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The Quality of Public Finances

Findings of the Economic Policy Committee-Working Group
(2004-2007)

Edited by Servaas Deroose
and Dr. Christian Kastrop

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THE QUALITY OF PUBLIC FINANCES

Findings of the Economic Policy Committee-Working Group (2004-2007)

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March 2008

Abstract:

Improving the quality of public finances has become a key policy challenge for European policy makers. While maintaining sound budget positions remains the linchpin of the European Union's fiscal framework, rising pressures from globalisation and ageing populations are calling to improve also the qualitative aspects of fiscal policy with a view to supporting economic growth. This includes to better target public resources, raise the efficiency of public spending, modernise public finance institutions and budget administration, create supportive fiscal frameworks and establish efficient and growth-enhancing revenue systems. The need for such a comprehensive approach to strengthen public finances is laid out in this collection of papers prepared by the EPC Working Group on the Quality of Public Finances between 2004 and 2007. It also highlights the challenges that come along with policy implementation by drawing on a number of country case studies.

Key words: Public finances, fiscal policy, public spending, expenditure composition, fiscal governance, fiscal rules, public administration, expenditure efficiency, health expenditure, innovation policy, revenue systems, taxation, COFOG

JEL classification: E01, E62, H11, H20, H30, H50, H51, H61, H83

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FOREWORD

The relevance of quality of public finances

Improving the quality of public finances has become a key policy challenge for European policy makers. While maintaining sound budget positions is the linchpin of the European Union's fiscal framework, rising pressures from globalisation and ageing populations have put additional demands on fiscal policy with a view to supporting economic growth. In particular, the upward pressures from age-related expenditure require public spending in other areas to become more efficient to free up resources so as to avoid a further increase of the already large public sectors and high tax burdens in many EU Member States. More generally, greater public spending efficiency is an objective that is independent of the size of government sectors and has therefore received much attention recently. Modernising public finance institutions and budget administration as well as creating supportive fiscal frameworks can help achieve this objective and have therefore been another focus of the work on quality of public finances (QPF). At the same time, public resources can be better targeted toward “growth-enhancing” areas, for example R&D and education. These challenges should be tackled hand in hand with creating revenue systems that are apt to the challenges of today's globalised markets. In particular, efficient tax structure should keep in check the disincentives for the provision of capital and labour and thereby potentially damaging growth prospects.

The role of the Working Group on Quality of Public Finances

Responding to the importance of quality of public finance, the Working Group on Quality of Public Finances was formed in 2004, as a sub-committee to the Economic Policy Committee (EPC). Its objective is to analyse the links between public finances and long-term potential growth. Since QPF comprises many dimensions, the Working Group decided to follow a step-by-step approach and over time focus on the various aspects of QPF, including by presenting and discussing country experiences.¹

Members of the Working Group include expert staff of the Member States, the European Commission, Eurostat and the European Central Bank. Moreover, the OECD and the IMF participate as observers and have provided input. The Group has also regularly invited experts from academia and national and international administrations for an exchange of views.

The main issues discussed and the main findings

The key aspects of QPF, which the Working Group has discussed since 2004, are presented in this collection of papers. Unfortunately, only a subset of the large amount of work can be included here due to space constraints. It should also be noted that the papers reflect the state at the time when they were presented at the Working Group. That means, especially for the country case studies, policies and institutions may have changed since, which is not reflected in the papers.

The papers are structured into five sections broadly covering the key topics of the Working Group. The main issues and findings are as follows:

Framework and data: The first focus of the Working Group was to define a concept of quality of public finances and identify data needs to conduct cross-country studies. Quality of public finances

¹ The original EPC mandate from May 2004 was accompanied by specific ECOFIN mandates of January 2006, October 2006 and June 2007.

has commonly been viewed as a concept with many facets. An EPC note (2007) defined QPF as “a broad concept which refers to the conduct and organisation of budgetary policy and its potential impact on long-term growth of the economy.” As summarised in the EPC notes from 2006 and 2007 and the paper by Afonso et al. (2005), presented in Section I, empirical evidence suggests that public finances can contribute to this objective by well-targeted expenditure and more efficient use of scarce public resource which also allows lowering the overall size of governments and the tax burden. Sound budget positions are key for these objectives and can be helped by fiscal rules and institutions.

Since meaningful and comparable data are key for the cross-country analysis of quality of public finances, the Working Group paid much attention to identifying and filling data gaps, in particular on public spending. The paper by the EPC from 2004 describes that the Classification of Functions of Government (COFOG) was agreed to be the most useful starting point in this respect as it allowed splitting up government expenditure by functions rather than by economic classification. The former lends itself better for studying the productivity and efficiency of expenditure. By now, these data are available for all EU Member States through the Commission services' AMECO database. However, since the aggregation level was still too high to assess, for example, the role of R&D spending for growth, the work was advanced on providing second-level data (COFOG-II). This work is ongoing and data are envisaged to be made publicly available soon.

Fiscal governance: Fiscal governance cuts through all dimensions of quality of public finances, but particularly helps ensure sound budgets and sustainability. A paper by the European Commission (2006) provides a comprehensive overview of the numerical fiscal rules in the European Union and documents their rising importance. Moreover, it finds empirical evidence that strong fiscal rules with a wide coverage of budgetary items are linked to better budgetary outcomes. A paper by Anderson and Minarik (2006) compares deficit and expenditure rules and clearly recommends the latter in terms of best accomplishing the multiple objectives of the budget. Another institutional option to lower the deficit bias are fiscal institutions (also called fiscal agencies) which provide independent analysis, forecasts or judgements as shown in the paper by Debrun, Hauner and Kumar (2007). The work by Curristine, Lonit and Joumard (2006) focuses on the role of budgetary procedures, in particular performance-based budgeting, in improving public efficiency. Country experiences in this area and modernising public administrations more generally are surveyed in the European Commission note (2007). Instructive are the country examples of fiscal governance frameworks. The paper by Hansson-Brusewitz and Lindh (2005) details the Swedish experience with medium-term expenditure rules, while the paper by Bobay (2005) describes the French budget reform from 2001 that introduced a new budget structure along with goals and performance indicators.

Composition and efficiency of expenditure: Initially the Working Group paid much attention on reviewing the composition of public expenditure given the links between some spending components and growth (see for example an overview of the literature in the 2004 Public Finance Report). Two country cases, Austria and the Netherlands, are presented in this section, describing the experiences with shifting expenditure in support of growth (more country examples can be found in Section V). The particular role that public expenditure can play in boosting innovation is assessed in the paper by Lilienthal (2004).

Given the pressures to reduce public spending, another focus has been on how to assess and improve the efficiency of public expenditure. The main challenges for such analysis, such as the measurement of inputs, outputs and outcomes to obtain efficiency indicators, and the main reform avenues, such as structural and institutional reforms, are summarised in a joint EPC/European Commission note (2007). Comparative estimates of efficiency of public expenditure and overall public sector performance for new Member States are provided in the paper by Afonso, Schuknecht and Tanzi (2005). This study builds on their earlier paper on efficiency, covering the old Member States. While the paper stirred some critical discussions on the methods used, it opened the door for further efficiency studies, which explicitly take into account the determinants of efficiency such as the one by Afonso and St. Aubyn (2006) on health provision.

Composition of revenue and tax systems: The structure of revenues can impact long-term growth, mostly by affecting the allocation of labour and capital. While there is some evidence that consumption taxes create fewer disincentives for growth than direct taxes, the detailed structure of such taxes need to be carefully considered. Valenduc (2005) explains these challenges for assessing the quality of tax revenue systems and focuses particularly on the choice of indicators which he applies in an analysis of the Belgian tax system. In addition to minimising distortions from tax systems for economic growth, the Member States of the European Union also face important challenges in maintaining robust tax bases. Firstly, aging will reduce the labour tax base. Secondly, the increased mobility for labour and capital that globalisation is bringing could complicate their reliability as tax basis. And thirdly, the desire to shift taxation away from labour “to make work pay” requires finding alternative tax basis. The paper by the European Commission (2007) reviews the recent trends in taxation in the European Union and discusses several ways in light of these rising challenges.

Case studies on improving the quality of public finances: The last section is devoted to detailed country studies. The examples of the Czech Republic, Finland, Germany, Italy, Malta, Poland, Portugal, Spain and the United Kingdom summarise expenditure trends and review reforms in the public sector with the aim of improving the efficiency of spending and strengthening fiscal institutions. The emphasis of policies reflects the country-specific circumstances, for example fiscal consolidation in the Czech Republic through an expenditure and revenue-based approach; the introduction of spending limits for a whole electoral period in Finland; a three-pronged approach (structural reforms, tax cuts and consolidation) to foster growth in Germany; budgetary institutional reforms in Italy to raise public sector productivity; the reduction of the government sector and public employment in Malta; rebalancing fiscal positions in Poland and Portugal largely from the expenditure side, while at the same time raising efficiency; in Spain shifting spending to those items with the largest impact on medium and long-term potential growth; and the implementation of a new public spending framework for improving the quality and cost-effectiveness of public services in the United Kingdom.

The way forward

The objective of raising the quality of public finances remains pertinent. The re-launched Lisbon Strategy from 2005 provides a foundation for future work,² which was recently reiterated by the ECOFIN Council in its meeting on 9 October 2007. It specifically gave the Commission and the EPC a mandate to continue its work in this area as the Council conclusions included the following statement: “It invites the EPC and the Commission to step up their efforts to improve the analysis, methodology and measurement of the quality of public finances, including the efficiency and effectiveness of public expenditure and revenue structures, as well as of major public sector reforms. Ministers also re-iterated their June 2007 request for Member States to step up efforts in the provision and subsequent analysis of COFOG, level II data (...).” Following this mandate, the Working Group is aiming to make quality of public finances operational as part of the Lisbon strategy and against the background of strengthening the coordination and surveillance of fiscal and economic policies. Based on a comprehensive conceptual framework, work is envisaged to continue on the efficiency and effectiveness of specific expenditure categories, the efficiency of revenue systems and the role of fiscal governance. The Working Group will also continue, together with the Commission, to conduct cross-country studies and exchange country experiences in the various dimensions of quality of public finances and their macroeconomic links to growth.

² Integrated Guideline No. 3 of the re-launched Lisbon Strategy states: "To promote a growth- and employment-orientated and efficient allocation of resources, Member States should, without prejudice to guidelines on economic stability and sustainability, re-direct the composition of public expenditure towards growth-enhancing categories in line with the Lisbon strategy, adapt tax structures to strengthen growth potential, ensure that mechanisms are in place to assess the relationship between public spending and the achievement of policy objectives, and ensure the overall coherence of reform packages."

Words of appreciation

The work on quality of public finances that is summarised in this collection of papers reflects the joint efforts by all members of the Working Group. Even if only an excerpt of papers can be shown here, we are most grateful to all contributors to the Working Group since 2004. While we cannot name all people individually, let us nevertheless point out some who have been instrumental in setting up the Working Group and advancing its work. From the European Commission, we are particularly grateful to Elena Flores Gual, Fabienne Ilzkowitz, Joaquim Ayoso Casals, Giuseppe Carone, Adriaan Dierx, Ulrike Mandl, Laurent Moulin, Gaëtan Nicodème, Jan-Host Schmidt and Peter Wierds, who have been key contributors by providing numerous important issues notes and advancing the discussions over time. From the EPC, we would like to thank Heinz Scherrer and Olaf Prüßmann for their excellent support to help keep the Working Group stay on track. We also greatly appreciate the ongoing support from the European Central Bank and particularly from António Afonso whose conceptual work has given indispensable stimulus to the Working Group. From Eurostat, our thanks go to Eduardo Barredo Capelot and his team for the instrumental work on COFOG data. In that respect, our special thanks also go to Raffaele Malizia (Italian participant in the Working Group) for the comprehensive work on indicator developments based on COFOG and Werner Ebert and Tanja Burckardt (Ministry of Finance, Germany) who played an important role in developing the conceptual and strategic work of the Working Group.

Last but not least, we would like to thank the team that has made the publication of this collection of papers possible. We are greatly indebted to Werner Ebert and Andrea Schaechter as the project leaders who have assembled this book in a very short period of time. They received excellent editorial assistance by Anna Rauch, help by Olaf Prüßmann and support in the production process by Dominique Marchalant.

Brussels, 5 February 2008

Servaas Deroose

Christian Kastrop

I. FRAMEWORK AND DATA ISSUES

INTRODUCTION: I. FRAMEWORK AND DATA ISSUES

The ‘quality of public finances’ (QPF) is a manifold concept. Originally, the idea to explore *qualitative* aspects of fiscal policy stemmed from the notion that concentrating solely on *quantitative* aspects, in particular the Maastricht criteria, is not comprehensive enough and could possibly result in suboptimal outcomes including unwanted side-effects. Therefore, right from the beginning, the task of the Economic Policy Committee’s QPF-Working Group has been to explore the links between the qualitative and the quantitative sides of fiscal policies. This first section on methodology and data issues prepares the ground for this analysis. Here, also the fundamental question of defining the concept is addressed.

The first paper by the Economic Policy Committee (2006) reflects the first two years of the Working Group on QPF. During that time, the Working Group concentrated mainly on the expenditure side of the budget. In that respect, the work on quality covered three elements: investigating the role of budgetary institutions in identifying and implementing expenditure priorities; analysing and monitoring trends in the composition of public expenditure; and measuring the efficiency of public expenditure. In the meantime, as the second paper by the Economic Policy Committee (2007) on "Work accomplished and the way forward" points out, also the composition and qualities of tax revenues have become an important issue of QPF-analysis – yet, this is a nascent branch at the moment.

Thus, the paper on the quality of public finances and growth by Afonso, Ebert, Schuknecht and Thöne (2005) concentrates on the linkages between the level and composition of public expenditure and its financing via revenue and deficits on the one hand, and economic growth on the other hand. In general, the authors find that fiscal policies are of high quality and support growth if they fulfil five requirements: They (1) provide for an institutional environment supportive to growth and sound public finances, (2) limit commitments to the essential role of government in providing goods and services, (3) set growth promoting incentives for the private sector and make efficient use of public resources, (4) finance government activities and where appropriate private sector activities with an efficient and stable tax system, and (5) support macroeconomic stability through stable and sustainable public accounts.

In their paper, Afonso and colleagues also provide a survey of different empirical studies which shows that an objective and unambiguous overall catalogue of “high quality”-expenditure items cannot be established. Yet, as the Working Group on the quality of public finances learned, there is also very limited comparable data on the composition of public finances. When the Working Group started, the composition of government expenditure could only be examined with first level data from the ‘Classification of Functions of Government’ (COFOG), i.e. in no more than ten different categories. To overcome this knowledge gap, the Working Group outlined ‘possible ways to implement a dataset to analyse the quality of public expenditure’ and conducted a survey among its members on the feasibility of an improved dataset as outlined in the EPC note from 2004.

At the center of this improved set stand expenditure data broken down at a second level (COFOG-II), i.e. differentiated into seventy different groups. Meanwhile, Eurostat and the Member States have established a specialised COFOG-task force on this matter. On the basis of voluntary submissions, this work is ongoing, COFOG-II-data for most Member States are being produced, and they are envisaged to be made publicly available soon, as the above mentioned EPC-note of 2007 reports.

RESTRUCTURING PUBLIC EXPENDITURE: CHALLENGES AND ACHIEVEMENTS

KEY ISSUES ON THE QUALITY OF PUBLIC FINANCES

Economic Policy Committee

Paper completed: January 2006

1. Background

The current EU economic policy framework considers budgetary discipline and fiscal sustainability to be key elements in achieving a sound and growth-supportive economic environment. In recent years, in support of these priorities, the concept of “Quality of Public Finances” has gradually been acquiring greater relevance in the economic-policy making debate at the national and EU levels on how fiscal policy can contribute to more growth and employment¹.

The focus on quality supports the quantitative criteria of the current EU fiscal surveillance framework. In the new Broad Economic Policy Guidelines 2005-2008 (BEPGs), Member States are asked to direct the composition of public spending towards growth-enhancing items, adapt tax structures to strengthen growth potential and assess properly the relationship between public spending and the achievement of policy objectives. Notably, the ECOFIN report to the March 2005 European Council on “Improving the implementation of the Stability and Growth Pact (SGP)” includes specific references to the overall quality of public finances and the implementation of policies in the context of the “Lisbon Agenda”, as elements to be taken into account when assessing budgetary developments in the EU. The reform of the Pact stresses the role of national institutions and fiscal rules in reinforcing the fulfilment of the fiscal objectives considered in the SGP and strengthening the quality of public finances.

Against this backdrop, the Economic Policy Committee (EPC) has analysed the links between public finances and long-term growth. *This note deals with three elements: (1) investigating the role of budgetary institutions in identifying and implementing expenditure priorities; (2) analysing and monitoring trends in the composition of public expenditure; and (3) measuring the efficiency of public expenditure.* The analysis at this stage has focused on the expenditure side of the budget.

¹ The concept of quality encompasses those elements of public finances that ensure the most effective and efficient use of public resources with a view to raising the long-term growth potential of the economy.

2. First results²

The composition of public finances, budgetary laws, fiscal frameworks and institutions are issues of national responsibility. Therefore, analysing Member States' quality of public finances requires due consideration of their heterogeneity in terms of national preferences and specific institutional and behavioural context (concerning, for example, the level of development and the quality of the infrastructure or their education systems).

(1) Defining and implementing priorities: the role of budgetary institutions and fiscal rules

One approach to evaluate budgetary quality is to assess the degree to which Member States' spending reflects their ex-ante identified economic policy priorities. In general, countries that have maintained fiscal discipline have been able to put a stronger focus on efficient resource allocation. National case studies carried out by the EPC confirm that most Member States have established expenditures priorities in key areas of R&D, education and investment (Table 1). In practice, however, these priorities are easily crowded-out by upward pressures in other categories during the budgetary decision-making process and in the course of budgetary implementation (e.g. structural spending items such as ageing). This can largely be explained by the soft nature of the announced priorities and in several countries an inappropriate institutional setting through which they should be implemented.

The case studies provide first indications that those countries that have been at the forefront of institutional reform, by introducing national expenditure rules and performance budgeting schemes within a medium-term framework, manage better to redirect public spending towards their national expenditure priorities and to protect these targeted items during periods of fiscal consolidation.³

Therefore, effective and appropriate budgetary institutions appear to be a key factor in facilitating the implementation of medium-term policy objectives, which are relevant not only for raising the quality of public budgets but also for helping maintain fiscal discipline and budgetary consolidation.

(2) Recent trends in the composition of public expenditure

Figure 1 summarises key trends in public expenditure in terms of its composition, over the past decade and for a broad sample of Member States⁴. Overall, they point on average to a long-term trend of increases in expenditure on transfers/social protection and decreases in public investment.⁵ Recent changes in the composition of public expenditure in the Member States show that many of those countries benefiting from large decreases in interest payments since the late 1990s used this room for manoeuvre for increasing expenditure on government consumption⁶ and on current transfers (Table 2). As decreases in interest payments fade out, room for manoeuvre in line with national priorities necessarily needs to be found in other categories of public expenditure, for which those of transfers and consumption are by far the largest. However, these are the categories in which pressures for expenditure increases will remain very high in the absence of reforms, in a context of expenditure pressures rising further due to ageing populations.

² A fuller analysis of the preliminary findings of the EPC is included in the progress report of the EPC on the Quality of Public Finances adopted by the Committee on 27 September 2005 (ECFIN/EPC(2005)REP/53776).

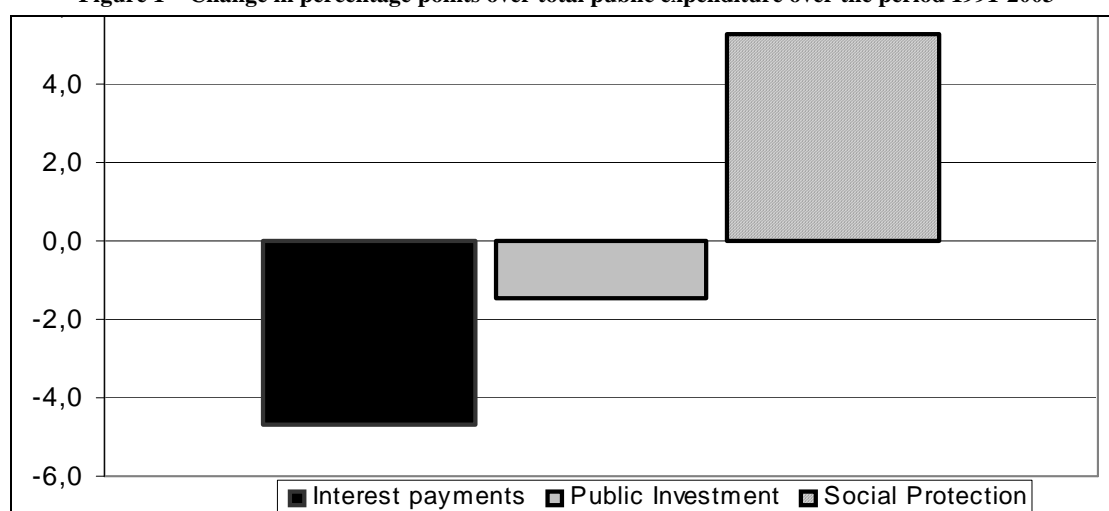
³ Performance budgeting in a strict sense is defined as the allocation of resources based on the achievement of specific, measurable outcomes.

⁴ The sample depended on the availability of full time-series of data.

⁵ It should be noted that the picture for social protection expenditure is mixed, with substantive relative decreases in IE, UK, FR and NL and substantive increases in SE, EL and PT. As regards the trends in public investment, one should note the changing boundaries between public and private investment, which are in part linked to privatisation.

⁶ This also includes the bulk of health care and education expenditure.

Figure 1 – Change in percentage points over total public expenditure over the period 1991-2003



Source: Commission Services.

Note: (1) This presentation does not reflect a normative choice in the sense of a classification of expenditure items into “growth-enhancing” items and “non growth-enhancing items”. It should also be noted that accounting conventions have an impact on these spending trends. This supports the case for the need for more precise data. (2) Countries included are BE, DK, DE, EL, IT, LU, PT, FI, UK. (3) Interest payments and public investment belong to the economic classification of public expenditure; social protection to the functional classification.

Ideally, the analysis on the composition of public expenditure would allow for detailed monitoring of the implementation of expenditure priorities as set by Member States themselves and the exchange of best practices. However, a broader and more detailed data set with longer time series is a necessary precondition for better ex-post evaluation of trends as well as monitoring of public expenditure composition. In practice the analysis on the composition of public expenditure is hampered by a lack of sufficiently detailed data.⁷

In cooperation with Eurostat, concrete steps for moving towards more detailed data availability on the functional classification of public expenditure have been developed. Further efforts in broadening the data base are needed.

(3) Measuring the efficiency and effectiveness of public spending

The analysis of the quality of public finances is incomplete without addressing the efficiency and effectiveness of public expenditure, i.e. the achievement of priorities at minimum costs. This allows for analysing how specific inputs (e.g. expenditure on R&D) affect outputs (e.g. number of patents per million population) and final outcomes (i.e. increasing sectoral and overall productivity). Available empirical evidence on specific spending categories (in particular, impact assessments in the case of innovation and human capital formation) shows that spending inefficiencies can be high, thus suggesting room for improvement in the use of scarce public resources. This kind of assessment requires suitable evaluation methods and tools to provide policy-makers with a better understanding of the impact of their policies.

3. Further work

Efforts to improve the composition of public finances appear of utmost importance for the achievement of the goals incorporated in the Lisbon strategy. In the light of the first results and the priorities and

⁷ The reference data set to be improved is the so-called COFOG classification (General Government expenditure by function and economic category) collected by Eurostat under the ESA95 transmission programme.

needs outlined above, the ECOFIN Council may wish to mandate the EPC to develop further the framework for assessing and promoting the quality side of budgets amongst Member States:

(1) The role of fiscal rules and institutions

In line with the literature on this topic, the first conclusions of the EPC point to the relevance of the design and nature of fiscal rules and institutions (e.g. medium-term budget frameworks, appropriate design of fiscal rules, budgetary transparency etc) to final budgetary outcomes. While it is clear that these issues fall under national competence and that there are no one-size fits all solutions, learning from best practices would be most useful. In addition, given the prominence of national budgetary rules and institutions to comply with common EU fiscal targets underlined in the context of the reform of the SGP, the analysis on this topic should be both broadened and deepened. This implies looking at a larger range of budgetary rules and institutions and their impact on key budgetary objectives (fiscal sustainability, the composition of the budget and the efficiency of public expenditure) and thus on long-term growth.

Against this background, the EPC could be mandated by the Ecofin to conduct jointly with the Commission a comprehensive analysis of the institutional aspects and budgetary rules in the EU.

(2) Analysing and monitoring expenditure composition

The BEPGs include a specific guideline on the quality of public finances (guideline No. 3). The Commission is monitoring the implementation of this guideline as part of its regular yearly assessments, but methodologies can be improved. A precondition to improve the analysis of public finances and to draw a clearer picture on the composition of public expenditure is the availability of more detailed, timely and comparable statistics. Specifically, three aspects of the data presently available should be improved: i) a broadening and extension of available COFOG data to the second level of the functional classification to facilitate cross-country analysis (at present such data is available for only 7 Member States); ii) longer national time-series should be available in order to carry out comparison across Member States and backwards analysis; and iii) other relevant data, for instance for public-private partnerships (PPPs) in infrastructure investment (including concessions and other types of public procurement), and tax expenditures, should also be considered in the analyses.

A clear mandate to the EPC in order to make, jointly with EUROSTAT and the National Statistical Offices, further progress on these statistical issues through the existing EUROSTAT COFOG taskforce or by other means as appropriate, would be an effective way to make progress.

(3) Measuring efficiency and effectiveness of public expenditure

Further work could focus on exchanging best practices on national experiences with systems of appraisal and evaluation, or continued work on performance-based approaches in budgeting. This might include, *inter alia*, the formulation of appropriate indicators of policy outcomes, the improvement of the information content of performance budgets, and the exchange of best practices in the use of evaluation techniques. Some work could also be undertaken on evaluating the efficiency and effectiveness of state aid.

The EPC stands ready to continue work on these issues in order better to assess the efficiency and effectiveness of public expenditure in achieving desired ends.

Annex:

Table 1 - Expenditure priorities in EU Member States

Member State	Prioritised items	How to create room for manoeuvre?
AT	Expand future-related spending (public infrastructure, R&D, education)	Contain past-related expenditure (that typically relate to income distribution); pension reform; public sector administration reform
BE	R&D, education, transport infrastructure, health, justice and public security	Falling interest payments, containment of overall expenditures except priorities
CY	R&D; physical infrastructure, human capital and knowledge	Defence, agricultural subsidies, grants to semi-governmental organisations
CZ	R&D, education, transport infrastructure, programmes co-financed from the EU budget	Spending reforms in area of sickness benefits; pensions; state social support; assistance and central government employment (i.e. cuts in consumption and social transfers)
DE	Education and training, research and innovation, measures to making it easier to reconcile work and family life	Labour market reforms, reforms in the pension and health care systems to limit social security expenditures, cutting down subsidies and tax expenditures
DK	Education, human capital and knowledge	Expenditure on economic affairs has declined
EL	Full priority given to fiscal consolidation	Cutting down operating expenditure, consumption expenditure
ES	Technological investment, development and innovation, infrastructure, education	Strict commitment to fiscal discipline
FIN	Education, research and development	Pension and health insurance reform and lowered unemployment security costs to curb social security expenditure, municipal sector
FR	Employment, R&D, innovation, higher education, security	Reduction of state expenditure in real terms, enhancing efficiency, containment of social expenditure, promoting moderation in local spending
HU	EU projects, certain infrastructural expenditure	Expenditures without priority, falling interest payments
IT	Investment in infrastructures, capital formation in less developed areas of the country	Reduce the rate of growth in pension expenditure, falling interest payments, contain expenditure on goods and services, improve administrative procedures
LIT	Knowledge society, public security and competitive economy	Pension and tax reform, improve public administration
LV	Macroeconomic stability, knowledge and innovation, R&D, education, public services	Introduce medium-term strategic planning, improve cost efficiency
MT	Education, environment	Fiscal consolidation, public sector reform, reduce the size of the public sector, privatisation
NL	Education and knowledge, health care, and public security	Strong fiscal consolidation aimed at increasing labour participation and improving long-term growth potential (for instance through social security reform)
PL	Public investment, development of technical infrastructure	Adjustment in spending in a static way (elimination of unproductive social expenditures), and a dynamic way (elimination of indexation mechanisms)
SE	Environmental protection, education, social security, health and medical care	Top-down budget process, general public administration, falling interest rates, provision of housing and social planning
SI	Investment in science and technological development; education and training.	Raise cost efficiency of public administration; contain wage growth; change revaluation mechanism for social transfers

Member State	Prioritised items	How to create room for manoeuvre?
UK	Health, Education, Transport, R&D	Better public services (stretching efficiency targets); falling unemployment and rising economic participation have allowed savings to be made in welfare spending.

Source: National case studies

Table 2 - Redirecting Public expenditure: the Lisbon experience

Relative changes in composition of public expenditure in percentage points: averages 2003/4 versus 1998/99 (economic classification) and 2002/3 versus 1998/99 (functional classification)

Economic classification:	-10.0	-5.0	-2.0	-1.5	-1.0	-0.5	+0.5	+1.0	+1.5	+2.0	+5.0	+10.0
Subsidies				DE	SE, IE	FI, NL, IT, LU, DK, ES, FR, EL	PT, AT, BE, UK					
Interest payments	EL,	IE, SE, IT, BE, NL, ES, UK, DK, FI		PT	DE, FR, AT	LU						
Public investment		PT			AT, DE	BE, SE	DK, LU, FI, IT	FR, UK, EL, ES	NL	IE		
Consumption						LU	AT, DE, FR			DK, PT	EL, ES, FI, UK, SE, IT, BE, NL	IE
Transfers		UK, NL		FI		ES, FR	IE, LU, DK	BE, IT, SE		DE, AT, EL, PT		
Functional classification:												
Economic affairs		PT		DK, FR		DE, IT, FI	ES, BE	SE, LU	NL, UK, AT	EL, IE		
Education						DE, FR, LU, PT	BE, ES, EL, SE, AT, NL, IT	IE, FI, DK, UK				
Health				EL, AT		ES	LU, DE	PT, DK	NL, BE, FR,	UK, IT, SE,		

Economic classification:	-10.0	-5.0	-2.0	-1.5	-1.0	-0.5	+0.5	+1.0	+1.5	+2.0	+5.0	+10.0
									FI	IE		
General Public Services	EL	IE, SE, IT, NL, UK, DK	BE, AT	ES	FI, DE	LU	PT	FR				
Social Protection		IE	UK, FR, NL			FI	ES, BE, LU	IT, DK, DE	AT	EL, SE, PT		

Source: Commission services. *Notes:* changes are measured in percentage points of total public expenditure. "Economic affairs" includes expenditure for general economic, commercial and labour affairs, for agriculture and forestry, for fuel and energy, for mining, manufacturing and construction, for transport and for other industries. "Social protection" mainly covers benefits for subcategories such as sickness and disability, old age, family and children, unemployment and other forms of social benefits. "General public services" includes expenses related to executive and legislative organs, financial and fiscal affairs, external affairs, foreign economic aid, general services, interest payments and other expenses related to debt and part of research and development spending.

REPORT ON "QUALITY OF PUBLIC FINANCES" ISSUES

— WORK ACCOMPLISHED AND WAY FORWARD —

Economic Policy Committee

Paper completed: May 2007

Executive Summary

The "Quality of Public Finances" is a broad concept which refers to the conduct and organisation of budgetary policy and its potential positive impact on the long-term growth of the economy. Increasing the efficiency of public spending is in this context one of the most pressing challenges facing the EU Member States. Good value for money, i.e. maximising output with the input available, is essential because of the increased challenges on public finances stemming from globalisation and ageing.

In January 2006 the ECOFIN Council invited the Economic Policy Committee (EPC) and the Commission to analyse the following aspects linked to the quality of public finances: (i) national fiscal rules and institutions in the EU, (ii) data availability to better monitor the composition of public expenditures, and (iii) the measurement of public expenditure efficiency. This report describes the progress achieved so far in relation to these Council requests as well as in the analysis of the revenue side of public finances and suggests a possible way forward.

Cross-country comparison of public spending efficiency revealed significant differences across Member States and showed that efficiency gains are possible. Structural reforms and institutional features such as fiscal rules can help to improve the efficiency performance of public spending. For example, structural reforms contribute to a more business friendly environment and institutional arrangements, such as fiscal rules and institutions, could improve the conduct of fiscal policy.

Approaches on the institutional side concentrate primarily on changing budget procedures, and introducing results oriented approaches to budgeting. The use of performance information in the budget process is an important tool for decision-making. Performance information delivers a better picture of the governments' goals and priorities and acts as a signalling device showing which measures are working, and which are not. More systematic and independent evaluation of existing policies could help to strengthen the efficiency of public spending, and there is a strong need for making better use of reliable methodological approaches towards assessing the success or failure of government programmes.

Further work in these areas should include exchange of information and best practices among Member States in order to be able to better identify the key drivers of efficiency. To measure the efficiency of public spending, better data on governments' inputs and outputs are essential. A more robust methodology and measurement framework should be established. Member States and the Commission could include analyses on effectiveness and efficiency in the Lisbon National Reform Programmes and the Community Lisbon Programme.

Progress has been made to improve the methodology and to increase the availability of data on the

composition of public expenditures. It is expected that data availability will improve significantly in the course of 2007, provided countries stick to their commitments and countries that deliver data agree to publication. However, some large Member States have not yet transmitted any COFOG second level data to Eurostat. As these countries account for a large proportion of government expenditures in the EU, it would be welcome if these Member States stepped up their efforts. Only a strong commitment by the national authorities to effectively deliver these statistics would allow for further progress in the assessment of changes in the composition of public expenditure in line with the Integrated Guidelines for jobs and growth and the Lisbon National Reform Programmes.

The stocktaking of the prevailing national fiscal rules and institutions showed that a lot of initiatives have been taken by Member States to strengthen their national fiscal framework. National fiscal frameworks have a positive impact on budgetary outcomes and have proved to help Member States in achieving their budgetary targets. The recently introduced or planned reforms go in the direction of an improved quality of the fiscal framework. A strengthening of national fiscal institutions and budgetary procedures has -to a lesser extent- also been implemented or at least announced. However, further efforts are still needed to reinforce domestic fiscal governance, which in turn will support the respect of the SGP provisions. Further work should address in particular the interaction of fiscal rules with other elements of the budgetary policy making as well as their influence on expenditure composition.

The quality of public finances is not just a question of the expenditure side but also of the revenue side. Discussions at the Informal ECOFIN in Berlin have welcomed the analysis made on the revenue side within the context of "Financing the Future". Work could continue to present a quantification of the effects of shifting taxes across tax bases in the context of the quality of public finances and to assess the relative merits of alternative revenue bases (profit versus. non-profit, green taxes, Public-Private-Partnership).

1. Introduction and background

The "Quality of Public Finances" is a broad concept which refers to the conduct and organisation of budgetary policy and its potential positive impact on the long-term growth of the economy. A comprehensive analysis should examine both the expenditure and the revenue side of the budget, while considering those institutional aspects of national fiscal frameworks that influence the developments in the budgetary aggregates (i.e. national fiscal rules and institutions and budgetary procedures) as well as the organisation of public administration.

This concept is acquiring a growing importance in the fiscal policy debate in the EU. The pursuit of fiscal stability oriented policies within the EU fiscal framework calls for an efficient and effective use of public resources. Similarly, the upward pressure on public spending resulting from age-related expenditure, which affects not only the overall size of public budgets but also their composition, requires due attention in order to avoid the crowding out of possible growth-enhancing budgetary items, such as education or R&D. Against this background, efficiency and effectiveness has to be measured and assessed and the availability of sufficiently detailed data is important to draw conclusions on the composition of overall spending. Demographic changes and globalisation pose new challenges to the revenue side of the budget as well. These new phenomena make it increasingly important to have growth-supportive revenue systems and to ensure an adequate and stable level of resources in order to finance public expenditure. Optimal framework conditions have to be in place to improve the quality of public finances: well designed fiscal rules and institutions but also structural reforms can support the quality agenda.

The importance of budgetary quality has been taken up in the main instruments for economic policy coordination in the EU, such as the Integrated Guidelines for Growth and Jobs¹ and the National Reform

¹ In particular, the Integrated Guideline no. 3 specifies that to promote a growth- and employment-orientated and efficient

Programmes. In the same vein, the ECOFIN report to the March 2005 European Council on "Improving the implementation of the Stability and Growth Pact (SGP)" includes specific references to the overall quality of public finances and the implementation of policies in the context of the Lisbon Strategy for Growth and Jobs as elements to be taken into account when assessing budgetary developments.

Therefore, in January 2006 the ECOFIN Council invited the Economic Policy Committee (EPC) and the Commission to analyse the following aspects linked to the quality of public finances:

1. The Council invited the Commission in joint co-operation with the EPC to conduct a comprehensive analysis of the existing national fiscal rules and institutions in the EU.²
2. The Council invited Eurostat and the National Statistical Offices, in co-operation with the EPC, to step up efforts on data availability to better monitor the composition of public expenditures.
3. Finally, the Council invited the EPC to further develop the measurement of public expenditure efficiency, by improving the information content of budgets and the exchange of best practices in the evaluation of public spending

This report summarises the progress achieved so far in relation to these Council requests and suggests a possible way forward.

2. Improving public expenditure efficiency

In response to the January 2006 Council request, the Commission submitted a background paper³ to the informal ECOFIN in April 2007 on the efficiency and effectiveness of public spending. A joint Commission/ EPC Issues paper served as a basis for Ministers' discussion. The main messages could be summarized as follow:

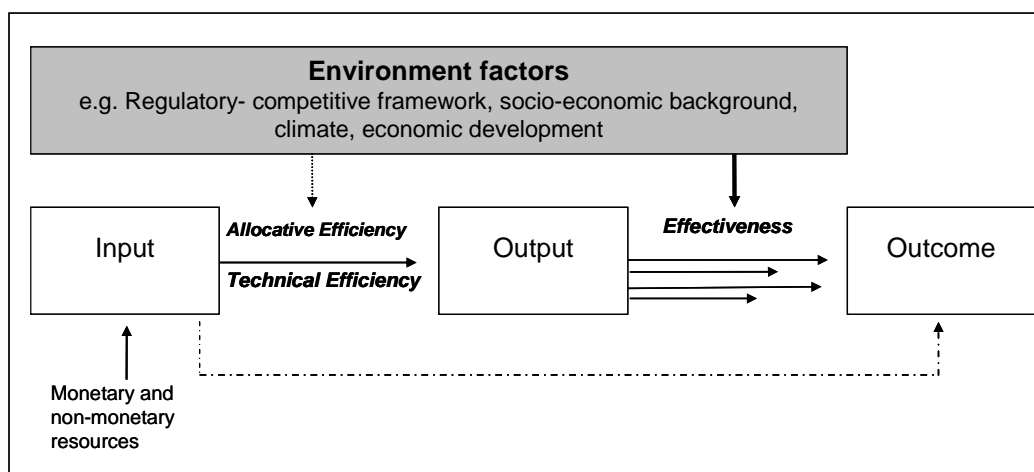
- Public spending represents a large share of GDP and therefore has a major impact on the productivity of the whole economy. Improved efficiency and effectiveness of public spending could alleviate budget constraints as it allows achieving the same results at lower levels of spending or increases value for money by achieving better outcomes at the same level of spending. Even though EU Member States' budgets show large country differences in both the level and the composition of public expenditures, cross-country comparisons can provide important insights into the policy challenges that countries face.

allocation of resources Member States should, without prejudice to guidelines on economic stability and sustainability, re-direct the composition of public expenditure towards growth-enhancing categories in line with the Lisbon strategy, adapt tax structures to strengthen growth potential, ensure that mechanisms are in place to assess the relationship between public spending and the achievement of policy objectives and ensure the overall coherence of reform packages.

² This request is in line with the statements included in the report on the SGP reform endorsed by the European Council in March 2005, which says that national budgetary rules should be complementary to the Member States' commitments under the Stability and Growth Pact. It also says that national institutions could play a more prominent role in budgetary surveillance to strengthen national ownership, enhance enforcement through national public opinion and complement the economic and policy analysis at EU level.

³ Developed further in Mandl, U. A. Dierx and F. Ilzkovitz (2008), "The efficiency and effectiveness of public spending," European Economy. Economic Paper No. 301 (Brussels).

Figure 1 - The concepts of efficiency and effectiveness



- The measurement of efficiency and effectiveness is complex. There are various ways to measure public sector efficiency and effectiveness. Conceptually, efficiency is described by the relation between input and output (see Figure 1), with the objective of maximising output for a given amount of inputs; or of minimising inputs for a given output. Effectiveness relates the input to the final policy objective (the outcome). For instance in the area of education, money spent or the number of civil servants deployed for this public activity are often used as input. Output tends to be measured by performance indicators, such as the number of pupils finishing secondary school level. Since the outcome reflects the final policy objectives there can be different outcomes between countries, such as low youth unemployment or high welfare levels. As there are several limitations in covering the whole diversity of objectives, analytical work carried out so far has focused on the measurement and assessment of efficiency.
- Policy makers should be well aware that data limitations and the methodology applied can significantly affect the results. Moreover, cross-country differences can often be explained by factors beyond the control of decision makers. The choice of appropriate indicators is often constrained by data availability and comparability across countries. Moreover, quality aspects have to be taken into account. Not taking account of the quality of the teachers, for instance, could lead to under- or overestimation of efficiency. Adjusting for such considerations is not easy and moreover, it is not straightforward to measure governments' output or outcome when it comes to non-market outputs. Against this background the development of comprehensive and comparable data on input, output and outcome should be a priority for EU Member States. For example, as a basic requirement for the efficiency analysis COFOG 2nd level data availability would facilitate the data on monetary inputs. Experience has shown that focussing on individual spending areas is more promising in order to derive concrete policy recommendations. The analyses so far have focused on R&D and education but the efficiency of other important categories of public spending such as social protection, and health care could also be investigated. Bearing in mind the limitations and data constraints, first investigations in the spending areas of education and R&D, however, show that efficiency gains are possible.
- Public spending on education varies greatly in EU-countries and so do education outputs. Recent work suggests that, in a number of countries, reforms could visibly enhance performance of pupils while maintaining the education spending levels⁴. Recent investigations on efficiency of education

⁴ Afonso A., St. Aubyn M. (2006), "Cross-country efficiency of secondary education provision: A semi-parametric analysis with non-discretionary inputs", *Economic Modelling* 23 (3), 476-491.; Afonso A., St. Aubyn M. (2005), "Non-parametric Approaches to Public Education and Health Efficiency in OECD Countries," *Journal of Applied Economics* 8 (2), 227-246.; Sutherland D., Price R, Joumard I. and Nicq C. (2007), "Performance Indicators for public spending

spending suggest that factors such as parents' education or greater decision making autonomy at school-level (more competition between schools) affect the efficiency of money spent on education⁵. In addition, studies indicate that the social return on investment in education is highest when spending is on pre-school education⁶, which would suggest redirecting public spending on education to this specific area. On the other hand, more technologically advanced countries appear to get a higher value for money from tertiary education⁷. Regarding R&D spending, some studies investigate the leverage effect of public R&D spending on private R&D⁸. High levels of government funding for R&D may go hand in hand with a good innovative performance. First preliminary results of the study commissioned by the Commission on efficiency and effectiveness of public R&D spending suggest that efficiency gains are possible. Moreover, it seems that the most efficient countries maintain their high efficiency performance over time. The study will be available by the beginning of 2008.

- Structural reforms and institutional changes as policy tools help improve the performance of public spending. Structural reforms can play a role. For example, the leverage effect of public R&D on private investment in R&D and innovation could be amplified in a more competitive and business friendly environment. Most Member States have already taken steps in this direction. Besides opening up new areas of the economy to competition, reforming organisational aspects of public administration (e.g. the degree of outsourcing) also offers the potential for an improved public sector efficiency performance. Diverse approaches have been adopted by Member States to reforming institutional arrangements. These approaches concentrate primarily on changing budget procedures, and introducing results (output) oriented approaches to budgeting. Countries are at different stages of using or introducing performance information (i.e. performance measures and evaluations) into their budget processes. While shifting the budgetary focus from money spent (input) to output and outcome achieved, some Member States, like the UK and the NL, have gained experience in output-measurement. Experiences show that criteria like simplicity, transparency and focus have to be fulfilled in order to make optimal use of performance information and efficiency measurement.

Against this background, the importance of a more in-depth exchange of national experiences in increasing the efficiency of public spending has been stressed at the Informal Ecofin. A better identification of structural and institutional determinants of efficiency and a better understanding of their interactions could help to shape a more consistent policy agenda. Therefore, the EPC and Commission launched a questionnaire to gather more information in these areas (see also Annex 1).

A first screening of the responses showed that Member States have adopted various approaches to enhance the efficiency of their public spending. Generally, reforms of institutional arrangements, e.g. decentralisation of political power, changing budget practices and procedures, are used to enhance efficiency. Very often these reforms go hand in hand with enhancing transparency and a clearer division of responsibilities and accountability. Structural changes, like increasing the scale of operations, are used in specific areas like education and health care (see Annex 1 for more details).

However, a more systematic screening of the information is necessary to draw more concrete conclusions. In addition, little information is available about the impact of reform initiatives so far.

efficiency in primary and secondary education", OECD Economics Department Working Paper No. 546

⁵ OECD (2007), "Linkage between performance and institutions in the primary and secondary education sector"

⁶ Heckman J.A. (1999), "Policies to foster human capital" (NBER 7288)

⁷ Vandenbussche J., Aghion P. and Meghir C. (2006), "Growth, distance to frontier and composition of human capital", *J Econ Growth* 11, pp. 97-127.

⁸ For a comprehensive review of empirical evidence, please see David P. A., Hall B. H. and Toole A. A. (2000), "Is public R&D a complement or substitute for private R&D? A review of the econometric evidence," *Research Policy*, Elsevier, vol. 29(4-5), pp. 497-529, April; and Garcia-Quevedo J. (2004), "Do Public Subsidies Complement Business R&D? A Meta-Analysis of the Econometric Evidence", *Kyklos*, 57(1), pp. 87-107

The information available reflects that the use of performance information (PI) in the budget process is becoming an important tool for decision-making in order to move the focus away from spending towards actual achievements. In the decision-making process it could act as a signalling device showing which measures are working, and which are not. Overall, it improves transparency by providing more information on public sector performance. Country experiences so far also showed that the shift to output-oriented policy making is also a learning-by-doing process. The OECD⁹ has developed general guidelines for countries highlighting that there is no "one size fits all" model of performance budgeting and countries need to adapt their approach to their political and institutional context.

2.1. Possible way forward

Good value for money is essential because of the increased pressure on public expenditures. Moreover, government output is an important share of GDP and therefore, improvements in public spending efficiency with the objective to maximise the output for a given amount of inputs should be high on our policy agendas.

A continued exchange of views should allow identifying key drivers of efficiency and effectiveness. An exchange of information and case studies based on countries' experiences could help to agree on indicators that build the basis to draw reasonable conclusions on efficiency levels. Moreover it could lead to a common understanding of sound principles and methods for efficiency measurements on a cross-country basis.

Concerning specific spending items the work on data collection and availability should be improved. This should be based on efforts by Eurostat, National Statistics Institutes and the OECD to implement output measures in the national accounts. Progress is underway in the context of the "Handbook on measuring Education and Health Volume Output". However, a greater effort is required to get better input data (COFOG 2nd level). Finally, the shift from input- to output measurement in the budgetary process can be considered as a first step towards increasing the efficiency and effectiveness of public spending. In addition, following efforts should be taken in specific areas:

- R&D spending: the Commission services should continue to work towards identifying more appropriate methodologies that can be used to measure and assess cross country efficiency and effectiveness. Quantitative indicators of efficiency and its determinants could be discussed on the basis of the results of ongoing work.
- Education spending: There are already very valuable data available thanks to OECD efforts in the context of PISA. A new dataset on PISA will be available by the end of this year.
- Health spending: A better common understanding of the efficiency concept could help to facilitate the definition of appropriate indicators.

Once a more robust methodological framework and better data have been established, an overall assessment of the efficiency and effectiveness of public spending could be envisaged, possibly as part of the evaluation of the Lisbon National Reform Programmes. Such considerations could also be introduced in the evaluation of the budgetary situation in the Member States.

3. Data availability and knowledge about the composition of public expenditures

The composition of public expenditures reflects governments' input for policy objectives, like the Lisbon goals. However, in order to assess the achievements, more detailed and comparable data are needed.

⁹ OECD (2007)

Eurostat and Member States, with the support of the EPC, have created a taskforce whose objective it is to provide data for individual government expenditure items (based on the Classification of the Functions of Government – COFOG) with a sufficient level of detail (COFOG second level) and comparability. The detailed data requirements were defined by the EPC in May 2006 with a view to facilitating the monitoring and analysis of the quality of public finances within the context of the Lisbon strategy and the Integrated Guidelines.

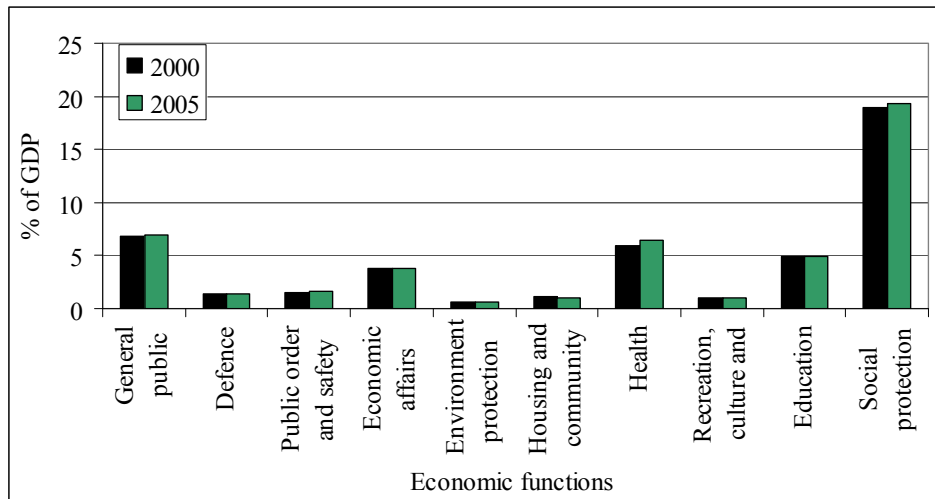
The work developed along several lines: making progress on the methodology, increasing data availability, analysing possible synergies with other existing international data sets, and sharing best practices for the collection of COFOG data. The legal basis for the delivery of COFOG is the ESA 95 transmission programme. The transmission of the first level of COFOG (10 functions) is mandatory, while the transmission of second level COFOG (69 functions) is voluntary.¹⁰

3.1. Availability of COFOG first level data and possible conclusions on the composition of public spending

The transmission of COFOG first level data is well established in all Member States and timeliness and coverage of these data have recently improved considerably. This data, which is available on Eurostat's website, provides basic information, albeit at an aggregated level, for the analysis of the breakdown by function and the changes in the composition of public expenditure. Eurostat is working in close co-operation with Member States to overcome remaining quality issues.

Graph 1 is an illustration of the possible use of this data. It shows that three functions accounted for the largest share of government expenditure (not taking into account expenditure on interest) in the euro-zone both in 2000 and in 2005 (see Graph 1): social protection (19.4% of GDP in 2005), health (6.4% of GDP) and education (5.0%).

Figure 2 - Aggregated government expenditure of the euro-zone by function in 2000 and 2005 as % of GDP



Source: Eurostat

Some significant differences in the composition of expenditures across Member States can be observed:

- As for expenditure on social protection, the Nordic Member States plus France, Germany, Austria and Greece register figures well above the EU25 average (18.8%), whereas the Baltic countries, Ireland, Romania, Slovakia, Cyprus, Czech Republic, Spain, United Kingdom, Portugal and Malta stand significantly below this average.

¹⁰ Data are due at t+12 months after the end of the reference year.

- Regarding health expenditure, Member States are more evenly distributed around the EU25 average (6.5%). Ireland ranks in the first position in health expenditure, while a group of countries formed by Cyprus, the Baltic States, the Netherlands, Poland and Greece spend on public health between 2 and 3.5 percentage points of GDP less than the EU25 average.

3.2. Demand for more detailed information - Availability of COFOG second level

Although the first level of COFOG data provides an overall picture of the composition of public expenditures and the possibility for cross-country comparisons, there is clearly a need for more detailed data. For example, while a better knowledge of R&D expenditures is particular relevant in the context of the Lisbon Strategy, it is not possible to isolate these expenditures, except on the basis of COFOG second level data.

Longer time series and disaggregated data also allow the explanation of trends in some categories. For example, the overall growth in general government expenditure as a percentage of GDP between 2000 and 2005 has been concentrated in health (from 5.9% of GDP to 6.4%) and social protection (from 19.0% of GDP to 19.4%).

- Concerning health expenditures, a more disaggregated analysis shows that, in the case of Denmark, the increase in health expenditures (1.6%) between 1990 and 2007 resulted from an average real growth of 4.3% for medical products, compared to 1.3% for hospital services.
- Concerning social protection, the support for the elderly is dominant in nearly all countries which reported second level COFOG data for 2005, followed by expenditure on sickness and disability (relatively significant for Denmark, Sweden, Finland and Hungary).

Following the ECOFIN request for COFOG second level data, Member States, in co-operation with Eurostat, continued to work on the extension of the data set, on a voluntary basis, and on the improvement of the relevant quality aspects.

Up to now there have been three voluntary transmissions of COFOG second level data to Eurostat, the last one in December 2006. Several Member States made considerable efforts and delivered second level COFOG statistics covering different periods. While at the end of December 2005, only 7 countries reported data to Eurostat, the current availability of COFOG second level data is up to 16 Member States' sets of data for the most recent years: Bulgaria, Belgium, Denmark, Germany (estimates for 2003), Estonia, Greece, Spain, Italy, Cyprus, Lithuania, Hungary, Poland, Portugal, Slovak Republic, Finland and Sweden. In addition, Ireland and France have delivered partial II level COFOG breakdowns (Ireland for the function environmental protection and France for sub-sector social security funds for years 1995-2003). However, Eurostat can only disseminate these figures when Member States do not object, and large Member States such as Germany¹¹, France and the United Kingdom are still working to compile or complete their datasets Eurostat has started to publish COFOG second level data for some Member States on its website, and plans to enlarge the number of countries published.

In several cases data were transmitted only from 2000 or 2001 onwards, limiting the possibility to conduct a detailed structural analysis further back in time and to produce European aggregates¹². Eurostat plans to investigate suitable methods with Member States to extend the time series available.

Concerning methodological developments, some Member States encountered serious theoretical and practical difficulties for the compilation of these figures, notably the lack of detailed source data for back years (especially the new Member States, and local government data) and scarcity of resources in some National Statistical Offices. The collection of second level COFOG statistics is not an easy task, partly

¹¹ Preliminary data for 2003 are expected by the end of May.

¹² Some countries only provided one year of data.

due to the fact that many of the expenditure-related activities conducted by a government at a detailed level fall under several possible headings.

There is accordingly a need to harmonise concepts and definitions in a consistent way across countries. Moreover, there is also a need to encourage synergies and further consistency with other international data sets, such as educational, social protection, health, or environmental accounts. Although it only meets once per year, all these issues are being tackled by the previously mentioned task force. Eurostat will publish a manual for the compilation of COFOG statistics in 2007.

3.2.1. Some common patterns

Notwithstanding all these drawbacks, and considering that work is still in progress and the data subject to improvement, some common patterns can be identified in the data transmitted so far, which show their usefulness for addressing user' needs. More light can be shed on the composition of public expenditures.

Expenditure under the COFOG 2nd level category "old age" (under social protection) appears for most countries to be the most relevant, ranging from around 15% of total government expenditure in 2005 in Belgium, Denmark, Slovak Republic, Lithuania, Finland, Hungary, Spain, and Estonia, to over 25% in Poland, Italy, Bulgaria and Greece. Some other very significant categories reported by most countries are sickness and disability, executive and legislative organs, and hospital services.

Moreover, the COFOG 2nd level data reported allow for an analysis of the different compositions across countries, for each of the first level categories. For example, the proportion of expenditure on pre-primary and primary education is relatively significant in countries like Sweden and Denmark, while Portugal devotes a very high share of educational expenditure to secondary education. Finland devotes a significant share to tertiary education, compared to the other countries which reported data.

When longer time series are available, there is also the possibility to analyse changes in the composition of public expenditure, both within each category through time and also across countries, as we have shown in the case of Denmark.

3.3. Future developments and way forward

Member States have been asked to step up their efforts to compile and disseminate COFOG second level data in order to comply with the requests of the Council. Given that the transmission of these data is voluntary, only a strong commitment by the national authorities to effectively deliver these statistics would allow the assessment of the degree of achievement of the Lisbon Agenda and the related Integrated Guidelines.

4. National fiscal rules and institutions

The Commission together with the EPC launched two comprehensive surveys among EU countries to take stock of the prevailing national fiscal rules and institutions over the period 1990-2005.¹³ Overall, the surveys provided substantial information on sixty national numerical fiscal rules and twenty three national independent institutions in the field of fiscal policy, and yielded interesting results in terms of

¹³ The survey on rules covered all types of numerical fiscal rules (i.e. budget balance, debt, expenditure and revenue rules). Therefore, other types of rules such as budgetary legal procedures were not considered. As for the questionnaire on institutions, its coverage concerned the existing national institutions, others than the government, the Central Banks and the Parliament, which may have a direct or indirect influence on the conduct of fiscal policy and are primarily financed by public funds (i.e. private think-tanks or banks' research departments were not covered). These independent institutions generally provide inputs for budget preparation (e.g. forecasts), analyses on fiscal developments and/or recommendations on fiscal policy issues.

fiscal policy making:

Firstly, Member States have been increasingly relying on fiscal rules over the past twenty years, and point to the existence of a link between these fiscal arrangements and budgetary outcomes.

- Budgetary positions tend to improve in the years following the introduction of fiscal rules and primary government expenditures tend to grow less in the years following the introduction of expenditure rules.
- The characteristics of rules may influence fiscal developments. Rules enshrined in law or constitution and foreseeing automatic enforcement mechanisms seem to have a larger influence on budgetary outcomes.
- However, this does not prevent other "softer" arrangements based on political agreements or commitments from being effective in improving the conduct of fiscal policy (e.g. fiscal rules applied to central government in Finland).
- It also follows from the analysis that expenditure rules capping spending growth over the medium term and revenue rules determining ex ante the allocation of revenue windfalls may contribute to governments' commitment to avoid pro-cyclical policies in good times (e.g. fiscal rules in the Netherlands). In this respect, only a few rules currently in force are defined in cyclically-adjusted terms (e.g. budget balance rule for the general government in Sweden).
- However, there are other instruments that help address pro-cyclicality such as medium-term frameworks for budgetary planning. For instance, rules incorporated into medium-term budgetary frameworks, as a part of a comprehensive fiscal strategy, may be better adapted to economic and country specific circumstances while making stabilisation and sustainability objectives more compatible (e.g. Denmark).
- In addition, a multi annual rule could be considered superior to a rule that only sets a target for one year. Rules covering a medium term horizon could make circumvention more difficult and, therefore, reinforce credibility and prospects of fulfilment. In this respect, the coverage and escape clauses of the rule must be clearly defined in order to avoid arbitrary circumventions.
- Finally, in a number of Member States fiscal rules prove to be instrumental in promoting an appropriate budgetary coordination among general government tiers to maintain sound fiscal positions (e.g. Spain).

Secondly, a number of interesting facts emerges from the Commission analysis of fiscal institutions.

- The involvement of such independent institutions in the budget process appears to be an important element determining its influence on the fiscal decision-making. Different arrangements currently in place in some EU countries have proved to be effective in conveying the policy messages issued by these independent bodies.
- The most widespread options consist of regular hearings by the Parliament, consultation by the government in the course of the budgetary process, or the obligation of the fiscal authorities to justify departures from the forecasts or recommendations released by the institution (e.g. the Institute of Economic Research (WIFO) in Austria).
- According to some Member States' experiences, delegation of forecasting tasks for the preparation of the budget seems to help address possible optimistic biases in macroeconomic projections (e.g. the National Accounts Institute in Belgium). The existence of independent national advisory bodies and research institutes, through a higher degree of competition, may also contribute to eliminate biases in macroeconomic projections of national governments.
- Next, the institutions in place seem to have a considerable impact on the public debate as most of them enjoy a considerable reputation, which appears to be essential for exerting real influence on policy decisions.

- Finally, fiscal institutions need to enjoy high credibility and a strong political support, which in turn should be reflected in a large degree of autonomy and functional independence.
- However, it must be stressed that special status is not always a pre-requisite for ensuring independence, which can also be achieved by government ownership and commitment to the duties assigned to the institution (e.g. the Central Planning Bureau in the Netherlands).

Country policy experiences show that numerical fiscal rules and institutions should not be seen as mutually exclusive but rather as complements.

- The existence of fiscal rules reflecting the main fiscal policy objectives of a country can help in specifying the mandate and facilitate the work of independent institutions. Fiscal institutions, on their side, can effectively contribute to monitoring compliance with the existing numerical fiscal rules, thereby increasing the chances that rules are respected. In turn, rules and institutions can complement each other since they potentially focus on different aspects of government finances.
- Numerical fiscal rules often apply to one sub-sector of the general government and generally have a short to medium-term orientation. In contrast, independent fiscal institutions potentially conduct analysis covering the whole of government finances and may also consider the situation of government finances in a long-term perspective.
- Finally, although these conclusions are in principle valid for all Member States, it must be clear that the desirable design of national fiscal rules and institutions is country specific and depends on domestic circumstances, such as the institutional and political setting and the nature of fiscal problems. Above all, the success of national rules and institutions in improving fiscal governance is subject to one prerequisite: the existence of a broad consensus on the need to conduct sound fiscal policies and a strong political support for this aim.

It clearly follows that national fiscal rules and institutions are largely complementary to the SGP provisions, and support their observance by promoting fiscal discipline and limiting pro-cyclical loosening of the fiscal stance in economic ‘good’ times.

In this respect, the October 2006 Ecofin asked Member States to provide relevant information on their national fiscal frameworks, including implementation and envisaged changes, in the forthcoming Stability and Convergence Programmes (SCP).¹⁴ It also encouraged the Commission to take into account these elements when preparing its assessments of the programmes as far as relevant for the observance of EU budgetary rules, and to provide an overview of the implementation of the existing national rules based on the 2006 SCPs.

This overview was discussed by Member States in *March 2007*. Although with different levels of detail, most Member States included relevant information in their updates, which facilitated a useful exchange of best practices on the envisaged or recently implemented improvements of domestic fiscal frameworks.¹⁵ The main results of the overview may be summarised as follows:

Over the last 20 years, Member States have attached an increasing reliance to domestic fiscal rules and this trend seems to continue according to the information contained in the SCPs. For instance, significant changes and/or new rules were reported by France, Italy, Portugal, Cyprus, Estonia and Spain. In all

¹⁴ In this context, the definition of national fiscal frameworks encompasses three elements: i) those rules that regulate the preparation of the budget (i.e. budgetary procedures); ii) all numerical fiscal rules; and iii) independent fiscal bodies.

¹⁵ Denmark, the Netherlands, Finland and Sweden provided the most comprehensive sets of information. These four countries not only gave a complete description of their fiscal frameworks but also included an assessment of the implementation of their fiscal rules currently in place (i.e. whether fiscal rules were respected in recent years). The information submitted by these countries shows the role that fiscal rules play in the overall fiscal strategy adopted in the update and their instrumental character in reinforcing the respect of the SGP provisions. These four cases were considered as telling examples of what kind of information should be included in the SCPs regarding domestic fiscal frameworks.

cases, the changes recently introduced or planned could go in the direction of an improved quality of the fiscal framework.

Although to a lesser extent than rules, improvements to strengthen national fiscal institutions and budgetary procedures have also been implemented or announced in some programmes (e.g. France). Overall, Member States frequently mentioned two aspects of their fiscal frameworks when announcing recently implemented or envisaged reforms:

- The purpose of reforming the fiscal relations between government tiers with a view to better monitoring budgetary developments at sub central levels (e.g. France, Germany, Spain, Italy, Denmark and the Netherlands).
- The intention of implementing medium term budgetary frameworks (or strengthening the existing ones) to improve budgetary management through multi-annual planning (e.g. Bulgaria; Estonia, France, Spain, Cyprus and Latvia).

This overview also made it possible to compare policy invitations related to domestic budgetary frameworks included in the Council opinions on the 2005 SCP updates with the measures announced or envisaged in the 2006 SCP updates. The following results deserve due attention:

- Approximately half of Member States which have been invited to improve their fiscal frameworks in the context of the 2005 SCPs have introduced reforms in the right direction in the course of 2006 (e.g. France, Portugal and Italy).
- On the whole, additional efforts are, however, still needed in most of the Member States that have been invited to improve their framework. Despite some recent progress, further efforts are still needed in countries such as Hungary and Poland in relation to the recommended improvements of their budgetary institutions.
- Nearly one third of countries which have not been invited to strengthen their fiscal frameworks in last year's round of the SCPs have implemented or announced plans to improve their domestic fiscal governance. For instance, countries registering positive budgetary developments and respecting both national and EU rules (e.g. Estonia and Spain) have undertaken measures to reinforce their fiscal frameworks.

On the whole, the overview showed encouraging initiatives adopted in a number of Member States in order to strengthen their national fiscal frameworks. However, further efforts are still needed so as to reinforce domestic fiscal governance, which in turn will support compliance with the SGP provisions.

Way forward

Member States concluded that the exchange of best practices included in the overview has made it possible to identify successful experiences by presenting different solutions adopted in different countries, which could be particularly useful for those Member States with more fragile fiscal frameworks. It was also considered that this exercise could help to strengthen the preventive arm of the SGP. Based on the October Ecofin conclusions, it was agreed to continue this exercise in the next round of the SCPs, and Member States agreed to improve the information on national fiscal frameworks included in the updates.¹⁶ Finally, the Commission was also requested to prepare a new report on the implementation of fiscal rules in relation to pro-cyclicality to be submitted for discussion in summer or early autumn.

In parallel, the Commission has already undertaken or envisaged new projects dealing with other aspects of national fiscal frameworks. Specifically, a survey on the preparation of the SCPs and their link with

¹⁶ They agreed to focus on implemented or envisaged changes in national fiscal frameworks and new initiatives; and on how they have been implemented.

the national budgetary procedures for the annual budget preparation was launched in December 2006. This exercise intends to shed some light on how to improve the functioning of the preventive arm of the SGP, and how Member States can stick to their budgetary objectives. In particular, some elements such as the use of medium-term budgetary frameworks, a greater involvement of National Parliaments in the preparation of the SCPs as well as the strengthening of the Medium Term Budgetary Review to assess the consistency between budgetary plans for next year and fiscal objectives included in the latest SCP, may reinforce the preventive arm. The analysis of this survey has provided abundant and useful information in this respect, and a deeper analysis will be included in the up-coming 2007 Public Finance Report.

The Commission also plans to carry out further research on the issue of fiscal rules, particularly by analysing their interaction with other elements of budgetary policy making such as budgetary procedures and the use performance budgeting. Further work also needs to be undertaken on the influence of budgetary rules on expenditure composition. Finally, additional monitoring of the role of independent fiscal institutions may also be envisaged.

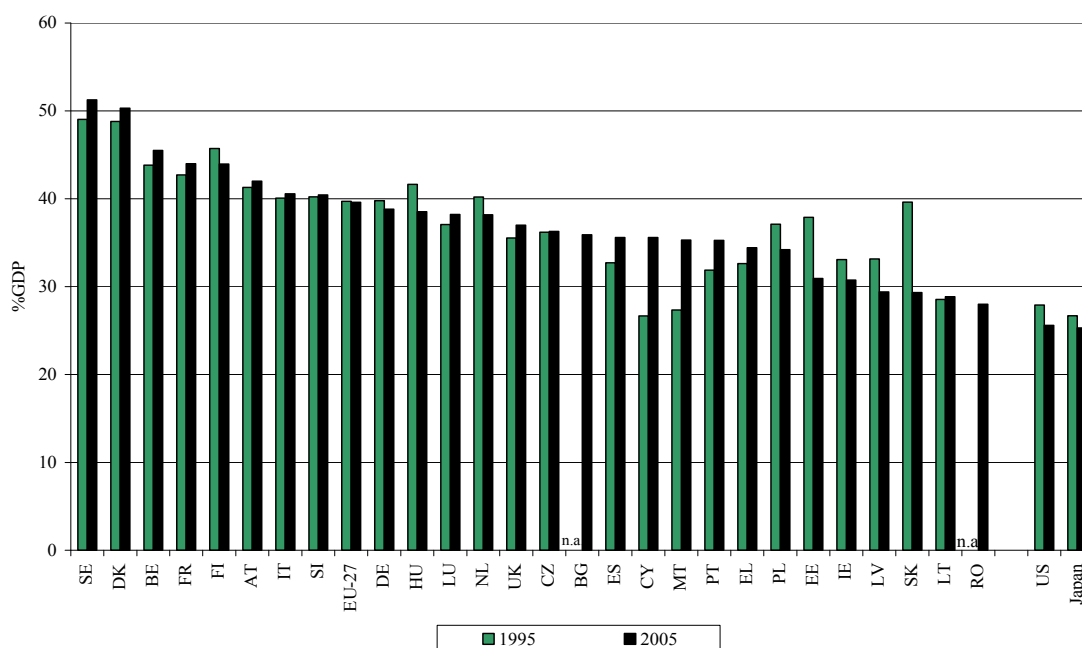
5. The revenue side of public finances

As noted previously, a comprehensive analysis of the quality of public finance shall examine both the expenditure and the revenue side of the budget. In preparation of the Informal ECOFIN, the Commission has therefore also prepared a note on *"Tax revenues in the European Union: developments and economic issues"*. The note reviews recent developments in tax revenues in the European Union and points to several key findings:

Over the last few years, we have witnessed a certain stabilisation in the overall tax-to-GDP ratio. This follows many years of increasing tax-to-GDP ratios in most Member States, reflecting the need to finance increasing public expenditures. More recently, overall levels of expenditure have started to decline in an effort to consolidate public finances, followed to some extent by some reduction in revenues as a percentage of GDP since the peak in the late 1990s.

The EU, by and large, combines relatively high taxes with relatively high public expenditure levels, although there are many differences across countries.

Figure 3 - Total taxes (including social security contributions) in percentage of GDP in 1995 and 2005



Source: European Commission (2006). OECD (2005b). US and Japan: 1995 and 2003.

Over recent years, Member States have carried out major reforms of their tax systems and these reforms have been driven by several interrelated factors. First, the growing awareness that an excessive tax burden on labour and its interaction with the benefit systems lowers work incentives has led Member States to move towards a more employment-friendly labour taxation. Second, Member States have endeavoured to rationalise and simplify their tax systems, almost always by broadening the tax base in order to reduce the tax rates. Finally, globalisation and demographic ageing have raised the issue of how the social models in the European countries should be financed, and particularly how to find robust tax bases.

The option of pursuing further reductions in labour taxes, given notably the pressing need to complete the consolidation of public finances raises difficult political and practical issues. Against the background of consolidation of public finances, revenue-neutral tax reforms deserve particular attention. This implies that Member States have to look for robust alternative tax bases to labour taxation to finance the welfare state.

Increasing mobility of factors and ageing populations are creating new challenges for tax policy. For the future, it is important to maintain the momentum towards more neutral and more efficient tax systems within the EU, while stabilising revenues, ensuring sound public finances and budgetary discipline. This would appear to require, among other things, further efforts to:

- improve the quality of public revenues by a growth-enhancing tax structure,
- achieve higher economic efficiency through a fiscal environment that encourages entrepreneurship and investment, and provides work incentives and increased employment;
- increase the fairness, transparency, and efficiency of taxation by broadening tax bases and eliminating unjustified loopholes, special tax regimes and exemptions.

Way forward

Discussions at the EPC, EFC and the informal ECOFIN have welcomed the analysis made in the note and the Commission stands ready for work further on these issues. In particular, the European

Commission could continue its analysis of the advantages and disadvantages of alternative tax bases as well as a quantification of the effects of shifting taxes across tax bases (non-profit/profit tax base, green taxes, etc.). Finally, it will also pay particular attention to the development and effects of tax expenditures on budgets.

Annex 1: Major national reform initiatives to improve public sector efficiency and effectiveness

- Many Member States aim to enhance the efficiency and effectiveness of public spending by improving the design of the budget and allocation of resources. 10 Member States indicated that they have introduced or improved their medium-term budgetary framework (LT, CY, CZ, PL, RO, EE, SK) or undertaken other kinds of budgetary reforms like FR ("LOLF"), LV ("Public expenditure management reform") and NL (Performance budgeting). Many Member States combine their efforts to introduce a medium-term budgetary framework with more performance information.
- Some Member States enhance efficiency by reforming public administration. In particular, public employment management is under revision in some Member States. For example, HU reformed the pay system of civil servants and MT introduced a results-oriented employee appraisal system. Furthermore, the introduction of new IT systems seems to be a key driver in modernising public administration. E-Government was introduced or better utilised in BE, ES, AT and DK. Some Member States (LT, CY, PL) introduced new fiscal reporting or accounting tools.
- High efficiency gains are also expected by Member States through a restructuring of local governments. In particular, the Scandinavian countries restructured their local government, for example by merging municipalities (FI). In other (federal) countries constitutional reforms are in progress (DE, AT). In particular in specific areas like education and health care, the decentralisation of the management of funds is a priority in some countries (RO).
- In specific areas, like pension systems, health care, education, infrastructure, Member States have implemented reforms to enhance efficiency. For example in SE, schools have been exposed to competition ("independent schools") to enhance the quality and consequently the efficiency of the education system.

Major national reform initiatives to improve public sector efficiency and effectiveness

<i>Country</i>	<i>Major government wide reform initiative</i>	<i>Specific policy areas</i>
AT	Administrative reform	R&D institutional and strategic reforms, University reform, Railway reform
BE	eGovernment	Labour market
BG	Medium-term budgetary framework, public expenditure management reform	Public Finance School (civil servants), Education, R&D, Health care
CY	Medium-term budgetary framework, Fiscal accounting system (FIMAS)	
CZ	Medium-term budgetary framework, programme financing	R&D (Outcome assessment)
DE	Constitutional reform, "cutting red tape", Reducing subsidies,	Labour market, Education, R&D, Health care
DK	eGovernment, Local government reform	
EE	Medium term budgeting	Pension insurance system reform, Health care sector, Internal security

Major national reform initiatives to improve public sector efficiency and effectiveness

Country	Major government wide reform initiative	Specific policy areas
EL	Fiscal audits reform, new operating framework for public enterprises and entities, measures to reduce red tape	Tertiary education reform, R&D (investment law, various programmes), health care reform
ES	States agencies law, State agency for the evaluation of public policies and service quality, eAdministration	Education, R&D
FI	Local government reform (restructuring municipalities)	Productivity measurements
FR	Budget reform (LOLF), State modernisation audits	Audits, Infrastructure projects
HU	Administrative reform (staff reduction, pay system, ...)	Education (performance indicators), health care
IT	Spending review, Budget reform, Performance based budgeting	Health care, Education, Transport, fiscal federalism
LT	Budget reform (Medium-term budgetary framework), Accounting and fiscal reporting system reform,	Pension system, Health care services
LU	Budgetary reform (Direction du contrôle financier, reform of the Court of Auditors, better integration with SGP)	
LV	Budgetary reform ("special budgets")	
MT	Service Quality Improvement ("chartered departments"), Performance management, Collective bargaining for public service employees	Social benefits
NL	Performance based budgeting, Social assistance reform (changing funding of municipalities, benchmark system)	Lump sum funding in education, Regulatory reform programme of businesses
PL	Expenditure planning, Performance budgeting, IT system	
PT	Government reform (PRACE, SIMPLEX)	Health sector, Education sector
RO	Budgetary reform, Programme budgeting	Education (decentralising of funding)
SE	Local government reform (Balanced budget requirements for municipalities)	Education, Elderly care (users choice-systems)
SI	Result-oriented budgeting, Public private partnership	Education (funding)
SK	Public finance management reform (MTB, Programme budgeting, Fiscal decentralisation)	
UK	Public Service Agreements (PSAs)	300 individual efficiency initiatives (drugs procurement, police force, procurement, back office functioning of local government)

Source: Responses to the questionnaire "Improvements in public expenditures efficiency and effectiveness – Lessons learned and the way ahead"

Annex 2:

COFOG second level classification

01 - General public services

- 01.1 - Executive and legislative organs, financial and fiscal affairs, external affairs
- 01.2 - Foreign economic aid
- 01.3 - General services
- 01.4 - Basic research
- 01.5 - R&D General public services
- 01.6 - General public services n.e.c.
- 01.7 - Public debt transactions
- 01.8 - Transfers of a general character between different levels of government

02 - Defence

- 02.1 - Military defence
- 02.2 - Civil defence
- 02.3 - Foreign military aid
- 02.4 - R&D Defence
- 02.5 - Defence n.e.c.

03 - Public order and safety

- 03.1 - Police services
- 03.2 - Fire-protection services
- 03.3 - Law courts
- 03.4 - Prisons
- 03.5 - R&D Public order and safety
- 03.6 - Public order and safety n.e.c.

04 - Economic affairs

- 04.1 - General economic, commercial and labour affairs
- 04.2 - Agriculture, forestry, fishing and hunting
- 04.3 - Fuel and energy
- 04.4 - Mining, manufacturing and construction
- 04.5 - Transport
- 04.6 - Communication
- 04.7 - Other industries
- 04.8 - R&D Economic affairs
- 04.9 - Economic affairs n.e.c.

05 - Environmental protection

- 05.1 - Waste management
- 05.2 - Waste water management
- 05.3 - Pollution abatement
- 05.4 - Protection of biodiversity and landscape
- 05.5 - R&D Environmental protection
- 05.6 - Environmental protection n.e.c.

06 - Housing and community amenities

- 06.1 - Housing development
- 06.2 - Community development
- 06.3 - Water supply
- 06.4 - Street lighting
- 06.5 - R&D Housing and community amenities
- 06.6 - Housing and community amenities n.e.c.

07 - Health

- 07.1 - Medical products, appliances and equipment
- 07.2 - Outpatient services
- 07.3 - Hospital services
- 07.4 - Public health services
- 07.5 - R&D Health
- 07.6 - Health n.e.c.

08 - Recreation, culture and religion

- 08.1 - Recreational and sporting services
- 08.2 - Cultural services
- 08.3 - Broadcasting and publishing services
- 08.4 - Religious and other community services
- 08.5 - R&D Recreation, culture and religion
- 08.6 - Recreation, culture and religion n.e.c.

09 - Education

- 09.1 - Pre-primary and primary education
- 09.2 - Secondary education
- 09.3 - Post-secondary non-tertiary education
- 09.4 - Tertiary education
- 09.5 - Education not definable by level
- 09.6 - Subsidiary services to education
- 09.7 - R&D Education
- 09.8 - Education n.e.c.

10 - Social protection

- 10.1 - Sickness and disability
- 10.2 - Old age
- 10.3 - Survivors
- 10.4 - Family and children
- 10.5 - Unemployment
- 10.6 - Housing
- 10.7 - Social exclusion n.e.c.
- 10.8 - R&D Social protection
- 10.9 - Social protection n.e.c.

QUALITY OF PUBLIC FINANCES AND GROWTH¹

António Afonso,² Werner Ebert,³ Ludger Schuknecht⁴ and Michael Thöne⁵

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Non-technical summary

In this paper we review the linkages between the quality of public finances, that is the level and composition of public expenditure and its financing via revenue and deficits, and economic growth. The importance of high-quality fiscal policies for economic growth has been brought to the forefront by a number of developments over the past decades. Member States of the European Union are bound to fiscal discipline through the Stability and Growth Pact which limits their scope to conduct unfinanced spending. Globalisation makes capital and even tax payers more mobile and exerts pressure on governments' revenue base.

The study provides arguments and quantitative evidence that fiscal policies are of high quality and support growth if they fulfil the following requirements: (i) provide for an institutional environment that is supportive to growth and sound public finances, (ii) limit commitments to the essential role of government in providing goods and services, (iii) set growth promoting incentives for the private sector and make efficient use of public resources, (iv) finance government activities and where appropriate private sector activities with an efficient and stable tax system, and (v) support macroeconomic stability through stable and sustainable public accounts.

Some of the main conclusions of the paper are as follows:

- A well-defined institutional framework is important to support the long-run growth of the economy and 'high quality' public finances play an important role for its functioning;
- Fiscal policy can contribute to macroeconomic stability and a sound policy mix and create expectations that foster economic growth;

¹ We are grateful to the participants at the meeting of the EPC Working Group on the Quality of Public Finances, Brussels, August 2004, for helpful comments, particularly to Frédéric Bobay, Elena Flores, Niels Frederiksen, Heinz Handler, Georges Heinrich, Christian Kastrop, Balázs Romhányi, and Maurice Weber. We are also grateful to Gabriela Briotti, Vítor Gaspar, Rolf Strauch and an anonymous referee for helpful comments and contributions. Any remaining errors are the responsibility of the authors. The opinions expressed herein are those of the authors and do not necessarily reflect those of the author's employers.

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- The evidence on size effects of fiscal variables supports the case for quantitative consolidation with a view to reducing total spending, thus enabling reductions of deficits and taxation. The empirical findings on growth effects of the composition of government activities clarify that not all kinds of government spending should be treated alike when it comes to reforming public finances;
- On the spending side, certain core spending items are essential for the economy to function and to grow. However, these services also must be delivered in a cost-effective way;
- A main growth element is public investment, especially in human capital and – under certain conditions - in R&D. The growth effects of physical capital investment are less clear-cut;
- Redistributive spending can undermine growth. However, a certain basic level of redistribution and social spending is probably necessary as a social infrastructure.
- Taxes should be not distorting and should display low marginal rates while avoiding tax uncertainty and time inconsistency;
- The survey of different empirical studies shows that an objective and unambiguous overall catalogue of “high quality”-expenditure items is not feasible. There is no cookbook for growth. Economics gives an idea of the major ingredients, but it does not clearly tell the recipe;
- The quality-indicators for public finances developed in the meantime can only be illustrative. Within their methodical limits, indicator-concepts may offer orientation on their respective aspects of quality. But no indicator can in fact measure the comprehensive quality of public finances;
- In spite of all efforts to identify the sources of growth, we still have a simplistic growth concept that ignores many interdependencies and synergies of this process. From this perspective, the use of comprehensive case studies could give valuable additional insight, and this can be an avenue for further work on the topic.

1. Introduction

This study reviews the linkages between the quality of public finances, that is the level and composition of public expenditure and its financing via revenue and deficits, and economic growth. The importance of high-quality fiscal policies for economic growth has been brought to the forefront by a number of developments over the past decades. Member States of the European Union are bound to fiscal discipline through the Stability and Growth Pact which limits their scope to conduct unfinanced spending. Globalisation makes capital and even tax payers more mobile and exerts pressure on governments’ revenue base. At the same time, expenditure pressures do not abate, and countries will soon have to face up to the fiscal consequences of ageing population.

The study reviews the literature and, thereby, provides arguments and quantitative evidence that fiscal policies are of high quality and support growth if they fulfil the following requirements: (i) maintain an institutional environment that is supportive to growth and sound public finances, (ii) limit commitments to the essential role of government in providing goods and services, (iii) set growth promoting incentives for the private sector and make efficient use of public resources, (iv) finance government activities and (regulate) private sector activities with an efficient and stable tax system, and (v) support macroeconomic stability through stable and sustainable public accounts. If these conditions are fulfilled, fiscal policies boost growth via positive effects directly on employment, savings/investment and innovation and, indirectly, via the institutional framework.⁶

⁶ It is also worth recalling that there is an important policy debate that discusses the same issue in a more operationally minded manner and terminology. The European Commission in its Public Finance Report (2004), for example, proposes a broad definition of the quality of public finances, which concerns the allocation and the most effective and efficient use of resources in relation to identified strategic priorities. This definition does not identify the policy objectives *ex ante*

The direct transmission channels to growth are derived from the growth literature whereby fiscal policies can affect “exogenous” growth through its effect on labour, capital accumulation and technological progress and it can create “endogenous” growth effects, for example, when it boosts learning-by-doing effects or contributes to the development of a “knowledge-producing” sector.

By contrast, the measurement of public sector efficiency is a difficult empirical issue and the literature on it, particularly when it comes to aggregate and international data is rather scarce. Recently, progress has been made in this regard by shifting the focus of the analysis from the amount of resources used by a ministry or a programme to the services delivered or outcomes achieved.

The paper is organised as follows. Section two addresses the various channels through which taxes and spending affect growth. Section three assesses public finance quality and its growth impact by discussing measurement issues and empirical findings. Section four presents the summary and the conclusions of the paper.

2. Public finances affect growth

Public finances affect growth in several ways. In the understanding developed here, growth is primarily defined as long-term growth potential, and not short term or cyclical growth. This section briefly reviews the economic linkages between spending, tax policies and growth, as well as the relevance of the institutional framework, and the contribution of public finances to macroeconomic stability. There is by now a considerable literature of which we provide some general references in the footnote below and more specific references in the text.⁷

2.1. Institutional framework

The institutional framework, that is, the environment within which fiscal policies operate, matters for growth via two main channels. First, the existence of a well-defined institutional framework is key to growth. Public finances, indirectly, play an important role for its proper functioning. Legal constraints and rules, such as well-established property rights or the existence of efficient markets minimise institutional uncertainty, and enhance the control over and security of returns on investment. Rules promoting market exchange (e.g. via contract law, freedom to set prices) are a prerequisite for a market economy. Functioning markets generate information via the price mechanism, which, in turn, induces agents to work, save, invest, specialise and innovate so as to make a profit. Rules must promote competition, secure adequate information and allow efficient risk management. They should also guarantee that government actions do not undermine but rather support the functioning of markets. In that way a well functioning institutional framework minimizes transaction costs for the private economy and helps to internalize externalities and spillovers. This view of the role of government has been advocated by classical economists such as Adam Smith and advocates of the modern institutional and constitutional economics literature (including e.g. F. Hayek, D. North and J. Buchanan).

High quality public finances can indirectly support growth by supporting the broader institutional framework. With sufficient funds for internal and external security and public administration, well-trained and non-corrupt civil servants, judges, etc secure that the wheels of the economy are well greased. Underfunded, overstaffed administrations by contrast are prone to less well-functioning

given that it does not single out the expenditure categories that are more “productive” and consequently more quality improving. It leaves to the political process the role of setting those priorities which could include general social targets, economic growth as well as redistribution and economic stabilization, being therefore a technical definition. Additionally, productive expenditure is generically defined as expenditure with a positive effect on the growth potential of an economy by means of increasing the marginal productivity of capital and/or labour or the total factor productivity respectively.

⁷ See also European Commission (2001, 2004), ECB (2001), Hemming et al. (2002), OECD (2003a, b), Romero de Avila and Strauch (2003), Tanzi and Schuknecht (2000, 2003), Tanzi and Zee (2000), and Zagler and Durnecker (2003).

institutions (see e.g., van Rijckeghem and Weder (2002)). Prohibitive taxation undermines property rights and subsidised public services can destroy private markets.

Second, the institutional framework that governs fiscal policy making plays an important role for the quality of public finances and growth via well established and enforceable fiscal rules and institutions (see e.g. von Hagen, Hallerberg and Strauch (2004)). These can prevent an expenditure and deficit bias in the political process that creates inefficient and overly large public sectors and undermines the sustainability of public finances. Rules can also secure the stability of fiscal policies by preventing erratic changes in deficits, tax laws and expenditure programmes. Furthermore, rules can enhance the efficiency of fiscal policies and reduce the scope for rent seeking.

Budgets rules are particularly important because they determine the aggregation of spending demands and the solution of distributional conflicts. A number of techniques, such as performance budgeting, human resource management tools, market-like mechanisms of pricing, have been developed to provide the necessary information for a technically sound allocation of resources and enhance the efficiency of the implementation process.⁸ Other examples of important institutional elements include audit rules, public procurement rules and cost-benefit analysis in the context of deciding on public activities and regulation as well as expenditure targets or sunset clauses.

2.2. Government spending

In the theoretical literature that links public finances with growth, three expenditure variables have been considered: public investment spending, public consumption spending and social welfare or redistributive spending. Some of this literature has also considered public spending that increases human capital and spending that contributes to innovation such as that for research and development as core spending as it enhances the human capital base (investment) and technological progress. Total government spending average about 45% of GDP in industrialised countries but the range from little over 30% of GDP to around 60% suggests enormous differences across countries (European Commission, AMECO, as quoted in Tanzi and Schuknecht (2003)).

There is some governmental activity and related public spending that is essential for the performance of the economy. This “core”, or “essential”, or “productive” spending may be as important to growth as private capital and labour. This core spending can directly raise the human and physical capital stock and technical progress in the economy but it can also do so indirectly by creating synergies for private activities. Without it the economy will not function well and will not grow. The level of this spending depends on how efficient the government is in using the resources available. The more efficient is the government, the lower needs to be the spending level. But government spending depends also on a number of “exogenous” factors: geography, the level of development of the country and on the sophistication of its markets (Tanzi (2004)).

Core spending includes spending for essential administrative services and justice (see also the impact on growth via institutions as discussed above), basic research, basic education and health, public infrastructure, internal and external security and so on. Spending on these categories in industrialised countries are hard to assess precisely. However, if approximated by public consumption they average about 20 percent of GDP or 45% of total public expenditure (cfr. European Commission, AMECO database).

Public spending on education (via human capital) and research and development (innovation/technical progress) enhances growth. As the new growth theory suggests, public activity is needed as it can compensate for market failure due to network-externalities, non-linearities and monopolistic competition. Public spending (e.g. in the areas of education and R&D) can drive education and R&D to a more efficient level than would prevail in a pure market scenario.

⁸ See, for example, OECD (1995).

Redistributive spending by contrast can undermine growth by reducing incentives to work, invest in human capital or exercise entrepreneurial talents. Early retirement incentives or generous social assistance reduce labour supply and the incentive to maintain one's human capital. On the other hand, spending on basic social safety nets reduces the need for precautionary savings and enhances the ability for risk taking and insofar could serve as a growth-promoting institutional factor. All in all, an increase in efficiently executed core spending can promote growth while an increase in non-core spending beyond basic safety nets can be assumed to retard growth. Redistributive spending, nevertheless, is the second most or even most significant expenditure category in many industrialised countries and averages about 40% of public spending (though this depends very much on the definition of redistributive spending and the country).

Public investment is a narrower concept than productive or core spending. It is more specifically directed to the creation of physical infrastructure. Normally gross fixed capital formation is limited to around 2–3% of GDP (or about 5 percent of total spending) (see also European Commission (2004)).⁹

There is no question that public investment may contribute to growth. Apart from directly raising an economy's capital stock, it is often argued that public investment on infrastructure is necessary to crowd in private investment and to reduce some private costs. However, in the theoretical as well as the empirical literature the impact is not clear-cut (see Pfähler et al. (1996)). First, the definition of what is an investment is somewhat arbitrary and could lend itself to manipulation. Second, the use of strictly objective cost-benefit analysis has yet to enter investment decisions. Inefficient projects, often called "white elephants" can have very significant fiscal costs but with little impact on growth. Third, the increase in public investment could replace/discourage private investment. Still, in spite of these reservations, it must be maintained that properly defined public investment and efficiently executed public projects would contribute to growth.

2.3. Tax systems

Industrialised countries typically have well developed revenue collection system to finance the above-mentioned spending levels. As revenue must remain on average close to spending, the revenue ration also averages nearly 45% industrialised countries with roughly one third of this falling on indirect taxes on consumption, six tenths on direct taxes on incomes, and the remainder on other revenue.

The level of taxation is important because (a) taxes are generally distortive, and (b) taxes transfer resources from the private to the public sector and there is often the presumption that the private sector is more efficient in their use. A high level of taxation is likely, *ceteris paribus*, to reduce the growth potential of a country because of the negative impact that it might have on work incentives, investment, saving decisions, and on the allocation of resources in general. In a global environment high taxes in one country may also reduce growth in that country by inducing capital flight towards lower taxed countries.

While taxes may reduce growth by being too high, they might also reduce it by being too low. This will happen if the level of taxation is too low to give the public sector of a country the resources necessary to provide essential government services. At least in theory, there must be a level and structure of taxation that could be considered "optimal" from a growth point of view because it would be just sufficient to finance the essential public services in an efficient way. When the tax level of a country exceeds this optimal level, a lowering of it could lead to faster growth. For instance, typical examples of tax-induced distortions are labour-leisure decisions, savings-consumption decisions or the alternative allocation of consumption among various commodities and investment among various economic sectors.

Over the years, public finance experts have analysed the impact of different taxes and tax structure on economic variables, and have generally concluded that not all taxes have the same impact on the economy. Taxes that are imposed with high marginal rates (for example on the factor labour) are more damaging because economic theory teaches that the dead-weight cost of taxes grows with the square of

⁹ The remaining 5-10% of total expenditure are interest expenditure on public debt.

the marginal tax rate. For this reason, on efficiency grounds, value added taxes (that are basically proportional taxes on consumed income) are preferred by many tax experts to personal income taxes that are often applied with high marginal tax rates on both consumption and saving. In general, reforms that broaden the base of income taxes and reduce the marginal rates; or that replace income taxes with proportional sales taxes improve the efficiency of an economy.

While there are tax changes that improve the efficiency of the economy, it is also true that when tax systems are changed frequently in their structural and level aspects, these changes introduce “tax uncertainty”, and this could have negative effects on growth. Uncertainty makes economic decisions involving the future more difficult. This can happen especially when tax uncertainty is likely to create time consistency problems. For example a tax reform may introduce tax incentives to stimulate investment but, because the incentive will cost revenue to the government, the investors may fear that they may be removed or reduced after the investments have been made.

In structural terms, taxes and subsidies can serve as one possible tool to internalise network-externalities and spillovers in (new growth) models where market price signals are not able to lead to a social optimal level of economic activity, e.g. in research and development (R&D), development of human capital or production of social and physical infrastructure.

2.4. Public finances and macroeconomic stability

Fiscal policies are one factor that can contribute to macroeconomic stability and a sound policy mix and, thereby, also support monetary policy in maintaining stable prices at low interest rates. Low deficits and debt ratios create expectations that public finances are sustainable so that expenditure policies and tax systems and rates will be predictable. This is conducive to economic growth because it creates an environment conducive to long-term-oriented savings and investment decisions (Sargent (1999)). By contrast, if, over a sustained period of time, government revenue is much lower than total public spending, (thus, creating unsustainable macroeconomic imbalances and public debt accumulation) growth may be reduced because the private sector might come to see the fiscal situation as unsustainable and reduces investment in anticipation of future higher taxes. Moreover, uncertainty about the future tax changes and, thereby, the tax structure may exacerbate the negative effects and, in particular, reduce immobile capital investment that is vulnerable to tax increases.¹⁰

Moreover, low deficits prevent the absorption of a large share of savings to finance the public sector (crowding out) which, in turn, benefits investors via lower interest rates and raises the capital stock (see Detken, Gaspar and Winkler (2004)). This argument is based on the presumption that Ricardian equivalence (i.e., lower public saving as reflected in higher deficits is fully offset by higher private savings) does not hold. However, here a number of arguments and empirical evidence that suggests that at least some crowding out of private investment due to public imbalances should be expected (Blanchard (1985), Easterly and Rebelo (1993), Domenech, Taguas and Varela (1999)).

3. Assessing public finance quality and its growth impact

The impact of fiscal policies can be measured in two ways: First, indirectly, by looking at the outcome of public spending that might have a bearing on growth and, thereby, assessing the productivity and efficiency of the public sector; and second directly via statistical/econometric analysis or case studies.

¹⁰ For the channels from taxation via deficits and debt to growth see Tanzi and Chalk (2000). For an overview of the political economy literature explaining deficit and debt biases see Alesina and Perotti (1995) and Schuknecht (2004).

3.1. Measuring the quality of public finances indirectly

3.1.1. Expenditure policies

The adequate measurement of public sector efficiency, particularly when it concerns services provision, is a difficult empirical issue and the literature on it, particularly when it comes to aggregate and international data is rather scarce (for a survey see Afonso, Schuknecht and Tanzi (2003)). Recently, academics and international organisations have made progress in this regard by shifting the focus of the analysis from the amount of resources used by a ministry or a programme (inputs) to the services delivered or outcomes achieved (see OECD (2003a)).

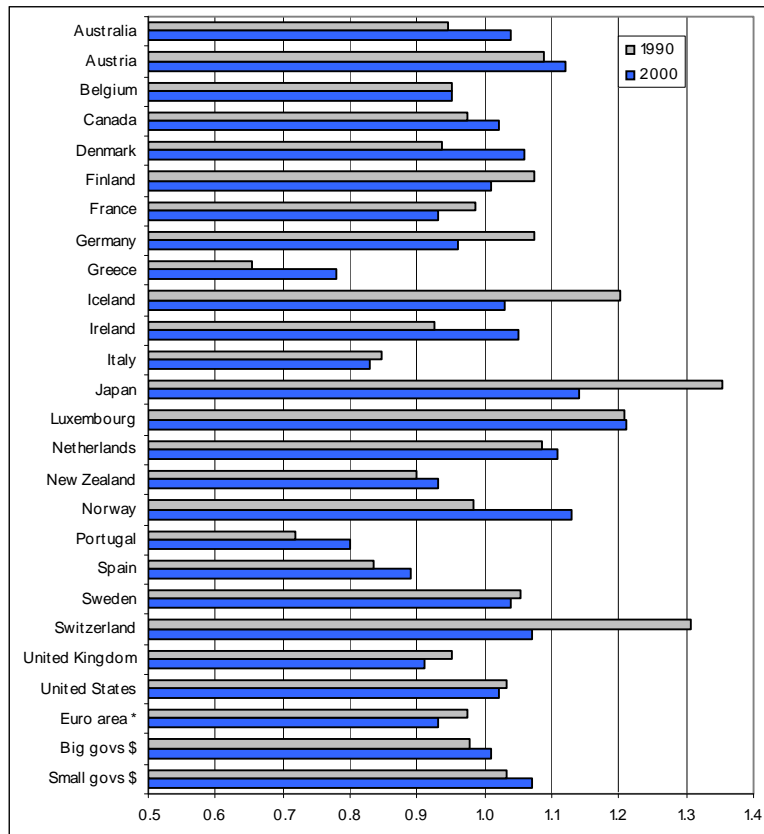
There have been a number of attempts to measure public sector performance and efficiency by setting output/outcome measures in relation to inputs.¹¹ Afonso, Schuknecht and Tanzi (2003) compute a composite indicator of public sector performance using several sub-indicators. One group seeks to measure the functioning of the markets and the equality of opportunity for people by taking into account administrative/institutional, education, health and public infrastructure outcomes. They also look at several other indicators to incorporate information on the “Musgravian” functions of the government: stabilisation, redistribution and allocation. Although such structural indicators can give some first indication on the performance, they can only serve as an illustrative tool for assessment because the development of composite indicators that show an adequate weighting of the different aspects of the performance and sufficient comparability faces data and methodological obstacles.

A general pattern that emerges is that countries with lower public spending-to-GDP ratios show a better performance of their administration/institutions and more growth while large public sectors are correlated with more equal income distribution. Spending on and performance of education and health systems seem to be less correlated. Naturally, trying to determine the “optimal” composition and size of public spending has to be seen in perspective, given the policy options and priorities of each country.

Figure 1 is based on the results presented by the authors for overall public sector performance in 1990 and 2000. First, there are marked but not huge difference across industrialised countries in 2000. Second, performance seems to have converged between 1990 and 2000. The chart clearly shows the catching up of Greece, Portugal, Spain and Ireland over this decade. However, note that progress in public sector performance made by the different countries over time is measured relative to other countries and not relative to its own past performance.

¹¹ See Afonso et al. (2003) for public expenditure performance and efficiency in OECD countries, Afonso and St. Aubyn (2004) for health and education in OECD countries, and Clements (2002) for education in Europe. The Social and Cultural Planning Office of the Netherlands (2004) also provides a useful cross-country and cross-sector assessment of the public sector performance while Her Majesty’s Stationery Office (2004) addresses the the measurement of government output and productivity

Figure 1 - Index of public sector performance (Average=1)



Source: Compiled from Afonso (2004) and partially arranged from Afonso, Schuknecht and Tanzi (2003).
 * Weighted average according to the share of each country GDP.
 \$ Small governments: public spending <40% of GDP.
 Big governments: public spending >50% of GDP.

Subsequently, in the aforementioned study public sector performance is set in relation to resources used, i.e. public expenditure. Differences in efficiency turned out to be very significant and in particular the costs of more equal income distribution in terms of higher spending (and taxes) and less favourable economic performance were found to be rather high.

The analysis of public sector productivity and efficiency is usually done by applying non-parametric approaches such as the Free Disposable Hull or the Data Envelopment Analysis.¹² With this sort of non-parametric analysis Afonso et al. (2003) show that European countries spend on average 30% more than the most efficient OECD country would have used to attain the same performance. Overall, the results of the study also seem to indicate declining marginal productivity of public spending.

A study of education and health expenditures by Afonso and St. Aubyn (2004) further illustrates these non-parametric approaches and also sheds some light on the shortcomings. The study assesses the efficiency in secondary education and health in OECD countries in 2000 by looking at quantity measures of inputs. For education, the OECD PISA indicator is the output measure and two quantity measures are

¹² For instance, Clements (2002) and Afonso and St. Aubyn (2004) review efficiency studies using non-parametric analysis. In the context of the so-called non-parametric techniques (FDH or DEA), of estimating a theoretical efficiency frontier, one assumes that under efficient conditions, for instance, public sector performance of country i , measured by an indicator y_i , the output, which depends on a set of factors, x_i , the inputs: $y_i = F(x_i)$. If $y_i < F(x_i)$, it is said that country i exhibits inefficiency. For the observed input level, the actual output is smaller than the best attainable one and inefficiency can then be measured by computing the distance to the theoretical efficiency frontier.

used as inputs: the number of hours per year spent in school and the number of teachers per student.¹³ For health, the quantitatively measured inputs are the number of doctors, nurses and hospital beds, while the outcomes are infant mortality and life expectancy.

3.1.2. Tax policies

Assessing the quality of public finances, one also needs to look at the way governments use taxation to finance their borrowing requirements. Naturally, tax systems play a relevant role in determining not only the efficiency of the public sector but also of the overall economy.

When evaluating the tax policies of particular countries it is necessary to go beyond statutory rates and to develop indicators, which bear a stronger and sounder relation with the taxes actually paid, and assess effective taxation. Since there are quite a few elements of tax-benefit systems that have to be accounted for when making cross-country comparisons, the so-called “effective tax rates” show relative tax burdens resulting from the joint operation of taxes, social security contributions and benefits, in a comprehensive fashion.

Therefore, indicators frequently used in this context are “effective” tax rates and “effective” marginal tax rate. For instance, Mendoza, Razin and Tesar (1994) compute aggregate effective tax rates on consumption, capital income and labour income for the G-7 countries, arguing that these tax rates are the appropriate ones to help transform theoretical insights into policy-making. “Effective” marginal tax rates are calculated by taking into account statutory tax rates and tax rules defining the taxable basis. They represent also by now a well-established approach to analyse the influence of taxes on key macroeconomic variables such as saving, investment and employment.

Studies from the European Commission show that the tax burden on labour in the EU has been steadily increasing over the last thirty years.¹⁴ The “effective tax rate on labour” in the EU, defined as non-wage labour cost (employers’ and employees’ social security contributions) and personal labour income tax as a percentage of labour costs, was about 30% in 1970 and increased to reach a peak of 38% in 1996. These figures compare to a tax burden on labour of only 24% in the USA, and some 20% in Japan. Since mid-1990s, the EU average tax burden on labour has started to decline in a number of EU countries, although only very slightly.

Marginal tax rates are useful indicators in investigating whether Member States face a “poverty trap” problem. According to an OECD (2001) study, over the period 1997-2000 most Member States succeeded in reducing the tax wedge on the low and medium earnings (see Table 1, copied from European Commission (2001, pp. 88)). The so-called poverty trap is due to the existence (and its rapid withdrawal) of income-tested tax allowances and/or a steep progressiveness built into the tax system that leads to particularly high marginal rates at the lower end of the wage distribution.¹⁵ With little disposable income from additional work effort, labour supply is reduced.

¹³ Education expenditure is predominantly public particularly in European countries (92.4% of total educational expenditure is public in the European Union in 2000). Public expenditure in health is usually more than half of total expenditure, and it averaged 72.2% of total expenditure in the OECD in 2000.

¹⁴ See, Commission Issues Paper, ECOFIN of 17 October 2000, EC (2000), and Martinez-Mongay and Fernandez (2001). Additionally, Carey and Tchilinguirian (2000) also compute average effective tax rates for the OECD countries. As a result a joint European Commission-OECD project, Carone et al. (2003) also report marginal effective tax rates in the context of the EU.

¹⁵ Tax wedges – the difference between labour costs to the employer and the corresponding net take-home pay of the employee – express the sum of personal income tax and all social security contributions minus cash benefits as a percentage of labour costs.

Table 1 - Marginal tax rates in the EU 1997–2000 (income tax plus employees contributions less cash benefit, as % of gross wage)

	Single individual (no children, earning 67% of APW)		Single individual (2 children, earning 67% of APW)		Married couple (2 children, single earner on APW)		Married couple (2 children, 2 earners — APW + 33 %)	
	Marginal tax rate in 2000	Change1997 to 2000	Marginal tax rate in 2000	Change1997 to 2000	Marginal tax rate in 2000	Change1997 to 2000	Marginal tax rate in 2000	Change1997 to 2000
B	54.1	-0.7	54.1	-0.7	51.4	-0.3	45.5	1.0
D	51.0	-0.9	48.8	-0.8	51.8	3.6	39.5	-2.4
EL	20.1	0.0	15.9	0.0	28.5	0.0	35.5	-0.3
E	26.4	-4.8	6.4	-17.7	23.2	-0.9	34.9	-1.8
F	48.6	-0.8	21.0	-0.4	21.0	-0.4	39.0	-0.5
IRL	22.0	-8.5	22.0	-68.5	28.5	-4.2	20.3	-4.6
I	32.8	-1.6	32.8	-1.6	40.1	-0.6	40.5	-6.5
L	34.1	0.0	14.7	2.1	14.7	2.1	14.2	-1.3
A	37.1	-14.4	52.1	30.5	42.0	-0.5	32.3	-2.0
P	25.0	-1.0	11.0	0.0	25.0	-1.0	27.5	-0.5
FIN	42.7	-2.3	42.7	-2.3	48.4	-2.3	38.9	-1.0
EUR-12 (*)	48.5	-2.8	33.7	-2.1	46.3	-0.8	44.5	-2.2
DK	50.7	-1.4	50.7	-1.4	45.2	-1.3	36.3	-0.5
S	38.3	-0.6	38.3	-0.6	35.2	-0.5	43.6	-2.5
UK	32.0	-1.0	69.4	36.4	69.4	36.4	20.8	-1.3
EU-15 (*)	41.9	-1.7	39.7	3.0	42.6	5.3	36.2	-1.9
US	29.6	-0.3	35.6	-15.4	29.6	-21.4	24.8	-2.4
JP	17.3	0.8	17.3	0.9	18.6	0.6	21.7	4.1

(*) Weighted average (real GDP).

Source: OECD, Taxing wages 1999-2000

The measurement of the tax burden and public expenditure is complicated in particular by the use of so-called tax expenditure. By “spending” via reducing the taxable base or by granting a tax break, they make average taxation and public spending look smaller than they would be if “open” expenditure and taxation were used instead. Brixi, Valenduc and Swift (2004) provide some results for the “foregone” revenues for some countries which can reach up to 4% of GDP.

The EC (2000) shows in simulations that tax distortions would be reduced and growth increased by shifting from direct to indirect taxation since consumption taxes are less distortionary than labour income taxes. Additionally, a tax shift from labour income to indirect taxes is under certain circumstances, a valid alternative to expenditure reduction in terms of fiscal consolidation since by fostering employment and growth such tax shift may also reduce unemployment transfers (see also EC (2000) for further empirical references)).

3.1.3. Fiscal institutional framework

Budgetary institutions also play a key role in the quality of public finances. The measurement of the quality of fiscal institutions is a difficult task. Some progress has been made to measure the quality of institutions to maintain fiscal discipline. The relevant literature has identified two commitment technologies to achieve aggregate fiscal discipline: the delegation of power to a strong minister of finance and the creation of a fiscal contract (see Hallerberg, Strauch and von Hagen (2004)). In the delegation approach, the minister of finance receives strong agenda setting powers in the planning and approval stage, and the necessary discretionary authority to keep the budget on track during the implementation stage. In the contract approach, leading policy makers agree on the overall budget target before the actual budgeting process starts. During the approval and implementation stage, legislative authorities and the minister of finance need monitoring tools to ensure that the initial contract is kept. The quality of institutions under these approaches has then been assessed via surveys on the relevant parameters.

Empirical work with the resulting measures on the quality of budget institutions have shown that the quality of budgetary institutions differs considerably in Europe and matters for maintaining fiscal discipline. On average, however, institutions have improved over the last decade. Moreover, more stringent multi-annual budgetary targets have helped to contain deficits almost across all countries.

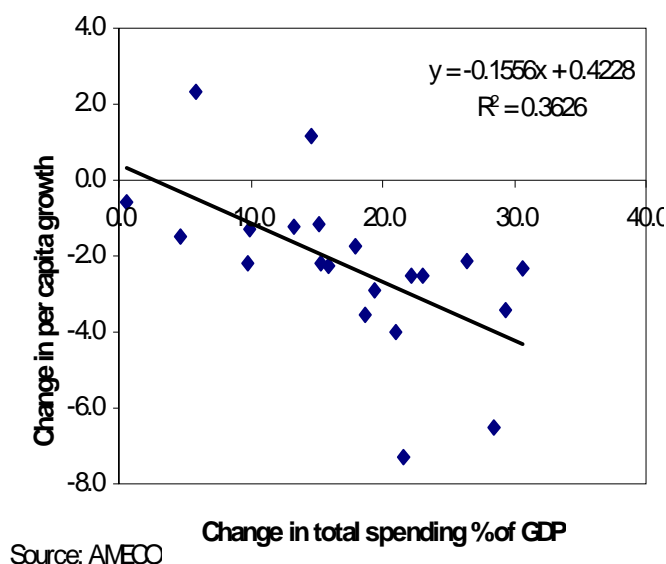
3.2. Empirical findings on the growth impact

For a first orientation, the empirical findings on the impacts of fiscal variables on sustained economic growth can be divided into two broad groups. The first group studies the impact of the most aggregate fiscal variables, like total expenditure, total taxation and government debt or deficit. These variables primarily give an impression how government size and its financing affects growth. In the centre of the analysis presented here are the growth effects of the composition of government activities. While still on the aggregate level, this investigation necessarily takes place one level below the “size effects”. The second and relatively small groups looks at case studies and, thereby, emphasize more the analysis of the policy process in the broader context that reforms take time and concern different policy domains.

3.2.1. Growth effects of government size

Before reviewing the econometric evidence on the growth enhancing (or reducing) consequences of general government’s total expenditures, a few stylised facts may give a good first impression. For 24 OECD countries, Tanzi and Schuknecht (2003) plot the changes in total government spending in the last 40 years of the 20th century against the changes in per capita GDP growth (Figure 2).

Figure 2 – Change in total spending 1960-2000 versus change in per capita growth, 1960s- 1990s



The illustration of the growth-spending dynamics in the very long run shows a strong correlation between total spending increases and growth declines. The same applies for a similar plot of gross fixed capital formation (one of the main growth determinants) and public spending ratios in the 1990s, i.e. in the medium term. Economy-wide capital formation is strongly and negatively correlated with total government expenditure. [Moreover, when looking at the financing side, the strongly negative correlation between direct taxes and employment ratios is noteworthy (see also Prescott (2004)).]

These stylised facts lay no claim to statistical significance. Yet, they are supported by most econometric studies in this field. Table 2 gives a brief overview of recent papers.¹⁶

¹⁶ This and further literature reviews below were compiled with additional reference to surveys of empirical research, namely: Agell, Lindh and Ohlsson (1997), Temple (1999), Ahn and Hemmings (2000), David, Hall and Toole (2000), European Commission (2002), Florax, de Groot and Heijungs (2002), Nijkamp and Poot (2003), Lamo and Strauch, R. (2002), OECD (2003), Tanzi and Schuknecht (2003), and Thöne (2004).

Table 2 - Growth effects of total government expenditure

Author(s)/date	Regional Basis	Independent Variable	Effect on Growth
Agell/Lindh/Ohlsson (1997)	23 OECD countries	General government spending (among others)	neither positive, nor negative
Barro/Sala-i-Martin (1995)	90 countries worldwide	Government pending ratio	significantly negative
Bassanini/Scarpetta/Hemmings (2001)	21 OECD countries	General government spending (among others)	significantly negative
De Gregorio (1996)	21 OECD countries	General government spending (among others)	negative, yet not significant
Fölster/Henrekson (1999)	23 OECD countries	General government spending	significantly negative
Heitger (2001)	21 OECD countries	General government spending (among others)	significantly negative
Lee (1995)	16 OECD countries	General government spending (among others)	negative, yet not significant

The “size effect” of government spending on growth is mostly negative. No study has found a positive relationship between growth and aggregate expenditure. Agell, Lindh and Ohlsson (1997) did not find clear evidence on the nature of the relation between the two variables. De Gregorio (1996) and Lee (1995) could not confirm the significance of the negative spending effects on growth. However, all other studies reviewed assert the significance of these effects.

This negative correlation is not a linear function. The review of composition-effects of public spending below will show that, at the core level, the productive effects of a certain level and some components of public expenditure are very high, because government activities set the indispensable framework in which economic growth takes place. But the evidence in Table 2 gives reason to believe, that the governments in OECD countries have outgrown these “purely productive” spending dimensions and now crowd out more productive private sector activities.

3.2.2. Growth effects of taxation and the spending composition

Before analysing further the effect of expenditure components on growth, we look at taxation. The econometric evidence on the growth effects of the means employed to finance the size of government spending supports the argument that a high level of taxation impairs the allocation of resources, mainly by depressing incentives to work, to invest and/or to save. Moreover, if taxation leads to high and sustained government deficits and growing debt, growth is harmed through many channels as discussed above (see Tanzi and Chalk (2000)).

For taxation in OECD countries, quite a few studies find significant negative effects on growth (see Cashin (1995), de la Fuente (1997), Fölster and Henrekson (1999), and Kneller, Bleaney and Gemmell (1998)). Yet other studies cannot find a relationship, be it positive or negative. Again, no study so far has shown positive growth effects of high taxation. The empirical literature also supports the general view on government deficits. Where budget deficits have been tested econometrically, they have often displayed significant negative growth effects (see Martin and Fardmanesh (1990), Easterly and Rebelo (1993), Miller and Russek (1997), de la Fuente (1997), Kneller et al. (1998) and Bleaney et al. (2001)). For aggregate government debt, analogous arguments apply (see European Commission (2004)).

The evidence on size effects of fiscal variables supports the case for quantitative consolidation with a view to reducing total spending, thus in turn enabling reductions of deficits and lower levels of taxation.

The review of empirical findings on growth effects of the composition of government activities clarifies that not all kinds of government spending should be treated alike when consolidating public finances.¹⁷

The evidence on differentiated growth effects of “qualitative” spending aspects crucially depends on the quality of the available data. Econometric studies on the macroeconomic level often face the necessity to use highly aggregated components of public spending. This sometimes leads to empirical endeavours that produce seemingly tautological results like: “Specifically we find that (1) distortionary taxation reduces growth, whilst non-distortionary taxation does not; and (2) productive government expenditure enhances growth, whilst non-productive expenditure does not” (Kneller et al. (1998)). When instead looking at the more disaggregated spending level, empirical analyses often must resign themselves to the use of intermediate impact indicators which display a plausible relation to growth, but do not facilitate direct evidence.

The foremost component of government spending traditionally associated with positive growth effects is investment expenditure. Following Aschauer’s (1989) seminal paper many studies have found positive growth effects of the acquisition or the accumulation of physical capital goods by governments (see for OECD countries, e.g., Cashin (1995), Nourzad and Vrieze (1995), Sanchez-Robles (1998), Shioji (2001) and Kamps (2004)). Yet, the size of the effects differs considerably. A large number of authors present evidence that public investment expenditure has no significant impact on growth (see for OECD countries, e.g., Barth and Bradley (1988), Ford and Poret (1991), Holtz-Eakin (1994), Yi and Kocherlakota (1996) and Cassou and Lansing (1999)).¹⁸ Moreover, investment can be productive or unproductive for growth depending on the institutional context in which it is undertaken. Keefer and Knack (2002) show that secure property rights and the rule of law significantly affect the growth-enhancing impact of public investment.

But there is less polarity in the discussion than it may seem from these contrasting results. A certain consensus has emerged that public investment still is important for growth, but less important than it used to be (European Commission (2003)). In economic theory, public expenditure on physical capital can enhance growth only, if it is spent on infrastructures that serve as inputs to private investment. This notion is affirmed by empirical evidence, mainly for investments in transport, communication and public utilities (see e.g. Easterly and Rebelo (1993), Devarajan, Swaroop and Zou (1996)).

For infrastructure spending, there is also evidence that the law of diminishing returns holds. De la Fuente (1997), for example, has shown that public investment is beneficial only up to a level of two percent of GDP. This perspective is endorsed by Kalyvitis and Kalaitzidakis (2002) in their case study for Canada: In this “mature” economy equipped with a high level of infrastructure, its maintenance promises high productivity effects, whereas newly added infrastructure yields low or even negative marginal returns. As a conclusion from the mixed empirical findings, Thöne (2004) advocates to dismiss the “classical” focus on investment spending in favour of a direct focus on spending for infrastructure services.

In contrast, the empirical literature on the significant positive growth effects of public activities in the production of human capital is almost unequivocal (see for OECD countries, e.g. Englander and Gurney (1994), De Gregorio (1996), Keefer and Knack (1997), De la Fuente and Domenech (2000), Bassanini and Scarpetta (2001), Gemmell and Kneller (2001), Heitger (2001), Buysse (2002) and OECD (2003b)). Due to limited data availability, all empirical studies are restricted to formal school education. Thus, the human capital effect of vocational training is not reflected in the findings. A second restriction directly relates to public finances. Most empirical studies do not use public spending on schooling as their independent variable, but school attendance rates, schooling years or graduation rates. Wößmann (2002, pp. 58) even states a “missing link between expenditure and schooling quality”. This is a good reminder

¹⁷ For brevity’s sake, the evidence on growth effects of different tax regimes cannot be reproduced here. By and large, empirical studies reconfirm the theoretical assertions that (1) indirect taxes harm growth less than direct taxes and that (2) high tax *rates* of direct taxes are especially damaging for incentives and general allocation.

¹⁸ Vanhoudt, Mathä and Smid (2000) even find evidence for “reverse causality” in the EU-countries. Public investment often encompasses more than pure spending on infrastructures. According to their findings, it is economic growth which has a significant impact on public investment (not the other way around).

that the focus on growth enhancing public expenditures can only be sustained with a strong link to efficiency issues.

In modern industrial or “post-industrial” economies, research and development is undoubtedly one of the major causes of economic growth. But the growth impacts of public R&D-activities are treated controversially in the empirical literature: are public and private R&D substitutes, or do they complement one another? Only in the latter case public R&D spending can bring about positive effects on economic growth, because it does not crowd out private R&D. The studies of Robson (1993), Park (1995), Busom (1999), Diamond (1999), Guellec and van Pottelsberghe de la Potterie (2000) give evidence for complementarity, while the studies of Toivanen and Niininen (1998), Wallsten (1999), Bassanini, Scarpetta and Hemmings (2001) indicate crowding out. As only a slight majority of econometric research supports the notion of complementarity, the empirical question should be treated as unsolved.¹⁹

Health policy has long been counted among the growth-enhancing government activities, because good health improves human capital and thereby growth. Bleaney, Kneller and Gemmell (2001) find a significant positive impact of health expenditures on growth in OECD countries. Bloom, Canning and Sevilla (2001) support this view in a worldwide study. Yet with respect to the OECD, Rivera and Currais (1999) see evidence for reverse causality: economic growth has created high real incomes which enable people to spend more on the consumption good ‘health’.

There are also other policies that may help to mobilise human capital. In many countries women still have insufficient chances and incentives to combine family life with a long-term professional career. The ensuing low labour utilisation is an important obstacle to satisfactory growth dynamics. As far as government expenditure is concerned, particularly early childcare measures significantly increase female labour market participation. This is supported by the empirical evidence on the high negative elasticity of female labour supply with respect to the individual costs of out-of-home childcare (see e.g. Ribar (1992), Averett et al. (1997), Anderson and Levine (1999), Kimmel (1999), Han and Waldfogel (2001)).²⁰

3.2.3. Institutional linkages

Finally, we should look at the transmission from fiscal policies to growth via the institutional framework. There is little modern empirical literature on this issue so far but important work has looked at this dimension from a case study perspective (see also below for the use of case studies to discuss the impact of broader fiscal and institutional reform programs).

North (1990, 1998) provides fascinating accounts of how fiscal policies, institutions and growth interact. North explores how England and Spain from similar starting points went very different ways in their economic development. Both countries needed more money to finance their wars. In England, decentralized decision making with independent courts, secure property rights and a well developed mercantile law including patent law gave rise to a law-based market economy, with much investment and innovation and rapidly developing capital markets. This also filled the government’s coffers via moderate taxation. In Spain by contrast, the government stifled economic exchanges/trade with over-regulation, the sale of monopoly rights and price controls. Over-taxation and confiscation undermined property rights. The two basic rules supporting investment, innovation and growth could hence not develop. Fiscal revenue, though perhaps initially buoyant, suffered.

3.2.4. Making use of the evidence

How do we interpret the evidence on the growth impact of diverse fiscal instruments and objectives? An ideal econometric study on the growth impact of fiscal variables might come to a conclusion like: “For

¹⁹ David, Hall, and Toole (2000) survey 30 empirical studies and come to a comparable conclusion.

²⁰ The empirical literature mentioned above refers to the United States. Recently, the OECD has started a series of country studies, which now covers the relationship of “Babies and Bosses” in Australia, Denmark, the Netherlands (see OECD (2002)), Austria, Ireland and Japan (see OECD (2004)).

our panel of 20 OECD countries, an x percent increase of general government spending on the y -item in 1975-1995 increased GDP growth rates by z percent on average.” Of course, this is not a cookbook recipe for future growth. One of those OECD countries now increasing spending on the “ y -item” by “ x percent” would almost certainly not experience an increase of growth rates by “ z percent”.

It goes without saying that, by its very nature, econometric analysis can give *ex post* evidence on “average” impacts only. Furthermore, the analysis of rather recent developments in OECD or EU countries cannot make allowances for non-linearities that especially become evident for core spending (protection of property rights, internal and external security).

Finally, the econometric foundation of the new growth literature itself is subject to controversial debate. When interpreting the evidence with a view to the quality of public finance, we should bear in mind that, despite its popularity, the “(...) new empirical growth literature remains in its infancy” (Durlauf and Quah (1999, pp. 295)). So far, in standard growth regressions a range of methodological problems are not sufficiently controlled for. On an elementary level, many of the empirical studies on the sources of growth are plagued with measurement error and specification problems (Schulz (1999, pp. 71)). Many variables of growth are endogenous, which raises identification problems. Endogeneity, if not properly dealt with, can easily give rise to the notorious *post hoc ergo propter hoc* fallacy, i.e. wrongly concluding causality from correlation. Yet, the obvious answer to simultaneity – using exogenous instrumental variables to proxy for the regressors – requires very strong, in many cases implausible assumptions for the omitted growth determinants (Durlauf (2000, pp. 252)). The multiplicity of proposed variables which offer plausible partial explanations of growth also calls for procedures of variable selection, or, at least, for tests of robustness (see e.g. Levine and Renelt (1992) and Sala-i-Martin (1997)).

These and other problems of the empirical growth literature demonstrate that the above mentioned ideal econometric study on the growth impact of fiscal variables does not exist.²¹ Nevertheless, there is no need to discard the empirical evidence surveyed in this paper. Growth regressions may not always live up to the very high expectations they once raised. But still they give a good idea of the driving forces of growth. Some of the methodological problems mentioned can be overcome with the use of modern statistical methods.

Other problems of growth econometrics cannot be overcome because they do not reflect statistical or mathematical complications, but our limited understanding of the mechanics of growth. In spite of the major efforts to identify the sources of growth, we still have a simplistic growth concept that ignores many interdependencies and synergies of this process. From this perspective, “greater eclecticism in empirical work” with a stronger reliance on qualitative case/country studies promises valuable additional insight (see Durlauf (2000)). Tanzi and Schuknecht (2000), for example, examine the fiscal reform in a number of countries in the 1980s and 1990s. They argue that comprehensive (“radical”) rather than piecemeal reforms, which improve the institutional framework and curb the rent seeking incentives of special interests, have been most successful in reducing public expenditure, changing the expectations and outlook of economic actors and re-invigorating economic growth. They provide a detailed account for the experiences of New Zealand and Chile but also make reference to the reforms in OECD countries such as Australia, Ireland, the Netherlands or the UK.

The interdependencies and synergies of all-in-one reforms give a good illustration why the same partial policies may lead to different growth results in different countries. Of course, institutional and political preconditions for radical reform are not alike in all countries. But be it comprehensive reforms, be it piecemeal reforms, a few issues stand out despite all methodological complications: it is certainly wise to treat policies that are positively associated with current economic growth differently than other policies which are not. And the returns for these “wisely spent” expenditures do not necessarily come tomorrow, but in the medium and – mainly – in the long-term.

²¹ E.g. model specification and heterogeneity. For further discussion see Pack (1994), Freedman (1997), and Brock and Durlauf (2001).

4. Summary and conclusions

The present survey has addressed the fact that the “quality of public finances” indeed might have a potential impact on long-term economic growth. One key problem in the whole debate, however, is that the issue of “quality” is very difficult to capture. Moreover, theoretical limitations (economic theory, econometric studies) and data and methodological problems (construction of indicators) prevent exact quantifications handoff the impact of fiscal policies on growth. Some concluding points can now be summarised building on the previous sections.

A well-defined institutional framework is important to support the long-run growth of the economy and ‘high quality’ public finances play an important role for its functioning;

Fiscal policy can contribute to macroeconomic stability and a sound policy mix and create expectations that foster economic growth;

The evidence on size effects of fiscal variables supports the case for quantitative consolidation with a view to reducing total spending, thus enabling reductions of deficits and taxation. The empirical findings on growth effects of the composition of government activities clarify that not all kinds of government spending should be treated alike when it comes to reforming public finances;

On the spending side, certain core spending items are essential for the economy to function and to grow. However, these services also must be delivered in a cost-effective way;

A main growth element is public investment, especially in human capital and – under certain conditions - in R&D. The growth effects of physical capital investment are less clear-cut;

Redistributive spending can undermine growth. However, a certain basic level of redistribution and social spending is probably necessary as a social infrastructure.

Taxes should be not distorting and should display low marginal rates while avoiding tax uncertainty and time inconsistency;

The survey of different empirical studies shows that an objective and unambiguous overall catalogue of “high quality”-expenditure items is not feasible. There is no cookbook for growth. Economics gives an idea of the major ingredients, but it does not clearly tell the recipe;

The quality-indicators for public finances developed in the meantime can only be illustrative. Within their methodical limits, indicator-concepts may offer orientation on their respective aspects of quality. But no indicator can in fact measure the comprehensive quality of public finances;

In spite of all efforts to identify the sources of growth, we still have a simplistic growth concept that ignores many interdependencies and synergies of this process. From this perspective, the use of comprehensive case studies could give valuable additional insight, and this can be an avenue for further work on the topic.

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POSSIBLE WAYS TO IMPLEMENT A DATASET TO ANALYSE THE QUALITY OF PUBLIC EXPENDITURE

Economic Policy Committee

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Synopsis

The quality of public finances is a broad concept with many facets. The aim of the new EPC Working Group on Quality of Public Finances (WGQPF) is to analyse the links between public finances and long term growth. However, the lack of a coherent set of data prevents an in-depth analysis of the different activities of government. The 2004 implementation report of the BEPGs highlights this lack of timely and comprehensive data as a main obstacle for analysing trends in the composition of total public expenditure.

The European Commission, the OECD and the WGQPF view the Classification of Functions of Government (COFOG) as the most useful dataset in this respect, as it covers all different public expenditures and allows to identify the government's expenditure for each function. At the moment, the highly aggregated data of COFOG-divisions (1st level) cannot give an appropriate picture of the issues relevant in the discussion on quality of public finances.

Against that background, the paper proposes an expansion of ESA95 TP table 11 from COFOG-divisions to COFOG-groups (for general government sector) and also some further breakdowns for transactions. The WGQPF also takes into account possible government data extension through additional modules and, on a more academic level, changes in definitions.

Building on this proposal, the paper tackles specific questions of a comprehensive delivery of data and the important implementation issue. The needs for uniformity of public expenditure data availability, of time specification and timeliness across countries are briefly addressed. The question of the implementation in the short run and more tentative reflections on possible medium-/long-term work are treated. The main argument is that the proposed approach is very operational and can be rapidly followed by the majority of countries.

On the basis of a specific survey conducted among countries participating in the WGQPF, the current data situation in the Member States is assessed, referring to data available in the required format or which could easily be elaborated, with or without additional efforts. The main conclusion is that relevant improvements can be carried out, although not immediately and provided a commitment is given by the ECOFIN Council and additional resources are assigned to data producers.

1. Introduction

1.1. Rationale for a comprehensive dataset for analysing the quality of public finances

The feature of *quality of public finances* is regularly underlined in EU policy documents, within the a context in which fiscal discipline and a sustainable fiscal position are maintained. The March 2003 ECOFIN Council stated that “greater attention should be paid, within the overall constraints of the Stability and Growth Pact, to the quality of public finances with a view to raising the growth potential of the EU economies.”

Against that background the EPC established a new Working Group on the Quality of Public Finances (WGQPF) that aims at analysing the links between public finances and long term growth. The work should provide contributions to clarifying the concept of quality and to addressing useful tools for the analysis of the use of public resources.

From a theoretical point of view, the issue of whether public finance enhances long-run economic growth has been widely discussed in recent years. Economic models confirm that it is possible to distinguish between “productive” and “unproductive” expenditures, as well as between “distortionary” and “non-distortionary” taxes.

Although a growing strand of empirical literature has tried to identify the features of “productive” expenditure, the understanding of the links between public expenditures and economic growth is still limited. The unsatisfactory knowledge can be attributed, among other reasons, to the lack of a uniform, coherent set of data, comparable across countries, for in-depth analysis of the different activities of government.

A reliable dataset is a necessary tool to analyse the quality of public finances in the political framework of the BEPGs as well. The 2004 implementation report of the 2003-2005 BEPGs highlights a lack of timely and comprehensive data as the main obstacle for analysing trends in the composition of total public expenditure. Therefore the WGQPF stresses that “considering the methodological complexities and the problems of collecting comparable data among Member States, the first and probably permanent part of the work should be devoted to the development of a consistent methodology to analyse the composition of public expenditures” (WGQPF, 2004).

1.2. Structure of the paper

This note is an attempt to examine the problems and data needs related to the WGQPF definition of quality of public expenditures.

Mainly, the paper focuses on four issues:

- 1) The possibility to construct – and the way to achieve - an enlarged information system characterised by coherence, comparability, consistency and completeness, without entailing an excessive increase in the administrative burden;
- 2) The present state of data availability, of time specification and of timeliness across countries;
- 3) What could be implemented in the short run and what should be left to the medium-long-period work;
- 4) The assessment of the state and the perspectives of statistics officially produced by European Member States and of the possibility to improve them in the next future.

The paper is organized as follows.

Paragraph 2 refers to the first issue and presents a specific proposal. The paragraph outlines a process, which is the central focus of the paper.

Paragraph 3 discusses further possibilities for redefinitions, extensions and possible links and compatibilities to sectoral data gathered in other OECD and Eurostat databases (on R&D, innovation, healthcare, social protection and education activities).

Specific technical questions concerning data delivery and the important issue of implementation are tackled in paragraph 4. This section briefly analyses the needs and the state of the uniformity of public expenditure data availability, of time specification and of timeliness across countries. The international comparability of public sectors (General Government, “G.G.”) among EU countries requires the definition of a uniform reference period set out by data availability. In an enlarged EU, this issue bears even more importance, on account of the likely lack of data of the new Member States. In addition, this section addresses question of what could be rather easier to implement in the short run and tentative reflections on what could be developed in the medium-long period. The main argument is that the approach should be very operational, giving priority to the proposed steps that can be immediately or rapidly done by the majority of countries.

On the basis of a specific survey conducted among countries participating in the WGQPF, a number of important remarks are made on the aspects of possible implementation and the assessment of the current data situation in the Member States. They are referred to under data availability (data published or not published yet at the national level) in the required format or that can be easily elaborated, with or without additional efforts, and on the availability of backward information, timeliness in updating, etc. The more interesting conclusion is that relevant improvements in the information system might be carried out, even if quite often not immediately and provided a strong commitment by ECOFIN and/or additional resources to data producers are assigned. With reference to further possible future enlargement of the information system, some other useful elements to form an opinion are provided by the example of the Italian case, with reference to some specific kinds of additional information.

2. Towards an enlarged dataset on QPF

The European Commission, the OECD and the EPC WGQPF agree that the most useful, uniform and comprehensive database to examine the composition of public expenditure is the COFOG classification, as it covers all different public expenditures and allows to identify government expenses for each expenditure function. COFOG is internally consistent with the public expenditure standards for use in the National Accounts and in the Excessive Deficit Procedure. However, the information available at present is not sufficient to assess the efficiency and quality of public expenditures. Therefore, the information contained in the COFOG have to be integrated with deeper and more detailed data: the proposed approach is that of the “satellite account” where the core of the information system can be expanded progressively, step by step, through time. It is possible to imagine different kinds of modules to be linked to the main NA/COFOG dataset, which use specific classifications and more detailed statistics than those officially available at present.

2.1. Extending the existing dataset

The definition of quality of public finance could be addressed both to the expenditure and to the revenue sides of the budget. A short discussion on what we should consider as improving quality on the latter side is contained in European Commission Report “Public Finance in EMU 2004”. In the present paper, according to the priorities established in the EPC WGQPF, we concentrate our attention on the public expenditure side.

The definition of quality is a relative concept, not an absolute one. In this sense quality means the capacity of the expenditure structure to determine or to facilitate the achievement of identified objectives

considered as priorities. In our context (within the framework of the Lisbon strategy, recommendations by ECOFIN in setting-up the WGQPF and the BEPGs) the priority is to enhance long term growth.

According to the main findings in the economic literature and to the summary of the analysis presented in previous documents discussed in the WGQPF and in the European Commission Report “Public Finance in EMU 2004” (Part IV), some categories of expenditure have to be seen as growth enhancing.

The focus on the expenditure side and the decision to postpone the assessment of public revenues is coherent with the logic to proceed following a “step by step” approach, which the WGQPF agreed on. This logic aims at fostering a progressive construction of an information system on the quality components of public expenditure and therefore is very operational.

In this building process, it is also very important to proceed bearing in mind a pre-determined conceptual framework, where each piece of information is coherently linked with other ones and is able to support the progressive – logically and chronologically – approaching of the final goal. The latter should be completely achieved in the long run, but the most important thing is to allow the availability of useful information in the transition period (in the short - medium run) and to put each element together like the bricks of a building, which will be finished only after a long working period but provided that the initial bricks are put in the right manner.

Therefore, starting from data already available, one should assess how to organize them, how to expand their scope and towards what directions. The priorities have been discussed by the WG. This paragraph suggests to progress through a modular approach in a “satellite accounts” logic.

From a general point of view, whatever the information to be implemented may be, two kinds of fundamental requisites must be fulfilled: the data ought to be comparable through time and across countries.

This characteristic of comparability implies using data and reference concepts which must be:

- a) internationally compatible
- b) consistent
- c) independent from administrative / institutional country specific arrangements
- d) well established and fixed for a long period
- e) focused on describing the economic reality instead of the legal one.

These characteristics are essential since, in their absence,

- either one could have to deal with changes in figures across time and across countries only due to formal – but not substantial – changes in the same transactions (which might remain unchanged from an economic point of view);
- or data could be affected by duplications/overlaps which prevent to use them in an aggregate manner;
- or there could be differences in figures only due to differences in treatment, in recording and accounting principles followed by compilers, in classifications of transactions and statistical units.

The presence of these characteristics is guaranteed only by the National Account system (NA). They are explicitly mentioned in the SNA and ESA manuals (see in particular ESA95, paragraphs 1.05 – 1.12). Therefore it is quite natural to propose that the core of the information system on the quality of public finance (QPF) is represented by national accounts figures. In particular, as it has been already stressed in several EC and WG previous documents, NA- COFOG estimates are the most relevant in our context.

However, the Working Group believes that National Accounts data currently available should be widened, in scope and content, in order to better respond to the demand for information which stems from the need to deepen the analysis of QPF. While the starting step is to increase data availability for

COFOG level one, and to include the second level of the COFOG in the ESA 95 transmission tables, other relevant improvements can be envisaged. Can this goal be reached without loosening the strength of the fundamental characteristics mentioned above? The answer can be found inside the NA system itself and it consists in the satellite account approach.

ESA95, par. 1.18, states:

“for some specific data needs the best solution is to draw up a separate satellite accounts. Cases in point are the data needs for e.g.: the analysis of the costs and financing of health care; the analysis of the importance of research & development and human capital for the national economy ... etc.”¹.

Furthermore, par. 1.19 states:

“satellite accounts can serve such data needs by:

- a) showing more detail where necessary and leaving out superfluous detail;
- b) enlarging the scope of the accounting framework by adding non-monetary information (...);
- c) changing some basic concepts, e.g. by enlarging the concept of capital formation by amount of the expenditure on research & development or the expenditure on education.”

And the following par.1.20 adds:

“An important feature of the satellite accounts is that in principle all basic concepts and classifications of the standard framework are retained. Only when the specific purpose of the satellite account definitely requires a modification, are changes in the basic concepts introduced. In such instances, the satellite account should also contain a table showing the link between the major aggregates in the satellite account and those in the standard framework. In this way, the standard framework retains its role as a framework of reference and at the same time justice is done to more specific needs”.

The proposals made in this paper follow this very simple – but rigorous – logic, which is able to produce rapidly a significant output to be used in the economic analysis and, in the meantime, it is rooted in a strategic horizon which can be approached progressively.

The main starting point to begin to draw the architecture of the information system on QPF should be the statistics on General Government deficit and debt developed in the context of the excessive deficit procedure (EDP). These statistics are implemented strictly applying the ESA95 rules, and are rigorously monitored by Eurostat and supported by a very important methodological tool: “The Government Debt and Deficit Manual”, which is continuously updated.

Namely, the deficit is the strategic aggregate which the Stability and Convergence Programmes of each European country refers to and it is at the core of the control procedure of the soundness of public finances. Therefore, it is the main reference aggregate along with other relevant statistical information, which should be coherently gathered in order to build a harmonized data system on QPF. The government deficit is the synthesis of the whole set of economic activity carried out by GG, i.e. the difference between total revenues and expenditures as defined in the NA.

Only a well identified discrepancy differentiates EDP figures from NA deficit figures (net borrowing / net lending) which relates to interest rate swaps and forward rate agreements (RFA) operations, so that:

¹ Satellite accounts contain complementary information relative to the National Accounts and are mainly used as tools for analysing in depth the situation in particular fields of National Accounts.

$$\begin{aligned}
& \text{EDP deficit} \\
& \quad +/- \\
& \text{Swaps and RFA net proceeds} \\
& \quad = \\
& \quad \text{NA deficit} \\
& \quad = \\
& \quad \text{NA revenues} \\
& \quad - \\
& \quad \text{NA expenditures}
\end{aligned}$$

Therefore the NA public expenditure is directly linked to the EDP deficit. In other words, if one analyses NA public expenditure, one implicitly (and coherently) analyses the determinants of the EDP deficit on the spending side.

NA public expenditure is precisely defined by ESA95 (even in table 2 of the Transmission programme), which states that:

$$\begin{aligned}
\text{Total expenditure} = & \text{Intermediate consumption} + \\
& \text{Compensation of employees} + \\
& \text{Other taxes on production payable} + \\
& \text{Subsidies payable} + \\
& \text{Property income payable} + \\
& \text{Current taxes on income, wealth etc. payable} + \\
& \text{Social benefits other than social transfers in kind and social transfers in kind} \\
& \text{related to expenditure on product supplied to households via market producers} + \\
& \text{Other current transfers payable} + \\
& \text{Adjustment for the change in net equity of households in pension funds reserve} + \\
& \text{Capital transfers payable} + \\
& \text{Gross capital formation and acquisitions less disposals of non-financial non-} \\
& \text{produced assets}
\end{aligned}$$

This total is broken down by economic and functional category according to homogeneous criteria by all European countries and, with some not relevant particularities, by other main OECD countries, like US, Japan, Canada. This kind of statistics is collected by IMF in similar formats.

For European countries, the ESA95 Transmission programme explicitly asks to respect the identity between the total expenditure of table 2 (Main aggregates of General Government, which includes the deficit) and the total expenditure of table 11 (Expenditure of General Government by function). Therefore, in principle, comparability across space is assured in order to implement non-distorted cross-country analysis. In addition, statistics should be available with a sufficient degree of coverage for several years, preferably starting from the beginning of nineties. Therefore, in principle comparability across time is assured in order to allow non-distorted longitudinal analysis as well.

The breakdown of the NA public expenditure by economic and functional category represents, therefore, the core of the architecture of the information system proposed in this document. The core of the system (the planet of the satellite account framework), in other words, is the well known table 11 of the transmission programme established by the ESA95 (ESA95TP), which is in force for all European countries (see below):

Table1 - Expenditure of GG by function and main economic categories

	TRANSACTION	Gross capital formation	Acquisitions less disposals of non-financial non-produced assets	Compensation of employees	Subsidies	Property income	Social benefits other than social transfers in kind and social transfers in kind related to expenditure on products supplied to households via market producers, payable	Intermediate consumption	Other taxes on production + Current taxes on income, wealth, etc.+ Adjustment for the change in net equity of households in pension funds reserves	Other current transfers	Capital transfers	Total expenditure	Final consumption expenditure
COFOG	Transaction / COFOG Code	TRP5	TRK2	TRD1	TRD3	TRD4	TRD62+ TRD6311+TRD63121+ TRD63131	TRP2	TRD29+ TRD5+ TRD8	TRD7	TRD9	TRTE	TRP3
General public services	CG010	x	x	x	x	x	x	x	x	x	x	x	x
Defence	CG020	x	x	x	x	x	x	x	x	x	x	x	x
Public order and safety	CG030	x	x	x	x	x	x	x	x	x	x	x	x
Economic affairs	CG040	x	x	x	x	x	x	x	x	x	x	x	x
Environment protection	CG050	x	x	x	x	x	x	x	x	x	x	x	x
Housing and community amenities	CG060	x	x	x	x	x	x	x	x	x	x	x	x
Health	CG070	x	x	x	x	x	x	x	x	x	x	x	x
Recreation, culture and religion	CG080	x	x	x	x	x	x	x	x	x	x	x	x
Education	CG090	x	x	x	x	x	x	x	x	x	x	x	x
Social protection	CG100	x	x	x	x	x	x	x	x	x	x	x	x
Total	TCG	x	x	x	x	x	x	x	x	x	x	x	x

But if this is the planet, what are the satellites?

A first category of extension is internal to the core itself. It is related to the need to expand the analysis both by function and by economic category. In principle, this type of extension might not require any substantial additional effort by national accounts compilers in European countries, provided that the national database is sufficiently analytic.

A deeper analysis by function implies considering second level of the COFOG classification in those cases which are relevant for the quality analysis. Table 2 shows the proposed level 2 breakdown.

TABLE 2 - Expenditure of GG by function (2 levels) and main economic categories (*)

COFOG CLASSIFICATION	TRANSACTION / COFOG Code	Transactions by economic category											
		Gross capital formation	Acquisitions less disposals of non-financial non-produced assets	Compensation of employees	Subsidies	Property income	Social benefits other than social transfers in kind and social transfers in kind etc.	Intermediate consumption	Other taxes on production + Current taxes on income, wealth, etc.	Other current transfers	Capital transfers	Total expenditure	Final consumption expenditure
		TRP5	TRK2	TRD1	TRD3	TRD4	TRD62+ TRD631+ TRD632+ TRD63B1	TRP2	TRD29+ TRD5+ TRD8	TRD7	TRD99	TRTE	TRP3
General public services	CG010	x	x	x	x	x	x	x	x	x	x	x	x
Executive & legislative etc.	101	o	o	o	o	o	o	o	o	o	o	o	o
Foreign economic aid	102	o	o	o	o	o	o	o	o	o	o	o	o
General services	103	o	o	o	o	o	o	o	o	o	o	o	o
Basic research	104	o	o	o	o	o	o	o	o	o	o	o	o
R&D General public services	105	o	o	o	o	o	o	o	o	o	o	o	o
General public services	106	o	o	o	o	o	o	o	o	o	o	o	o
Public debt transactions	107	o	o	o	o	o	o	o	o	o	o	o	o
Transfers between GG	108	o	o	o	o	o	o	o	o	o	o	o	o
Defence	CG020	x	x	x	x	x	x	x	x	x	x	x	x
Military defence	2.01	o	o	o	o	o	o	o	o	o	o	o	o
Civil defence	2.02	o	o	o	o	o	o	o	o	o	o	o	o
Foreign military aid	2.03	o	o	o	o	o	o	o	o	o	o	o	o
R&D Defence	2.04	o	o	o	o	o	o	o	o	o	o	o	o
Defence n.e.c.	2.05	o	o	o	o	o	o	o	o	o	o	o	o
Public order and safety	CG030	x	x	x	x	x	x	x	x	x	x	x	x
Police services	3.01	o	o	o	o	o	o	o	o	o	o	o	o
Fire-protection services	3.02	o	o	o	o	o	o	o	o	o	o	o	o
Law courts	3.03	o	o	o	o	o	o	o	o	o	o	o	o
Prisons	3.04	o	o	o	o	o	o	o	o	o	o	o	o
R&D Public order and safety	3.05	o	o	o	o	o	o	o	o	o	o	o	o
Public order and safety n.e.c.	3.06	o	o	o	o	o	o	o	o	o	o	o	o
Economic affairs	CG040	x	x	x	x	x	x	x	x	x	x	x	x
General economic etc.	4.01	o	o	o	o	o	o	o	o	o	o	o	o
Agriculture, forestry, fishing	4.02	o	o	o	o	o	o	o	o	o	o	o	o
Fuel and energy	4.03	o	o	o	o	o	o	o	o	o	o	o	o
Mining, manufacturing and	4.04	o	o	o	o	o	o	o	o	o	o	o	o
Transport	4.05	o	o	o	o	o	o	o	o	o	o	o	o
Communication	4.06	o	o	o	o	o	o	o	o	o	o	o	o
Other industries	4.07	o	o	o	o	o	o	o	o	o	o	o	o
R&D Economic affairs	4.08	o	o	o	o	o	o	o	o	o	o	o	o
Economic affairs n.e.c.	4.09	o	o	o	o	o	o	o	o	o	o	o	o
Environment protection	CG050	x	x	x	x	x	x	x	x	x	x	x	x
Waste management	5.01	o	o	o	o	o	o	o	o	o	o	o	o
Waste water management	5.02	o	o	o	o	o	o	o	o	o	o	o	o
Pollution abatement	5.03	o	o	o	o	o	o	o	o	o	o	o	o
Protection of biodiversity	5.04	o	o	o	o	o	o	o	o	o	o	o	o
R&D Environmental	5.05	o	o	o	o	o	o	o	o	o	o	o	o
Environmental protection	5.06	o	o	o	o	o	o	o	o	o	o	o	o
Housing and community	CG060	x	x	x	x	x	x	x	x	x	x	x	x
Housing development	6.01	o	o	o	o	o	o	o	o	o	o	o	o
Community development	6.02	o	o	o	o	o	o	o	o	o	o	o	o
Water supply	6.03	o	o	o	o	o	o	o	o	o	o	o	o
Street lighting	6.04	o	o	o	o	o	o	o	o	o	o	o	o
R&D Housing and comm.	6.05	o	o	o	o	o	o	o	o	o	o	o	o
Housing and comm. am.	6.06	o	o	o	o	o	o	o	o	o	o	o	o
Health	CG070	x	x	x	x	x	x	x	x	x	x	x	x
Medical products, appl. etc.	7.01	o	o	o	o	o	o	o	o	o	o	o	o
Outpatients services	7.02	o	o	o	o	o	o	o	o	o	o	o	o
Hospital services	7.03	o	o	o	o	o	o	o	o	o	o	o	o
Public health services	7.04	o	o	o	o	o	o	o	o	o	o	o	o
R&D Health	7.05	o	o	o	o	o	o	o	o	o	o	o	o
Health n.e.c.	7.06	o	o	o	o	o	o	o	o	o	o	o	o

Recreation, culture and	CG080	x	x	x	x	x	x	x	x	x	x	x	x	x
Recreational and sporting	8.01	o	o	o	o	o	o	o	o	o	o	o	o	o
Cultural services	8.02	o	o	o	o	o	o	o	o	o	o	o	o	o
Broadcasting and publishing	8.03	o	o	o	o	o	o	o	o	o	o	o	o	o
Religious and other c.s.	8.04	o	o	o	o	o	o	o	o	o	o	o	o	o
R&D Recreation, culture and	8.05	o	o	o	o	o	o	o	o	o	o	o	o	o
Recreation, culture and	8.06	o	o	o	o	o	o	o	o	o	o	o	o	o
Education	CG090	x	x	x	x	x	x	x	x	x	x	x	x	x
Pre-primary and primary	9.01	o	o	o	o	o	o	o	o	o	o	o	o	o
Secondary education	9.02	o	o	o	o	o	o	o	o	o	o	o	o	o
Post-secondary non-tertiary	9.03	o	o	o	o	o	o	o	o	o	o	o	o	o
Tertiary education	9.04	o	o	o	o	o	o	o	o	o	o	o	o	o
Education not defined by	9.05	o	o	o	o	o	o	o	o	o	o	o	o	o
Subsidiary services to	9.06	o	o	o	o	o	o	o	o	o	o	o	o	o
R&D Education	9.07	o	o	o	o	o	o	o	o	o	o	o	o	o
Education n.e.c.	9.08	o	o	o	o	o	o	o	o	o	o	o	o	o
Social protection	CG100	x	x	x	x	x	x	x	x	x	x	x	x	x
Sickness and disability	10.01	o	o	o	o	o	o	o	o	o	o	o	o	o
Old age	10.02	o	o	o	o	o	o	o	o	o	o	o	o	o
Survivors	10.03	o	o	o	o	o	o	o	o	o	o	o	o	o
Family and children	10.04	o	o	o	o	o	o	o	o	o	o	o	o	o
Unemployment	10.05	o	o	o	o	o	o	o	o	o	o	o	o	o
Housing	10.06	o	o	o	o	o	o	o	o	o	o	o	o	o
Social exclusion n.e.c.	10.07	o	o	o	o	o	o	o	o	o	o	o	o	o
R&D Social protection	10.08	o	o	o	o	o	o	o	o	o	o	o	o	o
Social protection n.e.c.	10.09	o	o	o	o	o	o	o	o	o	o	o	o	o
TOTAL	TCG	x	x	x	x	x	x	x	x	x	x	x	x	x

(*) Rows in dark show new additional information we consider particularly relevant in the analysis of QPF.

The COFOG-groups positively associated with economic growth account only for a limited number of all COFOG-groups. The definition of these groups, which is not yet established, is the subject of the work in progress of the WGQPF for which there will be significant benefit from better availability of data on expenditures. A number of 40-50 COFOG-groups (covering only the General government sector as a whole) of 69 in total could be interesting from the quality perspective.

However, instead of singling out specific COFOG-groups, we propose as a first step a *complete* expansion of ESA95 TP table 11² from COFOG-divisions to COFOG-groups (on a voluntary basis). The present choice of functions might change in the light of further research. Furthermore, only the full list of COFOG-groups warrants synergies with other potential users of these data (Member States, EU, OECD, economic and social sciences in general).

It should be noted that regulation 113/2002, with regard to revised classifications of expenditure according to purpose, already includes the second level of the COFOG classification in ESA 95, but standardised transmission tables have only been defined for the first level and data collection, therefore, only started for the first level. In this respect, the EFC Status Report on Information Requirements in EMU, as endorsed by the Ecofin in June 2004, states that: *‘The analysis of the quality of public finance receives an increasing importance and would benefit from the availability for all Member States of statistics on the functional classification of government expenditure (COFOG), in accordance with the Commission proposal for the revision of the ESA 95 transmission programme. Complete expenditure data for general government on the second COFOG level would provide the best basis for aggregate analysis.’* Overall, clear legal and political guidance has been given to continue this process and include the second level of the COFOG in the ESA 95 transmission tables.

In addition, the present form of data transmission to the IMF in the context of GFS statistics already foresees to provide (where available) data at the second level of classification. The classification adopted in the GFS Yearbook Questionnaire foresees two classification digits for the functions “Economic Affairs”, “Health” and “Education” in the following format:

² But just for the general government sector and not for sub-sectors.

Economic affairs

Agriculture, forestry, fishing, and hunting
 Fuel and energy
 Mining, manufacturing, and construction
 Transport
 Communication

Health

Outpatient services
 Hospital services
 Public health services

Education

Pre-primary and primary education
 Secondary education
 Tertiary education

Adopting a level-2 classification will result in an important synergy with the IMF system, something to be taken into account in relation to the minimization of the statistical burden and foster international comparability³. Even taking such synergies into account, expanding table 11 to the COFOG groups will result in additional administrative burden which should not be ignored. In order to reduce this burden, it is suggested to restrict the voluntary transmission (of the expanded table 11) to the *general government* sector only. However, the production of data for general government will involve considerable data analysis on the level of sub-sectors.

For the analysis of QPF-questions, longitudinal data are very important. This poses the question of backward calculation of level-2-COFOG data. When conducting a first and informal survey among its members, the WGQPF found that only some of them would see the possibility of producing series extending back as far as 1990. More members saw chances to produce level-2-data from the late 1990s onwards. Still, the WGQPF would like to suggest an expansion of the general government sector of table 11 on a *voluntary* basis. Thus, the plea for backward calculation should be extended to 1990 onwards, so that every country “willing and able” can go along as far as its individual circumstances allow.

Finally, the WGQPF suggests considering two additional breakdowns for transactions in table 11, again both on a voluntary basis. Here, more analysis by economic category implies considering very few other economic items in addition to those already contained in table 11 of the ESA95 transmission programme. They are already included in table 2 of the ESA95TP, so that the additional effort to be made by national accountants might be often very limited. The first breakdown would be to distinguish the item “TR51 Gross fixed capital formation” within the category “TRP5 Gross capital formation”, because only the investment component of TRP5 can potentially influence the economic growth. (The remainder, i.e. “Changes in inventory” and “Acquisitions less disposals of valuables”, will probably not be effective in such a manner.) The second additional breakdown relates to distinguishing the item “TRD92 Investment grants” within the category “TRD9 Capital transfers” for the same reason: only investment grants are capital transfers that are aimed at enhancing the growth potential.

The intersection between the second level COFOG classification and the proposed more detailed classification by economic category generates the table 3 below, which represents the WG proposal of a new table 11 of the transmission programme to be filled in on a voluntary basis.

³ Probably, for some new Member States this IMF request could be particularly relevant in this context because most of them have a long tradition of compiling IMF GFS statistics (with reference to the function “Economic Affairs”, an example is that of Slovenia: see the paper presented at the 3rd meeting of the WGQPF held in Berlin, 15 October 2004). This could facilitate them in the minimization of efforts requested by the implementation of the enlarged database proposed in this paper.

TABLE 3 - Expenditure of GG by function (2 levels) and more detailed economic categories

COFOG CLASSIFICATION	TRANSACTION	Transactions by economic category													
		Gross fixed capital formation	Changes in inventories + acquisitions less disposals of valuables	Acquisitions less disposals of non-financial non-produced assets	Compensation of employees	Subsidies	Property income	Social benefits other than social transfers in kind and social transfers in kind etc.	Intermediate consumption	Other taxes on production + Current taxes on income, wealth, etc.	Other current transfers	Investment grants	Other capital transfers	Total expenditure	Final consumption expenditure
COFOG Code	Transaction/COFOG Code	TRP51	TRP52 + TRP53	TRK2	TRD1	TRD3	TRD4	TRD62+ TRD631+ TRD632+ TRD6331	TRP2	TRD29+ TRD5+ TRD8	TRD7	TRD92	TRD99	TRTE	TRP3
General public services	CG010	0	0	x	x	x	x	x	x	x	x	0	0	x	x
Executive & legislative etc.	101	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Foreign economic aid	102	0	0	0	0	0	0	0	0	0	0	0	0	0	0
General services	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Basic research	104	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R&D General public services	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0
General public services n.e.c.	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Public debt transactions	107	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transfers between GG	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Defence	CG020	0	0	x	x	x	x	x	x	x	x	0	0	x	x
Military defence	201	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Civil defence	202	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Foreign military aid	203	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R&D Defence	204	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Defence n.e.c.	205	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Public order and safety	CG030	0	0	x	x	x	x	x	x	x	x	0	0	x	x
Police services	301	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fire-protection services	302	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Law courts	303	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prisons	304	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R&D Public order and safety	305	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Public order and safety n.e.c.	306	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Economic affairs	CG040	0	0	x	x	x	x	x	x	x	x	0	0	x	x
General economic etc.	401	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agriculture, forestry, fishing etc.	402	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fuel and energy	403	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mining, manufacturing etc.	404	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transport	405	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Communication	406	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other industries	407	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R&D Economic affairs	408	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Economic affairs n.e.c.	409	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environment protection	CG050	0	0	x	x	x	x	x	x	x	x	0	0	x	x
Waste management	501	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste water management	502	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pollution abatement	503	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Protection of biodiversity	504	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R&D Environmental prot.	505	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental prot. n.e.c.	506	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Housing and community am.	CG060	0	0	x	x	x	x	x	x	x	x	0	0	x	x
Housing development	601	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Community development	602	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water supply	603	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Street lighting	604	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R&D Housing and comm. am.	605	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Housing and comm. am. n.e.c.	606	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Health	CG070	0	0	x	x	x	x	x	x	x	x	0	0	x	x
Medical products, appl. etc.	701	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatients services	702	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hospital services	703	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Public health services	704	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R&D Health	705	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Health n.e.c.	706	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Recr., culture religion	CG080	0	0	x	x	x	x	x	x	x	x	0	0	x	x
Recreational/sporting serv.	801	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cultural services	802	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Broadcasting and pub. serv.	803	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Religious and other c.s.	804	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R&D Recreation, culture etc	805	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Recreation etc. n.e.c.	806	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Education	CG090	0	0	x	x	x	x	x	x	x	x	0	0	x	x
Pre-primary and primary ed.	901	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secondary education	902	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Post-secondary non-tert. ed.	903	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tertiary education	904	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Education not defined by level	905	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subsidiary serv. to education	906	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R&D Education	907	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Education n.e.c.	908	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Social protection	CG100	0	0	x	x	x	x	x	x	x	x	0	0	x	x
Sickness and disability	1001	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Old age	1002	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Survivors	1003	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Family and children	1004	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unemployment	1005	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Housing	1006	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Social exclusion n.e.c.	1007	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R&D Social protection	1008	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Social protection n.e.c.	1009	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	TCG	0	0	x	x	x	x	x	x	x	x	0	0	x	x

The new analytical information that would derive from the implementation of the proposed amendment of Table 11 would be very useful to allow a first significant study on the quality of public expenditure, more significant than the one feasible using the existing information.

What we have illustrated until now would constitute the first and really decisive stage of the building process of the information system on QPF. However, the logic of the satellite account allows to proceed further. For example, an additional extension that might be logically and chronologically pursued could aim at:

- adding some new items in the analysis of the expenditure by economic category in order to provide further more detailed information;
- identifying additional datasets – of monetary and/or non-monetary information – to be linked to the enlarged set of information.

It is worth noting that the proposed possible enlargement towards a wider information system focused on quality aspects of public expenditure is not a substitute of existing statistics (the compulsory part of table 11 of ESA95 revised transmission programme should principally remain unchanged, at least in the initial stage of the implementation process) but should integrate them. The identification of specific sub-categories and the use of specific accounting rules for some items do not represent proposals to change ESA95 criteria, but simply additional tools to better analyse the qualitative structure of public finance and its dynamic without loosening the explicit link with NA statistics.

3.3. Possible further pathways for an enlarged dataset on quality of public finances

3.1. Adding some new items to the analysis of expenditure

In a longer term perspective, we suggest trying to introduce three main types of integrations to data analysed by economic and functional category (according to table 3 above). The rank of the new items listed below reflects the order of importance attributed to each of them. It is important to stress that these are simple suggestions, therefore the list is open to the discussion.

- I. using specific additional accounting rules
 1. providing the information to calculate investment expenditure (capital formation) gross of sales of assets. At present, investment is calculated net of proceeds of sales, but it would be interesting to measure the impact of new public initiatives on the productive capacity of the economy instead of the impact on the stock of assets owned by GG;
 2. valuating tax expenditure measures to support the productive process, in particular investment initiatives and R&D private expenditure;
- II. more details in economic classification

1. to separate expenditure to construct infrastructures from expenditures for the acquisition of dwellings, other buildings, machineries and equipment ⁴;
2. to distinguish between expenditure for acquisition of new real assets and for acquisition of already existing real assets (simple transfer of property right);
3. to distinguish expenditure in “Grants for interest relief” (which are aimed at supporting private investment initiatives) from “other current subsidies on production”;
4. to identify public expenditure in PPPs initiatives;
5. to provide estimates of capital consumption in order to allow the calculation of net investment expenditure

III. additional information on some financial transactions

The inclusion of the following items (always broken-down by function) in the dataset could be useful:

1. capital injections (transactions in shares and other equities) into public corporations and quasi-corporations;
2. loans and other credits to private or public enterprises aimed at financing their investment and/or R&D activity.

3.2. Extension through additional modules

In the long run, it would be useful to develop some complementary additional information. What follows is a set of possible – and always open to the discussion - areas to investigate.

- a) Guarantees given by GG to support loans for private investment initiatives (the total should be the same – or the eventual discrepancy should be explained – to that included in the EDP notification as facultative information item);
- d) Information on the whole amount of investment made through PPPs, i.e. total private and public expenditures, where the latter are already identified in item II-4 above;
- e) Expenditure of the Public Sector as a whole (including GG and corporations and quasi-corporations owned and controlled by GG);
- f) Information on GG output in volume (at constant prices) and on GG productivity (see, for instance, the work carried out in this direction in the U.K. by T. Atkinson as described in the

⁴ It is worth noting that, as far as investment expenditures are concerned, the IMF GFS Yearbook questionnaire requests even more information than that proposed in this paper. Table 3 of the GFS questionnaire asks for the following breakdown (where available):

Fixed assets
Acquisitions: fixed assets
Disposals: fixed assets
Consumption of fixed capital (CFC): fixed assets
 Buildings and structures
 Acquisitions: buildings and structures
 Disposals: buildings and structures
 CFC: buildings and structures
 Machinery and equipment
 Acquisitions: machinery and equipment
 Disposals: machinery and equipment
 CFC: machinery and equipment
 Other fixed assets
 Acquisitions: other fixed assets
 Disposals: other fixed assets
 CFC: other fixed assets

Interim report “*Measurement of Government Output and Productivity for the National Accounts*”; information on public investment expenditure in volume;

g) Regulatory activities (simplification and impact of regulation).

A further possible implementation of the extension of the core of the information system would be achievable through the link with other data bases already available at the international level, which could be eventually better harmonized with NA statistics. These additional existing datasets (besides the GFS – managed by the IMF - already mentioned above) are those managed by the OECD, in particular in the field of:

I. Research & Development

II. Education

III. Health

The possibility of a coherent extension of the NA statistics (expanded according to the lines illustrated so far) through the link with these thematic databases is subject to a preliminary check of their mutual consistency. To this aim, some preliminary remarks are made in the following sub-paragraph.

3.3. Developing links with other databases: OECD statistics on education and R&D

So far we have developed an integrated database on the spending functions of the general government based on the system of National Accounts (SNA). A further stage of the analysis would aim at integrating such a database with those developed by international organisations (in particular OECD) and related to specific items of expenditure.

This exercise would turn useful in providing additional and more detailed information on those items the WGQPF has indicated to be growth-enhancing, as strictly related to the agreed definition of quality of public expenditure. At the same time, it would allow an extension of the comparison with other countries than EU Member states with more analytical data collected on a cross-country perspective.

Considering the many methodological problems in relating specific expenditure statistics provided by alternative sets of data and the additional effort required to countries to pursue this further integration, this part of the analysis should be implemented in a longer-term perspective.

This section of the paper presents a brief description of the OECD databases on Education and R&D statistics and a first assessment of the methodological problems encountered in making these datasets consistent with the whole analytical structure developed in the preceding sections of the paper.

Education

There are many databases and thematic publications covering education statistics both at the EU⁵ and at the OECD level⁶. The OECD collects data on education statistics jointly with UNESCO and EUROSTAT, within the so-called UOE data collection programme, being the main objective to provide internationally comparable data on key aspects of education statistics. The data refer to the participation and completion of education programmes, and on the cost and type of resources dedicated to education. The data collection involves about 60 countries worldwide. It reports data on students enrolled, new entrants, graduates, repeaters, educational personnel and class size, and on expenditure items.

As to expenditure statistics, educational institutions represent the main defining units: they are identified as entities that provide instructional services to individuals or education-related services to individuals and other educational institutions; they include instructional institutions (i.e. schools, universities, etc.) and non-instructional institutions (ministries, local authorities and student unions).

The classification of educational outlays is developed across three dimensions: *i*) location (inside or outside the educational institutions); *ii*) goods and services; *iii*) source of funds. It should be noted that all public educational expenditure is covered, which is collected on a cash accounting basis. Outlays are reported by source, type of transaction and level of education, and for both public and private components. Private expenditure refers to two private sources of education funds: households (data refer mainly to tuition fees paid by households) and other private entities.

As to government expenditure, education expenditures are reported by level of government⁷ and are classified according to three types of intervention:

- Direct expenditure on educational institutions. Figures include both current⁸ and capital outlays, but direct expenditure explicitly designated or earmarked for capital is reported in a separate row. However this row underestimates the actual amount of capital spending on education since non-earmarked funds, still used to finance capital expenses, are not classified within this category. Also data on direct expenditure on ancillary services (student welfare and services for the general public) are reported separately, to allow for a better international comparison.
- Intergovernmental transfers for education. These transfers are explicitly designated for education and are usually defined as net transfers from a higher level to a lower level of governments. Transfers are thus reported as expenditures at the level of government receiving the funds.
- Transfers or other payments from governments to households and other private entities. They include public subsidies to households (scholarships and loans to students for tuition fees and student living costs) and public subsidies to other private entities.

Another section reports data on educational expenditure by nature, resource category, type of institution and level of education. Outlays are distinguished between current and capital (with a separate row for ancillary services in each of the two sections). Current expenditures are classified into: expenditure on

⁵ For a list of publications provided by EUROSTAT see Schmidt P. "A short guide to educational expenditure statistics", EUROSTAT working paper, Population and social conditions 3/2003/E/N°24.

⁶ A short overview on the data availability to assess the composition of government expenditures has been presented to the Sub-Committee on Statistics attached to the Economic and Financial Committee last 12 December 2003 (ECFIN/477/03-EN). It briefly illustrates the main datasets, and the related data classifications and coverage, provided by EUROSTAT and the OECD on the main expenditure items. Moreover it measures the quantitative divergences, rather than the qualitative ones, between the different databases.

⁷ Three levels of government are reported: 1) central government, 2) regional government (province, state, Land, etc.) and 3) local government (municipality, district, etc.). For EU countries the NUTS99 classification is the reference guideline.

⁸ It should be noted that these data include expenditure on social contributions for current educational personnel.

compensation of personnel and current expenditure other than compensation of personnel⁹. Capital outlays¹⁰ refer to the amount of capital formation within the observed year, regardless of whether it was financed by current revenues or borrowing.

The general government expenditure by functions (classification COFOG), as has been seen, provides information on education outlays. It should be noted however that consistency between the two definitions and data coverage is not straightforward. A few issues should be taken into account:

The UOE expenditure on education is collected on a cash accounting basis rather than on an accrual one as in the SNA framework of ESA95;

The distinction between current and capital outlays within the UOE data collection does not reflect the same classification followed by the SNA;

In the UOE data collection there are many breaks in the time series causing problems of comparability over time and across countries;

The definition of sectors performing education expenditures might differ between the two classifications COFOG and UEO;

R&D

The OECD has been collecting data on R&D for Member countries since the early 1960s. Figures are published in the *Main Science and Technology Indicators* report. R&D statistics are collected according to the methodology developed in the so called *Frascati Manual*¹¹ on the basis of retrospective surveys of the units actually carrying out or performing R&D projects. The coverage of fields of science includes natural sciences and engineering, and social sciences and humanities. Data relate to R&D performed by four sectors: *i*) Business Enterprise (Industry), *ii*) Higher Education, *iii*) Government and *iv*) Private Non-Profit institutions. R&D expenditure is also classified by five sources of funds which include the four above-mentioned sectors of performance plus funding from abroad.

Resources devoted to R&D are measured both in terms of researchers and total amount of personnel employed in R&D, and in terms of expenditures. Personnel data are expressed in full-time equivalent and refer to all personnel working on R&D. It should be noted, however, that sometimes international comparisons are restricted to researchers or university graduates since they are considered as the core of the R&D system. As to outlays, the basic measure is “intramural expenditure”, which includes all expenditures for R&D performed within a statistical unit or sector of the economy. Both current and capital expenditures are included. The standard aggregate is the gross domestic expenditure on research and experimental development (GERD) which is carried out in a country in a specific year. It is calculated as the sum of intramural expenditures carried out by the four performing sectors, and it is displayed in the form of a matrix combining both performing and funding sectors.

The Business Enterprise sector is classified according to the International Standard Industrial Classification (ISIC Rev.3). Detailed information on R&D statistics performed by the business private sector is reported in the OECD Analytical Business Enterprise R&D database (ANBERD) covering 19 Member countries. As to the Government sector, spending data are collected by national authorities from the national budgets, by identifying those items involving R&D and measuring or estimating their R&D content. Data usually refer to the central government only and are collected on a source-basis, rather than

⁹ Current expenditure other than compensation of personnel includes expenditure on contracted and purchased services, on other resources (teaching and learning material) and required payments other than expenditure on educational resources.

¹⁰ It includes spending on construction, renovation and major repair of buildings and new or replacement equipment.

¹¹ OECD: “*The Measurement of Scientific and Technological Activities: Proposed Standard Practices for Surveys of Research and Experimental Development – Frascati Manual 1993*”, OECD/GD(94)84.

on a performer-basis as advocated in the *Frascati Manual*¹² and as implemented in the data collection for the other performing sectors. However, using budget data has the advantage of investigating the direct link between government spending on R&D and policy issues by means of classification of the funds by socio-economic objectives.

This functional breakdown reflects specific policies as introduced by the government at a given point in time, the allocation being determined with reference to the time the government has initially intended to devote an amount of resources to R&D activities.

The distribution by socio-economic objective has been specifically designed by the OECD for R&D statistics as suggested in the reference manual. It is the following:

1. Development of agriculture, forestry and fishing
2. Promotion of industrial development
3. Production and rational use of energy
4. Development of the infrastructure
 - Transport and telecommunications
 - Urban and rural planning
5. Monitoring and protection of the environment
 - Prevention of pollution
 - Identification and treatment of pollution
6. Health (excluding pollution)
7. Social development and services
8. Exploration and exploitation of the Earth and the atmosphere
9. General advancement of knowledge
 - Advancement of research
 - General university funds
10. Civil space
11. Defence

Some remarks on government spending on R&D as collected by the OECD:

1. The above distribution by objectives reflects the policy intentions of a given programme rather than its precise contents;
2. Methodological constraints: outlays should be allocated to the objectives according to the primary intention of the programme. Nevertheless a discrepancy between the purpose and the content of the programme may arise;

¹² R&D is an activity where there are significant transfers across units and sectors. The *Frascati Manual* indicates two alternative ways of measuring such transfers. The first, and most recommended, is *performer-based*: the sums a single unit or sector has received from another unit or sector for the performance of intramural R&D should be reported. The second criterion is *source-based*: it reports extramural expenditures defined as the sums a single unit or sector has paid to another unit or sector for the performance of R&D.

3. International comparability for government appropriations or outlays for R&D is more limited than that for the R&D effort of the Business Enterprise sector due to different institutional arrangements;
4. International comparability for R&D expenditure performed and financed by the Higher education sector is limited. This sector includes both public and private universities and the R&D effort of each component is not identified. Without further specifications the different composition between public and private higher education institutions limits comparisons across countries;
5. The classification by objectives reflects needs specific to the R&D sector of activities, and it does not reflect directly the functional breakdown of the general government expenditures as in the COFOG classification;
6. Data are released with approximately two years of delay with respect to the current year and are accounted on a cash basis;
7. Tax expenditures to favour R&D investments are not quantified; in the questionnaire sent to the business and government sectors it is asked to specify only on qualitative terms whether part of the financing has benefited of tax incentives.

4. What could be implemented?

This paragraph is directly linked to paragraphs 2, 3.1 – 3.2 and it aims at discussing the possible implementation of the envisaged extension of the core of the dataset and of the additional modules (the satellites of the system). In the following discussion, we make reference to the outcome of a specific survey conducted among countries through the members of the WGQPF. The results of the survey are presented in a comprehensive and analytical way in the Michael Thöne paper “A survey on the feasibility of an enlarged dataset on the quality of public finances – First results”, which was discussed at the third meeting of the WGQPF, held in Berlin on 15 October 2004. The various steps that might be taken in the future are illustrated below in succession.

As a starting point, we believe that before starting the process of the progressive enlargement of the information system there is a preliminary condition to comply with: guaranteeing the availability of data for all countries in the format already established as compulsory by the ESA95 transmission programme in force, i.e. ESA95 table 11 (COFOG). Therefore, the first step should consist in assuring a common standard for existing data: in other words it is necessary to reach a high level of homogeneity among countries as far as both the length of time series and the timeliness of delivery are concerned.

Step 1

Step one is represented by the implementation of the proposal described in paragraph 2, where we underlined the need to dispose (at least) of the second level of the COFOG classification and of a limited number of additional breakdowns by economic category.

In principle, at least part of this kind of information might be already deliverable with limited efforts by national accountants of each Member State. This is because the calculation of the GG non-financial accounts and of the COFOG public expenditure statistics (according to ESA95 format) are generally estimated using a very detailed database. Hence, the additional information implied by the enlargement of the initial core (moving from table 1 of par. 2.1 towards table 3) could already be included in the national accountants’ archives as a “work in progress”. This is confirmed by the results of the survey carried out by the WGQPF. On average, this first enlargement is judged as feasible by the majority of countries, in some case provided that a common commitment/financing is decided.

Let us consider the case of Italy as an example: time series are currently produced by the Italian National Statistical Institute (Istat) in a format more analytical than that required by table 3 above, even if they are not published. Therefore, in principle, the requested data could already be delivered. Of course, there could be problems with reference to the reliability of these more analytical estimates. The evaluation of the present degree of reliability is a task of the national compilers of statistics. This might be considered a target in case the demand by the Ecofin Council of more information to enhance the analysis on quality of public finances were to result in a strong request of specific common commitments to Member States.

Using the survey evidence, it should be pointed out that some of the additional data requested could be delivered with a sufficient timeliness, i.e. at time $t+12$. This should be even more realistic if, during a transition period, these data are limited only to the last years of the series (e.g. starting from 1999).

We propose a transmission of the amended level-2-categories in the transmission programme on a voluntary basis. In the meantime the issue of a possible lean regulation will be discussed further.

Step 2

The second step consists in the harmonisation among countries of the time series formats in the present NEWCRONOS database.

With reference to backwards estimates, only a part of countries is in line with the standards established by the ESA95 transmission programme. Considering NEWCRONOS data or those in AMECO database (therefore excluding new access countries), Belgium, Denmark, Greece, Italy, Luxemburg, Portugal and United Kingdom show data since 1990; Germany from 1991; France, Ireland, Netherlands, Austria, Finland and Sweden from 1995; Spain from 1999.

As to the timeliness (the deadline is fixed at time $t+12$, therefore at present data available in the database should include at least the year 2002) the situation is the following: Belgium, Denmark, Germany, Greece, Ireland, Italy, Luxemburg, Netherlands, Austria, Portugal, Finland, France, Spain, Sweden and United Kingdom show data until 2002.

Step 3

Step 3 would be in a longer-term perspective. It consists of – in several cases – new specific elaborations and, probably, new collections of basic data. Therefore its implementation would be obviously more problematical. Obviously all the proposals advanced in this paper are very open to discuss.

In particular, the survey allows answering some of the additional requests of information listed in paragraph 3 as follows:

a) using specific additional accounting rules

1) Investment expenditure gross of sales of assets: this calculation is generally considered easily feasible, though in some cases with some efforts and on condition of common commitment/additional resources;

2) Tax expenditure measures to support the productive process, in particular investment initiatives and R&D private expenditure: no question on this issue was inserted in the survey. In the case of Italy (to which, as already said, we have asked additional information) the answer is this can be provided, but with relevant efforts and in the medium-long term;

b) more details in economic classification

1) to identify separately expenditure to (re-)construct infrastructures from those for the acquisition of dwellings, other buildings, machineries and equipment: from the survey, the average answer is: yes, but not immediately and on condition of common commitment/financing;

2) to identify public expenditure in PPPs initiatives: the survey says that generally it is not immediately feasible (in three cases it is very difficult, especially for backward data);

3) to provide estimates of capital consumption in order to allow the calculation of net investment expenditure: from the survey the answer is generally yes, but only at the first digit of the COFOG classification. At the second digit, the answers are very heterogeneous.

Therefore, for a large number of Member States, excluding the new Member States, in principle it would be possible to obtain the data in table 4. Data availability would, however, not be complete for every country and, before their delivery, national accountants would have to evaluate in depth the reliability degree of each additional information. This is true even for the level-2 COFOG classification, for which – on the basis of the survey outcome – we have assessed that some problems arise especially as far as the R&D items are concerned.

Table 4 - Expenditure of GG by function (2nd Level) and more detailed economic categories with an additional breakdown of fixed capital formation

COFOG CLASSIFICATION	Transactions by economic category															
	TRANS ACTION	Gross fixed capital formation	Of which: Infrastructures	Other gross fixed capital formation	Changes in inventories + acquisitions less disposals of valuables	Acquisitions less disposals of non-financial non-produced assets	Compensation of employees	Subsidies	Property income	Social benefits other than social transfers in kind and social transfers in kind related to expenditure on products supplied to households via market producers, payable	Intermediate consumption	Other taxes on production + Current taxes on income, wealth, etc.+ Adjustment for the change in net equity of households in pension funds reserves	Other current transfers	Investment grants	Other capital transfers	Total expenditure
Transaction / COFOG Code	TRP51 and its break-down			TRP52 + TRP53	TRK2	TRD1	TRD3	TRD4	TRD62+ TRD6311+ TRD63121+ TRD63131	TRP2	TRD29+ TRD5+ TRD8	TRD7	TRD92	TRD99	TRTE	TRP3
2 digit of COFOG classification	data detailed at 2 COFOG digit	data detailed at 2 COFOG digit	data detailed at 2 COFOG digit	data detailed at 2 COFOG digit	data detailed at 2 COFOG digit	data detailed at 2 COFOG digit	data detailed at 2 COFOG digit	data detailed at 2 COFOG digit	data detailed at 2 COFOG digit	data detailed at 2 COFOG digit	data detailed at 2 COFOG digit	data detailed at 2 COFOG digit	data detailed at 2 COFOG digit	data detailed at 2 COFOG digit	data detailed at 2 COFOG digit	data detailed at 2 COFOG digit

Step 4

Step 4 consists of including some additional information and harmonising COFOG statistics and other international databases.

If, in principle, table 4 above might possibly be available in the medium-term, what about the implementation of further items not included in table 4? In paragraph 3 we have underlined that the extension of the information system through additional modules can be implemented in the long term only. To have real chances to succeed in this task, the pre-condition is the assignment of sufficient additional resources. Reaching these objectives not included in the proposed table 4 implies a strong commitment by the ECOFIN Council and specific financial means to invest in the project.

Finally, the improvement of the harmonization and the clarification of the links between COFOG-NA statistics and other data bases (in particular OECD R&D, Education, Health statistics) seem to be feasible in the medium term. It is worth noticing that even in this respect a strong commitment by ECOFIN and specific financial means are generally necessary to start any type of study.

Regarding the link between COFOG statistics and OECD statistics, the survey has given good results on average as far as Education and Health are concerned (see annex). The more frequent answer by respondent countries was that it is possible to identify the reasons of discrepancies and to measure them in the medium-long period. As to the R&D, the indications from the survey are less homogeneous, some country having judged very difficult the possibility to achieve the objective.

5. Some concluding remarks

To conclude, we can summarise what has been proposed so far.

As to the improvement of present data availability at European level (in particular with reference to the fifteen “old” Member States), the most important and urgent target is to implement the proposed enlargement towards a wider information system focused on quality aspects of public expenditure.

Our proposals on possible priorities and our preliminary findings about the possibilities to implement the various steps of the envisaged process of enlargement of the information system on QPF are open to discussion.

As we have already noted, we can say that – generally speaking – the main part of the objectives listed in our paper can be achieved, though not immediately and provided specific commitment and additional resources are assigned to the producers of data.

On the basis of 14 questionnaires received by respondent countries (the average answers to each question shown in annex refer to 12 countries only, having excluded Hungary and Czech Republic questionnaires due to their large incompleteness), it is possible to say that a reduction limited reduction (3 months) in the transmission deadline might be possible in the medium period only. The main common problems in developing the information system are related to backward data and data from the local government level, while those encountered to elaborate future or more recent data are of lower importance.

Considering the results on average, we can say that the mean answer to various questions falls between C and D (C being equal to “Data, which can be produced rather easily without substantial effort. Data of this category could be submitted within short time”, and D = “Data, which would need to be ascertained new. These data might be produced in the future, provided that a common commitment / financing has been made (e.g. by ECOFIN)”. The answer E (= “data that cannot be produced - at least not with any tolerable effort”) are particularly frequent only in the case of backward estimates (especially for years 1990-1995). Therefore, since the more urgent need of data is represented by the information on current and more recent period (say, from 1999 onwards), the global final outcome of the survey can be considered rather positively.

In addition, we received some written and oral comments by respondent countries. Some of them (like those by Sweden, Spain and Italy) are very supporting, other ones are less optimistic (like that by Germany). In the latter case, however, if the attention is put on the perspectives – instead of on the present “state of art” – i.e. on the possibility to carry out new activities to develop the project in the next future, the conclusions should be more favourable.

The strongest encouragement to start the implementation project of an enlarged dataset to support the analysis of the quality of public finance is represented by the answer given by countries to the last question of the survey: “How much of the data of 1-digit COFOG or 2-digit COFOG is (or could be) won by original census and how much is (or could be) indirectly estimated (e.g. through sample / partial surveys or through indicators like the share of workers employed / wages and salaries paid to produce services in each function)?”. The average answer for indirect estimations (see annex) is B (that is between 10% and 25%) when data are referred to the 2nd digit of the COFOG classification. That means that the statistics the majority of countries is able to produce in the next future will be of a rather high quality level.

A last remark: we think that a very important tool to start (and to foster) the process of enlargement of the existing data system should be the integration of the transmission programme in force with the table 4 above to be filled in on a voluntary basis. This will allow the countries “willing and able” to provide the relevant (and even partial) information already available (or easily obtainable) starting from the next transmission. It should be very important in order to permit to start a meaningful analysis of the quality of public finance. The survey results described above (and synthetically presented in annex) support this positive view.

Annex: The survey results

In this annex it is presented a synthesis of the results from the survey made among countries participating in the QPFWG. The results are shown on average: for each answer the literal codes A, B, C, D and E have been changed with numbers 1, 2, 3, 4 and 5 in order to allow the calculation of the arithmetic mean. Therefore, for instance, the answer 3,7 means that, on average, the answers fall between C and D. Of course one has to bear in mind that there is an internal variability of answers, so that the mean value 3,7 can hidden even very different single answers between countries. In order to get this kind of detailed information it is possible to examine the paper by Michael Thöne: “A survey on the feasibility of an enlarged dataset on the quality of public finances – First results”, Berlin, 15 October 2004.

Participation

Member State		Answered questionnaire (partially / completely)	Comments/ remarks on questionnaire	General remarks (additionally / alternatively)	Total participation
Austria	AT	1	1		1
Belgium	BE	1	1		1
Cyprus	CY				
Czech Republic	CZ		1		1
Denmark	DK	1	1		1
Estonia	EE				
Finland	FI	1	1	1	1
France	FR	1	1		1
Germany	DE			1	1
Greece	EL	1			1
Hungary	HU	1	1		1
Ireland	IE	1	1		1
Italy	IT	1	1		1
Latvia	LV				
Lithuania	LT	1	1		1
Luxembourg	LU	1			1
Malta	MT				
Netherlands	NL	1	1	1	1
Poland	PL				
Portugal	PT	1	1	1	1
Slovakia	SK				
Slovenia	SI				
Spain	ES	1	1		1
Sweden	SE	1	1		1
United Kingdom	UK				
	25	15	14	4	17

Questions 1-7 are based on the notion, that the respective data can be classified into five groups:	
A	Data, which are published by the Member State and/or are submitted to Eurostat. These data are available immediately.
B	Data, which are already produced the Member States, but not published yet. These data could be submitted immediately without any additional effort.
C	Data, which can be produced rather easily without substantial effort. Data of this category could be submitted within short time.
D	Data, which would need to be ascertained new. These data might be produced in the future, provided that a common commitment / financing has been made (e.g. by ECOFIN).
E	These data cannot be produced (at least not with any tolerable effort).

1 How do you assess an extension of cross-table 11 "Expenditure of general government by function" of the ESA95-transmission-programme from 1-digit COFOG to 2-digit COFOG?																	
COFOG functions	Member States	Current data					Delay (t + month)	Calculation for years 2003–1999					Backward calculation 1998–1990				
		A	B	C	D	E		A	B	C	D	E	A	B	C	D	E
All functions																	
total / average	15	1		4	6	3	t+ 12,1			4,6	5,4	4			1	4	10
% of total		7%		27%	40%	20%				33%	39%	29%			7%	27%	67%
R & D																	
total / average	15	1		2	9	2	t+ 11,6			3,6	5,4	5			4	11	
% of total		7%		13%	60%	13%				26%	39%	36%			27%	73%	
Economic Affairs																	
total / average	15	1		4	9		t+ 11,7			4,6	7,4	2			1	4	10
% of total		7%		27%	60%					33%	53%	14%			7%	27%	67%
Education																	
total / average	15	1		4	8	1	t+ 12,5			4,6	6,4	3			1	3	11
% of total		7%		27%	53%	7%				33%	46%	21%			7%	20%	73%

2 How do you assess the viability of a cross-table of 2-digit COFOG with a more detailed classification by economic categories than the present-one (additional breakdowns)?																	
COFOG functions	Member States	Current data					Delay (t + month)	Calculation for years 2003–1999					Backward calculation 1998–1990				
		A	B	C	D	E		A	B	C	D	E	A	B	C	D	E
Gross fixed capital formation (TRP51)																	
total / average	14	1	1	5	6	1	t+ 11,6		1	4	6	3		1	1	3	9
% of total		7%	7%	36%	43%	7%			7%	29%	43%	21%		7%	7%	21%	64%
Changes in inventories and valuables (TRP52+TRP53)																	
total / average	14	1	1	5	6	1	t+ 11,6		1	4	6	3		1	1	3	9
% of total		7%	7%	36%	43%	7%			7%	29%	43%	21%		7%	7%	21%	64%
Investment grants (TRD92)																	
total / average	14	2	1	4	6	1	t+ 11,6	1	1	3	7	2		1	1	3	9
% of total		14%	7%	29%	43%	7%		7%	7%	21%	50%	14%		7%	7%	21%	64%
Other capital transfers (TRD99)																	
total / average	14	2	1	4	6	1	t+ 11,6	1	1	3	7	2		1	1	3	9
% of total		14%	7%	29%	43%	7%		7%	7%	21%	50%	14%		7%	7%	21%	64%

3 How do you assess the chances to consider investment expenditure (capital formation) gross of sales of assets?																	
COFOG functions	Member States	Current data					Delay (t + month)	Calculation for years 2003–1999					Backward calculation 1998–1990				
		A	B	C	D	E		A	B	C	D	E	A	B	C	D	E
1-digit COFOG																	
total / average	13	1	2	5	3	2	t+ 10,8	1	1	6	3	2		1	2	4	6
% of total		8%	15%	38%	23%	15%		8%	8%	46%	23%	15%		8%	15%	31%	46%
2-digit COFOG																	
total / average	13	1	2	3	5	2	t+ 11,4	1	1	4	3	4		1	1	3	8
% of total		8%	15%	23%	38%	15%		8%	8%	31%	23%	31%		8%	8%	23%	62%

(In question 1, one Member State split part of her answers.)

4 How do you assess the chances to distinguish the expenditure to (re-)construct infrastructures from those for acquisition of dwellings, other buildings, machineries and equipment?																	
COFOG functions	Member States	Current data					Delay (t + month)	Calculation for years 2003–1999					Backward calculation 1998–1990				
		A	B	C	D	E		A	B	C	D	E	A	B	C	D	E
1-digit COFOG																	
total / average	14	1	1	7	2	3	t+ 11,0	1	1	6	2	3	1		3		9
% of total		7%	7%	50%	14%	21%		8%	8%	46%	15%	23%	8%		23%		69%
2-digit COFOG																	
total / average	14			5	6	3	t+ 11,8			4	3	6			2	1	10
% of total				36%	43%	21%				31%	23%	46%			15%	8%	77%

5 How do you assess the chances to identify <u>public</u> expenditure in PPPs initiatives?																	
COFOG functions	Member States	Current data					Delay (t + month)	Calculation for years 2003–1999					Backward calculation 1998–1990				
		A	B	C	D	E		A	B	C	D	E	A	B	C	D	E
1-digit COFOG																	
total / average	13	3	1	2	5	2	t+ 11,1	2		1	6	2	1			5	5
% of total		23%	8%	15%	38%	15%		18%		9%	55%	18%	9%			45%	45%
2-digit COFOG																	
total / average	13	3		1	6	3	t+ 12,0	2			5	4	1			5	5
% of total		23%		8%	46%	23%		18%			45%	36%	9%			45%	45%

6 How do you assess the chances to identify <u>total</u> expenditure in PPPs initiatives?																	
COFOG functions	Member States	Current data					Delay (t + month)	Calculation for years 2006–1999					Backward calculation 1998–1990				
		A	B	C	D	E		A	B	C	D	E	A	B	C	D	E
1-digit COFOG																	
total / average	13	1	1	1	7	3	t+ 13,5	1		1	7	3	1			6	5
% of total		8%	8%	8%	54%	23%		8%		8%	58%	25%	8%			50%	42%
2-digit COFOG																	
total / average	13	1			8	4	t+ 15,0	1			6	5	1			6	5
% of total		8%			62%	31%		8%			50%	42%	8%			50%	42%

7 How do you assess the chances to provide estimates of capital consumption in order to allow the calculation of net investment expenditure?																	
COFOG functions	Member States	Current data					Delay (t + month)	Calculation for years 2007–1999					Backward calculation 1998–1990				
		A	B	C	D	E		A	B	C	D	E	A	B	C	D	E
1-digit COFOG																	
total / average	14	3	1	6,5	2,5	1	t+ 10,2	2	2	5,5	3,5	1	2		3,5	2,5	6
% of total		21%	7%	46%	18%	7%		14%	14%	39%	25%	7%	14%		25%	18%	43%
2-digit COFOG																	
total / average	14	1		1,5	5,5	6	t+ 8,0			2,1	5,9	6			0,5	3,5	10
% of total		7%		11%	39%	43%				15%	42%	43%			4%	25%	71%

(In question 7, two Member States split their answers between "C" and "D")

Questions 8 and 9 concern the comparability of COFOG data with other statistics, i.e. OECD datasets.	
In this case the meaning of the categories from A to E is the following:	
A	Possible in the short time without relevant efforts.
B	Possible in the medium/long period without relevant efforts
C	Possible in the short time but with relevant efforts and provided a common commitment is given (e.g. by ECOFIN)
D	Possible in the medium/long period but with relevant efforts and provided a common commitment is given (e.g. by ECOFIN)
E	Not possible even in the medium/long period

8															Is it possible to <u>identify the reasons</u> of discrepancies between COFOG data and correspondent data in OECD datasets?				
COFOG functions	Member States	Current data					Calculation for years 2003–1999					Backward calculation 1998–1990							
		A	B	C	D	E	A	B	C	D	E	A	B	C	D	E			
total / average	11		1		6	3	1	2		8		2,5	2		5	1,5			
% of total			9%		55%	27%	9%	18%		73%		23%	18%		45%	14%			
9															Is it possible to <u>measure the various components</u> of the discrepancies between COFOG data and correspondent data in OECD datasets?				
total / average	11		1		4	5		1	2	7	1	1,5	1	2	4	2,5			
% of total			9%		36%	45%		9%	18%	64%	9%	14%	9%	18%	36%	23%			

[In Qu8 and Qu9 one Member State split her answers.]

10		How much of the data of 1-digit COFOG or 2-digit COFOG is (or could be) won by original census and how much is (or could be) indirectly estimated?												
	Member States	1-digit COFOG % of indirectly estimated data:					2-digit COFOG % of indirectly estimated data:							
		A <10%	B 10%-25%	C 25%-40%	D 40%-50%	E >50%	A <10%	B 10%-25%	C 25%-40%	D 40%-50%	E >50%			
All functions (on average)	total / average	14	11	0,5	1		1,5	8	0,5	1	1	1,5		
	% of total		79%	4%	7%		11%	67%	4%	8%	8%	13%		
R&D	total / average	12						8	0,5	1	1	1,5		
	% of total							67%	4%	8%	8%	13%		
Economic Affairs	total / average	14	11	0,5	1		1,5	7	1,5	1		2,5		
	% of total		79%	4%	7%		11%	58%	13%	8%		21%		
Housing / community amenities	total / average	14	10	1,5	1		1,5	7	1,5	1	1	1,5		
	% of total		71%	11%	7%		11%	58%	13%	8%	8%	13%		
Education	total / average	14	10	1,5	1		1,5	7	1,5	1		2,5		
	% of total		71%	11%	7%		11%	58%	13%	8%		21%		
Health	total / average	14	11	0,5	1		1,5	7	1,5	1		2,5		
	% of total		79%	4%	7%		11%	58%	13%	8%		21%		

(In question 10, one Member State split her answers.)

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II. FISCAL GOVERNANCE

INTRODUCTION: II. FISCAL GOVERNANCE

Establishing sound fiscal institutions is the first building block of the quality-concept for public finances since it affects all other aspects of QPF. Institutions can act as safeguards against the volatility of day-to-day policy priorities and thus help to warrant the ‘sustainability of sustainable policies’. Fiscal governance via institutions – i.e. rules and/or institutional agents – works mainly on two levels. First, institutions make a decisive difference in reaching and maintaining a sound fiscal stance on the macro-level, i.e. in reducing and constantly curbing budget deficits. And second, new rules and institutions enable modern, results- and efficiency-oriented ways of steering the administration on the micro-level. Naturally, both perspectives supplement each other.

The first paper in this section by the European Commission (2006) provides a wide-ranging overview of the use of *numerical* fiscal rules in the European Union and their impact on the fiscal stance. The empirical study points out that the number of rules has increased significantly over the past twenty years. This was usually a good move for the respective countries. Overall, the analysis corroborates the influence of fiscal rules in determining budgetary outcomes. It underlines the relevance of well-designed national fiscal rules and appropriate institutional fiscal frameworks to ensure sound fiscal policies.

Debrun, Hauner and Kumar (2007) analyse the role of independent fiscal agencies in lowering and restraining budget deficits. The success with delegating monetary policy has led some to argue that analogous fiscal agencies could play a useful role in increasing fiscal discipline. The paper identifies two main types of institutions, independent fiscal authorities (IFA) and fiscal councils (FC). Full-fledged independent IFAs may have some appeal from the analytical perspective, yet the authors do not consider them a viable political option. In contrast, fiscal councils which offer independent analysis, forecasts and normative judgments are likely to be more generally acceptable and could help reduce policy distortions.

Specific design issues of fiscal rules are discussed in the paper Anderson and Minarik (2006). They compare, for example, deficit and expenditure rules and discuss other design features with a view of the multiple objectives of the budget. They conclude with a clear recommendation of rules that administer government expenditure directly.

The following paper by Curristine, Lonti and Joumarq (2006) looks for the ways and means to improve the efficiency of public sector activities on the micro-level. The authors review main institutional drivers that may contribute to improving public sector efficiency. They find that there is no one-size-fits-all blueprint for reform; yet evidence nevertheless suggests that three factors may improve public sector performance best: (i) the decentralisation of political power and spending responsibility to sub-national governments, (ii) appropriate human resource management practices, and (iii) – in the education and health sectors – higher scales of operations. The authors also focus on one other important institutional factor in more detail: on performance information and its use in the budget process.

Country experiences in modernising public administrations and improving the efficiency and effectiveness of public spending are surveyed by the ensuing European Commission issues note (2007). It becomes obvious that virtually all Member States are undertaking initiatives to reform their public administrations. These reform steps may vary significantly from one to another, depending on starting points, differences in political and administrative cultures and different sources of public sector inefficiencies. Still, Member States appear to focus their reform attention primarily on four main areas: performance-orientation, organisational aspects, human resource management, and encouraging the use of ICT tools.

The section on fiscal governance concludes with two instructive country studies on the implementation of core institutional reforms. The paper by Hansson-Brusewitz and Lindh (2005) gives a record of the

Swedish experience with medium-term, nominal expenditure rules. They were introduced in response to a severe economic and fiscal crisis in the mid-1990ies. The authors point out that these rules decisively influenced the ensuing fiscal consolidation. The rules were very successful although, to some extent, they also promoted incentives to circumvent them. Bobay (2005) describes the French budget reform of 2001. The paper focuses on the new constitutional Bylaw regarding budget appropriation and implementation and describes the new system of programme-based budgeting, the new appropriations powers of the Parliament, the increased autonomy of the administration, and the integrated performance system.

NATIONAL NUMERICAL FISCAL RULES FOR SOUND PUBLIC FINANCES

European Commission

Paper completed: Spring 2006

Summary

The economic literature has provided abundant analysis on how taxes, government expenditures and budget balances should be set over the business cycle for fiscal policy to be considered optimal and sustainable. However, experience has shown that such policies were in practice not always pursued by policymakers. Some of the most evident signs have been the tendency to conduct pro-cyclical fiscal policies and the large increase of debt ratios in a number of developed economies. The debate on the ways to favour sound fiscal policies has focused on the need to rebalance the incentives of policy-makers or impose constraints on the conduct of fiscal policy via the introduction of adequate fiscal rules and institutions.¹

At EU level, the Maastricht Treaty and the Stability and Growth Pact (SGP) impose budgetary obligations on Member States. In order to ensure the respect of objectives, both of them also stress the importance of national rules and institutions for budgetary discipline. In particular, the report on the SGP reform endorsed by the European Council on 22 March 2005 states that *national budgetary rules should be complementary to the Member States' commitments under the Stability and Growth Pact* and that *national institutions could play a more prominent role in budgetary surveillance to strengthen national ownership, enhance enforcement through national public opinion and complement the economic and policy analysis at EU level*. The importance attached to national fiscal rules and institutions in the reformed SGP reflects the consensus among Member States that appropriate national fiscal rules and institutions could provide the basis for sound and sustainable budgetary developments and contribute to the respect of the objectives of the EU fiscal framework.

This chapter focuses on national numerical fiscal rules. It exploits the results of surveys which review the rules in force in the 25 EU Member States and assesses whether these arrangements have an effect on budgetary outcomes. The definition of 'fiscal rules' follows that proposed by Kopits and Symanski (1998), i.e. a *permanent* constraint on fiscal policy, expressed in terms of a *summary indicator* of fiscal performance. Numerical fiscal rules therefore specify numerical targets or limits for key budgetary aggregates such as annual budget balance, expenditure, revenue, or debt. The questions related to the desirable characteristics of the budgetary process, which have already been extensively addressed in the literature, are outside the scope of this chapter.

The analysis of the survey on numerical fiscal rules leads to the following conclusions:

¹ This is an excerpt from Chapter III of the European Commission's *Public Finance Report in EMU 2006*. Due to space constraints, here we do not include the section on fiscal institutions.

- The number of rules in force in EU Member States has increased continuously over the past twenty years. This tendency has been accompanied by an interesting evolution in terms of the government sub-sectors covered by rules. While in the early 90s fiscal rules were mostly applied to territorial (local and regional) governments, a relatively recent feature has been the development of fiscal rules for the whole of the general government sector and the social security sub sector. This may be a response to the increasing spending pressures in the social security sector and to the introduction of the EU fiscal rules, which impose requirements for the general government deficit and debt.
- The characteristics of the numerical fiscal rules in place vary depending on the sub-sector to which they apply. Most of the numerical rules applied to regional and local governments are enshrined in a legal text or constitution, while rules applying to the central government or the whole of the general government sector are more frequently based on coalition agreements or political commitments. Similarly, while rules for regional and local governments seem to have relatively strong enforcement mechanism, rules applying to general and central governments generally do not envisage ex ante defined actions in case of non compliance. Another interesting finding appears when taking into account the type of budgetary governance, namely the distinction between the so-called *contract* and *delegation* countries². Both sets of countries have a similar number of numerical fiscal rules. However, contract countries have more numerical fiscal rules applied to central government and social security sectors while delegation countries have a higher number of fiscal rules implemented at regional and local level.
- Statistical and econometric exercises suggest the existence of a link between numerical rules and budgetary outcomes. A preliminary descriptive analysis of data shows two interesting results. Firstly, the primary CAB on average improved in the years following the introduction of fiscal rules while it remained broadly stable over the period under consideration (1990–2005). Secondly, primary government expenditure adjusted for the cycle tend to grow more slowly in the years following the introduction of numerical expenditure rules.
- When enriching the analysis by taking into account the coverage and characteristics of fiscal rules and by controlling for various factors that may affect government budget balance and developments in primary expenditure (debt ratio, cyclical conditions), the presumption of a link between numerical fiscal rules and budgetary outcomes is strengthened. The analysis suggests that an increase in the share of government finances covered by numerical fiscal rules leads, ceteris paribus, to lower deficits or higher surpluses. In the case of expenditure rules, it appears that an increase in the coverage of government finances by expenditure rules leads to a reduction in the primary expenditure-to-GDP ratio. The analysis also suggests that the characteristics of fiscal rules matter for their influence on budgetary outcomes. Strong rules, enshrined in law or constitution and foreseeing automatic enforcement mechanisms, seem to have a larger influence on budgetary outcomes.

The main conclusions of the analysis of the survey on national independent institutions can be summarised as follows:

Overall, the empirical analysis in this part of the report confirms the influence of national fiscal rules in determining budgetary outcomes. It underlines the relevance of well designed national fiscal rules and appropriate institutional fiscal frameworks to ensure sound fiscal policies and the respect of the objectives of the EU fiscal surveillance.

² *Delegation* countries tend to centralise their budget process by delegating powers to a strong Minister of Finance. They generally have single-party governments or government coalitions of ideologically aligned parties. In contrast, *contract* or *commitment* countries usually present governments with a larger political dispersion. Different parties and ministries take part in the negotiation process leading to an agreement (a 'contract') on a set of key fiscal objectives. In theory, contract countries are expected to show a greater number of fiscal rules than delegation countries (see Box 1 for more details).

1. Introduction

The Maastricht Treaty and the Stability and Growth Pact (SGP) impose budgetary obligations on the Member States. In order to facilitate the respect of these obligations, both of them also stress the importance of national rules and institutions for budgetary discipline. The Protocol on the excessive deficit procedure annexed to the EU Treaty states that *Member States shall ensure that national procedures in the budgetary area enable them to meet their obligations in this area deriving from this Treaty*. The report on the SGP reform endorsed by the European Council on 22 March 2005 states that *national budgetary rules should be complementary to the Member States' commitments under the Stability and Growth Pact and that national institutions could play a more prominent role in budgetary surveillance to strengthen national ownership, enhance enforcement through national public opinion and complement the economic and policy analysis at EU level*.

The importance attached to national fiscal rules and institutions in the reformed SGP is not fortuitous. Recent economic history provides evidence that policymakers do not always pursue time consistent and sustainable fiscal policies: the tendency to conduct pro-cyclical fiscal policies and the recent increase of debt ratios in a number of developed economies point to the existence of a deficit bias. The explanations for this bias generally point to the consideration that policymakers may not have the right incentives to pursue sound public finances in the long run. In this context, a number of proposals have been put forward with the intention of modifying national fiscal frameworks that form the environment, the incentives and the constraints under which policymakers operate, in a way that would foster the conduct of sound fiscal policies.

The proposals concerned notably (i) the procedural rules laid down in law or constitution governing the elaboration and implementation of the annual budget law; (ii) the numerical fiscal rules which are guiding or imposing constraints on the discretion of policy-makers; and (iii) national independent institutions, other than government and Parliament, possibly influencing fiscal policy.

This chapter reviews the numerical fiscal rules in force in the 25 EU Member States and assesses their influence on budgetary developments. The questions related to the desirable characteristics of the budgetary process have already been extensively addressed in the literature and are outside the scope of this chapter. The aim of the analysis is not to make an overall judgement on the quality of national budgetary rules and institutions in the EU countries. The study should therefore not be read as a plea per se in favour of particular arrangements, since there is no single best institutional framework that would be suitable for all countries.

Section 2 provides empirical evidence on the existence of a deficit bias in the EU countries and other developed economies. It discusses the main reasons for the existence of such a bias and some possible ways to address it. And Section 3 is devoted to the analysis of numerical fiscal rules in the EU Member States and their impact on budgetary developments. The analysis is based on a new dataset providing a comprehensive overview of existing numerical fiscal rules in the EU.

2. Rationale for the introduction of numerical fiscal rules at the national level

2.1. Introduction

The economic literature has provided abundant analysis on how taxes, government expenditures and budget balance should be set over the business cycle for fiscal policy to be considered optimal and sustainable. However, experience has provided ample evidence that such policies were in practice not always pursued by policy-makers. Some of the most evident signs have been the tendency to conduct pro-cyclical fiscal policies and the propensity to finance public expenditure with debt in a number of industrialised economies. The debate on the ways to address the deficit bias has focused on the need to

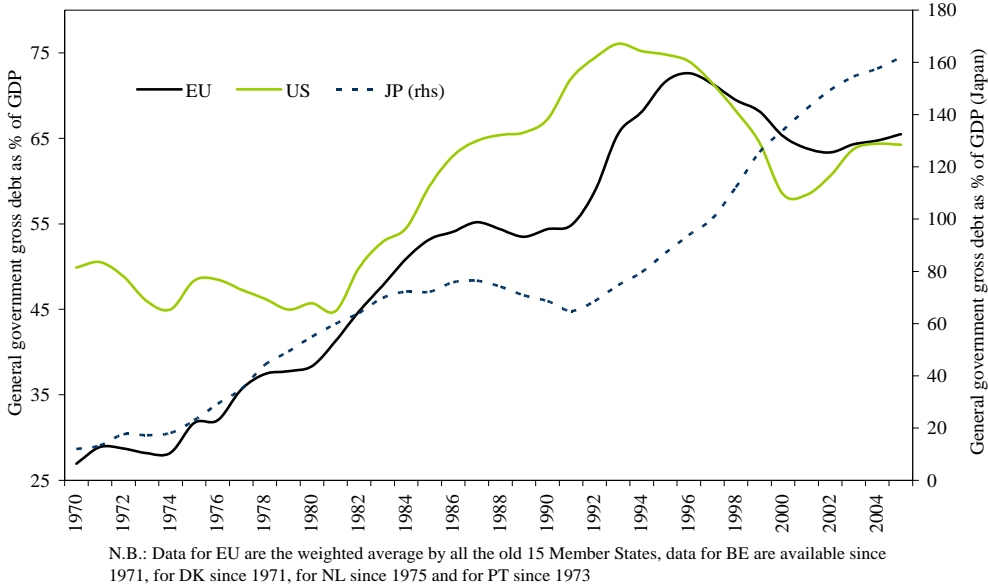
rebalance incentives of policy-makers and impose constraints on the conduct of fiscal policy, via the introduction of adequate fiscal rules and institutions. This section first provides empirical evidence for the existence of a deficit bias in most of developed economies (considerations related to the conduct of pro-cyclical policies are addressed in Part 4 of this report). Next, the main explanations for the existence of such a bias mentioned in the literature are reviewed. Finally, proposals for limiting or eliminating the deficit bias are examined.

2.2. The deficit bias in perspective

When looking at fiscal developments in a long-term perspective, it appears that episodes of protracted departure from budgetary balance have been rather uncommon in the history. Up to the first oil price shock, budgetary deficits were almost exclusively related to war episodes and were typically corrected promptly (see European Commission, 2004). The picture changed from the 70s onwards, when sustained deficits not related to exceptional public finance needs as during war periods were recorded in the most advanced economies.

The propensity to finance public spending with debt has become an increasing source of concern in Europe. As illustrated in Figure 1 below, in the last thirty years the general government gross debt-to-GDP ratio has been increasing rapidly in the EU. In countries like Germany and France, for example, debt ratios – not debt levels – more than tripled over the last three decades. Even if most EU governments started to shift gear during the 1990s with the agreement on the Maastricht Treaty and the run-up to EMU, deficit and debt levels remain high in a number of EU countries.³

Figure 1 - Developments in the debt ratio in the main industrialised regions since 1970



Source: Commission services.

In the absence of policy measures, government deficits and debt will further increase in the medium and long term. In most of EU countries, governments made in the past long-term welfare expenditure commitments which, against the background of demographic changes, i.e. low birth rates and longer life expectancy resulting in population ageing, may lead to unsustainable government finances. The recent long-run projections of the Commission show that, under unchanged policies, the debt ratio could follow

³ For instance, in 2005, the debt-to-GDP ratio reached 107.5 percent of GDP in Greece, 106.4 percent in Italy, 93.3 percent in Belgium, 67.7 percent in Germany and 66.8 percent in France.

an explosive path in most EU countries due to the large amounts of implicit liabilities that Member States have accumulated and continue to build up. In light of this challenge, addressing the causes for the deficit bias is a major and urgent challenge in a number of EU countries.

2.3. Reasons for the deficit bias point to the short-term horizon of policy-makers

2.3.1. Explanations for the deficit bias

The reasons for the conduct of undesirable fiscal policies leading to persistent deficits have been addressed extensively in the economic literature. Most explanations are based on political economy considerations related to the short-term horizon of policy makers, which in turn leads to time-inconsistent fiscal policies.

The electoral cycle and voters' fiscal illusion

A first possible explanation for the existence of a deficit bias is related to the fact that individuals (voters) tend to see the short-term benefits they can get from lower taxes and increased government spending but are not always fully aware of the possible long-term costs of such policies.⁴ This 'fiscal illusion' would notably explain why governments conducting policies leading to high and unsustainable deficits are not always punished by voters. Instead, voters' behaviour would provide incentives for opportunistic politicians to improve their chances to be re-elected through the implementation of unfinanced tax reductions or expenditure increases.⁵ This can also result in asymmetric fiscal policy over the cycle, since governments generally get more support for implementing expansionary fiscal policies during downturns than for consolidating government finances in upturns.⁶

An alternative argument why voters would not punish excessive lending has to do with intertemporal redistribution. The generation that is alive today may prefer leaving the burden of debt to future generations while taking advantage of today's lower taxes and higher public spending. Since the current generation is the only one that votes, such preferences may provide incentives for undesirable policies from a society point of view.

Short-term strategic behaviour of political parties

Another explanation for the deficit bias is based on the influence of strategic actions of political parties. Several authors (see notably Persson and Svenson, 1989) argued that the behaviour of political parties that are likely to alternate in office can feed the deficit bias. For instance, governments with little chances of being re-elected may be tempted to run deficits and accumulate debt in the course of their mandate so as to prevent future governments from engaging in ambitious programmes or in activities inconsistent with the priorities of the administration currently in power (Tabellini and Alesina, 1990). As a result, the larger the probability of an electoral defeat for the administration in power and the larger the difference in preferences between parties, the larger the deficit bias may be (Calmfors, 2005). This explanation might be particularly relevant for those countries experiencing a high political unrest.

⁴ See Alesina and Perotti (1994) and papers of the "public choice" school (Buchanan (1959), Buchanan and Wagner (1977), Buchanan and Tullock (1962)).

⁵ Persson and Tabellini (1998) showed that taxes are generally cut before elections and that painful fiscal adjustments are postponed after elections. Buti and van den Noord (2004) put in evidence the role of electoral cycles in explaining budgetary developments.

⁶ While electoral cycles and "fiscal illusion" have so far been widely accepted as explanatory elements for the deficit bias, this view has been challenged by recent research. See notably Brender and Drazen (2006).

Fragmented governments and the common pool problem

Another part of literature has studied the influence of voting rules and political systems on budgetary outcomes. Roubini and Sachs (1988) argued that the extent of dispersion of political power among different parties in the government could explain part of the rising spending pressures that appeared in the 70s and 80s. At that time, the growing strains on public budgets were not associated to demographic factors but to pressures exercised by different groups of interest through political parties. The theoretical underpinning of this explanation draws on the “common pool” problem, which arises when several players representing different interest groups bargain on the allocation of public resources with the view to satisfy their own base. Each actor tends to maximise appropriation, without internalising the overall budget constraint (Hallerberg and Von Hagen, 1999). In the absence of a clear delegation of powers to a strong Finance Minister (delegation approach) or of preliminary agreements or pacts within the cabinet (contract approach) to decide on budgetary allocations in a centralised manner, this situation can lead to a deficit bias.

2.3.2. Recent economic and political developments might have strengthened those elements behind the deficit bias

Most of the possible explanations for the deficit bias described above were already valid a long time ago. However, as previously seen, the deficit bias has gained considerable strength from the 1970s onwards. This suggests that a number of recent political and economic developments have had an influence on the deficit bias.⁷

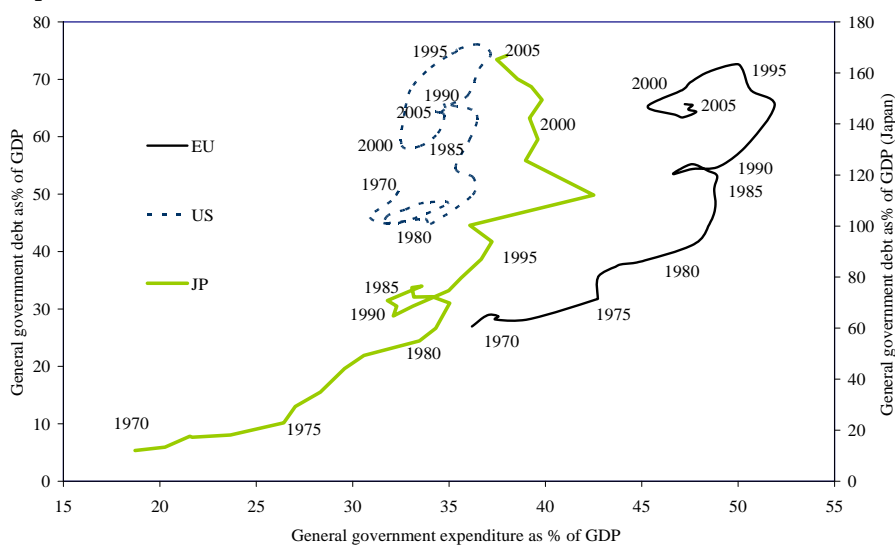
Lower potential growth, the size of the public sector and globalisation

The increase in the deficit bias has coincided with decelerating growth rates in most advanced economies and an increase in the size of the public sector reflecting the involvement of governments in a growing number of economic activities (e.g. the production of goods and services) and the extension of the welfare state (see Figure 2).⁸ The higher expenditure associated with the increasing demand for public services were not always matched by similar increases in revenues. This can be explained by the potential economic and electoral costs of raising an already high tax burden in an integrating world economy in which certain tax bases have become more mobile. Obviously, this does not entail a causality relationship between the size of the government and the deficit bias; some countries show simultaneously sizeable public sector and sound fiscal positions. This only suggests that large public sectors might favour those elements behind the deficit bias.

⁷ Political changes occurred during the twentieth century could also partially explain why those elements behind the deficit bias have gained strength. It is broadly recognised that policy making in democratic systems is associated to an inherent deficit bias largely due to the elements described in section 2.3.1. As democratic regimes extended through most of industrialised countries those factors linked to the electoral cycle and 'selfish generation' may have had an increasing influence on the deficit bias.

⁸ Explanations for the growing size of public sectors over the last decades point to a wide range of possible causes: from the Wagner's Law and Baumol disease theories to interpretations arguing that the expansion of the public sector mostly stemmed from economic policy decisions reflecting changing perceptions about the role of the government. In line with this reasoning, Rodrik (1998) argues that trade openness and market integration experienced in recent decades may help explain the rising burden on public budgets caused by public social expenditure, subsidies and transfers. The degree of exposure to international competition would increase the demand for insurance against external shocks and more open economies would have larger public sectors. This might have bolstered the tendencies towards time inconsistent fiscal policies and led to a higher deficit bias (Annet, 2005).

Figure 2 - Developments in the debt ratio in the main industrialised countries and in the EU over the last 30 years



Source: Commission services.

The role of monetary unions

The incentives for the conduct of unsound fiscal policies may also be stronger in a monetary union (Weale, 2004). In flexible exchange rate regimes, the negative effects of unsustainable or pro-cyclical fiscal policies have a direct negative impact on the country concerned (e.g. through higher real interest rate and lower growth prospects).⁹ In a monetary union, the effects of an expansionary fiscal policy on economic growth may be larger than would be the case in absence of monetary union because there is little crowding out of private investment and consumption due to the partial interest rate response. In addition, the adoption of a common currency eliminates the exchange rate risk and the associated interest rate risk premia among the participant countries, thus weakening the discipline and signalling function normally exerted by financial markets.¹⁰ In the long term, if excessive borrowing in one country or group of countries leads to inflationary pressures or even, in the extreme, to a risk of default, the implications in terms of monetary policy and financial stability may be shared by all the members of the union.

2.4. How can the deficit bias be addressed?

The debate on the ways to address the deficit bias has focused on the need to rebalance the *incentives* of policy-makers or / and to impose *constraints* on the conduct of fiscal policy. A commonly accepted view is that budgetary governance structures should provide sufficient information and the right incentives for governments and institutions concerned to interact in a way that favours or ensures sound fiscal policies.

Institutional settings at national level can play an important role in containing spending and deficit biases. These settings include in particular (i) the *procedural rules of the budgetary processes*, i.e. the process laid down in law or constitution governing the elaboration of the annual budget law; (ii) the *numerical fiscal rules* which are guiding or imposing constraints on the discretion of policy-makers; and (iii) the *independent bodies or institutions* in charge of providing inputs (forecasts, analysis) and formulating recommendations in the area of fiscal policy.

⁹ Obviously, such policies would also have negative effects in fixed exchange rate regimes.

¹⁰ This can be seen in developments of euro area government bond yields, which point to a narrowing of spreads across countries.

As mentioned in the introduction, the questions related to the desirable characteristics of the budgetary process are outside the scope of this chapter. The main findings of the literature on this issue are summarised in Box 1. The following sub-sections focus on the role of numerical fiscal rules and independent institutions, other than government and Parliament, which may have an influence on the conduct of fiscal policy.

2.4.1. Numerical fiscal rules

A simple way to promote or ensure the implementation of time-consistent policies is the introduction of numerical fiscal rules. Such rules can be defined in many different ways. They can for instance introduce limits on the deficit or debt of entities of the general government sector (budget balance and debt rules), on a yearly basis or on average over a given period. Alternatively, they can impose constraints on some categories of government expenditure or tax revenues (expenditure and revenue rules). A detailed typology and review of the properties of different types of fiscal rules is included in section 3.2 of this Chapter.

While not fully ruling out discretionary policy, fiscal rules, if enshrined in constitution or law and having strict monitoring and enforcement mechanisms, can impose binding constraints on the conduct of fiscal policy, and thereby *directly* contribute to fiscal discipline. The influence of numerical fiscal rules based on political commitments or informal agreements between different tiers of general government is more *indirect*. Such rules provide guiding principles for the conduct of fiscal policy and benchmarks against which it can be assessed. Apart from their influence on the deficit bias, numerical fiscal rules can also positively contribute to policy coordination between different levels of government, help mitigate uncertainty as to future government actions and, if properly designed, contribute to improving the quality of public finances.

Numerical fiscal rules are also subject to a number of drawbacks. Notably, they may be ineffective if they are not backed by strong political commitment or if they are not complemented by domestic budgetary institutions ensuring an appropriate monitoring and enforcement (von Hagen and al., 2005). Other well-known criticisms are that numerical fiscal rules do not easily allow dealing with unexpected circumstances, changes in the economic situation and preferences. For instance, some categories of fiscal rules may hamper the stabilisation function of fiscal policy (e.g. some types of balanced budget rules). Several authors (see notably Wyplosz, 2002a) also argued that rules tend to be rigid and artificial (setting arbitrary debt or deficit limits) and that they can be easily circumvented, e.g. through creative accounting. As argued by Kopits and Symanski (1998), there is therefore a need to carefully consider the design of fiscal rules (see also European Commission, 2005).¹¹

2.4.2. Independent institutions, other than government and Parliament, influencing the conduct of fiscal policy

Another way to address the deficit bias is to complement the existing national institutional framework by independent public bodies designed to limit or ensure an appropriate use of discretion in the conduct of fiscal policies. In principle, such bodies can contribute to improve the conduct of fiscal policy in two different ways.

The *first* possibility would be to delegate part of fiscal policy to an 'independent fiscal agency'. There is currently no example of such 'independent fiscal agency' and their creation is not seriously envisaged

¹¹ According to Kopits and Symanski (1998), eight criteria should be taken into account when assessing the design of fiscal rules. Fiscal rules should be *well-defined* (no ambiguous definitions and competence divisions and clear escape clauses); there should be a *transparent* data reporting and accounting conventions; rules should be *simple* and *flexible* (rules should allow to deal with exceptional events). Rules should be *adequate* in relation to their final objectives, *credible* and *enforceable*. Finally, they should be *consistent* internally and with other policy objectives and *supportive of structural reforms*.

anywhere. However, a number of theoretical proposals, inspired by the success of delegation of monetary policy to independent central banks, were put forward by the academia.¹²

According to these proposals, a number of fiscal policy choices would be entrusted to a non-political body. Wyplosz (2005) argues for instance that an independent fiscal agency could be mandated to decide, every year, on the general government balance to be targeted in the Budget. The agency would set the target with the view to achieve in the long run a debt ratio objective specified by the Parliament. Whether there is a case for delegation of part of fiscal policy to such independent institutions is discussed more in depth in *Public Finance Report in EMU 2006*.

Box 1 – Procedural rules of the budget process and budgetary outcomes

Economic literature has underlined the importance of the characteristics of the budgetary process to achieve a level of aggregate expenditure consistent with overall macroeconomic constraints (see von Hagen 1992; von Hagen and Harden 1994; Poterba and von Hagen 1999; Strauch and von Hagen 2000; Hallerberg 2004). The budget process is governed by a number of procedural rules laid down in law or constitution. These rules establish the role of a limited number of participants which have to carry out their distinct tasks according to a specified timetable. A key element of the process is related to the distribution of powers between the government and the legislative branch and within the executive. Other important aspects concern which ministry has the agenda-setting power, how possible disputes between Ministries can be solved and the amendment power of the Parliament.

Among the desirable characteristics of the budget system, comprehensiveness, transparency and reliability are particularly important. Comprehensiveness is ensured if the budget covers almost all of government transactions. In practice, all public resources should be directed to a common pool from which expenditures are decided according to policy priorities. In this context, the use of extra budgetary funds should be exceptional. Transparency is notably achieved through a specification of the roles and responsibilities of all participants to the budget process and publication of reports at different stages of the process (pre-budget report, infra-annual monitoring reports, end-year re-port on compliance with plans, audit reports examined by Parliament). Finally, the budget plans are considered re-liable if they are based on reasonable macroeconomic projections and if new policies are assessed carefully and their future costs and implications taken into account on a multiyear planning horizon.

Empirical research has looked at whether the key characteristics of the budget processes have an influence on budgetary outcomes. For example, the pioneering study by von Hagen (1992) builds an index that captures the degree of centralisation of the budget process. It covers the stages of: (i) budget formulation (including restrictions on the budget and the relative position of the Minister of Finance vis-à-vis the spending ministers) (ii) budget approval (focusing on the degree to which amendments in Parliament may increase the size of the budget) and (iii) budget implementation. Alesina et al (1999) considered three different dimensions: (i) fiscal constraints that may be conducive to fiscal discipline; (ii) hierarchical procedures and (iii) transparency of the procedures. Both studies found evidence of a statistically significant link between the characteristics of the budgetary procedures and budgetary outcomes.

Centralisation of the decision-making in the budgetary process helps addressing the common pool problem. Several authors underlined that a high degree of centralisation is necessary to ensure a comprehensive view of the budgetary implications of all spending requests, and that it forces participants to recognise the real costs and benefits of each spending decision. Two main approaches to centralisation are generally identified (Hallerberg and Von Hagen 1999). Under the delegation approach a single policymaker, usually the Finance Minister, can significantly influence the budget process. Typically he is vested with agenda-setting power relative to other ministries in the preparation stage. He is responsible for monitoring the implementation of the budget and can correct deviations from plans. In countries adopting the delegation approach, the Parliament has generally a limited role in amending the cabinet's proposals. In the contract approach all ministries take part in a negotiation process leading to an agreement on a set of key fiscal figures and objectives, generally in a medium-term

¹² See notably Calmfors (2003) and Wyplosz (2005).

perspective. The Finance Minister has strong monitoring and enforcement powers in the execution stage. The Parliament has in general strong powers to amend the budget proposal.

The choice of the approach to centralisation depends on country-specific characteristics. Literature (Hallerberg and Hagen 1999) has underlined that the ideal way for a country to address common pool problems (see section 2.3.1) depends on its electoral system and the resultant degree of political dispersion of governments. Countries with an ideologically unified government (i.e. a one-party government or in which parties in government are close ideologically) generally rely on the delegation approach. Countries in which the government is less unified ideologically generally rely on fiscal contracts (e.g. coalition agreements). Several studies have shown that the approach followed by countries is also linked to their size (see European Commission (2005) and Von Hagen et al. (2002)). Large EU Member States are mostly delegation countries. In practice, the classification of countries according to the approach chosen to centralise the budgetary process is not always evident. Indeed, some countries combine features of both approaches (e.g. Denmark and Sweden), which complicates the categorization, and reforms of fiscal institutions may change the classification of some countries over time.

The *second* possibility consists of institutions whose work may contribute to improving the conduct of fiscal policy in a more indirect way. These institutions, denominated as 'Fiscal Councils' in some pieces of literature, are not mandated to carry out any particular fiscal policy task (no delegation). Among other activities, they can ensure that fiscal policy is based on unbiased inputs (e.g. through the provision of independent macroeconomic forecasts), provide analysis on fiscal policy issues (e.g. independent estimates of the cost of policy measures; analysis of the sustainability of government finances), and release regular assessments and recommendations related to fiscal policy, with the view notably to increasing 'reputation costs' for the conduct of unsound policies.

These institutions differentiate from existing 'think tanks', such as some private banks' research departments, by the fact that they are primarily financed by public funds. Specific arrangements (legal provisions, appointment procedures etc.) are foreseen with a view to ensuring a high degree of independence vis-à-vis political authorities. As discussed in the *Public Finance Report in EMU 2006* (pp. 168-183, 189-195), several institutions of that kind are already in force in EU and other advanced economies and seem to have contributed to the conduct of sound fiscal policies.

2.4.3. Concluding remarks

Numerical fiscal rules and independent institutions: complements or substitutes?

At first sight, independent institutions can be viewed as an alternative to numerical fiscal rules since they also aim at eliminating possible distortions in the conduct of fiscal policy. However, in general, numerical fiscal rules and institutions should not be seen as mutually exclusives but rather as complements.

The existence of numerical fiscal rules reflecting the main fiscal policy objectives of a country can help specifying the mandate and facilitate the work of independent institutions. Fiscal institutions, on their side, can effectively contribute to an independent monitoring of the respect of the existing numerical fiscal rules, thereby increasing the chances that rules are respected. At the stage of budgetary planning and implementation, independent institutions can provide an assessment of whether budgetary plans and developments are in line with the rules. Ex post, independent institutions can increase the public accountability of the government, e.g. by providing a critical assessment of the reasons for possible non-compliance with the rule.

Another reason why rules and institutions could complement each other is that they potentially focus on different aspects of government finances. Numerical fiscal rules often apply to one sub-sector of the general government and generally have a short to medium-term orientation. On the contrary, independent fiscal institutions potentially conduct analysis covering the whole of government finances and may also consider the situation of government finances in a long-term perspective.

Consistency with the EU fiscal framework

The objectives of national fiscal rules and institutions largely fit with those of the EU fiscal framework. Adequate rules foster the attainment of sustainable budgetary positions and respect of the Treaty and SGP rules. Subject to their design and targets, national fiscal rules may also help preventing pro-cyclical loosening of the fiscal stance in economic ‘good’ times, which is also in line with one of the objectives of the 2005 reform of the SGP. However, compliance with national fiscal rules does not necessarily secure the respect of the EU fiscal rules. For instance, respect of expenditure rules does not guarantee convergence of the deficit towards levels consistent with the SGP, since this also depends on developments on the revenue side.

National independent institutions can also contribute to an effective functioning of the EU fiscal framework not only by tackling the main sources of fiscal profligacy at its roots but also by improving the knowledge and public awareness about economic and budgetary developments and raising reputation costs of non-compliance with the EU fiscal framework.

3. Numerical fiscal rules in the 25 EU Member States

3.1. Introduction

This section provides an overview of the numerical fiscal rules in force in the EU Member States and assesses whether these rules effectively influence budgetary outcomes. The definition of ‘fiscal rules’ followed in this chapter is that proposed by Kopits and Symanski (1998), i.e. *a permanent constraint on fiscal policy, expressed in terms of a summary indicator of fiscal performance, such as the government budget deficit, borrowing, debt or a major component thereof*. What distinguishes a numerical rule from the usual budget appropriations in the yearly budget cycle is therefore that there should be a *constraint* on one of the aggregates mentioned and that this constraint should be *permanent*. Numerical fiscal rules specify numerical targets for key budgetary *aggregates* such as annual budget balance, expenditure, revenue, or debt.

This section first reviews the different types of numerical fiscal rules and their properties with respect to various objectives assigned to fiscal policy. Then, it provides a descriptive analysis of the numerical fiscal rules in force in the EU Member States. Finally, the analysis investigates the existence of a link between numerical fiscal rules and budgetary outcomes.

3.2. Various types of numerical fiscal rules and their respective properties

The following broad categories of rules can be distinguished:

- *Budget balance, borrowing and debt rules*. Provided that targets are properly set, respect of such rules over time ensures the sustainability of government finances. These rules have been criticised for possibly introducing a pro-cyclical bias in the conduct of fiscal policy. Common ways to address this problem are to extend the time-horizon of the rule or exclude the cyclically-sensitive items of the budget from the rule coverage. Another well-known potential drawback is the risk that respect of these rule might be achieved through cuts in the most productive expenditure items (investment, R&D expenditure), which may be less politically-sensitive. To avoid this problem some items may be excluded from the coverage of the rule (e.g. golden rules). However, this can in turn lead to monitoring difficulties and may facilitate circumvention of the rule.
- *Expenditure rules*. The main objective of these rules is to ensure fiscal discipline through improved expenditure control. Such rules directly target the part of the budget that the government controls most directly, making the authority responsible fully accountable for the respect of the rule. Expenditure rules can also be part of a strategy for redirecting public expenditure according

to the priorities of the government by allowing increases above or below baseline for specific components. They can be instrumental in limiting the size of the government and hardly prevent automatic stabilisers from operating.

- *Revenue rules* can pursue different objectives. They can notably be designed to limit the increase in the tax burden or the size of the government, or on the contrary to ensure a sufficient amount of revenues for the government to finance its priorities. They can also aim at avoiding the conduct of pro-cyclical policies by pre-defining the allocation of possible higher-than-expected revenues.

Table 1 below provides a review of the respective properties of various ‘families’ of fiscal rules with respect to different possible economic objectives.

Table 1 - Properties of various 'families' of numerical fiscal rules with respect to different economic objectives

	Effect on the deficit bias (*)	Effect on macroeconomic stabilization	Effect on the quality of government finances	Other properties
Budget balance rules	Direct and positive Efficiency in addressing the deficit bias depends on the degree of ambition of the numerical targets and on the design (time-horizon, definition of the objective, coverage) and characteristics of the rule (in particular monitoring and enforcement procedures).	Possibly negative – depends on the design of the rule Budget balance rules defined in nominal terms (in levels and as a % of GDP) introduce a pro-cyclical bias in fiscal policy. The bias is reduced in case the rule has a multiannual perspective. Budget balance rules targeting a cyclically-adjusted balance or to be respected over the cycle do not have such a bias (subject to uncertainties on the quality of the cyclical adjustment).	Positive or negative, depending on the design of the rule A negative effect is possible in case no item is excluded from the coverage of the rule, due to the political temptation to cut expenditure categories that are less politically-sensitive, including 'productive' expenditure (expenditure on R&D, infrastructure and education). Positive effect in case selected 'productive' items are subject to less strict constraints or excluded from the scope of the rule. This may however imply risks of inefficient allocation of public resources. Additionally, exclusion of selected items can raise monitoring difficulties and facilitate circumvention of the rule.	Such rules are frequently applied at regional and local levels of government. They are subject to a trade-off between, on the one hand, simplicity and straightforward monitoring of the rule and, on the other hand, stabilisation/quality aspects.
Expenditure rules	Indirect and positive Efficiency in addressing the deficit bias depends on the degree of ambition of the numerical targets, on the design and characteristics of the rule, but also on tax developments.	Likely positive, but depends on the design of the rule Expenditure rules contribute to macroeconomic stabilization if the aggregate targeted by the rule is defined in level or growth rate of expenditure. Counter-cyclical contribution is maximal when the rule is defined in nominal terms (larger-than-expected budgetary adjustment in case of demand-pull inflation) and when the coverage excludes cyclically-sensitive items. Expenditure rules can however entail a pro-cyclical bias if they are defined in terms of an expenditure-to-GDP ratio (this is rarely observed in practice).	Positive or negative, depending on the design of the rule Same as for budget balance rules.	Such rules are relatively rare at local government level and frequent at central government level. They may contribute to contain the size of the public sector. High accountability of the government for the respect of the rule since such rules directly target the part of the budget that the government controls most directly. Accountability is maximal if specific items not fully under the control of the government are excluded from the coverage of the rule (e.g. interest payments, unemployment benefits).
Revenue rules	Positive or negative Rules imposing limits on revenues (e.g. aiming at stabilising or reducing the tax burden) may have a negative impact on the deficit bias if they are not coupled with other rules, e.g. budget balance or expenditure rules. Indeed, stringent tax limits may have a negative impact on borrowing costs (markets might consider that the risk of default becomes higher if constraints are imposed on the capacity of the authority to increase taxes). On the contrary, rules pre-defining the allocation of higher-than-expected revenues generally help lessen the deficit bias by avoiding a relaxation of the fiscal stance in good times (depends on the allocation rule).	Positive or negative Such rules can be slightly pro-cyclical in case the rule targets a given revenue-to-GDP ratio (due to the progressivity of the tax systems). They can be strongly pro-cyclical if the rule targets a given amount of revenues in nominal terms (such rules are rare). Revenue rules pre-defining the allocation of higher-than-expected revenues may limit the conduct of pro-cyclical policies in good times (if all additional cyclical revenues are allocated to deficit reduction).	Uncertain No evident influence on the quality of government finances. However, in case only some categories of taxes are covered by the rule there can be an impact on the structure of the tax system.	Revenue rules pursue a wide variety of objectives. Rules imposing limits on revenues may contribute to contain the size of the public sector.
Debt rules	Direct and positive Efficiency in addressing the deficit bias depends on the degree of ambition of the numerical targets and on the design and characteristics of the rule (in particular monitoring and enforcement procedures).	Possibly negative – depends on the design of the rule Depends on the design and time-horizon considered by the rule (see budget balance rules). In case the rule has to be respected over the business cycle, the stabilization objective is not hampered.	Positive or negative - depends on the design of the rule Same as for budget balance rules.	Borrowing constraints are generally applied at sub-central levels of government. However, in some countries debt limits for the general government sector are enshrined in the law or constitution.

(*) Positive (negative) effect on the deficit bias means a decreasing (increasing) effect

3.3. Existing numerical fiscal rules in EU Member States

With a view to having a comprehensive picture of *numerical fiscal rules* in place in the EU Member States and to investigate the existence of a possible link between the design of these rules and budgetary outcomes, a questionnaire was prepared (see Box 3) and submitted to the national authorities of the 25 EU countries. Both numerical fiscal rules enshrined in the constitution or law and those based on political commitment or agreement between different general government tiers were included in the survey. As already mentioned, the procedural rules governing the annual budget process are not covered.

The survey covers the period 1990-2005. Sixty numerical fiscal rules were considered in the analysis.¹³ Replies by Member States pointed to a larger number of rules, but some of them were not considered in the study because they did not meet the pre-defined conditions to be considered genuine numerical fiscal rules. The reasons justifying these exclusions were notably that:

- Some questionnaires concerned policy measures (e.g. freeze in the number of civil servants over a number of years) rather than genuine numerical fiscal rules;
- Some replies were related to procedural rules governing the budget process (relative powers of Parliament and government) and, therefore, could not be regarded as numerical fiscal rules;
- Some questionnaires concerned fiscal policy targets rather than numerical fiscal rules: the annual budgetary targets included in documents such as the Budget Law and the Stability and Convergence Programmes cannot be considered as numerical fiscal rules;
- Some rules were excluded to ensure a sufficient homogeneity of the sample.¹⁴

The analysis of the questionnaires shows that there is a great deal of variety in the design of numerical fiscal rules as regards their coverage, the type of rule and the definition of the target. Likewise, the statuses of the rules as well as the monitoring and enforcement mechanisms vary considerably. The interesting messages emerging from the descriptive analysis of the questionnaires are summarised below.

Distribution of rules by sub-sectors of general government

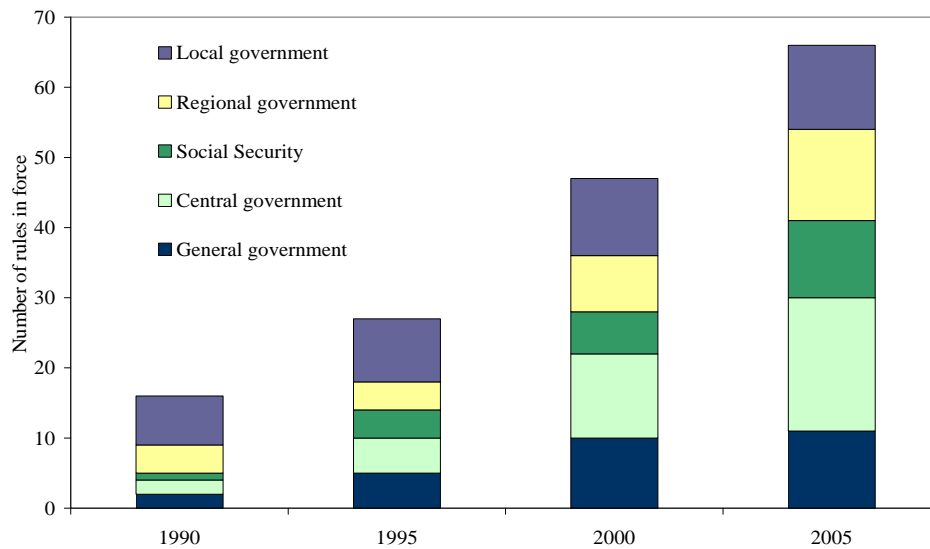
A first result is that the number of fiscal rules in force in the EU Member States has grown continuously over the past twenty years.¹⁵ At present, almost all EU Member States have numerical fiscal rules. The number of rules varies widely across countries: Germany and Finland have five numerical fiscal rules; Hungary and Austria have one (see Annex 1 for more details).

¹³ If those rules applied to more than one general government tier are counted according to number of sub-sector concerned (e.g. a balanced budget rule for regional and local governments would represent two rules), the sum of fiscal rules considered in the study would amount to 69 (66 in force in 2005). This figure is however attained by keeping rules for the whole of the general government as single rules.

¹⁴ An example of such rules consists of arrangements foreseeing minimal expenditure increases for some strategic items or rules governing transfers among general government tiers.

¹⁵ Obviously, the growing number of national fiscal rules in the EU is partly explained by the enlargements occurred since the 90s.

Figure 3 - Number of numerical fiscal rules in force in the EU Member States



Source: Commission services.

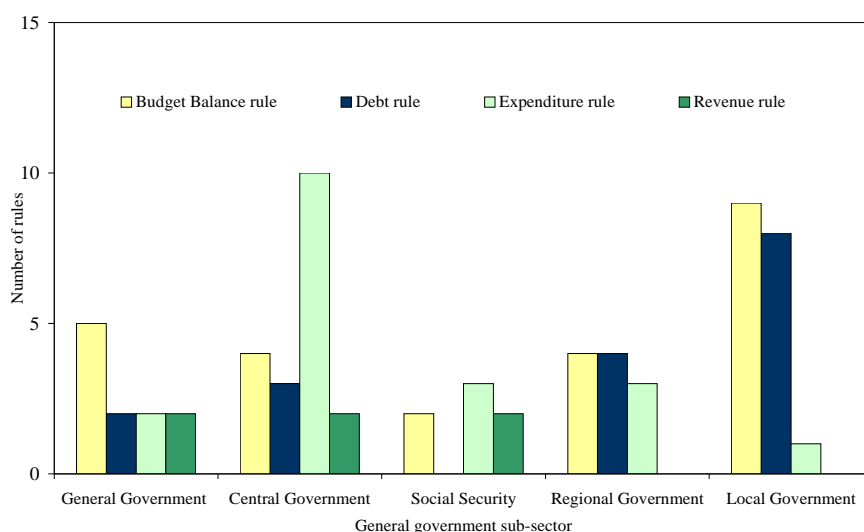
There has been an interesting evolution in terms of the government sub-sectors covered by numerical fiscal rules. In the early nineties, most numerical fiscal rules were applied at local or regional levels of government. This reflected the willingness of higher levels of government to impose constraints on local entities and the need to ensure sufficient coordination among general government tiers. Such rules continued to develop in the 90s and exist today in almost all EU Member States. A large and increasing number of numerical fiscal rules are found at the central government level. A relatively recent feature is the introduction of numerical fiscal rules in the social security sector and rules covering the whole of the general government sector. This may be a response to the increasing spending pressures in the social security sector and to the introduction of the EU fiscal rules, which impose requirements for the general government deficit and debt.

Distribution of the various types of numerical fiscal rules by fiscal aggregate

More than one third of the numerical rules in force in the EU Member States are budget balance rules (including golden rules) whereas expenditure and debt rules each represent about 25 percent of the total rules. Revenue rules account for less than 10 percent. Most of budget balance and debt rules are applied to regional and local governments and, to a lesser extent, to the central government. In contrast, expenditure rules are more frequent in the central government and social security sub-sectors ¹⁶.

¹⁶ In the following graphs, the total number of fiscal rules does not always coincide since some replies did not answer all the questions included in the survey.

Figure 4 - Number of numerical fiscal rules by sub-sector of general government



Source: Commission services.

There is also a large diversity as regards the aggregates targeted by the various types of rules (see Table 2). One third of budget balance rules in force target a balanced budget while one quarter are golden rules. Interestingly, only few budget balance rules, all of them applying to the general and central governments, are defined in structural (or cyclically-adjusted) terms. About half of debt rules, generally applied to local governments, establish debt limits depending on the repayment capacity (e.g. limit to total indebtedness in relation to current revenues). Expenditure rules are evenly distributed between those defining ceilings and those targeting expenditure growth rates. While ceilings are generally expressed in nominal terms, targeted growth rates are equally divided between nominal and real increases. Finally, more than half of revenue rules establish pre-defined principles for the allocation of higher-than-expected revenues.

Table 2- Target definitions by type of rule¹⁷

Budget Balance Rules	Golden rules	Balanced budget rules	Nominal ceiling	Ceiling as a % GDP	Rules in structural terms	Total
	5	8	5	1	3	22
Debt Rules	Debt ceiling in nominal terms	Debt ceiling as a % of GDP	Debt ceiling related to repayment capacity	Other		Total
	5	2	7	1		15
Expenditure Rules	Nominal expenditure ceiling	Real expenditure Ceiling	Expenditure growth rate (nominal)	Expenditure growth rate (real)	Other	Total
	5	2	3	3	2	15
Revenue rules	Tax burden as a % GDP	Rule related to tax rates	Allocation of extra revenues	Other		Total
	0	1	3	1		5

Source: Commission services.

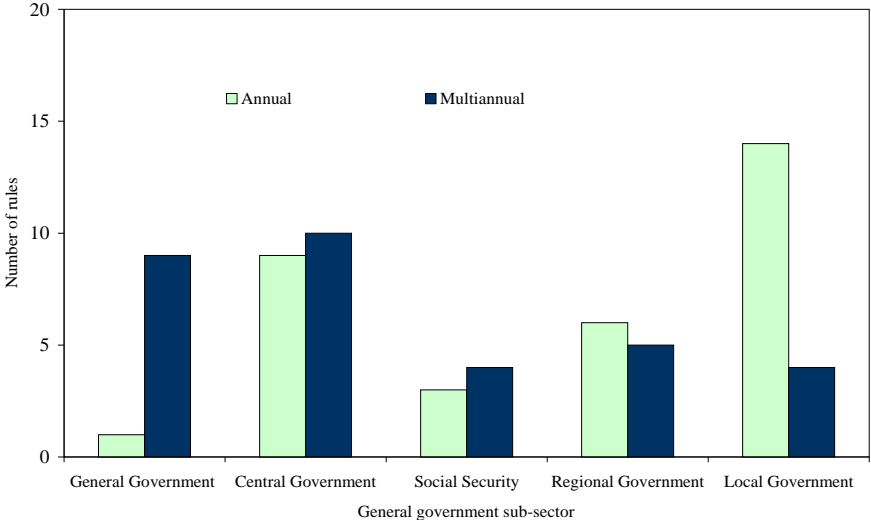
The characteristics of the rules depending on the level of government to which they apply

Numerical fiscal rules in EU Member States are evenly divided between those that are incorporated into a multi-annual budgetary framework and those applied on an annual basis. Rules applied to regional and local governments rely preponderantly on annual schemes while most of those concerning the general

¹⁷ Without disaggregating fiscal rules according to number of sub-sectors concerned. Only rules in force in 2005 were considered in this table (57 rules).

government and central government sectors have a time horizon that goes beyond the yearly budgetary cycle and are integrated into a multi-annual fiscal framework (see Figure 5). This provides an indication that fiscal rules applied at higher levels of government pursue medium-term policy objectives while those concerning local governments focus on short-term budgetary considerations.

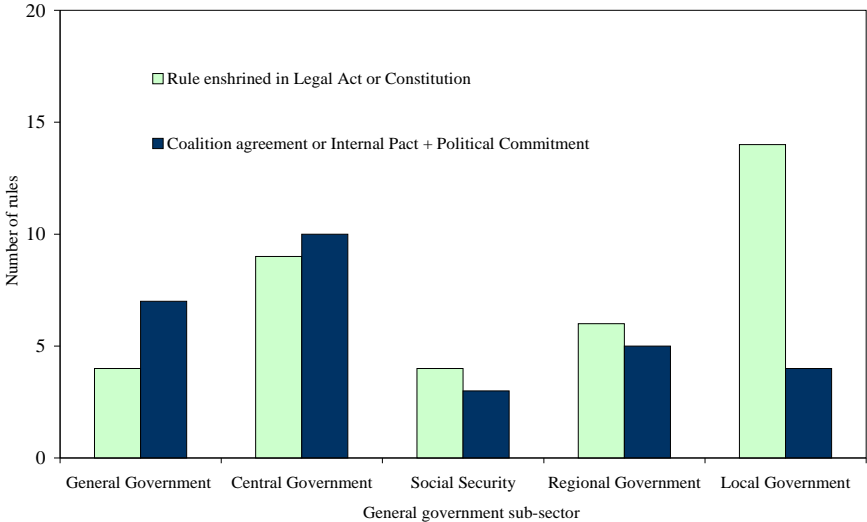
Figure 5 - Time horizon of fiscal rules by sub-sector of general government



Source: Commission services.

Interestingly, the large majority of numerical fiscal rules applied to local and regional levels of governments are enshrined in law or in constitution, while rules concerning central and the whole of the general government sector tend to be more based on political agreements (internal stability pacts or other forms of political agreement or commitment).

Figure 6 - Statutory base of fiscal rules by sub-sector of general government

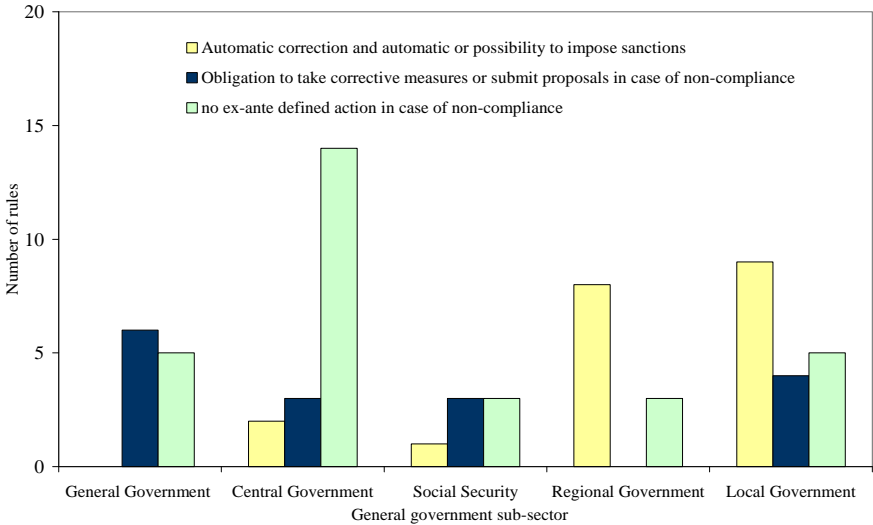


Source: Commission services.

Likewise, enforcement mechanisms are generally stronger for those rules applied at local and regional government levels than for rules applying to the central government (see Figure 7). A majority of rules applying to local and regional governments sectors foresee either automatic correction mechanisms or the obligation for the authority responsible to adopt measures in case of non-compliance with the rule. In

contrast, most of rules concerning the central government sub-sector do not include ex-ante defined actions in case of non-respect of the rule.

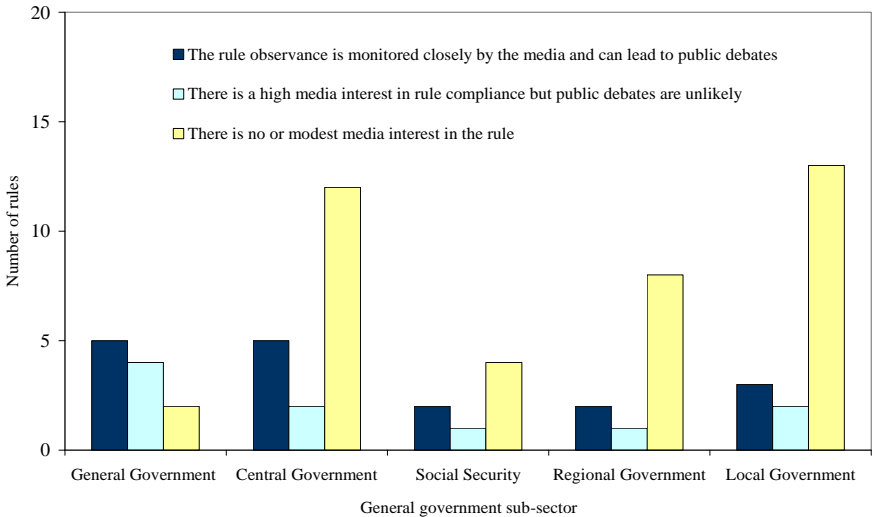
Figure 7 - Enforcement mechanisms of numerical fiscal rules by sub-sector of general government



Source: Commission services.

The apparent weaker status and enforcement mechanisms of rules in force at the central government and general government levels may be linked with the fact that such rules draw much more public opinion and media interest than other rules (see Figure 8). A high media visibility of the rule can, ceteris paribus, be expected to contribute to the enforcement of the rule, through higher reputation costs in case of non-compliance.

Figure 8 - Media activity and numerical fiscal rules in different sub-sector of general government



Source: Commission services.

Different arrangements in contract and delegation countries

An interesting exercise consists of analysing whether there is a pattern in the distribution of different types of fiscal rules in EU Member States depending on the approach chosen by the country concerned for centralising its budget process. In other words, we examine whether the fact that a particular country adopts a *delegation* or *contract* (or commitment) approach yields specific results in terms of the numerical fiscal rules in force.

Broadly speaking, delegation countries (examples are the UK, France and most countries generally relying on single-party governments or on coalitions of ideologically aligned parties) tend to centralise their budget process by relying on the discretionary powers of a strong finance Minister. In the contract or commitment countries (for instance Belgium and the Netherlands) all ministries take part in the negotiation process leading to a binding agreement on a set of key fiscal figures, often in a medium term perspective. In practice, there are in some specific cases difficulties in distinguishing between commitment and delegation countries: some countries combine features of both approaches (e.g. Denmark and Sweden) and reforms of fiscal institutions may change the classification of some countries over time.¹⁸

One would expect a priori countries following the contract approach to have a greater number of fiscal rules than those Member States that base their budgetary procedures on the delegation scheme. Table 3 shows the existing fiscal rules in EU countries classified by type of rule and general government sub-sector, and distributed according to the approach chosen by the country concerned for centralising its budget process.

Table 2 - Classification of numerical fiscal rules depending on the approach followed to centralise the budget process (only rules in force in 2005, disaggregated as explained in footnote¹²)

Sector Rule	General Government				Central/ Federal Government				Social Security				Regional Government				Local Government				Totals
	Contract	Deleg.	Mixed	Total	Contract	Deleg.	Mixed	Total	Contract	Deleg.	Mixed	Total	Contract	Deleg.	Mixed	Total	Contract	Deleg.	Mixed	Total	
ER	NL		DK	2	FI CZ IE IE LU SK	FR IT DE	SE	10	BE BE	FR	SE	4		IT IT DE		3		IT		1	20
RR	NL		DK	2	LV	FR		2	FI LV			2				0				0	6
BBR	EE	ES UK	SE DK	5	FI	PT AT DE		4	LU			1	BE	AT DE IT		4	FI LT BE IE	FR PT AT DE IT		9	23
DR	PL	UK		2	FI LT LU			3				0	CZ SK	ES ES		4	CZ EE LV SK	HU SI ES DE		8	17
Totals	4	3	4	11	11	7	1	19	5	1	1	7	3	8	0	11	8	10	0	18	66

ER: expenditure rules; RR: revenue rules; BBR: budget balance rules; DR: debt rules
Notes: (i) Those countries not included in the table do not have numerical rules; (ii) Due to changes in the budgetary process over time, some countries are difficult to be assigned to the delegation or contract approach (e.g. Italy); (iii) Germany has also numerical rules applied to the social security sub-sector but the relevant information about them could not be collected on time before the publication of this report.

Source: Commission services

This table shows that delegation and contract countries present a similar number of fiscal rules (29 and 31 respectively), which departs from what could have been expected. In fact, rather than the number of rules by type of country, the real difference is found in the distribution of fiscal rules among general government sub-sectors. Countries following the contract approach hinge more on numerical fiscal rules applied to central government and social security sectors, which contrasts with the few rules applied to these sub-sectors in delegation States. Conversely, delegation countries have a higher number of fiscal rules implemented at regional and local level than Member States relying on the delegation approach.

This distribution seems consistent with the fact that the larger political dispersion of governments in contracts countries is likely to promote fiscal rules ('contracts') at central level, while territorial sub sectors are likely to enjoy fewer restrictions imposed by central authorities. Likewise, delegation countries having a strong Minister of Finance and more homogeneous political majority in the Parliament are expected to enact relatively few fiscal rules for central levels of government and more rules (constraints) on regional and local governments in order to implement a more effective control on the whole of general government finances.

¹⁸ The classification used in our analysis is based on relatively recent papers (Von Hagen et al. (2001, 2002, 2005) and Yläoutinen (2004)).

3.4. Do numerical fiscal rules improve budgetary performance?

In this section, the detailed information from the questionnaires on fiscal rules in the EU Member States is used to analyse whether there is link between numerical fiscal rules and budgetary outcomes. The analysis is conducted in three stages:

- In a first step, the analysis focuses on the link between the *existence* of numerical fiscal rules and budgetary outcomes. It notably looks at whether budgetary developments in the years immediately following the introduction of rules differ from those typically observed on average during the sample period 1990-2005 considered in the survey.
- In a second step, the analysis takes into account the *coverage* of fiscal rules and tests the existence of a link between the share of government finances covered by numerical fiscal rules and budgetary developments. In order to carry out such a test, a time-varying 'fiscal rule coverage index' is constructed, for each Member State, which summarises the information on the share of government finances covered by numerical fiscal rules.
- In a third step, the analysis takes into account the *characteristics* of fiscal rules along with their *coverage*. To this aim, an index on the *strength* of individual fiscal rules is constructed based on the desirable characteristics of fiscal rules defined in the literature (i.e. statutory base, body in charge of monitoring, body in charge of enforcement, enforcement mechanisms and media visibility of the rule).¹⁹

Box 2 – The questionnaire on numerical fiscal rules

In order to collect the most comprehensive and accurate information on the existing numerical fiscal rules in the EU, a questionnaire was sent to all EU Member States in the context of the Working Group on the Quality of Public Finances (WGQPF) attached to the Economic Policy Committee (EPC). The questionnaire covers all types of numerical fiscal rules such as budget balance rules including golden rules, debt rules, expenditure rules and rules concerning the revenue side of the budget. Member States were invited to fill out one questionnaire per fiscal rule. The questionnaire considers rules applied to all levels of government. The time frame covered by the questionnaire is the period from 1990 to 2005. Member States were invited to signal changes in their definition and/or contents during the period under review. Likewise, Member States were also requested to fill out the questionnaire for those fiscal rules that had prevailed for a certain period between 1990 and 2005. The survey is made up of 24 questions, which are grouped in 6 sections:

1. **General description of the rule.** This section required Member States to provide information on the general characteristics of the rule (targeted variable, coverage), the motivations for its introduction, and the relevant dates of introduction and entering into force of the rule, and concerning the main changes in the period under review.
2. **Design, time frame coverage, exclusions and target definition of the rule.** This section includes questions concerning the time span covered by the rule (annual / multiannual), specification on the aggregate targeted (definition of the variable and accounting system in which it is expressed, exclusions from the coverage of the rule, ratios vs. level and growth rates, aggregates defined in nominal vs. real term). This section also contains questions related to the properties of the rule.
3. **Statutory base of the rule.** This section allows to make a distinction between rules based on political commitments (coalition agreements, agreement reached by different levels of government), and those based on legal acts (law, constitution).
4. **Monitoring of compliance with the rule.** This section requests information on the body responsible for the monitoring of the rule. Answers provided by Member States give important indications on whether

¹⁹ Although there is a close relationship, these characteristics do not have to be confused with the eight criteria listed in footnote 10 on the design of fiscal rules.

the rule is monitored by a partisan or a non-partisan institution and whether monitoring of compliance with the rule is ensured in real time or only ex post.

5. **Enforcement procedures.** This section contains questions related to the body in charge of ensuring enforcement of the rule (partisan vs. non-partisan) and the description of actions in case of non-compliance (obligation to propose corrective measures for the relevant authority, automatic correction mechanisms, possibility of imposing sanctions, existence of well-defined escape clauses). This section also contains questions related to the media visibility of the rule.
6. **Experience with the rule.** The last section of the questionnaire asks questions related to the track record in terms of compliance, and to the reasons for possible non-compliance with the rule. It also contains subjective questions related to the perception on whether the rule has contributed to fiscal discipline (definitively / significantly / modestly).

3.4.1. Relation between the introduction of numerical fiscal rules and budgetary outcomes

A first and simple way to assess the influence of fiscal rules on budgetary outcomes is to see whether budgetary developments in the years immediately following the introduction of fiscal rules differ from those observed on average during the sample period 1990-2005.

Table 4 reports the average changes for different time horizons in the cyclically-adjusted primary balance (primary CABs) and in the ratio of cyclically-adjusted primary expenditure to GDP (over 1990-2005), and compares them with the changes recorded for the same variables in the years immediately following the adoption of new numerical fiscal rules.²⁰ All fiscal rules were considered when comparing the changes in the primary CABs and only expenditure rules when changes in the cyclically-adjusted primary expenditure were analysed.²¹ Major changes in the design of rules were treated in the same way as the introduction of new fiscal rules.

The results indicate that the primary CAB on average improved in the years following the introduction of numerical fiscal rules. This conclusion holds for the different time-horizons considered, i.e. one, three and five years after the introduction of the rule. It contrasts with the fact that the primary CAB has on average been unchanged over the same time-horizons in the period 1990-2005. There seems to be also a link between developments in general government expenditure and expenditure rules. The decline in the ratio of primary government expenditure adjusted for the cycle is significantly larger in the years following the introduction of numerical expenditure rules than the average change in the period 1990-2005. Nevertheless, the results for expenditure rules have to be taken with caution given the relatively small number of expenditure rules in the sample.

This preliminary analysis suggests that there may be a link between the introduction of numerical fiscal rules and budgetary outcomes. However, this result should be considered cautiously since the analysis does not take into account the coverage and characteristics of fiscal rules and does not control for other factors that may have affected government budgets and developments in primary expenditure in the last fifteen years (e.g. position in the economic cycle, level of the government debt...).

²⁰ For instance, the change in the cyclically-adjusted primary deficit in the year immediately after the introduction of a rule is compared to the average yearly change registered during the whole of the sample period. Similarly, the average change in the cyclically-adjusted primary deficit in the three years following the implementation of a rule is compared to the average three-year change over the sample period. An identical comparison is carried out for a five-year time horizon.

²¹ A third possibility would have consisted of looking at developments in cyclically-adjusted revenue after the implementation of revenue rules. However, the relatively low number of revenue rules and their heterogeneity would have prevented from drawing any meaningful interpretation.

Table 3 - Average change in budgetary variables following the introduction (or major changes) of fiscal rules in the EU-25 Member States (1990-2005)

	A fiscal rule is introduced (or strengthened)	Average over the sample
Change in the Primary CAB:		
In the following year	0.2 (-0.2; 0.7)	0.0 (-0.2; 0.2)
In the following three years	0.4 (-0.7; 1.5)	0.0 (-0.4; 0.3)
In the following five years	0.3 (-0.9; 1.4)	-0.1 (-0.5; 0.3)
	An expenditure rule is introduced (or strengthened)	Average over the sample
Change in Primary Exp/GDP:		
In the following year	-1.5 (-2.8; -0.2)	-0.2 (-0.5; 0.0)
In the following three years	-1.9 (-3.3; -0.6)	-0.9 (-1.3; -0.4)
In the following five years	-3.1 (-4.4; -1.3)	-2.1 (-1.4; -2.7)

Note: extreme values from the sample were eliminated. For all time-horizons, the 2.5% highest and lowest changes in the primary CAB and cyclically-adjusted primary expenditure-to-GDP ratio were removed from the sample. Confidence interval values (5%) are in brackets.

Source: Commission services.

3.4.2. Relation between the share of government finances covered by numerical fiscal rules and budgetary outcomes

One major difficulty in assessing the influence of numerical fiscal rules on budgetary outcomes is that a large number of these rules apply to lower levels of governments while detailed budgetary data (notably estimates of budgetary aggregates corrected for the effect of the cycle) are only available for the general government. In order to overcome this difficulty, there is a need to take into account what part of government finances is covered by fiscal rules. To this aim, a 'fiscal rule coverage index' was constructed, for each Member State, which summarises the information on what fraction of general government finances is covered by numerical fiscal rules. This index was calculated for all the years covered by the study, i.e. the period 1990-2005. Details on the construction of the 'fiscal rule coverage index' are provided in box 3 below.

As seen in section 3.2, the number of numerical fiscal rules in the EU Member States has continuously increased over the last two decades. The share of government finances covered by fiscal rules has naturally followed the same evolution. On average, less than 25 percent of government finances of EU Member States were covered by numerical fiscal rules in the beginning of the 1990s. This proportion today approaches 75 percent, with considerable differences across Member States.²²

Box 3 – Construction of a time-varying 'Fiscal rule coverage index' and a time-varying 'Expenditure rule coverage index'

In order to analyse the existence of a possible link between the share of government finances covered by fiscal rules and budgetary outcomes, a time-varying 'fiscal rule coverage index' was constructed. This index summarises, for each Member State, the information on what part of general government finances is covered by numerical rules (measured as the share of government expenditure of the general government sub-sector to which the rule applies in total general government expenditure). When constructing this indicator, two main

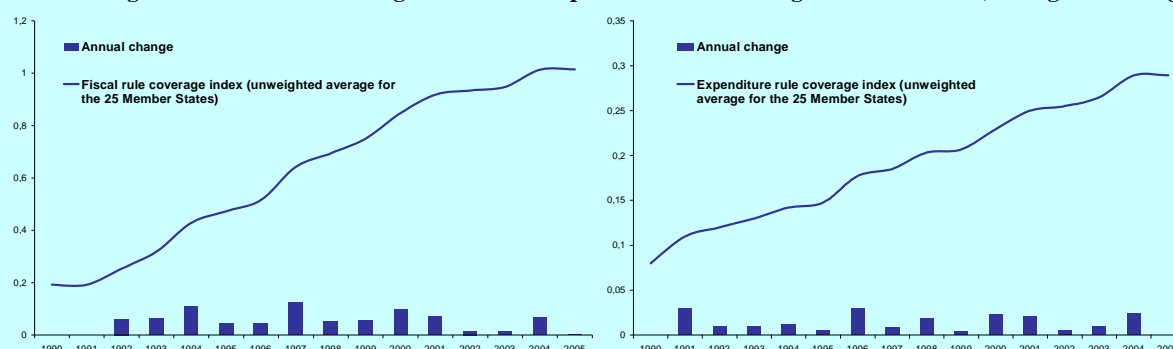
²² In 2005, about 30 percent of Hungarian government finances were covered by numerical fiscal rules. This percentage reaches about 70 percent to 80 percent of general government finances in some countries (e.g. Belgium, France). In some other EU Member States (Sweden, the Netherlands, United Kingdom) 100 percent of general government are covered by one or more numerical fiscal rules.

issues had to be addressed.

- The first one concerns how to deal with the fact that some Member States rely on different types of rules (e.g. a country can have an expenditure rule for the central government and a budget balance rule for regional governments). Taking into account that the purpose of the analysis is to assess whether numerical fiscal rules can contribute to fiscal discipline, it was considered that all numerical fiscal rules – i.e. all expenditure, budget balance, borrowing, debt and revenue rules – could be aggregated in terms of coverage. In other words, if a part of government finances is covered by an expenditure rule, and another part is covered by a budget balance rule, the part of government finances covered by numerical fiscal rules can be considered to be the sum of both. A specific 'expenditure rule coverage index', taking into account only expenditure rules, was calculated to assess the influence of expenditure rules on developments in primary expenditure.
- The second issue is how to treat cases in which several rules apply to the same sub-entity of the general government sector, e.g. the case of a Member State in which an expenditure rule at general government level (100% coverage) coexists with a budget balance rule for local governments (for instance 10% coverage, i.e. in a case where local governments' spending represent 10% of total general government expenditure). In this situation, a possible approach would have been to consider that the coverage is 100% since the whole of general government finances are covered by fiscal rules. However, this would not have allowed to take into account that the existence of several fiscal rules applying to the same sub sector could potentially bring more benefits in terms of fiscal discipline than one single rule (in our example, local government finances are subject to an expenditure and a budget balance rule), even if the marginal benefit of the second rule can be assumed to be lower than for the first one. In order to take these considerations into account, the 'fiscal rule coverage index' and the 'expenditure rule coverage index' were constructed following this simple approach: when more than one rule apply to the same sub sector of general government, the index gives a weight of 1 to the coverage of the first rule considered (in practice, the rule with the wider coverage). In our example, the expenditure rule has 100% coverage since it applies to the whole of the general government sector; the contribution of this rule to the 'fiscal rule coverage index' is therefore equal to 1. The coverage of the second fiscal rule is given a lower weight of 0.5. In our example, the second fiscal rule is a budget balance rule for local governments covering 10% of government finances. The contribution of this rule to the 'fiscal rule coverage index' equals to 10% multiplied by 0.5 that gives 0.05. Therefore, the 'Fiscal rule coverage index' for the country considered reaches 1.05 in the year considered.

A time-varying 'Expenditure rule coverage index' measuring the share of government finances covered by expenditure rules was constructed following exactly the same methodology, but restricting the sample to numerical expenditure rules. Figure 9 below plots the 'Fiscal rule coverage index' and the 'Expenditure rule coverage index' for the EU 25 (unweighted averages) since 1990.

Figure 9 - Fiscal rule coverage index' and 'Expenditure rule coverage index' – EU-25 (unweighted average)

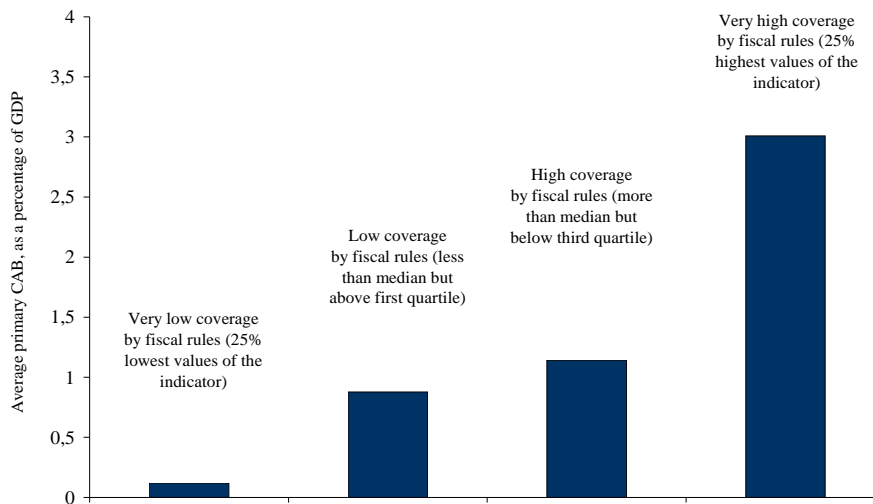


Source: Commission services.

Relation between the time-varying 'fiscal rule coverage index' and budgetary outcomes

Figure 10 reports the average value of the primary cyclically-adjusted balance observed in EU Member States over the period 1995-2005 for different groups of countries classified according to the value of the 'fiscal rule coverage index'. This figure suggests that there may be a link between the share of government finances covered by fiscal rules and the underlying position of government finances. However, such a static analysis does not allow to conclude on a possible relation between the two variables, and there is a need to control for other factors that may have an impact on government budgets.

Figure 10 - Fiscal rule coverage index and average primary CABs in the EU-25 countries



Source: Commission services.

A way to perform such control, and to infer more robust conclusions on the relation between fiscal rules and budgetary outcomes, is to estimate relations describing the reaction of fiscal authorities (in terms of chosen levels of budget balances or developments in government expenditure) to key macroeconomic and budgetary developments, such as those related to the cycle and the level of debt. The strategy followed consists of augmenting traditional forms of fiscal reaction functions with our indicator measuring the share of government finances covered by numerical fiscal rules in the 25 EU Member States. In such a relation, the influence of the coverage of numerical fiscal rules on budgetary policy can be gauged by looking at the sign of the regression coefficient of the 'fiscal rule coverage index' and its statistical significance.

Table 5 below reports the results for panel data estimation of a fiscal reaction function for the 25 EU Member States. The dependent variable is the primary cyclically-adjusted balance (CAPB). The explanatory variables are the lagged CAPB, the lagged debt, the output gap, two dummy variables, taking value 1, respectively, after 1992 and after 1999, and our fiscal rule coverage index. The CAPB and the debt level capture the fiscal stabilisation motive of fiscal authorities. The two dummy variables are aimed at capturing possible behavioural changes occurred in correspondence with, respectively, the signing of the Maastricht Treaty (1992) and the completion of the EMU project (1999). The constant term captures the portion of the fiscal stance not explained by the chosen explanatory variables. The output gap is instrumented with its own lag and a lagged indicator of foreign output gap in order to avoid endogeneity problems. All fiscal variables are expressed as shares of potential output. The period chosen for the estimation reflects the time frame considered in the questionnaire on fiscal rules, which includes all rules into force starting from 1990. The sample includes episodes of very large and rarely observed changes in budgetary data, observed mostly in New Member States. In order to avoid results being driven by these "outliers", the sample was trimmed in such a way to exclude the observations exhibiting changes in the CAPB and in the primary cyclically-adjusted expenditure outside the 2.5 percent and the 97.5 percent percentiles of the overall distribution.

Table 4 - Coverage of fiscal rules and developments in the primary CAB (EU-25, 1990-2005)

Explanatory variables	Dependent variable: primary CAB (CAPB)
OG	0.09 (1.5)
Constant	-0.93 (-2.1)**
Lagged CAPB	0.63 (15.8)***
Lagged debt/GDP ratio	0.02 (3.0)***
Fiscal rule coverage index	0.19 (1.6)*
Dummy 1992	0.68 (2.2)**
Dummy 1999	-0.51 (-2.7)***
N. obs.	260
R sq. within	0.59
R sq. between	0.93
R sq. overall	0.80

Notes: Estimations method: fixed effects, instrumental variables regression. The output gap is instrumented with its own lag and a lagged indicator of foreign output gap. The foreign output gap indicator is the export-weighted output gap of the 3 major export markets of each market. All fiscal variables are expressed as shares on potential output. "t" values are reported in parentheses. *, **, and *** denote, respectively, significance at the 10, 5 and 1 percent level. Coefficients for country fixed effects are not reported.

Source: Authors' calculation and DG ECFIN AMECO database.

In accordance with existing estimates of fiscal reaction functions for EU countries, results indicate a non-significant response of fiscal authorities to output gap and a significant positive response to debt.²³ As for our 'fiscal rule coverage index', the coefficient is positive, which indicates that an increase in the share of government finances covered by numerical fiscal rules leads to an improvement in the primary CAB. The coefficient is significant at the 10 percent level.

Table 5 - Coverage of expenditure rules and developments in primary expenditure (EU-25, 1990-2005)

Explanatory variables	Dependent variable: primary CAE (PCAE)
OG	0.10 (1.5)
Constant	6.28 (4.0)***
Lagged PCAE	0.90 (25.4)***
Lagged debt/GDP ratio	-0.02 (-2.7)***
Expenditure rule coverage index	-0.24 (-1.7)*
Dummy 1992	-0.51 (-1.5)
Dummy 1999	0.01 (0.2)
N. obs.	260
R sq. within	0.77
R sq. between	0.99
R sq. overall	0.96

Notes: Estimations method: fixed effects, instrumental variables regression. The output gap is instrumented with its own lag and a lagged indicator of foreign output gap. The foreign output gap indicator is the export-weighted output gap of the 3 major export markets of each market. All fiscal variables are expressed as shares on potential output. "t" values are reported in parentheses. *, **, and *** denote, respectively, significance at the 10, 5 and 1 percent level. Coefficients for country fixed effects are not reported.

Source: Authors' calculation and DG ECFIN AMECO database.

The same analysis was carried out focusing on the relation between expenditure rules and developments in general government expenditure. The dependent variable is now the ratio of cyclically-adjusted

²³ This would mean that EU countries attached more importance to the objective of fiscal consolidation than to stabilization purposes during the period 1990-2005. This finding is consistent with the results obtained by others studies (see for instance Ballabriga and Martinez-Mongay, 2002).

primary expenditure to GDP. The 'fiscal rule coverage index' is replaced by the 'expenditure rule coverage index'. The coefficient of this variable in the regression is negative and significant at the 10 percent level. This provides an indication that an increase in the coverage of government finances by expenditure rules leads, *ceteris paribus*, to a reduction in the primary expenditure-to-GDP ratio. Again, the results concerning expenditure rules must be interpreted with care, due to the relatively low number of expenditure rules considered.

3.4.3. Relation between the characteristics and coverage of numerical fiscal rules and budgetary outcomes

The previous sections examined the link between the *existence* and *coverage* of numerical fiscal rules and budgetary outcomes. However, economic literature stresses that the effectiveness of fiscal rules also depends on their properties (see notably Inman, 1996), i.e. their statutory base and whether there are independent and efficient monitoring and enforcement mechanisms to ensure the respect of the rule.

An index on the strength of numerical fiscal rules

A fiscal rule is generally considered to be 'stronger', in the sense of having a higher likelihood to be respected and to influence developments in the targeted fiscal variables, if it has a strong *statutory base*, i.e. if the provisions related to the existence of the rule are enshrined in the constitution or in law. While not ruling out discretionary policy, such rules impose binding constraints on the conduct of fiscal policy, thereby addressing the deficit bias in a direct way. The statutory base also provides an indication of the difficulty to amend or derogate the rule and of the importance given to the rule in the Member State concerned, at least at the moment of its introduction.²⁴

The nature of the *body in charge of monitoring* the respect of the rule is another important element. When respect of the rule is monitored by an independent body, which has the possibility to send alert signals in case a risk of non-compliance is identified, the probability that fiscal variables are adjusted to ensure compliance with the rule can be expected to be higher. The nature of the *enforcement mechanisms* also matters. The existence of automatic correction mechanisms or the possibility to impose sanctions in case of non-respect of the rule can be expected to foster compliance. Enforcement of the corrective measures and sanctions should preferably be ensured by an *independent authority*. Finally, it is worth noting that those rules that are neither enshrined in law or constitution nor regularly monitored and for which no enforcement mechanisms have been defined *ex-ante* may also contribute to the conduct of sound fiscal policies. As a matter of fact, such rules can be useful in providing benchmarks against which fiscal policy can be monitored and assessed by the public. Therefore, the effectiveness of fiscal rules in ensuring fiscal discipline can be expected to be stronger when the rule benefits from a large *media visibility* and when non-compliance is likely to trigger a public debate.

In order to assess whether the design of fiscal rules has an impact on their effectiveness, the country-specific 'fiscal rule coverage index' constructed in section 3.4.2 was augmented to take into account the characteristics of the individual fiscal rules. To this aim, an index of the 'strength' of numerical fiscal rules was calculated, for each of the rules considered in the sample. The index takes into account the five criteria mentioned above: the statutory base of the rule; whether there is an independent monitoring of the rule; the nature of the institution responsible for the enforcement of the rule; the existence of pre-defined enforcement mechanisms; and the media visibility of the rule. For each criterion, scores were attributed, the higher value corresponding to the characteristic that is presumed desirable for a strong/effective rule. Details on how the scores were attributed depending on the characteristics of the

²⁴ A distinction should be made between situations where the rule itself is enshrined in law or constitution (i.e. higher-than-expected revenues should be allocated to the reduction of the deficit) and cases where only the principle of the rule is considered in the relevant legal text (i.e. the government has to specify *ex ante* the use of possible higher-than-expected revenues). In the first case, the rule can be considered 'stronger' than in the second one.

rules and on the calculation of the synthetic index measuring the strength of each fiscal rule are provided in box 4.

Box 4 – Calculation of an index of strength of fiscal rules

The index of strength of numerical fiscal rules was calculated taking into account five criteria: the statutory base of the rule; whether there is an independent monitoring of the rule; the nature of the institution responsible for the enforcement of the rule; the existence of pre-defined enforcement mechanisms; and the media visibility of the rule. The methodology followed was inspired by the previous work by Deroose, Moulin and Wiertz (2005). This box provides details on how the scores were attributed for each of these criteria and on the calculation of the synthetic index measuring the strength of individual fiscal rules.

Criterion 1: statutory base of the rule

The score of this criterion index is constructed as a simple average of the two elements below:

Statutory or legal base of the rule

- 4 is assigned for a constitutional base
- 3 if the rule is based on a legal act (e.g. Public finance Act, Fiscal Responsibility Law)
- 2 if the rule is based on a coalition agreement or an agreement reached by different general government tiers (and not enshrined in a legal act)
- 1 for political commitment by a given authority (central or local government, Minister of Finance)

Room for setting or revising objectives

- 3 if there is no margin for adjusting objectives (they are encapsulated in the document underpinning the rule)
- 2 there is some but constrained margin in setting or adjusting objectives
- 1 there is complete freedom in setting objectives (the statutory base of the rule merely contains broad principles or the obligation for the government or the relevant authority to set targets)

Criterion 2: Nature of the body in charge of monitoring respect of the rule

The score of this criterion index is calculated as follows:

- 3 if there is a monitoring by an independent authority (Fiscal Council, Court of Auditors or any other Court) or the national Parliament
- 2 monitoring by the Ministry of Finance or any other government body
- 1 no regular public monitoring of the rule (there is no report systematically assessing compliance)

The score of this variable is augmented by one point in case there is a real time monitoring of compliance with the rule (e.g. existence of alert mechanisms in case there is a risk of non-respect of the rule).

Criterion 3: Nature of the body in charge of enforcement of the rule

The score of this criterion index is calculated as follows:

- 3 enforcement by an independent authority (Fiscal Council or any Court) or the National Parliament
- 2 enforcement by the Ministry of Finance or any other government body
- 1 no specific body in charge of enforcement

Criterion 4: Enforcement mechanisms of the rule

The score of this criterion index is calculated as follows:

- 4 there are automatic correction and sanction mechanisms in case of non-compliance
- 3 there is an automatic correction mechanism in case of non-compliance and the possibility of imposing sanctions
- 2 the authority responsible is obliged to take corrective measures in case of non-compliance or is obliged to present corrective proposals to Parliament or the relevant authority
- 1 there is no ex-ante defined actions in case of non-compliance

The score of this variable is augmented by 1 point in case escape clauses are foreseen and clearly specified.

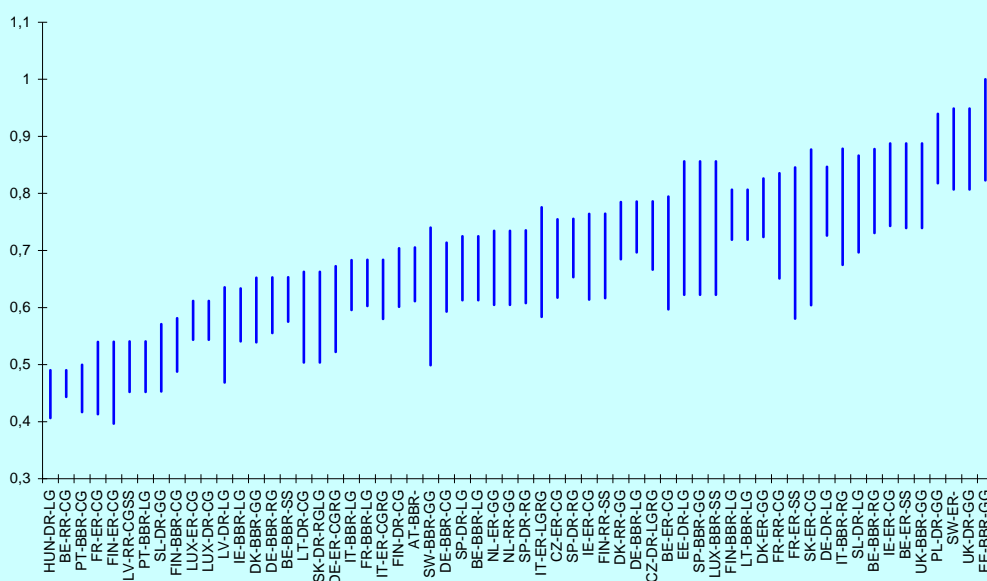
Criterion 5: Media visibility of the rule

The score of this criterion index is calculated as follows:

- 3 is assigned if the rule observance is closely monitored by the media, and if non-compliance is likely to trigger a public debate
- 2 for high media interest in rule-compliance, but non-compliance is unlikely to invoke a public debate
- 1 for no or modest interest of the media

In absence of strong theoretical base or preference regarding the weight to be given to each criterion, it was decided to calculate the synthetic index in a large number of different ways, reflecting different possible weightings for the five criteria. The scores of the five criteria were first standardised to run between 0 and 1. Then, a random weights technique was used following the method used by Sutherland and al. (2005). This technique uses 10000 sets of randomly-generated weights to calculate the synthetic indicator in 10000 different ways. The random weights are drawn from a uniform distribution between zero and one and then normalised to sum to one. The resulting distribution for the synthetic indicator reflects the possible range of values given no a priori information on the weight to be given to each component of the index. Given that the weights are drawn from a uniform distribution, the mean value of the synthetic indicator is asymptotically equivalent to the indicator calculated using equal weights for the constituent components (unweighted arithmetic average). The chart below shows, for all the fiscal rules considered in the study, the range containing 98% of the values of the index of strength of the rule calculated with 10000 different sets of random weights (we eliminated the 1% lowest and highest values of the synthetic index)

Figure 11 - Index of strength of the fiscal rules in force in EU Member States in 2005 (classified according to the average value)



Notes:

1/ The chart shows, for all the numerical fiscal rules considered in the study, the range containing 98% of the values of the index of strength of the fiscal rule concerned. Rules were classified in an ascending order. The scores of the individual criteria taken into account in the calculation of the overall index were normalised to one. The size of the vertical line provides an indication of the heterogeneity of the scores related to the five criteria considered in the calculation of the synthetic index.

2/ When the characteristics of a rule have evolved over time, the chart only present the index consistent with the most recent features. Three rules presented in the chart are not anymore in force in 2005. For Belgium, the expenditure rule and the revenue rule were implemented for the convergence process leading to EMU qualification. For Slovenia, the debt rule was in force over 2000-2004.

A country-specific 'fiscal rule index', taking into account the coverage and the characteristics of numerical fiscal rules

By combining the information contained in the 'fiscal rule coverage index' and the information of the strength of each fiscal rule, a time-varying 'fiscal rule index' was constructed, for each Member State,

which takes into account all the available information on the national numerical fiscal rules. The indicator is calculated in two steps. *First*, we calculate the potential contribution of each rule to the 'fiscal rule index' by multiplying the share of government finances covered by the rule by the indicator of the strength of the rule. *Second*, we sum these indicators by country, taking into account their changes over time.²⁵ In case two rules apply to the same general government sub-sector, we follow the same methodology as for the calculation of the 'fiscal rule coverage index'. We give a weight of 1 to the rule which can be considered as the strongest one, based on the index of strength of fiscal rules, and a weight of 0.5 to the weaker rules. Following the same approach but taking into account only expenditure rules, a time-varying 'expenditure rule index' was constructed for each Member State.²⁶

The influence of fiscal rules on budgetary outcomes depends on their characteristics

Like in section 3.4.2, we augment standard fiscal reaction functions with our 'fiscal rule index', which incorporates information on the coverage and characteristics of the numerical fiscal rules in the EU-25 Member States.²⁷ Table 7 reports the results of the econometric analysis.

A remarkable result is that the inclusion of information on the strength of the individual fiscal rules improves the quality and robustness of the relation between fiscal rules and budgetary outcomes. When comparing this regression to the one including the 'fiscal rule coverage index', it appears that the coefficient measuring the influence of fiscal rules on budgetary outcomes is clearly more significant.²⁸ The level of this coefficient is also higher, suggesting that a change in the coefficient has a larger impact on budgetary outcomes (all 'fiscal rule indexes' and 'fiscal rule coverage indexes' were standardized, so that the size of the coefficients in the various regressions can be compared). Overall, these results provide a strong indication that the characteristics of fiscal rules matter for their influence on budgetary outcomes.

In order to test the robustness of the results, we estimated other regressions including alternative calculations of the 'fiscal rule index' using different weighing for the calculation of the index of strength of fiscal rules (in practice we used the low and high values of the brackets in Figure 11). It appeared (regressions results are not reported here) that weighing differently the various components of the index of strength of fiscal rules does not change the results significantly, suggesting that the relation is not strongly sensitive to the choice of the weights for the aggregation of the criteria taken into account in the calculation of the index on the strength of fiscal rules.

²⁵ For example, take the case of a country having three fiscal rules in year n : an expenditure rule to contain developments in health care spending (index of strength x) covering about a percent of general government expenditure; a budget balance rule for local governments (index of strength y) covering about b percent of general government finance and an expenditure rule at central government level (index of strength z) covering about c percent of total general government expenditure. The indicator for that country in year n equals to $a*x + b*y + c*z$.

²⁶ In order to test the sensitivity of the results to different choices for the weighting of the five criteria used in the calculation of the index of strength of fiscal rules, we calculated the 'fiscal rule index' in two alternative ways, taking into account the low and high values of the possible index as illustrated in Figure 11.

²⁷ In the analysis, the 'fiscal rule index' is calculated using an index of strength of fiscal rules that gives an equal weight to the five criteria entering in the calculation of the indicator.

²⁸ The coefficient becomes significant at the 5 percent level as against 10 percent in the regression including an index taking into account only the share of government finances covered by fiscal rules.

Table 6 - Influence of fiscal rules on the primary CAB (EU-25, 1990-2005)

Explanatory variables	Dependent variable: primary CAB (CAPB)
OG	0.09 (1.4)
Constant	-0.90 (-2.0)**
Lagged CAPB	0.63 (15.8)***
Lagged debt/GDP ratio	0.02 (3.1)***
Fiscal rule index	0.25 (2.1)**
Dummy 1992	0.63 (2.0)**
Dummy 1999	-0.53 (-2.9)***
N. obs.	260
R sq. within	0.59
R sq. between	0.94
R sq. overall	0.81

Notes: Estimations method: fixed effects, instrumental variables regression. The output gap is instrumented with its own lag and a lagged indicator of foreign output gap. The foreign output gap indicator is the export-weighted output gap of the 3 major export markets of each market. All fiscal variables are expressed as shares on potential output. "t" values are reported in parentheses. *, **, and *** denote, respectively, significance at the 10, 5 and 1 percent level. Coefficients for country fixed effects are not reported.

Source: Authors' calculation and DG ECFIN AMECO database.

The same analysis was made for assessing the influence of expenditure rules on developments in cyclically-adjusted primary government expenditure (results are reported in Table 8). The conclusions are very much the same as for the analysis considering all fiscal rules. Taking into account the characteristics of expenditure rules in the calculation of the index leads to a stronger relation between expenditure rules and budgetary outcomes. The coefficient of the 'Expenditure rule index' is higher and more significant than in the regression considering only the coverage of expenditure rules. Like for the regression on the 'fiscal rule index', robustness tests confirm that results are not significantly affected by a change in the coefficients to calculate the index measuring the strength of expenditure rules.

Table 7 - Influence of expenditure rules on developments in primary expenditure (EU-25, 1990-2005)

Explanatory variables	Dependent variable: primary CAE (PCE)
OG	0.10 (1.6)
Constant	6.43 (4.1)***
Lagged PCE	0.89 (25.2)***
Lagged debt/GDP ratio	-0.02 (-2.8)***
Expenditure rule index	-0.28 (-2.0)**
Dummy 1992	-0.44 (-1.3)
Dummy 1999	0.01 (0.1)
N. obs.	260
R sq. within	0.77
R sq. between	0.98
R sq. overall	0.95

Notes: Estimations method: fixed effects, instrumental variables regression. The output gap is instrumented with its own lag and a lagged indicator of foreign output gap. The foreign output gap indicator is the export-weighted output gap of the 3 major export markets of each market. All fiscal variables are expressed as shares on potential output. "t" values are reported in parentheses. *, **, and *** denote, respectively, significance at the 10, 5 and 1 percent level. Coefficients for country fixed effects are not reported.

Source: Authors' calculation and DG ECFIN AMECO database.

3.4.4. Main conclusions from the study

The survey on numerical fiscal rules shows that the number of fiscal rules in force in the EU Member States has increased continuously over the past twenty years. At present, almost all EU Member States rely on such rules. This growing number of rules during the latest years has also undergone an interesting evolution in terms of the government sub-sectors covered by rules. In the early 90s, fiscal rules in EU

countries were mostly to applied to territorial (local and regional) governments. A relatively recent feature has been the introduction of fiscal rules for the whole of the general government sector and for the social security sub-sector. This may be a response to the increasing spending pressures in the social security sector and to the introduction of the EU fiscal rules, which impose requirements for the general government deficit and debt.

The characteristics of fiscal rules vary depending on the sub-sector to which they apply. Fiscal rules applying to higher levels of government are usually incorporated into a multi-annual budgetary framework whereas most rules applied to regional and local governments rely preponderantly on annual schemes. Most of the numerical rules applied to regional or local levels of governments are enshrined in law or constitution, while rules applying to the whole of the general government sector are more frequently based on coalition agreements or political commitments. Similarly, while rules for regional and local governments seem to have relatively strong enforcement mechanisms, rules applying to general and central governments generally do not envisage ex-ante defined actions in case of non-compliance.

An interesting finding appears when taking into account the type of budgetary governance, namely the distinction between the so-called *contract* and *delegation* countries. Both sets of countries have a similar number of fiscal rules. However, contract countries tend to have more numerical fiscal rules applied to central government and social security sectors while delegation countries have a higher number of fiscal rules implemented at regional and local level. This seems consistent with the fact that the (a priori) larger political dispersion of governments in contract countries is likely to promote fiscal rules at central level, while territorial sub sectors are likely to enjoy fewer restrictions imposed by central authorities. Likewise, delegation countries are expected to enact relatively few fiscal rules for central levels of government and more rules on regional and local governments in order to implement a more effective control on the whole of general government finances.

Statistical and econometric exercises suggest the existence of a link between numerical rules and budgetary outcomes. A simple analysis of data shows two interesting results. Firstly, the primary CAB improved in the years following the introduction of fiscal rules while on average it remained broadly stable over the period under consideration (1990-2005). Secondly, the decline in the ratio of primary government expenditure adjusted for the cycle has been significantly larger in the years following the introduction of numerical expenditure rules than the average change observed over the sample period. When enriching the analysis to take into account the coverage and characteristics of fiscal rules and control for various factors that may affect government budget balance and developments in primary expenditure, the presumption of a link between numerical fiscal rules and budgetary outcomes is strengthened. The analysis suggests that an increase in the share of government finances covered by numerical fiscal rules leads, ceteris paribus, to an improvement in the structural position of government finances. In the case of expenditure rules, it appears that an increase in the coverage of government finances by expenditure rules leads to a reduction in the primary expenditure-to-GDP ratio. The analysis also suggests that the characteristics of fiscal rules matter for their influence on budgetary outcomes. Strong rules, enshrined in law or constitution and foreseeing automatic enforcement mechanisms, seem to have a larger influence on budgetary outcomes.

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Annex 1. Numerical fiscal rules considered in the study

COUNTRY	TYPE OF RULE	DEFINITION OF THE RULE (AGGREGATE TARGETED & RELEVANT ACCOUNTING SYSTEM)	SECTOR(S) COVERED	TIME FRAME	STATUTORY BASE	BODY IN CHARGE OF MONITORING	ENFORCEMENT (BODY & ACTIONS IN CASE OF NON-COMPLIANCE)
AUSTRIA	Budget balance rule	Budget balance as a % of GDP ESA95 accounting	Central, regional and local governments	Multianual (4 years)	Legal act (based on Constitution)	Governmental structure (Committee with central, regional and local government representatives)	Governmental structure Possibility of sanctions
	Expenditure rule (in the convergence process leading to EMU qualification)	Real expenditure growth rate Budgetary accounting	Central government	Multianual (4 years)	Coalition agreement	Independent (Court of Auditors and the High Council of Finance) and National Parliament.	Governmental structure No pre-defined action
	Revenue rule (in the convergence process leading to EMU qualification)	Nominal growth of fiscal revenues in relation to nominal GDP growth Budgetary accounting	Central government	Multianual (4 years)	Coalition agreement	No body	Government (Ministry of Finance) No pre-defined action
	Expenditure rule	Real expenditure growth rate Budgetary accounting (consistent with ESA95)	Social security	Multianual (4 years)	Legal act	Independent (Court of Auditors and Wise Men Committee) and National Parliament	Government (Ministry of Health), possibly social partners Automatic mechanism if sanction
	Budget balance rule	Budget balance in nominal terms Budgetary accounting	Social security	Multianual (4 years)	Coalition agreement	Governmental structure (Ministries of Budget and Social Affairs)	Governmental structure (Ministries of Budget and Social Affairs) No pre-defined action
	Budget balance rule	Real expenditure growth rate ESA95 accounting	Regional government	Multianual (5 years)	Political agreement between central and regional governments	Independent (High Council of Finance)	Governmental structure Possibility of sanctions
CZECH REPUBLIC	Budget balance rule	Budget balance in nominal terms Budgetary accounting	Local government	Annual	Legal act	Independent (High Council of Finance) and regional Government	Governmental structure (regional government) corrects possible slippages by taking appropriate actions
	Expenditure rule	Nominal expenditure ceiling Budgetary accounting	Central government	Multianual (3 years)	Political agreement (medium-term expenditure framework enshrined in legal act)	Government (Ministry of Finance)	None No pre-defined action; government provides explanations in case of non-compliance
	Debt rule	Limit on debt service Budgetary accounting	Regional and local governments	Annual	Political agreement	Government (Ministry of Finance)	Government Corrective measures are proposed - possibility of sanctions
DENMARK	Expenditure rule	Real expenditure growth rate ESA95 accounting	General government	Multianual	Political agreement	Government (Ministry of Finance)	Government (Ministry of Finance) No pre-defined action
	Revenue rule	Limits on direct or indirect tax rates (tax freeze)	General government	n.a.	Political agreement	Government (Ministry of Finance)	Government (Ministry of Finance) No pre-defined action
	Budget balance rule	Target as a % of GDP in structural terms ESA95 accounting	General government	Multianual (up to 2010)	Political agreement	Government (Ministry of Finance)	Government (Ministry of Finance) No pre-defined action
ESTONIA	Budget balance rule	Budget balance in nominal terms Budgetary accounting	General government	Multianual	Coalition agreement	Government (Ministry of Finance)	Government and national Parliament No pre-defined action; possibility of cuts in expenditure if revenue shortfall

COUNTRY	TYPE OF RULE	DEFINITION OF THE RULE (AGGREGATE TARGETED & RELEVANT ACCOUNTING SYSTEM)	SECTOR(S) COVERED	TIME FRAME	STATUTORY BASE	BODY IN CHARGE OF MONITORING	ENFORCEMENT (BODY & ACTIONS IN CASE OF NON-COMPLIANCE)
FINLAND	Debt rule	Debt limits as a % of budgeted revenues Budgetary accounting	Local government	Annual	Legal act	Government (Ministry of Finance)	Government and national Parliament Proposition of corrective measures (possible reduction in transfers)
	Expenditure rule	Real expenditure ceiling Budgetary accounting	Central government	Multianual (5 years)	Political agreement	Government (Ministry of Finance)	Governmental structure proposes corrective measures
	Budget balance rule	Budget balance as % GDP ESA95 accounting	Central government	Multianual (5 years)	Political agreement	Government (Ministry of Finance)	Governmental structure No pre-defined action (political pressure to ensure compliance)
	Debt rule	Debt to GDP ratio has to be reduced Budgetary accounting	Central government	Multianual (5 years)	Political agreement	Government (Ministry of Finance)	Governmental structure No pre-defined action (political pressure to ensure compliance)
	Revenue rule	Allocation of revenue surpluses ESA95 accounting	Social security	Multianual (business cycle)	Legal act	Governmental structure (Ministry of Social Affairs and Health).	Independent enforcer No pre-defined action
FRANCE	Budget balance rule	Budget balance rule in nominal terms Budgetary accounting	Local government	Multianual (4 years)	Legal act	Independent (auditing committees) and governmental structure (Ministry of Interior)	Same as monitoring Preparation of plans to cover eventual deficits, possible personal admonitions
	Expenditure rule	Real expenditure growth rate Budgetary accounting	Central government	Annual	Political agreement	Independent (Court of Auditors) and National Parliament	No pre-defined action in case of non-compliance
	Revenue rule	The government has to pre-define the allocation of possible higher-than-expected tax revenue Budgetary accounting	Central government	Annual	Legal act	Independent (Court of Auditors) and National Parliament	No pre-defined action in case of non-compliance
	Expenditure rule	Ceiling in volume for health expenditure growth rate ESA95 accounting	Social security	Annual	Legal act	Independent Alert Committee and Court of Auditors	Independent Alert Committee Proposes corrective measures
	Budget balance rule	Golden rule Budgetary accounting	Local government	Annual	Legal act	Independent (regional Court of Auditors)	Obligation to propose corrective measures
GERMANY	Budget balance rule	Budget balance in nominal terms Budgetary accounting	Central government	Annual	Constitution and legal act	Government (Ministry of Finance) and National Parliament	Possibility of a challenge at Constitutional Court No pre-defined action
	Expenditure rule	Nominal expenditure growth rate Budgetary accounting	Central and regional governments	Multianual (5 years)	Political agreement between central and regional governments	Governmental structure (Financial Planning Council with central, regional and local members)	None (Financial Planning Council can criticise rule violations and deviations) No pre-defined action
	Budget balance rule	Budget balance in nominal terms (golden rule) Budgetary accounting	Regional government	Annual	Constitution	Government (Ministries of Finance of Länders)	None, but possibility of a legal challenge at the Constitutional Court No pre-defined action
	Debt rule	Specific amount of debt in nominal terms Budgetary accounting	Local government	Annual (1 or 2 years)	Legal act	Governmental structure (Communal Supervisory Agencies of the Länder)	Governmental structure Permission for credits refused
	Budget balance rule	Budget balance in nominal terms Budgetary accounting	Local government	Annual	Legal act	Governmental structure (Communal Supervisory Agencies of the Länder)	Governmental structure Clear actions are foreseen in case of non-compliance
HUNGARY	Debt rule	Ceiling in proportion with capacity to repay debt Budgetary accounting	Local government	Annual	Legal act	No official body (supervision of private banks)	None No pre-defined action
IRELAND	Expenditure rule	Automatic allocation of expenditure to the National Pension Reserve Fund Budgetary accounting	Central government	Annual	Legal act	Government (Ministry of Finance)	Government No pre-defined action

COUNTRY	TYPE OF RULE	DEFINITION OF THE RULE (AGGREGATE TARGETED & RELEVANT ACCOUNTING SYSTEM)	SECTOR(S) COVERED	TIME FRAME	STATUTORY BASE	BODY IN CHARGE OF MONITORING	ENFORCEMENT (BODY & ACTIONS IN CASE OF NON-COMPLIANCE)
ITALY	Expenditure rule	Nominal expenditure ceiling Budgetary accounting	Central government	Multianual (5 years)	Legal act	Governmental structure	Ministry of Finance No pre-defined action
	Budget balance rule	Budget balance nominal terms ESA95 accounting	Local government	Annual	Political agreement	Ministry of finance and governmental structure	Government Limits imposed on borrowing of local authorities
	Expenditure rule	Nominal expenditure ceiling ESA95 accounting	Central and regional government	Annual	Legal act and internal pact between central and regional government	Government (Ministry of Finance) and governmental structure (Italian Pharmaceutical Agency-Ministry of Health)	Governmental structure Corrective actions
	Expenditure rule	Nominal expenditure growth rate Targets set in ESA95 (monitoring based on budgetary accounting)	Regional and local government	Multianual (3 years)	Legal act	Government (Ministry of Finance)	Independent Automatic sanction mechanism
LATVIA	Budget balance rule	Budget balance in nominal terms Targets in ESA95 accounting	Regional government	Multianual (3 years)	Legal act	Board of Performance Assessors (with central and regional government representatives)	Government Automatic correction mechanism and possibility of financial sanctions
	Budget balance rule	Budget balance in nominal terms (excl. capital revenue and expenditure) Budgetary accounting	Local government	Multianual	Constitution and legal act	Independent (Court of Auditors), Government (Ministry of Finance)	Government (Ministry of Finance) No pre-defined action
	Revenue rule	Actual revenues must cover completely the special government budget Budgetary accounting	Central government, social security	Annual	Legal act	Government (Ministry of Finance) and governmental structure (The State Treasury)	Governmental structure (The State Treasury) No pre-defined action
	Debt rule	Debt ceiling in nominal terms Budgetary accounting	Local government	Annual	Political agreement	Independent	Government (Ministry of Finance) No pre-defined action
LITHUANIA	Debt rule	Maximum possible net borrowing by the central government Budgetary accounting	Central government	Annual	Legal act	Independent	Government (Ministry of Finance) No pre-defined action
	Budget balance rule	Budget balance in nominal terms Budgetary accounting	Local government	Annual	Legal act	Governmental structure (Council of Municipality)	Government and National Parliament Possibility of sanctions and of claim to the Courtii
	Expenditure rule	Over the medium-term, nominal expenditure increase in line with nominal GDP Budgetary accounting	Central government	Multianual	Coalition agreement	None	None No pre-defined action
LUXEMBOURG	Debt rule	The debt-to-GDP ratio should remain moderate (new debt only to finance rail infrastructure projects) Budgetary accounting	Central government	Multianual	Coalition agreement	None	None No pre-defined action
	Budget balance rule	Reserve funds for health care, long-term health care and pension private sector schemes Budgetary accounting	Social security	Annual and Multianual	Legal act	Government (Ministry of Social Security)	Governmental structure Corrective measures
	Expenditure rule	Real expenditure ceiling ESA95 accounting	General government	Multianual (4 years)	Coalition agreement	Government (Ministry of Finance)	Government (Ministry of Finance) proposes corrective measures
NETHERLANDS	Revenue rule	Allocation of higher-than-expected revenues ESA95 accounting	General government	Multianual (4 years)	Coalition agreement	Government (Ministry of Finance)	Government (Ministry of Finance) proposes corrective measures
	Debt rule	Ceiling in terms of debt/GDP ratio Budgetary accounting	General government	Annual	Constitution and legal act	Independent (Supreme Audit Office) and National Parliament	Government, Independent body (Supreme Audit Office) and national Parliament Government proposes corrective measures.

COUNTRY	TYPE OF RULE	DEFINITION OF THE RULE (AGGREGATE TARGETED & RELEVANT ACCOUNTING SYSTEM)	SECTOR(S) COVERED	TIME FRAME	STATUTORY BASE	BODY IN CHARGE OF MONITORING	ENFORCEMENT (BODY & ACTIONS IN CASE OF NON-COMPLIANCE)
PORTUGAL	Budget balance rule	Budget balance in nominal terms Budgetary accounting	Central government	Annual	Legal act	Government (Ministry of Finance)	Government (Ministry of Finance) No pre-defined action
	Budget balance rule	Budget balance in nominal terms ESA accounting	Local government	Annual	Legal act	Government (Ministry of Finance) and governmental structure (Directorate General for Local Government)	Government (Ministry of Finance) No pre-defined action and possibility of imposing actions
SLOVAKIA	Expenditure rule	Nominal expenditure ceiling Budgetary accounting	Central government	Annual	Political agreement	Independent (Supreme Audit Office), Government and National Parliament	Independent (Supreme Audit Office, National Parliament) Obligation to take effective measures
	Debt rule	Limits on total debt and annual repayments as a % of real current incomes of t-1 budget year. Budgetary accounting	Regional and local government	Annual	Legal act	Independent (Supreme Audit Office) and Government (Ministry of Finance)	Government Possibility of sanctions
SLOVENIA	Debt rule	Ceiling of debt/GDP ratio Budgetary accounting	General government	Multianual (4 years) iii	Coalition agreement	Governmental structure	Governmental structure proposes corrective measures
	Debt rule	Limit on local government's total stock of debt Budgetary accounting	Local government	Annual	Legal act	Independent (Court of Auditors) and Government (Ministry of Finance)	Government (Ministry of Finance) No pre-defined action
SPAIN	Budget balance rule	Budget balance as % of GDP ESA95 accounting	General government	Multianual (3 years)	Legal act	Government (Ministry of Finance) and governmental structure	Government (Ministry of Finance) presents corrective plan with appropriate actions
	Debt rule	Debt level in nominal terms ESA95 accounting	Regional government	Annual	Agreement between central and regional government	Government (Ministry of Finance)	Government (Ministry of Finance) Possibility of sanctions
	Debt rule	Limit in the debt level Budgetary accounting	Regional government	Annual	Legal act	Government (Ministry of Finance)	Government (Ministry of Finance) No pre-defined action
	Debt rule	Ceiling for local government debt as a % of current revenue. Budgetary accounting	Local government	Annual	Legal act	Government (Ministry of Finance) and Regional government	Government or Regional government Local government designs financial plan to be met in 3 years.
SWEDEN	Budget balance rule	Budget balance target in structural terms. ESA95 accounting	General government	Multianual (business cycle)	Government commitment, endorsed by Parliament	Independent (Court of Auditors) Government and National Parliament	Government No pre-defined action
	Expenditure rule	Nominal expenditure ceiling for central government and extra old-age pension system expenditures Budgetary accounting	Central government and social security	Multianual (3 years)	Legal act	Independent (Court of Auditors), Government and National Parliament	Government Obligation to correct by appropriate actions
UNITED KINGDOM	Budget balance rule	% of GDP (average across the cycle) ESA95 accounting	General government	Multianual (economic cycle)	Legal act	Independent (National Audit Office), Ministry of Finance, Treasury and National Parliament	Government Appropriate actions have to be taken ^v
	Debt rule	Ceiling for the government debt at level as a % of GDP ESA95 accounting	General government	Multianual (economic cycle)	Legal act	Independent (National Audit Office), Ministry of Finance, Treasury and National Parliament	Government (Ministry of Finance) Appropriate actions have to be taken

i Domestic Stability Pact not enshrined in legal act

ii Administrative responsibility: The supervisor authorised by the Government has the right to submit a claim to the court in the case of infringement of legal acts.

iii From 2000 to 2004.

iv The Code for Fiscal Stability states that, "The Government may depart from its fiscal objectives and operating rules temporarily, provided that it specifies: (a) the reasons for departing from the previous fiscal policy objectives and operating rules; (b) the approach and period of time that the Government intends to take to return to the previous fiscal policy objectives and operating rules; and (c) The fiscal policy objectives and operating rules that shall apply over this period."

THE ROLE FOR FISCAL AGENCIES*

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Introduction

There is a growing recognition that the design and implementation of economic policies depend to a considerable extent on the incentives of policymakers. It is also generally recognized that even well-intended governments may end up pursuing unsound policies. This may happen in part because incentives of policymakers change over time, with policies agreed to previously not being implemented.¹ It may also reflect the impact of the political environment, such as the influence of special interests or immediate electoral concerns that generally results in short-time horizons. These factors have contributed to unsatisfactory fiscal performance in many advanced and developing economies (IMF, 2003).

The emphasis on policymakers' incentives has paved the way for institutional innovation expected to improve policy. A common objective of reform has been to reshape policymakers' incentives. One way to achieve this is to delegate activities susceptible to "government failure" to independent agencies or to establish arrangements that raise the reputational and electoral costs of distorted policies. The case for delegation has been at the core of the recent developments regarding the independence of central banks and financial regulators. The success with delegation of monetary policy has led some to argue that analogous fiscal agencies could play a useful role in reducing undesirable tendencies, such as the emergence of unsustainable debt, policy procyclicality, and inefficient tax and expenditure policies.

This chapter examines the rationale for fiscal agencies, explores issues relating to their implementation, and reviews country experiences. These agencies could improve fiscal policy by exercising policy mandates explicitly delegated to them or by influencing the democratic debate through independent analysis, forecasts, or judgment. Their specific mandate and structure would depend on the nature of the fiscal policy problem and on the country's policymaking environment. Hence, unlike the structure and role of independent central banks, which is fairly uniform across countries, the characteristics of fiscal agencies would be much more country specific.

The chapter identifies two types of fiscal agencies: Independent fiscal authorities (IFAs) to some extent mimic on the fiscal side independent central banks. For instance, they could be mandated with the objective of attaining a short-term fiscal balance target consistent with debt sustainability, and/or with output stabilization. They may also be provided with some discretion over tax rates or spending.

Fiscal councils (FCs) would not receive any specific authority over fiscal policy but would undertake analysis and assessment of fiscal developments and policies. They would essentially provide independent

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¹ This is the familiar problem of time inconsistency.

projections and analysis and thereby affect policymakers' incentives through external scrutiny and democratic debate. They could also issue normative judgments, possibly involving formal procedures, such as a special session in parliament.

The chapter first develops an analytical framework for policy delegation in general and fiscal policy delegation in particular. Next it discusses the potential roles of IFAs and FCs. Then it examines the experience with FCs and considers the complementary role that existing institutions—and especially the IMF—can play. The chapter ends by summarizing the main conclusions.

1. Delegation and institutional innovation

Given the scope for institutional innovation, what role could fiscal agencies play? They could help inform, analyze, assess, and implement fiscal policy.² In one form or another their operation would entail some delegation from the elected representatives or their administration. This raises a number of issues. What are the general criteria for the delegation of policy or policy-related areas to new institutions? What do these criteria suggest specifically about the appropriateness of delegation in fiscal policy? What would be the types of institutions that could assume responsibilities in the fiscal area? These issues are examined below.

1.1. When is delegation useful?

The proposition that institutional reform can improve the conduct of economic policy rests on two premises. First, institutions directly shape policymakers' incentives that in turn affect policy choices; and, second, well-intended governments would be willing to adopt or modify institutions in a way that effectively improves policymaking. Nonetheless, reforms are in general likely to encounter resistance from entrenched interests: "All societies tend to see their current governing institutions as immutable, as if they were the natural order of things" (Blinder, 1997). In particular, reforms that entail delegation of policy mandates to politically independent, specialized bodies usually occur slowly and encounter stiff opposition. The evolution of institutions that are now generally taken for granted—independent judiciaries, central banks, or (financial) regulators—provides ample testimony in that regard.

Economic theory points to four basic criteria that should dictate whether it is desirable to delegate some or all aspects of policy (Alesina and Tabellini, 2003):

- First, there must be socially harmful distortions in policymaking undertaken by political representatives. If there are no such distortions, there would be no gain from delegation, and the policy can be designed and implemented optimally by political representatives. In such circumstances, the other three criteria noted below would also not apply.
- Second, there should be a broad consensus on what constitutes "sound policy" in any particular domain. This is essential to establish a mandate for which the independent body can be held accountable. The absence of such a consensus would indicate conflicts among social groups or constituencies. This would in turn suggest difficult policy trade-offs that only an elected body could legitimately resolve.
- Third, delegated mandates should not be primarily distributive or have major distributive consequences. Clearly, distributional decisions should reflect a popular mandate that can only be exercised legitimately by the elected representatives.

² Several countries already have such institutions that play varying roles in helping increase the transparency and credibility of fiscal policy. The practices of these countries are examined in the section "Experience with Fiscal Councils."

- Fourth, delegation should not give rise to major policy coordination problems. If a policy in a particular area or some aspect of it is delegated, it should not create conflicts with policymakers in another area that is not delegated. Otherwise, the coordination difficulties could outweigh any benefit from delegation. Likewise, delegation would be undesirable if there are significant economies associated with complementarities between prerogatives to be delegated and nondelegated ones.³

The delegation of monetary policy fits in fairly well with the above analytical criteria: (1) the politicization of monetary policy is generally perceived as a key source of macroeconomic instability; (2) there is relatively little variance in opinions about what constitutes sound monetary policy; (3) monetary policy is not primarily distributive; and (4) a clear-cut assignment of responsibilities between monetary and fiscal policies is in fact one way to deliver a well-coordinated policy mix (Box 6.1; see also Dixit and Lambertini, 2003). (Rogoff (1985) first made a case for an independent “conservative” central bank that would preserve policy discretion and still reduce the inflation bias.)

At the same time, the above framework shows why structural policies are unlikely to be delegated to an independent agency. This is despite the fact that structural policies are often characterized by biases in favor of the status quo due to political distortions (such as the action of well-organized special interests), and reflects the following: (1) there is no consensus on an ideal economic “model”—mainly because structural policies often involve difficult trade-offs between efficiency and equity; (2) structural reforms often have deep distributive implications; and (3) they have far-reaching implications for other policy areas.

1.2. Delegation of fiscal policy

With regard to fiscal policy, delegation might appear possible in some areas. The above analytical framework suggests that specific areas of fiscal policy particularly susceptible to government failure could be delegated to an independent agency. This concerns especially the overall fiscal balance, as supported by the four criteria elaborated above: deficit bias and procyclical fiscal policies constitute socially harmful distortions in policymaking; there is broad agreement that sound fiscal policy should not create unsustainable deficits; the fiscal balance does not have direct distributional consequences, except across generations;⁴ and delegating the setting of the fiscal balance can reduce the problem of macroeconomic policy coordination, especially with monetary policy.

However, some other areas of fiscal policy should clearly remain under elected officials’ control. Specifically, those serving primarily distributive objectives, such as the progressivity of the tax system or the size of social transfers, are not good candidates for delegation. Even though political decisions on them might create economic inefficiencies, there is no broad consensus on what constitutes sound policy in these areas. Aspects of fiscal policy that are so highly dependent on social preferences should clearly remain under the control of the political process. (Nevertheless, there might be technical aspects of tax and expenditure policies where delegation could be considered, as discussed below.

³ Some observers also point out that delegation is particularly useful in cases where policy choices involve a lot of technical expertise with respect to other dimensions of the decision process (e.g., Blinder, 1997; and Alesina and Tabellini, 2003). However, this does not appear to be a key discriminating criterion, as most well-designed economic policy decisions arguably require a significant input from highly skilled professionals

⁴ Intergenerational redistribution actually adds a political economy argument for delegation: future generations are generally not sufficiently represented by elected policymakers. Additional distributional aspects of the fiscal balance concern its financing and the implications for expenditure composition of rapid adjustment. However, these distributional repercussions are not necessarily greater than those associated with monetary policy changes.

Box 1 - Comparing Monetary and Fiscal Policy Delegation

Fiscal agencies raise a number of issues in comparison with independent central banks. One can compare and contrast specifically IFAs with independent central banks.

The core objective for monetary policy is broadly recognized in most countries—price stability. Indeed, the costs of high inflation are felt quickly by large parts of the population, which boosts support for institutions supposed to prevent it. However, what could be called the analogous objective for fiscal policy—debt sustainability—is less clear-cut. For one thing, high debt and deficits are likely to be less easily perceived as harmful by the general public. In the short and medium run at least, the costs of high deficits can be blurred by a number of factors: (1) large groups in the population might benefit from them; (2) the costs are potentially spread over a long time period; and (3) concerns about these costs could be deflected by an expected positive impact on economic growth.

Also, defining the goals of an IFA is more complex than those of central banks, owing to different characteristics of fiscal and monetary policy. This is despite the fact that the mandates of the two bodies can be comparable: IFAs could be mandated with ensuring debt sustainability and contributing to economic stabilization, compared with central banks mandated with ensuring price stability and contributing to growth.

Objective. The objective of monetary policy is usually an inflation rate within a prespecified range (with output stabilization sometimes added as a secondary objective). For fiscal policy, however, there is no broad agreement on one single objective. Unless fiscal stabilization over the cycle would be entirely dismissed, a fiscal agency would likely have to square two potentially conflicting objectives: fiscal sustainability and economic stabilization. Even if the IFA's objective were indeed limited to debt sustainability *ex ante*, political pressure to pursue also a stabilization objective could get severe in bad times.

Target. The target of monetary policy is usually a certain interest rate or money supply growth. A natural target for fiscal policy would be the fiscal balance. However, there are at least three complications compared with monetary policy: First, the measurement of the fiscal balance is more complex and susceptible to “creative accounting.” Second—in contrast to the inflation rate—there is no broad consensus on a fiscal deficit that should not be exceeded. Third, fiscal policy generally works with longer lags than monetary policy: an IFA would have to decide on the fiscal balance several months before the new fiscal year.

Instrument. Central banks have a number of instruments at their disposal. However, what could be called the instruments of fiscal policy—tax rates and expenditures—would tend to remain under the control of the elected government.

	Independent Central Banks	Independent Fiscal Authorities
Mandate	Price stability (and sustainable growth)	Debt sustainability (and economic stabilization through the cycle)
Objective	Restraining inflation	Debt level and/or fiscal balance through the cycle
Target	Interest rate, money supply	Fiscal balance
Instrument	Open market operations, etc.	Typically none (potentially some selected tax rates or the overall expenditure level)

If delegation is deemed desirable, the following institutional arrangements need to be given specific attention:

Mandate. The agency needs a simple and unambiguous mandate, clearly related to the economic rationale for delegation—which is to effectively reduce fiscal policy biases. This facilitates the monitoring of the agency and enhances its accountability.

Discretion. The agency should be given complete discretion with regard to mandates delegated to it, and it should be able to use such discretion to fulfill its mandate.

Accountability. Ex post control procedures should allow elected officials to verify that the delegated prerogatives were used in accordance with the mandate. Sanctions against the agency can be envisaged if violations are detected.

Independence. There should be explicit guarantees against ex ante political control. That includes the prohibition for elected officials to issue instructions to the agency, specific appointment procedures for the agency's executives, and provisions for a long-term budget allowing it to hire staff commensurate to the task both in terms of numbers and qualifications.⁵

2. Independent fiscal authorities

An IFA could reduce deficit bias and improve policy design and implementation. This could be achieved by providing IFAs with the mandate to decide on specific aspects of fiscal policy within a general policy framework previously defined through the political process. While no country has so far instituted a body similar to an IFA, a wide spectrum of proposals has delineated different mandates for such bodies.⁶ Alluding to the terminology familiar in the context of central banks (see Box 6.1), the proposals mainly differ according to whether the IFA would independently set an objective (e.g., debt sustainability) and a target of fiscal policy (such as the annual budget balance), or have some jurisdiction over one or more instruments of fiscal policy (e.g., tax rates). While no proposal envisages that all three aspects would be set by the IFA, some propose the IFA's mandate to consist of a combination of targets and instruments (Figure 6.1).

At one end of the spectrum, an IFA could be mandated with setting both the long-term fiscal objectives and the annual targets for the budget balance (see Appendix 3). The IFA could, for example, be mandated to set a binding deficit target at the beginning of the budget process with a view to preserving long-term fiscal sustainability, given the economy's cyclical position. The definition of the precise objectives, that is, a specific future debt level or the budget balance (over the cycle), would be left to the IFA (Eichengreen, Hausmann, and von Hagen, 1999). While the individual revenue and expenditure plans in the budget would continue to be decided through the political process, parliament would only be legally allowed to pass the budget if the target set by the IFA was reached.

Some more limited proposals envisage IFAs mandated to prescribe budget targets within a politically prespecified framework of fiscal policy objectives.⁷ The IFA could be mandated to set a binding budget target with a view to reaching a future debt level or a certain budget balance over the cycle prespecified through the political process. While some proposals focus on the IFA's contribution to debt sustainability (Wyplosz, 2005), others concentrate more on the need to pursue countercyclical fiscal policy (Calmfors, 2003). Ultimately, however, an IFA would necessarily have to be concerned with both sustainability and cyclicity, as they cannot be fully separated.

In the same vein, an IFA could be instituted as the impartial enforcer of an existing fiscal rule. The IFA could, for example, be mandated to veto any budget proposal at odds with the fiscal rule. The more economic analysis the implementation of a rule requires, the more important the value added of such an IFA could be. For instance, while a balanced budget or "golden rule" is relatively clear-cut, the

⁵ Constraints on the availability of human capital as well as other administrative limitations could nonetheless be a problem in many developing countries.

⁶ However, similar bodies have been instituted in a number of countries under exceptional circumstances in the absence of adequately functioning domestic political institutions by the international community, not the national government; examples are Austria after World War I or, more recently, conflict areas administered by the United Nations.

⁷ A range of other potential IFAs discussed in the literature are summarized in Appendix 1.

assessment of any rule that has to be met over the cycle requires considerable expertise, which can weaken implementation. In such cases, the rulings of the IFA could be particularly useful.⁸

Although an analytical case for IFAs can be made, their establishment appears unlikely for a number of reasons. First and foremost, the institution of an IFA raises issues of democratic accountability that are much more serious than those pertaining to independent central banks.⁹ Second, there is a risk that conflicts between the IFA and the government could undermine policymaking: for example, in-year adjustments to the budget (due to unforeseen events) would require close cooperation between the IFA and the government; in countries with substantial fiscal decentralization, an IFA would need also close coordination with subnational governments. Third, policymakers are reluctant to delegate a significant part of their mandate (particularly given that monetary policy often is already independent).

In sum, these concerns are likely to explain why there are to date no IFAs in operation in any country. This strengthens the view that similar but less intrusive fiscal agencies could play a useful role in promoting fiscal discipline. These are discussed in the following section.

3. Fiscal councils

Fiscal councils (FCs) could help reduce the deficit bias while leaving discretion to the political representatives. They could contribute to greater transparency and therefore accountability of fiscal policy and thereby raise the political cost of inappropriate uses of fiscal policy in terms of credibility of the policymakers. A variety of FCs have been in operation in a number of countries. They range from organizations essentially mandated to provide independent projections of budgetary variables and general fiscal analysis to bodies assessing the consistency of a government's budgetary policies with its own long-term objectives or proposing specific fiscal adjustment measures in the context of fiscal rules.

Mandate

Existing FCs can be broadly categorized into three types (Figure 6.1). The first type has a mandate to provide objective analysis of current fiscal developments, their macroeconomic context (such as the cyclical position of the economy), long-term sustainability considerations, and costing of budgetary initiatives. The second type provides independent projections and forecasts. The third type, in addition, has the mandate to provide normative assessments. This includes, for example, the appropriateness of fiscal policy in a given macroeconomic environment, or a recommendation of a particular fiscal stance for a given year within a medium-term framework previously defined through the political process.

A number of proposals in the literature describe arrangements essentially similar to those noted above (Table 6.1). Most often, they propose a strengthening of the commitment to existing fiscal rules through an FC type of institution.¹⁰ Such an institution would typically assess budgetary performance relative to fiscal rules and might also be mandated to suggest adjustments if necessary. The proposals are mostly centered around debt sustainability, although some also envisage a role for the FC in stabilization, whereby it could issue statements on the appropriateness of the fiscal stance from a cyclical perspective.¹¹

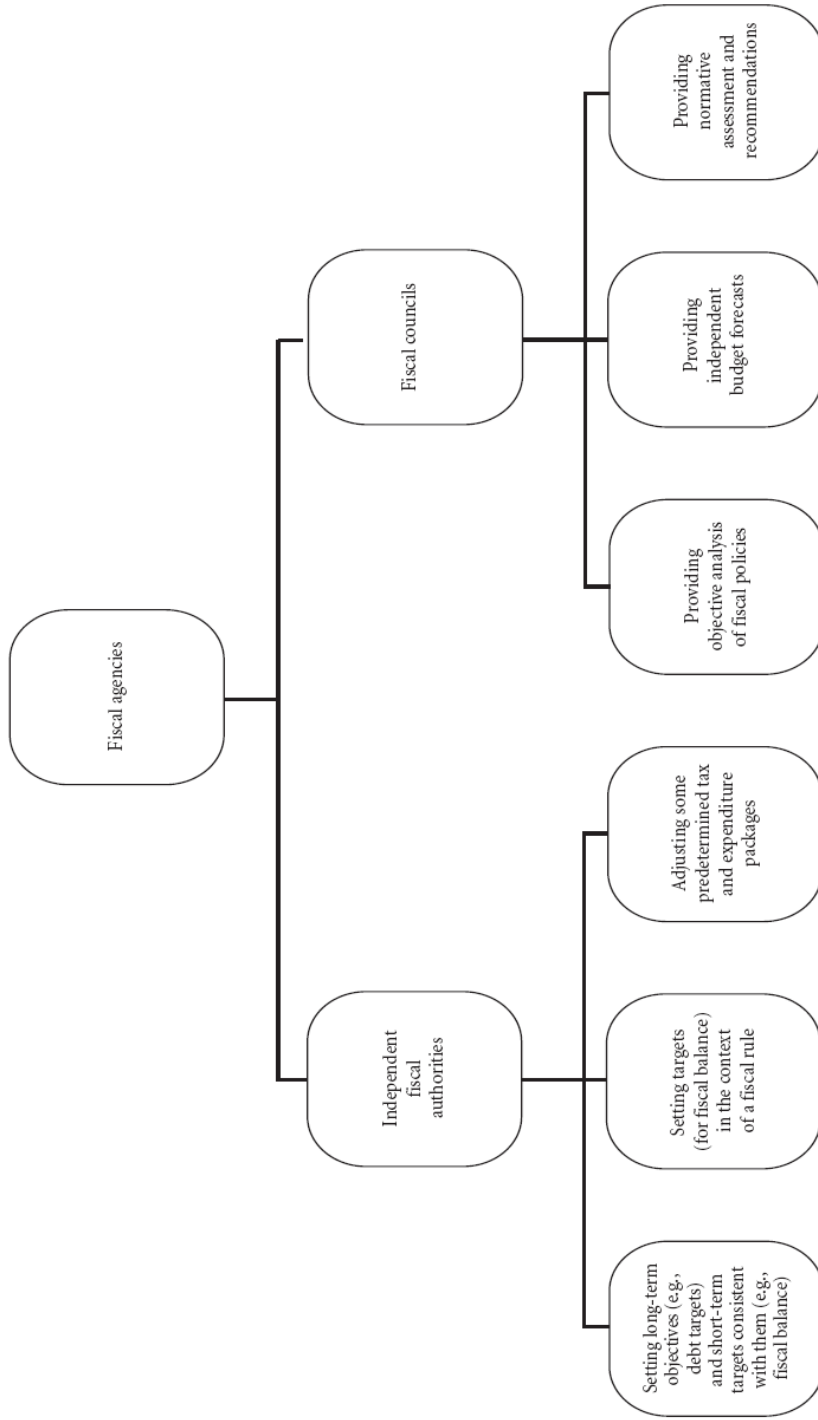
⁸ While the well-known technical constraints on the assessment of cyclically adjusted balances would remain, the IFA could at least remove any politically motivated interpretation of underlying economic developments.

⁹ Some proposals suggest addressing such concerns through accountability-enhancing measures similar to those applied to independent central banks, and/or overriding rules if a qualified majority in parliament disagrees with a decision of the fiscal authority.

¹⁰ For example, Committee on Stabilization Policy (2002), Fatás and others (2003), European Commission (2004), and Ubide (2004).

¹¹ For example, Committee on Stabilization Policy (2002).

Figure 6.1. A Taxonomy of Fiscal Agencies



Source: IMF staff.

Table 6.1. Selected Proposals for Fiscal Councils

Reference	Mandate	Instrument(s)	Structure	Accountability
Inman (1996), European Union	Contribute to enforcement of Stability and Growth Pact (SGP).	European Court of Justice rulings in cases of infringement of Maastricht rules.	European Court of Justice assumes the role of a fiscal council.	Unspecified.
Committee on Stabilization Policy (2002), Sweden	Contribute to enforcement of existing fiscal rules.	Assess fiscal performance relative to the existing fiscal rules. Monitor cyclical developments and recommend fiscal stance. Analyses to be published in public reports that the government has to react upon.	Expert panel from academia and government guaranteed "a sufficient degree of independence." Staggered tenures. Safeguards against conflicts of interest.	Unspecified.
Fatás and others (2003), European Union	Preserve debt sustainability.	Assess compatibility between national budget plans and sustainability.	EU-wide council. Same guarantees of independence as for the European Central Bank.	Appointed by and regular reports to parliament.
European Commission (2004), European Union	Contribute to enforcement of SGP by increasing national ownership.	Provide publicly available assessment of national policies relative to the stability programs.	On national level. Structure could vary by country.	Unspecified.
Ublde (2004), European Union	Contribute to enforcement of SGP by removing biases in budget forecasts.	Produce macroeconomic and fiscal forecasts against which adjustments toward the SGP limits would be assessed. Monitor budget developments.	National independent agencies.	Unspecified.
De Haan, Berger, and Jansen (2004), European Union	Contribute to enforcement of SGP.	European Commission decides on fiscal adjustment needs. Supreme Court decides on sanctions if countries fail to adjust.	European Commission and European Court of Justice together assume the role of a fiscal council.	Unspecified.
Jonung and Larch (2004), European Union	Improve transparency by eliminating bias in budget forecasts.	Prepare binding forecasts for growth and other budget variables to be used for budget.	Same arrangements as for modern central banks. Member appointed by international organizations.	Public comments on forecasts.

Some proposals go a step further and suggest combining an FC's assessment of the observance of fiscal rules with sanctions imposed by the judiciary. For example, De Haan, Berger, and Jansen (2004) propose in the context of the European Stability and Growth Pact that the European Commission should issue

binding decisions on the fiscal adjustment needs for the EU member countries. Noncompliance with these rulings by the governments would entail sanctions to be imposed by the European Court of Justice.¹² The effectiveness of the FC, in this case the European Commission itself, would stem from the legal consequences of noncompliance with its decisions. However, the role of the FC in these proposals should not be overstated: ultimately, the idea is to make fiscal rules that were established through the political process legally binding like any other constitutional provision.

Some propose the independent preparation of fiscal and macroeconomic forecasts by an FC.¹³ Without presuming that independent forecasts would be technically better, these proposals are motivated by the concern that policymakers may utilize biased economic forecasts underlying the budget to obfuscate policy intent and limit ex ante public scrutiny (see also the section “Can Other Institutions Play the Role of Fiscal Agencies?”). To the extent that biased forecasts contribute to excessive deficits, independent forecasts could improve fiscal performance. The FC would prepare forecasts on a continuous basis that would increase the transparency of the budget and of fiscal performance throughout the year. Different from private sector or academic forecasters, the FC would be mandated by the government and would thus have access to inside information. The forecasts could be revisited during the year to adjust the fiscal stance where needed (see the Chilean example in the section “Can Other Institutions Play the Role of Fiscal Agencies?”). While the ultimate decision on the budget forecasts could be left to the government, the impact of independent forecasts on fiscal discipline would be enhanced if their use for the budget were made mandatory. This type of FC could make a constructive contribution to promoting fiscal discipline.

4. Implementation issues

The proposed institutional setup for FCs vary, but autonomy is a general consideration (Table 6.1). As for IFAs, most proposals envisage that FCs would consist of economic policy experts from academia and the public sector, whose autonomy could be bolstered by a number of provisions, not unlike those in place for many independent central banks.¹⁴ As a special case, two proposals (Inman, 1996; and De Haan, Berger, and Jansen, 2004) envisage a role for the judiciary in strengthening compliance with fiscal rules. Accountability is less of a concern for FCs than it is for IFAs, but nonetheless it could be enhanced if FCs were instituted by parliament and required to explain recommendations in detailed public reports. Moreover, an FC’s influence in the debate would depend on the credibility of its assessment.

Whether an FC is likely to make a significant contribution to policy will depend in part on the severity of the fiscal problem in a given country. A political system with a fair amount of credibility and manageable slippages may prefer a relatively limited mandate for an FC, that nonetheless still enhances public scrutiny of policies. However, countries demonstrating a serious deficit bias under discretion and low credibility might consider a more significant move with the FC given the authority to provide normative assessments that the government feels obliged to take into account.

The institutional environment in a given country is also likely to determine the shape and effectiveness of FCs. Its effectiveness will depend on the importance of accountability in a country’s institutional setup, as enshrined in its constitution. When checks and balances are strong, an FC with a mandate limited to analysis could usefully lend support to the more fiscally responsible parties. But where checks and

¹² Inman (1996) makes a similar proposal.

¹³ Jonung and Larch (2004), Ubide (2004), and Wyplosz (2005). In this vein, the IMF Code of Good Practices on Fiscal Transparency (see IMF, 2001) recommends independent expert assessments of fiscal and macroeconomic projections.

¹⁴ Of course, the format of an FC would need to take country circumstances, including the scarcity of the relevant expertise, into account.

balances are weak, such an FC is more likely to be ignored in the political process.¹⁵ Substantial fiscal decentralization might raise the potential gains from an FC, as it could assume the role of an independent arbitrator between the central and the subnational governments and contribute to the coordination of fiscal policies (see the Belgian example discussed in the section “Can Other Institutions Play the Role of Fiscal Agencies?”). At the same time, such decentralization could complicate the FC’s mandate as it would have to monitor the fiscal policies of the local governments as well.

A number of conditions could bolster the effectiveness of an FC. Given that it would exert influence primarily through the public debate, two main conditions are crucial: (1) its mandate needs to be clearly defined and reflect a relatively broad social consensus on what constitutes sound policy;¹⁶ and (2) the government must be willing to integrate the FC into its work—perhaps even by using it to bolster its case for unpopular measures or reforms. Additional conditions that could strengthen the effectiveness include (1) the existence of fiscal rules, because they provide a clear benchmark against which the government’s policies can be assessed; (2) a central role for the FC in the budget process—for example, the budget vote could require a hearing with the FC or an explanation from the government if its recommendations are ignored; and (3) legislated provisions regarding the FC, because they could bolster its position in a possibly unfavorable political environment.

5. Experience with fiscal councils

This section reviews the experience with FCs in a number of countries. It yields four main lessons. First, the establishment of an FC is a realistic institutional reform that seems to have contributed to fiscal discipline in a number of countries. Second, FCs providing normative assessments of fiscal policy appear to have been more effective than those limited to nonnormative analysis. Third, the effectiveness of either hinges on the government’s commitment to fiscal soundness. If a certain degree of commitment exists, it can be bolstered by an FC; if not, its impact is likely to be limited. Fourth, the desirable mandate and setup of FCs should be country specific, depending on the nature of the fiscal problems, the existence of fiscal rules, the role of the legislature in the budget process, and the checks and balances existing in the political process.

There are several examples of FCs with a mandate to issue normative judgments regarding a government’s fiscal policy and assessment of whether it is consistent with its own predefined goals. In the process, these councils undertake independent analysis of fiscal developments, as well as provide forecasts and projections for macroeconomic variables.

Belgium’s High Council of Finance recommends specific annual borrowing requirements for all levels of government (Box 6.2).¹⁷ Each year, the council publishes two reports: one on the future public sector borrowing requirement and another on the implementation of the Belgian stability program. The council’s mandate is explicitly limited to the borrowing requirement, but it provides recommendations on the requisite fiscal stance for all levels of government consistent with that requirement.

¹⁵ It has been argued that a higher degree of separation of powers tends to reduce the size of deficits (Aghion, Alesina, and Trebbi, 2002; and Persson and Tabellini, 2003 and 2004), while a lower degree of internal unity in the government (typically under plurality electoral rules) tends to increase it (Balassone and Giordano, 2001; Fiorina, 1996; and Persson, 2004). These arguments are typically based, among others, on a government’s degree of accountability, its susceptibility to rent-seeking, or the resistance to reform.

¹⁶ The social consensus could, however, itself be shaped to some degree by increased transparency that could be provided by a fiscal council.

¹⁷ Website: docufin.fgov.be/websedsdd/intersalgen/hrfcsf/onzedienst/Onzedienst.htm. Belgium also has a second FC-type institution, the Federal Planning Bureau (FPB). While technically part of the government, it has some independent standing. The FPB provides independent economic forecasts that must be used for official purposes, long-term forecasts, and policy analysis.

Box 2 - Belgium—The High Council of Finance

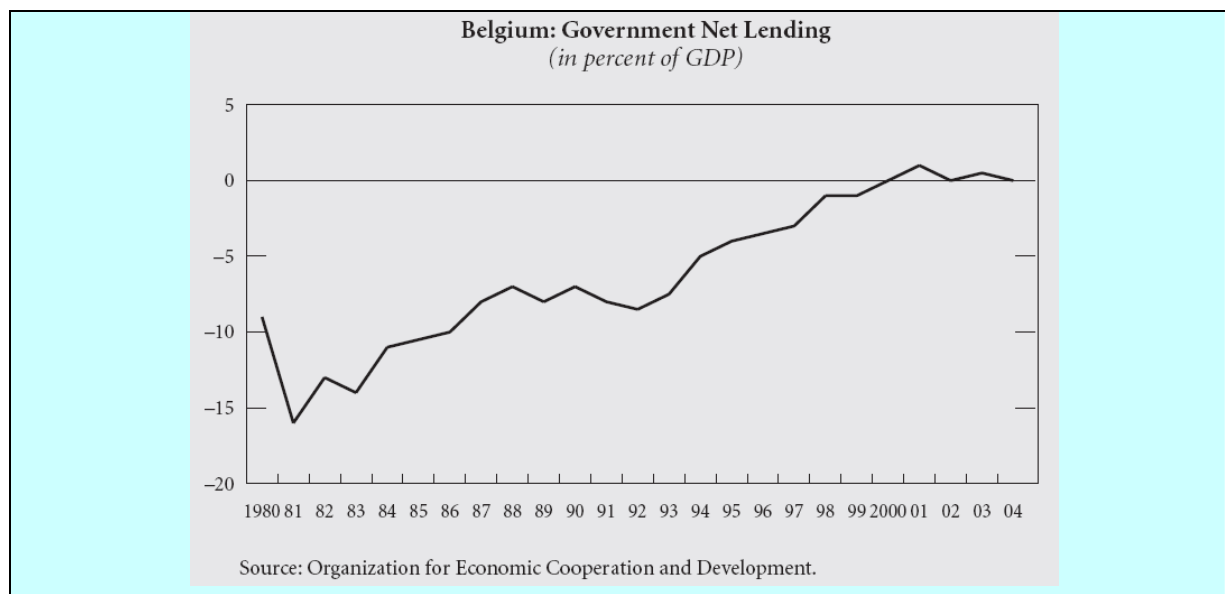
Belgium established an “independent fiscal council” in 1989 in the context of a substantial fiscal decentralization reform. The aim was to provide a coordinating mechanism for general government fiscal policy to secure macro-economic stability. The council was officially established as the “Public Sector Borrowing Requirement Section” of the already existing “High Council of Finance.” (The other sections are “Taxation and Social Security Contributions,” “Transfer of Federal Collected Tax Revenues,” and “Financial Institutions and Markets,” and a “Study Group on Ageing.”) The council complements the role of the Federal Planning Bureau, which is a relatively independent government body and provides independent economic forecasts that must be used for official purposes, long-term forecasts, and policy analysis.

Belgium’s council has a relatively strong mandate. First, it publishes two yearly reports: (1) in March, an assessment of the implementation of the internal stability program during the previous year; and (2) in June, an analysis of the borrowing requirement of each of the local governments, as well as the budgetary policy to be adopted, including specific recommendations on the budget balances of the three levels of government. Second, the council may give its opinion, on its own initiative or upon request of the federal finance minister, regarding the advisability of restricting the borrowing requirement of governments due to considerations about short- or long-term macroeconomic stability.

However, the council is explicitly limited to commenting on the borrowing requirement. It must not comment on general fiscal policy (particularly tax and expenditure policies) or social and economic policies in a wider sense. Still, it can make reference to a broad range of issues in the context of its recommendations pertaining to fiscal sustainability, including politically sensitive issues such as expenditure pressures arising from aging. In its assessment of the fiscal stance and its recommendations, it is guided by the long-term fiscal frameworks agreed between the different levels of government.

The council is composed with a view to equal representation and independence. Its 12 members are appointed by the king upon proposal by the regional governments, the central bank, and the ministry of finance. The chairman (from its inception) is an academic. Six members each have to come from the Flemish and the francophone community, respectively. The members are appointed for renewable five-year mandates. They have to be economic experts and must not hold a political office at the same time to ensure their independence. Recommendations by the council have to be supported by a majority of its members.

The council’s recommendations were followed closely as long as its views were aligned with political priorities. During the 1990s, the council was charged with monitoring the implementation of the government’s “convergence plan” that envisaged reducing the fiscal deficit to the Maastricht criterion of 3 percent of GDP by 1996. During that period, its recommendations for the deficit were closely adhered to and—according to anecdotal evidence—contributed to the substantial fiscal consolidation during that period. Since the downturn in 2000, however, the council’s recommendations seem to have been followed less closely. The downturn provided the context for a downward revision of the medium-term consolidation plan for 2000–05. However, even the council’s recommendation for meeting these revised targets was not fully implemented. As a consequence, the budget outcomes, adjusted both for the cycle and one-off measures, were negative at the general government level over the period 2000–04 (Van Rompuy, 2005).



Denmark's Economic Council provides judgment on fiscal and structural policies and recommends changes.¹⁸ Its analysis is based, among others, on its own economic forecasts for the subsequent two to three years. The council's semiannual reports are produced by its three independent chairs.

The composition of these FCs varies considerably, ranging from specific representation to loose expert panels. In Belgium, the federal finance ministry, the central bank, and the regions are represented on the agency, reflecting the council's role in policy coordination in the context of substantial fiscal decentralization. These representatives cannot hold political posts at the same time. In Denmark, in addition to independent experts, the council has 26 members representing trade unions, employers, the central bank, and the government; the three chairmen ("wise men") are generally academics.

The evidence suggests that these agencies have made an effective contribution to fiscal discipline in their respective countries. Although it is difficult to disentangle their impact from that of other factors, the recommendations of these agencies seem to have been taken seriously, with the respective governments adhering to them in many instances. These agencies have helped make the process of fiscal policy formulation and implementation transparent and contributed to a constructive public debate on budgetary issues. This, in turn, has often helped highlight the requirements for sustainable policies and strengthen the governments' ability to implement them. For instance, in Belgium, the council's recommendations on the borrowing requirement were followed particularly closely for a number of years during the 1990s, and allowed some difficult consolidation measures to be implemented. In addition, the council's recommendations have served as a useful basis for multiannual cooperation agreements between different levels of governments.

The experience with these agencies also highlights the role of political environment, and usefulness of rules. In both cases, the agencies' establishment reflected a political will and social consensus to stabilize or consolidate the fiscal position. Under such circumstances, these agencies reinforced credibility of commitment by increasing the political cost of deviating from responsible fiscal policies. In addition, there was a quite marked complementarity between "judgment" (entailing discretion) and rules.

For instance, in Belgium, the agency's recommendations were adhered to by the government because the need for adjustment was enshrined in a transparent rules-based framework. This underlines the contention that a clear standard against which the government's policies can be assessed, particularly if it has been set by the government or parliament itself, may enhance the effectiveness of an FC.

¹⁸ Website: www.dors.dk/english/index.htm.

A number of countries have delegated the preparation of economic assumptions and projections underlying the budget to independent bodies.¹⁹ Studies have shown that, if produced by the government, these assumptions and forecasts (typically for GDP growth, inflation, interest rates, unemployment, and tax revenues) can be susceptible to systematic overestimation or underestimation.²⁰ While all forecasts—whether produced by the government or an independent body—are prone to errors (Table 6.2), independent forecasts would eliminate systematic, politically motivated biases. In the short run, such biases can make the budgetary situation look rosier than it is in fact, allowing governments to avoid making difficult choices. Over time this exacerbates fiscal vulnerabilities. Projections prepared or scrutinized by independent bodies could contribute to reducing these potential biases. For example, in Canada, a panel of independent experts from academia and the private sector is polled for macroeconomic forecasts. These experts underestimated the strength of Canada’s economy since the mid-1990s, which contributed to a string of larger than expected fiscal surpluses in recent years.²¹ In Chile, two independent expert panels help enforce a structural balance rule (Box 6.33). In the budget process, the two panels forecast copper prices and the growth of the labor force, real investment, and total factor productivity.

There are several examples of existing FCs with a mandate limited to impartial analysis of the government’s policies and their consequences.

The U.S. Congressional Budget Office (CBO) advises Congress and the public on a range of fiscal issues. It analyzes the president’s budget based on its own assumptions, “scores” new legislative proposals, and produces a large amount of ad hoc reports. The scoring or budgetary costing of specific initiatives has played a role in the decisions on whether such initiatives were adopted (Box 4).

¹⁹ In addition to the more independent institutional arrangements in Canada and Chile, which are elaborated here, in some countries forecasts are provided by bodies separate from the government as such, but still under its scrutiny in a wider sense. Examples of such arrangements include Austria (Austrian Institute for Economic Research) and the Netherlands (Central Planning Bureau).

²⁰ Hallerberg, Strauch, and von Hagen (2001); Jonung and Larch (2004); Mühleisen and others (2005); and Strauch, Hallerberg, and von Hagen (2004) find evidence—albeit mixed—for biased budget forecasts in a number of OECD countries. In the same vein, a large proportion of governments have tended to overestimate crucial budget parameters in the past (Table 6.2), according to governments’ own self-assessments.

²¹ Mühleisen and others (2005).

Table 6.2. Economic Assumptions in the Budget

	Prepared Independently	Reviewed Independently	Overestimated ¹	
			GDP growth	Revenues
Algeria		X		
Argentina			Significantly	Significantly
Australia			Significantly	
Austria	X	X	Significantly	Significantly
Belgium	X		Slightly	
Bolivia		X	Significantly	Significantly
Cambodia		X	Slightly	
Canada		X		
Chile			Slightly	Slightly
Colombia			Slightly	
Czech Republic		X		
Denmark			Slightly	
Finland				
Germany		X	Significantly	Significantly
Greece				
Hungary		X	Slightly	
Iceland				
Indonesia		X	Slightly	Slightly
Ireland				
Israel			Significantly	Significantly
Italy			Slightly	Slightly
Japan			Slightly	Slightly
Jordan			Slightly	Slightly
Kenya			Slightly	Slightly
Korea		X	Slightly	
Mexico			Significantly	Significantly
Morocco		X		Slightly
Netherlands	X	X	Significantly	Significantly
New Zealand			Slightly	
Norway				
Portugal		X	Significantly	Significantly
Slovak Republic		X		
Slovenia	X	X	Slightly	Slightly
South Africa				
Spain				
Suriname				Significantly
Sweden			Significantly	
Turkey			Significantly	
United Kingdom		X	Slightly	Slightly
United States		X		Significantly
Uruguay				
Percent of total	9.8	41.5	63.4	46.3

Source: OECD and World Bank (2003), based on self-assessments by governments.

¹Budget forecasts higher than actual performance in 2001 and 2002.

Japan's Fiscal System Council advises the finance minister on topics related to the budget and the government accounting system. It comments on the budget requests and makes proposals for the measures to be taken for the following fiscal year. Furthermore, it conducts research on and recommends

measures in the areas of fiscal structural reform (such as expenditure rationalization) and the government accounting and budget systems.

In Germany, the “Working Group on Tax Estimates” publishes regular estimates of government revenues. It consists of government officials, academics, and representatives of the Council of Economic Experts and has a reputation of relative independence.²²

The Central Planning Bureau (CPB)²³ of the Netherlands conducts independent analyses and provides the economic assumptions for the budget. It conducts research on a broad range of economic issues, including fiscal, labor market, and regulatory policies. The CPB also plays a role in the development of the budget policy contained in the coalition agreements. All political parties use the CPB’s economic assumptions for their policy platforms, and the larger parties submit their platforms to the CPB ahead of elections for assessment. After the elections, the CBP assesses compromises negotiated for coalition agreements.

Box 3 - Chile: The Interaction of Fiscal Rules and a Fiscal Agency

Recent changes in Chile’s fiscal institutional setup have been consciously designed to further buttress fiscal sustainability and help dampen the effects of cyclical fluctuations. Since 2001, policy has been based on the rule of maintaining ex ante a structural surplus of 1percent of GDP for the central government. According to the rule, fiscal expenditures follow the dynamics of structural revenue, that is, the revenue that would be achieved if the economy were operating at full potential, and the price of copper (Chile’s main export) were at its long-term level.

To strengthen the implementation of the rule, the projection of the inputs into the trend GDP estimate and of copper prices was delegated to two independent expert panels. The panelists estimate individually the growth of the labor force, real investment, and total labor productivity. The estimates are then averaged eliminating the two most extreme values and used by the finance ministry to estimate trend GDP through a production function approach. Such a methodology is likely to avoid under or overestimation or underestimation of potential GDP: a downturn in the pace of activity is likely to impart a downward bias to the potential that is likely to result in a more expansive policy while a rebound is likely to go in the opposite direction. In addition, a second panel produces 10-year forecasts of the price of copper which are also averaged excluding the two most extreme values.

Despite a largely technical mandate, the panels play a key role in the budget process. The combination of the structural balance rule and the independent panel was adopted to signal policy credibility, while at the same time maintaining some policy flexibility. Together they aim to give more stability to public expenditure preventing excessive adjustments in periods of recession or unsustainable expenditures during boom years. The panel’s role ensures that the underlying economic assessment is separate from other considerations in the budget preparation and implementation.

Box 4 - United States: The Congressional Budget Office

The Congressional Budget Office (CBO) was established in 1975 to inform the U.S. Congress on fiscal issues. As part of a comprehensive reform, it was intended to contribute to compliance with the then newly created congressional budget process. Both were designed to give Congress the capacity to act independently of the president on revenue and spending matters. Its mission is “to provide the congress with the objective, timely, nonpartisan analyses needed for budget and economic decisions and with the information and estimates required for the Congressional budget process.” In doing so, the CBO produces a large number of reports and its senior staff regularly testifies before Congress.

The CBO plays a key role in the annual budgeting process and in budget monitoring. Particularly important is

²² In addition, the Council of Economic Experts (see www.sachverstaendigenrat-wirtschaft.de) advises the government and parliament on economic policy, but does not make specific recommendations and does not analyze the budget in a comprehensive manner. The government is required to respond formally to the annual report.

²³ Also called “Netherlands Bureau of Economic Policy Analysis” (website: www.cpb.nl/eng).

the annual analysis of the President's budget, including its reestimation using the CBO's economic and technical assumptions. Further tasks include cost estimates of bills reported by congressional committees and estimates of unfunded federal mandates, which impose costs on state or local governments. During the dozen years that the Budget Enforcement Act was in effect, the CBO also reported to Congress on the status of spending limits and any required offsets.

As an important input into its advice on the budget, the CBO produces two macroeconomic forecasts each year. They cover GDP, unemployment, inflation, and interest rates for the next two calendar years. In preparing the economic projections, the CBO is guided by a panel of economic advisors. The CBO also produces 10-year baseline projections of macroeconomic trends and federal revenues and expenditures.

The baseline projections serve as the starting point for measuring the impact of policy changes on future budgets ("scoring"). The baseline report is updated each summer to reflect fresh estimates of economic conditions and recent policy changes. In explaining variations from the previous baseline projection, the CBO classifies changes into three categories: policy changes, such as new legislation; economic changes, such as higher or lower GDP growth; and technical changes due to reestimates of future receipts or expenditures. The "scoring" task of the CBO has tended to be one of the more important roles. This role gained prominence in the 90s because of the rules existing then requiring mandatory spending increases and revenue reductions to be offset. The amount of the offset depended on the CBO score. If, for example, the CBO scored tax legislation as a \$0 billion reduction in revenue, Congress had to compensate for that estimated loss by raising other revenues or reducing mandatory spending by an equivalent amount. The CBO has a reputation of independence. Its director is appointed jointly by the House of Representatives and the Senate and can be removed by either house of Congress. However, the Budget Act provides that the director and staff are to be appointed "without regard to political affiliation and solely on the basis of their fitness to perform their duties" and the operational independence of the CBO, while not enshrined in law, appears to have been generally respected. As Schick (2004) notes, the "CBO has never openly asserted its independence from Congress, for doing so would undercut its legitimacy and alienate it from its patrons. Yet it has behaved in ways that manifest its independence on the political scene. For the CBO, independence is more a matter of organizational culture than of legal status." The CBO's staff numbers about 230, about one-third of which is assigned to the largest division, budget analysis. Most of the remaining staff work in the program divisions that deal with macroeconomics, taxation, microeconomics and finance, long-term models, health and human resources, and national security.(1)

(1) For further information, see the CBO's website (www.cbo.gov) and, for example, Schick (2004) and Blöndal, Kraan, and Ruffner (2003).

Korea's National Assembly Budget Office²⁴ advises parliament on fiscal policy issues. It analyzes budget and economic policies, evaluates general fiscal policies and national programs, and conducts research. The budget office also produces cost estimates for bills and forecasts of fiscal and macroeconomic trends. The head of the budget office is advised by the Budget Policy Advisory Committee, which includes members from the financial sector, universities, and the media.

Mexico's Center for the Study of Public Finances,²⁵ modeled on the U.S. CBO, is attached to the congress. It reviews the periodical government reports on the economic situation, the public finances and public debt, as well as the budget proposal and fiscal laws. It also provides independent analyses requested by the congress or upon its own initiative.

A number of other countries have fiscal advisory bodies attached to the legislature. In addition to Korea, Mexico, and the United States, Canada, Chile, Indonesia, Japan, Jordan, the Netherlands, and Sweden have "specialized budget research organization(s) attached to the legislature (or the audit office) that conduct analyses of the budget" (OECD and World Bank, 2003). They have generally less than ten professionals that are part of the legislature's general support staff.

²⁴ Website: www.nabo.go.kr/english/index.html.

²⁵ Website: www.cefp.gob.mx.

FCs can have varied structures. They can range from a small group of academics to a full public agency with extensive technical and financial resources as in the U.S. (see Box 6.4). In Mexico and the United States, the council is attached to the legislature, only the respective director is appointed by congress. In Japan, the council is an organ of the ministry of finance and is composed of scholars, journalists, and business executives. In Chile, the two panels of 12–14 members each are appointed each year.

The experience with these FCs appears to suggest that their effectiveness depends even more than for those with stronger mandates on the government’s commitment to fiscal prudence. Fiscal performance has varied substantially both across countries and across time despite their existence. This suggests that the political cost of ignoring the analysis of a purely advisory body is generally limited. The cost is likely to be smaller than ignoring normative assessments and recommendations, because the latter provide a benchmark against which the government’s policies can be scrutinized in public forums. The more open-ended the advice, the less it is likely to have weight in the political and public debate.

6. Can other institutions play the role of fiscal agencies?

A number of existing institutions—most notably central banks, private financial institutions, and regional or multilateral institutions—already help shape policymakers’ incentives in ways that discourage the abuse of discretionary fiscal policy. However, for a variety of reasons noted below, they cannot fully substitute for fiscal agencies. In particular, they are either not independent or do not have a domestic government mandate, as an ideal FC would. Rather, FCs and the existing institutions could complement each other.

Where a nascent FC already exists, strengthening it may well be preferable to the setting-up of a new institution. For example, a well-established and reputable policy institute could be provided with a formal mandate to systematically undertake analysis of budgetary issues and to issue regular reports on the government’s policies. There could also then be a mandatory requirement on the part of the government to respond formally to its reports. These reports of course need not be restricted simply to analysis, but could include also normative assessments, and recommendations (for instance in the “green budget” produced by the Institute for Fiscal Studies in the United Kingdom). A prerequisite for credible operation of such an institution is the provision of a formal mandate, as well as accountability.

In many countries, national central banks could—and to a certain extent already do—act as an FC. Central banks often enjoy political independence, are granted an autonomous budget, and have a staff able to analyze and assess fiscal policy issues as well as influence the policy debate. As the government’s bank, the central bank is also well placed to monitor fiscal flows and stocks. Granting the central bank a well-defined fiscal mandate could thus save the costs of creating a new institution, and make sure that the “embedded” FC is credible. However, there is a danger that a central bank will be too narrowly focused in its approach to fiscal policy. This could in turn elicit a response from the government that threatens the independence of the central bank. Moreover, the concentration of policy-related mandates in the hands of unelected representatives would magnify issues of democratic accountability.

Private financial institutions, such as commercial and investment banks, as well as rating agencies, also provide independent assessments of fiscal policy. Their influence on policy outcomes works through market pricing of government and quasi-government securities. However, there are two key reasons why these institutions are unlikely to be able to substitute for FCs. First, their motivation and incentives, based on profit considerations, and lack of democratic legitimacy, imply that they will not be guided by public policy considerations. Private sector research is arguably subject to its own bias, and distortions. Second, the transmission channel from the assessment to policy decisions is not the continuous democratic policy debate, but the discontinuous, and often sharp, delayed reaction of financial markets. Conversely, FCs can increase the flow of their information about fiscal policy, improve policy outcomes, and stabilize expectations, leading to smoother functioning financial markets.

Regional or multilateral institutions, such as the OECD and, in particular, the IMF, also undertake tasks similar to those of fiscal agencies. In the case of the IMF, its appropriate role will depend on whether it is

providing financial support to a country or is engaged in surveillance. Where it exists, a fiscal agency and the IMF could play complementary roles in the context of an IMF-supported program. In this case, an independent fiscal authority (IFA) would have a mandate that is close to that of the IMF, although even an FC could facilitate the negotiation and implementation of a program by increasing the information flow between the authorities and the Fund, and by strengthening ownership of a program at the national level by shaping the desirable preconditions in terms of consensus, fiscal rules, and budgetary framework. The basic premise would be that the fiscal agency would have a realistic and objective view of the constraints facing the economy, and the policies that need to be implemented. There is, however, always a risk that an additional actor may end up further complicating the interaction between country authorities and the IMF.

In a surveillance context, an FC and the IMF play similar roles, in that they are both involved in the analysis of fiscal developments and sustainability. In this context they can support one another, rather than duplicating each other's work. Thus, an FC should engage in a continuous assessment of fiscal developments, and undertake more detailed analysis of fiscal developments than is realistic for the IMF. The IMF, on the other hand, can provide a better perspective on the implications of broader international and global developments, as well as bring a cross-country perspective to bear on national fiscal policy.

7. Conclusions

This chapter has examined a number of issues related to the rationale, mandate, and operations of fiscal agencies and analyzed country experiences. The discussion points to the following conclusions.

There are widespread difficulties in the design and implementation of fiscal policy in both industrial and developing economies. They are reflected in deficit bias, procyclicality, and conduct of unsustainable policies. These problems arise from a variety of political and economic factors, but political economy considerations, including electoral concerns, and the competing demands from various constituencies and lobbies play a key role.

A major element underlying the above problems is the inappropriate use of discretion in fiscal policymaking. In general, discretion is valuable and allows response to unexpected shocks, as well as the exercise of the democratic mandate, particularly with regard to redistribution issues. However, discretion can be misused, especially in the presence of political and distributive conflicts, and if governments have short-time horizons. The challenge is to alleviate the undesirable features of discretion while retaining flexibility.

Institutional reform is one way of meeting that challenge. Whether as a complement to existing fiscal rules, or independently of them, institutions can be set up that help in the formulation and implementation of sound fiscal policies. Reforms in this direction could in general entail some measure of delegation of a policy mandate or of activities supporting such a mandate. Theory has identified various factors, including a consensus on what constitutes sound policy, that suggest that, in practice, delegation in fiscal policy could be beneficial.

There are two main types of fiscal agencies to which some aspect of policy could be delegated and which could help improve fiscal discipline: IFAs could be mandated with setting annual targets for the budget balance, or could veto proposals at odds with a given fiscal rule. However, while an analytical case can be made for IFAs, the fact that there are no instances of IFAs to date suggests that policymakers are reluctant to delegate a significant element of their mandate and that their implementation may raise issues of democratic accountability.

FCs are likely to be more generally acceptable and could help reduce policy distortions. These councils could help improve fiscal policy by independent analysis, forecasts, or normative judgments. They could thereby affect policymakers' incentives and motivations, including through public debate and scrutiny. A number of countries have constituted FCs, and there are a variety of proposals for new ones. The

evidence suggests that FCs providing assessment generally contribute more to fiscal discipline than those limited to pure analysis.

The desirable form of fiscal agencies is country specific. It would depend on the nature of the fiscal problem and on the country's political environment, including the constitutional setup, the legal tradition, and policymaking customs. Fiscal agencies can complement the role played by existing institutions, including the Fund, and enhance their effectiveness. As part of the IMF's mandate, consideration could be given to exploring the development of specific types of fiscal councils.

Both theory and experience suggest that fiscal agencies can improve the quality of fiscal policy. In particular, they can help improve fiscal discipline and policy credibility, and serve a useful signaling role conducive to more stable expectations and less uncertainty. But institutions of whatever shape are not a panacea: their effectiveness ultimately rests on a government's commitment to the mandate assigned to them.

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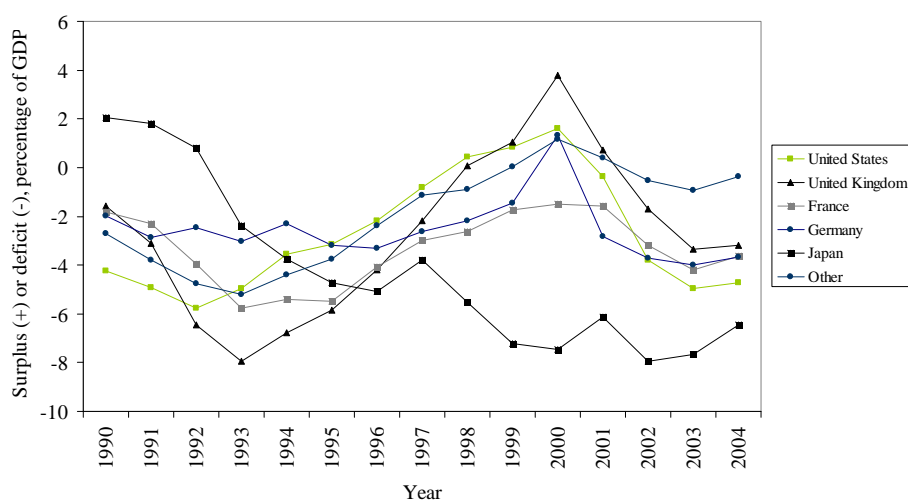
DESIGN CHOICES FOR FISCAL POLICY RULES

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Fiscal deficits have reclaimed their place as a pressing public policy issue around the world, as the brief respite of smaller deficits and even budget surpluses in the late 1990s has come to an abrupt end. The swing back toward large deficits is somewhat concentrated in the developed world's largest economies, with Germany, the United Kingdom and the United States all moving from surplus five years ago to deficits in excess of 3% of GDP. France's deficit has swelled from well under 2% of GDP to almost 4% in 2004; Japan's budget gained ground in the 1990s from its larger deficit, but has lost that ground again. The smaller OECD countries, taken as a group, have also seen a budget deterioration, but of smaller magnitude (see Figure 1).

Figure 1 – General government deficit for OECD countries, 1990-2004



Source: OECD, OECD Factbook 2006: Economic, Environmental and Social Statistics, March 2006.

Large sovereign credit demands on the part of the world's major developed countries are potentially destabilising, both domestically and in the global financial markets. To the extent that those demands are met by transnational borrowing, they could eventually and suddenly cause substantial drops in debtor country currency values, which could in turn increase domestic interest rates and raise prices of imports,

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challenging macroeconomic stabilisation policy. Over the longer term, large fiscal deficits can reduce domestically financed investment, and thus future incomes.

Large fiscal deficits on the part of the wealthiest countries are problematic also in that they draw capital out of the world's developing countries, where it is urgently needed to raise the lowest living standards.

These pressing issues have again drawn the attention of fiscal specialists to effective budget process rules – or the lack thereof. Different OECD countries face different procedural or political issues.

In the European Monetary Union (EMU), the Stability and Growth Pact (SGP) imposes medium-term budgetary objectives to achieve and maintain a status close to balance or in surplus, and a ceiling on fiscal deficits at 3% of GDP. In the early years of the SGP (and before that, the Maastricht Treaty), budget rules helped to bring the European countries toward or fully into compliance with the conditions for membership (Kopits, 2004, p. A9). However, recent developments tested the procedures for enforcement. Problems encountered in the implementation of the SGP, particularly the decisions of the ECOFIN Council in November 2005, have made it clear that the credibility of the framework to constrain deficits of member countries has been, in the words of the European Commission itself, “seriously dented” (European Commission, 2004, p. 107). Others, who are not quite so charitable in their description of the ECOFIN Council's decision, say that the legal framework of the SGP has been “effectively suspended” (Annett and Jaeger, 2004, p. 25). Whatever words are used, it is clear that the EMU's current fiscal rules need to be revised. Whether the 2005 revisions, which were intended “to solidly re-establish the credibility of the Pact and to strengthen the enforcement of budgetary discipline” (European Commission, 2005, p. 68), will be successful or not remains to be seen.

Certain attributes of the SGP played a big role in the decision to discard the current mechanism, including:

- “[R]igid adherence to annual deficit targets can impart a procyclical bias to fiscal policy through contractionary measures to buttress revenues in a downswing and a temptation to spend windfall tax receipts in an upswing” (Dabán Sánchez *et al.*, 2003, p. 1).
- In particular, the current mechanism permitted pro-cyclical loosening of fiscal policy during the good times.¹
- The measurement uncertainties involved with the estimation of potential output and budgetary elasticity have led to confusion, not the least of which concerns what constitutes a valid one-off measure. “The basic problem is that changes in the primary CAB [cyclically adjusted balance] may correctly measure neither the impact nor the final effect of fiscal policy on aggregate demand” (European Commission, 2004, p. 81).
- The SGP does not deal with country-specific circumstances in a consistent manner.
- “[T]he enforcement procedures of the SGP have been found wanting at critical junctures. In particular, the early-warning mechanism was not effective” (European Commission, 2003, p. 52).
- The SGP process is complicated and confusing, and it has been difficult to communicate effectively with the media, markets, and the public on how the SGP works.

The European Commission recognises that the “number of countries that experienced excessive deficit positions in the past few years, and the difficulties in the co-ordination and surveillance processes, have highlighted the need for improvement[s]” (European Commission, 2004, p. 113) in the SGP process. Thus, they have reviewed and promoted a number of ways to rejuvenate the SGP, including:

- Allowing for country-specific circumstances by redefining the medium-term budgetary objectives of “close to balance or in surplus”;

¹ See, among others, European Commission (2003, p. 52), and Gros *et al.* (2004).

- Placing more focus on debt and sustainability in the surveillance of budgetary positions;
- Ensuring earlier actions to correct inadequate developments to foster both prudent and symmetric-over-the-cycle behaviour, and surpluses in good times;
- Catering for protracted slowdowns and ensuring consistency with the medium-term budgetary objectives by, for example, redefining the clause on “exceptional circumstances” concerning the application of the deficit criteria; and
- Allowing for country-specific elements in the enforcement of the correction of excessive deficits.

The EC recognises that by placing even more emphasis on attempting to adjust the current deficit and debt targets of the SGP for the business cycle, it may be introducing additional problems. For example, making budgetary corrections conditional on economic growth may give rise to moral hazard in forecasting GDP, because countries may have an incentive to make over-optimistic growth projections *ex ante* in order to blame lower than expected growth *ex post* for any slippage compared to plans. Likewise, the EC recognises that assessing budgetary adjustments by means of observed changes in the cyclically adjusted balance (CAB) has proven to be problematic, because changes in the budget can result from either fiscal policy actions, or higher- (or lower-) than-expected growth. In addition to these reforms of the current SGP process, the EC reviewed two alternatives to the SGP: a permanent balance rule (Buiter and Grafe, 2002) and a golden rule. But it found even more weaknesses with these alternatives than it did with rejuvenating the current SGP (European Commission, 2004, pp. 108 and 119).

Nevertheless, the proposed changes to the deficit/debt-based mechanisms of the SGP can, at best, only mitigate some of the problematic attributes of the current process; they do not fix them. The SGP process, even with the changes proposed by the EC, does not prevent countries from taking pro-cyclical actions during the good times, does not provide for consistently applied country-specific limits, and is not measurably more enforceable than the current process. At the same time, the changes proposed by the EC would make the process more complicated, with no certainty that the additional adjustments for the cycle would be accurate. Efforts to provide for more flexibility in the current system appear particularly misguided; as was stated in a 2004 *Financial Times* op-ed: “Germany and France are on course for their fourth year of excessive deficits. What would they do if they had even more flexibility?” (Munchau, 2004, p. 11).

Budget process issues are also under scrutiny in the United States. After an extended period of compliance with that country’s latest budget rules (enacted in essentially their final form in the Budget Enforcement Act [BEA] of 1990), which helped to bring about significant fiscal improvement, the rules were repeatedly waived in the fiscal years of the 1990s until they expired at the end of 2002. Despite occasional discussion and some abortive legislative attempts, they have not been renewed.

Scholars have considered the effectiveness of fiscal rules, and have concluded that countries that practice fiscal discipline without rules do not need them, and that countries that flout rules will not achieve fiscal discipline with them (Kennedy and Robbins, 2001; Kopits, 2004). However, at the same time, some countries (those of the EMU among them) have determined that they need fiscal rules, and others (the United States prominently) have achieved favourable fiscal results when following sound fiscal rules, and have failed when ignoring those rules (or allowing them to expire). For this reason, the current authors undertake this inquiry regarding fiscal rules, and believe that it is useful.

This paper discusses issues regarding budget process rules in the context of the current pattern of rising fiscal deficits. It begins by explaining the premise that budget process rules have multiple objectives, and so must be judged according to multiple criteria. Prominent among those criteria given the apparent economic sluggishness of the early years of the 1990s and the resulting fiscal deficits are how any particular set of rules might facilitate (or at least not harm) economic recovery and growth, but also maintain fiscal responsibility and public credibility. This discussion is pertinent to both the euro area countries and the United States, because both have budget process issues on their respective policy agendas.

The paper then proceeds to analyse alternative fiscal control measures according to these and other criteria, such as the ability to maintain sound core operations of government to attain all of its long-standing policy objectives, including the funding of public investment. The paper concludes by weighing the alternative rules against these criteria.

1. Criteria for sound fiscal discipline rules

The core motivation of every fiscal policy rule is to promote stable economic growth through control of the accumulation of debt. As evidence of that fundamental point, every step in the evolution of the United States budget rules came on the heels of bad fiscal news – from the creation of the congressional budget process in the early 1970s, to the initial so-called Gramm-Rudman-Hollings deficit limit rule in the mid-1980s, to the enactment and refinement of the final stage of the rules in 1990, 1993, and 1997. Then, demonstrating the obverse, when concern about the budget faded with the achievement of a surplus in the late 1990s, the interest in the budget rules waned, and they were eventually allowed to expire.

The motivation behind the European Union Stability and Growth Pact was reportedly a variation on that same theme. Leaders of EU member countries believed firmly that the benefits of a credible common currency could be maintained only if all the members of the Union achieved fiscal credibility as well. The SGP was designed to counteract the potential motivation of each individual country to attempt to enjoy budgetary freedom while relying on all the others to endure the fiscal discipline necessary to maintain institutional credibility. A “free rider” country might assume that a single central bank for the entire EMU would not raise interest rates to punish a lack of fiscal discipline on the part of just one country.

However, even though every fiscal policy rule has one primary motivation, creating such a rule requires a multi-dimensional choice. There are at least two proximate objectives: (a) long-term fiscal responsibility and sustainability; and (b) short-term macroeconomic stabilisation.

The first objective, fiscal responsibility, is measured most simply in terms of control over the accumulation of debt. Assuming rational financial markets and economic actors, that criterion must extend over time into the foreseeable future, raising issues about the long-term outlook and sustainability. It also requires that the fiscal authorities establish confidence in the public that future policy choices will be sound and responsible.

At the same time, control over the accumulation of debt should be achieved at the least possible cost of unemployment and economic slack in the near term, very simply for the well-being of the population at large. In the extreme, policy that needlessly prolongs an economic downturn could prove self-defeating even in the long run. It would add to the stock of debt, even if only on a one-time basis. It may deter private business investment, at least for a time, extending the period during which economic performance would be sub-par and fiscal deficits and debt accumulation would be larger than necessary.

Thus, achievement of long-term fiscal sustainability requires credibility with the financial markets and the public. Achievement of either long-term sustainability or short-term stabilisation requires that the fiscal rule be transparent and administrable, in terms of both its ongoing implementation and its enforcement, and that it be viable in the political domain. A rule that is impossible to enforce cannot have its desired effect on debt accumulation, sustainability and credibility. Likewise, credibility will not be achieved by a discipline mechanism that is not publicly accepted as politically sustainable over a meaningful time horizon. And no fiscal rule should interfere with the core functions of government as it strives to achieve all of the public sector’s other long-standing objectives. This involves, among other things, predictable funding and adequate funding for public investment.

Because of the multi-dimensional objectives of fiscal rules, the apparent superiority of any rule on the basis of one criterion is not a sufficient justification for adoption. This is most obviously true regarding the need for a balance between macroeconomic stabilisation and debt restraint. However, it may be especially noteworthy with respect to real-world constraints such as administrability, credibility and

political viability. Because so much of the public benefit of fiscal responsibility comes through the behaviour of financial markets, any successful budget rules must be demonstrably workable and credible.

Furthermore, because debt control is solely a function of budgeting, whereas macroeconomic stabilisation can be pursued through monetary as well as fiscal policy, any policy must have substantial advantages with respect to the secondary goal of stabilisation to offset any disadvantage with respect to the primary goal of fiscal control. There is some difference of circumstance between the European Monetary Union, with its single central bank and numerous fiscal authorities, and the United States. However, this distinction should not be exaggerated; the 50 states are not small and are quite diverse, and the EMU countries have for decades been constrained in their fiscal and monetary policies by trade and currency considerations. The European Central Bank can be expected to respond to adverse macroeconomic shocks that are strong enough to affect the greater part of the EMU, and the SGP does provide exceptions that would apply if a significant shock should be more localised. So to a certain degree, the principle remains that monetary policy can carry at least some of the load of macroeconomic stabilisation, and that fiscal rules therefore should focus somewhat more closely on debt accumulation.

For the same reason, fiscal policy rules should be judged as well on their harmony with sound monetary policy making. Predictability and stability should be important considerations. Monetary authorities would be more confident in taking important decisions, either to act or not to act, if they could rely on the fiscal process to follow a sound and steady course. On the other hand, a fiscal rule that could respond to sharp movements in budget outcomes with abrupt changes in the fiscal stance would make monetary policy making much harder, and make monetary authorities in effect compete with fiscal policy makers, rather than co-operate with them.²

In sum, the choice of a fiscal rule, like fiscal policy making itself, requires perspective and judgment. The focus must extend over time and across policy making criteria. The optimal choice may not be the best by one particular standard, but must balance several important objectives and must be durable under stressful economic and political conditions.

2. Some alternative fiscal rules

Among the numerous fiscal rules that have been implemented, there are probably two distinct broad classes that may serve as potential models: (1) deficit-and-debt-based rules, and (2) expenditure rules.

Deficit-and-debt-based rules (“deficit rules”, for convenience) generally operate through numerical limits on the amount of the annual deficit – either a limit denominated in terms of currency, such as zero, or a limit set as a percentage of the GDP. Examples of this type of fiscal rule include the European Union’s Stability and Growth Pact, and the United States Gramm-Rudman-Hollings system (which was in effect for fiscal years 1986 through 1990).

The US system was based on statutory dollar deficit limits, gradually falling to zero, which were revised once (to ease the restrictions) before the system was replaced. The Stability and Growth Pact sets a maximum deficit of 3% of GDP.

A possible alternative to this approach, to be discussed in some detail in this paper, is to adjust the deficit limit according to the state of the economy – for example, to set a deficit limit as a percentage of potential, rather than actual, GDP. This would leave unchanged the maximum permissible fiscal deficit in currency for a country whose GDP was determined to have dropped below (or risen above) an unchanged estimate of potential. Some would argue that such a modification would be an improvement upon a fixed percentage-of-GDP limit (although the Stability and Growth Pact already allows exceptions for temporary increases in deficits).

² Blinder (1982) highlights this concern; Canzoneri *et al.* (2002) give this consideration less weight.

The key characteristic of the second broad class of fiscal rules, expenditure rules (or “spending rules” for short), is that they aim to limit policy-induced increases in spending and reductions in taxes, rather than to focus directly on the deficit. Note, importantly, that the terms “expenditure rules” and “spending rules” should **not** be construed necessarily to exclude controls on revenue-losing changes in tax policy. The now-expired US system was in some respects the most elaborate model. It used dollar-denominated caps on annually appropriated spending, with pay-as-you-go (PAYGO) restrictions on the aggregation of spending mandated by permanent appropriations (mostly for programmes with important automatic stabilisation implications) **and taxes**. In the US case, it is unlikely (in the judgment of the present authors) that the rule would have succeeded without including revenues as well as spending. Other examples of spending rules use caps on all spending, or on a broader range of spending than did the United States; this is a policy choice that can accommodate the rule to different countries and institutions, as is discussed further below.

A second characteristic of the US version of a spending rule is that it has its effect *ex ante*, rather than *ex post*. In other words, the spending rule constrains policy actions as they are taken, and thus their future effects, rather than requiring remedial action for their budgetary results after those results are recorded for a past fiscal year. The enforcement of the spending caps therefore constrains appropriations as they are enacted, and the enforcement of the PAYGO rule constrains the estimated future effects of changes in tax policy and in mandatory spending programmes. The US system used across-the-board spending cuts (“sequesters”) to remedy policy overages shortly after they were enacted.

The US version of an expenditure rule was enacted at the start of fiscal year 1991, to replace the prior deficit-based rule. It continued in force, having been re-enacted twice, through the end of fiscal 2002, when it expired. It was, however, overridden by statute numerous times in the last three years of its life, after helping the budget to leave fiscal deficit and enter surplus in the late 1990s.³

This paper will analyse an expenditure rule generally following the US model in more detail, as an alternative to a deficit rule (with or without cyclical adjustment). In keeping with the discussion above, this comparative analysis will aim to determine which of the two alternative classes of rules might better satisfy, on balance, several criteria. To be preferred, an alternative should achieve the better mix of debt control and counter-cyclical macroeconomic policy, taking into account the administrability, political viability and credibility of the rule itself.⁴

3. Evaluating two alternatives

3.1. Background: Uncertainty and fiscal rules

At the outset, it is important to discuss a possible simple misconception. A deficit rule might be assumed to be superior to a spending rule for purposes of long-term sustainability and control of debt, for the simple reason that it at least in name targets precisely the ultimate cause of additional public borrowing, the deficit, rather than the controllable proximate causes, spending increases or tax decreases. However,

³ The failure of the United States to follow its own rule in recent years should not be seen as an inherent flaw of the rule, any more than should the SGP necessarily be indicted because the larger member countries have flouted it. Rather, the current analysis seeks to evaluate the alternative rules for their relative merits, understanding that “Although all rules, including those prescribed by legislation, are intended to apply strictly and permanently – over successive governments – they are, in practice, open to some interpretation and conceivably can be revised, suspended, or repealed through subsequent legislative action” (Kopits and Symansky, 1998, p. 8).

⁴ Kopits and Symansky (1998, p. 4) and Kopits (2001, p. 6) would characterise the US budget rule not as a fiscal policy rule, but as a procedural rule. Readers who prefer the latter characterisation may construe this paper as a comparative analysis of a deficit fiscal policy rule and a spending procedural rule. The current authors see no reason to conclude pre-emptively that either rule is necessarily superior or inferior on the basis of such a characterisation.

that assumption is incorrect; the linkage between the rule and the ultimate borrowing outcome is by no means exact. The US experience helps to explain this point.

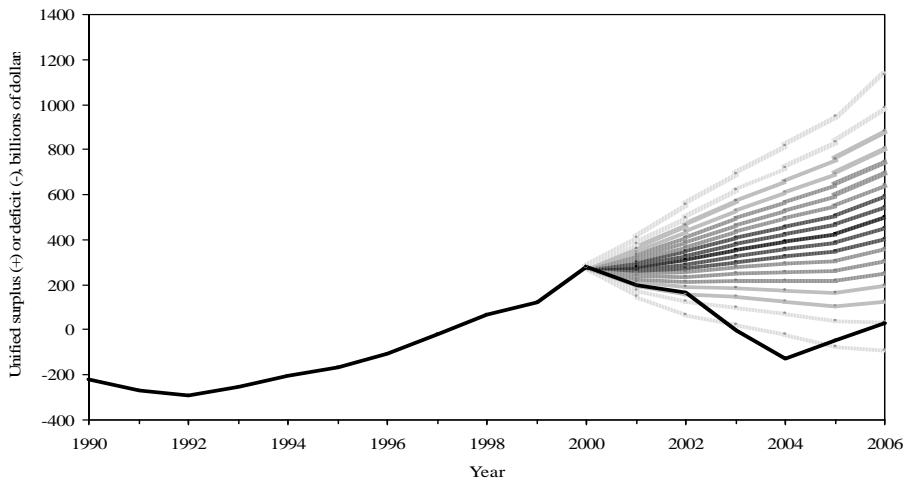
The long-term goal of fiscal rules – sustainability – necessarily extends over time. Thus, any deficit rule, to be successful, must control future deficits – and therefore must operate through estimates. (Deficit rules can also target the deficit in an ongoing fiscal year. The US system from fiscal years 1986 through 1990 purported to limit deficits in the ongoing fiscal years, though it was never effective. In part, its ineffectiveness in constraining deficits for ongoing fiscal years arose because of the difficulty of predicting the deficit even for a fiscal year in progress.) Experience shows that it is uncertainty about the future that leads such estimates to be imprecise, much more than imprecision in the relationship between the components of the budget (spending and revenues) and the deficit itself.

For example, the United States dissipated a large budget surplus and fell into substantial fiscal deficit in the last five years. However, throughout the crucial policy decisions that contributed to this adverse development, policy makers maintained that the budget would not and could not fall into deficit. Thus, a substantial part of that development arose not because of the policy changes that were undertaken, but rather because of economic and technical developments that drove the budget far below its previously estimated path in the absence of policy changes. This was true both in the sense that the unwinding of overly optimistic estimates played a major numerical role in the disappearance of the budget surplus, and in that those erroneous estimates were used to justify the policy steps that contributed still further to the fall from fiscal grace.

Figure 2 illustrates that development. It reproduces the probability map of future budget outcomes released by the US Congressional Budget Office (CBO) in January 2001, based on its statistical analysis of available prior years of data. Superimposed upon that probability map is the actual outcome – that is, the best estimate included in that same map, adjusted only for the economic and technical budget re-estimates subsequently published by the CBO. By the now-current fiscal year (2006) and over all preceding years since 2000, the outcome is approximately the 10th percentile expectation (with the 50th percentile being the most likely estimate, and percentile rankings below that designating more adverse outcomes), even before considering the effects of any policy changes. As is apparent from the figure, economic developments and the correction of prior technical forecasting errors would have driven the budget into deficit even before policy changes. Because US policy changes – including large tax cuts and substantial increases in defence and health-care spending – during and since 2001 have sharply increased the deficit, the actual budget outcomes have been worse still than the so-called baseline, as is shown in Figure 3.⁵ (Still, had the US budget rules been obeyed, budget outcomes would have been far superior and well within the bounds of, for example, the EMU guideline of 3% of GDP.)

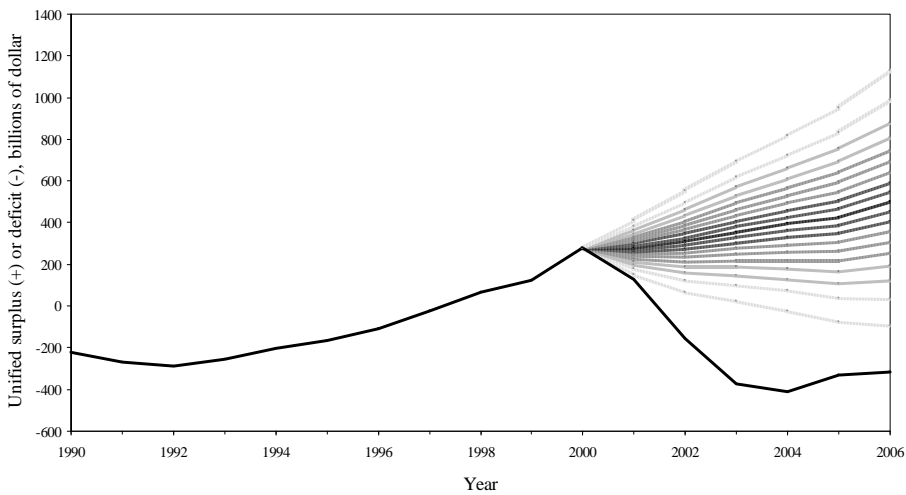
⁵ Even this picture may understate the degree of uncertainty in the 2001 US budget outlook, and similarly in all other years. The US federal government, by convention, does not revisit its estimates of budgetary consequences of its policy changes; the original estimates stand into the indefinite future. Then, after accounting for the previously estimated policy effects and for the effects of errors in economic forecasts, all remaining errors in budget predictions are assigned to a residual “technical” category. Notwithstanding that policy effects are not re-estimated officially, it is generally the case that economic weakness would reduce the “true” budgetary effects of most tax cuts (certainly those based on reductions in tax rates) in an accounting sense. This is simply because the cost of a tax rate cut would be less if there were less income to tax. It is not because of any presumed effect of tax cuts on the supply of factors of production, or on productivity. Note that the relationship between the cost of entitlement spending programmes (even those with counter-cyclical purposes) and the state of the economy *ex post* is probably not so systematic and strong. Thus, if the actual budget path in Figure 2 were recalculated today, using currently known information, the cost of the policy steps would likely be lower and, as a direct result, the adverse economic and technical re-estimates would be larger, in equal dollar amount; and the “baseline” budget outcome, without the policy decisions, would have been even worse than depicted in Figure 2.

Figure 2 - Uncertainty in CBO projection of the US budget deficit: Baseline



Source: Congressional Budget Office, *Budget and Economic Outlook: Fiscal Years 2002-2011*, January 2001.

Figure 3 - Uncertainty in CBO projection of the US budget deficit: Actual



Sources: Congressional Budget Office, *Budget and Economic Outlook: Fiscal Years 2002-2011* (January 2001) and *Budget and Economic Outlook: Fiscal Years 2007 to 2016* (January 2006).

There is no reason to believe that the US experience in this respect is atypical. Countries around the world have been surprised by the strength of the descent of budgets into deficit in the 1990s.

The reality, then, is that **any** fiscal rule, whether based on deficits or spending, must be implemented through imperfect knowledge of the future. Imperfect foreknowledge is the primary source of error in any such rule. Thus, in this most important respect, the same key problem afflicts any fiscal rule, and a deficit-based rule, even though it focuses nominally on “the deficit”, has no inherent superiority.

Put another way, the creation of any fiscal rule, whether based on deficits or spending, involves the selection of policies that achieve a satisfactory projected future deficit path, under conditions of uncertainty. Therefore a deficit-based rule would immediately require the choice of an economic forecast and policies that would reach a deficit below the reference level. Thus, for example, countries under the

SGP would present an economic forecast and programmes that would take their budget results “close to balance or in surplus” within the requisite number of years. Similarly, a spending-based rule would likely be initiated using prospective estimates of the policies, both spending and tax levels, which would be required to achieve a target deficit level; that was the US experience. The issue is not that a spending rule is sensitive to longer-term budget forecasting, and a deficit rule is not; **both** require budget forecasts. One might argue that under a deficit rule, those forecasts must be reviewed with each budget cycle, and that this constitutes a safeguard. However, the track record of currently operating deficit rules is not encouraging. And on the other hand, a spending rule would likely keep a tighter leash on policy.

In fact, in the three instances of enactment and re-enactment of the most recent US system – in 1990, 1993, and 1997 – the rule was designed so that the budget would reach its target of balance or significant deficit reduction five years hence if annual appropriations hit their numerical caps for the next five years, and if taxes and mandatory spending taken together were precisely deficit neutral. The same structure could have been initiated to achieve greater deficit reduction if the discretionary caps were lower, and/or if the pay-as-you-go rule were programmed to achieve net savings over time, rather than to be precisely deficit neutral. That is, the same “PAYGO scorecard” that was created to keep track of subsequent policy action could have been initiated with future-year debits, rather than zeros, that would have required future policy savings. These design issues will be important in the discussions on spending rules and on all of the objectives of fiscal rules in general, to follow later.

A deficit-based rule may have one limited advantage over a spending rule, in that the public at large may be more reassured by a fiscal discipline rule that at least in name places a limit on the deficit itself. The economics and policy science professions would likely see through the nominal distinction fairly quickly, and participants in financial markets would surely engage in deeper analysis; but for immediate public relations purposes, a deficit limit might have some additional impact. Still, experience suggests that the performance of fiscal discipline rules will be the telling issue for the public over the longer term.

Thus, the use of proximate spending and tax-policy targets, rather than a target with respect to the deficit itself, might be thought an imprecision and a disadvantage. However, a deficit-based rule would be implemented through the same estimates of the effects of spending and tax policy, chosen to achieve the particular deficit target. Thus, under the EU model, fiscal authorities are expected to set policy to limit deficits to less than the reference value of 3% of GDP, and to achieve the medium-term “close to balance or in surplus” objective, on the basis of economic forecasts and budget projections. At the outset, the two processes are in substance the same; policy under both rules would be made based on the same kinds of forecasts and estimates. Thus, there is no inherent precision or superiority in the deficit-based rule.

3.2. Compliance with alternative fiscal rules

An explicit deficit rule might be preferred on the belief that it would be easier to enforce if adverse budgetary developments pushed the fiscal result into deficit. The presumption would be that the measurement of the problem and the selection of a solution would be easier, again because the measure used by the rule is the deficit itself. However, again, this conclusion presumes too much.

For one thing, as was noted earlier, a deficit rule would provide policy makers with no more information than a spending rule. The excess of an historical fiscal deficit over the chosen target is a datum, available whether the rule was based on the deficit or on spending. The excess of a projected future deficit over a target is uncertain in any event.

Nor would a deficit rule provide any greater precision as to the magnitude of the solution for a fiscal problem. Corrective action would of necessity be based upon forecasts of the future, which would be uncertain in either case. Therefore, the policy remedy under either a deficit or a spending rule would be the amount of savings – spending reductions or tax increases – needed to reach a target future fiscal deficit, which would in either case be uncertain.

And finally, the policy measures needed to solve the problem would be no more palatable under a deficit rule. Whatever rule were being applied, an excess of borrowing of any given amount would require that same amount of pain to be imposed upon taxpayers and spending beneficiaries. The type of rule that had been imposed would yield no difference in the ease of accepting and enduring a remedy.

Therefore, an understanding of this choice must begin without preconceptions and with an understanding that any rule operates through an uncertain future and, in the event of trouble, through reducing government spending or increasing taxes. There is no obvious inherent advantage to either rule on these grounds; decisions must be made on the basis of a deeper analysis.

This paper will proceed with discussions on alternative fiscal rules and the criteria of fiscal responsibility, macroeconomic stabilisation, and the effectiveness of the core functions of government.

4. Alternative fiscal rules and long-term budget responsibility

For purposes of analysis, one might separate changes in the budget outlook from year to year into two classes: they may be cyclical, or they may be trend-related (as, for example, with an enduring productivity shock). If the distinction between the two were hard and fast, they would require separate analysis. However, one lesson of the economic boom of the 1990s was that what might appear to be an enduring productivity shock can in fact be short-lived. In the discussion that follows immediately, and in the later discussion pertaining to macroeconomic stabilisation, this distinction will be considered, but will not be assumed to be crucial to the argument.

4.1. Deficit rules and fiscal responsibility

A deficit rule such as that imposed by the SGP sets an upper bound on the fiscal deficit that in essence applies at all times, regardless of the cyclical condition of the economy. (There is an “early-warning system” based on the cyclically adjusted balance [CAB], intended to head off a growing fiscal deficit that has not yet reached the 3% of GDP reference limit. However, that system has not in practice led to any tangible action by the European Commission.) Such a constant reference limit on the fiscal deficit might cause significant problems, and some would argue that the incentives embodied in such a rule are not conducive to fiscal discipline.

For example, assuming the most perverse motivations, one country’s fiscal authorities might choose to set their budget deficit as close to the limit as possible (taking into account any effective early-warning system) when the economy is operating at its potential. That country would forecast an optimistic fiscal outlook that would bring the budget into close-to-balance status (CTB) within the time period required. If the economy should surprise and grow even further, then the percentage-of-GDP reference limit would yield even more room for fiscal deficits. If the economy weakened and thereby raised the deficit, however, policy makers might expect that those deficits could be exempted from discipline on the grounds that they were “temporary”. The result would be that this country could hope to reap the benefit of monetary stability paid for through the discipline of the other EU members, while itself enjoying the fruits of public spending in excess of revenues collected. Of course, if every country were to behave in such a fashion, monetary stability would not last long; but such short-sighted policy making is not unusual.

Beyond the threat to monetary stability, the fiscal stability of the country in question would be short-lived. With fiscal deficits just within the boundaries of sound policy in the best of times, any cyclical economic weakness, or any adverse productivity shock, would see the budget in excessive and substantial deficit.

As was noted above, the country in question might well throw itself upon the mercies of the Commission, claiming that the excessive deficit was caused by recession and was temporary in nature. Frequent appeals of this sort would strain the cohesion of the EU, and also would cause the country in question to

add significantly to its accumulated burden of debt by the time the procedural issues were resolved. The additional debt would make it harder for the country in question to meet the Commission's fiscal standards in the future.

4.2. Cyclical adjustment

It might be thought that a variation on the deficit rule, in which the reference value for the fiscal deficit is simply set at a percentage of potential rather than actual GDP, would solve this problem. At best, however, it would moderate the problem, not solve it. In practice, the difference in the fiscal target from such a revised rule would be too small to change incentives and behaviour; a country's fiscal authorities would have the same incentive (and perhaps even more so; see below) to target their deficit as close to the limit as possible.

In an economy operating at its potential, for example, the reference fiscal deficit amount of 3% of GDP, measured in currency, would be unchanged under such a revised rule. If the economy grew beyond its estimated potential, the deficit limit would not grow in currency terms if the rule were based on potential rather than actual GDP; but with a strong economy, the actual deficit would decline, leaving policy makers more room for spending and tax reductions in any event. And of course, this assumes that the extra spurt of growth would be recognised quickly as beyond potential. If it were interpreted as an increase in potential, then there would be still further room for pro-cyclical deficit-increasing policy.

On the other side of the coin, if the economy grew less strongly, policy makers would have more room to expand their deficit, because 3% of potential GDP would be greater than the same fraction of actual GDP.⁶

Given these limited differences in the deficit rule, policy makers still might be expected to push their near-term deficit toward 3% of GDP in an economy at its potential, relying on favourable assumptions for the coming years to demonstrate eventual compliance with a close-to-balance-or-in-surplus standard. Given exceptions for recession, they might expect that they would need to tighten policy even less if budget outcomes proved less favourable. In this regard, a deficit rule is no less vulnerable to long-term forecasting error than is a spending rule.

It is surely at least somewhat cynical to assume that countries would choose to manipulate a deficit-based fiscal rule to the limits of its elasticity. Policy makers are mindful of the well-being of their constituents, and understand that debt begets debt service, which can beget further debt. Even those who believe that the incentive effects of existing deficit-based rules are powerful enough to lead to some measure of fiscal irresponsibility would concede that this is in spite of policy makers' concern about the public interest, as they define it.

However, it cannot be denied that a deficit-based fiscal rule such as that described above is in the nature of a one-way instrument. It provides no meaningful, productive guidance to countries whose deficits are smaller than the reference level, allowing them to move toward that limit with impunity – thereby adding to their accumulations of debt, and their debt-service obligations. (The medium-term CTB requirement might be thought to provide such guidance, but recent practice has not been encouraging, perhaps in part because it is easy to project budget improvement beyond a current fiscal year with an economy that is forecast to grow, and with hopeful assumptions of future spending restraint.) One might argue that the structure and incentives of the deficit-based fiscal rule do not require malfeasance to yield adverse results; the pressure of short electoral cycles against long-term interests, plus a little bad luck, will suffice.

⁶ An additional use of cyclical adjustment by the SGP is to assess the required 0.5% of GDP minimum fiscal adjustment for countries out of compliance with the SGP, making references to the existing concept of cyclically adjusted balance (CAB). This application of cyclical adjustment is fully legitimate, though it does not address the other problems of deficit rules raised here.

4.3. Enforcement

Furthermore, based on experience in the United States from 1985 to 1990, there would be significant opportunities for manipulation and evasion under a deficit-based budget rule. The rule in the United States had attempted to impose spending discipline prospectively, before the beginning of a fiscal year. Alternatively, one could try to enforce the rule retrospectively, during the final months of a fiscal year. Both instances would be subject to manipulation.

A deficit-based rule does, in some circumstances, allow manipulation through the choice of an economic and budget forecast that drives a politically desirable outcome. For example, the authority responsible for the economic forecast used in the budget could forestall the need for tax increases or spending cuts by issuing a more optimistic economic forecast, and therefore a lower projected budget deficit. In the experience of the United States, such manipulation allowed different actors in the budget process to force the responsibility to recommend policies to achieve budget savings onto other actors, which presented an additional political motive to manipulate the system. Because a spending rule does not rely directly on a budget forecast (but rather involves a pre-stated appropriations cap and a pay-as-you-go requirement for mandatory spending and taxes, which are often less dependent on the underlying economic forecast), it raises less of a prospect of such a moral hazard.⁷

At present, enforcement in the EU appears to be based mostly upon retrospective views of deficits in excess of the reference amount. However, at the time of enforcement, optimistic budget projections might be used to argue that the past deficit was merely temporary. This pattern suggests that enforcement under deficit rules can often be unsatisfactory.

5. Spending rules and fiscal responsibility

Based on a view of incentives and experience, an alternative fiscal rule based upon spending might well be judged more conducive to responsible fiscal policy under a range of economic conditions.

As was noted above, spending rules have been initiated to achieve targeted fiscal goals over a period of years, based upon underlying economic and continuing spending programme forecasts and prescribed annual caps for appropriated spending. The underlying economic forecast has typically assumed that the economy would gradually converge to its estimated potential output. This process and its underlying assumptions are really no different than the plan that a government would need to formulate to comply with a deficit rule over time. Once such budget policy amounts have been determined, the spending rule might require that entitlement spending and tax policy changes be no worse than deficit-neutral, and that annual appropriations comply with the stated caps. However, the spending rule could be made more rigorous with lower discretionary caps and a requirement for future budget savings through mandatory spending and taxes; the opposite, of course, could also be true.

A spending rule would provide continual guidance to policy makers, under any and all economic and budget conditions. If budget results proved more favourable than expected, whether because of cyclical economic improvement or a positive productivity shock, the rule would allow no additional budgetary

⁷ The United States once attempted to enforce a deficit rule for a fiscal year in progress to achieve the actual budget outcome mandated in the targets, based on estimates at the beginning of that year. The US process used only automatic, across-the-board spending reductions; in general, such enforcement could occur through tax increases as well. In practice, such enforcement could require spending cuts that would be painful and impossibly large. Because some major spending items, such as medical care and old-age pensions, could not practically be subject to substantial short-term reductions, the base for cutting spending to enforce the rule would likely be relatively small. And even annual appropriations can be difficult to cut over a time span of several months, given that some of the annual appropriations concern the fulfilment of contracts, some of which are long-term. Therefore, it is easily possible that such spending cuts would be obviated by legislation, eroding the credibility of the budget enforcement process. In practice, all of the significant attempts to enforce the US budget rules through automatic spending cuts were overridden by subsequent legislation, with only the smallest cuts enforced.

resources to the fiscal authorities. Therefore, unlike a deficit rule, under which a lower deficit or a higher GDP (actual or potential, depending on the formulation) would allow (some might say “encourage”) greater spending or tax cuts, a spending rule would require that policy remain unchanged, and thus that the budgetary bonus be saved. Given the lesson of the 1990s – that even apparently durable positive budgetary shocks might well evaporate – this aspect of spending rules would seem advantageous and prudent; it would make it more likely that budgets would remain in balance over the macroeconomic cycle and into the long run. (It also would make sense from a counter-cyclical point of view, as will be discussed below.)

A spending rule might seem well suited for the current situation of the EMU. With already high government expenditure ratios in most EU member countries, it might be desirable to put more policy focus on attaining sustainability through spending restraint. Some countries have already taken this approach. Another case for greater focus on the expenditure side is that it is where slippages have often occurred (European Commission, 2003). The European Commission noted that expenditure rules can be a national complement to the deficit rule, but given the success of expenditure rules in some countries, more focus on this issue would be valuable.

On the other side of the coin, should fiscal performance prove weak, a spending rule would tolerate the deterioration of the budget through its automatic stabilisers, but would not allow further shifts in policy. (Some might contemplate allowing inter-temporal policy shifts, in which greater spending or tax cuts in one or two years could be offset by future spending restraint or tax increases. Going even further, a spending rule might allow a purely one-time counter-cyclical stimulus without offset. Such policy flexibility might make sense if future compliance could be assured. Whether such future discipline should be relied upon is a matter of judgment.) If the fiscal deficit remained below the reference level, a deficit rule would, like the spending rule, tolerate the deterioration. However, if the fiscal deficit did cross the reference level, policy makers would have to choose between raising taxes or cutting spending, on the one hand, and seeking extraordinary relief (through, for example, an appeal to treat the deficit as temporary), on the other. Such fiscal constraint might possibly be seen as appropriate discipline, but it would raise potentially serious macroeconomic stabilisation concerns (discussed below).

Thus, one possible argument for the spending rule is that it provides continual guidance to the fiscal authorities; at all times and under all circumstances, policy changes must be deficit-neutral. In contrast, a budget rule does not bind policy makers unless the budget deficit is in proximity to the reference value. Some might argue that this limited restriction implicitly condones, or even encourages, the fiscal authorities’ moving their deficit toward the reference limit in a pro-cyclical fashion in good times.

5.1. Administrability and enforcement

One potential way to strengthen the deficit rule from this perspective of fiscal responsibility might simply be to reduce the reference limit – in the EU instance, for example, to a smaller deficit or even balance rather than the reference level of 3% of GDP. That would make the reference level binding in more instances, and would limit the fiscal damage even if countries chose to operate close to the reference level. Which raises the question: Why was the US spending rule aimed toward a budget in balance with the economy at potential GDP, whereas the EU deficit rule sets a reference value at 3% of GDP? Why not set the reference value for the deficit rule at a smaller deficit, or at balance?

The answer might centre on administrability. A maximum fiscal deficit amount of zero would lead to more frequent episodes of apparent overstepping of the limit, which in turn would result in numerous contentious debates and inevitable instances of alleged unfair treatment of one country or another. Those disputes would rest on controversial estimates of the affected countries’ entire budgets.

In comparison, questions of compliance with a spending rule would be more transparent and less disputable. Even if there were dispute with respect to an estimate of a policy change in entitlement spending or taxes, the universe in dispute would be only that one change; and because the rule would require the policy change to aim for a net effect of zero, the amount at stake would be much smaller than

in controversies regarding a deficit rule. Thus, routine enforcement of a spending rule would focus more on policy changes before the fact. Enforcement of existing deficit rules has tended to arise after deficits are already excessive, and has not been notably successful.

Overall fiscal outcomes depend upon both central and sub-national government policy, especially in those countries where local government constitutes a comparatively large share of the total. This issue could be approached in several ways. One would be to impose an expenditure rule at the sub-national level. Particularly for a pay-as-you-go type rule, this could be complex for the governmental units involved. However, this course might not be necessary if those governments do not have significant counter-cyclical roles. The alternative would be to use deficit-based rules at the sub-national level. This is *de facto* the approach in the United States, where virtually all sub-national units face constitutional or statutory balanced budget requirements. Of course, even deficit rules can be problematic for sub-national governments, for all of the same reasons as for national governments.

In the end, these advantages in administrability might lead to greater compliance and cohesion among the countries involved under a spending rule.

5.2. Limits to and values of rules

Still, there are limits to the effectiveness of any fiscal rule which should be clear from experience – for example, the United States fell back into deficit while its spending rule remained nominally in place – but might still be forgotten as the advantages and disadvantages of any alternatives are weighed. At bottom, no fiscal rule should be expected to do the impossible. No fiscal rule will achieve its desired budgetary results if and when the political will of policy makers is to the contrary. A legislature's procedural rules can be changed or waived, and restrictive laws can be amended or repealed; and the recent experience of both the United States and the largest countries of Europe makes clear that these contingencies are very real, for both spending and deficit rules.

However, what a fiscal rule can do is expose steps contrary to stated fiscal guidelines. Policy makers must vote to waive or change the procedural rules, and to amend or repeal the statutory fiscal rules. These steps must usually be in addition to the enactment of the policies themselves. These additional procedural steps usually involve an explicit admission that the policies that follow do violate the budget restrictions that had hitherto been accepted rules. Such restrictions clearly are not insuperable, as recent experience again would show clearly. However, they might provide some measure of deterrence against violations of fiscal responsibility, because they are transparent, and because they can be cited later by political opponents if events go awry.

This deterrent value of fiscal rules may apply more tellingly to a spending rule than to a deficit rule. Budget deficits are incontestable only after the fact, and – long after policy actions have been taken – policy makers can argue with optimistic assumptions or estimates that their policies will not result in further deficits in excess of reference limits. In contrast, policy steps that might violate appropriations caps or pay-as-you-go restrictions are apparent as soon as they are taken and, as was noted above, the numerical results are more transparent and less subject to dispute. Therefore, policy makers who could deny that their actions would push fiscal deficits beyond a reference limit would more likely be confronted with the certainty that their policies violated a spending rule.

5.3. Credibility

Achievement of the benefits of fiscal responsibility rests heavily on the credibility of fiscal policy. Currency will not be respected, and investment within a country's borders will not be attractive, unless fiscal policy is perceived as responsible and as likely to remain so. (The recent retroactive re-designation of the dates of an economic cycle in the United Kingdom to provide additional flexibility under a fiscal rule – a voluntarily self-imposed rule, to be sure – cannot be ignored in this regard.) No fiscal rule can

add to credibility if it is flouted, but a rule that is more conducive to compliance might fairly be scored more highly than one that is less so. Here again the advantage probably rests with the spending rule.

From the political perspective, there are risks to allowing fiscal targets to move up and down with some frequency. If spending targets are allowed to rise or revenue targets are allowed to drop because of improvements in the budget outlook, it may be difficult for government to reclaim those ostensibly temporary benefits if and when circumstances reverse. And should there be resistance in the budget process to any formula-induced imposition of pain, it may erode the credibility of that process.

This suggests that the difficulty of complying with and enforcing a deficit rule, which calls for continual (even if usually small) adjustment of the fiscal targets and of budget policy, might in the end raise greater concern in the financial and investment markets. This would be especially true if policy makers were eager to loosen fiscal policy when circumstances allowed, but were reluctant to tighten policy when situations required. From this perspective, a deficit rule would create more occasions for loss of credibility than would a spending rule, which would allow freedom of action for automatic stabilisers, but would limit tax and spending policy changes to deficit-neutral steps.

5.4. Productivity shocks

There could be differences in circumstances depending upon whether the changing budget fortunes were caused by a purely cyclical economy or by an enduring productivity shock.⁸ As was argued earlier, the budgetary benefits of apparent favourable productivity shocks can themselves prove to be temporary. However, in theory, a productivity shock could confuse the implementation of a cyclically adjusted deficit rule, because potential GDP would be mismeasured until the shift was recognised and estimates were corrected. But in truth, any fiscal rule would be confused by an unrecognised productivity shock, and economic policy makers could be expected to search the data for productivity changes, whether a fiscal rule were cyclically adjusted or not, and to adjust their budget policy making accordingly. So it would not appear to be productive or fair to judge any fiscal rule differently because of the possibility of a change in productivity growth. If a shock can be accurately perceived under a cyclically adjusted deficit rule, it can be accurately perceived under a spending rule. In either instance, corrective action would have to be undertaken by policy makers.

Still, theoretically, it could happen that a true, enduring productivity shock would be recognised quickly and distinguished from a cyclical movement in the economy. In that event, and should the productivity shock be adverse, a cyclically adjusted deficit rule would perceive the lower level of potential GDP and would reduce the reference deficit limit in currency, thus requiring a reduction in the budget deficit – if, again, at that time, the deficit was already in proximity to the deficit limit. Such a development could be conducive to good policy if, yet again, the economy were not at that time sufficiently weak that an additional stimulus would be needed for reasons of macroeconomic stabilisation. On the other hand, recognition of a favourable productivity shock could lead to an increase in estimated potential GDP, and so in the reference deficit limit in currency; and the allowance of a higher deficit in currency at the time of a favourable productivity shock would likely not be helpful for reasons of either fiscal responsibility or stabilisation. Furthermore, if such a favourable shock should in time prove to be temporary rather than permanent, as was the case in several countries during and after the 1990s, the initial allowance of additional room for deficit spending could prove difficult to reverse.

A spending rule would not be affected directly by any productivity shock. Thus, in the event of a favourable productivity shock, a spending rule would not allow a higher deficit – which would likely be judged to be the preferred outcome. A negative productivity shock, similarly, would not force a fiscal tightening. This could be unfortunate if the shock in fact proved to be permanent, but not if it reversed

⁸ The generic term “productivity shock” is used to denote any potentially enduring change in the rate of growth of potential output. One-time shocks to the budget, whether favourable or adverse, present a much simpler choice under any fiscal rule: their effects must be either offset or accepted (or some arithmetic compromise between the two).

itself in time. One might imagine formalising a looser, longer-term deficit rule to back up a spending rule, to cover instances of enduring adverse productivity shocks. Alternatively, the judgmental political process would have to step in.⁹

In sum, one might conclude that a spending rule would prove superior to a deficit rule – even one that was cyclically adjusted – in maintaining fiscal responsibility in a satisfactorily performing economy. This conclusion rests in part on the workings of the rule itself, but also on its probable greater credibility and durability in the political process. The argument for a cyclically adjusted deficit rule is theoretically plausible, but is based on what would seem to be an unlikely combination of hypothetical circumstances.

6. Fiscal rules and macroeconomic stabilisation

Just as fiscal responsibility requires control of debt at times when the economy is strong or weak, so macroeconomic stabilisation requires sound budgeting in good times and bad. The discussion above has already suggested that a deficit rule is an imperfect instrument for macroeconomic stabilisation.

6.1. Deficit rules and macroeconomic stabilisation

Under a deficit-based rule, the stabilisation options available to fiscal policy makers depend upon the pre-existing state of the budget. If, for example, the economy softens with the budget in surplus or small deficit, the reference limit on GDP would decline in currency terms (because the amount of GDP would fall short of expectations), but there might still be budgetary room to allow the automatic stabilisers to increase the deficit, and for additional action to stimulate the economy and/or provide relief for affected persons and businesses. If, however, the fiscal deficit were already close to the reference level of 3% of GDP, a lower amount of GDP would reduce the room even for operation of the automatic stabilisers, and might force policy makers to consider pro-cyclical tightening of the budget (European Commission, 2004, Graph II.10, p. 90). The affected country could contend that its deficit was temporary, because it was caused by an economic cycle, and ask for forbearance with respect to the deficit reference level until the economy recovered; this would involve uncertainty for policy makers and the affected public, and possible contentiousness with the Commission authorities.

In the case of a strengthening economy and an improving budget, the effects of a deficit rule are again, if anything, pro-cyclical. As actual GDP increases, the currency value of the 3% reference level of GDP increases, and the fiscal authorities have more room to cut taxes or increase spending. If the budget began in deficit beyond the reference level, the growth of the economy would either reduce the necessary amount of fiscal rationalisation or eliminate it entirely. Although these deficit-rule effects would not themselves compel a country to act, the incentives would in fact be perversely pro-cyclical.

To summarise, the failings of a deficit rule are that it allows – perhaps encourages – countries to run excessively loose fiscal policies in good times, and may constrain counter-cyclical fiscal policy, including notably the workings of automatic stabilisers, in bad times. One frequent reaction is that the deficit rule should be cyclically adjusted to solve these problems. However, again, to solve these problems it would take a policy change far more complicated than merely using cyclically adjusted GDP rather than actual GDP in the existing deficit rule.

⁹ To avoid ambiguity, the current authors do not use the word “discretionary” (which in the United States refers to all annually appropriated spending, but elsewhere is often used to denote decisions made on fiscal policy). Instead fiscal policy decisions are described as “judgmental”.

6.2. Macroeconomic stabilisation: A deficit rule with cyclical adjustment

If the deficit rule were cyclically adjusted and based on estimated potential rather than actual GDP, the perverse incentives would be reduced but not eliminated. In a weakening economy, the currency amount of permissible deficit would not decline, because potential GDP would not decrease. However, the actual deficit would go up, and so it would still be possible that the affected country would find itself in excess of the deficit reference amount, facing pro-cyclical budget policy tightening. In the case of a strengthening economy, the converse would be true. The deficit reference level would not change in currency terms, because estimated potential GDP would not change; but the actual deficit would decline, and so policy makers would find that they had increased latitude to engage in pro-cyclical fiscal expansion.

So to solve the pro-cyclical tendencies of deficit rules, one would need to do more than merely substitute potential for actual GDP in the rule itself. Rather, one would need to reduce the maximum percentage of GDP allowed for a deficit in a strong economy, and increase the percentage in a weak economy. In short, reasonably speaking, one would need to make the deficit rule behave more like a spending rule.

6.3. Macroeconomic stabilisation: A spending rule

Design choices for the categorisation of spending programmes for constraint by numerical caps as opposed to pay-as-you-go procedures would affect macroeconomic stabilisation. In the US implementation, spending programmes were assigned to one or the other instrument by a fairly simple rule. Programmes subject to annual appropriation were limited by the spending caps; programmes funded by continuing law were subject to pay-as-you-go procedures. To some extent, that distinction was based on the perceived length of time needed so that programme changes could be implemented and have meaningful effect on the amount of outlays. However, an alternative criterion for this distinction could be the strength of the automatic stabiliser effects of different spending programmes. In the US context, the two criteria would yield approximately the same result.

In another governmental structure, however, a categorisation based directly on automatic stabiliser effects could be just as valid. Depending on that governmental structure, the amount of spending subject to numerical caps, as opposed to pay-as-you-go, could be comparatively large or it could be smaller. In Sweden, for example, all of central government non-interest spending is subject to a cap; there is no pay-as-you-go category. Spending rules can be accommodated to different governmental institutions in different countries through similar policy choices.

With such design choices determined, a spending-based fiscal rule would not change in character with cyclical fluctuations in the economy. That provides some significant advantages, but in some measure does constrain policy responses.

In a weakening economy, a spending rule requires continued compliance with the caps on annual appropriations. At the same time, the rule fully accommodates increases in counter-cyclical spending programmes, and decreases in revenue, that would occur without changes in the underlying law. In other words, a spending rule fully accommodates the workings of the automatic stabiliser programmes in the budget. This is in favourable contrast to a deficit rule, whether cyclically adjusted or not, that could require pro-cyclical budget tightening if the deficit approaches the reference limit. Furthermore, the spending rule is, in effect, cyclically adjusted in real time; because it unconditionally allows the workings of the automatic stabilisers, it raises no questions in the minds of policy makers, the public or the financial markets as to whether the automatic stabilisers in tax and counter-cyclical spending policies can be allowed to work.

A spending rule would have further advantages in the instance of a strengthening economy and an improving budget. Unlike a deficit rule, where a larger GDP would allow a larger pro-cyclical deficit, a spending rule would require that policy remain deficit-neutral. That would allow the automatic stabilisers in the budget to restrain a strengthening economy, in a counter-cyclical fashion.

Thus, a spending-based fiscal rule would have the appropriate effect of allowing the automatic stabilisers in the budget to work continuously, whether the economy was on the upside or the downside. In a strengthening economy, increases in revenues and declines in entitlement spending would tend to dampen any excess growth. The rule would, of course, allow the fiscal authorities to enact further restraint in a strengthening economy. The monetary authorities could also act more freely. (It is possible that monetary policy could be more effective if it could count on comparative budget policy stability, rather than continuous adjustments in fiscal policy.) The spending rule would, however, prevent policy makers from enacting an additional stimulus in a weakening economy (in the absence of some extraordinary measures, such as declaring an excessive deficit under the SGP as temporary and thus permissible). A spending rule could be allowed to adjust for one-time outlays required by natural disasters and other such unanticipated needs (as was the case in the United States), which could provide a counter-cyclical stimulus under those circumstances. (The apparently weakest scenario for a spending rule – a weakening economy where the rule, strictly interpreted and enforced, does not allow judgmental stimulative fiscal policy – is of course the situation in which policy makers are most likely to take the decision into their own hands in any event.)

The track records of spending-based rules thus far have been encouraging. Although at the end of the day the rule is only a part of the total system, both Sweden and the United States did perform well when spending-based rules were in place and observed. In particular the progress of the United States under its rule was striking. Finland and the Netherlands have successful expenditure rules as well. Descriptions of the systems of Finland, the Netherlands and Sweden are appended to this paper.

Questions of judgment arise regarding the preferred properties of a fiscal rule. Would the best rule be one that allows the automatic stabilisers to work at all times and without restriction, but that prevents or at least restricts additional counter-cyclical policy in a weakening economy? Or would the best rule rather be one that sometimes constrains those stabilisers in an economic downturn and never requires their action on an economic upturn, but would with a small pre-existing deficit allow additional expansionary counter-cyclical policy? This is clearly a matter of judgment.

However, arguably, and allowing for consideration of other criteria, giving free rein to the automatic stabilisers on both the upside and the downside of the economy might be the better policy.¹⁰ There is no reason to believe that a spending-based rule would be less conducive to a stable macroeconomy than would a deficit-based rule; in fact, the pro-cyclical tendencies of deficit-based rules would suggest that spending rules would be superior. This judgment depends in part upon the inexact nature of the economic and budget forecasting process.

6.4. Weaknesses of judgmental counter-cyclical fiscal policy

A spending rule would not allow additional judgmental changes in fiscal policy for stimulative counter-cyclical purposes; however, for that reason, it would neither overstep any counter-cyclical fiscal adjustment, nor move in the wrong direction because of false indicators in the macroeconomic data. (It should be noted that, depending on circumstances, the rule could in fact be made to allow such actions. But that is not the topic in this discussion.)

When viewed purely through the lens of stabilisation policy, a fiscal rule driven in some way by a cyclically adjusted deficit measure might seem superior. However, there are numerous problems in the implementation of judgmental counter-cyclical fiscal policy. For one thing, there are multiple lags in the data development and budgeting processes which result in a substantial delay between the occurrence of economic phenomena and the ultimate implementation of fiscal policy.

¹⁰ “...even governments enjoying a solid reputation may want to refrain from pursuing discretionary countercyclical fiscal policy in view of the associated implementation lags, irreversibility, and political constraints. In fact, accumulated evidence on the ineffectiveness of discretionary activism suggests that they should rely simply on a fiscal rule that allows for the operation of automatic stabilizers” (Kopits, 2001, p. 8).

Data are collected, processed, and revised with significant lags, which might be called technical lags. As has been made abundantly clear in recent years, economic data can be misread for years, let alone quarters, and so there is no guarantee whatever that even “final” figures will be meaningful at their release.

The Congressional Budget Office summarised the inaccuracies of US real-time economic forecasting – its own, that of the Presidents’ budgets, and that of the private sector consensus – as follows:

As the track record shows, forecasters collectively tend to err during periods that include either turning points in the business cycle or significant shifts in the trend rate of productivity growth. For example, most forecasters overestimated the economy’s growth rate in forecasts they made just before the two back-to-back recessions of the early 1980s. That pattern was repeated in the forecasts they made just before the more moderate recession of the early 1990s. In addition, during the mid- to late 1970s, forecasters continued to assume that the productivity trend of the previous two decades would prevail. In retrospect, however, the productivity trend of the 1970s and 1980s was significantly lower than that of the 1950s and 1960s. Because forecasters in the 1970s expected the previous trend to return, their forecasts of real output in the mid- to late 1970s turned out to be too optimistic. Partly for the same reason, forecasters repeatedly underestimated inflation in the late 1970s.

The years from 1995 to 2000 were a mirror image of the forecasting experience of the late 1970s. Partly because forecasters underestimated the trend rate of productivity growth beginning in 1996, they underpredicted the economy’s growth rate and overpredicted inflation.

(Congressional Budget Office, 2005, p. 3)

In short, and in summary, economic forecasting has been highly accurate except when it mattered. The CBO elaborated on this point in qualifying any optimistic interpretation of the averages of forecasting errors over long periods of time:

As noted earlier, forecast errors tend to be larger at turning points in the business cycle and when there are shifts in major economic trends. That tendency can be clearly seen in the forecasts of real output growth by comparing the large errors for 1979 through 1983 – when the economy went through its most turbulent recessionary period of the post-war era – with the smaller errors recorded for the mid-expansion years from 1985 to 1987. More recently, the recession of 2001 and slow recovery in 2002 account for the overpredictions made by all three forecasters in 2000 and 2001.

(Congressional Budget Office, 2005, p. 4)

There is no reason to believe that the US experience is unique in this respect. Thus, one might argue that reliance on the operation of the automatic stabilisers, rather than on judgmental fiscal policy, would be significantly less error-prone.

Even after the economic data are fully formed, they enter the policy-making process at different points in the budget cycle. And policy decisions are made with varying degrees of rapidity, involving political lags in the recognition of the data and in acting upon them. These lags can add a further measure of delay in the response of judgmental fiscal policy actions.

The European Commission recognised this problem in its 2004 summary report when it noted that requirements for pro-cyclical policy adjustments “...coupled with the traditionally long lags in identifying the growth shortfall and the slowness of the decision-making process in fiscal policy put fiscal authorities under strain” (European Commission, 2004, p. 90).

Given the annual budget cycle and the lags in collecting, processing, and acting upon economic data, the delay from real-world developments until the actual impact of fiscal policy under a deficit rule could easily be two years, or even longer. In the scale of economic cycles, that is a very long time.

For the same reasons, fiscal policy – in contrast to monetary policy – is much more difficult to reverse even should circumstances require. The annual cycle of policy making could be delayed even more.

Changing the benefits of spending and tax policies in reverse is difficult politically. Thus, a shift of direction in fiscal policy would be much more difficult than, for example, the reversal of US monetary policy in the face of the international currency instabilities of 1998.

Such lags are among the reasons why economists have come over time to lean more on the monetary authorities for stabilisation policy, with or without a deficit-based fiscal rule.

Because of the problem of lags in discretionary macroeconomic stabilisation, some might argue that changes in fiscal policy could move somewhat faster if the policy-making system allowed less intervention by political decision makers. But that would require a substantial, if not complete, surrender of stabilisation policy judgment to the outcomes of a formula.

Such a quick-reaction deficit rule would require budget policy makers to yield their control over the details of spending and tax policy, so that actual policy decisions could be made in step with a mechanical formula. Policy makers could not take the time to debate the details of counter-cyclical policy choices and still remain timely. Accordingly, proposals for heavy reliance on fiscal policy for counter-cyclical purposes have sometimes suggested that limited options for policy tools be pre-selected, and perhaps chosen purely by formula. Such a mechanised process would be unlikely to yield sound budget decisions. Both economists and public sector decision makers would almost certainly prefer the freedom to exercise some judgment.

Rejecting a cyclically adjusted deficit-based budget rule would not mean that policy makers would forsake the wisdom in calculations of cyclically adjusted deficit estimates. Rather, those models would be used as inputs to policy-making processes instead of as determinants of the outcomes of those processes.

7. Macroeconomic stabilisation, deficit rules, and productivity shocks

As was argued in the discussion on fiscal responsibility, if a productivity or other supply shock should occur, and once it is correctly categorised as temporary or permanent, then under any fiscal rule, the entire outlook and budget policy must be recalibrated. Until the shock is recognised, results under the fiscal rule will be sub-optimal. No fiscal rule is immune from such a problem.

Until an adverse shock is recognised, and until the necessary action is then taken, a deficit rule will be too lenient, in that GDP estimates used to compute the reference deficit limit in currency will be overstated. The reverse will be true with respect to a favourable shock; in this case, the deficit rule will be too restrictive. The excessive leniency in the case of an adverse productivity shock might be thought to be an advantage, if the lower productivity coincides with a cyclically weak economy, or if the productivity shock should prove not to be permanent.

A deficit rule using a cyclically adjusted output measure would have only limited advantages. Recognition of a favourable productivity shock would give a larger reference deficit limit in currency, which would give more room for fiscal deficits in what would likely be an already strong economy, and thus would provide at least the potential for pro-cyclical policy. Recognition of an adverse productivity shock would reduce the reference deficit limit in currency, and thus might require pro-cyclical budget tightening in a weak economy. Recognition of any shock that proved to be temporary rather than permanent would require difficult policy readjustments in the future.

A spending rule, as in the instance of a cyclical economic movement, would allow the automatic stabilisers to work in real time. Thus, in an adverse productivity shock, the spending rule would allow counter-cyclical spending to grow and receipts to decline. In a favourable productivity shock, the automatic stabilisers would work in the opposite direction, but still counter-cyclical. But again, the spending rule would not allow further stimulative counter-cyclical policy action.

7.1. Fiscal rules, public investment, and other issues of resource allocation

There has been concern that fiscal rules might prevent the provision of adequate funding for public investment (such as human capital building, infrastructure, research, and so on). This might be thought to be a particular problem with a spending rule because it imposes a cap on annual appropriated spending, through which much of public investment occurs. However, that potential problem is readily avoided. First, the spending rule can be given parameters to achieve any given deficit goal, over any given time profile of fiscal consolidation, with higher annual appropriated spending and a requirement for lower spending and/or higher receipts under the pay-as-you-go category. (This approach could use the same technique described earlier – a “debit” on the “pay-as-you-go scorecard” – that could be used to mandate additional deficit reduction.) Second, as was the case for part of the history of the spending rule in the United States, there could be separate appropriations caps for different categories of spending, which could allow more spending for investment purposes and mandate less spending for other appropriations programmes.

Similar techniques could be used to ensure adequate public investment funding under other fiscal rules. Otherwise, some might fear that any fiscal rule could distort choices of allocation of resources between public and private uses, or among alternative public uses. On the former point, there will always be difficult choices between public spending with positive societal returns, and private spending; and imposing a system of fiscal constraints only makes such choices more explicit. Those decisions can and should be addressed explicitly at the imposition of a spending rule, and the outcomes need be no less desirable than in any alternative process that achieved fiscal sustainability. And as illustrated above with respect to the allocation of resources toward public investment, a spending rule can encourage explicit debate on alternative uses of public resources, which can only be for the good; and the tools exist under a spending rule to achieve the allocation that is desired by decision makers.

7.2. Deficit rules and core government functions

In the standard theory of public finance, the levels of government spending and revenues should be determined by the marginal cost of raising an additional dollar of public funds and the marginal benefit of spending that dollar. And even in practice, spending decisions are often based upon a rough consensus on an appropriate size and role of government, which in turn presumes at least some stability in the availability of funds.

A fiscal rule that relies upon unpredictable annual upward and downward adjustments of spending and revenue amounts, based solely on fiscal projections and without reference to programmatic considerations, would inject an increased measure of uncertainty and instability in public sector decisions – surely much more instability than the most basic public finance principles would welcome. This instability would most likely reduce the efficiency and effectiveness of the core functions of government. Likewise, uncertainty with respect to tax parameters could lead to inefficient and even pro-cyclical decisions in the private sector. For example, if private decision makers perceive that the economy is strengthening and that tax parameters would therefore become less generous, they might accelerate economic activity – with pro-cyclical effect. The converse pro-cyclical impact would result from instances of economic weakening.

In this respect, a spending rule might be more conducive to the sound operation of the customary functions of government and to greater stability in the expectations held by the private sector. A multi-year spending rule, as was the pattern in the United States, would provide accurate expectations about future appropriations, allowing policy makers and programme managers to plan more effectively, and inducing them to consider the tradeoffs inherent in multi-year allocation decisions. In contrast, a deficit-based rule, which might allow an increase in spending in one year (through an increase in the allowable deficit in currency) but require a decrease in spending in the next, would make planning much more difficult and might lead government programmes to waste resources in changing course unpredictably. In

this regard, as argued above, a spending rule could improve the efficiency of the allocation of resources within the public sector.

Similarly, because a spending rule would allow receipts to fall through the workings of the automatic stabilisers during an economic downturn, the private sector could have reasonable confidence that tax policy would remain stable. In contrast, under deficit-based rules, taxpayers might have to fear tax increases, perhaps shortly after having enjoyed tax cuts, because the economy would weaken and the deficit would rise toward its reference limit. That could lead to pro-cyclical behaviour in the private sector.

7.3. Fiscal rules and monetary policy

The uncertainty in public sector planning (and in private sector planning relative to the tax system), and the potential pro-cyclical bias of a deficit-based fiscal rule, recall why economists have changed their general preference over the last 40 years away from counter-cyclical fiscal policy and toward reliance on the monetary authorities for stabilisation, with spending and tax policy aimed more toward longer-term structural goals. This trend in economic thinking suggests a preference for the greater stability and certainty that could be had in an expenditure-based rule.

The trend in economic thinking toward reliance on the monetary authorities for stabilisation policy would have to be considered in the particular circumstances of the European Union, given its single monetary authority but individualised budget policies. But as was noted earlier, the difference between the United States and the countries of the European Union – and the difference between the European countries' policy flexibility now and several decades ago – though real, should not be exaggerated.

7.4. Outlines of an expenditure rule in a multi-country monetary union

In the instance of a multi-country monetary union such as the EMU, or for other monetary unions that have been discussed in other parts of the world, the following characteristics of a possible expenditure rule would seem pertinent:

- **Coverage:** The PAYGO provisions of the US Budget Enforcement Act (BEA) permit both revenue collections and entitlement programmes to function as automatic stabilisers, but still provide for effective restraint on un-paid-for expansions of entitlement programmes and tax cuts. The US PAYGO appears to be more effective in providing for a counter-cyclical expenditure rule than the Swedish case with minimal – or non-existent – margins for years t and $t+1$, leaving no scope for automatic stabilisers in a cyclical downturn.
- **Time Frame:** Three years has been an effective budget horizon for Sweden. Although the United States nominally sets five-year caps, the caps were actually effective for closer to three years, in that the 1991-95 caps were slightly revised and extended in 1993, the 1994-98 caps were increased and extended in 1997, and the 1998-2002 caps were essentially disregarded in their last years. Because of the impending impacts of the retirement of the baby-boom generation, however, a longer time frame might be considered.
- **Country Specificity:** All aspects of an expenditure rule could be country specific: the caps; the categories used (capital investments; defence; programmes for the poor; etc.); the deficit/debt targets on which the categories are based; the enforcement procedures (see below); even many of the economic assumptions. This is not to say that some aspects could not be shared by several groups of countries; for example, caps for countries with higher debt or greater demographic problems may be set at different levels than for countries that do not have these problems to the same degree. Similarly, some aspects (treatment of natural disasters and emergencies, for example) may be the same for all countries. The point is that the expenditure rule can provide the flexibility

to address most country-specific problems without surrendering the restraints on spending needed to promote long-term fiscal sustainability.

- **Enforcement:** Sweden and the United States provide some lessons on enforcing an expenditure rule even though the characteristics of groups of sovereign countries collectively may be very different from the characteristics for any single country.
- **Warnings do not work; laws do.** National rules will never be stronger than the political commitment to keep them, because the national legislature can always change the rule. Political support will always be important, but even that will not be enough. Warnings can be ignored too easily, but caps (and enforcement provisions) that are set in law are difficult to change – procedurally and politically. This implies that caps for each country should be accepted by all the countries in the monetary union, but then also enacted into law by each country individually. The same applies to enforcement procedures. Uniformity of enforcement procedures is less important than having some kind of binding procedure that requires a change in law to ignore or overturn.
- **Statistics matter.** The data on which the caps and enforcement mechanisms are based should be of high quality and consistent across countries. The sovereignty of each country can be protected through the establishment of small, nonpartisan, independent national budget agencies¹¹ in each country to make regular public reports of budget implementation and forecasts. Although created by law in each country, these agencies should be obliged by law to use the concepts, procedures, and definitions on budgetary matters set forth by a central authority, such as the European Commission. Also, these national bodies should be scrutinised by a central authority, to ensure that the data are accurate.

8. Conclusion

In sum, both in abstract analysis and in the practical record, there seems to be little identifiable advantage in the use of deficit rules for fiscal behaviour. If anything, the balance would seem to lean toward spending rules that are simpler and less prone to malfeasance.

The balance between deficit-based rules and spending rules is summarized in Table 1. It weighs the pros and cons of the various options, and highlights the following differences:

- With respect to fiscal responsibility, deficit-based rules that set only (in effect) a maximum limit on the deficit might be thought to encourage countries to run the largest deficits permitted, creating risks of excessive deficits under unexpected adverse conditions. In contrast, a spending rule would provide firm guidance to policy makers whether the economy and the budget are strong or weak.
- With respect to macroeconomic stabilisation, deficit-based rules provide no incentive for counter-cyclical policy in strong economies, and can limit even the operation of automatic stabilisers in the budget in weak economies. In contrast, spending rules allow the automatic stabilisers to work in full at all times and in any economic conditions.
- Violations of a spending rule are transparent and incontrovertible. In contrast, non-compliance with a deficit rule, including either a reference deficit limit or required progress toward close-to-balance-or-in-surplus status, can be hidden behind optimistic economic assumptions or unlikely plans for future spending and revenue discipline.
- The performance of the core functions of government – its ability to achieve all of the traditional objectives of the public sector – can be adversely affected if the availability of resources is subject to unpredictable decreases or increases based only upon cyclical developments, as can be the case

¹¹ See Gros *et al.* (2004), and European Commission (2004, p. 113).

under deficit rules. Spending rules make the availability of resources more predictable, notably with respect to annually appropriated funding for those core functions of government.

- Funding for public investment can be protected under a spending rule, by requiring additional fiscal restraint through mandatory spending or taxes, or by setting a separate appropriations limit for investment.
- In contrast to the unpredictable fiscal constraints imposed by deficit rules, the more predictable fiscal behaviour encouraged by spending rules can lead to easier co-ordination with monetary policy, and to greater confidence and steadier behaviour within the private sector.

Based on this analysis, and in the judgment of the current authors, policy analysts should consider this alternative approach to fiscal policy making carefully.

Table 1. Alternative fiscal rules

	Deficit rule	Cyclically adjusted deficit rule	Spending rule
Fiscal responsibility:			
Expansion	Encourages larger deficit	Encourages larger deficit	Requires that surplus be saved
Recession	May require a smaller deficit	May require a smaller deficit	Allows deficit to grow
Macroeconomic stabilisation:			
Expansion	Pro-cyclical	Pro-cyclical, but less so than unadjusted deficit rule	Counter-cyclical, through automatic stabilisers
Recession	Pro-cyclical	Pro-cyclical, but less so than unadjusted deficit rule	Counter-cyclical, through automatic stabilisers
Administrability	Verification more difficult	Verification more difficult	Verification easier
Credibility	Status more contentious	Status more contentious	Status more transparent
Public investment	Can be protected	Can be protected	Can be protected, possibly better than under deficit rules
Core government functions	Volatile funding	Volatile funding	Predictable funding
Monetary policy	Co-operation difficult	Co-operation difficult	Co-operation easier

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Appendix: Expenditure rules in Finland, the Netherlands and Sweden

Finland

In addition to the rules that come with being a member of the EMU, Finland has introduced further national expenditure rules. Expenditure ceilings were introduced in Finland in the late 1980s and early 1990s. The initial aim was to strengthen the budget process; in recent years the problems of an aging population have resulted in increased support for the ceilings. The Budget Law mentions in general terms that the government is to set frames for expenditures; however, the ceilings are not just a political commitment but also a customary practice of Finland’s government.

The ceilings are set for four years on a rolling basis. They are set in real terms and for central government only, although they include transfers to sub-national governments. Cyclical expenditures – such as unemployment benefits and accommodation subsidies, interest on central government debt, and expenditures that are matched by revenues from the European Union – are excluded. All in all, around 75% of central government expenditures are under the ceiling and account for around 20% of GDP.

When the current government took office it stated a number of fiscal policy objectives, including reducing the central government debt to GDP ratio, securing balanced central government finances in national account terms, and controlling growth of central government spending in real terms. Controlling central government spending is a key feature. The ceiling is stated in real terms and adjusted to nominal terms according to price development for different expenditure items every year.

The Finnish system also includes a “brake” to avoid excessive deficits, stating that the government will take actions, even in conditions of weak economic development, if the deficit according to forecasts will be higher than 2¾% of GDP.

Furthermore, there have been recent discussions about expenditure control for sub-national governments. In a country like Finland, with a high degree of sub-national decision making enshrined in the Constitution, it may be hard for the central government to impose binding rules with sanctions.

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The Netherlands¹²

In the Netherlands, after a dramatic increase in deficits in the early 1980s, the government embarked on a new policy to bring deficits down. After some success, however, a high structural deficit limited the scope

¹² This section is drawn from Jón R. Blöndal and Jens Kromann Kristensen (2002), “Budgeting in the Netherlands”, *OECD Journal on Budgeting*, Vol. 1, No. 3, pp. 43-80.

for allowing automatic stabilisers to work, and required the government to take judgmental measures to meet the targets. From 1989 to 1994, budget projections were frequently overtaken by downward revisions in economic activity, forcing the government to introduce new fiscal packages with greater budget savings than the original budgets. This system of “continuous budgeting” resulted in major decisions on an *ad hoc* basis and at the last minute. As a result, it was recognised that the framework for budgeting had to be reformed.

In 1993, the minister of finance appointed a study group on the budget that recommended a new budget formulation system focused on the **level of expenditures**, rather than the **level of the deficit**,¹³ and on cautious economic assumptions. This created more stability, as any extra revenue would not automatically translate into extra expenditures, and the cautious economic assumptions would help compensate for uncertainty.

In new coalition agreements between different political parties, separate caps on expenditures were to be established for each of the three sectors of the Dutch budget: the “core” budget sector; the health care sector; and the social security and labour market sector. The coalition agreements would also incorporate the multi-year expenditure projections of each ministry as the basis for sub-caps for each minister within the “core” budget sector. Caps were to be established in real terms, which serve to prevent the coalition agreements from having to be re-opened during the course of the government’s term of office. Transfers were to be permitted between sectors and between sub-caps established within the “core” budget sector. Surpluses in one area, however, could be used only to fund **existing** policies that are experiencing higher costs than projected. The consent of the entire cabinet would be required to finance **new** proposals.

Budget over-runs must be offset in the area of the over-run. In exceptional cases, the cabinet may decide that more than one ministry should contribute to financing an over-run. There are strong “firewalls” between revenue and expenditures. If the budgetary situation turns out more favourable than anticipated, then some of the extra revenues may be used to cut taxes, depending on the size of the remaining deficit.

The new budget process has been the key to the successful turnaround of public finances in the Netherlands. The coalition agreements have proven to be an excellent instrument for control, both before and after the Netherlands joined the European Monetary Union.

Sweden

In the early 1990s Sweden experienced a recession and the most severe fiscal crisis since the Second World War. A weak budget process was identified as part of the problem.¹⁴ A reform was initiated that led to significant changes in the budget process in the second half of the 1990s. The introduction of a nominal expenditure ceiling for the central government in 1997 was an important part of the reformed budget process. The ceilings on expenditure were accompanied by a top-down budget process and a surplus target for the general government sector of 2% of GDP over the business cycle. In 2000, a balanced budget requirement was introduced for local governments. Although the expenditure ceilings are not explicitly derived from the overall surplus target, the surplus target is taken into account when setting the expenditure ceilings.¹⁵

¹³ This is similar to the caps on discretionary expenditure applied in the United States, except they apply to all expenditure in the Netherlands. For a discussion of the United States experience, see Barry Anderson (1999), “Budgeting in a Surplus Environment”, PUMA/SBO(99)3/FINAL, OECD, Paris.

¹⁴ For a more thorough description of Swedish fiscal rules, see, for example, Urban Hansson Brusewitz and Yngve Lindh (2005), “Expenditure Ceilings and Fiscal Policy: Swedish Experiences” (paper presented at the Banca d’Italia Workshop on Public Finance, held in Perugia, 31 March-2 April) or Willem Heeringa and Yngve Lindh (2001), “Dutch Versus Swedish Budgetary Rules: A Comparison” (paper presented at the Banca d’Italia Workshop on Public Finance, held in Perugia, 1-3 February).

¹⁵ Or using the words of the 2005 Spring Fiscal Policy Bill: “One fundamental factor in the Government’s deliberations on expenditure ceilings is the determination to keep expenditures at a level that is compatible with the public finances surplus target, while also ensuring margins for conducting an active labor market policy and meeting unforeseen expenses, such as costs associated with climate-related and other natural disasters.”

Annual nominal expenditure ceilings are set three years in advance as part of the budget process, and are considered to be binding. The ceilings apply to central government primary expenditure, including transfers and grants to local governments, plus expenditures by the old-age pension system outside the central government budget. Each year, as part of a rolling budget framework, an additional ceiling is applied to expenditures three years out.¹⁶ The ceilings for years $t+1$ and $t+2$ could in principle be altered, but this has not happened since the system was adopted in 1997 (except for technical adjustments). The ceilings are set with a margin over projected expenditures to allow for some policy flexibility and, more importantly, for increases in cyclical spending during an economic downturn. An attempt by parliament to change a proposed budget has to be presented in the form of a complete package that respects the previously determined expenditure frames and ceilings. This requirement has strengthened the hand of the minister of finance in the budget process and has made it more difficult for the budget to be defeated or amended in parliament.

Nominal expenditure ceilings have been an effective means of achieving the surplus target in Sweden. In fact, the ceilings together with a prolonged economic upswing, where revenue collections continuously exceeded projections, produced surpluses that exceeded 2% of GDP between 1999 and 2001. As a result of the expenditure ceilings, fiscal headroom produced by this boom was saved or used for tax cuts rather than for expenditure increases. However, the margins for cyclical fluctuations have been fully used during economic upturns even though they were intended to be only a safety cushion during unexpected downturns. As a result, the ceilings came under pressure following the 2002-03 downturn, forcing the government to scale back some expenditure commitments. The habit of using all headroom under the ceiling for expenditure increases and using the ceiling more as an expenditure target is worrisome and has contributed to a general government surplus lower than 2% of GDP since 2002, but still the ceiling has been important in reducing the expenditure ratio for the central government in the late 1990s and after that keeping it at a stable level.

Apart from the tendency to use up the margins for expenditure, Sweden's fiscal framework has two potential weak spots. First, expenditure restraint has been less evident at the local level, where most government consumption takes place, than at the central government level. Second, the government has resorted to the limited use of tax expenditures to introduce new policies without breaching the ceiling or requiring balancing measures.

¹⁶ Between 1997 and 2001 the ceiling for $t+3$ was set by parliament in the spring (March-May). Since 2002 it is instead proposed in the Budget Bill and decided in the autumn (September-November). In autumn 2004 no ceiling was set for 2007. Instead, the government planned to propose ceilings for both 2007 and 2008 in the Budget Bill for 2006 (in autumn 2005).

IMPROVING PUBLIC SECTOR EFFICIENCY: CHALLENGES AND OPPORTUNITIES

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Executive summary

Governments of OECD countries are under pressure to improve public sector performance and at the same time contain expenditure growth. While factors such as ageing populations and increasing health care and pension costs add to budgetary pressures, citizens are demanding that governments be made more accountable for what they achieve with taxpayers' money. This article briefly reviews key institutional drivers that may contribute to improve public sector efficiency, and focuses on one of them in more detail: performance information and its role and use in the budget process.

There is no blueprint for enhancing public sector efficiency. OECD countries have thus adopted diverse approaches to reforming key institutional arrangements, which include: increasing devolution and decentralisation; strengthening competitive pressures; transforming workforce structure, size, and HRM arrangements; changing budget practices and procedures; and introducing results-oriented approaches to budgeting and management. Although the majority of OECD countries have engaged in some institutional reforms, the empirical evidence of their impact on efficiency is so far limited due to: the lack of resources to conduct evaluations; the lack of pre-reform measures of performance; the complexities in measuring efficiency¹ in the public sector; and the problem of isolating the effects of specific institutional reforms on efficiency from other external influences.

Empirical evidence nevertheless suggests that the following three institutional factors may improve public sector performance:

- Decentralisation of political power and spending responsibility to sub-national governments.
- Appropriate human resource management practices.

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¹ Efficiency is here defined as costs per unit of output. The measurement of efficiency requires quantitative information on costs (or physical inputs) and outputs of public service provision. Ideally, this requires an accrual accounting system that registers costs rather than cash flows. Likewise, the measurement of outputs should ideally capture both quantitative and qualitative aspects of the services provided. The latter is especially difficult in the public sector since a large bulk of the services provided are typically intangible, *e.g.* policy advice. These measurement difficulties are even more pronounced for cross-country comparisons, although they are possible to overcome for some sectors.

- In the education and health sectors, there is evidence that increasing the scale of operations may improve efficiency.

Increasing the use of **performance information in budget processes** is an important initiative that is widespread across OECD countries. It is part of an ongoing process that seeks to move the focus of decision making in budgeting away from inputs (how much money can I get?) towards measurable results (what can I achieve with this money?).

OECD countries have reported a number of benefits from the use of performance information (PI):

- It generates a sharper focus on results within the government.
- It provides more and better information on government goals and priorities, and on how different programmes contribute to achieve these goals.
- It encourages a greater emphasis on planning and acts as a signalling device that provides key actors with details on what is working and what is not.
- It improves transparency by providing more and better information to parliaments and to the public, and has the potential to improve public management and efficiency.

OECD countries, however, continue to face a number of challenges with the use of PI in the budget process, including how to improve the measurement of activities, the quality of information, and getting politicians to use it in decision making.

Despite these challenges, countries are evolving their approaches, not discarding them. The OECD has developed general guidelines for countries as they adopt and evolve initiatives to improve the use of PI in budgeting processes. Some important factors to consider in this respect are:

- There is no one model of performance budgeting; countries need to adapt their approach to the relevant political and institutional context.
- A common whole-of-government planning and reporting framework is important.
- PI should be integrated into the budget process.
- Designing government-wide systems that automatically link performance results to resource allocation should be avoided, because they may distort incentives and because it is difficult to design systems that take account of the underlying causes of poor performance.
- Independent assessments of performance information should be carried out.
- The support of political and administrative leaders is vital for implementation.
- The staff and resource capacity of the ministry of finance (MOF) and spending ministries is critical.
- Reform approaches need to be adapted to evolving circumstances.
- It is important to develop incentives to motivate civil servants and politicians to change their behaviour.

As citizens continue to demand better value for money for their tax payments, there will be a continuing need for PI. Although the speed and methods of reforms will vary across countries, it is vital that countries recognise that a long-term approach is necessary, that implementing PI in budgeting is clearly a learning-by-doing process, and that the journey can be as important as the destination.

This article was produced for the German Presidency of the European Union. The article is divided into two sections.² The first briefly examines efficiency measurement issues across countries and provides a review of the literature on potential institutional drivers. The second examines one of these drivers in more detail – the use of performance information in the budget process across OECD countries – as this is considered a particularly important factor for public sector efficiency.

1. Institutional drivers of efficiency

1.1. Introduction: setting the scene

Providing more public services with less public spending is an ongoing challenge for all OECD member countries which is becoming increasingly important in the context of ageing. Cross-country comparisons could be useful to identify best practices in delivering public services in a cost-effective manner. In practice, the paucity of data often makes it difficult to benchmark countries, but recent attempts at doing so in the education sector – where the lack of output data is a less severe constraint – reveal that efficiency shortfalls can be large. Also, the variety of OECD country approaches to managing public spending programmes provides useful insights about possible strategies for improving value for money. In that respect, stepping up the use of performance information in budget processes – “performance budgeting” – is an important dimension of the reforms undertaken by OECD countries since the early 1990s.

Recent developments in public spending leave no room for complacency. Ratios of public spending to GDP have fallen below their historical high in the early 1990s in the OECD area, Japan being a notable exception. However, the factors behind this positive development – improving cyclical conditions, privatisation and enterprise restructuring, and lower debt servicing costs, for example – are unlikely to exert the same influence going forward.³ Meanwhile, demands on social transfer systems have remained intense over the past two decades; spending on pensions, poverty alleviation programmes and core merit goods (education and health) continued on a clear upward trend during that period. Population ageing will put further significant pressures on public spending in virtually all OECD countries over the next few years.

Making cross-country comparisons of public spending efficiency requires corresponding measures of the value of public service outputs and inputs. On the input side, even the public spending data available from the national accounts – which are the best internationally comparable source – are fraught with problems. Cross-country comparisons based on public spending-to-GDP ratios suggest significant differences across OECD countries. However, many of these variations reflect the different approaches to delivering public goods and providing social support rather than true differences in resources spent on public services. For example, if support is given via tax breaks rather than direct expenditure, expenditure-to-GDP ratios will naturally be lower.

Measuring public spending outputs is even more complex. The coverage and scope of public services differ across countries, partly reflecting societal priorities. These disparities require that public spending effectiveness be assessed by spending area, at least for the key components, including health care, education and social assistance. Even for each of these spending areas, public involvement often has various objectives (or output targets). And the outcomes of public services also depend on a number of

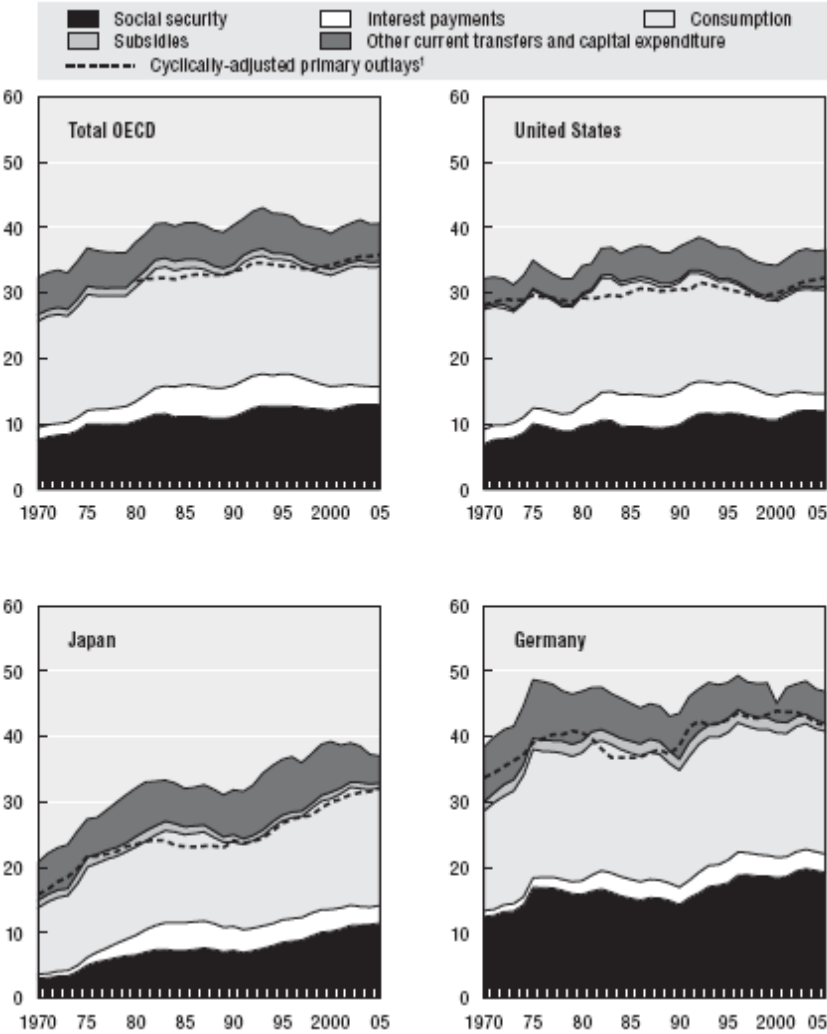
² Please note that this article is a shortened version of a longer paper.

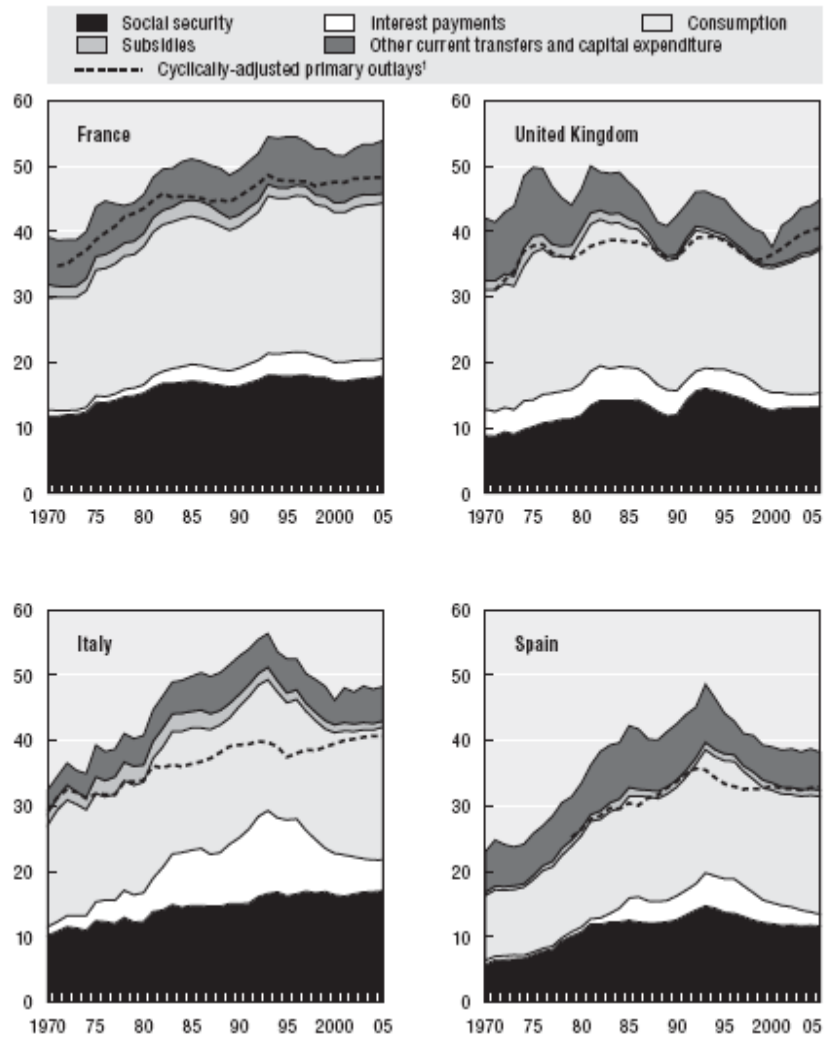
³ The benefits of falling interest rates have been partially offset by increases in general government gross financial liabilities in several EU countries; these reached an historically high level in France, Germany, Greece and Portugal in 2005.

factors that are outside the control of policy makers, at least in the short run. (Life expectancy, for example, depends to a large extent on lifestyle and diet.) Although most OECD countries have introduced performance targets and measurement tools in some parts of general government, they employ different methods. Thus, assembling a data set on public service outputs suitable for cross-country comparisons is, for many sectors, more an ideal than a possibility. Education is the sector where existing data allow some comparisons to be drawn on cost efficiency across countries, and the OECD has recently made a comparative assessment of performance in this area.

Figure 1 – Trends in general government outlays in the OECD area and large EU countries (cont.)

As a percentage of GDP



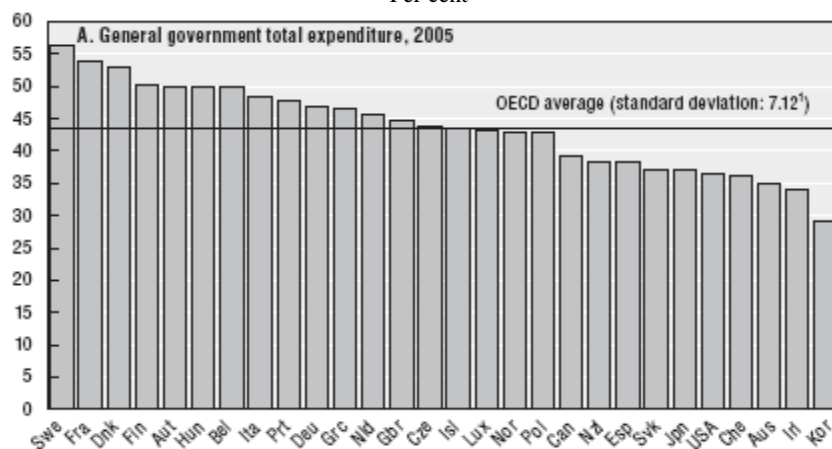


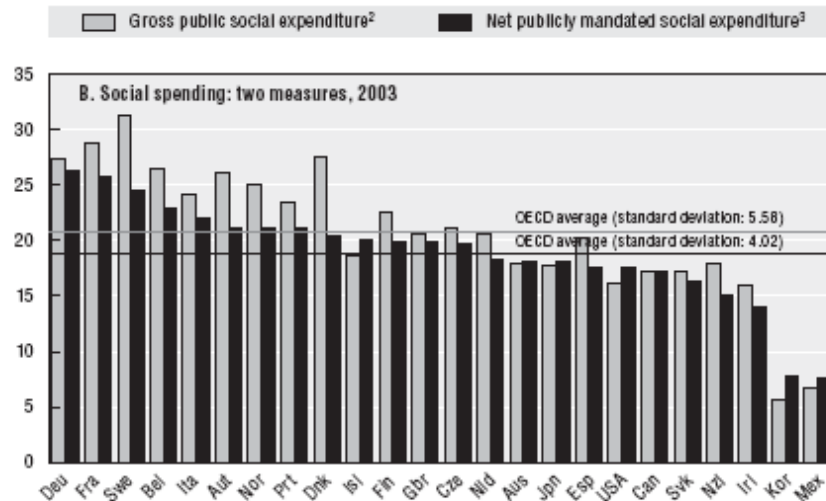
1. Expressed as a percentage of potential GDP.

Source: OECD Economic Outlook 80 database

Figure 2 – Comparing public spending-to-GDP ratios across OECD countries

Per cent





1. The standard deviation is calculated using only the data for the 23 countries shown in both Panel A and Panel B.
2. Gross public social expenditure is the sum of all social cash benefits and services provided by general government.
3. Net publicly mandated social expenditure is equal to gross public social expenditure plus mandatory private social expenditure less direct taxes and social contributions paid out of public cash benefits and indirect taxes on private consumption financed by net cash transfers, plus tax breaks for social purposes (not including pensions).

Source: OECD Economic Outlook 80 database. OECD Social Expenditure database (SOCX 2007)

Most OECD countries have carried out reforms to contain the growth in public spending and improve spending outcomes since the early 1990s. Reforms can be classed under three broad headings:

- making the budget process more responsive to priorities;
- making management practices more flexible, such that defined priorities are easier to achieve;
- strengthening competitive pressures among providers of public services and, where not incompatible with equity considerations, containing the demand for public services.

Because of important synergies among the three areas, getting the most out of these reforms would require that they be internally consistent. Further, since the early 1990s there has been a substantial transfer of spending responsibilities (particularly in education and health care) to sub-national governments in many OECD countries. This has had two effects. It has left central governments with responsibility for pension systems and other entitlement programmes, as well as debt-servicing costs, that are largely unaffected by these reforms. And since effective reform cannot be confined to central government, fiscal relations across levels of government must be such as to ensure that sub-national governments have the right incentives to deliver cost-effective public services. This is an issue for all countries, whether or not they are formally federal or unitary. The remainder of this section explores different reforms to key institutional arrangements within government which may improve public sector efficiency.

1.2. Institutional drivers of efficiency in the public sector⁴

This section briefly summarises the findings of the literature regarding the potential institutional drivers of efficiency. The institutional arrangements that have been reviewed in the literature summarised here include: *i*) practices ensuring increased **results orientation**, such as budget practices and procedures and

⁴ This section has benefited from the research carried out for the OECD by van Dooren *et al.* (2007).

performance measurement arrangements; *ii*) arrangements that increase **flexibility**, including devolution of functional and fiscal responsibilities from central to sub-national governments, agencification, intra-governmental co-ordination, human resource management arrangements and e-government; *iii*) methods for **strengthening competitive pressures** through privatisation and other means; and *iv*) various **workforce issues**, including workforce size, its composition, the extent and nature of unionisation and the attractiveness of the public sector. Overall, the evidence is surprisingly scant. Available research is inconclusive with respect to the impact on efficiency of varying the mix of inputs used or of changing structural and managerial arrangements.

However, some findings emerged in three areas. First, it seems that efficiency gains could be obtained by **increasing the scale of operations**, based on evidence collected mainly in the education and health sectors. This effect is attributed to economies of scale that result from savings in overhead costs and fixed costs in tangible assets. However, the impact on other public sector values such as equity, access to services, and the quality of services needs to be taken into account.

Second, **functional and political decentralisation** (*i.e.* spending responsibility) to sub-national governments also seems beneficial for efficiency. In principle, devolution of functional responsibilities, if accompanied by appropriate fiscal and political decentralisation, provides incentives for sub-central governments to deliver locally preferred services more efficiently, as the burden and the benefits of public service delivery both accrue in the communities. Evidence from federal countries shows that decentralised taxation reduces the size of government; however, evidence on the comparison of countries is inconclusive in this regard.

Third, **human resource management practices** also matter a great deal. The soft aspects of human resource management, such as employee satisfaction and morale, are considered to be the most important drivers of performance. While wages are still important for staff, non-monetary incentives are also essential. High wage levels – compared to similar work in the private sector – could lead to inefficiencies, although governments often are model employers and their wage policies reflect equity concerns as well. Wages are also important for attracting and retaining qualified staff, especially in case of skill shortages. Performance-related pay initiatives appear to have a low impact on staff motivation.

There is extensive literature on wage differences between public sector workers and otherwise comparable private sector workers covering many OECD countries. In many countries wages in the public sector are higher than in the private sector although they vary over time and across countries. The public sector wage difference is the highest at the lower end of the wage distribution (*i.e.* low-salaried or poorly-skilled workers are paid better in the public sector) and decreases as one moves up the wage distribution. Significant differences have also been found in the differential by various worker characteristics, such as occupation and gender. For example, in Germany wages for men were lower in the public sector than in the private sector, but the opposite was found for women.

The strict division between career-based systems and position-based systems does not reflect the reality of OECD countries. Many fall in between, with systems characterised by a relatively high level of delegation of HRM functions to ministries and a relatively low level of individualisation (lifelong careers and minimum lateral entry). These hybrid systems are often termed department-based systems. There are also countries with a high level of individualisation and a low level of delegation.

Findings are more inconclusive on the impact of **ownership, competition and agencification**. While private ownership is not a guarantee of higher efficiency, public ownership does not necessarily lead to higher inefficiencies either. Rather than ownership *per se* it is the importance of competitive pressure on efficiency that matters. However, there is a need to further explore for what and with whom public organisations compete. The nature of service delivery, *e.g.* whether it has features such as low asset specificity (high levels of alternative uses for resources) and low information costs, is crucial for successful competition in public services.

Regarding agencification, there is some evidence that a reduction of input controls combined with steering for results, financial incentives and competition could lead to increased efficiency. However, the

impact on the quality of service delivery and policy effectiveness is unclear. The literature also calls attention to the major risks of agencification, including the exposure of government to financial and employment risks and opportunities for political patronage and corruption. The effects of new intra-governmental co-ordination mechanisms are also not known.

Surprisingly, the impact of e-government has also not been thoroughly evaluated by researchers. A survey on e-government among United States municipalities concluded that it has been adopted by many municipal governments, but is still at an early stage and has not obtained many of the expected outcomes such as cost savings and downsizing. Few cities have experienced savings or reductions in the numbers of staff, while many cities have observed changing roles of staff and changes in business processes. It appears that e-government practices reduce time demands but increase task demands on staff members and require more technical skills.

There is growing empirical evidence about the negative effects of performance measurement/management, although the question of whether it does lead to better performance is largely unanswered. As will be discussed in the next section, performance information is typically not used in political budgetary decision-making processes, or by a majority of political actors. Rather, its impact is in the internal management of departments and agencies.

There is very little evidence of the impact of **workforce diversity and representativeness** on efficiency. Little research exists on the impact of diversity on workforce performance, and the findings are contradictory. A public administration study based on a survey of front-line supervisors found that high-performing agencies tend to strive towards workforce diversity. Some studies point to higher creativity and implementation ability in diverse organisations. Others find no link between diversity and performance. Furthermore, there are studies that find negative effects of diversity, such as increased absenteeism.

Assessment of the **unions' role in public sector efficiency** is also relatively uncharted territory, although union representation is rather high in the public sector in most countries. There is some empirical evidence from local school districts and fire services in the United States that suggests that high levels of unionisation constrain both flexibility and productivity. It has been found that collective bargaining in local government in the United States led to increased municipal expenditures. However, the impact of unions on issues of efficiency and effectiveness is unclear. European studies find no relationship, either positive or negative. This observation points to the importance of national differences in the nature of unionisation, including differences in the level of bargaining. The scarcity of research on public sector unions is all the more remarkable because, in all probability, the role of unions in the public sector differs from the private sector substantially, as public sector unions are more prominent, bargaining is not strictly managerial, it is also a political affair, and many of the public services are considered essential.

In terms of attractiveness of the public sector, its image plays an important role. The relatively unattractive image that the public service is considered to have in the United States encourages many talented students to pursue careers in the private sector. The denigration of the public sector and public servants can produce a self-fulfilling prophecy that drives out the most able. Overall, the empirical evidence on this issue is surprisingly scant. Available research provides a very limited assessment of the impact on efficiency of varying the mix of inputs used or of changing structural and managerial arrangements.

In summary, while there has been a plethora of public sector reforms in many OECD countries, the research evidence shows fewer success stories than have been claimed by practitioners. There are several reasons for this. First, research in this area is extremely complicated due to data availability issues, measurement difficulties, and the potential effect of many external factors on efficiency and productivity (the attribution problem). Second, reforms are often driven by ideological considerations and management fads rather than by efficiency concerns. Third, practitioners often have a vested interest in the success of the reforms and may over-claim their impact. Fourth, governments launch reform initiatives with great fanfare but often devote few or no resources to evaluating them. Finally, there could

be substantial differences between the short-run and long-run effects of these reforms, such as efficiency gains dissipating over time.

2. Incorporating and using performance information in the budget process⁵

The previous section discussed a number of institutional factors and how they contribute to enhancing public sector efficiency. This section examines in more detail the use of performance information⁶ in the budget process. The central aim of this reform is to improve decision making by providing better and more concrete information on the performance of agencies and programmes. Advocates claim that the use of performance information in budgetary decision making can contribute to improving allocative and productive efficiency as well as aggregate financial discipline.

The introduction of performance information (PI) into budgeting has been linked to wider reform efforts to improve expenditure control and/or public sector management. Performance budgeting initiatives tend to go hand in hand with performance management. These initiatives seek to shift the focus and emphasis of management and budgeting away from inputs and processes towards measurable results. The initiatives can be combined with reductions in input controls and increased flexibility for managers – in return for stronger accountability for the results – so as to enable them to decide how to best deliver public services.

The introduction of PI is widespread and well established (nearly 75% of OECD countries include non-financial performance data in their budget documents) albeit there is large variation in the approaches adopted. Nearly 80% of countries introduced their first government-wide initiative on outputs measures at least five to ten years ago, and over 40% have been working on developing outputs measures for more than ten years. Country approaches are not static but rather evolving, with 75% of countries having introduced new initiatives within the last five years. Countries follow a variety of methods to assess non-financial performance, including performance measures, evaluations and benchmarking. In the 2005 OECD survey on the use of PI, 80% of countries reported developing both performance measures and evaluations to assess performance. Of those countries that have developed performance measures, over 50% produce a combination of output and outcome measures for most of their programmes.

Despite the widespread introduction of performance information in the budget process over the past 15 years, OECD countries continue to struggle with its implementation. There has been a significant increase in the volume of PI produced; however this has not been matched by a corresponding increase in use, especially in budgetary decision making. Key issues centre on how to improve the use of PI in budgetary decision making and to what extent it should be related to resources. Country experiences have shown that having a procedure to integrate PI into the budget process is a necessary but not sufficient condition to ensure its use. Other factors influencing use include the quality of the information, the institutional capacity of the ministry of finance (MOF) and spending ministries, and the political and economic environment.

This section is based primarily on the results of the OECD 2005 questionnaire on performance information (PI)⁷ and on country case study reports produced by the ministry of finance from Australia,

⁵ An extended version of this section will be published in the forthcoming OECD publication, *Performance Budgeting in OECD Countries*.

⁶ Performance information is defined as evaluations and performance measures.

⁷ See the OECD 2005 survey on the development and use of performance information in the budget process (OECD, 2005f). This questionnaire was sent to the budget office of the ministries of finance in all OECD countries and two observer countries – Chile and Israel. There was a high response rate: 26 out of 30 OECD countries and the two observers completed the questionnaire.

Canada, Denmark, Korea, the Netherlands, Sweden, the United Kingdom, and the United States for the 2006 meeting of the Senior Budget Officials Network on Performance and Results.

2.1. Performance budgeting

Since at least the early 1990s, the majority of governments in OECD countries have been developing PI. However, performance budgeting is about more than the development of performance information: it is concerned with the use of this information in budget processes and resource allocation. Despite the fact that the idea of relating performance to resources has been debated since the early 20th century, there is no single agreed standard definition of performance budgeting.

The OECD has defined performance budgeting (PB) as a form of budgeting that relates funds allocated to measurable results. Different models and approaches to performance budgeting can be incorporated under this definition. Taking this definition as a starting point, the OECD has sought to distinguish different categories of PB based on the proposed uses of PI in the budget process, where PI is taken to refer to both performance measures (outputs and/or outcomes) and evaluations. Table 1 distinguishes three different PB categories.

Table 1 - Performance budgeting categories

Type	Linkage between PI and funding	Planned or actual performance	Main purpose in the budget process
Presentational	No link	Performance targets and/or performance results	Accountability
Performance-informed budgeting	Loose/indirect link	Performance targets and/or performance results	Planning and/or accountability
Direct/formula PB	Tight/direct link	Performance results	Resource allocation and accountability

2.2. Integrating PI into the annual budget process

An important factor in promoting the use of PI in budgetary decision making is the method used to integrate it into the budget process. PI can be used at different stages and levels of the budget process. Countries have taken a variety of approaches to include PI in budget negotiations. These can be split broadly into formal and non-formal approaches. Some countries have followed a formal approach, in which the MOF requires spending ministries to present performance plans and/or performance results along with their spending proposals, while other countries have no formal requirements. PI can be used by the MOF for planning purposes and/or accountability purposes. In both these cases there is an ongoing discussion of how PI should be linked to funding. There are different classifications of PB: presentational, performance-informed budgeting, and direct or formula PB. Depending on the approach adopted, countries can seek to link PI to decisions on resource allocation not at all, loosely, or tightly.

2.2.1. Presentational performance budgeting

In this approach PI is presented in budgeting documents or other government documents. It does not play a role in decision making on allocations nor is it intended to do so. Some countries have taken a non-formal approach to the development and use of PI in negotiations between the MOF and spending ministries. For example, Denmark and Sweden have an informal and discretionary approach on a government-wide scale which allows individual ministries to decide whether to produce and present PI in budget negotiations. There is no formal mechanism for the systematic integration and use of the information at this stage of the budget formulation process. In the case of Canada, PI is utilised

throughout the planning, monitoring and reporting phases of expenditure management. This largely takes place outside the annual budget process.

2.2.2. Performance-informed budgeting

In OECD countries when PI is part of the budget process, it is most commonly used to inform budget allocations along with other information on political and fiscal priorities. Thus, it is only one factor in the decision-making process. There is no direct or mechanical link between performance (planned or actual) and funding. When performance information is used, it can be for planning and/or accountability purposes.

Most budget negotiations have traditionally included some output information, as budgetary estimates generally state what a spending ministry aims to achieve with its funding, *e.g.* the number of roads or hospitals. The introduction of PB has formalised this process and placed a greater emphasis on setting targets and measuring performance.

- **PI for planning purposes: loosely linking planned performance to funding.** In countries where the MOF is involved in setting performance targets, these can be discussed and/or agreed during budget negotiations. Except for New Zealand, OECD countries do not have a systematic government-wide approach to linking expenditures to targets. Over 46% of countries do not link expenditures to outputs or outcome targets; the countries that do so only link them to a few targets. In some cases, even where there is a link, it can merely be a reflection of presentational changes in the budget structure rather than any real change in the decision-making process.

Both Australia and the United Kingdom have requirements that link increases in spending or new spending to performance targets or performance evaluations. For example, the United Kingdom has a more systematic approach in which each department develops three-year spending plans and public service agreements, which include performance targets negotiated with the Treasury.

In some countries planning is completely separated from budgeting, and strategic and performance plans are primarily presented and approved by the office of the prime minister or president, the ministry of planning or the legislature.

- **Performance results for accountability purposes: loosely linking performance results to funding.** The MOF can use performance results to hold other ministries and agencies accountable for performance. There is an ongoing debate about how tightly performance results should be linked to funding. In OECD countries, the MOF rarely uses performance results to determine budget allocations. At best, performance results can be used to inform budget allocations along with other information. Even this use of performance-informed budgeting can be sporadic. The use of PI in budget negotiations and the weight given to it varies among countries and also within countries depending on the information available, the policy area, and the wider economic and political context.

2.2.3. Direct/formula performance budgeting

The above section discussed government-wide systems of PI. In certain sectors however, PB is applied directly and explicitly links performance results to funding. This type of formula PB requires clear and explicit output measures and information on unit costs, which are not readily available in many government sectors. The approach is used only to a limited extent in OECD countries – mainly in Nordic countries and in certain sectors, *e.g.* higher education, research and health. Two-thirds of respondents to the 2005 OECD survey on PI stated that they do not directly link performance results to appropriations.

2.2.4. Mechanisms available to the MOF to motivate agencies to improve efficiency and performance

The MOF can use performance results to motivate agencies to improve performance; to do so, the ministry has a number of potential mechanisms at its disposal. These incentives can be financial or non-financial, and formal or informal. They can be divided into three broad categories: funding, flexibility, and public recognition. Table 2 summarises these mechanisms.

Table 2 - Potential mechanisms available to the MOF to motivate performance

Mechanisms	Rewards	Sanctions
Funding	Increase funding to the agency.	Reduce or restrict agency funding.
	Maintain status quo on agency funding.	Eliminate agency funding.
	Increase the staff budget.	Cut the staff budget.
	Provide management and employee bonuses.	
Flexibility	Allow the agency to retain and carry over efficiency gains.	Return all funding to the centre.
	Allow flexibility to transfer funds between different programmes and/or operating expenditures.	Restrict ability to transfer funds.
	Exempt the agency from certain reporting requirements.	Increase reporting requirements.
		Order a management audit of the agency.
Public recognition	Publicly recognise the agency's achievements.	Publicly criticise the agency's performance.

In the majority of cases the MOF does not use performance results to financially reward or punish agencies. Table 3 shows the percentage of MOFs in OECD countries that often use PI – evaluations or performance measures – to eliminate programmes, to cut expenditure, or to determine pay.

Table 3 - Percentage of ministries of finance that often use PI for action

	Performance measures	Evaluations
To eliminate programmes	4%	11%
To cut expenditure	10%	15%
To determine pay	11%	5%

The difficulty in linking funding to results reflects the fact that the issues and context surrounding budget decisions are complex. The capacity of the MOF to eliminate or even cut back programmes can be restricted by lack of institutional capacity and power or lack of political support. In some countries, there are no procedures for the MOF to use PI in this manner and/or it is a decision of the relevant ministry. This is especially the case for determining pay, where other central agencies as well as spending ministries play a key role.

There are also a number of technical and incentive issues related to financially rewarding good performance and sanctioning bad, which make it questionable if this approach on a government-wide scale will actually motivate agencies to use PI to improve performance. It is intuitively appealing to reward good performance, but a method that automatically does this would not take into account government priorities or budgetary constraints. Performance measures do not explain the underlying causes of poor performance. Performance in any given year can be influenced by a variety of factors,

both internal and external, that may or may not be within the control of an agency. The causes of poor performance can be outside an agency's control or can be related to insufficient funding. In addition, in some OECD countries it is uncertain if the PI is of sufficiently high quality to be used in budgetary decision making in this manner.

In addition, a mechanical approach can generate perverse incentives and encourage agencies to manipulate data. Incentives to provide accurate information are influenced by the expectations of how it will be used in decision making. If funding is tightly and automatically linked to results, there can be incentives to engage in gaming and to manipulate data in order to receive more money or to avoid receiving less. An observation made over 30 years ago still holds true today: it is politically irrational to expect agencies to provide objective information if it will be used to cut back their programmes.

2.2.5. PI in budget negotiations between spending ministries and their agencies

OECD research indicates that PI is more often used by spending ministries than by the MOF. A common approach to integrating PI into the budget process is through discussions on agencies' performance agreements and contracts. This is especially the case in countries with executive agencies, such as Australia, the Netherlands, New Zealand, the Nordic countries and the United Kingdom. These discussions can concentrate on either future targets or past performance, or involve a combination of both. With the exception of the purchaser-provider model used in New Zealand, in most cases there is only a loose link between funding and targets.

Ministries can and do use PI to reallocate resources, although it tends to be only one factor in the decision-making process. Also, unlike the MOF, spending ministries can seek to link an individual's performance to that of the organisation and use performance results to reward and sanction individuals. Across OECD countries, however, there is a wide variation in the quality and use of PI by spending ministries in the budget process. Even within the same country there can be wide variations among different ministries in terms of the quality, the extent of use and the weight given to PI in budget discussions. Many OECD countries struggle with problems of developing clear objectives and high quality performance measures and collecting associated data.

In summary, PI does not tend to have a significant impact on resource allocation. When performance information is used by the MOF in budgetary decision making, it is one factor in the decision-making process that is used along with other information to inform rather than determine budget allocations. Rarely on a government-wide scale is there any mechanical link between performance and funding. The MOF rarely uses PI to cut or eliminate programmes. It does, however, use this information as a signalling device to monitor agencies' performance and to highlight when further action is needed in the case of poorly performing agencies. The PI most used by MOFs for funding decisions comes from reviews conducted by the ministries themselves or in conjunction with other ministries as part of expenditure review exercises. PI is most often used by spending ministries, and they most frequently use it to manage programmes.

2.3. Benefits and challenges

It is difficult to measure the success of government initiatives to introduce PI into budgeting and management processes. As already noted in Section 1, there is a gap in the literature in terms of evaluating the impact of reforms. Given the lack of systematic evaluation within and across OECD countries, there are no comparative quantitative data measuring the impact of these reforms on efficiency, effectiveness or performance. There are, however, qualitative data available from the case study reports of the countries that participated in this study, and from the results of OECD surveys and secondary sources in the academic literature on individual countries and departmental and agency experiences.

2.3.1. The benefits

OECD countries reported a number of benefits from these reforms which are discussed below.

Improving the setting of objectives. These reforms provide a mechanism that enables politicians to clarify objectives. It has proved a useful tool for setting priorities over the short and medium term and can clarify what results are expected from the public sector. Most OECD member countries now present performance objectives to parliament and the public, either in government-wide performance plans or in ministerial or agency-level plans. For example, in Australia, Canada, the United Kingdom and the United States, all individual ministries are required to produce strategic plans, including medium-term performance goals. These initiatives, if successfully implemented, can provide more information on government goals and priorities, how programmes fit in with these goals, and actual progress and results in achieving them.

Improving the monitoring of performance: PI as a signalling device. Reforms of this kind have provided a mechanism for monitoring agencies' performance and progress. PI provides key actors with details concerning what is working (and what is not) within government. Also, in the case of evaluations, an explanation can be given as to why programmes are not working. PI acts as a signalling device that highlights problems with programmes and with service delivery, as well as good practice. Once a problem or poor performance is identified, different steps can be taken to improve performance. As discussed in the previous section, however, this rarely involves cutting expenditure or eliminating programmes. A more common course of action is that poor performance is discussed with the agency in question, to identify steps to be taken to address the problems and to improve each programme's performance.

Greater emphasis on planning. The introduction of PI has resulted in a greater emphasis on planning in management and budgeting, and a move towards outcome focus in policy design and delivery. There is more emphasis on long-term planning through the introduction of three-year to five-year strategic plans. The use of planning in budgeting has become more systematic. Combined with medium-term expenditure frameworks, which in theory inform agencies of their funding for the next two or three years, this makes it easier to plan the spending available to achieve goals. It can also provide a clear and logical design that ties resources and activities to expected results.

Improving management. PI is most often used by ministries and agencies to manage programmes. Adopting a results-focused approach allows managers to ask fundamental strategic questions about how to deliver services. In designing these systems agencies can address fundamental issues such as: Is this service necessary? Is it appropriate for the problem being addressed? What is the intended objective of this service? What is the proposed outcome? How can the service be best designed to achieve that outcome? If agencies are given the flexibility and authority to do so, they can organise their structure and operations to achieve their goals more effectively.

Across OECD countries there has been widespread implementation of the performance-based management approach. Approximately 50% of countries report having a system of performance management which incorporates the setting of and reporting on performance targets and their subsequent use in the internal decision-making processes of ministries and agencies. This includes internal decisions on changing work processes, setting programme priorities and reallocating resources within programmes.

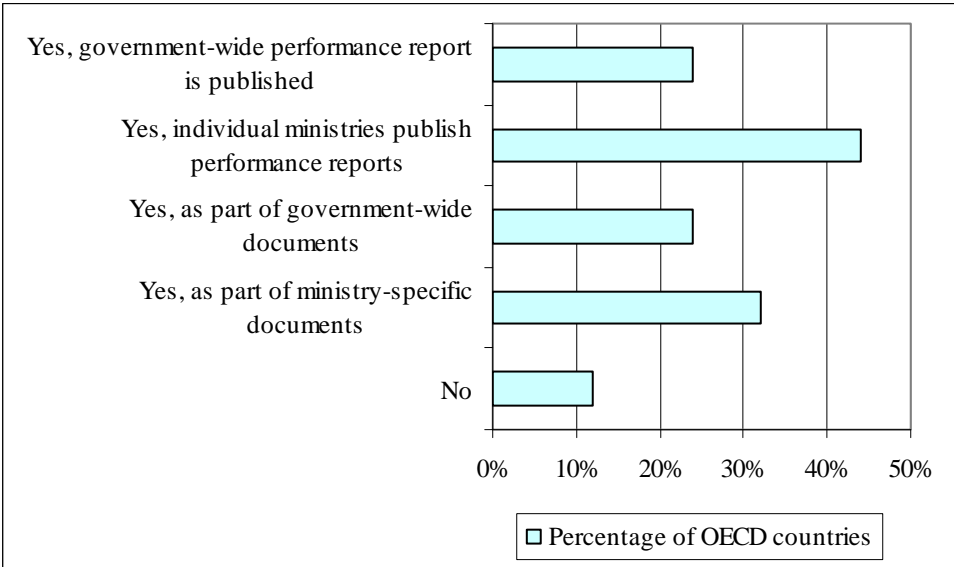
In terms of the actual development of PI within countries, there is wide variation. While some agencies have used this approach to transform how they operate and to improve delivery of service, others have paid mere "lip service" to the reforms and have resisted change, viewing performance guidelines and requirements as a paper exercise.

There is little systematic analysis within countries on the impact of these policy measures on performance. The literature does, however, provide case studies of individual agencies using PI in their budget process to help improve management and service delivery. In a recent OECD survey, MOFs named spending ministries and certain agencies that had made good use of PI in their budget formulation

process. The most important factors explaining the perceived successful use of PI to manage programmes and to improve performance were the type of good or service, followed by the support of top management of the respective ministry, and political pressure to reform.

Improving transparency. Many countries set improving accountability to the legislature and to the public as one of the key objectives of their reform initiatives. These reforms have improved transparency by increasing the amount of information provided to the legislature and to the public on the performance of the public sector, as was found in 24 out of 30 OECD countries.

Figure 3 - Are performance results made available to the public?



Source: OECD/World Bank Budget Practices and Procedures Database, 2003.

There has been a renewed interest in providing objective performance information to show that the government’s efforts are becoming more efficient, effective and accountable. Politicians’ interest in these initiatives in some countries stems from the hope that the provision of more quantitative information on performance will provide a visible affirmation that they are fulfilling electoral promises of improving public sector performance.

While there is strong evidence that transparency has increased, the provision of information is not an end in itself. Supporters of this approach have argued that the provision of objective information in the public domain should shift the nature and quality of public debate. It should move debate beyond subjective self-serving assessment of interest groups and value judgments based on anecdotal evidence and scandals, and towards the use of more objective criteria from which to make rational decisions about policies and programmes and the allocation of resources.

Despite the claim that the government’s presentation of information on its performance is objective, questions will be raised about its true objectivity. This is especially the case when the media’s view is sceptical, or when results are generally aggregated outcomes for the country as a whole. In the latter case, even if the information is accurate, the general results may be at odds with regional and individual experiences. This problem is exacerbated when there is no independent audit of PI. Despite these problems, it is arguably better to have some form of quantitative and/or qualitative PI than to continue to base discussions on inputs, anecdotes and weak evidence.

Informing citizens’ choices. Some governments, such as Australia and the United Kingdom, have provided PI evaluations to citizens and have also benchmarked the provision of local services, e.g. schools and hospitals. League tables and benchmarking that provide explanations and more detailed information than just raw numbers can help citizens choose among local schools and hospitals. This

information, while not perfect, can at least provide some guidance with regard to the level of performance and service provision. The public availability of this information, and citizens' action based on these data, can serve to place the spotlight on underperforming service providers and thereby serve as a motivator for future action to improve performance. Previously, this type of non-formal comparative performance data was not available to citizens.

2.3.2. Improving efficiency

PI has much potential if it is of good quality, relevant and timely, and if it is actually used to improve programmes. There is evidence that some ministries and agencies use PI in budgetary decision making to help improve programme performance. All these factors can contribute to improve operational efficiency. While there are individual ministry or agency case study examples, it is more difficult to pinpoint **systematic** use of PI on a government-wide scale by ministries and agencies to improve operational efficiency. There is a gap in the literature in terms of assessing the impact of government-wide systems of performance budgeting on efficiency. This gap is a reflection of the methodological difficulties already discussed.

For nearly all countries, one of the main objectives of these reforms is to improve the efficiency and effectiveness of programmes. For example, the United Kingdom has recently announced that performance measures are used to assist the Treasury and departments to obtain more than GBP 20 billion in annual efficiency gains over the years from 2005 to 2008. To improve efficiency, countries generally combine PI with other initiatives. In Denmark, for example, ministries have been asked since 2004 to publish efficiency strategies to ensure co-ordination between different efficiency tools such as performance contracts, outsourcing and procurement. Countries can follow a variety of methods, but the strategies should focus on achieving results.

It is argued in the literature that certain types of performance budgeting – mainly direct or formula performance budgeting, which is applied at a sectoral level – can improve operational efficiency. In the health sector, this type of budgeting has been based on the measurement of activity by diagnostic related groups (DRG). In higher education, these models are applied to teaching (for example, in Denmark, Sweden and Finland) and research (for example, in the United Kingdom). In the case of Denmark, it has been claimed that the application of what is termed the “taximeter model” in higher education and health has created incentives that – combined with the increased financial flexibility for universities and hospitals – generated efficiency gains.

These models are, however, controversial: three primary concerns have been expressed. First, they can create financial incentives for hospitals to engage in dysfunctional and gaming behaviour, mainly skimping (not providing the full service), dumping (avoiding the high cost of difficult cases) and creaming (over servicing low-cost, “easy” patients). Second, these initiatives can impact the quality of service provision. In the area of higher education, there have been issues with “dumbing down” of exams, and grade inflation. The fear is that universities will engage in these activities in order to ensure that students pass and that they then receive their payment. Third, concerns have been raised about the impact of these initiatives on overall aggregate fiscal discipline. In the case of health care in Norway, the introduction of activity-based financing did not increase the budget constraint.

Allocative efficiency involves the efficient allocation of public expenditure in accordance with government priorities. PI should in theory help to improve allocative efficiency by providing the government with information that facilitates the allocation of funds towards high-performing programmes and which are preferred by the citizens. The first question is if PI is actually used in the allocation of resources. And the second is if it is used as part of government expenditure prioritisation exercises, which seek to reallocate resources towards high-priority areas and away from lower-level priorities.

As already discussed, PI when used in budget negotiations is meant to inform but not determine budget allocations. Some countries, such as Canada, Denmark and Sweden, reported that PI was not used during

the annual budget process at a central level in decisions on budget allocations. Both Australia and the United Kingdom have a process that seeks to integrate PI into decision making on the allocation of new funding and priorities and to ensure performance returns in exchange for increases in expenditure.

The second question relates to reallocation exercises. For example, the Canadian programme review exercise in the 1990s resulted in cuts of 21.5% over a number of years. The Dutch interdepartmental policy reviews exercise initially required a 20% reduction in expenditures. In both countries these initiatives were introduced during times of fiscal stress. For the Canadians it was an *ad hoc* exercise, which finished in the late 1990s with the advent of budget surpluses. While the Netherlands continued with a revised version of their review process, given more favourable economic circumstances, the 20% cut requirement was dropped.

Despite these examples, significant central reallocation across government is not common. In OECD country budgets, there is little room for manoeuvre, given the extent of mandatory spending, entitlement programmes and prior commitments. Except in conditions of fiscal abundance, the funds available for reallocations are generally considered to be marginal. In this sense, much of the annual budget process in many OECD countries remains incremental, and inputs still play a significant role. PI does not tend to be used in a systematic manner for reallocation. In making decisions on marginal funding, performance is only one of many factors that can be taken into consideration. PI must compete for attention with other priorities, mechanisms and sources of information in the budget process. The MOF and the budget office have the objective of improving allocative efficiency; however, their primary role is to maintain aggregate fiscal discipline.

In theory, PB can contribute to **aggregate financial discipline** through improvements in operational efficiency. In practice, at a central government level it has been difficult to find empirical data to support the claim that PB contributes to aggregate financial discipline. Certainly no country in this study perceived the improvement of aggregate financial discipline as the main aim of a PB system, nor did any country provide evidence in support of its contribution to this objective. Countries use other instruments to achieve this goal, such as fiscal rules and medium-term expenditure frameworks.

In summary, countries have reported that ministries and agencies have used these reforms to improve the management of their programmes and as a signalling device to highlight poor performance. For some agencies they have contributed to improving efficiency and effectiveness. In terms of allocative efficiency, there are a few examples of PI being used to assist with reallocation exercises, but generally it is not used at a government-wide level systematically in reallocation. There is no evidence to support the thesis that PB has an impact on aggregate fiscal discipline; other mechanisms are more suitable for this task.

2.3.3. Challenges

Most OECD member countries continue to struggle with these reforms. Some common challenges, regardless of approach, include: improving measurement; finding appropriate ways to integrate PI into the budget process; gaining the attention of key decision makers; and improving the quality of the information. Although there are exceptions, most governments are finding it difficult to provide decision makers with good quality, credible and relevant information in a timely manner, let alone incentives to use this information in budgetary decision making. This section examines these challenges in more detail.

Measurement. Countries continue to face challenges with issues of measurement, especially with outcomes. Even with outputs it can be difficult to find accurate measures for specific activities. Governments carry out a wide variety of functions, from building roads to providing advice on foreign travel. Performance measures are more easily applied to certain types of functional and programme area than others. Problems especially arise with regard to intangible activities such as policy advice. The functional areas with the most developed performance measures are education and health.

Output and outcome measures each present a different set of challenges. Systems which only concentrate on outputs can result in goal displacement. Outcomes are technically more difficult to measure; they are complex and involve the interaction of many factors, planned and unplanned. It can also be problematic to relate what an agency or programme actually contributes towards achieving specific outcomes. There are also problems with time-lag issues, and in some cases the results are not within the control of the government. Outcomes, however, have a strong appeal for the public and politicians.

Resistance from public servants: changing behaviour and culture. Nearly all reforms encounter resistance, especially when they have to do with long-term budgeting practices that impact on the whole of government. Motivating key actors to move away from traditional and familiar budget practices proves to be difficult.

Managers in spending ministries can resist change, particularly when it is not clear whether or how PI will be used by the MOF and politicians. In many cases they fear the information will be misused to either publicly criticise programmes or to cut funding. They fear being held accountable for results that are not within their control. Alternatively, they can resist reform because of increased demands for the collection of data and burdensome paper requirements. This is especially true if the information is not used at all by the MOF or politicians. The MOF can also reject change by favouring the familiar systems of input control over concentration on PI. The ministry may fear that change will give it less control over expenditure and spending. In some cases, the PI presented is in fact not relevant or of good enough quality to be used in decision making.

Developing the institutional capacity of the MOF and spending ministries. Countries have experienced problems with developing the necessary institutional capacity at the level of the MOF and spending ministries to support these reforms. That capacity is influenced by the wider institutional structure and resources in terms of staff and expertise. PI is different from financial information. In order to make judgments and compare performance, the MOF needs the relevant expertise to be able to analyse and evaluate the information received from different spending ministries. Spending ministries depend on agencies for information. Therefore they, like the MOF, will need the capacity to understand and evaluate information they receive if they are to make judgments about how realistic the proposed targets are and the quality of the performance measures and data. Even if the interest is there, ministries in some cases – dependent on the country – do not have the expertise or knowledge to develop performance measures or even effectively monitor performance. This can lead to the passive provision of data that has no real weight in the decision-making process.

Changing the behaviour of politicians. Politicians have an important role to play in promoting the development and use of PI in the budget process. That role involves applying pressure on other actors to implement PB, playing an active role in setting objectives, and using PI in budgetary decision making. Their role in the legislature and the executive will vary depending on the nature of the legislative-executive relationship in the budget process, which in turn is influenced by the type of political system in place: presidential, semi-presidential or parliamentary.

The aim of most models of PB and the management-for-results approach is to have politicians set clear goals and objectives for agencies and create formal mechanisms for them to monitor progress in achieving these goals. However, politicians have not always availed themselves of this opportunity. Setting clear objectives is one of the challenges that OECD countries continue to encounter. In any system with multiple principals, or lack of agreement on the role of an agency, there can be competing and even conflicting goals and demands. This problem is more pronounced in separation-of-powers systems with joint control of the bureaucracy, like in the United States.

For PB, the key issue is whether and how politicians who make budgetary decisions use PI. With the exception of individual sectoral ministries in most countries it has been difficult to get politicians, especially those in the legislature, to pay attention to PI and to use it. Only 19% of OECD legislatures use PI in decision making. The percentage is even lower (8%) for those politicians in the budget committees.

In many cases however, politicians complain about receiving too much information of variable quality and relevance. Often the information is presented in an unclear or incomprehensible manner. Politicians in the legislature and the executive have different informational needs; to be useful, the information must be tailored to their requirements. It should also be provided at the right time for the relevant decision. A key challenge is to create good quality and relevant information that takes account of the timing and capacity constraints under which political decision makers operate.

Politicians face other competing priorities when making budgetary decisions. They are concerned with elections and with demonstrating to citizens that they understand and are responding to their needs. They operate on short-term time horizons often requiring quick results before the next elections, and they take decisions and use information in a fast-paced environment. Meeting these political needs is not necessarily conducive to using PI in budgetary decision making. In some political contexts, programmes and agencies are continued even though their existence is questionable on grounds of efficiency and effectiveness.

The budget process is by nature political, and PI will not change it into a rational decision-making process. Rather, it is an issue of how to provide the right incentives so that PI can be taken more into account. The type of incentives needed, and for whom, will be influenced by contextual variations such as the economic situation and wider political and institutional structures.

2.4. OECD guidelines on designing and developing budget systems that use PI

Based on OECD research and the experiences of member countries, some general insights are discussed below that are helpful to consider when designing, implementing or changing systems of performance budgeting.

2.4.1. Designing budget systems that use performance information

Context is important. There is no single approach to performance budgeting that can succeed in all countries; rather, each model needs to be adapted to the relevant political and institutional context and be seen as part of a learning process. Institutional and political factors help to explain the different country approaches, but also influence the ability of these reforms to achieve their objectives. These factors include: the nature of the political system, especially the respective role of the legislature and the executive in the budget process; the state structure, federalist or unitary; the degree of centralisation of the public administration system; and the relative power of the MOF in the wider institutional structure. The two latter institutional factors influence the capacity of governments to adopt different implementation strategies.

Have clear reform objectives. From the outset, the main objective and the implementation strategy for achieving it need to be clearly stated to all participants in the reform process. There should be clarity of purpose and of expectations. Too often, reforms are introduced with multiple and even competing objectives without any clear consideration of how these will be achieved, how they relate to each other or what is to be the key priority.

Align financial and performance information. The architecture of information structures and systems needs to be consistent. In many countries it is difficult to alter these systems. Nonetheless, it is important to consider how the existing budget classification and accounting systems can be aligned to fit with the adopted performance approach. Budgets tend to be structured in accordance with institutional and functional boundaries and not according to result categories, which makes it difficult to relate true costs to results. Proper cost accounting and a solid programme budget structure will help maximise the benefits of the performance system.

PI should be integrated into the budget process. A vital factor in ensuring the use of PI is a method for integration that helps achieve objectives. Countries have taken different approaches: PI can be part of the annual budget cycle and feed into decision making at different levels and stages of the process.

Design reforms with the end user in mind. Too often systems are developed and information is collected without a clear understanding of how this information will be used, or by whom. If it is to be used in the budget process, the information should be provided to the different users at different stages of the budget process. Also, in order to avoid fear and mistrust, the intended use of the information must be clear. Will it be used in budgetary decision making? How is PI to be linked to resources?

Government-wide systems of PI that tightly link performance results to resource allocation should be avoided. It is not recommended that a direct or tight linkage between funding and performance results be applied on a systematic government-wide scale. Such automatic linkages distort incentives, ignore the underlying causes of poor performance, and require a very high quality of PI that is rarely available. Direct linkage may be possible in certain sectors, but should be decided on a case-by-case basis rather than by establishing a government-wide system.

Involve key stakeholders in the design of reforms. Politicians and civil servants should be consulted and involved in the design phase of the reforms in order to gain their interest and support. It is important to maintain effective communication throughout the process.

Develop a common whole-of-government planning and reporting framework. Such a framework is needed if governments wish to engage in government-wide strategic planning and reporting. It can facilitate the setting of government-wide objectives that cut across organisational boundaries and assist with the prioritisation of goals and the comparison of PI.

Develop and use different types of PI. It is necessary not only to develop different types of PI, but also to understand the potential and limitations of each one. It can be problematic to have a system that concentrates solely on one type of PI. The different types of PI should feed into each other and, if possible, be seen and used in conjunction with each other. For example, failure to achieve a target could serve as a signal to conduct a more detailed review.

Have independent assessments of PI. Regardless of the type of PI, one factor that can help to improve quality is the presence of an independent element in the process. This can take the form of independent agencies or individuals to conduct or participate in evaluations or the collection of performance data. In addition, it is important to have an independent “check” or an independent system to audit performance results data and processes.

2.4.2. Implementing budget systems that use performance information

Find an implementation approach appropriate to the wider governance and institutional structures. What role do central agencies play and how centralised should the implementation approach be? The answers to these questions will vary according to, among other things, the wider institutional context, the approach to PB, the degree to which the administrative structure is centralised, and the relative power of the MOF. Efforts should be made to balance centralised and decentralised aspects of implementation approaches. While the institutional framework imposes limits, countries can take steps to counteract negative tendencies. For example, those countries with a tendency towards a centralised approach should seek to engage in consultation with ministries and agencies so as to avoid problems of over-centralisation. Those following a decentralised approach need to develop strategies and create incentives that encourage uniformity in the development and submission of PI, and to actively engage political leadership at all levels.

Have flexibility in implementation; one size does not fit all. Whatever implementation approach is adopted, it needs to allow enough flexibility to take account of the differences in the functions performed by government agencies while ensuring sufficient uniformity in approach and presentation of performance data to enable some comparability. In addition, if the reforms are seeking to apply a management-by-results approach, it is vital that the agencies have enough flexibility to achieve their goals.

Leadership is important. The support of political and administrative leaders is vital for pushing the implementation of these reforms. Politicians have an important role to play in their development. Strong political leadership can create momentum and impetus for change and help to overcome bureaucratic resistance. Nearly all countries stressed the importance of strong leadership at the ministerial or agency level. It is vital to promote the development and use of PI throughout the organisation and to ensure its use to improve performance.

Develop the capacity of the MOF and spending ministries. It is important that the MOF and spending ministries have the authority and the analytical and administrative capacities to implement these reforms. This has resource implications in terms of staffing and information systems. Staff need to have the relevant training and expertise.

Focus on outcomes, not just outputs. While outputs are easier to measure, they may lead to a too narrow focus on efficiency and to the exclusion of the wider issue of effectiveness. There may also be risks of goal distortion. According to experience in a number of countries, agencies that focused only on outputs were not sufficiently oriented towards the needs of the citizens and the wider societal outcomes. Ultimately, while they are more difficult to measure, outcomes are the main concern of politicians and citizens.

Have precise goals and measure and monitor progress towards achieving them. It is important to set clear goals and priorities and to consider what programmes contribute towards achieving these goals. If it is not possible to measure how a programme is performing, it is not possible to improve delivery. Performance should be evaluated regularly; many countries recommended an annual assessment.

Good knowledge of the programme base is important. This is especially the case if the focus is on outcomes. Clear, detailed understanding of the programme base requires a clear definition of what a programme is and knowledge of what programmes exist, how they align with intended whole-of-government outcomes, how much they cost, and the results achieved.

Limit the number of targets, but use many measures. Many OECD countries have experienced that it is better to have a few targets for which there are many measures than the reverse. Too many targets can create information overload and make it difficult to prioritise targets, resulting in an unclear focus.

Have information systems that communicate with each other. Information systems need to be developed for planning purposes, for the collection of PI, and for relating performance and financial information. These systems should have the ability to collect, update and disseminate financial and non-financial performance information over a range of programmes. It is important that systems implemented at a central and departmental level can operate together – and creating that capacity can require extensive planning and investment.

Cross-organisational co-operation is vital. The introduction of PI into the budget process requires the co-operation of many different actors. If PI is to be used in decision making and to improve performance, it is important that all levels of government co-operate in the development and implementation. That co-operation needs to be both horizontal and vertical. Vertical co-operation is needed between the MOF, ministries and agencies to deliver improvements in services. When outcomes and targets cut across organisational boundaries, co-operation between ministries and agencies is essential to achieve goals.

Consultation and ownership are important. It is important to develop a dialogue with relevant parties. Consulting and working with agencies, local authorities and those on the front line to establish a performance framework and set targets helps ensure that the framework has buy-in. This not only alleviates problems of gaming, but also helps create ownership which can motivate agencies and employees to achieve the target.

Consider how changes to budget rules can influence behaviour, in both positive and negative ways. Gaming is the norm in budgeting; it pre-dates the system of performance targets. However, introducing a system that tightly links funding to performance results creates new rules and a new dynamic that can give rise to a different type of gaming. Possible solutions include taking a cautious approach and

engaging in rigorous consultation and analysis, and “piloting” performance budgeting schemes and creating a sense of ownership of the relevant target. Given that it is not possible to predict all unintended behaviour, there is a need for the capacity to adjust systems and rules as they evolve.

2.4.3. Obtaining continued use of PI in evolving budget systems

A performance system evolves over time and creates different challenges at each stage. At the initial stage, merely developing relevant PI is the main challenge. As the performance system moves forward, other challenges become more important: mainly behavioural change, how to make various actors use PI in the decision-making process, and how to monitor the performance of the system itself.

Reform approaches need to be adapted to evolving circumstances. Implementation approaches are not static, and countries alter them in practice. This is a learning exercise, and countries have to allow their method to evolve based on the experiences of previous reforms or in reaction to changes in the wider political or administrative structures.

Have incentives to motivate civil servants to change behaviour. These reforms seek to change the behaviour of civil servants in both the MOF and the spending ministries. Civil servants should at a minimum have a proper understanding of the system of performance budgeting and their given role in that process. It is important to motivate ministries and agencies to use this information in decision making and to move them away from traditional processes. Country experiences highlight the importance of having the support of top leadership and the buy-in of managers. This can be promoted through a mixture of formal and informal incentives. It is also important that the incentives are positive and not just negative. These can vary from simply communicating the benefits of using PI as a managing and budgeting tool to increasing the flexibility of managers to get the job done; incorporating programme performance into managers’ and employees’ performance appraisals; and linking performance to bonuses and pay. It is important for the MOF to signal that performance is taken seriously by using PI in budget discussions. It is also necessary to address fears that the PI will be used for punishment only or to cut staff or budgets.

Have incentives to motivate politicians to change their behaviour. If they are to succeed, these reforms need to change the behaviour of politicians. Politicians should be consulted and involved in the reform process, and at a minimum be made aware of the importance and potential benefits of using PI in decision making. This is a delicate balancing act. It is important not to oversell the benefits: the approach is not a substitute for difficult budget decisions or the hard political choices that governments face. The key issue is use: it is important to provide incentives that will motivate politicians to use PI in decision making. PI must be tailored to their needs. Many OECD countries continue to struggle with behavioural changes. There should be a realisation that changing behaviour is more complex and requires a long-term approach.

Improve the presentation and reporting of performance information. To encourage the use of this information in decision making, it is important that it be relevant, of high quality, credible and timely. PI should be presented in a simple and integrated manner. At a minimum there needs to be a clear link between planning and performance reporting documents and/or between programmes, resources and results. If possible, the planned and actual results should be presented (ideally in a time series) in the same document along with financial information.

Recognise the limits of PI. There is no such thing as perfect government or perfect PI. The costs of developing and maintaining systems for collecting and reporting on PI need to be considered. These costs relate to both operational expenses and the time of civil servants. No OECD country has provided information on the total costs of developing and maintaining performance systems.

Remember the journey is as important as the destination. Some of the benefits of this approach come from reviewing existing systems, asking a different set of questions, and seeking to shift thinking and focus from inputs towards results. It is also a continuously evolving process – there is no end point and one will never get it “right” – because countries are adapting and learning from existing reforms, and also

because the issues that governments deal with and the operational environment within which they work are continuously changing.

Manage expectations. Previous incarnations of performance budgeting in many countries began with expectations that were too high and unrealistic, ensuring disillusionment when the predicted results failed to materialise. It is important from the outset to manage expectations in terms of the length of time it takes for the reforms to produce results. There are no quick fixes. Some countries estimated that it took 3-5 years to establish a government-wide performance measurement framework. There can be expectations that PB will create an environment of rational decision making and will enable governments to financially reward good performance and punish bad. While this is a simple and appealing idea it does not take account of the fact that budgetary decision making takes place in a political context, or that the issues and context surrounding budget decisions are complex. In most cases such an approach is not desirable. The more realistic expectation is that, at best, countries will engage in performance-informed budgeting.

3. Conclusion

This article briefly examined potential key institutional drivers that may contribute to improving public sector efficiency. There is indeed evidence that some institutional variables help improve efficiency, mainly: functional and political decentralisation to sub-national governments; certain human resource management practices; and increasing the scale of operations. The most notable conclusion, however, is that there is a lack of empirical evidence and systematic evaluation of the impact of institutional variables on efficiency.

The article mostly examined one variable in depth: the development and use of performance information in the budget process. In case studies and through an OECD questionnaire, countries reported a number of benefits from this reform, including the fact that for some agencies it contributed to improving efficiency and effectiveness. Most MOFs using PI engage in performance-informed budgeting. PI acts as a monitoring and signalling tool that tells decision makers what is working with government programmes and what is not. This information is essential to improving performance. Countries continue to struggle with aspects of these reforms, and a key issue is improving the use of PI. Integrating PI into the budget process is a necessary but insufficient condition for assuring its use. Other factors influencing use include the quality of PI itself, the capacity of the MOF and spending ministries, and the wider institutional and political context.

The road from incremental budgeting towards results-based budgeting is proving to be long and difficult. In the governments of OECD member countries, a great deal of the annual budget process remains incremental and inputs still play a key role. Results information will never completely replace inputs. These reforms are, however, slowly shifting the thinking of decision makers at all levels – politicians, the MOF, spending ministries and agencies, and the general public – towards a greater focus on results. There is a clearer understanding of the need to see public policy and government actions in terms of achieving results. As long as citizens demand results from their governments for their tax dollars, there will be a continuing need for performance information. A long-term approach and patience are necessary as countries go down this road. Despite the challenges encountered, countries are continuing to move forward with reforms to improve the use of PI in budgetary decision making.

Several lessons clearly emerge from this study. First, there is a need for future research and analyses into the actual impact of key institutional variables on public sector efficiency, both within and across countries. More research is also needed into how the individual country context and political economy influence the capacity to adopt certain institutional drivers and their chances of success. Second, regardless of the type of PI – evaluations, performance measures or international benchmarking of public sector efficiency – consideration needs to be given to whether and how it will be used by decision

makers. It is a matter not just of process, but also of having the right incentives to motivate decision makers to use the information.

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MODERNISING PUBLIC ADMINISTRATION

INITIATIVES TO IMPROVE THE EFFICIENCY AND EFFECTIVENESS OF PUBLIC SPENDING

European Commission

Paper completed: September 2007

Key messages

The need to improve competitiveness, concerns about fiscal sustainability and growing demands by tax payers for better public services at lower costs have prompted wide-ranging reforms in the public sector, including efforts to modernise the public administration as well as recent initiatives to improve the quality of regulation and reduce administrative costs for business and citizens. The fact that the public sector represents a large part of the economy in many EU Member States increases the benefits of improving its efficiency.

This issues note, while not providing an exhaustive overview of the reforms undertaken, illustrates that all Member States are undertaking initiatives to reform their public administrations which vary significantly from one Member State to another. These various approaches reflect different starting points, different cultures (in terms of unionisation, parliamentary scrutiny, citizen involvement, etc.) and different sources of public sector inefficiencies. Nevertheless, based on an exchange of views at a workshop organised by the Commission and the Portuguese Presidency as well as on a survey launched by the EPC, Member States appear to focus their attention primarily on four main areas:

i) **performance-orientation:** There is evidence that: (a) an increased focus on the medium-term in budgetary planning; (b) the adoption of a result-oriented approach to budgetary planning; and (c) a coherent consideration of all budgetary resources, including specific earmarked funds if applicable, could be important tools for improving public sector efficiency and effectiveness.

ii) **organisational aspects:** in many Member States, the roles and responsibilities of the different governmental departments have been reviewed in order to simplify the organisation of the public administration. The trend towards an externalisation of the public sector has also affected management practices within the public administration.

iii) **human resource management:** the streamlining of the public administration has in many cases been accompanied by reforms of human resource management, including flexibility in recruiting, flexible working opportunities, performance pay and performance evaluation systems.

iv) **encouraging the use of ICT tools:** many countries use ICT to reduce administrative costs and enhance the quality of service delivered to businesses and citizens by creating the possibility for interaction with the public via the internet, but also by optimising internal processes through a wider use of electronic information flows.

Experience shows that the design of appropriate reform strategies needs to be based on a good understanding of the dynamics of the national public administration system. Additionally, gathering broad support, maintaining the reform momentum and guaranteeing the government-wide commitment at all stages of the reform process needs to be ensured as these are crucial success factors. A failure to do so could result in unintended effects making administrative processes less effective. This might occur in particular when the changes of rules, procedures and structures have not led to changes in behaviour and culture. In addition, interlinkages between different reform initiatives and their impact on citizens, businesses and workers within the public administration itself have to be taken into account. Also the interaction with other structural reforms, such as those in product and labour markets, need to be considered. Systems to measure efficiency and evaluate reforms are important and need to be improved. Indeed, such systems are necessary both for effective performance management in the public administration and to improve our understanding of which reform initiatives pay off.

A successful modernisation strategy needs political, economic and financial objectives, measures to achieve these objectives, sound performance measurement, and a well-designed communication strategy. Within the process of implementing reforms, a clear system of monitoring has proven valuable in many countries, including an improvement of data quality, transparency and accessibility to evaluations. Also striking the right balance between greater managerial flexibility and greater accountability is an important element to be considered. Finance Ministers can support the process of modernisation by creating a climate of innovation in their administration, by encouraging their staff to take an active role in the process and by promoting the use of information and communication technologies. They should also play a major role in the use of information on the performance of the public sector and could ensure more result oriented budgeting and regulatory impact analysis. Programme and performance-based budgeting techniques as well as medium term expenditure frameworks (MTEF) are important drivers for efficiency improvements.

The modernisation of the public administration, resting on a high degree of transparency and accountability, can be a key element to ensure control over expenditures and budgetary consolidation and can enhance effectiveness, in line with the requirements of both the preventive and the corrective arm of the Stability and Growth Pact. An efficient and modern public administration and better regulation also contribute to competitiveness, economic growth and, accordingly, to the goals of the Lisbon Agenda.

1. Introduction

The efficiency and effectiveness of public spending is becoming a more pressing policy challenge. Under German Presidency, the ECOFIN Ministers emphasised that a greater quality of public finances is essential to get more value for public money and invited the Economic Policy Committee (EPC) and the Commission to further develop the analysis and measurement of public expenditure efficiency and effectiveness. Within the context of this on-going work programme, the Portuguese Presidency suggested to put particular emphasis on the modernisation of public administration since an efficient and effective public administration is a necessary condition to increase the overall efficiency and effectiveness of public spending. The June ECOFIN Council agreed to return to the issue of reforms to improve efficiency in public administration on the basis of an exchange of best practices in the autumn.

In order to prepare the ECOFIN debate, the Portuguese Presidency and the Commission organised on 6 July 2007 a workshop on modernising public administration and its impact on competitiveness. It showed that as the role of the public sector has changed, so have management practices within the national public administrations. This note gives an overview of the main initiatives taken by Member States in this area based on the exchange of views held at the workshop as well as on a survey launched by the EPC.

2. Delivering efficiency and effectiveness

Although policy makers are interested in the final outcome of their policies, such as an increase in the growth potential, the outcome tends to be determined not only by the policy inputs, but also by external factors. As a result, the effectiveness of public policies, which relates input to final objectives and outcomes, is very hard to measure and the focus of empirical analysis tends to be on efficiency, the latter relating input to output. Studies show that significant efficiency gains in public spending are possible.¹ Further work on developing effective means of measurement of efficiency and effectiveness is needed. In this respect, the EU-KLEMS data base may provide a useful tool once the data becomes more reliable.

The public administration can be considered as an institution that affects the input, produces the output and has a significant impact on the outcomes of governments' policies. The functioning of the public administration will therefore have an important influence on the efficiency and effectiveness of public spending. Empirical research indicates that modern and efficient public administrations have a positive impact on productivity and growth².

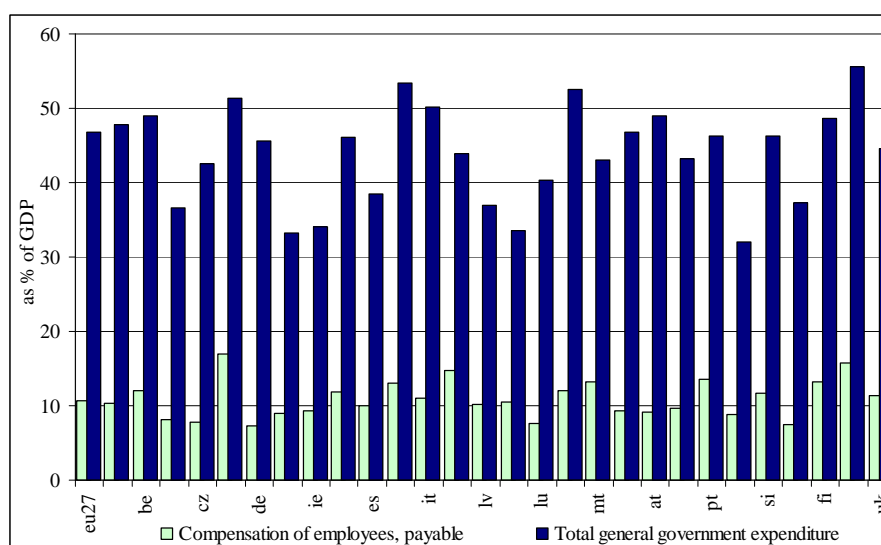
In a broad sense, the modernisation of public administration can be defined as reform measures aimed at improving the quality of governance and at raising the efficiency and effectiveness of public service provision. This is the reason why EU Member States have been implementing reforms aimed at modernising the public administration through the adoption of best management practices resulting in increased staff motivation, public sector productivity and citizens' satisfaction. This need to modernise reflects the fact that the responsibilities of public administrations have changed in line with evolving citizens' demands, the push by business for better regulation, the widening use of information and communication technologies, and less direct involvement of the public sector in the economy, including the reduction in the public ownership of industry.

The government remains a major economic actor in modern society. Amongst EU Member States general government expenditures in 2006 varied between 32% (Romania) and 55% (Sweden) of GDP. The size of the public administration as measured by the compensation of employees in the general government was above 10% of GDP on average. Again, there is a large variation between Member States with Slovakia (7%) and Denmark (17%) at the two extremes (see Figure 1).

¹ For example, A. Afonso and M. St. Aubyn (2005), "Non-parametric approach to education and health efficiency in OECD countries", *Journal of Applied Economics*, 8 (2), p.227-246; A. Afonso and M. St. Aubyn (2006), "Cross-country efficiency of secondary education provision: A semi-parametric analysis with non-discretionary inputs", *Economic Modelling*, 23 (3), 476-491; and A. Afonso and St. Aubyn (2006), "Relative Efficiency of Health Provision: a DEA Approach with Non-discretionary Inputs", ISEG-UTL, Working Paper n° 33/2006/DE/UECE; IMF; OECD (2005), "Modernising Government: The way forward". IMF (2007), "Budget Rigidity and Expenditure Efficiency in Slovenia", IMF Working Paper WP/07/131.

² M. St. Aubyn (2007): Modernising public administration and economic growth, Conference paper for the Workshop on "Modernising public administration and its impact on competitiveness" organised by the Portuguese Presidency and the European Commission.

Figure 1 - Total government expenditures as % of GDP in the EU Member States, including the compensation of employees (2006)³



Source: Eurostat

3. Major reform initiatives by Member States to enhance public administration efficiency and effectiveness

Based on the information on efficiency enhancing reforms (see Annex), which was provided by the Member States in response to a questionnaire circulated by the EPC, most national reform initiatives during the last five years can be classified around following key aspects:

- i) Focussing on performance (budgetary reform)
- ii) Streamlining roles and responsibilities (organisational changes)
- iii) Improved human resource management (personnel changes)
- iv) Using information and communication technologies and optimising internal processes (technological changes)

However, the note can not provide an exhaustive overview of reforms undertaken. Aspects which are not covered include: the use of microeconomic methods for assessing the costs and benefits of public policies or projects, the reengineering of public policies (e.g. through policy and process audits) and the reduction of administrative costs as such.

i) Focussing on performance (budgetary reform)

Awareness of the value of measuring the performance of the public sector has increased over the last decade. Nevertheless, a recent survey by the OECD shows a great variety in the reliance of Member States on performance-based budgeting techniques.⁴ Within Europe, the Netherlands, the Scandinavian countries and the UK (see Box 1) appear to use such techniques most frequently. Other countries have gotten on board more recently. France has shifted to programme- and performance-based budgeting, which is expected to improve the efficiency and effectiveness of public expenditures. Its new budgetary

³ It should be noted that differences between Member States may occur because in some Member States redistributive spending is included in total general government expenditures while in others it is not.

⁴ OECD (2007), Improving public Sector efficiency: Challenges and Opportunities.

framework (LOLF) is organised around a three-level structure: missions, programmes and actions and systematically includes a set of performance indicators. Romania as well has gained experience with programme budgeting. For the 2007 budget, 64% of the total amount of the budget was allocated on the basis of programmes. In Italy, the efforts to reform public expenditure in the framework of the 2007 Budget Law are mainly based on four elements: the spending review, the budget reclassification, the review of parliamentary procedures and the strengthening of performance-based budgeting. Spain is still in a developing phase.

In many of the other new Member States, the increased collection and wider use of information on the performance of the public sector is an important element of a public finance reform. In several countries this has gone hand in hand with measures to create medium-term budgetary frameworks (MTBF) so as to avoid one-off measures and budget overruns. In Cyprus, the creation of such a framework also led to the assumption of wider responsibilities and greater flexibility by the spending ministries. In Estonia and Bulgaria the consideration of budgetary plans within the context of a medium-term expenditure framework (MTEF) led to efficiency gains as a result of an improved allocation of public resources. In Latvia budgetary transparency and budget planning improved when earmarked spending items, which previously had been included in a large number of special budgets, became part of the general budget.

There is some evidence that: (i) an increased focus on medium-term in budgetary planning; (ii) the adoption of a result oriented approach to budgetary planning (complementing the traditional focus on the planning of inputs); and (iii) a coherent consideration of all budgetary resources, including specific earmarked funds are important tools for improving public sector efficiency.

Box 1 - UK public spending framework

The 1998 Comprehensive Spending Review laid the foundations for a modern public spending framework including the introduction of Public Service Agreements (PSAs), which specified priorities for government departments to deliver in exchange for the three-year budgets committed during the Spending Review. Since then, the framework has evolved through successive spending reviews, with an increasing focus on key outcomes and a fall in the number of targets to around 110 in 2004, down from 600 in 1998. The 2004 Spending Review set out the government's ambition to implement the conclusions of an independent review of public sector efficiency ("Gershon Review"). The Gershon Review considered all of public sector expenditure and made recommendations for significant efficiency gains to be made in five broad areas – procurement, corporate services, transactions, productive time and policy, funding and regulatory systems. Departments were each set individual targets for generating efficiency savings as part of the cross-government Efficiency Programme and a central government agency, the Office of Government Commerce (which is an agency of the Treasury) was made responsible for monitoring and challenging departments to ensure delivery.

Public finance reforms often encounter organisational and legal challenges. The main challenges are related to both the design and implementation of the reforms. The experience of the Netherlands and the UK illustrates this, in particular in terms of the definition of concrete policy objectives and related quantitative indicators. Defining an appropriate set of performance indicators based on a "SMART"⁵ definition of objectives is not an easy task. Moreover, such measures would have to be implemented in the entire public administration, involving multiple levels of government. Finally, the challenge of moving towards more delegation of decision-making combined with more accountability should not be underestimated. It is a long-term process since it takes time to change behaviour and to see the benefits of this approach emerge.

ii) Streamlining roles and responsibilities (Organisational changes)

In many Member States, the roles and responsibilities of the different governmental departments have been reviewed in order to simplify the organisation of the public administration. This restructuring has

⁵ "SMART" refers to characteristics of indicators: specific, measurable, achievable, realistic and timely.

taken various forms including a redistribution of responsibilities, the definition of new regulatory roles or a reduction in government bureaucracy. The trend towards an externalisation of the public sector (i.e. the use public funds to finance the private provision of activities having a public interest) has also affected management practices within the public administration. Especially, the Dutch "Agency Model" seems to be interesting in this context as it leads to more business-oriented working and thinking in the public sector. Spain as well is setting up agencies under a new law which promotes performance management.

A significant effort to streamline the organisation of the public administration has been made by the Nordic countries in particular. Denmark reduced the number of municipalities from 275 to 98 and established a new distribution of tasks among different levels of governments. In Finland, a programme was put in place, which aims at achieving efficiency gains in public services and the public administration through a reorganisation of structures and administrative practices. In July 2007, France launched the General Review of Public Policies, as an element in a global approach to public finances, to extend the scope and stake of the audit and modernisation process. It aims at identifying the relevance of the existing public policies, their implementation and their efficiency and effectiveness. It should contribute to reduce costs and to enhance the quality of public expenditures. It is co-ordinated by the Council for the modernisation of public policy, a body established at the highest political level. Hungary decided to centralise services in order to rationalise governmental operations. In order to reap scale benefits, government bodies had to identify functions which could be pooled and provided by a single institution.

Other reforms have focussed on changing fiscal relations between different levels of governments. The Netherlands modified the funding of municipalities for social assistance in order to achieve a more efficient use of welfare expenditures. The new law gives greater freedom to decentralised governing bodies, which are able to spend the available funds more efficiently since they have a better knowledge of the target groups. Moreover, the system is designed in such a way that the municipalities have incentives to spend the money in an efficient manner. Dutch estimates show that this new law has reduced the rate of increase in the number of welfare beneficiaries by around 2%. Slovakia introduced a new system of local government funding with the aim to strengthen the independence and responsibilities of the local governments in deciding on the use of public funds for provision of services to citizens. In Italy the 2007 Financial Law has increased the tax-raising powers of local governments. In particular with respect to decentralised countries, efficiency gains can be reaped at all levels of government, federal, regional and local.

Many Member States have reassigned responsibilities and changed the structure of specific public services, like the governance of public infrastructure or the provision of public health care. Very often these measures have gone together with the introduction of more market-based mechanism, like the consumer-choice-system within elderly care in Sweden or the better use of public procurement (see Box 2). The experience with the consumer-choice-system in Sweden shows that more competition and market based instruments can promote efficiency. It is important to note, that the design of the Swedish education subsidy system (voucher system) results in greater competition in quality than in costs. The presence of competition appears to increase the incentive to improve efficiency, no matter whether the management is private or public.

Box 2 - Public procurement

Public procurement, defined in the broadest sense as goods and services purchased by the Government or public utility services, make up over 16% of the European Union's GDP in 2005. Around 20% of this is covered by the Procurement Directives . The current Public Procurement Directives provide rules on how to buy but leave the choice on what to buy up to the public authorities. The Directives contain a number of features which allow public authorities the possibility to direct their purchasing operations in favour of a particular policy goal.

The provisions of the public procurement directives have aimed essentially at encouraging free and fair competition for public procurement markets through increased transparency and by ensuring that competition was not distorted within the internal market. It is clear that increased competition has provided public authorities with better value in terms of lower prices and higher quality through more competitive procurement over the past

decade. An initial evaluation of the Directives in force between 1993 and 2002 has demonstrated that the Directives have raised compliance costs for both awarding authorities and suppliers but this is outweighed by the significant overall benefits.

Efficient and expanding suppliers have benefited from improvements to transparency and fairness; other less efficient suppliers have suffered from the increased competition as well as from the increased administrative costs. In general, suppliers as a whole may be said to have benefited simply by becoming more efficient. However, there is evidence that the impacts differ regarding Member States. Member States with more centralised and/or formal procurement functions have benefited more as have those where efforts have been made to integrate national and EU legislation.

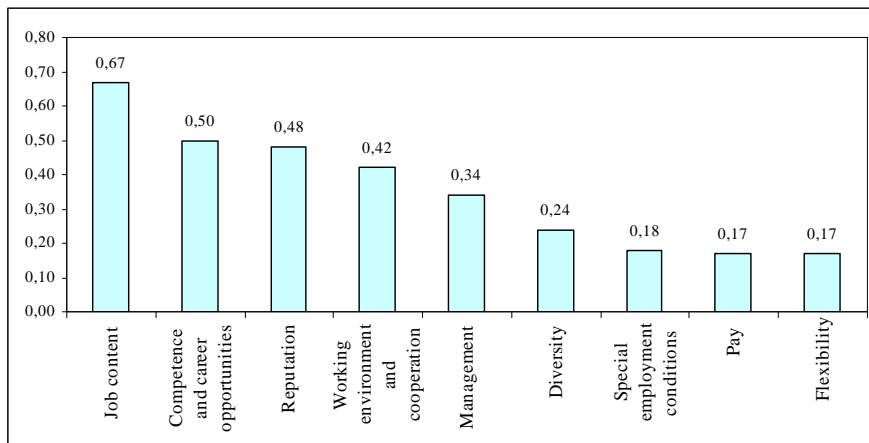
There are several important areas where new developments will arise in response to the challenges of globalisation, climate change and the need for innovation in the way public services are delivered. Several trends can already be discerned for which a community response could also be helpful, e.g. e-public procurement and green procurement. The potential of e-procurement is likely to be all pervasive, providing new opportunities for improving competition and greatly reducing transaction costs for both buyers and suppliers to the point where radical new procurement techniques may become possible

iii) Improved human resource management (personnel changes)

The streamlining of the public administration has in many cases been accompanied by reforms of human resource management. Portugal implemented a comprehensive reform of its public administration in order to cut costs and raise efficiency through a simplification and restructuring of the public administration, which implied a reduction in the number of senior management positions by 28.5% in 2006, and a thorough change in HRM through a new system of rules on pay, careers, employment affiliation, performance evaluation and workers' mobility. Hungary as well aims to improve efficiency by cost cutting and introduced a performance evaluation system. The size of the staff in central budgetary institutions was reduced and a more flexible pay system for civil servants was introduced. Finland aims to reduce the number of staff in the central government by about 8% by 2011.

In addition, performance evaluation and merit systems have become a common feature of human resource management in public administrations. The Danish experience, however, shows that performance related pay is a good supplement to other features of human resource motivation policy. The responses to a survey carried out by the Danish authorities showed that other determinants of staff motivation, like job content, were important (see Figure 2). Ireland has implemented a very comprehensive human resources reform agenda, including public service targets, flexibility in recruiting and flexible working opportunities (see Box 3). Spain has recently approved a Basic Statute for Civil Servants, which introduces greater flexibility and makes performance evaluation a core principle of HRM.

Figure 2 - The significance of different determinants of staff motivation



Source: Danish Ministry of Finance

Box 3 - Human resource management reforms in Ireland

In 1994, Ireland began a public service modernisation programme with the launch of the Strategic Management Initiative. This initiative set the agenda for change in the Irish Civil Service and the modernisation process for all of the public service has continued ever since. This programme recognises the potential contribution of public service reform to increased competitiveness, high and sustainable growth, higher employment and greater social well being. The main objectives of the modernisation efforts are (1) to better support the government in national development, (2) an effective use of resources and (3) quality service to customers. The new Social Partnership Agreement, 'Towards 2016', covers the key areas of pay, the workplace and employment rights and compliance, dealing with complex issues relating to protection of employment rights, compliance with standards and workplace relations. The Agreement outlines general principles of modernisation and flexibility, and goes on to itemise specific changes in the key sectors of Health, Education and Local Government as well as the central Civil Service. Pay increases will be contingent on independent performance verification groups being satisfied that sufficient progress has been made on the change and modernisation agenda. A particularly important development is the proposed extension of open recruitment at senior levels as a means of gearing public service organisations up for the challenges ahead, including coping with an increasingly ageing workforce. There will also be greater use of competitive processes for promotion purposes (merit-based promotions) and a range of measures to streamline terms and conditions and to support mobility and workforce planning (e.g. more than 10.000 civil servants will move from Dublin to regional offices).

iv) Using information and communication technologies and optimising internal processes (technological changes)

Many countries use the new technologies that have become available to reduce administrative costs and enhance the quality of service delivered to businesses and citizens. This can be done in different ways, for example by providing information online and by creating the possibility for interaction with the public via the internet, but also by optimising internal processes through a wider use of electronic information flows. The World Bank's "Doing business report" highlights that the same countries (such as the Nordic and Baltic countries) that rank top in terms of ease of doing business also have public administrations that make extensive use of ICT tools. E-administration is also being implemented in Spain through a wide set of initiatives aimed at extending the use of ICT (e.g. e-Identity Card). Belgium has introduced a multifunctional e-declaration that can be submitted to the social security system. It is one of many countries that have created the opportunity to fill out tax forms on-line. In Greece, the usage of the online tax services increased by 54% between 2005/2006. The online usage of tax services in

Greece is estimated to have resulted in a gain of 7 million working hours for citizens and firms and a gain of 288,000 hours for the public sector.

In Portugal, the simplification project (SIMPLEX) aims to better use ICT elements in the public administration. In Malta, a set of different government actions was undertaken in the field of eGovernment. In Denmark and Austria (see Box 4), eGovernment also plays a key role as a tool to reduce transaction and administrative costs. Similar reform initiatives can also be found in Germany and Italy. The German project encompasses the development, introduction and roll-out of the electronic identity card as part of the "E-Government 2.0" programme. The Italian e-government Action Plan aims at furthering the provision of e-government services to citizens and businesses.

In Poland, IT tools are increasingly used to improve the information flow during budgetary planning, execution and reporting. Lithuania introduced a new accounting and financial reporting system of the public sector. In Italy a new reporting system (SIOPE) will provide timely data on the outlays of general government bodies, allowing a more effective monitoring of public finances. In Cyprus, a new financial accounting system enables the better recording, accounting and classification of government transactions which in turn has provided the basis for better analysis and management of the resources of the public sector.

Box 4 - e-Government in the Danish and Austrian public administration

The Danish e-Government Project (Digital Forvaltning) was launched in 2001. So far, it consists of three main national strategies for e-government, each containing broad policy goals and specific initiatives.

"eDag": Provide federal, regional and local government authorities, as well as citizens and businesses, with a general demand electronic correspondence with authorities, and thus a right to refuse paper-based communication as long as standards to protect private information are available. A consultancy report estimated the potential gain during the amount to DKK 1 billion (€134.4 million) for the entire public sector.

"eFaktura" (eInvoice): All government organisations have been required to accept only electronic invoices from suppliers. This has necessitated that they convert their processes and systems from physical to digital handling of invoices, credit notes and other payment transactions. A consultancy estimated efficiency gains from more efficient internal working processes to amount to DKK 800 (€107.5) million per year.

"Nemkonto" (easyAccount): A bank account for all businesses and citizens open for all public authorities, which eliminates the need for manual payments and handling checks as well as reducing administrative burdens for businesses and citizens. The main aim is to reduce the transaction costs and administrative burdens concerning payments from the public sector. Potential savings for citizens, businesses and public sector are estimated to amount to DKK 280 (€37.6) million per year compared with investment expenditures in the amount of DKK 50 (€6.7) million and current expenses in the amount of DKK 20 (€2.7) million per year.

The **Austrian** Federal Government revised its IT strategy in 2000. In Austria more than 83% of all public services can already be handled online. This is the best result in the EU. The e-Government strategy in Austria mainly consists of four core elements:

"Help.gv.at": An online administration portal that has successfully established itself as a central point of access to public services. In order to gain access, citizens do not need to be familiar with administrative areas of competence, but can carry out their information search according to "life events" (businesses according to business circumstances). "Help.gv.at" registers daily about 12,000 hits.

"Finanz Online": An online financial administration portal that enables businesses and citizens electronically inspections of their tax accounts. Tax payers can by this way communicate online with fiscal authorities. Through "Finanz Online" about 23 million single transactions are made monthly and approximately 3/4 of all tax declarations are already done online.

"ELAK": The introduction of the electronic record system at federal administration level has meant that many procedures can now be conducted more speedily. Using "ELAK" it is possible for transactions to be carried out in a fully automated manner and for public authorities to cooperate seamlessly. "ELAK" saves annual costs of about €2 million.

"Bürgerkarte": A citizen card that identifies and authenticates e-Government users. Diverse chip cards or even mobile phones can be equipped with this function. With this card respectively function applications can be electronically signed and electronic documents from authorities can be collected. This function enables a safe online identification and communication

4. Impact and evaluation of reform initiatives: do public administration reforms pay-off?

An assessment of the costs and benefits of public administration reforms is very difficult, especially since most changes affect a large share of the population. Moreover, financial and political costs and benefits need to be considered.

Studies⁶ show a high correlation between the quality of governance and labour productivity and also provide evidence that government practices impinge positively on public sector efficiency. Some governance features seem to have a relatively important impact on growth, including the judicial system, the control of corruption and regulation systems. However, the direction of causation is not always obvious. Concerning the regulatory environment, the World Bank estimates that the improvement in the ease of doing business in countries that moved up from the bottom to the top quartile of its indicator had a 2.2pp growth effect annually between 1994 and 2004.⁷ This positive effect stemmed largely from lower unemployment and a reduction in the size of the informal sector.

However, in most specific cases "hard" evidence on the impact of public administration reforms is lacking, especially since both direct and indirect effects have to be considered. Moreover, the impact of reforms often occurs with a substantial time lag and existing estimations are beset by measurement problems.

In recent years, some countries have established institutions or procedures, which systematically assess the performance of public policies. Spain created an independent State Agency for the evaluation of public policies and service quality in December 2006. Its purpose is to promote and conduct assessments of public policies with the aim to foster a rational use of public resources and quality management of services. In France, the wider use of public policy audits had led to improvement and simplification of processes, higher efficiency of management practices and a better functioning of the public administration. In Luxembourg the Court of Auditors has far-reaching powers to assess the effectiveness and efficiency of public spending. The responsibilities of institutions like the Czech Science foundation (GA CR) is more limited in scope but no less important to evaluate the efficiency of the research effort of the public sector.

⁶ M. St. Aubyn (2007): Modernising public administration and economic growth, Conference paper for the Workshop on "Modernising public administration and its impact on competitiveness" organised by the Portuguese Presidency in collaboration with the EU Commission; A. Afonso, L. Schuknecht and V. Tanzi (2006). "Public Sector Efficiency: Evidence for New EU Member States and Emerging Markets", ECB Working Paper n. 581.

⁷ World Bank (2007), "Doing Business 2007: How to reform".

Annex: Illustration of reform initiatives taken by Member States

Country	Objectives	Reform initiatives	Problems and Challenges (Examples)
Belgium	Efficient public management/ quality of public services	e-Government/ Reducing administrative burden Human resource management reform; Business process reengineering of administrations Public Expenditure Management Reform Law on audit and control Public finance School	Technical constraints, Cooperation between all Ministries and levels of government
Bulgaria	Stable medium term public expenditure framework		Coordination between different strands of the reform, capacity constraints during design and implementation
Czech Republic	Efficient public budget management	Medium-term expenditure framework Methodology for the quantification of costs of the performance of public administration Analysis of the administrative burden on businesses and its reduction by 20% until 2010	Enforcing modifications given the long-established procedures
Denmark	Efficient public sector	e-Government Local Government reform Central Government budget and account reform	Creating new business-models based on digitalisation but still including all citizens/businesses
Germany	Efficient public sector	Constitutional reform of federalism Cutting red tape Focused on the Future: Innovations for Administration including the programme E-Government 2.0 Strategic planning system Medium-term expenditure framework Modernisation of Civil Service Law Provision of e-services/e-government, different initiatives (citizen charters)	Cooperation among all levels of government, challenging decision-making process,
Estonia	Efficient public sector/ quality of public services		Making the paradigm shift
Ireland	Delivering better services	Human Resource management Establishing a General Directorate of Fiscal Audit	Co-operation among state agencies
Greece	Efficient public management Mobility of public sector employees	New operating framework for public enterprises and entities Civil servants code	
Spain	Efficient public services Quality of public services	States Agencies Law, e.g. State Agency for the evaluation of public policies and service quality e-Administration Basic statute for civil servants LOLF	Spreading new assessment culture among all levels with spending powers Coordination at all levels of government
France	Efficiency and effectiveness	General review of public policies (audit) Microeconomic analysis process for public investment in	Designing performance indicators, changing behaviour, technical constraints, Co-operation with all Ministries

Country	Objectives	Reform initiatives	Problems and Challenges (Examples)
Italy	Improve the performance of Public Administration; efficient budget management, fiscal discipline and budget procedures	transport infrastructure Performance based budgeting; E-Government; fiscal federalism reform	
Cyprus	Efficiency of public sector	Medium term budgetary framework FIMAS (Financial accounting system)	Formulating objectives, monitoring outputs/outcomes, expanding forecasting beyond traditional one-year horizon Fine-tuning with the Medium-term budgetary framework
Latvia	Efficient public budget management	Reform of the budget (avoiding earmarking of revenues and expenditures)	
Lithuania	Effective management of public spending Efficient public sector	Budget reform Better management of human resources, innovations in provision of public services and e-government.	
Luxembourg	Efficient budget management	Establishing a direction du controle financier and reform of the Court of Auditors	Changing behaviour in the civil service
Hungary	Cost cutting	Staff reduction partly through concentration of institutions Flexible wage system with renewed performance evaluation system	Coordination and harmonisation among different levels of governments due to local governmental autonomy
	Rationalise	Central Service Directorate General (Procurement) Concentration of institutions from county level to regional level	
Malta	Quality of public services Result-oriented employee appraisal system Efficient budget management	Quality Service charters in the Public Service Performance Management Programme Financial Management Monitoring Unit	Changing behaviour and moving towards performance management, Cooperation with all stakeholders , in particular during the implementation of reforms
	Efficient welfare system	Social assistance reform	Creating win-win situations (allocation of responsibilities and budget power)
Netherlands	Accountability	Performance based budgeting	Formulating policy objectives, performance measures, etc., monitoring and assessing results based on methodological sound evaluations
	Simplified funding	Funding reform of education system	
Austria	Efficient public sector	Administrative reform, including staff reduction, reducing administrative burden eGovernment	Coordination among different levels of government and at the central level
Poland	Transparency, effectiveness, simplification	Public Finances Reform, incl. cheap and efficient state programme IT system	Changing to a multi-annual planning horizon, organisational challenges
Portugal	Simplified and modern public administration	PRACE Restructuring programme for the government central administration SIMPLEX Simplification programme for public services	Active involvement of all stakeholders, good design of targets and measurements, clear system of monitoring
Romania	Budgetary discipline Efficient public budget management	Medium term budgetary framework Programme budgeting	The selection and use of indicators, incl. providing relevant information

Country	Objectives	Reform initiatives	Problems and Challenges (Examples)
Slovenia	Efficient budget management	Result-oriented budgeting	Reporting objectives, avoiding additional administrative burden
	Flexible allocation of funds	Changing of funding of higher education	Monitoring the quality of higher education institutes, claim responsibility of universities to the public
Slovakia	Transparent and stable medium term framework	Public Finance Management Reform	Cooperation and coordination among departments involved, defining specific formats and reporting methodologies, technical constraints, additional capacity needed during implementation
	Efficiency and effectiveness	Fiscal decentralising	Political commitment at all decision-making levels
Finland	Productivity of public sector	Restructuring of municipalities and services	
		Productivity programme	
Sweden	Cost- saving and efficient public services	"Independent schools", Customer choice system within elderly care	Exceeding costs due the need of a certain amount of overcapacity
		Reform of fiscal relations	
UK	Modern budget management	Comprehensive Spending reviews	Coordination among different levels of government, defining performance targets, demand for good-quality, outcome-focused data
	Efficient public sector	Efficiency Programme (Gershon review)	Avoiding additional bureaucracy

EXPENDITURE CEILINGS AND FISCAL POLICY

SWEDISH EXPERIENCES

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1. Introduction

In the late 1990s the Swedish budget process and fiscal framework were thoroughly reformed, and in 2005 the new system has been in place for seven years. The aim with this paper is to describe this system, with an emphasis on expenditure ceilings, and to inform the reader about experiences so far. The paper is organized in six parts: In section two the reforms of the budget process and the fiscal framework are presented. Especially the relation between expenditure ceilings and the surplus target is explained. Section three is concentrated on expenditure ceilings and their track record so far, the budget margin mechanism and the principals for deciding the nominal levels of the ceilings. Thereafter, in section four, some problems with the system is elaborated and in section five the functioning of the system over the economic cycle 1998 to 2004 is discussed. Finally, in section six some reflections and conclusions are drawn.

2. Description of the fiscal policy framework²

2.1. Budget process and expenditure ceilings

Swedish public finances went through two weak periods in the last decades - one in the early 1980s and a second in the early 1990s. The latter episode was the most severe fiscal crises after the Second World War and probably one of the deepest in the industrialized world at that time. This pronounced weakening was influenced by the international slowdown, but had without doubt also domestic causes related to stabilization policy, sequencing of deregulation and to the wage formation process. It was also at that time observed that the Swedish budget process was rather loose and could have contributed to the crises.³ A reform process was initiated, which led to substantial changes in the budget process later in the 1990s. Central features of the new budget process, implemented in January 1997, are a “top-down” budgetary process, multi-year expenditure ceilings and a medium-term target for the government’s net lending.

¹ Both authors were at the time employed in the Swedish Finance Ministry. The views expressed in this paper are those of the authors and do not necessarily reflect those of the Finance Ministry. The authors would like to thank Gösta Ljungman for valuable comments.

² This part draws on Hansson Brusewitz (2002) and Heeringa-Lindh (2001).

³ Molander (2000).

The “top-down” budget process assigns a clear role to the Ministry of Finance in drawing up the budget. The multi-year framework includes nominal expenditure ceilings for the coming two or three years. For the two coming fiscal years (t+1 and t+2) these ceilings are already laid down in decisions of earlier years. The new expenditure ceiling three years ahead (t+3) is discussed and decided at a cabinet budget meeting in August. The discussion is based on a proposal from the finance minister. The level of the expenditure ceiling for year t+3 is presented to the Parliament in the Budget bill in September and is approved by the Parliament in November. The decision is a guideline decision that can be changed by a new decision by the Parliament. A lot of political prestige have, however, been invested in the expenditure ceiling and there are strong political commitments to maintain the ceiling at the decided level.⁴

The new budget process also includes a so-called two-stage frame decision process. Total expenditure is divided into 27 different expenditure areas for the coming fiscal year, for each of which the Parliament first determines a budget frame. This decision must comply with the previously set expenditure ceiling for year t+1. The Parliament then approves the level of the appropriations within each expenditure area. The total sums of the appropriations must not exceed the previously determined budget frame. Hence, additional spending on one appropriation must be matched with corresponding spending cuts within the same expenditure area. Otherwise the proposal will not be permitted to be discussed by Parliament. The new decision process in Parliament has reduced the size of parliamentary amendments to the Government’s budget. Indicative frames for the expenditure areas for years t+2 and t+3 are also approved by the Parliament as a starting point for the preparation of future budgets.

The ceiling includes central government and expenditures of the pension system outside the budget, but not interest expenditures and covers approximately two-thirds of total general government expenditures. Cyclically sensitive expenditures, such as expenditures on active labour market programmes, unemployment benefits and social security are included.⁵ Inflation is treated as all other factors affecting expenditures without any automatic adjustments. Interest costs are excluded with the argument that in the short term it is not possible for the government to influence them. Local government’s expenditure are excluded with the reference to the autonomy of this level of the government. The basic rules governing the budget process, including the expenditure ceilings, were collected in a budget act from 1997.

2.2. The surplus target

The fiscal policy framework implemented in the late 1990s includes two targets at the national level.⁶ In addition to the expenditure ceiling there are also surplus targets that cover the general government sector, i.e. the central government, local governments and the old age pension system. The target, which is set for the medium term, is that the general government net lending (according to ESA95) should amount to 2 per cent of GDP per year on average over the business cycle. One indicator of the targets is that the structural surplus (adjusted for the cycle and one-off measures) should amount to 2 per cent of GDP. Other indicators are averages over periods of several years indicating a cycle.

In practical implementation *ex ante* the medium-term target is translated into an annual target for the actual budget surplus in year t and t+1.⁷ This annual target is proposed by the Government in the Budget Bill for the year t+1 in September in year t and is approved by Parliament later in the autumn. The targeted surplus could deviate from 2 per cent of GDP for two reasons. First, the cyclical situation

⁴ In the period 1997 to 2001 the ceiling for t+3 was approved by the Parliament in spring. Since 2002 it is approved in November.

⁵ A motivation for including also cyclically sensitive expenditures is that transparency of the budget rule improves with a broad covering. The cyclical effects are intended to be taken care of by the so called budget margin, see part 3, page 9.

⁶ Added to the targets on national level there is also a balanced budget requirement for local governments.

⁷ This is the practice since the Budget for 2003. Earlier annual targets were set for the whole projected period of three years.

(measured as the GDP-gap) is normally taken into account when the annual target is set. Secondly, a large initial deviation from 2 per cent could motivate a slower adjustment back to the targeted level than within one year.

Table 1 - The surplus target: Annual targets and outcome
Net lending, per cent of GDP

	2000	2001	2002	2003	2004	2005
Annual target	2,0	2,5	2,0	2,0	0,5	0,5
Outcome	5,0	2,6	-0,5	-0,1	1,1	---

Source: Ministry of Finance and Statistics Sweden

The annual targets were fulfilled in the years 2000, 2001 and 2004. In 2002 and 2003 unexpected weak growth contributed to the outcomes.

2.3. The aim of the surplus target

The main motive of the surplus target is to reduce public debt to account for the budgetary impact of an ageing population. Thus, the target is forward-looking. The dependency ratio of elderly related to the working population will increase rapidly after 2010. To hold a surplus of public net lending of on average of 2 per cent, during the coming decade will reduce public debt and interest payments. This will diminish the need to increase the tax ratio when costs for the ageing population starts to rise, and also smooth the tax burden across generations. The sustainability criterion behind the choice of surplus target is that the debt situation should not deteriorate over a foreseeable period, which is sufficient long to include the demographical structural change. The estimates presented in the The Updated Swedish Convergence Programme 2004 results in a central government ratio 2050 that is lower than today. The calculations includes the assumption that the surplus target is fulfilled up to 2015.⁸

A second motive of the surplus target is to maintain a large enough margin to avoid excess deficits according to EU fiscal rules, defined as deficits exceeding 3 per cent of GDP, and to fulfill the Stability and Growth Pact's (SGP) medium-term target of a budget position of "close to balance or in surplus". For Sweden, with a relatively large expenditure and revenue ratios, a small structural surplus is needed to give room for automatic stabilizers and for other types of budget uncertainty.⁹ However, the Swedish national surplus target is somewhat more ambitious compared to the SGP-target. Hence, besides automatic stabilizers there could be some room for discretionary policies when there are risks for larger output gaps.

Accomplishment of the medium-term target also helps to support the credibility of the budget policy and thereby support monetary policy and moderate market interest rates. This may have positive effects on investments.

2.4. Why two targets?

The surplus target could be seen as the overarching target and the expenditure ceilings as an operational supplements to the surplus target. However, the expenditure ceilings have also their own virtues, see section 3.

⁸ For more detailed presentations of assessments of long term sustainability of Swedish public finances and its relation to the surplus target, see the Budget Bill for 2005, Appendix 2, "Sweden's Economy" (chap 13) and the Swedish Convergens Program 2004

⁹ Empirical estimates show that the so called semi-elasticity measuring the budget sensitivity with respect to the output gap is approximately 0,7 while it is on average 0,5 in EU15.

There exist several motives behind the system with two targets. First, even if the surplus target promote long term sustainability and secure room for automatic and active stabilization policies, it does not constrain the levels of total spending and total tax revenues. However, together with the surplus target, the level of the expenditure ceiling determines an implicit target for the tax level. A separate revenue target is therefore not needed but a desired tax level could guide the choice of the expenditure ceiling.

Second, a top down budget process, where a target for total expenditure is decided before expenditure details, make budget choices more explicit and results in improved argumentation for new spending proposals. This should in turn lead to improved allocation on the budget of scarce resources.

Third, an expenditure ceiling might prevent a situation where temporary high tax revenues are used to pay for permanently higher spending. Hence, a procyclical policy can be avoided in periods of cyclical upturns on the expenditure side of the budget. The multi-annual system supports a long-term direction of fiscal policy, and strengthens its credibility.

For practical application the expenditure ceilings have advantages compared to the surplus target. The nominal ceilings are highly transparent, a strict ceiling expressed as a simple figure in billion SEK, and therefore easy to monitor. The experience so far is that this contributes to the political commitment to keep the target and that there are substantial political costs not to do so. Other institutions monitor the ceilings, most strictly the National Financial Management Authority (ESV)¹⁰. At several occasions in autumns this authority has reported that the ceilings have been threatened and such reports are expressed in media. At such occasions the government has so far always corrected its expenditure policy to comply with the target. The medium term surplus target on the other hand is a symmetric target and less easy to monitor.¹¹ Measures of structural balances could be used as indicators of compliance but are notorious uncertain. Also the length of the cycle is not clearly defined concept.

3. Track record of expenditure ceilings 1997-2004

3.1. The level of the expenditure ceiling

General government expenditure as a percentage of GDP rose sharply during an economic crisis in the early 1990s. In 1993 the expenditure to GDP ratio amounted to 70.4 per cent of GDP. The savings in the consolidation program that was implemented in 1994, and became fully effective in 1998, contributed to a fall in the expenditure to GDP ratio. After the completion of the consolidation program general government expenditure continued to decline as a percentage of GDP between 1998 and 2000, from 58.2 per cent in 1998 to 54.7 per cent in 2000. This fall in the expenditure ratio was mainly a consequence of relative restrictive levels of the expenditure ceilings these years. As a percentage of GDP the expenditure ceiling fell by about 2.5 per cent between 1998 and 2000. During the same period the tax ratio increased by about 1 percentage point and general government net lending increased from 1.9 to 5.0 per cent of GDP. Hence, during these years the expenditure ceiling prevented a situation where temporary high tax revenues, due to a cyclical upswing, were used to finance permanently higher spending.

Corrected for technical changes the expenditure ceiling has been set at a relatively stable level of almost 33 per cent of *actual* GDP for the period 2000–2004. However, since average economic growth has been lower than trend growth during these years the expenditure ceiling as a percentage of *potential* GDP has decreased somewhat since 2000. During the same period primary general government expenditure including local governments according to the National Accounts is expected to increase by about 0.8 per

¹⁰ ESV is an authority which in its activities acts independently from the Government and the Finance Ministry.

¹¹ Annual targets have however been formulated as a floor for the surplus. That is for instance the case for the annual target in 2005.

cent of GDP to 52.5 per cent 2004, see Table 2.¹² The expenditure ceilings have, so far, been effective in restraining the growth of public expenditures and in maintaining a structural surplus in general government finances.

Table 2 - Expenditure ceilings adjusted for technical changes. Bn SEK

Year	1997	1998	1999	2000	2001	2002	2003	2004
Expenditure ceiling	698	695	711	720	746	773	803	836
<i>Per cent of GDP</i>	36,2	35,2	34,2	32,8	32,9	32,9	32,8	32,4
Expenditure under the ceiling				715	741	773	800	834
<i>Per cent of GDP</i>				32,6	32,7	32,8	32,8	32,8
Budget margin				5,0	4,7	0,4	2,9	2,4

Sources: Ministry of Finance and Statistics Sweden

Corrected for technical changes, the expenditure ceiling has decreased from 36.2 per cent of GDP in 1997 to 32.5 per cent of GDP in 2004. The ceilings that now are in effect up to year 2006 imply that the expenditure ratio will continue to decline over the next few years, but at a lower rate.

Table 3 - General Government expenditure and primary expenditures per cent of GDP

Year	1997	1998	1999	2000	2001	2002	2003	2004
Expenditure	60.5	58.2	57.2	54.7	54.2	55.7	55.9	54.5
Primary expenditure	54.2	52.7	52.9	50.6	51.1	52.4	53.5	52.5

Sources: Ministry of Finance and Statistics Sweden

3.2. The budget margin

A critical feature of the expenditure ceiling is that it has an *ex post* dimension. It should be implemented in such a way that the outcome of the ceiling-restricted expenditure is below the decided expenditure ceiling. It is not enough that the target is met *ex ante* when the ceiling is determined three years in advance or at the time of budget approval.

Since the ceiling limits the actual expenditure – not just appropriated funds – one has to take uncertainty in the expenditure forecast into account. To accommodate the impact of unanticipated developments there is a buffer – a so-called budget margin - between the ceiling and the ceiling-restricted expenditures. The main purpose of the budget margin is to absorb fluctuations in the expenditure level due to changes in the business cycle and other macroeconomic uncertainties. The margin should also absorb the uncertainty that is caused by the fact that Swedish agencies can shift the consumption of appropriated funds between years.¹³ However, the budget margin does not only serve as a contingency reserve. Given that the margin is considered sufficiently large to handle uncertainty, the margin also leaves some scope for future spending reforms. Hence, this part of the margin has served as a planning reserve for future, not yet decided or announced, spending initiatives.

¹² The minor difference between the development of the ceiling to GDP ratio and the central government expenditure ratio according to the National Accounts depends mainly on the fact that certain central government expenditures are reported on the income side in the central government budget and in the National Debt Office's net borrowing.

¹³ For most appropriations there is a carry-over possibility, which means that unused appropriations- within certain limits – can be carried forward to the next year. For most appropriations there is also a possibility to borrow against next years appropriation within certain limits. Such a credit is automatically deducted from the carry-over fund the following year.

A large budget margin will substantially reduce the risk of an overrun of the ceiling and the need for active measures in case of such a risk. It also gives room for the operation of the automatic stabilizers on the expenditure side of the budget to operate. On the other hand, too large a margin softens the budget constraint; so a trade-off has to be made when the expenditure ceiling and the budget margin is determined three years in advance. There is no established principle for determining the appropriate size of the budget margin. When the ceiling has been set for the third additional year in the three-year budget framework the budget margin has normally amounted to about 2 per cent of the expenditure ceiling. Since the uncertainty in the expenditure level is smaller for the coming two years, a smaller budget margin has been accepted for these years.

Table 2, page 8, shows the outcome of budget margins for 1997-2004 and projected levels for 2005-2007. We see that the expenditure ceiling has been met every year since its introduction in 1997. In 1997 the budget margin was relatively large in relation to the expenditure ceiling. Between 1998 and 2004, however, the outcome of the budget margin was relatively small, just a fraction of a per cent of the expenditure ceiling. The budget margins are also expected to be small between 2004 and 2006.

Since 1998 the budget forecasts for the current year has usually indicated a risk of an overrun of the expenditure ceiling. The reason for this is, among other things, because of new expenditure reforms decided after the level of the expenditure ceiling was approved and the economic downturn in the economy that began in 2001, see also section 5. This development has created a pressure on the expenditure ceiling, mainly through higher than expected unemployment benefits. The small budget margins have also to a large extent been caused by higher than expected costs for sick leave insurance. In 1997 the sick numbers were at a historically low level. In 1998, the sick leave numbers started to increase. This increase was forecasted not to last long. Because the increase from 1997 onwards was not forecasted, it took a long time for the Government to react to it. In 2002, an all-time high was reached. Hence, from 1997 to 2003, the total costs for sickness benefits, including early retirement, rose rapidly. In relation to total ceiling-restricted expenditures the costs for sick leave insurance and disability pensions increased from 11 per cent 1997 to 15 per cent 2003.

The new budget process with relatively small budget margins under the expenditure ceiling implies that expenditure forecasting over the short- and medium-term has become a high priority activity in the Government Office. Forecasting now plays a central role both during the budgeting phase and as a component of the in-year monitoring activities.

A lot of political prestige has been invested in the expenditure ceiling. Furthermore, the budget act stipulates that the Government must act to prevent an overrun of the ceiling if there is a risk of such an overrun. There has, therefore, been both a strong political commitment and a legal commitment to comply with the ceilings. To cope with the ceilings the Government has most years used its right to set maximum allowed expenditures below the amounts appropriated by the Parliament by using so-called limitation amounts. Because of the carry-over possibility that is applied to most appropriations in the Swedish budgetary system, the limitation amounts have carried forward expenditure from the current year to the next fiscal year. Hence, the limitation amounts have therefore not given rise to a permanent reduction of the expenditure level. They have, however, reduced the level of the budget margin in the next fiscal year and have therefore reduced the scope for expenditure reforms or increased the need for budgetary retrenchments in that year.

On some occasions the government has also proposed permanent savings in, e.g. some transfer systems, to comply with the expenditure ceiling. Other measures can also be used. The Government has submitted proposals to the Parliament on exceptions from the normal rule that acquisition of assets of an infrastructural nature shall be financed by appropriations. Instead the Government has, in a few cases, proposed that acquisition of such assets shall be financed by loans in the National Debt Office. This means that accounting in relation to appropriations and the expenditure ceiling takes place in future years when the loans are amortized and not in the fiscal year to which the investment expenditure relates. Hence, just like in the case with limitation amounts, loan-financed infrastructure projects tend to reduce the level of the budget margin in coming fiscal years. The Government has also used *tax expenditures* or

net budgeting of fees as a remedy when the expenditure ceilings have been threatened (see below). It should, however, be observed that the introduction of new tax expenditures have not been used as a substitute for existing expenditure programs but as a substitute for new expenditure reforms.

3.3. Principles for the decisions on the expenditure ceilings

When the ceiling for the new third coming fiscal year is to be set, the previously decided expenditure ceilings for the first two years are maintained, unless very strong reasons justify modifications of the ceilings. So far, the ceilings have been maintained at the previously decided level, with the exception for some technical adjustments.¹⁴

Several factors are normally taken into consideration when the level of the expenditure ceiling is determined. One factor is that the expenditure ceiling affects the scope for tax reforms or the need for tax increases over the medium-term. The desired level of future tax reforms is therefore taken into consideration when the ceiling is proposed. Equation 1 illustrates the relation between the desired level of tax reforms for year (t+3), ΔT_{t+3} , and the level of the expenditure ceiling, C_{t+3} .

$$C_{t+3} = R_{t+3} + \Delta T_{t+3} - S - OE_{t+3} + M \quad (1)$$

The calculation starts with a forecast of the general government revenues at present tax rules for fiscal year (t+3), R_{t+3} . The tax forecast normally shows expected tax revenue collected at the potential level of GDP¹⁵. To obtain the level of general government expenditures that are consistent with a potential desired tax reform one deducts the desired level of tax cuts, $-\Delta T_{t+3}$, and the structural level of general government net lending according to the surplus target, S , from the projected revenues. A forecast of net expenditures outside the ceiling, OE_{t+3} (mainly projected local government expenditures and interest on central government debt), are then deducted to obtain the level of ceiling-restricted expenditures that are compatible with the desired tax cuts. By adding an appropriate contingency reserve (M) one obtains the desired level of the expenditure ceiling.

The difference between the maximum planned expenditure level that follows from the expenditure ceiling (C-M) and a forecast of how large expenditure will be for the coming third year if measures already decided are implemented, then shows the potential scope for expenditure reforms for that year. If this difference is negative there is instead need for budgetary retrenchments on the expenditure side of the budget.

Hence, by choosing an appropriate level of the expenditure ceiling in this way a projected structural budget surplus in excess of 2 per cent of GDP, which is the surplus target for the public sector, can be divided between a scope for future desired tax reforms and a scope for future desired spending reforms. If the projected structural budget surplus instead is below 2 per cent of GDP the difference is instead divided into expenditure retrenchments and tax boosts.

¹⁴ Such adjustments have been made several times due to policy changes that have affected the ceiling-restricted expenditures without affecting the consolidated expenditures of the general government sector. After the technical adjustment of the expenditure ceiling the margin between the new ceiling and ceiling-restricted expenditures should in principle be the same as before the change that gave rise to the adjustment.

¹⁵ When the level of the expenditure ceiling for the third coming year is to be determined the output-gap is normally approximately zero for this year. This means that the calculation of the level of the expenditure ceiling is based on tax revenues obtained at the potential level of GDP. Higher tax revenue than expected due to a cyclical upturn (positive output gap), will therefore be used to improve the budget balance (given that the expenditure ceiling is a more or less binding constraint).

Other factors than tax reforms are also considered when the expenditure ceiling is determined. One is the relation between the expenditure ceiling and GDP. As mentioned above the expenditure ceiling has since year 2000 been set at an approximately constant level of GDP. For a given level of the surplus target and local government expenditures this means that the government has planned for an approximately constant level of the overall tax burden over time when the expenditure ceilings were determined.¹⁶ It has also been seen as important to avoid a trend growth in the expenditure ratio during the current decade because of the future budgetary impact of ageing populations after year 2010.

4. Problems

A drawback with hard budget constraints is that they might encourage the use of dubious accounting practices, thereby reducing the degree of transparency in the government budget.¹⁷ Normally, such operations give the government some margin of flexibility in the implementation of the fiscal rule. In the case of Sweden, with a rule on the aggregate level of central government spending, the easiest way to circumvent the expenditure ceiling is to introduce net accounting or subsidies on the revenue side of the budget (tax expenditures).

As a rule the Budget Act prescribes that the state budget shall, in principle, include all government revenue and expenditure, and that revenue and expenditure shall be entered gross in the state budget. However, the Parliament may decide on exceptions from these rules. This has occurred on a few occasions when the Government has been given authority to decide on the disposition of certain revenues from user-fees. This means that related expenses are no longer accounted for in the state budget. The effect of these operations on ceiling-restricted expenditures have, however, been relatively small and the proposals have been presented to the Parliament in a transparent way.

Another potential problem related to the expenditure ceiling is the use of tax expenditures. A tax expenditure exists if there is a deviation between the tax system and a certain benchmark or norm. In Sweden tax expenditure estimates have been published annually since 1996 in the Spring Fiscal Policy Bill. The report covers most types of taxes, for example, the national and the local personal income tax, the corporate income tax, social security contributions and most indirect taxes. More than 150 different tax expenditure items are included in the report. Currently, total reported tax expenditures amounts to about SEK 250 billion or about 8 per cent of GDP. Some of these tax expenditures are very close substitutes to ordinary expenditures, e.g. the so called employment support that is paid to local governments by crediting their tax accounts. Tax expenditures that can be directly compared to public expenditures amounts to about 0.4 per cent of GDP.¹⁸ Other tax expenditure items are less close substitutes to ordinary expenditure. Theoretically, proposals for new tax expenditure items, that take place after the level of the expenditure ceiling has been set, should be accompanied by a proposal for a downward technical adjustment of the ceiling. However, because of the varying degree of substitutability between tax expenditures and ordinary expenditures it is difficult to establish unambiguous rules for such technical adjustments. Hence, new tax expenditures have not usually been followed by a proposal for a technical adjustment of the expenditure ceiling. Small budget margins under the expenditure ceiling have led to increased pressure for tax expenditures. This pressure has, however, to some extent been held back by the surplus target.

Hard budget constraints might increase the temptation to present biased expenditure and revenue forecasts. By strategically manipulating the budget assumptions, the government can abide by the law and then have a long list of explanations as to why the targets were missed ex-post. The risk of a political element in budget forecasting can probably be reduced if the government is committed to meet the fiscal

¹⁶ Surpluses well above 2 % in 2000 and 2001 however gave room for tax cuts.

¹⁷ This is for instance discussed in Koptis (2001) and Milesi-Ferretti (2001).

¹⁸ In accordance with general accepted accounting practice in the Annual report.

rule both ex-post and ex-ante and if independent agencies outside the Government Office monitor the budget and produce independent budget forecasts. Currently there are three bodies outside of the Government Office that monitor budget execution and produce independent short term and medium term forecasts of central government finances.¹⁹ Since these forecasts are made public it may be hard for the Government to present budget forecasts that differ too much from the external forecasts without presenting a clear motivation for the deviation.

5. The fiscal framework in different cyclical situations

In the period after the expenditure ceilings were introduced in 1997 the Swedish economy has roughly experienced a full business cycle. The period 1998-2000 included "good years" with an average growth rate of 3.8 per cent per annum and with a positive output gap in 2000. On the contrary, the period 2001-2003 was economically weaker. Average GDP-growth rate amounted to 1.5 per cent of GDP with the largest negative output gap in 2003, approximately 1.5 per cent of GDP. 2004 was again a year with higher growth, around 3.5 per cent. The profile of the cycle did not diverge much from those of most other countries in the European Union, although the average growth rate over the whole period was somewhat higher compared to the European average.

Below the expenditure ceilings and their coordination with the surplus targets in two different cyclical situations are discussed.

5.1. Expenditures in the boom 1998 - 2000

In the period of "good years" the expenditure ceilings constituted a distinct limit to spending. As was intended, the central government expenditure to GDP ratio fell by 2.5 per cent of GDP between 1997 and 2000 and reached 32.4 per cent. Wind fall gains generated by the buoyant cyclical upswing were directed towards amortization of the central government debt, and to some extent, towards tax cuts. At the same time the surplus targets were easily met and in large the fiscal framework seemed robust and to function well. By setting limits on total expenditures the ceilings supported sound contra-cyclical policies. Doubtless, without the ceilings fiscal policy had been more expansionary. The framework was however not really tested due to an unusually favorable macroeconomic development.

In addition to a sustained growth and low unemployment in this period, inflation was moderate. On averages CPI rose by only 0.4 per cent per annum. Compared to the forecasts and projections in the *Budget Bill for 1998* growth developed 1.0 per cent faster per annum and CPI-inflation turned out 1.3 per cent lower per annum. As several transfers in the Swedish system are indexed to the development of CPI (with a lag) low inflation mitigated the pressure on the ceilings. This development was also enforced by the budget effects of declining unemployment. At the same time, budget margins reserved for cyclical effects on the budget in "bad times" were more or less fully used up. These margins appeared to be soft restrictions and constituted a weak part of the framework. All together, there was room for discretionary, and to some extent permanent, increases in non-cyclical expenditures. Examples were increased expenditures for *education and research* and *economic security for families and children*. The pressure on higher expenditures was, however, also enforced by the substantial increase in expenditures for *economic security in case of illness and disability*, i.e. the sick leave insurance and early retirement schemes between 1998 and 1999 and after that their trend wise growth up to 2003, see also page 10.²⁰

¹⁹ The National Debt Office publishes forecasts of the central government borrowing requirement for the current year and the coming fiscal year. The National Financial Management Authority publishes medium-term forecasts of central government revenues and expenditures (as well as ceiling-restricted expenditures) about four times per year. The National Bureau of Economic Research quarterly publishes medium-term forecasts of central and general government net lending as well as forecasts of ceiling-restricted expenditures.

²⁰ Spring Fiscal Policy Bill 2004

To sum up, expenditure ceilings contributed to contra-cyclical policies in this period by giving strict limits for total expenditures but there was also an embryo to pro-cyclical policies later on due to the failure to preserve budget margins for later periods when expansionary fiscal policies was needed.

5.2. The slowdown in 2001 to 2003

In the weak economic situation 2001 through 2003 surpluses deteriorated from approximately 5 per cent of GDP to just around balance. Roughly two thirds of the deterioration was contributed to discretionary fiscal policy measures and one third to automatic adjustments. In the first two years of the slowdown fiscal policy was strongly expansionary including both tax cuts amounting to approximately 2 per cent of GDP and increased expenditures of around 1 per cent of GDP. In 2003, the last year in the prolonged slowdown, the fiscal stance turned less expansionary and included only modest expenditure increases (0.2 per cent of GDP).²¹

The pressure on the ceilings for cyclical reasons was not that hard in 2001 and in the election year 2002 but grow stronger in the two successive years. This reflects the lagged effect on expenditure of the low CPI-inflation in earlier years and that unemployment only increased late in the slowdown. In these years there were two other distinct factors behind the pressure on the margins. First, as was mentioned above, active expansionary fiscal policy was substantial, partly executed at the expenditure side of the budget. Major expenditure increases were directed towards increased *child allowances, education and research and to health care, schools and social services*, the latter by increased grants to local governments. Most of this expenditure increases must be seen as permanent measures. Second, the costs for the illness insurance and early retirement grow rapidly in a trend wise and non-cyclical way. It is also notable that expenditures related to unemployment did not increase as could be expected in the slow growing economy, not even in 2003 when unemployment clearly picked up. An interpretation could be that automatic stabilizers on the expenditure side of the budget were hampered by pressure on the ceilings by used up margins of other reasons.

The net lending surplus now shrank to close to balance as a result of automatic adjustments and active fiscal policy. Due to the prolonged slowdown it continued to stay below 2 per cent of GDP both in actual and structural terms.

6. Reflection and conclusions

A first reflection is that the Swedish reform in the late 1990s was a typical example of how a severe economic and budgetary crises made a reform necessary.

A general conclusion is that the nominal expenditure ceilings have function well. First, the Government has in the period 1997-2004, i.e. for eight years, complied with the ceilings. The expenditure ceilings have helped the Swedish Government to eliminate its deficits and to stabilize public finances. Between 1997 and 2004 the expenditure ceiling has contributed to a fall in general government expenditure ratio from 60.5 to 54.4 percent of GDP. The new process with expenditure ceilings is also felt to have increased long-term thinking, because decisions on expenditure ceilings are taken early in the process.

A further reflection is that there might be some truth in the proposition that strict rules to some extent promote incentives to circumvent them. The Parliament has at some occasions decided on exceptions from the rule of gross accounting. The introduction of subsidies on the revenue side of the budget, so called tax expenditures, could also be seen as a circumvention of the expenditure ceiling. These measures have however been relatively small in relation to the total expenditure level.

²¹ Swedens' updated Convergens Programmes 2001 to 2004

The so called budget margin under the expenditure ceilings was introduced to take care of the impact of cyclical and other unanticipated developments affecting the budget. For the exception of the first year with the ceilings, 1997, these margins have been very small also in the period of “good years” which was not the intention. This could have hampered automatic stabilizers at the expenditure side.

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PROGRAM BUDGETING AND PERFORMANCE MANAGEMENT IN FRANCE: THE 2001 REFORM OF THE CONSTITUTIONAL BYLAW

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1. Introduction: A thorough, multipurpose budget reform, initiated by Parliament with a political consensus

The reform of the constitutional Bylaw on budget acts, the “LOLF - Loi Organique relative aux lois de Finance”, was adopted on August 1, 2001. It overrides the former 1959 legal framework of a similar kind and is due for initial implementation for the preparation of the 2006 budget act.

This budget reform has been essentially initiated by the Parliament and adopted on the basis of a political consensus and a broad support from political parties. During the 1998-2000 years, the Parliament engaged in budget process analysis, with a focus on transparency and performance and specific concerns with respect to rebalancing appropriation powers and enhancing expenditure efficiency.

It followed some dissatisfaction with the functioning of the former budget framework which showed excessive rigidities, lack of accountability, and no explicit consideration to expenditure performance or even purpose. Furthermore, besides the general principle, the Parliament tended to resent its rather limited power over the appropriation process, as only a share of the annual budget was in practice up for political scrutiny and amendments due to the entitlement constraints.

As a result, the new constitutional Bylaw is a thorough reform encompassing the whole budget framework. Nearly all aspects have been significantly revised, from its very appearance and format to the appropriations rules. It thus established a new incentive and control framework for the various participants to the budget process (parliamentarians, ministers, heads of administration departments). Enhanced transparency and accountability are also key components, also with respect to improving accessibility and readability of budget documents by the public at large. In that context, a new public finance accounting standard has also been decided, with a shift to accrual accounting.

The new constitutional Bylaw also provides for an increased autonomy of the administration when implementing the budget. For this purpose, the rules regarding expenditures management have been renewed with the introduction of the ‘globalization of means’ approach. Under this new framework, the administration is authorized to reallocate elements of funding during the year, without prior authorization from the Parliament. However, the administration’s performance is up for due reporting to and examination by the Parliament in the following year.

This paper focus on the core innovation of the new constitutional Bylaw regarding budget appropriation and implementation, without covering every aspects of the reform such as changes in the accounting

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standards². It is structured in four sections: 1) programme-based budgeting, 2) the new appropriations powers of the Parliament, 3) the increased autonomy of the administration, and 4) the integrated performance system.

2. Programme-based budgeting: A new budget structure for improved transparency and accountability

One of the major innovations of the French LOLF is the overhaul of the design of the formal structure of the budget. Breaking away from the expenditure-based approach, where budget documents are primarily organized along the line of the expenditure categories and spending institutions, it shifts the focus on expenditure purposes. The new programme-based budgeting defines and categorizes national public expenditures on the ground of their functions or purposes. As a consequence, attention moves away from the institutional structures of the administration in charge of implementing the expenditures.

The LOLF's programme-based system is a three-tier structure organized along the "Mission", "Programme", and "Action". The Missions correspond to the major public policies. Each Mission includes a set of programmes to which appropriations are allocated and broken down into sub-programmes (Actions) that together constitute the operational means of implementing the Programme. In comparison, the previous budgetary structure based on 'budget chapters' obscured the ultimate aims of budget appropriations and the cost of administrative policies and structures. By breaking down the budget into major public policy objectives, the State's missions and public service goals become fully transparent.

A Programme covers the appropriations needed to implement a measure, or a coherent set of activities coming under the same ministry and involving specific objectives. Thus, a Programme corresponds to a center of responsibility. A Mission covers a series of Programmes designed to contribute to a specific public policy. A Mission can jointly involve several different ministries (such as, for instance, the "Research and Higher Education Mission") or just a single one (such as the "Culture Mission").

In 2005, there are 34 Missions accounted for in the general budget (plus 13 Missions annex to the general budget), corresponding to a total of 132 Programmes (plus 26 respectively) and covering 580 Actions. Among the 34 Missions, 9 are inter-ministerial.

A detailed list of the LOLF's Missions and Programmes structure is presented in Annex 1.

In Annex 2, appropriations for the 2005 budget are presented in the new Missions structure as a quantitative application of the programme-based approach (on an indicative basis).

3. Greater appropriation and control powers for the Parliament

As a major change, the LOLF brings forward a revised set of rules for the Parliament appropriation process in order to increase its budget power.

The LOLF institutionalises the budget policy debate introduced in 1996 at the Parliament. This debate is the opportunity, before the debate on the Budget Review Bill, for an initial review of the implementation of the previous year's Budget Act and a multi-annual approach of the budget policy. Thus the LOLF increases the importance of one of the steps in the annual budget appropriation cycle, in order to further enhance the Parliament powers over the budget. At the occasion of the spring budget policy debate, the LOLF gives a greater role to the Parliament in outlining public finance strategy. This is also the time

² The new budget approach includes three types of accounting: cash-basis accounting to track budget execution, accrual-basis accounting inspired from corporate accounting, and programme-cost analysis tools, linked up with the general accounting.

when the Parliament plays its part in the expenditures' performance assessment of previous budgets in preparation of its future decision on credit appropriations for the following budget.

Before the LOLF, voting the budget was a rather limited activity due to the entitlement constraints, by which an important part of the budget was deemed already required without any change in order to maintain a series of public functions and operations. In that context, only flows of 'new measures' (as opposed to the stock of already 'approved measures') were available to the Parliament for debate and amendments. Under the LOLF, such a distinction between 'new' and 'approved' credits disappears and the total amount of the annual budget is readily amendable by the Parliament. This is referred to as the 'first euro-based appropriation rule'.

The new framework for Parliament appropriation powers is set around the Mission. The Parliament is entitled to amend funding allocations within a Mission, i.e. to increase/decrease appropriation for a Mission, or within a Mission to reallocate fund from a Programme to another. The decision making of the Parliament is thus centred on the Mission, which serves as a unit for the vote process. As a general effect of the LOLF, the MPs' powers of amendment are thus greatly extended, because they are able to reallocate appropriations between the various Programmes making up a particular Mission, on a first euro-basis.

The LOLF provides for more stringent control over current credit movements that will increase the impact of Parliament's budget authorisations. The Finance Committees of both assemblies will have greater investigative and hearing powers. They will be able to conduct on the spot investigations on particular matters and refer them to the French National Audit Office as part of their control and assessment remit. Thus stronger links between budget execution and parliamentary authorisation are established with more supervision of movements of appropriated funds. Most of these movements – credit transfers, carryovers, advances or cancellations – are subject to prior notification of Parliament and are capped, the ceiling being a percentage of the initial appropriations. That notwithstanding, in order to preserve the balanced budget as defined by the Budget Act, Parliament has recognised the Government's right to cancel, by decree, up to 1,5% of the initial appropriations (thereby affording Government the benefit of a mechanism for fine-tuning budget execution).

4. A greater autonomy for the administration to enhance executive efficiency

While the budget powers of the Parliament are significantly enhanced in terms of appropriation decision, the LOLF also increases the budget powers of the executive branch, but in terms of implementation. The ministries are granted a much higher autonomy for implementing the budget once credits have been approved by the Parliament. This autonomy of the administration in annual expenditures management results from the three-tiers budget structure itself. While the Parliament decides on appropriation at the Mission level, and approves the specific credits for each of the Programmes, any indications on credits allocations between Actions within a Programme remain indicative. At this lower, more detailed level, the position of the Parliament does not constitute a legal constraint to the executive branch in charge of implementation. This autonomy established at the Programme level, is referred to as the 'globalization of means', as credits within a Programme can be easily re-allocated without further authorisation from the Parliament.

The purpose of this increased autonomy is to give more flexibility to the administration to face the various shocks and uncertainties budget planners are unable to anticipate or control ex ante. It also serves as an incitation to promote higher efficiency of public spending, as the head of the administration in charge will have the powers to fine-tune its Programme management during the budget year, on the basis of the pre-established goals set forth within the Programme framework.

However, the LOLF established a specific limitation to this autonomy, a limitation referred to as the 'asymmetric' character of the globalization of means.

Actions are voted by the Parliament with a budget indicative amount specified by the various classes of spending (e.g. 'personnel', 'operating', 'capital'...). In principle, these credits can possibly be reallocated from one class of spending to another one, but only under the asymmetric constraint. 'Personnel' class appropriations may be used to replenish the rest of the Programme (i.e. other classes of credits); conversely, it is prohibited to replenish 'personnel' appropriations with other parts of the Programme's funding.

Thus, credits allocated to the 'personnel' are capped and such ceilings are mandatory to the administration, besides the globalization of means rule. The rationale for this asymmetric rule results from the long-term implications of personnel (civil servants) recruitment decisions when compared to the much shorter-term scope of most of other classes of public expenses. Thus fungibility is set to be only valid for same time-frame classes of credits, so as to prevent that irreversible long-term effect expenses be abounded by short-term ones, within a Programme, without due approval by the Parliament.

The LOLF also enhances managers' responsibility and accountability. Each Programme must be under the personified responsibility of a 'Programme Manager' (Directeur de Programme) who is accountable to the Parliament. This also contributes to the purpose of increasing transparency, as executive responsibilities are made public on an individual basis. In that respect, the Parliament is entitled to hearings, during which a Programme Manager is invited to report on its management and to testify in the context of the performance assessment examination. Each Programme under the responsibility of a Manager is tied with performance goals and indicators.

5. An integrated performance system: goals, indicators and reporting process

A major innovation of the LOLF lies in the creation of a performance management system applying to every expenditure items. This system has for primary purpose to enhance executive efficiency with respect to budget implementation. It also aims at improving the quality of appropriation decisions by the Parliament in making available to the MPs ex post information on the Programmes' achievements and their performance effects in terms of outputs and outcomes.

The new constitutional Bylaw has designed a systematic performance reporting process integrated to the budget legal framework (Budget Acts), for each Mission, Programme and Action, for every year. This performance reporting process also reflects a need associated to the higher autonomy granted to the administration in implementing the budget. These new powers of the executive side vis-à-vis the Parliament, characterized by a high spending discretion capacity during a budget year, required increased parliamentary control from one budget year to the next, as an institutional counterpart. All together, the performance reporting process, as compared to the pre-LOLF system, is a shift from ex ante parliamentary control, based on intentions and resource allocations, to ex post control based on implementations and achievements of explicit goals.

The performance reporting process is integrated to the budget cycle through two new types of mandatory budget documents, the PAP and the RAP:

- *PAP documents* (Projet Annuel de Performances):

The 'annual performance plans' - PAPs are published in Fall along with the Budget Act, as annexed documents individualized for each Program. For a given Mission, the PAP provides a detailed description of its purpose, goals, policy targets and indicators for performance examination. As part of the Budget Act, the PAP documents are primarily forward looking and tend to contribute to the public debate with respects to goals set for public policy. Appropriations for the following budget year are described in the PAPs including the indicative details regarding allocations by types of credits (staff, investment...).

- *RAP documents* (Rapport Annuel de Performances):

The ‘annual performance reports’ - RAPs are published in Spring along with the Budget Review Act in a format similar to the PAPs’. The RAPs focus on performance achievements and provide detailed information on the degree of expenditure implementation and results. The RAPs thus are rather backward looking and tend to contribute to the public debate on ex post performance analysis and on the administration’s performance in managing public expenditures.

Along with the PAP and RAP documents established by the LOLF, other innovations are intended to maximized the efficiency and credibility of the new performance examination process:

- The ‘Interdepartmental Programmes Audit Committee’ *CIAP* (Comité Interministériel d’Audit des Programmes) has been created to contribute to the methodological soundness of the performance examination process and documents. It is mandated to provide a quality control of the PAPs and RAPs before their submission to the Parliament, with a focus on the technical difficulties associated with performance methodology and data relevance and accuracy. It aims at guaranteeing the reliability and objectivity of the indicators and the data provided by line ministries. Members of the CIAP are internal auditors (inspecteurs généraux) from several ministerial departments and are nominated by the respective ministers. The CIAP’s chairman is designated by the Finance minister.
- An inter-institutional performance *Manual* has been created to foster a common conceptual reference and technical language for the institutions involved in the performance examination process. This Manual³ is the joint product of the collective work of the administration, the Parliament and the National Court of Auditors (*Cour des Comptes*). It provides orientations for designing, analysing and interpreting performance related information.

At the core of this performance examination process lies the *performance indicators*. Under the LOLF, a specific taxonomy has been created with three categories of indicators. Theses three types of indicators are defined in order to take into consideration the fundamental dimensions of performance around three standpoints (‘citizens’, public services ‘users’, and ‘taxpayers’). Thus, three criteria are used to measure performance: social and economic effectiveness, the quality of service, and efficiency.

Table 1- Performance Indicators Taxonomy

<i>Standpoint</i>	<i>Goal</i>	<i>Sample goal</i>	<i>Sample indicator</i>
Citizen	Social and economic effectiveness	Health: cut breast cancer screening time	Average time elapsing before breast cancers are detected
User	Quality of services	Police: cut police intervention time	Average time between police forces being alerted and their arrival on the scene
Taxpayer	Efficiency	Roads: reduce maintenance costs	Average maintenance cost per kilometre

Under this taxonomy, the actual indicators are designed with a pragmatic approach. As it turns, goals and indicators from one category to another may not be complementary or even compatible. Thus, for a given Action in a Programme, the citizens’ concerns to maximize social and economic effectiveness (or the users’ with service quality) may partially come in contradiction with the taxpayers’ concerns over minimizing the Programme’s costs (i.e. when associated with a lower goal, effectiveness or quality). However, such potential trade-offs are political in nature and, from a methodological point of view, there is a strong rational to review separately management efficiency or cost-effectiveness (outputs or

³ The Performance-Based Approach: Strategy, Objectives, Indicators - A Methodological Guide, June 2004.

outcomes measured in relation to their cost) and effectiveness (outputs or outcomes measured by the degree of targets achievement).

There is also a strong rationale for assessing separately the general economic and social impact of public policies (more outcome focused) and the quality of service (more output focused) when the administration provides such service directly to the users. In the latter case, there is a provider-client type of relationship (that may be monopolistic, but not necessarily) for which specific 'quality performance' assessments are most relevant (e.g. timeliness, accessibility, fairness, transparency...). Conceptually, they sharply differ from macro-economic effects of public expenditures or their impact on the society as a whole, goals for which the Government is expected to act on behalf of the citizens.

Under the LOLF, all indicators in the PAP and RAP documents must specify the category they belong to. Along with this three-fold indicator taxonomy comes specific methodological orientations for designing and interpreting the indicators.

Box 1 - Methodological characterization of goals and indicators

(Excerpt from the *Manual*)

Strategic objectives must combine:

- common features (they must be few in number, represent essential aspects of the Programme and address the expectations of citizens, users and taxpayers in a balanced way);
- specific features (they must be clear, linked to Programme activities and measurable by indicators).

Indicators must be:

- relevant, meaning that they must be capable of measuring the results actually obtained (they must be consistent with the objective, relate to a material aspect of the expected result, provide the basis for a judgment and avoid effects contrary to those sought);
- useful (they must be provided at regular intervals, lend themselves to comparison, be exploitable by government agencies and be comprehensible);
- solid (they must be durable and absolutely reliable while being generated at a reasonable cost);
- verifiable and auditable.

6. Conclusion: Achievements and outlook

All the institutions concerned have achieved a considerable work since the 2001 adoption of the reform of the Constitutional Bylaw in order to have the new budget system ready for the 2006 Budget Act. This preparatory work has been organized under the leading role of the Finance ministry⁴ and has given way to many local-scale experiments and tests.

The new general budget structure, along with the goals and performance indicators, has been made public along the 2005 Budget Act, as a large-scale test. During the year 2005 and up to the moment of the official shift to the LOLF, this initial step serves as a basis for further adjustments in order to reach the final framework with consensual support from all parts.

Nevertheless, the transition work might not stop there and further analysis and potential adjustments are possible in the future. Performance-based budgeting is actually about adapting to what is effective and

⁴ For this purpose, a new 'Budget Reform Department' (*Direction de la Réforme Budgétaire*) has been created on a temporary basis within the Ministry of Finance with the task to conduct the preparation work for and the transition to the LOLF.

efficient, which is bound to apply to the performance system itself. Also, the pragmatic nature of the approach suggests that the LOLF is not to be considered as a new rigid system, although stability is an important condition for meaningful performance examination.

As a dynamic process, the shift to performance-based budgeting is sometimes expected to significantly affect the incentive framework of the administration and its executive heads so that adjustments of the *organizational structure of the administration and human resources allocations* are foreseen as a result. Such a trend however would be more bottom-up in nature, when pragmatic adaptations appear relevant and possible. The new result-oriented budget framework, combined with increased executive autonomy and accountability, seems to create such dynamic conditions.

Another component of the dynamic process, top-down in nature, is also at play. While the LOLF covers the general State budget, a significant share of public fund outside this budget remained untouched by the reform. In that respect a new LOLF-type of approach is now under preparation for credits outside the general State budget (except for the local authorities). Thus the “*LOLFSS*” - *Loi Organique relative aux Lois de Financement de la Sécurité Sociale*”, under discussion since March 2005, is intended to establish a performance management approach to social programmes expenditures (those which are off the State budget). While some aspects of the *LOLFSS* are entering into force as early as 2006, the performance system is to be implemented at the occasion of the 2008 budget Act.

Besides its dynamic and pragmatic character, the LOLF should not however lend itself to too high expectations. First, performance management and analysis remain a very complex task, with many technical difficulties. Second, while the LOLF can serve as a useful framework, improving public finances quality will be critically dependant upon the participants’ contributions and their political decisions.

Box 2 - The French LOLF and the EPC Working Group on the Quality of Public Finances

Some elements drawn from the French LOLF experience can be relevant for the work of the EPC-WGQFP.

Analysing the ‘quality of public finances’, when viewed from a performance-based approach, needs to duly encor two dimensions of public finances: the administrative implementation of public policies choices and the global ec effects of these decisions. In the French experience, these complementary approaches are structurally built in the along the taxonomy of the goals and performance indicators.

Limiting the scope of the analysis to management aspects, as in the output-focused approach, with primary consideration towards raising efficiency, cost-effectiveness and the quality of service, would be bound to miss a major dimension of the ‘quality of public finances’.

The outcome-focused approach, with primary consideration towards raising effectiveness with respects to political requirements from the society at large, is just another critical aspect of ‘quality of public finances’.

For that matter, analysing the ‘quality of public finances’ ought to distinguish between positive and normative statements on the issue. Public finances have a significant political economics dimension, such as adjustment trade-offs that differently affects each type of economic agents in society. Such normative trade-off ought to be regulated by the democratic process, considering their political nature. Thus, the democratic process only should fulfil the primary function of setting the rules over the level or the nature of public expenditures or fiscal instruments.

This however, leaves considerable scope for useful analysis on how to push further the effectiveness and efficiency frontier, once goals and priorities have been democratically adopted.

Annex 1: The new budget structure: Missions & Programmes*

GENERAL BUDGET OF THE STATE	
Missions	Programmes
Foreign affairs	- France's diplomacy in Europe and the world - Cultural and scientific activities - French citizens abroad and foreign citizens in France
General and local State administration	- Local administration - Political, religious and non profit organisations affairs - Support for domestic policies
Agriculture, fish and forest policies and rural affairs	- Long-term management of agriculture, fisheries and rural development - Product enhancement, development and market regulation - Forestry - Support for agriculture policy
International development assistance	- Economic and financial development aid - Solidarity assistance to developing countries
Economic and Social Council	- The Economic and Social Council
Culture	- Heritage - Creation and the Arts - Art education and democratisation of culture
Defence	- Defence strategy and long-term planning - Preparation and engagement of armed forces - Support for defence policy - Equipment for armed forces
Economic development and regulation	- Business development - Control and prevention of technological risks and industrial development - Regulation and safeguard of goods and services transactions - Mining financial liabilities
Management of Government affairs	- Co-ordination of governmental activities - Civil service management, State reform and strategic planning
Ecology and sustainable development	- Risk prevention and pollution control - Management of the natural environment and biodiversity - Support for environmental policies
National financial commitments	- National debt servicing and cash management (indicative appropriations) - National guarantees liabilities (indicative appropriations) - Savings - Increase in State funds - Payments to the national family allowance fund
School education	- Primary State school education - Secondary State school education - Schoolchildren life - Primary and secondary private education - Support for national education policy - Technical agriculture education
Management and control of public finances	- Fiscal and financial management of the State and local public administration - Public finances control and legal supervision - Support for economic, financial and industrial policies
The judicial system	- Administrative jurisdiction - Ordinary and criminal jurisdiction

* Note: This budget structure is subject to changes for the 2006 budget.

GENERAL BUDGET OF THE STATE	
Missions	Programmes
	<ul style="list-style-type: none"> - Prison administration - Young offenders institutions - Entitlement to legal aid and justice - Support for judicial policy and related bodies
The media	<ul style="list-style-type: none"> - Press - Support for State broadcasting corporations
Veteran affairs	<ul style="list-style-type: none"> - Links between the nation and its army - Remembrance, recognition and redress for veterans and the defence community
Overseas affairs	<ul style="list-style-type: none"> - Overseas employment - Overseas living conditions - Integration and development in Overseas territories
Territorial policy	<ul style="list-style-type: none"> - Planning for the provision of facilities - Urban development and planning and civil engineering - Geographical and cartographic information systems - Tourism - Regional infrastructure planning - National territorial management
Public authorities of the Republic	<ul style="list-style-type: none"> - The President of the Republic - The National Assembly - The Senate - The Constitutional Council - The High Court of Justice - The Court of Justice of the Republic
Reserves	<ul style="list-style-type: none"> - Reserves for government employees remunerations - Reserves for contingent liabilities
Research and higher education	<ul style="list-style-type: none"> - Higher education and university-based research - Student life - Multidisciplinary scientific and technological research - Research in the field of environmental and resource management - Space research - Research policy and management - Research on risks and pollutions - Research on energy - Industrial research - Research in the field of transports, facilities and housing - Dual-use research programs (civilian and military) - Research in the field of culture and scientific knowledge promotion - Higher education and research in agriculture
Welfare and retirement schemes	<ul style="list-style-type: none"> - Welfare and retirement schemes for land transport - Welfare and retirement schemes for sailors - Welfare scheme for mining - Retirement schemes for the state tobacco company SEITA, the government publication office and other bodies
Relations with local authorities	<ul style="list-style-type: none"> - Financial assistance to cities (<i>communes & groupements de communes</i>) - Financial assistance to counties (<i>départements</i>) - Financial assistance to regions (<i>régions</i>) - Special competitive examinations and administration
Tax rebates and relief	<ul style="list-style-type: none"> - Rebates and relief on State taxes (indicative appropriations) - Rebates and relief on local taxes (indicative appropriations)
Health	<ul style="list-style-type: none"> - Public health and prevention - Care systems and their quality

GENERAL BUDGET OF THE STATE	
Missions	Programmes
	- Drug abuse and addiction - Health policy design and management
Security	- National police forces (urban areas) - <i>Gendarmerie</i> (military corps of police forces in rural areas)
Civil security	- Engagements with national resources - Coordination of rescue resources
Sanitary safety	- Sanitary safety and watchdogs - Food quality and safety
Solidarity and social integration	- Policies for social inclusion - Catering for and integrating foreigners - Actions towards underprivileged families - Disability and dependence - Supplementary health cover - Gender equality - Management and support of health and social policy
Sport, youth and community life	- Sport - Youth and community life - Management and support of sport, youth and community policy
Economic strategy and public finances management	- Economic and financial strategy - Economic statistics and studies
Transport	- National road network - Road safety - Land and sea transport - Financial liabilities of the railways - Maritime affairs and safety - Air transport - Meteorology - Support for transport facilities policy
Employment	- Employment development - Access and return to employment - Policies regarding economic, social and demographic transformations - Improving employment quality and labour relations - Management and assessment of labour and employment policy
Urban policy and housing	- Urban renewal - Social and economic intervention in favour of urban policy - Housing (aid to people) - Housing (building development and enhancement)

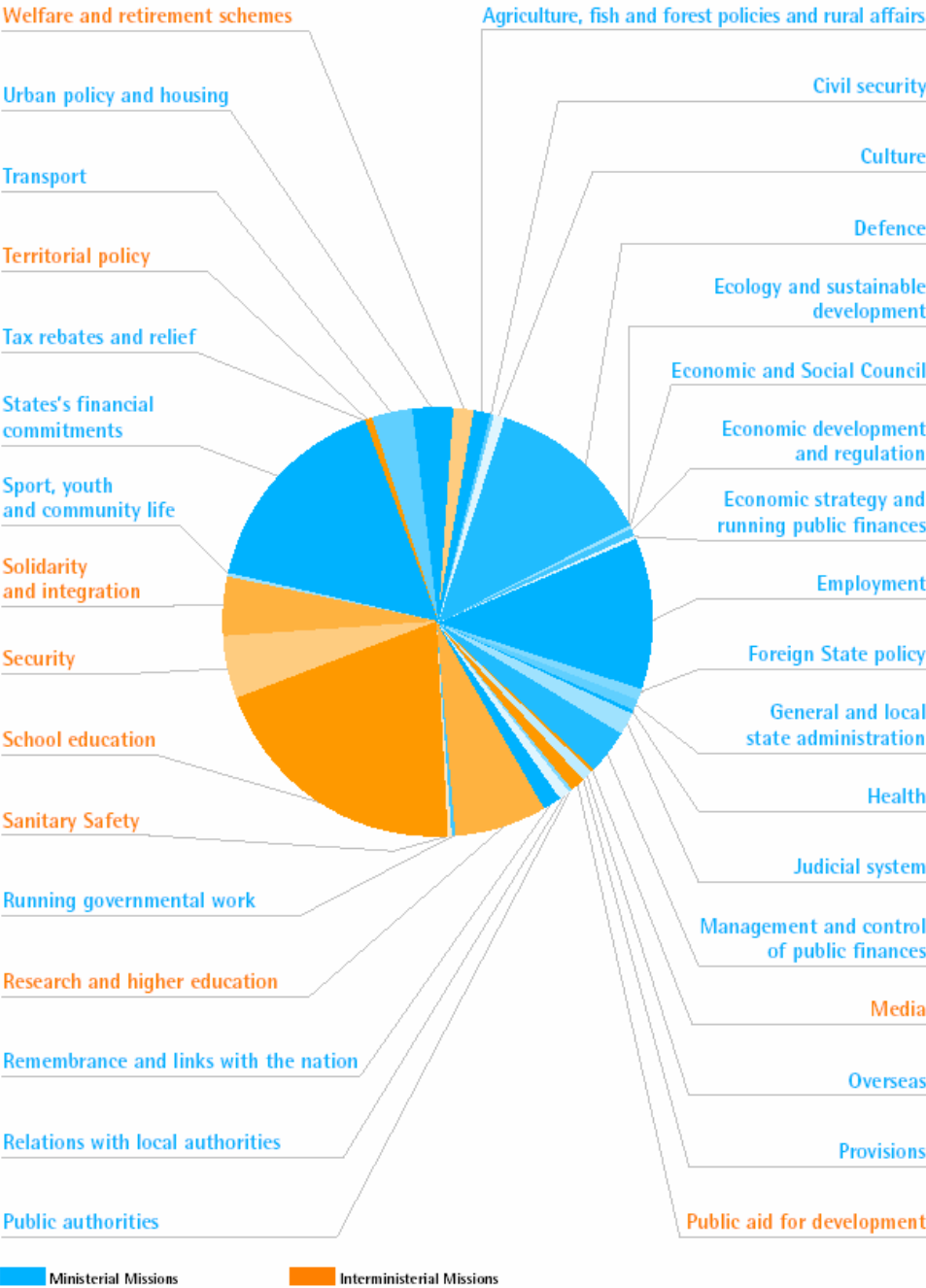
ANNEX TO THE GENERAL BUDGET OF THE STATE AND SPECIAL ACCOUNTS

Missions	Programmes
Civil aviation	- Support to civil aviation - Air navigation - Air control and certification - Aeronautic education
Legal publications	- Legal publications
Mint	- Mint on behalf of the State - Commercial mint
Pensions	- Pensions for civilian and military civil servants and compensations for temporary disabilities - Workers in State's industrial bodies

GENERAL BUDGET OF THE STATE	
Missions	Programmes
	- Military pensions for war disabilities and victims
Governmental financial participations	- Governmental financial participations
Cinema and audiovisual	- Cinema industries - Audiovisual industries
Support to the media	- Provision of the public audiovisual services - Support to local radio activities - Press modernization
Horse race and breeding	- Fund for horse race and breeding
International monetary agreements	- Relations with the central banks parts of a international monetary agreement with France
Loans to foreign States	- Loans to foreign States - Loans to foreign States for debt consolidation - Loans to the French Development Agency in order to promote -economic and social development in foreign countries
Advances to local authorities	- Advances to local authorities (<i>départments</i>) on receipts from the motor vehicles tax - Advances to local authorities and other local or overseas public bodies - Advances on tax receipts perceived on behalf of local authorities and bodies
Advances to administrations or bodies in charge of public services	- Advances to administrations or bodies in charge of public services
Loans and advances to individuals or private bodies	- Loans and advances to individuals or private bodies

Annex 2: The 2005 appropriations under the new budget structure (indicative)

Missions of State Budget in France (2005)



III. COMPOSITION AND EFFICIENCY OF EXPENDITURE

INTRODUCTION:

III. COMPOSITION AND EFFICIENCY OF EXPENDITURE

The composition of public expenditures is one of the key factors that influence the quality of public finances. This has been pointed already out in Section I. Some spending components seem to have close positive links to economic growth, while others are regularly associated with decreasing overall efficiency of government activities. The latter seems to be particularly the case when overall expenses are high.

In Section III public expenditure receives a deeper inspection which goes far beyond composition- and size-effects. Undoubtedly, the composition and overall volume of government expenditure are central variables in the discussion of the quality of public finances. Yet, this is only one side of government activities, the input side. Public money spent on the “right” objects is not necessarily money spend wisely. Whether you receive good value for money is decided on the output and outcome side. Thus, attaining a high degree of effectiveness and efficiency of government policies is an important issue in the QPF-discussion.

The main challenges for such analysis, such as the measurement of inputs, output and outcomes to obtain efficiency indicators, and the main reform avenues, such as structural and institutional reforms, are summarised in a joint EPC/ European Commission Issues Note (2007). As an example, this paper examines existing data on the efficiency and effectiveness of public spending on education and R&D. Here, cross-country comparisons in terms of efficiency and effectiveness of public spending can be very enlightening. Yet, one must be well aware that data limitations and the methodology applied can significantly affect the results. The note makes a strong case for further common exchange of information and studies based on countries' experiences to identify key drivers of efficiency and effectiveness and find a better understanding of sound principles and methods for efficiency improvements.

The paper by Lilienthal (2004) addresses the question how expenditure programmes aimed at boosting innovation can be properly appraised. It focuses on impact assessment with special reference to public investments regarding R&D and innovation and aims at giving some general guidelines on possible aspects and criteria for an impact assessment.

Comparative estimates of efficiency of public expenditure and overall public sector performance for new Member States are provided in the paper by Afonso, Schuknecht and Tanzi (2005). The paper delivers a survey of conceptual and methodological issues related to the measurement and analysis of public sector efficiency. Then, the authors construct composite public sector performance and efficiency indicators and finally use data envelopment analysis to compute input and output efficiency scores and country rankings. Here, the ensuing paper by Afonso and St. Aubyn (2006) is tied on directly, yet with a further-improved methodology. The authors compare systematically the output from the health system of a set of OECD countries with resources employed (doctors, nurses, beds etc). Results from the first-stage of the analysis imply that inefficiencies may be quite high. Yet, by usage of a two-stage approach, it is shown that inefficiency in the health sector is strongly related to variables that are, at least in the short- to medium run, beyond the control of governments, e.g. GDP per capita, the education level, and unhealthy lifestyles as obesity and smoking habits.

In a case study for Austria, Mandl (2004) describes the Austrian approach towards raising the quality of public expenditures. It aims at detecting dynamic problems in public finances by analysing the time-structure of public expenditures and its impact on GDP and employment growth. Based on the findings, measures are identified. They include those that dampen the pressure on “past-related” spending, such the pension reform in view of an ageing of population and the aim to achieve a balanced budget balance over the cycle. The approach is expected to help in prioritising expenditures for future investment, without worsening the fiscal balance.

In the final paper of Section III, van Hengel and Nahuis (2005) present a case study for the Netherlands with a special focus on the search for knowledge about its effectiveness of innovation policy. At first

sight, the Dutch economy seems to be characterised by below-average innovative strength. However, based on an array of indicators a more positive view emerges. To maintain and improve innovation further, the Netherlands focuses its innovation policy on areas in which market failures potentially exist. These are identified in an economic analysis. The actual design of the innovation policy and use of specific instruments depends on the identified problems.

THE EFFICIENCY AND EFFECTIVENESS OF PUBLIC SPENDING

Economic Policy Committee and European Commission

Paper completed: April 2007

1. Improving the efficiency of public spending is becoming a more urgent policy challenge

The efficiency of public spending is becoming a more pressing policy challenge for several reasons. Public spending represents a large share of GDP and therefore has a major impact on the productivity of the whole economy. First, Member States have to deal with increased pressures on their budgets resulting partly from globalisation and increasingly from ageing. These pressures are being felt both on the revenue and the expenditure side. Second, citizens expect to see benefits in return for their tax contributions. As taxes create distortions in the allocation of resources and thus constrain economic growth, it is essential that public expenditures are used to improve efficiency while ensuring the sustainability of public finances. Finally, improved efficiency and effectiveness of public spending not only helps sustain the fiscal discipline requested by the Stability and Growth Pact but is also instrumental in promoting the Lisbon structural reform agenda. It alleviates budget constraints as it allows achieving the same results at lower levels of spending or increases value for money by achieving better outcomes at the same level of spending.

Such considerations have led the Ecofin Council in its conclusions of January 2006 to stress the importance of further improving efficiency and effectiveness as a way to enhance the quality of public finances (together with an increased reliance on fiscal rules and greater attention being given to the composition of public expenditures).

A comparison of EU Member States' budgets shows large country differences in terms of the level and development of public expenditures. Therefore, cross-country comparisons in terms of efficiency and effectiveness of public spending can be very enlightening. They can provide important insights into the policy challenges that countries face. Nevertheless, policy makers should be well aware that data limitations and the methodology applied can significantly affect the results. In particular, cross-country comparisons can be complicated by factors beyond the control of decision makers which may lead to measurement bias. Consequently, cross-country comparisons must be viewed with due caution and be complemented with countries' experiences in order to obtain more complete and accurate information on efficiency drivers. Besides international comparisons, efficiency analyses within Member States have proved to be useful.

This note as an example examines existing data on the efficiency and effectiveness of public spending on education and R&D. Overall, spending in these areas is important for economic growth and public spending represents an important share of GDP (around 6%). The efficiency of public spending on education and R&D is currently subject to debate among policy-makers of EU countries. In education, there are questions about the ability of the school system to maximise the potential of students and to

respond effectively to changes in the demand for education. In R&D, there are some doubts regarding the strength of the leverage effect of public spending on innovation.

2. Measurement of efficiency and effectiveness has to be developed further

There are various ways for measuring public sector efficiency and effectiveness. Conceptually, efficiency is about the relation between input and output, with the objective of maximising output for a given amount of inputs; or of minimising inputs for a given output. Effectiveness relates the input to the final political objective (the outcome), such as welfare, growth or other priorities of the national governments. The measurement of effectiveness therefore to some extent reflects political choices and there are no inherently "growth-enhancing" public expenditures.¹

It is not straightforward to measure inputs, because it is difficult to cover all the costs of public sector activities, including in particular the opportunity costs of using government-owned assets, like school buildings and hospitals. The measurement of outputs and outcomes poses additional problems. The OECD PISA study, for example, presents a well-known measure of the performance of 15-year-old pupils. While this education output indicator has certainly contributed to initiate discussions on educational reform, it can not be considered an outcome indicator as the final objective of policy makers would more likely be to improve the employability of school leavers. In view of such difficulties, the note refrains from further analysing effectiveness issues and focuses on questions related to the efficiency of public spending.

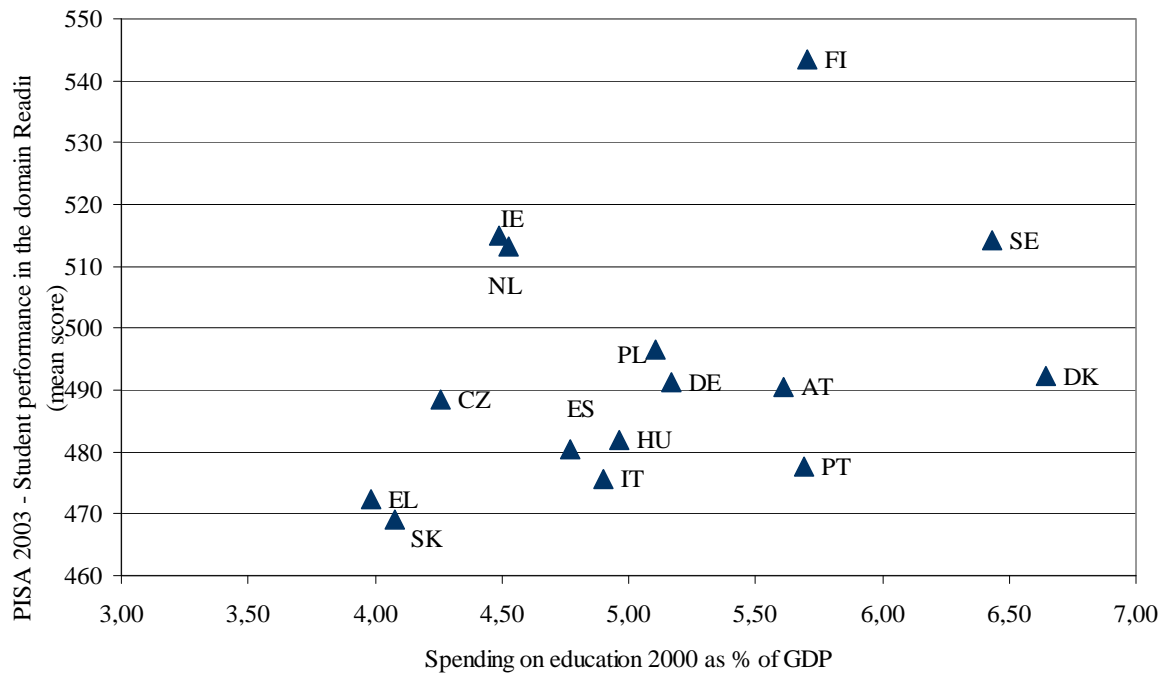
The choice of appropriate indicators for efficiency measurement and assessment is often constrained by data availability and comparability across countries. Against this background the development of comprehensive and comparable data on inputs, outputs and outcomes should be a priority for EU Member States. As the method used to measure efficiency of public spending seriously affects the results, one should be careful about drawing too prescriptive general conclusions from the efficiency measurements. A priority would therefore be to reach a common understanding on sound principles and methods for efficiency measurement.

3. Focusing on individual spending areas appears most promising to increase value for money

Government wide evaluations of efficiency are often based on complex composite indicators. These indicators are useful to get a broad overview of efficiency gains achieved. However, in order to arrive at concrete policy recommendations, it is more promising to investigate the efficiency of public expenditure in individual spending areas. Growth-enhancing expenditures, such as R&D and education and to some extent infrastructure, as well as expenditures affected by the ageing of population, such as health care, are first candidates for such investigations.

¹ See Mandl, U. A. Dierx and F. Ilzkovitz (2008), "The efficiency and effectiveness of public spending," European Economy Economic Paper No. 301 (Brussels).

Figure 1 - Performance of pupils (PISA scores) in relation to spending on education



Source: Eurostat, OECD

Public spending on education varies greatly in EU-countries and so do education outputs as reflected in Figure 1 for one indicator of education output (i.e. PISA score reading). This can be related to a number of different factors, and caution needs to be exercised in the interpretation of such a table. However, recent work suggests that, in a number of countries, reforms could visibly reduce expenditure while maintaining education outcomes². This is especially important since traditionally the European education systems are mainly financed by public means. However, the performance of pupils as measured by the PISA index does not clearly reflect the money spent on education. The Netherlands and Ireland, for example, score relatively well in the PISA test and spend in comparison little money on education as a percentage of GDP. Austria, Portugal and Finland spend similar amounts on education as a percentage of GDP, but the performance of their pupils is quite different.

However, cross-country differences in efficiency can also be explained by country-specific institutional arrangements and structural characteristics which complicates comparisons. Recent investigations on efficiency of education spending suggest that factors such as parents' education or greater decision making autonomy at school-level (more competition between schools) affect the efficiency of money spent on education³. Also, relative per capita GDP plays a role in some countries. In addition, studies indicate that the social return on investment in education is highest when spending on pre-school education⁴, which would suggest redirecting public spending on education to this specific area. On the

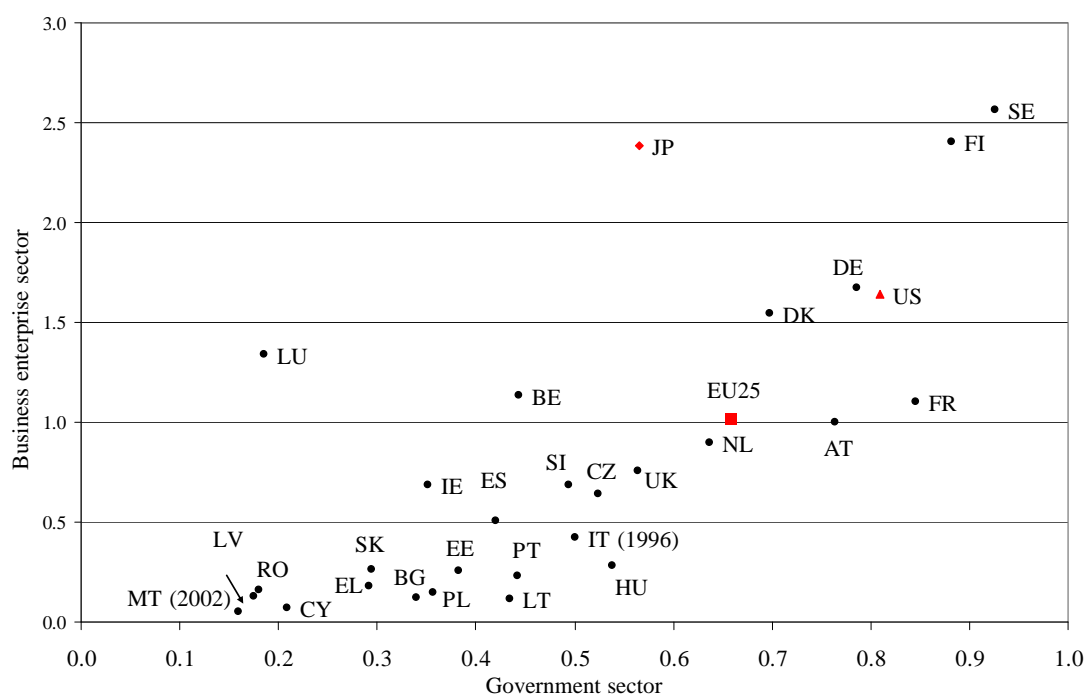
² Afonso A., St. Aubyn M. (2006), "Cross-country efficiency of secondary education provision: A semi-parametric analysis with non-discretionary inputs", *Economic Modelling* 23 (3), 476-491.; Afonso A., St. Aubyn M. (2005), "Non-parametric Approaches to Public Education and Health Efficiency in OECD Countries," *Journal of Applied Economics* 8 (2), 227-246.; Sutherland D., Price R, Joumard I. and Nicq C. (2007), "Performance Indicators for public spending efficiency in primary and secondary education", OECD Economics Department Working Paper No. 546

³ OECD (2007), "Linkage between performance and institutions in the primary and secondary education sector"

⁴ Heckman J.A. (1999), "Policies to foster human capital" (NBER 7288)

other hand, more technologically advanced countries appear to get a higher value for money from tertiary education⁵.

Figure 2 - Total R&D financed by business enterprise and by government as %of GDP, 2003



Source: Eurostat

Most studies on the efficiency and effectiveness of public R&D spending aim to evaluate the benefits of individual public R&D projects and programmes at the national and international level. Some other studies investigate the leverage effect of public R&D spending on private R&D⁶. High levels of government funding for R&D may go hand in hand with a good innovative performance, even if no clear causal relationship can be established. For example, the level of government funded R&D as a percentage of GDP is large in countries such as Sweden and Finland and these countries enjoy a high level of business funded R&D as well (see Figure 2). Again, cross-country and definitional differences may complicate making comparisons.

4. There are several ways to enhance public sector efficiency in a medium-term approach

Two kinds of factors can contribute to explaining the efficiency performance of public spending: institutional factors, such as the management of public institutions; and structural factors, like the educational achievement of the older generation, the degree of competition, the level of technological development, or the use of ICT in public administration.

Structural factors

Structural reforms could help increase the efficiency of public spending. For example, the leverage effect of public R&D on private investment in R&D and innovation could be amplified in a more competitive and business friendly environment. Most Member States have already taken steps in this direction. Similarly, the role of public procurement as a complementary tool to public R&D could be more

⁵ Vandenbussche J., Aghion P. and Meghir C. (2006), "Growth, distance to frontier and composition of human capital", J Econ Growth 11, pp. 97-127.

exploited to foster investment in innovation. A better identification of structural determinants of efficiency and a better understanding of their interactions could help to shape a more consistent policy agenda.

Institutional factors

Diverse approaches have been adopted by Member States to reforming institutional arrangements. These approaches concentrate primarily on changing budget procedures, and introducing results oriented approaches to budgeting. Countries are at different stages of introducing performance information (i.e. performance measures and evaluations) into their budget processes. The UK, the Netherlands and the Nordic countries, for example, have been working on these initiatives for over ten years. France has deeply reformed its budget system in that direction. Others are still developing their reforms: Poland will introduce PI into their budget process in 2008 and Portugal in 2009. The Netherlands, on the other hand, in light of its experience focuses on quantifiable objectives only where possible and sensible and puts more emphasis on qualitative ex post evaluation.

OECD work⁷ illustrates the potential benefits of applying performance information (PI) in decision-making. PI generates a sharper focus on results within the government and provides more and better information on government goals and priorities. Moreover, the use of PI in decision making encourages a greater emphasis on planning and acts as a signalling device that provides key actors with details on what is, and what is not, working. Overall, it improves transparency by providing more information on public sector performance to the public and the legislature and it has the potential to improve management and efficiency. OECD countries, however, continue to face a number of challenges with these reforms. These include improving the measurement of activities and the quality of PI and getting politicians to use it in decision making. The challenge is to create good-quality and relevant information that takes account of the timing and capacity constraints under which political decision makers operate.

The OECD has created general guidelines to help countries develop and improve the use of PI in budgeting processes.⁸ Some important factors to consider in this respect are:

- There is no one size fits all model of performance budgeting and countries need to adapt their approach to their political and institutional context.
- It is important to develop a government wide planning and reporting framework. Countries are encouraged to integrate PI into the budget process and give budgetary decision makers the opportunity to take PI into consideration.
- A long term approach is needed and reform should be adapted to evolving circumstances. The commitment of political and administrative leaders is vital for the implementation of these reforms. The staff and resource capacity of the ministry of finance and spending ministries is critical. It is important to develop incentives to motivate civil servants and politicians to change their behaviour and to use PI in decision making
- Meaningful and accountable PI requires reliable output and outcome data that is continuously updated. Timely and straightforward assessments of performance information should be carried out independently of the spending ministries and supported by external expertise.

⁶ For a comprehensive review of empirical evidence, please see David P. A., Hall B. H. and Toole A. A. (2000), "Is public R&D a complement or substitute for private R&D? A review of the econometric evidence," *Research Policy*, Elsevier, vol. 29(4-5), pp. 497-529, April; and García-Quevedo J. (2004), "Do Public Subsidies Complement Business R&D? A Meta-Analysis of the Econometric Evidence", *Kyklos*, 57(1), pp. 87-107

⁷ OECD (2007), "Improving public sector: Challenges and Opportunities"

⁸ For more details on these guidelines please see Curristine, T., Lonti, Z., Joumard, I. (2007) "Improving Public sector efficiency: Challenges and Opportunities"

5. Next steps

Good value for money is essential because of the increased pressure on public expenditures and the difficulties in measuring outputs and outcomes. Therefore, improvements in the measurement of public spending efficiency and a better understanding of its determinants are crucial policy agendas. An analysis by individual spending areas seems to be promising in order to be able to derive concrete policy recommendations. This paper has focused on R&D and education but the efficiency of other important categories of public spending such as health care, public infrastructures, as well as public procurement could also be investigated. Efficiency and effectiveness considerations could also be increasingly taken into account when reviewing the EU budget.

In these areas, an exchange of information and case studies based on countries' experiences could help to identify key drivers of efficiency and effectiveness and could lead to a better understanding of sound principles and methods for efficiency improvements. It has, however, to be kept in mind that the impact of different factors depends on the specific situation in the different countries. Therefore, best practices can not necessarily be exported to other countries. From a policy perspective, improving efficiency and effectiveness could be part of the Lisbon National Reform Programmes once a robust methodology and measurement framework has been established. Such considerations could also be introduced in the evaluation of the budgetary situation in the Member States.

IMPACT OF PUBLIC EXPENDITURES TO BOOST INNOVATION

Rikke Lilienthal (Ministry of Finance Denmark)

Paper completed: May 2005

1. Introduction

A comprehensive view of the effect of public expenditures on growth needs a deeper analysis of the impact of public expenditures. Thus, specific studies of single components of the public budget could serve as a starting point to reach – in the end – a general methodology and to develop criteria for impact assessments. In this context a broad and thorough input-output-assessment would be desirable in order to get a clearer insight into the efficiency and productivity aspects of specific public expenditures. The analysis of public R&D-programmes aimed at promoting private R&D, innovation and growth are of prime interest in the view of the importance of R&D to promote growth.

The studies should cover aspects like general framework conditions, spill-over effects, crowding-out effects (public/private), or the relationship between quality improvements and public balances. The governance of research institutions, the design of public support, co-operation between publicly controlled institutions and private enterprises, or the efficiency of educational and research/innovation systems (allocation mechanisms) are further aspects of such an assessment.

Against that background, this paper focuses on impact assessment with special reference to public investments regarding R&D and innovation and aims at giving some general guidelines on possible aspects and criteria for an impact assessment answering specifically the following questions:

1. What are the actual R&D and innovation expenditures?
2. What are the costs and benefits for the government when financing R&D?
3. Why is there reason to believe in spill-over effects?
4. What does empirical work say?

2. Broad developments of public and private innovation spending

Going through the literature on links between the composition of public expenditure and revenue and long-term growth confirms the importance of taking into account both the costs (i.e. higher taxation) and the benefits (i.e. reaching policy objectives) of public spending.

The ultimate objective is that the investments will result in growth but there might also be disadvantages. Governmental investments might crowd out private investments and the utility of the society would then not be improved. Furthermore, governmental investments often result in

deadweight losses, tax distortions etc. Analysing all aspects of investments in R&D is therefore not that straightforward.

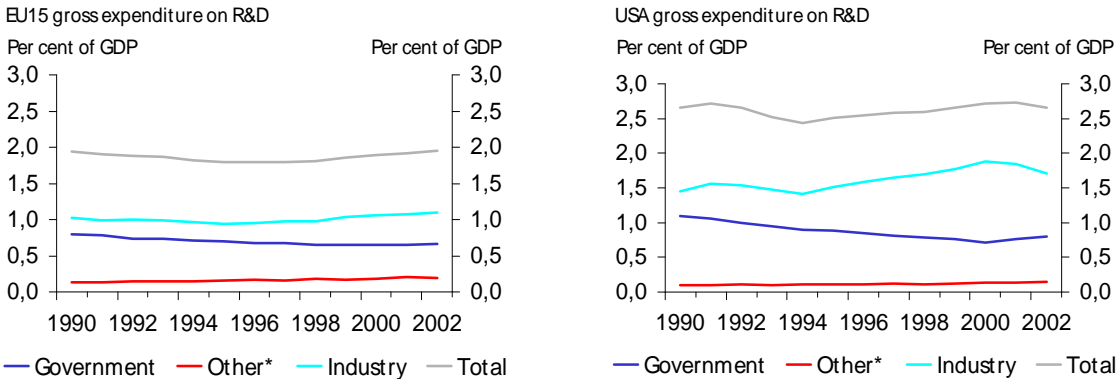
Substantial empirical uncertainty is associated with the relationship between R&D spending and economic growth. Hence, estimates of the effects of R&D spending on growth vary greatly, and – for government spending – may even be negative.

Furthermore, the empirical literature typically takes a macro-perspective (i.e., relating per capita growth to the ratio of public R&D spending to GDP), whereas little evidence is available on the microeconomic imperfections that government programmes are supposed to alleviate.

The European Council in Lisbon set the strategic goal of transforming the European Union by 2010 into the most competitive and dynamic knowledge-based economy in the world, capable of sustainable growth with more and better jobs and greater social cohesion.

Since then, many decisions have been taken in order to implement the Lisbon Strategy. In particular, the Barcelona Council meeting in 2002 set some clear and specific targets that would allow for monitoring progress and achievement of the more general goals. It was agreed that Member States should strive to achieve 3 pct. of GDP to be spent on R&D and innovation by 2010 of which one third should be financed by the Government sector and two-thirds by the Business sector.

Figure 1 - R&D expenditure in EU vs. USA by source of finance (GERD)

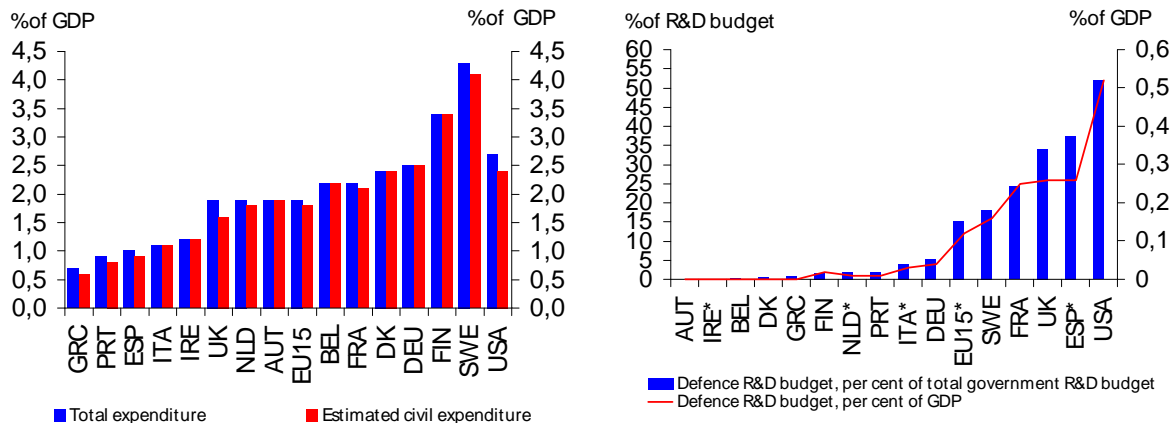


Source: OECD “Main Science and Technology Indicators”, 2004-2.

Compared to the US, Europe is far behind. Only with regard to governmental spending Europe is on par with the US.

It should be kept in mind that more than half of the US government’s R&D budget is allocated to defence, cf. figure 2. In most European countries, defence R&D plays a minor role. As a result, international comparisons differ, depending on whether defence R&D is included or not. Since the demand for defence R&D fluctuates with changing political situations its long-term trend varies differently from that of civil R&D.

Figure 2a - Gross expenditure on R&D (GERD), 2001 **Figure 2b - Defence R&D in government budgets, 2002**



Notes: Figure a: Estimated civil expenditure on R&D is given by total R&D expenditure minus expenditure on defence and military. Figure b: Data illustrated is GBAORD data, government budget appropriations or outlays for R&D. *) 2001 numbers.

Source: OECD, STI Scoreboard 2003.

Government spending on R&D, however, varies a great deal across EU countries. But since some countries might have more urgent problems it is not certain that they should focus on reaching the target of 3 pct.

Although the Barcelona target is a spending target it should be remembered that just by increasing R&D funds the outcomes do not necessarily follow.

The paper starts with introducing some definitional aspects mainly drawing on recommendations from the Frascati manual. Next, borderline issues are discussed. Are, for instance, PhD students researchers or purely students? Thirdly, which part is the important part when registering investments in R&D, the funder or the performer? Fourthly, what is the outcome of R&D? It turns out that different studies get different results depending on method and data used. The last part looks into different kinds of indicators that help shed some light on the output of R&D. The indicators will primarily be analysed by comparing with the US.

3. Definition of R&D and innovation

According to the well known *Frascati Manual*¹ R&D is defined as follows:

Research and experimental development (R&D) comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications.

R&D covers three activities:

1. *Basic research* which is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view.
2. *Applied research* which is original investigation undertaken in order to acquire new knowledge. It is, however, directed primarily towards a specific practical aim or objective.

¹ OECD (2002).

3. *Experimental development* is systematic work, drawing on existing knowledge gained from research and/or practical experience, which is directed to producing new materials, products or devices, to installing new processes, systems and services, or to improving substantially those already produced or installed.

The R&D data have two drawbacks. First, R&D is an input and does not measure the technical change. Second, R&D does not encompass all the efforts of firms and governments in this area, as there are other sources of technical change, such as learning-by-doing, which are not subject to the narrow definition.

If the objective is to live up to the Lisbon strategy one has to follow the conclusion from the Barcelona council meeting from March 2002, where The European Council agrees "*that overall spending on R&D and innovation in the Union should be increased with the aim of approaching 3 pct. of GDP by 2010. Two-thirds of this new investment should come from the private sector*".

The objective is therefore not to invest 3 pct. of GDP on R&D but to invest 3 pct. of GDP on R&D *and innovation*. The innovation part, however, seems to have been forgotten and many studies merely focus on R&D. Moreover, the definition from Barcelona can be understood in two ways. First, as if two-thirds of all investments on R&D and innovation should come from the business sector or second as if two-thirds of the *new* investments on R&D and innovation should come from the business sector. If the latter is the case, the business sector would only be obliged to invest two-thirds of the difference between 3 pct. and the level in 2002.

The Oslo Manual (OECD, 1996) gives guidelines regarding the collection of data and defines TPP (technological product and process) innovation as:

TPP innovations comprise implemented technologically new products and processes and significant technological improvements in products and processes. TPP innovation has been implemented if it has been introduced on the market (product innovation) used within a production process (process innovation). TPP innovations involve a series of scientific technological, organisational, financial and commercial activities. The TPP innovating firm is one that has implemented technologically new or significantly technologically improved products or processes during the period under review.

The Commission defines innovation as:

Innovation is the renewal and enlargement of the range of products and services and the associated markets; the establishment of new methods of production, supply and distribution; the introduction of changes in management, work organisation, and the working conditions and skills of the workforce. (COM(1995) 688).

R&D is therefore only a part of innovation.

4. Borderline issues

When trying to measure the amount of R&D in a society, certain borderline issues come to surface and have to be dealt with. First of all, the Barcelona council meeting talks of both R&D and innovation and it is therefore important to be able to distinguish between the two. Second, how do we distinguish R&D from teaching and routine work? These two issues are important and have to be examined.

Theoretically, there is both a definition of innovation and R&D and distinguishing between the two should therefore not be a problem. In the real world, however, the terms are often mixed together. Innovation is even left out in many studies. One can justify this by asserting that R&D is a fundamental basis for innovation and therefore can represent the total innovation process well. To be able to reap the full potential benefits of R&D it is necessary to have a well-

functioning (dynamic) innovation system, and the two terms should therefore not be treated as one term but rather as two interdependent ways of enhancing growth. It is therefore now commonly admitted that innovation is a more complex phenomenon going beyond R&D. The link between R&D and innovation is less clear-cut and less linear than earlier assumed. Firms can be engaged in the innovation process without performing R&D; they can participate in the innovation process through diffusion or implementation of new techniques or processes.

A Danish study found that most companies are able to distinguish between R&D and innovation. Other countries have had more difficulties during their collection of data for the joint European innovation survey (ISIC) and the data are therefore not published on a European basis.

Box 1 - Innovation expenditures

The Community Innovation Surveys (CIS) are the main statistical instrument regarding innovation. The surveys are carried out after joint guidelines prepared by Eurostat and the member states based on the “Oslo-Manual” by OECD 1997.

The countries are, among other things, asked how much they spend on innovative activities. Unfortunately, due to the fact that some companies either do not want to answer the question or are not able to and an overall low response rate the data are not published. In Denmark, however, the Danish data are published and can therefore help us get an idea of the magnitude of the innovative expenditures.

Even though the Danish figures are published, there are problems concerning the interpretation. First of all, some companies found it difficult to separate between R&D expenditures and innovation expenditures. Also, the survey showed that the estimate for R&D expenditures is significantly lower than previously published data. The data should instead be comparable. Other countries have had the same problems when trying to register innovation expenditures and R&D expenditures in the same survey.

Having these caveats in mind the table below gives an overview:

Table a - The Danish R&D and innovation expenditures

	Expenditures as pct. of GDP
Private R&D	1.75
Private innovation ^a (excl. of R&D)	0.25
Public R&D	0.70
Total R&D and innovative expenditures	2.70

Note: a The innovation expenditures amounts in total to 2 pct. of GDP. The innovation expenditures, however, include both innovation and R&D, and the 1.75 pct. are therefore subtracted from 2 pct..

The example shows that by including the innovation expenditures Denmark is closer to the target of 3 pct.

Source: OECD and The Danish Institute for Studies in Research and Research Policy.

In institutions of higher education, research and teaching are often closely linked, as most academic staffs do both. Because the results of research feed into teaching, and because the information and experience gained from teaching can result in input to R&D, it can be very difficult to separate the two. The Frascati manual proposes that it is the elements of *novelty* that distinguish R&D from routine teaching and other work-related activities. The manual admits that it can be a problem to decide whether or not scientific activities that are by-products of educational and training activities can be considered as R&D.

Postgraduate students at the PhD level and their activities are sometimes R&D and sometimes not. The important part to remember is the degree of novelty and the objective to produce new knowledge. Students that study the literature on a given subject, learn research methodology etc., do not fulfil the criterion of novelty in the definition of R&D.

Therefore, as long as for example the education only aims at teaching the students in well-known areas, it cannot be labelled as R&D.

5. Institutional classification

Since the Lisbon strategy set specific targets for both the private and public sector it is important to be able to distinguish between the two sectors.

According to the Frascati manual the *business enterprise sector* is defined as:

- All firms, organisations and institutions whose primary activity is the market production of goods or services (other than higher education) for sale to the general public at an economically significant price.
- The private non-profit institutions mainly serving them.

The main part of the sector comprises of private enterprises, whether or not they distribute profits. In addition, the sector also includes public enterprises mainly engaged in market production and sale of the kind of goods and services, which are often produced by private enterprises. To be part of this sector, the prices charged should be related to the value of the goods and services furnished, the decision to purchase them should be voluntary, and the prices charged should significantly affect supply and demand.

The *government sector* is correspondingly defined as:

- All departments, offices and other bodies which furnish, but normally do not sell to the community, those common services, other than higher education, which cannot otherwise be conveniently and economically provided, as well as those that administer the state and the economic and social policy of the community.
- Non-profit institutions controlled and mainly financed by government, but not administered by the higher education sector.

6. Sources of funds

Tracing the flow of R&D funds is extremely important when determining which sector is responsible for which expenditures. The transfers of resources may be measured in two ways:

Either by the agency providing the money (funding) or by the agency actually performing the R&D. The Frascati manual recommends the second approach.

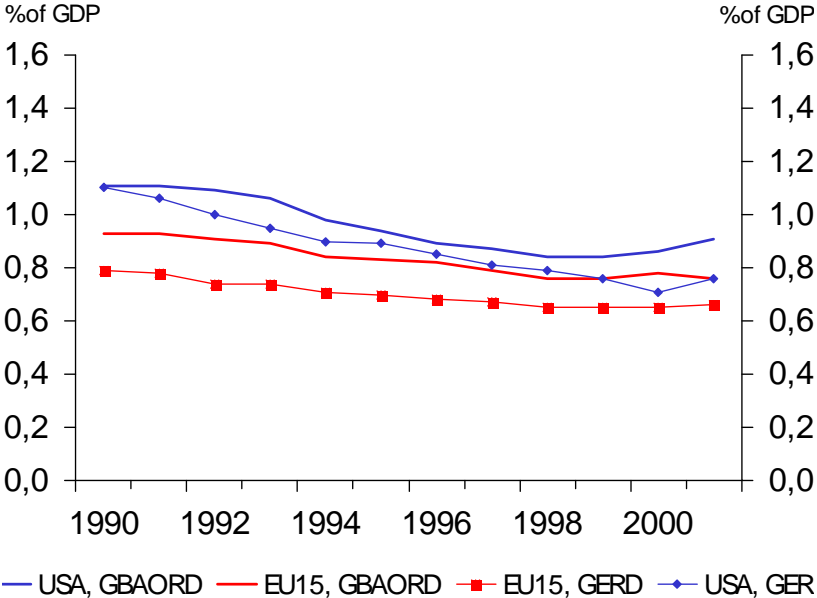
In light of the above, when calculating how much a country invests in R&D, the most common indicator of expenditures on R&D is the so-called “Gross domestic expenditure on R&D performed on the national territory during a given period” (GERD). GERD includes R&D *performed* within a country no matter where the funding comes from but excludes payments for R&D performed abroad.

Since this paper focuses on the public sector, the important part is to determine how much the government spends on R&D. For this, there are two ways. The first one is the government-financed GERD, which identifies the amount effectively spent on R&D over the previous year and the share financed by the government. The second way uses data from budgets and is based

on the *funder* rather than the performer. This essentially involves identifying all the budget items involving R&D and measuring or estimating their R&D content in terms of funding. Budget-based data are officially referred to as “government budget appropriations or outlays for R&D” (GBAORD).

Even though the Frascati manual recommends measuring the performer and not the funder, I find it appropriate to adduce some critical points. First of all, an institution wanting to carry out research will be able to outsource the task to another institution. The government may for example outsource some of its research to a private company or vice versa. If a governmental institution outsources a task to the private sector and the investment is registered as a private investment an important thing is overlooked. When the government invests in R&D (whether it is registered or not in the statistical databases) public spending increases, which presents a tax distortion irrespective of whether it is financed by higher taxes, or lower expenditure elsewhere as it needs to be financed. Therefore, when focusing on higher growth through investments in R&D the picture is not that simple and trade-offs exist. Because of this, using the GBAORD data might be a good alternative to the GERD data recommended by the OECD, even in spite of the fact that the data is collected from budgets and thereby are more imprecise than the GERD data.

Figure 3 - Total government R&D budgets, 1990-2001



Source: OECD, STI 2003.

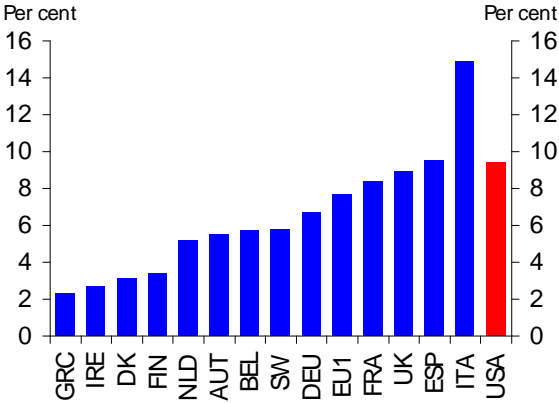
Not surprisingly, the data differs, *cf. figure 3*. As described, the main reason is that government-financed GERD and GERD objectives data are based on reports by R&D performers, whereas GBAORD is based on reports by funders. Second, the GERD-based series cover only R&D performed on national territory, whereas GBAORD also includes payments to foreign performers, including international organizations.

Furthermore, differences may also occur because the periods covered are different (calendar or fiscal years), because the money is finally spent by the performer in a later year than the one in which it was committed by the funder, and because the performer may have a different and more accurate idea of the R&D content of the project concerned.

One can also examine the data by looking at how much of the R&D performed in the business sector is financed by the government and vice versa, *cf. figure 4*. Since the two sectors do not

finance the same amount (for instance in the Netherlands the government finances 5.2 pct. in the business sector whereas the business sector finances 21.6 pct. in the government sector) one has to be careful when studying data.

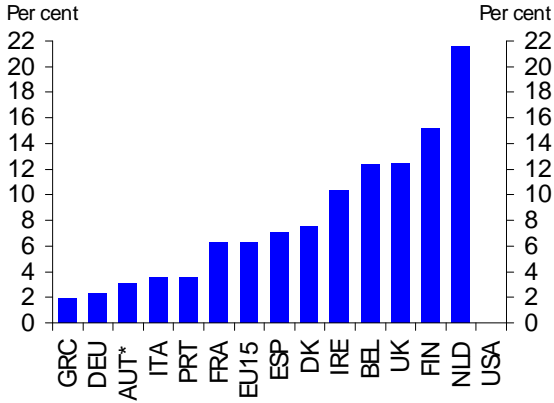
Figure 4a - Percentage of R&D performed in the business enterprise sector financed by government



Notes: Data is BERD.

Source: OECD STI 2003.

Figure 4b. Percentage of R&D performed in the government sector financed by industry



Notes: Data is GOVERD. *) 1998 numbers. USA data not available.

Source: OECD STI 2003.

7. Public sector efforts regarding R&D: rationale and empirical figures

While public spending on R&D and further education in EU, exceeds US levels there remains a strong case for maintaining and in some cases increasing spending, though after careful evaluation of costs and benefits. One issue in this respect is that marginal tax rates are already high in some parts of Europe and in aggregate well above US levels: the higher level of initial tax distortions imply that any marginal increase of any sort of public spending requires a larger return to be economically viable.

Figure 5a - EU15 vs. USA tax pressure

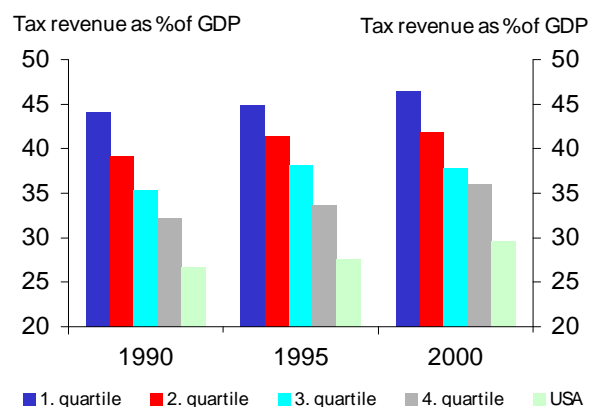
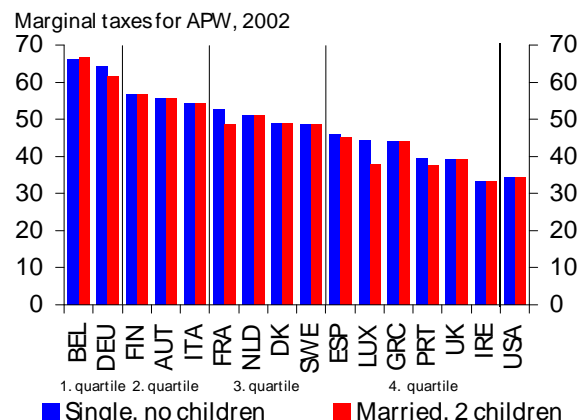


Figure 5b - EU15 vs USA marginal tax rates



Notes: Quartiles and weights based on population shares.

Source: OECD Revenue Statistics 1965-2002, OECD Taxing Wages 2003, Eurostat and own calculations.

There are potentially three good reasons for public spending on R&D. First the incentives to produce economically viable research may be too weak, since firms that engage in such activities cannot capture all the benefits through for example patents or employment contracts that prevents researchers from walking away with the knowledge paid for by their employers. And even when rent appropriation is feasible it may not be cost-effective for society, because the marginal social cost of using the information (after research expenses have been incurred) may well be small, but the benefits large. So patents, which impose a price on the use of existing knowledge, may not always be appropriate. However, the effective assignment of property rights to private firms and the associated costs should be carefully weighed against the problems associated with providing sufficient incentives for innovation in public (or subsidised private) institutions, where competition and cost-effectiveness may be much more difficult to sustain.

A second, traditional, but in general not entirely convincing, argument is a failure of financial markets. The argument is that the innovator/firm has strong reason to believe that a project is viable, but the bank etc, due to lack of trust and understanding of the information supplied, refuses financing. It is inherent in such situations that the proponent of a specific project has more knowledge about the specific project, though not necessarily the marketing potential, than outsiders. However, it is not clear how this “asymmetry of information” can be overcome.

Third, the case for government support for R&D rests, also, on the internalization of (positive net) R&D spillovers and other imperfections that may cause the private return on R&D to deviate from the social return.

A fourth potential argument is that individual projects may be very risky and therefore not undertaken by firms. However, that is a weak argument as a whole. If a firm will not fund a specific risky project, but potentially highly profitable project, it should go to the financial markets, to share risk. They may have problems understanding the project and giving it due credit for its value, but that is a problem facing any government controlled financing mechanism as well as argued above.

But both of the above arguments do suggest that government regulation in the field of financial markets should be careful not to put in place unwarranted barriers that raises the cost of, or reduces the amount of, capital that would otherwise flow to in particular small innovative firms that will have to rely on external capital.

However, in order for government spending on R&D to be desirable, the total net benefits must exceed total cost, including the distortionary cost.

As a simple benchmark a proportional (wage) income tax may be used. Raising the tax to finance incremental government outlays reduces the after-tax wage rate and hence induces households to replace consumption of market goods by leisure. The associated reduction in the income tax base, in turn, generates a negative effect on tax revenue (essentially a “fiscal externality”), which should be counted as part of the overall cost of government spending.

Augmenting the direct resource cost of (marginal) government spending by the distortionary cost of taxation produces the “marginal cost of public funds” (or MPCF), which may be written as:

$$\text{MPCF} = 1 / (1 - (t / (1 - t) * e))$$

Where e is the (uncompensated) wage elasticity, t is the marginal effective tax rate on wage income (including income and indirect taxes as well as the contribution from means tested government transfers) and it is assumed that a proportional income tax is used.

If $t=50$ pct. and $e=0.1$, then $\text{MCPF}=1.11$. I.e., the total benefits of the marginal government projects should exceed its direct resource costs by at least 11 pct.

Using an endogenous growth model empirical evidence suggests that if the government invests in productive categories such as for example R&D, education, health etc. it enhances growth but not if it is financed by distortionary taxes.²

The overall conclusion therefore is that there is a good case for the government to subsidize R&D – as long as the benefits exceed the marginal costs. The problem, however, is that there is extreme uncertainty about what the exact net benefits may be. The empirical literature in the field is comprehensive but unfortunately the estimates are very vulnerable and insecure. There are a lot of methodological problems and collecting proper data can also be a problem, especially when comparing different countries over time (panel data).

Going through the literature the overall picture is that the gain from private investments is bigger than for public investments. Some studies even find that the effects from public investments in R&D are negative or insignificant.³

A conclusion like that needs some qualification. Taken at face value it means that publicly performed R&D crowds out resources that alternatively could be used by the private sector, hereby private R&D. However, regression analyses do not capture all aspects of the relationship. For instance, while business-performed R&D is likely to be more directly targeted towards innovation and implementation of new innovative processes in production, other forms of R&D (e.g. health, energy, and university research) may not raise technology levels significantly in the short run. They may, however, generate basic knowledge with possible “technology spillovers”. These spillovers are not to be neglected as the business sector has the opportunity to take an advantage of the research done in the government sector.

Comparing different studies can be difficult because the estimated effect depends on the econometric method used, variables controlled for and time series looked at. Moreover, some studies use growth in GDP as dependent variable while others use TFP or labour productivity.

² Kneller et al. (1998).

³ See for instance Bassanini and Scarpetta (2001).

Box 2 - Citations

- “Currently, we do not have the robust and reliable ..tools..to state with any certainty what the benefits of additional public support might be” (Salter, 1999).
- “The findings (the effect of public R&D on private R&D) overall are ambivalent.... and the “experiment(s)” that the investigators envisage is not adequately specified” (David et al., 2000).
- “The relationship between R&D and innovation is a complex, non-linear one” (Guellec et al., 2001).

The question, however, is: does new research crowd out other developmental activities? Does the government employ a researcher in a public research institution, who would have carried out research in the private sector with potentially equally sized externalities? Furthermore, there might be some private companies that will stop financing research because the government is now paying for it.

The first crowding out effect is difficult to manage whereas the second effect has been estimated in some studies. Unfortunately, the picture is not clear since the empirical results are diverging. Some would even argue that public investments could generate more private research because of the fact that the level of research has to be at a certain level to be able to absorb the research coming from other places and countries, the so called absorption capacity.

Still there are some problems. First of all there is a methodological risk that both private and public institutions will, at the same time, identify new potential scientific areas and therefore scale down their expectations and with it investments in other areas. Statistically, the hypothesis of a negative or weak crowding out effect will be confirmed both at firm level and industry level. In addition, those industries that expand their research areas will tend to squeeze the market for researchers and innovators on other industries.

Because of the above the most correct thing to do is to look at the macro level. The macro level has the advantage of connecting the development in the total public research investments with the total private investments.

The macro level releases new problems. Both the public and private research might be determined by the same market trends and most importantly the total supply of highly qualified labour. In other words, the total amount of innovation grows when the general frameworks makes it propitious.

Especially in the short run where the supply can be rather stiff, there is a risk that more funds for public research result in crowding out of private research and/or higher salaries for the affected researchers.⁴ In the long run, however, the supply of researchers might increase.

For a small open economy like Denmark the calculation is further complicated by the fact that part of the social returns accrue to foreign consumers and foreign firms because of international spillovers. A study by OECD5 finds that the long-term elasticity of foreign R&D is as high as 0.459. The high elasticity suggests that other countries' R&D matter more than domestic R&D for the purpose of productivity growth, provided that the country and its industries have the capacity to absorb technology coming from abroad. The result is consistent with the well-known fact that domestic social return on R&D is higher than the private one. Several studies show⁶

⁴ Romer (in Jaffe et al., 2000) refers to a study that showed that an increase in the public investments in R&D as a pct. age of GDP of 11 pct. from 1980 to 1984 resulted in an increase in the researcher's salaries of 5-6 pct..

⁵ Guellec and Van Pottelsberghe de la Potterie (2001).

⁶ See for instance Coe and Helpman, 1995.

that smaller countries benefit more from foreign R&D than larger ones. This might be because researchers from small countries cooperate more with researchers from abroad and also because small countries do not have the economic capacity to research as much as bigger countries. To be able to absorb the foreign research the country has to have a certain amount of technology itself, the free-rider approach does not work.

The above insecurities are illustrated in the box below.

Box 3 - Tentative cost-benefit analyses of public investments in R&D

The two tentative cost-benefit analyses are based on different empirical findings but because of different insecurities they should not be viewed as conclusive in any way. In spite of that, the two examples do give a picture of the sensitiveness by having both an unfavourable example and a favourable example. The former can represent countries with a high marginal tax rate whereas the latter can represent countries with a low marginal tax rate.

	Unfavourable	Favourable
The social benefits:		
Additional R&D volume attributable to the public investments ^a		50 pct. 100 pct.
Social return to the additional R&D.....	30 pct.	70 pct.
Flow of social return starts in. 2 years	2 years	2 years
Social rate of depreciation of R&D.....	10 pct.	0 pct.
Discount rate.....	6 pct.	6 pct.
Risk premium.....	4 pct.	2 pct.
Windfall gains ^c	50 pct.	0 pct.
Total social benefits.....	118 pct.	499 pct.
The social costs:		
Social opportunity costs of the investments (distortion loss) ^a ..	40 pct.	10 pct.
Administration costs government ^a	2 pct.	2 pct.
Administration costs performers ^a	5 pct.	5 pct.
Opportunity spillovers of additional R&D workers ^b	15 pct.	5 pct.
Total social costs.....	158 pct.	142 pct.
Social net benefits.....	- 40 pct.	356 pct.
Internal rate of return.....	- 1.3 pct.	35 pct.

Notes: ^a As a pct.age of the investments.
^b As a pct.age of the social benefits.
^c Windfall gains are that part of the investments that do not lead to extra R&D but to higher profits for entrepreneurs and higher salaries for workers.

Source: The presentation is based on Cornet (2001).

The total benefits are calculated using this formula:

$$\frac{R}{(1 + \delta + \pi)^{y-1} (\alpha + \delta + \pi)}$$

where R = Social return to the additional R&D, δ = Social rate of time preference,
 π = Risk premium, α = Social rate of depreciation of R&D.

Whether it is advisable or not for a country to invest in more R&D depends on the country's initial frameworks. In the two examples illustrated here there is a magnificent difference between the outcomes since the welfare effect may be negative, but may also be very positive. Hence, the available empirical results about the ingredients of the costs and benefits do not support a final conclusion about

the sign of the true social cost-benefit analysis.

The most important factors determining the outcome are:

- Additional R&D volume attributable to the public investments
- Social return to the additional R&D
- Social rate of depreciation of R&D
- Opportunity spillovers of additional R&D workers

To the extent that the outcome of R&D has public goods character, the internalization of the associated spill-over effects calls in principle for government intervention.

This is perhaps most relevant as far as basic research is concerned, although it should be pointed out, that spillovers in this case are likely to be global or regional in nature. This implies, in turn, an argument in favour of, e.g., EU-wide financing of basic research projects although a successful outcome requires a network of well-functioning research institutions, including sufficient competition. This may be in areas where institutions are under-developed and where EU member states may learn from the experience from the US.

8. Indicators of R&D

When measuring the amount of R&D you have the choice to look either at input or output measures – or both. The simplest input indicator is the amount of investments undertaken in R&D. The most interesting thing to look at, however, is the output. The social return of governmental investments in R&D is typically examined on the basis of the following three categories:

1. The scientific return (measured by the production of scientific articles etc.).
2. The technological return (measured by the number of patents).
3. The educational return (measured by the supply of highly qualified labour in the form of candidates and ph.d's).

Whether it is possible to realize a high return of the governmental investments in R&D, and hereby ensure the quantity and quality of the research based results, will indeed depend on the organization of the research system.

Figure 6a - Number of patents in "triadic"* patent families per inventor's country of residence

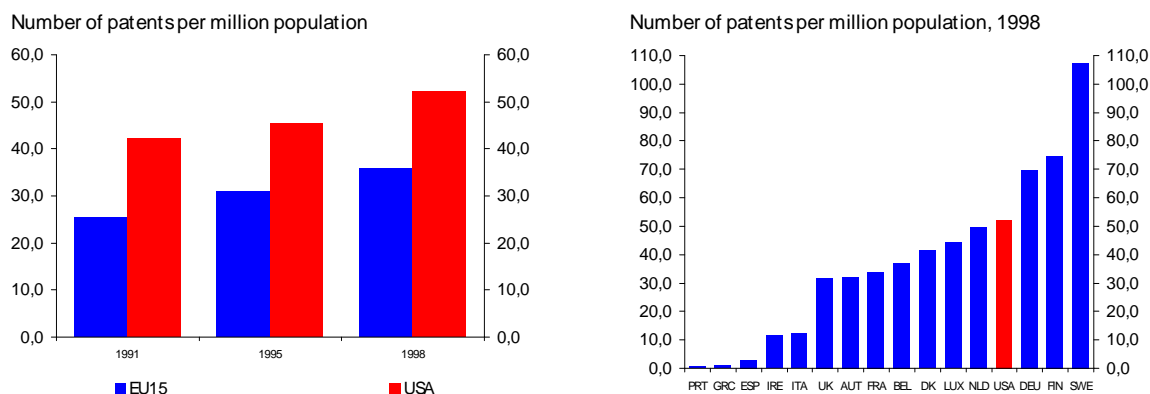
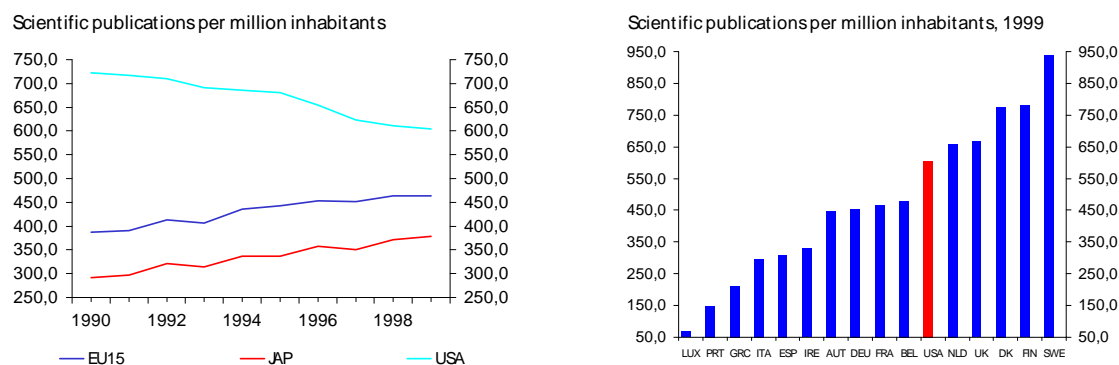


Figure 6b - Scientific publications per million inhabitants



Note: *Patents filed all together to the EPO, the USPTO and the JPO to protect a single invention

Source: OECD STI Scoreboard 2003/ National Science Foundation, Science and Engineering Indicators 2002, www.nsf.gov and Eurostat.

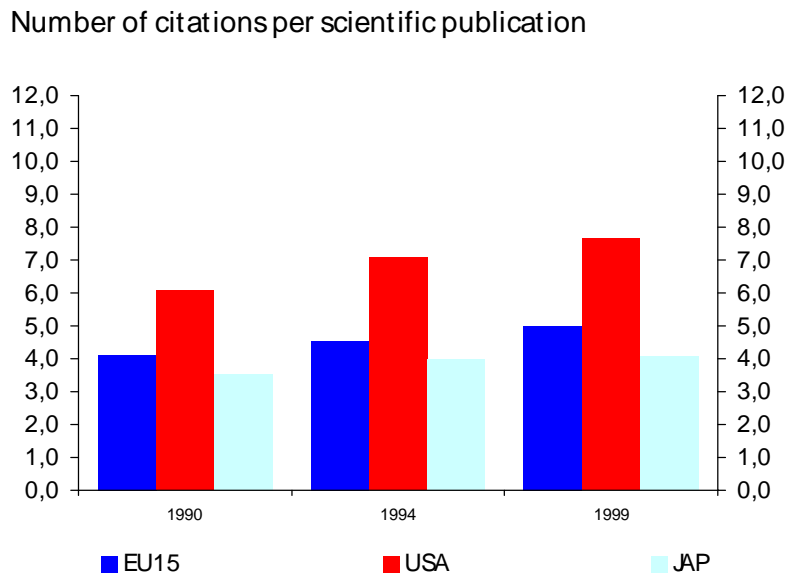
Patents are increasingly used as indicators of the output of invention activities. The number of patents granted to a given firm or country may reflect its technological dynamism. The drawbacks of patents as indicators, however, is that many innovations do not correspond to a patented invention; many patents correspond to an invention with a near zero technological and economic value, and many patents never lead to innovation. We do not have any statistics telling us what the "success rate" is but with an assumption that all countries are experiencing the same pattern the indicator still gives a good picture of where the countries relatively stand.

The US is again in front of the EU but three countries stand out among the rest; Germany, Finland and Sweden. These countries all file more patents than the USA. The fact that government non-defence R&D expenditures are higher in Europe, *cf. figure 6a*, while outcomes in terms of publications, patents etc. are less impressive indicate that Europe has an institutional governance problem rather than a government spending shortfall.

Another interesting output indicator is number of scientific publications. Again there is a huge difference between the countries but for the EU as a whole there is progress, *cf. figure 6b*.

To be able to value the published scientific articles (quality), one can examine how many times a certain publication has been cited.

Figure 7 - Citations of scientific articles by region of origin



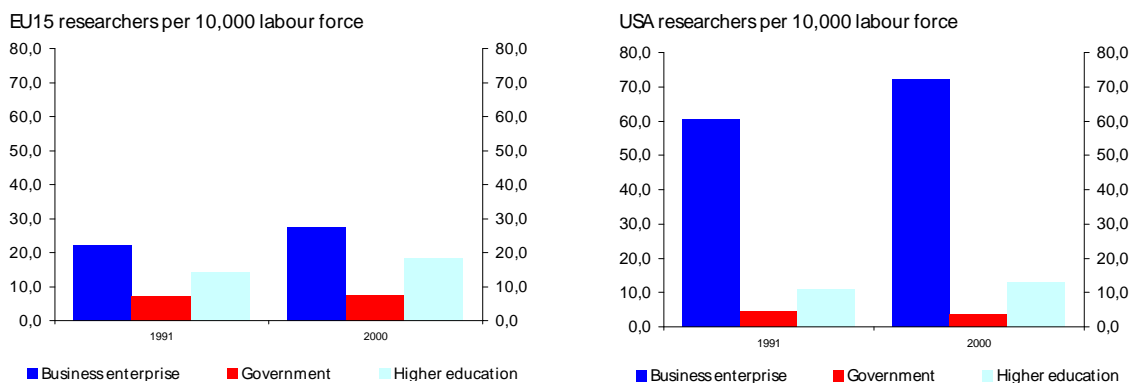
Note: Citations are defined as citations by scientific papers to scientific literature. Geography refers to cited region. Citations are on the basis of a three-year window with a two-year lag; for example, 1999 citations counts are articles published in 1999 citing articles published in 1995-97.

Source: OECD STI Scoreboard 2003 / National Science Foundation, Science and Engineering Indicators 2002, www.nsf.gov.

The EU lacks behind again – but only compared to the US. In Japan the number of citations per scientific publication is about 4 while the figure in the EU is about 5. All three regions have a rising tendency. Of course the indicator reflects the possible fact that English publications are more often cited than for instance publications from Germany, France, and Japan etc.

It seems that the EU still has a way to go although the time series show an upward tendency. The growth in the EU has for a while been stagnant which might have an impact on the investments on R&D. Looking at the number of researchers in the EU compared to the US there is a significant difference.

Figure 8 - Researchers per 10,000 labour force by sector of employment



Note: USA data for 2000 is 1999 numbers. EU data for higher education 2000 is in fact 1999 number.

Source: OECD STI Scoreboard 2003.

The explanation of why the EU is lacking behind might be the slow economy but it might also be the small amount of investments in R&D and thereby also the relatively low amount of researchers.

9. The government can support R&D in different ways

Member states' effort has in most recent years concentrated on the following areas:

- New governance structures for universities and advanced learning institutions.
- Reward of excellence in allocation of research funds.
- Reconsidering the cost split between users and suppliers of further education partly to finance more basic research (UK, GER).
- Streamlining the number of institutions in light of the need for specialization and the globalised character of research.
- Serious efforts to improve quality of education, in some countries also the follow up to disappointing test scores in international and national evaluations.
- Restructuring the tax systems in order to attract researchers and to make it more favourable to research.

However, most evaluations suggest there is still some way to go on these fronts with uneven progress in various countries and various areas of education and research.

In addition to these policy fronts, more focus may be attached to:

- The international dimension: The globalised character of advanced research and the large spill-over of positive effects between relatively many, smaller countries suggest more division of work, removing barriers to mobility for highly skilled and research workers and more co-funding of projects, for example over the EU-budget.
- Ensuring that overall economic and institutional incentives are geared towards expanding the supply of innovative workers for both the private and public sector, and for the latter that work and pay conditions in critical areas are sufficiently attractive to match offers from private firms and US-institutions.

Bear in mind that such efforts have to be subjected to important horizontal constraints and guidelines:

- The EU government's fiscal positions need to be improved, leaving some countries with little or no overall room for aggregate spending increases and with considerable budget gains from reforms needed just to plug the present and future deficits.
- Tailoring policies to individual country challenges, which differ widely in terms of challenges.

Box 4 - Major structural R&D changes and reforms in the EU countries

The table shows that all countries in the EU are working on different ways to promote R&D and innovation.

The reforms that have been adopted for the last 3 years have been categorized into 4 main headlines, which seem to be the main focus for the present. The year indicates when a certain reform or initiative has taken place.

	Governance	Tax incentives	Supply of researchers	Cooperation
between private-public				
Austria.....	2002	2002	2001	
Belgium.....		2002, 2003		
Czech Republic.....	2003			
Cyprus.....	2003			
Denmark.....	2001, 2002		2002	2002, 2003
Estonia.....				2003
Finland.....				
France.....	2002	2003		
Germany.....	2002, 2004		2001	2002
Greece.....		2002		
Hungary.....	2003			
Ireland.....	2001, 2003			
Italy.....	2001, 2002, 2003			2003 2001, 2003
Latvia.....	2003			
Lithuania.....	2003			
Luxembourg.....	2002, 2003			
Malta.....				
Netherlands.....	2001, 2002			
Poland.....				
Portugal.....	2001, 2002	2002		2003
Slovakia.....				
Slovenia.....	2003			
Spain.....	2001	2001, 2002, 2003	2001	
Sweden.....	2001			2001, 2002
UK.....	2001	2001, 2002, 2003		

Note: For a more detailed description of the reforms, see appendix.

Source: Cardiff reports, 2002, 2003 and 2004.

Appendix 1: Regarding the cost-benefit analysis, cf. box 3

Additional R&D volume

- Bang for the buck argument: How much additional R&D spending does a public euro elicit?
- The re-labelling (or fungibility) argument: The public investments provide an incentive to label previously unlabelled R&D activity as R&D.
- The price-versus-volume argument: The extra investments allow R&D personnel to raise their wage demands, since labour supply is inelastic in the short run.

From this evidence we conclude that the amount of additional R&D volume attributable to the public investments is equal to 50-100 pct.. The remainder is windfall gains.

Social return of the additional R&D

Based on empirical findings and the fact that Denmark is a small and open economy. These factors mean that part of the social returns accrue to foreign consumers and foreign firms because of international spillovers. It is therefore assumed that the return amounts to 30-70 pct. of the additional R&D.

The social output of R&D for a large and relatively closed economy (for example the US) is larger than the social output of R&D for a small open economy (for example Denmark). This finding is important because many estimates of the social output on R&D are obtained for the US.

Flow on social return

There is a certain lag of the investments. Assumed to be 2 years.

Social rate of depreciation

The literature typically finds it to be between 0-10 pct.. (Caballero and Jaffe, 1993; Jones and Williams, 1998).

Discount rate

Is set to 6 pct. (nominal).

Risk premium

R&D is risky. Projects can fail, both because of technological reasons but also because the market might not be ready for the project. As long as there is a certain risk it is not sufficient just to use the rate of time preference. The estimated risk premium lies between 2-4 pct.

Social opportunity cost (distortion loss)

Public investments are not free of charge. They either have to be collected through distortionary taxes or by lowering the expenditures elsewhere. The literature finds it to lie between 10-40 pct. of the investments.

Administration costs government

Investments in R&D projects demand some sort of administration. These administrations costs are assumed to make up 2 pct. of the investments.

Administration costs performers

The projects that are supported by the government have probably spent some time applying for the funds. Furthermore, after receiving the funds the money have to be administered.

Opportunity spillovers of additional R&D workers

Additional R&D labour brings additional opportunity costs, since some of the workers who turn to a R&D job are likely to have generated spillovers in their previous job too. These spillovers are assumed to lie between 5-15 pct. of the social benefits.

Internal rate of return

The internal rate of return to the investments is the rate of time preference when social costs equal social benefits.

Appendix 2: Regarding the structural reforms, cf. box 4

Austria	2001. Several initiatives to attract foreign ICT experts have been adopted. 2002. Research bonus for research expenditures was raised from 3% to 5%. Different research promotion funds.
Belgium	2002. Reduction of personal tax on scientific researchers' income. 2003. As of Oct 2003, employers (universities, high schools and national scientific research funds) will be exempted from depositing half of the payroll tax relating to the incomes of researchers.
Czech Republic	2003. Approval of the National Research Plan providing for the concentration of available human resources and funding on the priority areas of research.
Denmark	2001. A number of research centres have been set up. Establishment of a Ministry of Science, Technology and Innovation. 2002. Introduction of a green card to make it easier for businesses to obtain work permits for foreign nationals. Tax credit scheme to enhance collaboration between businesses and public-sector research institutions. Strengthening the university managements. 2003. Action Plan for enhanced interaction between public sector research and education institutions.
Estonia	2003. Program to support long-term cooperation between enterprises and research institutions.
France	2002. Four research and technological innovation network have been set up specifically for the life sciences. 2003. Finance Act allows R&D investment to be exempted from the basis of assessment for trade income tax.
Germany	2001. Work is done to attract foreign IT specialists. Several initiatives to promote research. 2002. Different initiatives to enhance the education sector. Programs to foster research cooperation. 2004. Measures to ease the economic use of inventions. Venture capital initiatives for high tech start-ups. Initiative with the social partners "Partner for Innovation". Masterplan "Information society Germany 2006". <i>Envisaged 2005. Extension of venture capital funds; initiatives to foster public private partnership, promotion of Spin-offs from universities and extension of top university research.</i>
Greece	2001. Establishment of a Special Secretariat for the Knowledge-based society. 2002. A law to giving R&D expenditures favourable tax treatment (50% R&D tax credit).
Hungary	2003. A government fund generated from mandatory contributions from businesses is proposed to be set up in 2004.
Ireland	2001. Industrial Designs Act - protection of industrial designs.

	2003. Science Foundation Ireland (SFI) announced substantial research investment in three new centres for science, engineering and technology.
Italy	2001. Fund for Basic Research to finance the strengthening of public and joint public-private research facilities. Initiatives to create centres of research excellence at universities and graduate schools. 2002. Universities more attention to labour market regards supply of courses. 2003. "Plan for Digital Innovation of Firms" - strengthen innovation, foster technology transfer from public research centres to firms etc. Different initiatives to enhance basic research. National portal set up to provide updated and online information both to researchers wishing to work temporarily in Italy and for Italians wishing to work in other countries' research centres.
Latvia	2003. National Innovation Programme for 2003-2006 approved. Establishment of united National Innovation System coordination, creation of favourable environment for innovative activity, support for drafting of mechanisms to implement innovative solutions into commercial activity.
Lithuania	2003. "Innovation in Business Program". Goal to improve competitiveness of Lithuanian industry and business by creating favourable conditions for establishment of new companies and for modernisation of the existing ones. Development of Science Parks
Luxembourg	2002. Initiatives to enhance public research - project: "University of Luxembourg", meant to complete and to rationalize the embryos of existing superior education and research structures. 2003. Portal for innovation and research was launched. Offers optimum services to companies and research centres concerning innovation, R&D and the creation of innovative business companies.
Netherlands	2001. Trying to activate and intensify the exploitation of knowledge within universities. Setting up of ECV Knowledge Centre - to build a bridge between working and learning. 2002. A "training impulse subsidy scheme" was launched to support innovative initiatives from within the private sector. Technostarters scheme - aims to improve the orientation of knowledge institutes toward knowledge transfer and exploitation by encouraging them to offer technostarters a good infrastructure and support.
Portugal	2001. Integrated Innovation Support Program (PROINOV). Initiatives to strengthening business investments in R&D. 2002. Public support through tax incentives. Deduction rates have been increased. New programs have been set up to support business enterprise R&D. 2003. The IDEIA Programme (Business Applied Research and Development) is addressed to applied research projects, and involves partnerships between firms and institutions of the National Scientific and Technological System, aiming at the creation of new products, services or processes.
Slovenia	2003. Two public agencies will be established in 2004 - in the field of research activity and in the field of technological development.
Spain	2001. Extension of tax incentives to promote R&D and innovation. Special aid programs to fund technical research. Initiatives to increase the number of researchers. 2002. Corporate income tax reform improves tax incentives to R&D and innovation by broadening the range of deductible expenses. 2003. Tax deductions for research, development and technological innovation activities.
Sweden	2001. Establishment of a new organisation for research funding. Promoting links between universities and business sector. All universities and university colleges shall be given the opportunity to set up holding companies. Initiatives to restructure research institutes so they become fewer, larger and more competitive internationally. 2002. Initiated a project with representatives from the business sector, social partners and universities. Aims to formulate an aggressive strategy for a

	coherent innovation policy. Primary objective is to transform new knowledge from universities into enterprise and growth.
UK	2001. More autonomy to universities. Considering proposals for R&D tax incentives for larger firms. 2002. R&D tax credit for large companies introduced.

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PUBLIC SECTOR EFFICIENCY: EVIDENCE FOR NEW EU MEMBER STATES AND EMERGING MARKETS*

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Non-technical summary

The importance of the efficient use of public resources and high-quality fiscal policies for economic growth and stability and for individual well-being has been brought to the forefront by a number of developments over the past decades. Macroeconomic constraints limit countries' scope for expenditure increases. The member states of the European Union are bound to fiscal discipline through the Stability and Growth Pact. Globalisation makes capital and taxpayers more mobile and exerts pressure on governments' revenue base. New management and budgeting techniques have been developed and there is more scope for goods and service provision via markets. Transparency of government practices across the globe has increased, raising public pressure to use resources more efficiently.

Our contribution in this study is essentially threefold: first we discuss and survey conceptual and methodological issues related to the measurement and analysis of public sector efficiency. Second we construct Public Sector Performance and Efficiency composite indicators for the ten new member states that acceded to the European Union (EU) on 1 May 2004 as compared to emerging markets from different regions, future EU candidate countries and some current EU member countries that show features of emerging markets and/or are undergoing a catching up process. Third we use Data Envelopment Analysis to compute input and output efficiency scores and country rankings, which we combine with a Tobit analysis to see whether exogenous, non-discretionary factors play a role in explaining expenditure inefficiencies. To our knowledge, such an efficiency analysis has not been applied before to this set of countries.

The Public Sector Performance and Efficiency composite indicator includes information on administrative, education, health, income distribution, economic stability, and economic performance

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outcomes. It is interesting to see that a relatively strong performance of the new EU member states on human capital/education and income distribution contrasts with a relatively weak one for economic performance and stability. There is no clear pattern of distinction between Baltic and Central European countries while the two island countries post strong values for all indicators for which data is available. Asian Emerging economies performed very strongly on administration, human capital and economic stability and growth. Overall performance was very equal as regards health indicators.

The results of our analysis show that expenditure efficiency across new EU member states is rather diverse, especially compared to the group of top performing emerging markets in Asia. From the analysis of composite public sector performance (PSP) and efficiency (PSE) scores we find that countries with lean public sectors and public expenditure ratios not far from 30% of GDP tend to be most efficient. PSE scores of the most efficient countries are more than twice as high as those of the poorest performers.

From the DEA results we see that a small set of countries define, or are very close to, the theoretical production possibility frontier: Singapore, Thailand, Cyprus, Korea, and Ireland. From an input perspective the highest ranking country uses 1/3 of the inputs as the bottom ranking one to attain a certain public sector performance score. The average input scores suggest that countries could use around 45 per cent less resources to attain the same outcomes if they were fully efficient. Average output scores suggest that countries are only delivering around 2/3 of the output they could deliver if they were on the efficiency frontier.

Finally we examine via Tobit analysis the influence of non-discretionary factors, notably non-fiscal variables, on expenditure efficiency. Our analysis suggests that the security of property rights, per capita GDP, the competence of civil servants, and the education level of people positively affect expenditure efficiency. Due to significant correlation, however, the two competence/education variables are only significant in separate regressions while the other two variables are robust over all specifications. International trade openness, trust in politicians and transparency of the political system have not been found to display a significant influence on expenditure efficiency (even though only the coefficient for public trust in politicians had the wrong sign).

1. Introduction

The importance of the efficient use of public resources and high-quality fiscal policies for economic growth and stability and for individual well-being has been brought to the forefront by a number of developments over the past decades. Macroeconomic constraints limit countries' scope for expenditure increases. The member states of the European Union are bound to fiscal discipline through the Stability and Growth Pact. Globalisation makes capital and taxpayers more mobile and exerts pressure on governments' revenue base. New management and budgeting techniques have been developed and there is more scope for goods and service provision via markets. Transparency of government practices across the globe has increased, raising public pressure to use resources more efficiently.

The adequate measurement of public sector efficiency is a difficult empirical issue and the literature on it, particularly when it comes to aggregate and international data, is rather scarce. The measurement of the costs of public activities, the identification of goals and the assessment of efficiency via appropriate cost and outcome measures of public policies are very thorny issues. Academics and international organisations have made some progress in this regard by paying more attention to the costs of public activities via rising marginal tax burdens and by looking at the composition of public expenditure. Moreover, they have been shifting the focus of analysis from the amount of resources used by ministry or programme (inputs) to the services delivered or outcomes achieved (see, for instance, OECD (2003), Afonso, Ebert, Thöne and Schuknecht, (2005), and Afonso, Schuknecht and Tanzi (2005)).

Our contribution in this study is essentially threefold: first we discuss and survey conceptual and methodological issues related to the measurement and analysis of public sector efficiency. Second we construct Public Sector Performance and Efficiency composite indicators for the ten new member states

that adhered to the European Union (EU) on 1 May 2004 as compared to emerging markets from different regions, future EU candidate countries and some current EU member countries that show features of emerging markets and/or are undergoing a catching up process.¹ Third we use Data Envelopment Analysis to compute input and output efficiency scores and country rankings, which we combine with a Tobit analysis to see whether exogenous, non-discretionary (and non-fiscal) factors play a role in explaining expenditure inefficiencies.² To our knowledge, such an efficiency analysis has not been applied before to this set of countries.

On the second and third objective, the study finds significant differences in expenditure efficiency across new member countries with the Asian newly industrialised economies performing best and the new member states showing a very diverse picture. The econometric study shows that income, public sector competence and education levels as well as the security of property rights seem to facilitate the prevention of inefficiencies in the public sector.

The paper is organised as follows. In section two we discuss conceptual issues regarding public expenditure efficiency. In section three we present the methodologies used for the measurement of public expenditure efficiency. Section four reports stylised facts regarding the new EU member states and various ways for assessing public sector efficiency: via i) performance and efficiency analysis based on cross-country composite indicators, ii) a non-parametric efficiency analysis, and iii) an explanation of inefficiencies via non-discretionary factors. Section five concludes.

2. Measuring efficiency in public expenditure: conceptual issues

Economists are concerned about the efficient use of scarce resources. The concept of efficiency finds a prominent place in the study of the spending and taxing activities of governments. Economists believe that these activities should generate the maximum potential benefits for the population and they castigate governments when, in their view, they use resources inefficiently. International organisations, such as the World Bank and the IMF, often express concern about governmental activities that they consider inefficient or unproductive.

Like the proverbial elephant, efficiency or, more often inefficiency, is easier to recognize than to define objectively and precisely. Merriam Webster reminds us that efficiency has to do with the comparison between input, and output or between costs and benefits. At a given input, the greater the output, the more efficient an activity is. A machine is efficient when, at a given cost, it produces the largest possible output. For example, a furnace is efficient when it produces a good amount of heat at a given cost. A car is efficient when it goes a good number of miles with a gallon of gasoline.

The measurement of efficiency generally requires: (a) an estimation of costs; (b) an estimation of output; and (c) the comparison between the two. Applying this concept to the spending activities of governments, we can say that public expenditure is efficient when, given the amount spent, it produces the largest possible benefit for the country's population. Here the word benefit is used because economists often make a distinction between output and outcome, a distinction to which we shall return later.

Often efficiency is defined in a comparative sense: the relation between benefits and costs in country A is compared with that of other countries. This can be done for total government expenditure, or for expenditure related to specific functions such as health, education, poverty alleviation, building of infrastructures and so on. If in country A the benefits exceed the costs by a larger margin than in other countries, then public expenditure in country A is considered more efficient.

¹ A method pioneered by Afonso, Schuknecht and Tanzi (2005).

² See also Gupta and Verhoeven (2001), Clements (2002), St. Aubyn (2003), Afonso, Schuknecht, and Tanzi (2005) Afonso and St. Aubyn (2005a, b), the latter including a combination of non parametric with econometric analysis.

The simple comparison outlined above requires that both costs and benefits be measured in acceptable ways. This is easy, or easier, for machines (cars, furnaces) but difficult for governmental activities. It is often difficult to measure the benefits from a governmental expenditure. But, one could assume that, at least the costs (i.e., the resources used) should be easy to determine. Unfortunately, this is not always so. Deficient budgetary classifications, lack of reliable data, difficulties in allocating fixed costs to a specific function, and failure to impute some value to the use of public assets used in the activity can also hamper the determination of real costs.

2.1. Measuring costs

A problem that arises from the comparison of, say, the efficiency of a car or a furnace with that of public spending is that additional amounts of inputs such as gasoline, petroleum or electricity can normally be bought by a consumer at the same price as previous amounts. In other words it is possible to assume a perfectly elastic supply curve for the input used by an individual. This, however, is not the case for public spending. Public spending is financed by tax revenue and more revenue can be obtained only at progressively higher marginal costs.

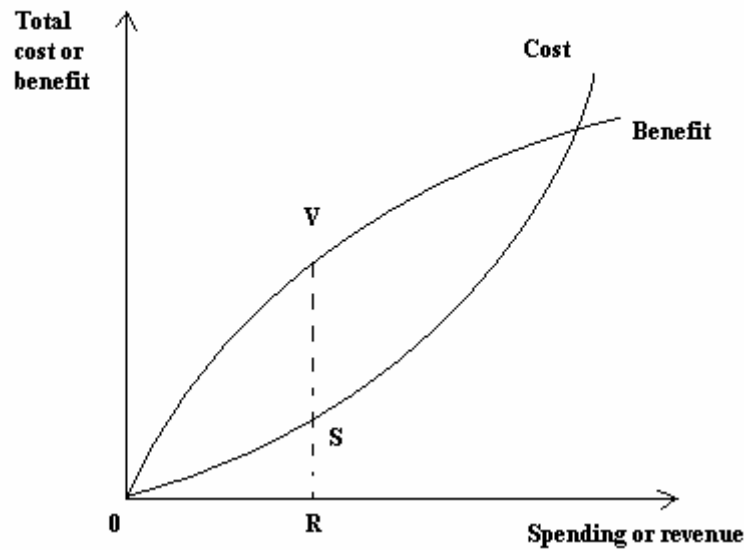
It is a well established conclusion, supported by both theory and empirical work, that, once a tax administration is in place, the marginal cost of tax revenue is generally higher than the average cost, and that marginal costs can increase rapidly. This is true in all countries but perhaps more so in emerging markets and developing countries. These countries face great difficulties in establishing good and efficient tax systems. As a consequence, they must often rely on revenue sources that impose: (a) dead weight costs, because of the distortions and the disincentives that they impose on the economy; (b) high costs for the countries' tax administrations; and (c) high compliance costs for the taxpayers. Thus, the true cost to the economy of the marginal dollar collected in taxes can significantly exceed the dollar received by the government. The assumption of a perfectly elastic supply curve for tax revenue is not tenable.

Each additional dollar of spending, requiring an additional dollar of revenue, will impose additional and rising marginal costs on the economy unless that dollar comes from reducing some other spending. The concept of efficiency in public spending must take this into account. Both the level of taxation and the quality of the tax system should become essential elements for the evaluation of the efficiency of public spending. This is quite apart from whether the use to which the tax revenue is put is efficient or not. An analysis that focused only on the use of revenue would be missing these important aspects.

A simple graphical presentation can explain more formally this important, obvious, but often-ignored point. It is made ignoring, for the time being, the efficiency in the actual use of the tax revenue. The focus, here, is on the efficiency in the tax collection side.

In Figure 1, the vertical axis measures both the benefits from public expenditure to the country's population and the costs imposed by the taxes collected. It is assumed that the same unit of measurement can be used to measure both. The vertical axis reflects total benefits from public expenditure and total costs of taxation. These costs include, in addition to the monetary payment made by the citizens' dead weight costs, administrative costs, and compliance costs. When the tax administration is corrupt, they include also bribes paid by the taxpayers to the corrupt tax administrators.

Figure 1 – Total costs and benefits



The budgetary or monetary value of public expenditure and the tax revenue to cover the expenditures are both measured, in dollars, on the horizontal axis. More public expenditure is supposed to bring more benefits to the population. Thus the curve is positively sloped. However, the marginal benefit from each additional dollar spent can be expected to fall as more dollars are spent. Thus, the curve that reflects total benefits is concave downward, i.e., its second derivative is negative. Curve OVB in Figure 1 describes this behaviour.

As more taxes are collected, each additional dollar collected becomes more costly. Therefore, the curve, OSC, describing the total costs of taxation is concave upward, i.e., its second derivative is positive.

At a level of public expenditure equal to OR, the slopes of the two curves are equal which means that the true cost of the last dollar spent is exactly equal to the benefit created by that spending. Before point R, increasing tax revenue and public spending increases net benefits which are measured by the vertical distance of the two curves. Beyond point R, the marginal cost of taxation exceeds the marginal benefits from spending. VS is the largest vertical distance between the two curves. Thus the optimal level of public expenditure is OR.

There are other reasons why the budgetary costs of an activity can underestimate the true costs of the activity. We shall mention two such reasons. The first is that most governments do not consider in their budgetary estimates of the costs of particular activities (education, defence, etc.) the opportunity costs of using government-owned assets such as buildings, land, forests and so on. For example the budgetary cost of a school includes the costs of teachers' salaries, school equipment and so on but it often does not include the rental value of the government-owned building used. The same is true for the cost of jails, for the cost of military bases, to name a couple of examples. This means that the budgets, and especially those for particular categories of spending, often, and at times substantially, underestimate, the true costs of these activities.³

Still another reason for the underestimation of the costs of particular activities is the difficulty of allocating government fixed costs among the particular activities. When, for example, the educational budget is considered in relation to the benefits from the spending, that budget will not include any part of the fixed costs of running a government. These costs for example should include parts of the activities of parliaments, the president's office and so on.

³ A discussion of this point is contained in Tanzi and Prakash (2003).

2.2. Efficiency with wrong goals

It is difficult to recognize in the analysis of efficiency in public expenditure that expenditure can be efficient in a technical sense – i.e. the goal pursued is pursued at low cost – but nevertheless can be inefficient in the sense of public interest or social welfare. This occurs when the government efficiently produces the wrong output. This is the classic case of guns versus butter. A government may be producing public defence efficiently but it may be producing too much of it (too many guns) and too little of other social goods (health, education) compared to what the population would prefer to have.

This is clearly a political problem. In a democratic society that operates well with checks and balances at the political level, the executive branch, under the control of a democratically elected parliament, determines the size and the composition of the budget. This budget can be assumed to reflect legitimately the goals of the population. In this case, the main question is the technical one of how efficiently the money assigned to each function is being spent. Thus, we could talk about technical inefficiency and not about political, or goal related, inefficiency.

Unfortunately, much of the world is not made up of well functioning democracies. The problem of “state capture” is a common one and one that has received much attention on the part of the World Bank. But even when “state capture” is not a problem, powerful lobbies and corruption can divert the budget towards goals that are not identical with those that would reflect the public interest. In these situations the definition of efficiency becomes less clear.

In conclusion it is important to recognize the distinction between producing the wrong output (i.e. allocating the budget to the wrong activities) but spending the money in a technically efficient (i.e. low cost) way; and allocating the budget to the right activities (i.e. so much for health, so much for education, etc) but doing it in an inefficient (i.e. high cost) way. Both of these problems are common and important, and both lead to inefficiency in the use of resources. Unfortunately in many situations one finds both problems, that is, the wrong output is produced and it is produced in an inefficient way.

2.3. Efficiency with right goals

In the previous sub-section we have discussed the possibility that, for various reasons, the budget gets distorted towards goals (defence, etc.) that the majority of the population may see as lower priorities than socio-economic goals such as health, education, support for poor groups, high growth and so on. Suppose, however, that the budget allocates proportions that may be considered appropriate toward popular expenditures such as health and education. UN Guidelines have at times recommended that governments allocate specific proportions of their budgets to particular social functions. In these situations various problems may arise that would tend to make the public spending less efficient than it could be. Let us mention some of these problems.

First, a problem similar to the one mentioned in the previous section is the hijacking of the expenditure for the specific benefit of special pressure groups. For example educational spending may be redirected from primary education towards secondary or tertiary education or from scientific subjects toward law, finance and so on; health spending may be diverted from prevention to hospital care; or from rural to urban areas; or from basic health to modern hospitals in big cities; or the resources may be allocated from diseases that affect mostly poorer people, such as malaria toward old people or “higher income” diseases. These redirections within a budgetary category are often important in determining the benefits that come out from the expenditure for a basic function; they are important in determining efficiency even when they do not change the total amounts spent for the category.

Second, and a problem that has attracted little attention, is the administrative hijacking of the budgeted resources by the provider of the services. For certain public functions and especially for those that are labour-intensive, such as education and health, the role of the providers of the services, (school teachers, administrators, doctors, nurses and so on) is fundamental. Unlike cash transfers (as for the payment of pensions) that are received directly by the legal beneficiaries, much of the actual spending for activities

such as education and health goes to the salaries of the public employees that provide the services. In exchange for the salaries received these employees are supposed to produce an output in the form of services that benefit patients, school children and other users in terms of good health, more literacy, more human capital and so on.

There has been a tendency among economists to measure the output or the benefit in these activities on the basis of the budgeted allocation: the higher the expenditure, the higher the benefit. For example calls to allocate a given, or a larger, share of national budgets to health and education assume the identity between expenditure and benefits. The larger the expenditure, the greater the benefits received by the intended destinatories are assumed to be. But, as argued already by Tanzi a long time ago (1974) the two can be widely different. This difference is central to the concept of efficiency.

Health, education and similar activities absorb a large share of the government payroll and the personnel who work for the government. Through high salaries they can absorb a large share of the budget allocated to these activities thus leaving little for ancillary needs. This is especially the case when those who work in these activities (school teachers, doctors, nurses) are well organized politically. If mostly higher salaries absorb additional resources allocated to these activities and the higher salaries are not accompanied by higher productivity of the public employees, the higher public spending can be unproductive and produce little additional benefits to the students or patients. This may happen even in presumably well-run countries. For example, Aninat et al. (1999) referred to the Chilean experience where a tripling of the real public spending on health over a few years did not produce any visible or measurable increase in the quantity or quality of the services to those who used the public health system. The increase in spending simply resulted in rents for the doctors and/or nurses. In other countries large increases in educational spending had little impact on educational output.

In connection with the above point we need to return to the question of the distinction between output and outcome. This distinction should be fundamental in the analysis of the efficiency of public spending. There is often much attention paid to the outputs of certain activities and too little to the outcomes. For example the outputs of educational spending may be school enrolments, or number of students completing a grade. The outputs of health expenditure may be the number of operations performed or days spent in a hospital bed. However, the outcomes should be based on how much students learned and how many patients got well enough to return to a productive life.

Third, corruption in its various forms has a deleterious effect on public expenditure efficiency or productivity. Corruption may be linked to the existence of ghost workers, i.e. individuals who receive a salary from the government but who never show up on the job; or, in some extreme cases, are literally inexistent. It may be linked to individuals who have double jobs and who spend as little time and energy at the government job as possible. It may be linked to individuals who often do not show up in their jobs claiming illness or some other reasons. It may be linked to the assignment of incompetent individuals in sensitive jobs or to overstaffing and nepotism, and so on. There is little question that corruption and inefficiency are often two sides of the same coin so that reduction of corruption becomes a *sine qua non* for an increase in efficiency. However, the effect of corruption is more likely to be noted in outcomes than in outputs of public spending.

Finally, what we call inefficiency may be the result of cultural factors, such as attitude toward work; climatic factors, that make it difficult to work in certain periods, such as summers, afternoons, etc.; traditions, such as number and length of religious holidays, and so on. These factors may generate what, borrowing a term from the economic development literature, could be called an X-inefficiency factor, which is difficult to define and measure but which exists nevertheless and is likely to play a significant role.

3. Measuring efficiency in public expenditure: methodologies

3.1. Composite indicators for measuring public sector performance and efficiency

In recent years various attempts have been made at measuring the efficiency of public expenditure via composite indicators. These attempts are of two broad types: macro measurements, and micro measurements. Macro measurements aim at estimating the efficiency of total public spending. Micro measurements aim at measuring the efficiency of particular categories of public spending. These methods try to make progress in tackling the most important measurement challenges: they aim to identify appropriate objectives, they measure outcomes of public sector activities that proxy these objectives (rather than inputs), and they set these in relation to the costs (expenditure and taxes).

Macro measurements have as their aim an evaluation of public spending in its entirety. In other words they attempt to measure, or rather to get some ideas of, the benefits from higher public spending. When, for example, Sweden spends 1 ½ times as much in terms of GDP shares as Switzerland, what does it get in return? Micro measurements attempt to determine the relationship between spending and benefits in a particular budgetary function or even sub-function (i.e., health spending or the efficiency of spending in hospitals, or spending for protection against malaria, aids, etc.).

A first and simple macro measurement attempt was made by Tanzi and Schuknecht (1997, 2000) in trying to assess the benefits from total public spending in 18 industrialized countries. The approach attempts to determine whether larger public spending in these industrialized countries provided returns, in terms of some identifiable benefits, that could justify the additional costs, including the limitation in individual economic freedom associated with higher tax burdens, imposed by that additional spending. The key question that it tries to address is whether there is a positive, identifiable relationship between higher public spending and higher social welfare.

This approach is a comparative method which uses data on various socio-economic indicators that are available for groups of countries. The countries are classified in terms of the level of (or the increase in) public expenditure. Then public spending is related to the values of, or the changes in, the socio economic indicators. The greater the positive impact of higher spending on the indicators, the more efficient public expenditure is assumed to be.

The application of this method led the authors to conclude that additional public expenditure had not been particularly productive in recent decades. The group of countries with lower levels of public spending had socio-economic indicators that were as good as or at times better than the countries with much higher spending levels.⁴ Afonso, Schuknecht, and Tanzi (2005) refined this approach and built composite indicators of public sector performance. They distinguished public sector performance (PSP), defined as the outcome of public policies, from public sector efficiency, defined as the outcome in relation to the resources employed. This is also the first method we apply to the new member and emerging market analysis later in the paper.

Assume that public sector performance (PSP) depends on the values of certain economic and social indicators (I). If there are i countries and j areas of government performance which together determine overall performance in country i , PSP_i , we can then write

$$PSP_i = \sum_{j=1}^n PSP_{ij} , \quad (1)$$

⁴ For industrialized countries there is also no apparent relationship between the level of public spending and the values of the UNDP's "Human Development Index". See Tanzi (2004).

$$PSP_{ij} = f(I_k).$$

Therefore, an improvement in public sector performance depends on an improvement in the values of the relevant socio-economic indicators:

$$\Delta PSP_{ij} = \sum_{i=k}^n \frac{\partial f}{\partial I_k} \Delta I_k. \quad (2)$$

The performance indicators are of two kinds: process or opportunity indicators, and traditional or Musgravian indicators. As a first step, they defined seven sub-indicators of public performance. The first four look at administrative, education, health and public infrastructure outcomes. Each of these sub-indicators can contain several elements. For example, “administrative” includes indicators for corruption, red tape, quality of judiciary, and the shadow economy. These are averaged to give the value for “administrative” performance. Health includes infant mortality and life expectancy etc. A good public administration, a healthy and well-educated population, and a sound infrastructure could be considered a prerequisite for a level playing field with well-functioning markets and secure property rights, where the rule of law applies, and opportunities are plenty and in principle accessible to all. These indicators thereby try to reflect the quality of the interaction between fiscal policies and the market process and the influence this has on individual opportunities.

The three other sub-indicators reflect the “Musgravian” tasks for government.⁵ These try to measure the outcomes of the interaction with, and reactions to, the market process by government. Income distribution is measured by the first of these indicators. An economic stability indicator illustrates the achievement of the stabilisation objective. The third indicator tries to assess allocative efficiency by economic performance. Once again each of these traditional indicators may be made up of various elements. For example stability is made up of variation in output around a trend and inflation. Finally all sub-indicators are used to compute a composite public sector performance indicator by giving the sub-indicators equal weights. The values are normalized and the average is set equal to one. Then the PSP of each country is related to this average and deviations from this average provide an indication of the public sector performance of each of country.

However, these performances reflect outcomes without taking into account the level of public spending. They ignore the costs in terms of public expenditure. To get some values of public sector efficiency (PSE), the public sector performance (PSP) is weighted by the relevant category of public expenditures.

We weigh performance (as measured by the PSP indicators) by the amount of relevant public expenditure that is used to achieve a given performance level. In order to compute these so-called efficiency indicators, public spending was normalised across countries, taking the average value of one for each of the six categories specified above. To get some values of public sector efficiency (PSE) the public sector performance (PSP) is weighted by the public expenditures as follows:

$$PSE_i = \frac{PSP_i}{PEX_i}, \quad (3)$$

with

⁵ The conceptual separation between “opportunity” and standard “Musgravian” indicators is of course somewhat artificial as, for example, health and education indicators could also be seen as indicators of allocative efficiency.

$$\frac{PSP_i}{PEX_i} = \sum_{j=1}^n \frac{PSP_{ij}}{PEX_{ij}} . \quad (4)$$

The input measures for opportunity indicators are:

- (1) Public consumption as proxy for input to produce administrative outcomes (explained later in section 4.2.1);
- (2) Health expenditure (for health performance/outcome indicators);
- (3) Education expenditure (for education performance).

Our earlier study also included a measure of the outcome of public investment, but due to a lack of comparable data, this measure is not used in this study.

Inputs for the standard or “Musgravian indicators” are:

- (1) Transfers and subsidies as proxies for input to affect the income distribution;
- (2) Total spending as proxy for the input to affect economic stabilization (given that larger public sectors are claimed to make economies more stable);⁶ and
- (3) Total spending also as a proxy input for economic efficiency and the distortive effects of taxation needed to finance total expenditure.

However, there are some caveats: it is not easy to accurately identify the effects of public sector spending on outcomes and separate the impact of public spending from other influences. Moreover, comparing expenditure ratios across countries implicitly assumes that production costs for public services are proportionate to GDP per capita.⁷

3.2. Non-parametric analysis of performance and efficiency

Some recent papers have used non-parametric approaches for measuring relative expenditure efficiency across countries. One such approach is the Free Disposal Hull (FDH) analysis.⁸ This analysis is broadly based on the concept of X-efficiency advanced by Leibenstein (1966). In the words of Gupta and Verhoeven (2001), the “...central premise of the FDH Analysis is...that a producer is relatively inefficient if another producer uses less or an equal amount of input to generate more or as much output.”

An alternative non-parametric technique that has recently started to be applied to expenditure analysis is Data Envelopment Analysis (DEA). This technique, which is applied also later in this study, was originally developed and applied to firms that convert inputs into outputs (Coelli, Rao and Battese (1998) and Sengupta (2000) for a number of applications). The term “firm”, sometimes replaced by the more encompassing term “Decision Making Unit” (henceforth DMUs) may include non-profit or public organisations, such as hospitals, universities, local authorities, or countries.

⁶ For a differing view on the limits of the stabilising effect of growing government, see Cuaresma, Reitschuler and Sillgoner (2005) and Buti and van den Noord (2003).

⁷ See Afonso, Schuknecht, and Tanzi (2005) for a discussion of the several caveats of such approach.

⁸ These approaches also often suffer from the logical fallacy of “post hoc non est propter hoc”. They attribute the outcomes or the benefits to the expenditure when other factors may have contributed to these outcomes or benefits. For example, effects from changing diets may be attributed to expenditure on health. In addition, many of these approaches suffer from the difficulty of distinguishing output from outcomes. For an overview of the FDH analysis see for instance Tulkens (1993).

The DEA methodology, originating from Farrell's (1957) seminal work and popularised by Charnes, Cooper and Rhodes (1978), assumes the existence of a convex production frontier.⁹ The production frontier in the DEA approach is constructed using linear programming methods. The term "envelopment" stems from the fact that the production frontier envelops the set of observations.¹⁰

Regarding public sector efficiency, the general relationship that we expect to test can be given by the following function for each country i :

$$Y_i = f(X_i), i=1, \dots, n \quad (5)$$

where we have Y_i – a composite indicator reflecting our output measure; X_i – spending or other relevant inputs in country i . If $Y_i < f(x_i)$, it is said that country i exhibits inefficiency. For the observed input level, the actual output is smaller than the best attainable one and inefficiency can then be measured by computing the distance to the theoretical efficiency frontier.

The purpose of an input-oriented example is to study by how much input quantities can be proportionally reduced without changing the output quantities produced. Alternatively, and by computing output-oriented measures, one could also try to assess how much output quantities can be proportionally increased without changing the input quantities used. The two measures provide the same results under constant returns to scale but give different values under variable returns to scale. Nevertheless, and since the computation uses linear programming not subject to statistical problems such as simultaneous equation bias and specification errors, both output and input-oriented models will identify the same set of efficient/inefficient producers or DMUs.¹¹

The analytical description of the linear programming problem to be solved, in the variable-returns to scale hypothesis, is sketched below for an input-oriented specification. Suppose there are k inputs and m outputs for n DMUs. For the i -th DMU, y_i is the column vector of the inputs and x_i is the column vector of the outputs. We can also define X as the $(k \times n)$ input matrix and Y as the $(m \times n)$ output matrix. The DEA model is then specified with the following mathematical programming problem, for a given i -th DMU:¹²

$$\begin{aligned} & \text{Min}_{\theta, \lambda} \theta \\ & \text{s. to } -y_i + Y\lambda \geq 0 \\ & \quad \theta x_i - X\lambda \geq 0 \quad . \\ & \quad n1' \lambda = 1 \\ & \quad \lambda \geq 0 \end{aligned} \quad (6)$$

⁹ Deprins, Simar, and Tulkens (1984) first proposed the FDH analysis which relaxes the convexity assumption maintained by the DEA model.

¹⁰ Technical efficiency is one of the two components of total economic efficiency. The second component is allocative efficiency and they are put together in the overall efficiency relation: *economic efficiency* = *technical efficiency* × *allocative efficiency*. A DMU is technically efficient if it is able to obtain maximum output from a set of given inputs (output-oriented) or is capable to minimise inputs to produce the same level of output (input-oriented). On the other hand, allocative efficiency reflects the DMUs ability to use the inputs in optimal proportions. Coelli et al. (1998) and Thanassoulis (2001) offer introductions to DEA, while Simar and Wilson (2003) and Murillo-Zamorano (2004) are good references for an overview of frontier techniques.

¹¹ In fact, and as mentioned namely by Coelli et al. (1998), the choice between input and output orientations is not crucial since only the two measures associated with the inefficient units may be different between the two methodologies.

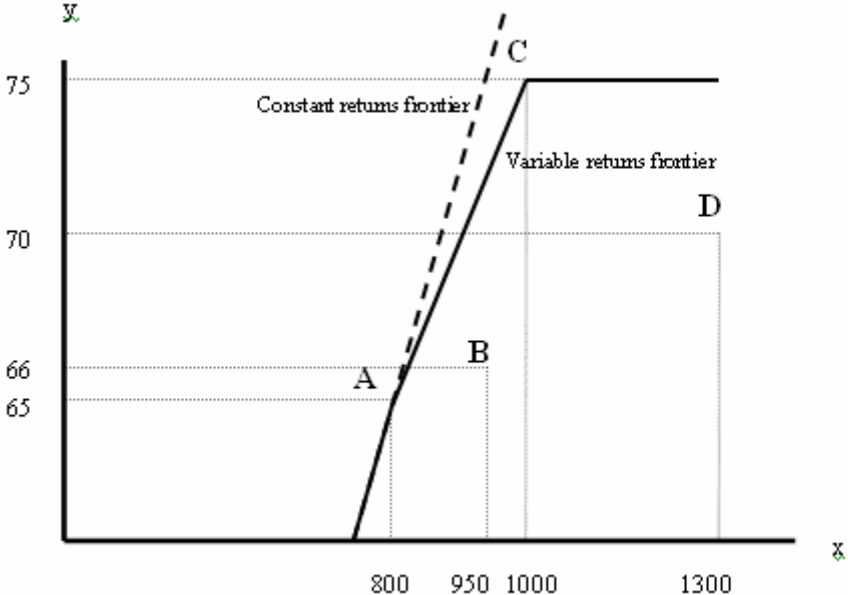
¹² We simply present here the equivalent envelopment form, derived by Charnes et al. (1978), using the duality property of the multiplier form of the original programming model.

In problem (6), θ is a scalar (that satisfies $\theta \leq 1$), more specifically it is the efficiency score that measures technical efficiency. It measures the distance between a country and the efficiency frontier, defined as a linear combination of the best practice observations. With $\theta < 1$, the country is inside the frontier (i.e. it is inefficient), while $\theta = 1$ implies that the country is on the frontier (i.e. it is efficient).

The vector λ is a $(n \times 1)$ vector of constants that measures the weights used to compute the location of an inefficient DMU if it were to become efficient. The inefficient DMU would be projected on the production frontier as a linear combination of those weights, related to the peers of the inefficient DMU. The peers are other DMUs that are more efficient and are therefore used as references for the inefficient DMU. $n1$ is a n -dimensional vector of ones. The restriction $n1' \lambda = 1$ imposes convexity of the frontier, accounting for variable returns to scale. Dropping this restriction would amount to admit that returns to scale were constant. Notice that problem (4) has to be solved for each of the n DMUs in order to obtain the n efficiency scores.

Figure 2 illustrates a one input and one output example with variable and constant returns to scale DEA frontiers for four countries: A, B, C, and D. The variable returns to scale frontier unites the origin to point A (not shown in Figure 2), and then point A to point C. The vertical axis and the horizontal axis represent respectively the output (some performance measure) and the input (some expenditure measure) used by the four countries.

Figure 2 – Example of DEA frontiers



For instance, country D may be considered inefficient, in the sense that it performs worse than country C. The latter achieves a better status with less expense. A similar reasoning applies to country B. On the other hand, countries A or C do not show as inefficient using the same criterion.

The constant returns to scale frontier is represented in Figure 4 as a dotted line. In this one input – one output framework, this frontier is a straight line that passes through the origin and country A, where the output/input ratio is higher. Under this hypothesis, only one country is considered as efficient. In the empirical analysis that follows, a priori conceptions about the shape of the frontier were kept to a minimum and the constant returns to scale hypothesis is never imposed.

3.3. Using non-discretionary factors to explain inefficiencies

The analysis via composite performance indicators and DEA analysis have assumed tacitly that expenditure efficiency is purely the result of discretionary (policy and spending) inputs. They do not take into account the presence of “environmental” factors, also known as non-discretionary or “exogenous” inputs. However, such factors may play a relevant role in determining heterogeneity across countries and influence performance and efficiency. Exogenous or non-discretionary factors can have an economic and non-economic origin.

As non-discretionary and discretionary factors jointly contribute to country performance and efficiency, there are in the literature several proposals on how to deal with this issue, implying usually the use of two-stage and even three-stage models.¹³ Using the DEA output efficiency scores computed in the previous subsection, we will evaluate the importance of non-discretionary factors below in the context of our new member and emerging market sample. We will undertake Tobit regressions by regressing the output efficiency scores, δ_i , on a set of possible non-discretionary inputs, Z , as follows

$$\delta_i = f(Z_i) + \varepsilon_i . \quad (7)$$

Previous research on the performance and efficiency of the public sector and its functions that applied non-parametric methods mostly used either FDH or DEA and find significant inefficiencies in many countries. Studies include notably Gupta and Verhoeven (2001) for education and health in Africa, Clements (2002) for education in Europe, St. Aubyn (2003) for education spending in the OECD, Afonso, Schuknecht, and Tanzi (2005) for public sector performance expenditure in the OECD, Afonso and St. Aubyn (2005a, b) for efficiency in providing health and education in OECD countries. De Borger et al. (1994), De Borger and Kerstens (1996), and Afonso and Fernandes (2006) find evidence of spending inefficiencies for the local government sector. Some studies apply both FHD and DEA methods. Afonso and St. Aubyn (2005b) undertook a two-step DEA/Tobit analysis, in the context of a cross-country analysis of secondary education efficiency.

4. A quantitative assessment of public sector performance and expenditure efficiency

4.1. Some stylised facts for the EU new member states and comparative countries

As a first step of our quantitative analysis, we will provide some stylised facts i) about expenditure levels and composition, and ii) about the relation between total expenditure and the level of economic development and economic growth. This will help gauge the situation of the new EU member countries and comparable industrialised and emerging market countries from a broader, global perspective.

The country sample which will be used in the efficiency analysis includes the ten EU new member states, (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovak Republic, and Slovenia); two candidate countries, (Bulgaria, and Romania); three “old” member countries that underwent a catching up process after entering the EU, (Greece, Ireland and Portugal); and finally nine countries that can also be considered as emerging markets, (Brazil, Chile, Korea, Mauritius, Mexico, Singapore, South Africa, Thailand, and Turkey). The selection of countries was determined by the search for a sufficient number of countries which can be compared with the new EU members and for which reasonably good quality data is available so that an expenditure efficiency analysis becomes meaningful.

¹³ See Ruggiero (2004) and Simar and Wilson (2004) for an overview.

In addition, we will make occasional references to comparative indicators for OECD or EU countries and country averages.

Table 1 illustrates total expenditure and the public expenditure composition across the sample countries, on an average basis for the period 1999-2003 (or within this period according to data availability). First, it is striking that the new EU member countries on average report similar total spending as the “old” EU members and much higher spending than most other emerging markets. When looking for relatively small governments with spending ratios of less than 40% of GDP, we only find the Baltic countries belonging to this group. Second, the divergence in expenditure ratios is enormous ranging from about 18% to 50% of GDP. The Baltics’ relatively low spending ratio is about one quarter less than that of the central European countries but it is significantly higher than the average for the Asian emerging economies (Korea, Singapore, and Thailand).

Table 1 – Public expenditure in sample countries and country groups, % of GDP

	Total spending 1/	Government consumption 2/	Transfers and subsidies 3/	Interest payments 4/	Public investment 5/	Education 6/	Health 7/
Brazil	46.6	19.5	17.1	8.2	1.9	4.6	3.3
Bulgaria	38.6	17.3	15.2	3.2	3.4	3.4	4.0
Chile	24.4	12.6	7.9	1.2	2.7	3.8	2.4
Cyprus	40.0	18.0	11.0	3.3	3.0	5.6	2.5
Czech Republic	40.6	22.7	15.0	1.2	3.4	4.0	6.2
Estonia	36.4	19.7	10.7	0.3	4.1	6.2	4.4
Greece	48.6	16.8	17.0	7.2	3.8	3.7	5.1
Hungary	50.2	22.4	15.0	4.6	3.8	4.8	5.3
Ireland	33.0	14.8	9.3	1.7	3.8	4.4	4.9
Korea	24.4	12.7			5.4	3.8	2.4
Latvia	36.6	21.4	12.7	0.9	1.3	5.8	3.5
Lithuania	33.3	20.3	11.1	1.5	2.6	5.9	4.5
Malta	45.0	20.7	14.5	3.8	4.4	4.8	6.2
Mauritius	24.7	12.9		3.8	7.5	3.8	2.1
Mexico	25.3	11.7	5.2	4.6	3.8	4.6	2.6
Poland	43.2	17.9	17.9	2.8	3.3	5.1	4.2
Portugal	46.2	20.7	14.3	3.1	3.7	5.7	6.2
Romania	33.7	15.7	13.7	2.3	1.9	3.4	3.8
Singapore	21.0	11.4	8.7	0.8			1.4
Slovak Republic	43.8	20.0	14.2	3.5	2.9	4.1	5.2
Slovenia	42.1	20.2	18.6	2.3	2.9		6.0
South Africa	26.3	18.4		4.5	2.7	5.7	3.6
Thailand	17.8	11.2			7.7	5.3	2.3
Turkey	42.7	13.8		21.3	4.6	3.5	4.0
Average	36.0	17.2	13.1	3.9	3.7	4.6	4.0
Max	50.2	22.7	18.6	21.3	7.7	6.2	6.2
Min	17.8	11.2	5.2	0.3	1.3	3.4	1.4
New EU members	41.1	20.3	14.1	2.4	3.2	5.2	4.8
Baltic countries	35.4	20.5	11.5	0.9	2.7	6.0	4.1
Other new EU	43.5	20.3	15.2	3.1	3.4	4.7	5.1
Asian NIC	21.0	11.8	8.7	0.8	6.6	4.6	2.0
Other NIC	32.8	15.2	11.8	6.1	3.5	4.1	3.2
OECD 1990s 8/	46.5	19.8	15.1		3.0	5.4	6.2

1/, 2/, 3/, 4/, 5/ - Average for 1999-2003, source: IMF World Economic Outlook (WEO), and AMECO.

6/ Average for 1998-2001, source: World Bank, WDI 2003.

7/ Average for 1998-2002, source: World Bank, WDI 2003.

8/ Source: Afonso, Schuknecht and Tanzi (2005) for OECD 1990s.

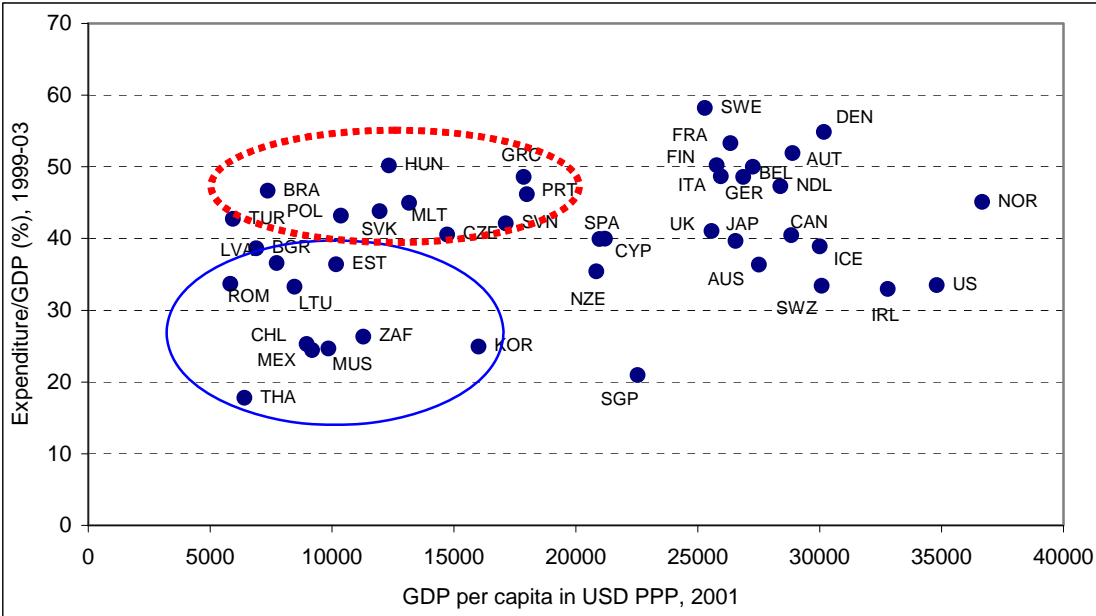
Note: columns 2 through 5 report economic expenditure categories, and that the last two columns report functional expenditure categories.

When looking at the expenditure composition, there are further major differences. But these differences are much more pronounced for less productive spending categories. Small government countries tend to spend equally as much, or even significantly more, on productive spending such as investment and education as the rest of the sample countries. New members report public consumption around 20% of GDP, twice as much as Asian emerging economies, with the reverse relation holding for public investment where new members spend roughly 3% of GDP while the Asian countries report an average above 6% of GDP. Data on transfers and subsidies is more sketchy but huge differences are noteworthy: large welfare states of similar size as in the old EU members predominate in many of the new member countries (with the Baltics' featuring somewhat lower expenditure) while such spending in Asian emerging economies is only fractional. When looking at education, differences across country groups are much smaller than for total spending. New members, old EU members and other emerging markets are not far apart from each other. In health, differences are again very significant where central European countries spend almost 2 and half times as much in % of GDP as the Asian emerging economies.

To further improve our picture of the expenditure situation in the sample countries, we look at per capita GDP as a proxy for the level of economic development and the total expenditure ratio. Figure 3 provides the evidence. It is interesting to see that the group of poorer new member states has roughly the same level of per-capita income as most emerging markets. Korea, the richest new member states and the poorest old EU members (Greece and Portugal) also report similar per-capita income. Singapore and Ireland would today already fall into the broader category of industrialised countries after rapid catching up over the past decade.

More relevant for the purpose of this study, however, is to look at expenditure ratios relative to per-capita income (industrialised country data is included for reference). The stylised facts confirm that the size of government in the new member countries is much larger than in some of their emerging market peers and only the Baltics fall into the group of countries with relatively small public sectors.

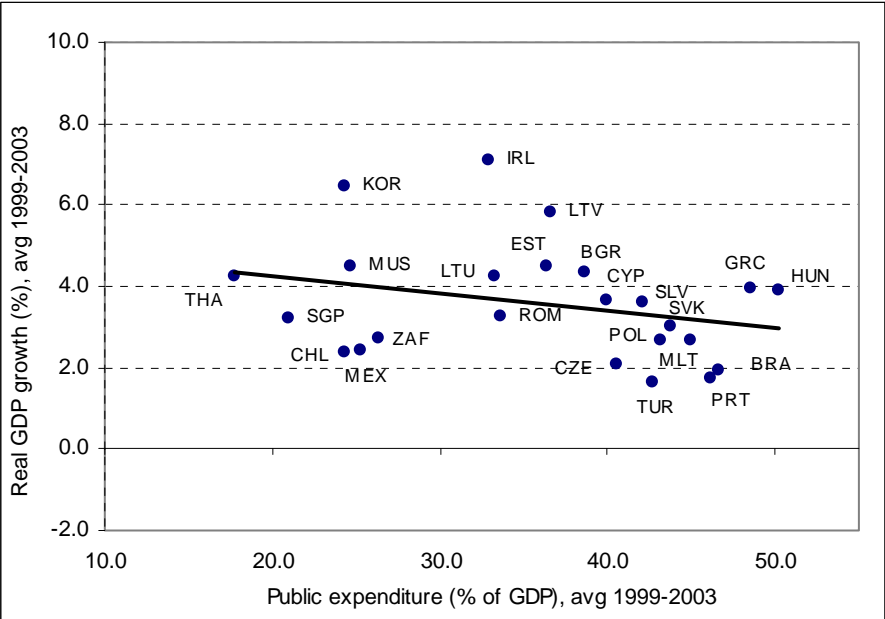
Figure 3 – Size of government and GDP per capita



Source: WDI.
 AUS – Australia; AUT – Austria; BEL – Belgium; BGR – Bulgaria; BRA – Brazil; CAN – Canada; CHL – Chile; CYP – Cyprus; CZE – Czech Republic; DEN – Denmark; EST – Estonia; FIN – Finland; FRA – France; GER – Germany; GRC – Greece; HUN – Hungary; ICE – Iceland; IRL – Ireland; ITA – Italy; JAP – Japan; KOR – Korea; LTU – Lithuania; LVA – Latvia; MEX – Mexico; MLT – Malta; MUS – Mauritius; NDL – Netherlands; NOR – Norway; NZE – New Zealand; POL – Poland; PRT – Portugal; ROM – Romania; SGP – Singapore; SPA – Spain; SVK – Slovak Republic; SVN – Slovenia; SWE – Sweden; SWZ – Switzerland; THA – Thailand; TUR – Turkey; UK – United Kingdom; US – United States; ZAF – South Africa.

A key question that is frequently asked is whether such large public sectors in the new member states hurt growth? Alternatively, it has also been asked whether the small public sectors in several of the emerging markets are detrimental to development if basic services and safety nets are not provided. This is an empirical question to which there is so far no clear answer, as illustrated in Figure 4. Per capita growth has been relatively buoyant in recent years in the small government emerging markets, ranging from two to nine percent per annum. This shows that low spending is no obstacle to high growth and the prioritisation on productive spending may also contribute to this picture. Data for the new member states also suggests that high spending is not necessarily detrimental to growth either. Annual growth averaged between two and six percent for this country group in recent years. Productive public spending and other factors such as the boost from impending EU accession may have contributed to this but large governments have so far not proven to be a very harmful obstacle.

Figure 4 – Public expenditure and real GDP growth



Source: WEO. See country names in Figure 4.

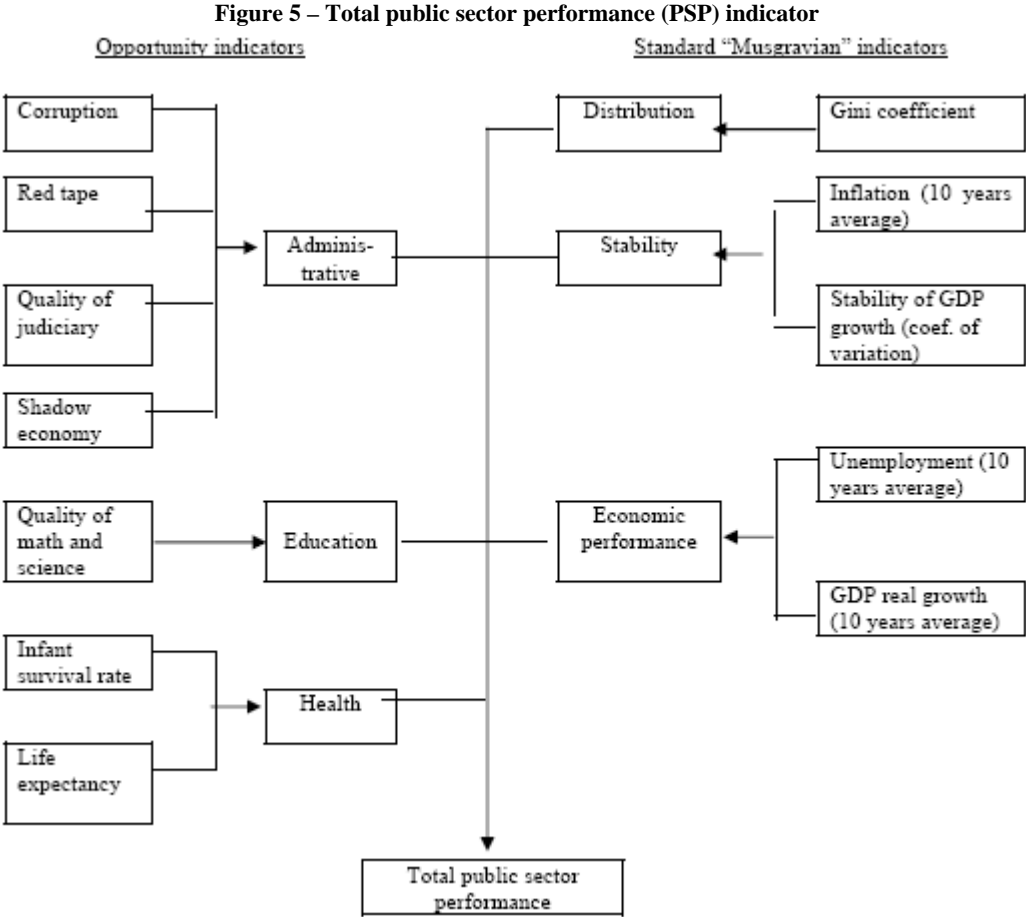
The picture might change slightly when not looking at the best linear fit (which is a slightly downward sloping line as indicated). The best overall fit would probably be an inverted U that has its maximum somewhere in the low 30 percent of GDP expenditure range. Indeed, there is illustrative evidence of a negative relation between rising public expenditure and economic growth from about this range, as we get a correlation coefficient of -0.56 when we correlate public spending-to-GDP ratios against real GDP growth for all countries with public spending above 30 percent of GDP. Though very tentative, this would confirm earlier presumptions by the authors that optimum spending for growth might be much lower in many new member and recent emerging market countries.

4.2. Public sector performance and efficiency via composite indicators

In measuring public sector performance and efficiency, we follow closely the methodology described above (as developed by Afonso, Schuknecht and Tanzi (2005)). In summary, our analysis suggests that new EU member countries show an average performance score that, due to relatively high expenditure, does not suggest very efficient use of public resources. Asian emerging markets take most of the top ranks.

4.2.1. Public sector performance (PSP)

As regards public sector performance we have deviated in a few respects from our earlier study. In the absence of reasonable data on public infrastructure we in particular focus on only three of the four opportunity indicators and the three respective Musgravian indicators. Figure 5 shows how the sectorial and overall indicators are put together (Annex Tables provide primary data).¹⁴



We compile performance indicators from the various indices giving an equal weight to each of them and the results are reported in Table 2.¹⁵ The results for public sector performance show some interesting patterns, with an overall very diverse picture for the new EU member states. Starting with the overall PSP indicator, the best performers seem to be Singapore, Cyprus and Ireland. Other Asian emerging economies and Malta follow this group of top performers while most new EU member countries and Portugal and Greece post a broadly average performance. Brazil, Bulgaria and Turkey are placed at the bottom end. The size of government per se appears to be a too crude instrument of differentiation, when looking at the score for large public sector countries.

¹⁴ The choice of indicators is slightly different from that used in Afonso, Schuknecht, and Tanzi (2005). In addition to omitting public infrastructure, education is reflected only by a qualitative measure of education achievement (leaving out secondary school enrolment) and economic performance excludes the level of per-capita GDP (which in this sample would strongly bias in favour of the rich countries).

¹⁵ The relevant time period for the several sub-indicators varies a little according to the availability of data but is essentially reported to 2001/2003 with some variables being used as an average of longer time spans (see the Annex for the precise periods).

Table 2 – Public Sector Performance (PSP) indicators (2001/2003)

<u>Country</u>	<u>Opportunity Indicators</u>			<u>“Musgravian” Indicators</u>			<u>Total public sector performance</u> (equal weights 1/)
	Adminis-tration	Human capital	Health	Distribu-tion	Stability	Economic perform.	
Brazil	0.88	0.80	0.96	0.63	0.43	0.77	0.75
Bulgaria	0.80	1.09	0.99	1.17	0.06	0.31	0.74
Chile	1.12	0.86	1.03	0.69	0.92	1.02	0.94
Cyprus		1.12	1.04		1.59	1.54	1.33
Czech Republic	1.00	1.14	1.02	1.19	0.74	0.74	0.97
Estonia	1.25	1.11	0.99	1.00	0.57	0.88	0.97
Greece	0.95	1.04	1.04	1.07	1.67	0.76	1.09
Hungary	1.09	1.16	1.00	1.21	0.97	0.88	1.05
Ireland	1.17	1.11	1.03	1.02	1.64	1.47	1.24
Korea	1.04	1.08	1.01	1.09	1.00	1.60	1.14
Latvia	1.03	0.98	0.98	1.08	0.76	0.88	0.95
Lithuania	0.98	1.12	1.00	1.08	0.37	0.84	0.90
Malta	1.11	1.03	1.04		1.45	1.12	1.15
Mauritius	0.91	0.86	1.00		1.40	1.08	1.05
Mexico	0.80	0.71	1.00	0.75	0.38	1.41	0.84
Poland	0.92	1.08	1.01	1.09	0.83	0.81	0.96
Portugal	1.11	0.88	1.03	0.98	1.30	0.91	1.04
Romania	0.63	1.13	0.98	1.10	0.18	0.63	0.78
Singapore	1.39	1.16	1.05	0.92	2.94	1.71	1.53
Slovak Republic	0.95	1.07	1.01	1.28	1.09	0.77	1.03
Slovenia	1.07	1.13	1.03	1.14	1.35	0.99	1.12
South Africa	1.00	0.66	0.80	0.65	1.23	0.50	0.81
Thailand	1.03	0.99	0.97	0.93	0.94	1.54	1.07
Turkey	0.77	0.75	0.97	0.93	0.17	0.82	0.74
Average 2/	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max	1.39	1.16	1.05	1.28	2.94	1.71	1.53
Min	0.63	0.66	0.80	0.63	0.06	0.31	0.74
New EU countries	0.99	1.06	1.00	1.09	0.74	0.86	0.96
Baltics	1.06	1.10	1.02	1.14	0.93	0.95	1.03
Other new EU	0.95	1.05	1.00	1.08	0.66	0.82	0.93
Asian NIC	1.11	1.00	1.00	0.93	1.76	1.44	1.21
Other NIC	0.97	0.91	0.98	0.87	0.96	1.08	0.98

1/ Each sub-indicator contributes 1/6 to total indicator. 2/ Simple averages.

When comparing the results for the best performers in this study with those from our earlier study on industrialised OECD countries, it is noteworthy that Ireland was “only” an average performer. Portugal and Greece which are near-average in this group were amongst the weakest in the former study. The results hence show that public sector performance is on average still somewhat lower in most new EU member countries and emerging markets than in the “old” industrialised countries but a few of them (notably the new member island countries and Asian Emerging economies) have broadly caught up.

With regard to sub-indicators, it is interesting to see that the relatively strong performance of the new EU member states on human capital/education and income distribution contrasts with a relatively weak one for economic performance and stability. There is no clear pattern of distinction between Baltics and Central European countries while the two island countries post strong values for all indicators for which data is available. Asian Emerging economies performed very strongly on administration, human capital and economic stability and growth. Overall performance was very equal as regards health indicators.

4.2.2. Public sector efficiency (PSE)

Public sector performance must be set in relation to the inputs used in order to gauge the efficiency of the state. We compute indicators of Public Sector Efficiency (PSE), taking into account the expenditure related to each sub-indicator as described in section III.1. PSE indicators are presented in Table 3 where, due to data limitations for the pre-1998 period in many countries, averages of the corresponding

expenditure item were used for the relatively short period of 1998-2003 (see Annex for precise dates and primary data).

Table 3 – Public sector efficiency (PSE) indicators (2001/2003) 1/

Country	Opportunity Indicators			“Musgravian” Indicators			Total public sector efficiency (equal weights 2/)
	Adminis- tration	Human capital	Health	Distribution	Stability	Economic perform.	
Brazil	0.78	0.81	1.15	0.48	0.33	0.59	0.69
Bulgaria	0.79	1.49	1.00	1.01	0.06	0.29	0.77
Chile	1.53	1.04	1.70	1.15	1.37	1.51	1.38
Cyprus		0.92	1.66		1.44	1.39	1.08
Czech Republic	0.76	1.31	0.66	1.04	0.66	0.66	0.85
Estonia	1.09	0.83	0.91	1.21	0.57	0.87	0.91
Greece	0.97	1.32	0.83	0.83	1.23	0.56	0.96
Hungary	0.83	1.12	0.75	1.05	0.70	0.63	0.85
Ireland	1.36	1.18	0.84	1.44	1.79	1.61	1.37
Korea	1.40	1.31	1.72		1.47	2.36	1.65
Latvia	0.82	0.79	1.14	1.11	0.75	0.87	0.91
Lithuania	0.83	0.88	0.90	1.27	0.40	0.90	0.86
Malta	0.92	0.99	0.68		1.16	0.90	0.78
Mauritius	1.21	1.04	1.91		2.04	1.58	1.56
Mexico	1.18	0.72	1.52	1.90	0.55	2.01	1.31
Poland	0.89	0.98	0.97	0.80	0.69	0.68	0.83
Portugal	0.92	0.71	0.66	0.90	1.01	0.71	0.82
Romania	0.69	1.53	1.03	1.05	0.20	0.68	0.86
Singapore	2.09		2.90	1.38	5.05	2.94	2.39
Slovak Republic	0.82	1.23	0.77	1.18	0.90	0.64	0.92
Slovenia	0.91		0.68	0.81	1.15	0.84	0.88
South Africa	0.93	0.54	0.89		1.69	0.68	0.95
Thailand	1.58	0.86	1.68		1.91	3.11	1.83
Turkey	0.96	0.99	0.98		0.15	0.69	0.63
Average 3/	1.06	1.03	1.16	1.03	1.14	1.15	1.09
Max	2.09	1.53	2.90	1.90	5.05	3.11	2.39
Min	0.69	0.54	0.66	0.48	0.06	0.29	0.63
New EU countries	0.87	1.05	0.87	1.04	0.64	0.77	0.84
Baltics	0.86	1.00	0.78	1.16	0.75	0.81	0.83
Other new EU	0.88	1.07	0.91	1.00	0.59	0.76	0.84
Asian NIC	1.63	0.95	2.16	1.38	3.00	2.54	1.93
Other NIC	1.10	0.95	1.32	0.96	1.11	1.29	1.13

1/ These indicators are the expenditure weighted “counterparts” of the indicators of Table 1.

2/ Each sub-indicator contributes equally to the total indicator.

3/ Simple averages.

The results for measuring public sector efficiency show an accentuation of the findings for public sector performance. This suggests that more public spending often has relatively low returns as regards improved performance (which is consistent with the findings of our earlier study for industrialised countries). Most low performers, including most new EU member states range between 0.8 and 0.9 and Cyprus is the only new member country with an average PSE score. Countries with a small government sector post a higher PSE score than the average (and hence even more so than the countries with “big” governments). The emerging countries of Asia plus Mauritius have most of the highest scores as their good performance is achieved with low public spending.

When looking at sub-indices, the new member states efficiency scores are near average on human capital and on income distribution. In all other areas, PSE scores are well below average for the new EU member states. Note also that the income distribution efficiency score is highest in the countries with smaller welfare states. This confirms findings elsewhere that welfare programmes in (rich and) poor

countries are often poorly targeted and benefit those with special interests rather than those in need (Alesina (1998) and Schuknecht and Tanzi (2005)).

All in all the results suggest that efficiency differs enormously across countries. In the new member states, a relatively average performance (PSP scores) in most countries is “bought” with too many inputs so that efficiency (PSE) is low. In the next section, we will analyse whether these findings are confirmed by using a DEA approach.

4.3. Relative efficiency analysis via a DEA approach

We used a DEA approach as described above, using as our output measure the PSP composite indicator reported in Table 2 and as an input measure the total government spending as a ratio of GDP. Table 4 presents both the input and the output oriented efficiency coefficients of the variable returns to scale analysis while the constant returns to scale coefficients are also reported for completeness.

The results largely confirm the findings of the earlier “macro” approach of determining efficiency of the public sector. New member states are ranked between 9 and 24 on input scores and between 3 and 18 on output scores, hence reflecting rather diverse and often below average efficiency. Two countries that also had amongst the top PSE scores are located on the frontier: Singapore and Thailand. Korea, Chile and Mauritius come next. Brazil, Greece and Hungary find themselves at the bottom of the list while most new member states fill the middle ranks. From an input perspective the highest-ranking country uses 1/3 of the input that the bottom ranking one uses to attain a certain PSP score. The average input score of 0.55 hints to the possibility that, for the level of output they are attaining, countries could use around 45 per cent less resources.

From an output perspective, the top performer achieves twice as much output as the least efficient country with the same input. The average output score of 0.67 implies that on average, for the level of input they are using, the countries are only obtaining around 2/3 of the output they should deliver if they were deemed efficient.

Table 4 – DEA results: one input, one output

Country	Input oriented		Output oriented		CRS TE
	VRS TE	Rank	VRS TE	Rank	
Brazil	0.381	22	0.488	22	0.219
Bulgaria	0.461	14	0.483	23	0.262
Chile	0.730	4	0.615	17	0.529
Cyprus	0.489	11	0.867	3	0.454
Czech Republic	0.439	15	0.637	13	0.329
Estonia	0.489	12	0.632	14	0.364
Greece	0.369	23	0.713	8	0.307
Hungary	0.355	24	0.687	9	0.287
Ireland	0.576	8	0.813	4	0.517
Korea	0.749	3	0.743	6	0.639
Latvia	0.486	13	0.624	16	0.357
Lithuania	0.535	9	0.588	18	0.370
Malta	0.408	19	0.753	5	0.350
Mauritius	0.721	5	0.686	10	0.583
Mexico	0.703	6	0.551	19	0.456
Poland	0.412	18	0.627	15	0.304
Portugal	0.385	21	0.678	11	0.308
Romania	0.528	10	0.509	21	0.316
Singapore	1.000	1	1.000	1	1.000
Slovak Republic	0.406	20	0.674	12	0.322
Slovenia	0.431	16	0.731	7	0.364

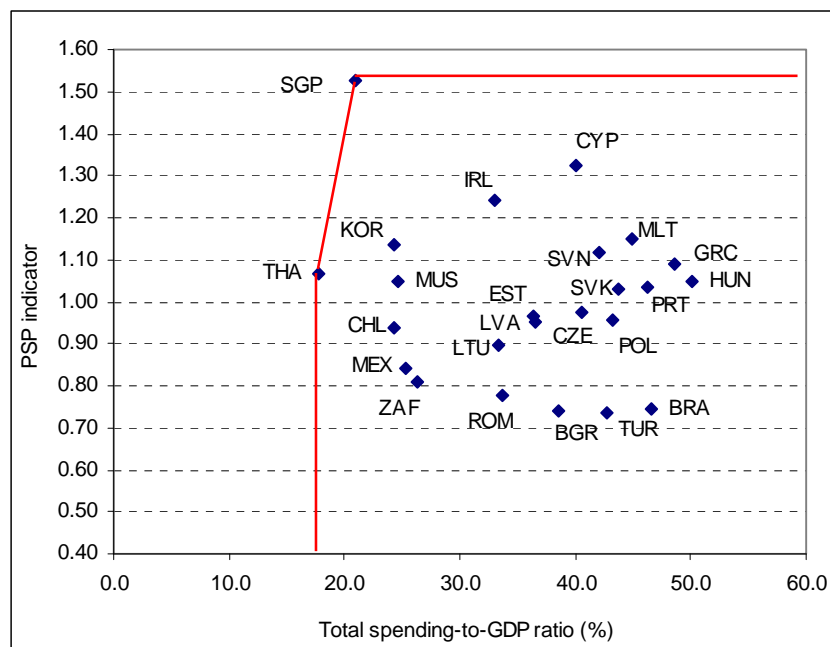
Country	Input oriented		Output oriented		CRS TE
	VRS TE	Rank	VRS TE	Rank	
South Africa	0.676	7	0.529	20	0.421
Thailand	1.000	1	1.000	1	0.822
Turkey	0.416	17	0.482	24	0.236
Average	0.548		0.671		0.422
Minimum	0.355		0.482		0.219
Standard dev.	0.186		0.144		0.186

CRS TE – constant returns to scale technical efficiency.

VRS TE – variable returns to scale technical efficiency.

Figure 6 presents the theoretical production possibility frontier associated with the aforementioned set of DEA results. It shows how far the distance is between the bulk of countries and the most efficient ones. Nevertheless, there are still very marked differences between the top, medium and bottom performers inside the production possibility frontier. To get a clearer picture of differences when abstracting from the best performer we treat Singapore as an “outlier” and recalculate the DEA without it.

Figure 6 – Theoretical production possibility frontier: one input, one output



BGR – Bulgaria; BRA – Brazil; CHL – Chile; CYP – Cyprus; CZE – Czech Republic; EST – Estonia; GRC – Greece; HUN – Hungary; IRL – Ireland; KOR – Korea; LTU – Lithuania; LVA – Latvia; MEX – Mexico; MLT – Malta; MUS – Mauritius; POL – Poland; PRT – Portugal; ROM – Romania; SGP – Singapore; SVK - Slovak Republic; SVN – Slovenia; THA – Thailand; TUR – Turkey; ZAF – South Africa.

When recomputing the DEA scores in a one input and one output framework without Singapore, the results are somewhat less dramatic and make more countries “feel good” about their public sector (see Table 5 and Figure 7). The corresponding theoretical production possibility frontier now includes Thailand and Cyprus while Korea and Ireland are almost on the frontier. These countries’ efficiency scores are equal to, or very close to, unity while they ranged from 0.49 to 0.87 before (except Thailand which was also at unity). New EU member states are spread over ranks 1 to 24 (input scores) and 1 to 18 (output scores), respectively.

Table 5 – DEA results: one input, one output (excluding Singapore)

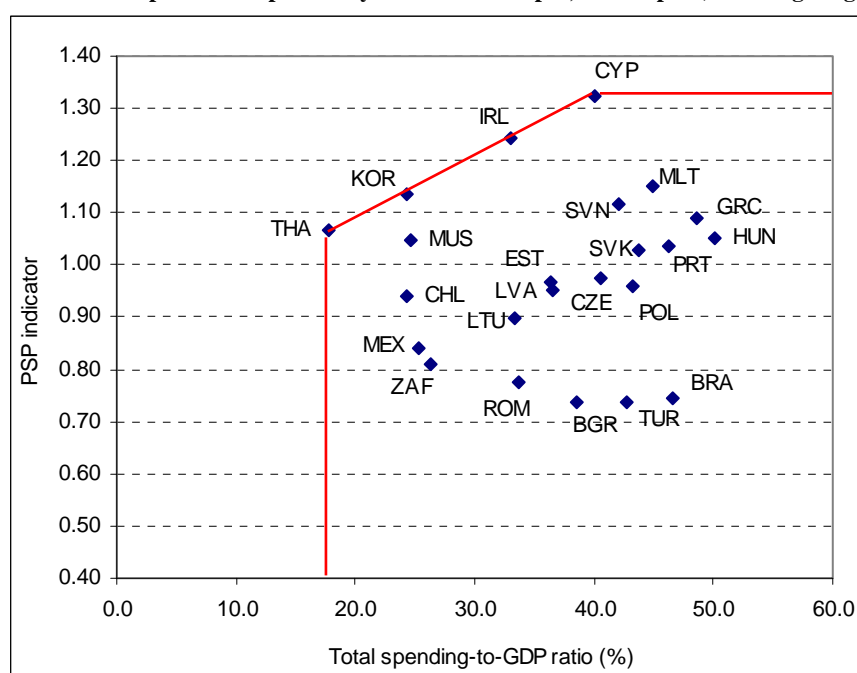
Country	Input oriented		Output oriented		CRS TE
	VRS TE	Rank	VRS TE	Rank	
Brazil	0.381	22	0.562	22	0.267
Bulgaria	0.461	15	0.564	21	0.319
Chile	0.730	5	0.823	8	0.644
Cyprus	1.000	1	1.000	1	0.553
Czech Republic	0.439	16	0.735	15	0.401
Estonia	0.489	13	0.753	13	0.443
Greece	0.407	19	0.822	9	0.374
Hungary	0.355	23	0.792	10	0.349
Ireland	0.997	3	0.999	3	0.629
Korea	0.976	4	0.994	4	0.778
Latvia	0.486	14	0.742	14	0.435
Lithuania	0.535	10	0.720	18	0.450
Malta	0.555	9	0.868	6	0.427
Mauritius	0.721	6	0.914	5	0.709
Mexico	0.703	7	0.730	16	0.556
Poland	0.412	18	0.723	17	0.370
Portugal	0.385	21	0.782	11	0.374
Romania	0.528	11	0.621	20	0.385
Slovak Republic	0.406	20	0.777	12	0.393
Slovenia	0.526	12	0.843	7	0.443
South Africa	0.676	8	0.693	19	0.512
Thailand	1.000	1	1.000	1	1.000
Turkey	0.416	17	0.555	23	0.287
Average	0.591		0.783		0.482
Minimum	0.355		0.555		0.267
Standard dev.	0.219		0.137		0.174

CRS TE – constant returns to scale technical efficiency.

VRS TE – variable returns to scale technical efficiency.

The results also show that input scores have not changed that much for most countries. This is because the lowest spending country, Thailand, also has a PSP score higher than most sample countries. Hence for these countries, input efficiency did not change. Only those with higher performance are now assessed relative to the other countries on the production possibility frontier and post a higher input efficiency score. The average increased from 0.55 to 0.59. As regards output efficiency, changes are more substantial if the reference point for countries with large public sectors is not any more Singapore but Cyprus, Ireland and Korea. The average increased from 0.67 to 0.78.

Figure 7 – Theoretical production possibility frontier: one input, one output (excluding Singapore)



BGR – Bulgaria; BRA – Brazil; CHL – Chile; CYP – Cyprus; CZE – Czech Republic; EST – Estonia; GRC – Greece; HUN – Hungary; IRL – Ireland; KOR – Korea; LTU – Lithuania; LVA – Latvia; MEX – Mexico; MLT – Malta; MUS – Mauritius; POL – Poland; PRT – Portugal; ROM – Romania; SVK - Slovak Republic; SVN – Slovenia; THA – Thailand; TUR – Turkey; ZAF – South Africa.

The above calculations could be seen as an approximation of potential direct costs of inefficiency in the provision of public services. However, indirect costs, implying a higher loss for consumer welfare should also be taken into account. This is outside the scope of our paper, but Afonso and Gaspar (2005) address this issue.

We can now compare the results of our composite indicator analysis of performance and efficiency with that of DEA analysis. Table 6 reports DEA input and output efficiency scores and ranks (as shown in Table 4) together with PSE scores (from Table 3) and ranks. The two methods provide rather similar results as reflected in very high correlation coefficients for scores and ranks across methods. This is evidence for a certain robustness of our results.

Table 6 – Comparison of country scores and ranks across methods

Country	DEA Analysis				Public Sector Efficiency (PSE)	
	Input oriented		Output oriented		Score	Rank
	Score	Rank	Score	Rank		
Brazil	0.381	22	0.488	22	0.69	23
Bulgaria	0.461	14	0.483	23	0.77	22
Chile	0.73	4	0.615	17	1.38	5
Cyprus	0.489	11	0.867	3	1.08	8
Czech Republic	0.439	15	0.637	13	0.85	17
Estonia	0.489	12	0.632	14	0.91	12
Greece	0.369	23	0.713	8	0.96	9
Hungary	0.355	24	0.687	9	0.85	17
Ireland	0.576	8	0.813	4	1.37	6
Korea	0.749	3	0.743	6	1.65	3

Country	DEA Analysis				Public Sector Efficiency (PSE)	
	Input oriented		Output oriented		Score	Rank
	Score	Rank	Score	Rank		
Latvia	0.486	13	0.624	16	0.91	12
Lithuania	0.535	9	0.588	18	0.86	15
Malta	0.408	19	0.753	5	0.78	21
Mauritius	0.721	5	0.686	10	1.56	4
Mexico	0.703	6	0.551	19	1.31	7
Poland	0.412	18	0.627	15	0.83	19
Portugal	0.385	21	0.678	11	0.82	20
Romania	0.528	10	0.509	21	0.86	15
Singapore	1	1	1	1	2.39	1
Slovak Republic	0.406	20	0.674	12	0.92	11
Slovenia	0.431	16	0.731	7	0.88	14
South Africa	0.676	7	0.529	20	0.95	10
Thailand	1	1	1	1	1.83	2
Turkey	0.416	17	0.482	24	0.63	24
Correlation	Score	Rank	Score	Rank		
DEA input-PSE	0.91	0.77	-	-		
DEA output-PSE	-	-	0.71	0.56		

4.4. Explaining inefficiencies via non-discretionary factors

As a final step, we extend our analysis to exogenous factors that explain expenditure efficiency (see section III.3 for methodical issues). It is probably reasonable to conjecture that expenditure efficiency depends on the “technology” applied in the public sector, on factors that influence the ability of private agents to protect their resources from public claims, on the monitoring capacities of public and private agents, and on international constraint. The variables and underlying hypotheses we test are the following:

- (i) Secondary school enrolment. This variable aims to proxy the level of education of the population in a given country. More educated people are hypothesized to be better able to monitor the activities of politicians and bureaucrats and ultimately sanction crass inefficiency. But more education is also likely to imply better educated and trained (and hence more efficient) civil servants.
- (ii) The competence of the civil (survey results presented in the Global Competitiveness Report, see Annex for sources and explanations). This variable aims to measure greater productivity and efficiency in the public sector through better training etc. It is expected to be correlated with the education variable.
- (iii) Per capita GDP. This variable aims to proxy the physical capital stock which facilitates an efficient production of public goods and services but which may also facilitate monitoring of policy makers.
- (iv) An indicator of property rights. Secure property rights make it more difficult for governments to extract wealth/rents from the private sector. They also facilitate holding governments accountable for their actions.
- (v) Trade openness (exports and imports as a share of GDP). This indicator proxies the degree of international competition over labour and capital that would penalise public inefficiency disproportionately.

(vi) Transparency in public policy. This is another indicator that should measure the ease of monitoring public officials.

(vii) Other more direct indicators of political accountability (such as civil liberty, political rights or checks and balances) do not show much variation for this country group as almost all of them are in the top group.

Exogenous factors could also include other factors that could be detrimental or favourable to efficiency (such as the climate, the cultural background) for which economically meaningful hypotheses are less readily available. We do not include such variables in our analysis.

Using the DEA output efficiency scores computed in the previous subsection, we now evaluate the importance of non-discretionary inputs via Tobit regressions where output efficiency scores are regressed on our choice of exogenous, non-discretionary factors. Table 7 confirms the relevance of several of our hypotheses and the variables chosen to test them.

Table 7 – Censored normal Tobit results
(dependent variable: output efficiency scores from Table 5)

	1	2	3	4	5
Per-capita GDP	7.08E-06 *** (2.18)	6.68E-06 ** (2.01)	6.75E-06 ** (2.04)	7.08E-06 ** (2.25)	1.33E-05 ** (2.12)
Property rights	0.102 *** (6.57)	0.095 *** (5.07)	0.101 *** (6.60)	0.127 *** (4.54)	0.063 * (1.76)
Competence of civil service	0.069 *** (2.80)		0.062 ** (2.12)	0.075 *** (3.06)	0.109 *** (3.02)
Secondary school enrolment		0.003 *** (2.60)			
Trade openness			2.46E-04 (0.46)		
Public trust in politicians				-0.055 (-1.08)	
Transparency in government					0.010 (0.42)
$\hat{\sigma}_\varepsilon$	0.081	0.086	0.083	0.081	0.083
N° of observations	20	20	20	20	16

Notes: *Y* – per capita GDP; *PR* – property rights; *Comp* – competence of public officials; *Enrol* – enrolment rate; *Open* – (Exports+Imports)/GDP; *Pub trust* – Public trust of politicians; *Transpar* – Transparency.

$\hat{\sigma}_\varepsilon$ – Estimated standard deviation of ε .

The z statistics are in brackets.

*, **, *** - Significant at the 10, 5 and 1 per cent level respectively.

The Tobit analysis suggests that the security of property rights, per capita GDP, the competence of civil servants, and the education level of people positively affect expenditure efficiency. Due to significant correlation, however, the two competence/education variables are only significant in separate regressions while the other two variables are robust over all specifications. International trade openness, trust in politicians and transparency of the political system have not been found to display a significant influence on expenditure efficiency (even though only the coefficient for public trust in politicians had the wrong sign). The regressions' standard deviation also points to a reasonable model fit.

5. Conclusion

In this paper we analysed public sector efficiency in the new member states of the European Union as compared to emerging markets. We start with a conceptual discussion of expenditure efficiency measurement issues where challenges regarding the measurement of costs, the definition of goals and the

measurement of outcomes are significant. Taking these challenges into account, we calculate efficiency scores and rankings by applying a range of measurement techniques to the new EU member countries and a selection of emerging markets, catch-up economies, and EU candidate countries.

The results of our analysis show that expenditure efficiency across new EU member states is rather diverse, especially compared to the group of top performing emerging markets in Asia. From the analysis of composite public sector performance (PSP) and efficiency (PSE) scores we find that countries with lean public sectors and public expenditure ratios not far from 30% of GDP tend to be most efficient. PSE scores of the most efficient countries are more than twice as high as those of the poorest performers.

From the DEA results we see that a small set of countries define or are very close to the theoretical production possibility frontier: Singapore, Thailand, Cyprus, Korea, and Ireland. From an input perspective the highest ranking country uses 1/3 of the input that the bottom ranking one uses to attain a certain PSP score. The average input scores suggest that countries could use around 45 per cent less resources to attain the same outcomes if they were fully efficient. Average output scores suggest that countries are only delivering around 2/3 of the output they could deliver if they were on the efficiency frontier.

Finally we examine via Tobit analysis the influence of non-discretionary factors, notably non-fiscal variables, on expenditure efficiency. The study shows that per-capita income, public sector competence and education levels as well as the security of property rights seem to facilitate the prevention of inefficiencies in the public sector.

From a policy perspective, one should be careful to draw overly strong conclusions and we have referred to a number of caveats in the course of the paper. Nevertheless, it is apparent that many new members states and other emerging markets can still considerably increase the efficiency of public spending by improving the outcomes and by restraining the resource use. The final econometric analysis also suggests that high education levels, a competent civil service and the security of property rights seem to provide an “extra boost” to public expenditure efficiency.

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Annex: Data and sources

Table A – Primary data for performance sub-indicators

	1/	2/	3/	4/	5/	6/	7/	8/	9/	10/	11/	12/	13/	14/
Brazil	4.6	2.8	3.9	4.6	3.3	68.3	31.0	60.7	1.41	220.9	2.6	7.6	7360	71.3
Bulgaria	5.5	2.5	2.7	5.2	5.0	71.7	14.0	26.4	0.14	139.0	0.7	14.6	6890	87.6
Chile	6.3	3.1	4.6	2.4	3.6	75.8	10.0	56.7	1.43	5.5	4.6	7.9	9190	74.5
Cyprus						78.0	5.0		2.31	3.0	4.0	3.2	21190	88.3
Czech Republic	5.2	2.7	4.2	2.6	5.5	74.9	4.0	25.4	0.97	6.0	2.1	7.0	14720	87.1
Estonia	5.9	4.2	5.3	2.1	5.5	70.6	11.0	37.6	1.26	13.7	4.3	10.6	10170	82.8
Greece	4.8	2.4	4.7	3.5	4.6	78.0	5.0	32.7	3.91	5.4	3.3	10.3	17440	87.4
Hungary	5.8	2.7	4.9	2.3	5.7	71.5	8.0	24.4	2.64	14.2	3.5	7.8	12340	87.2
Ireland	6.0	3.4	5.2	2.3	5.3	76.6	6.0	35.9	2.53	3.1	7.9	7.8	32410	85.8
Korea	5.3	3.2	4.1	2.8	4.7	73.6	5.0	31.6	1.08	4.1	5.4	3.7	15090	90.9
Latvia	4.9	3.7	4.2	3.6	4.8	70.4	17.0	32.4	1.66	10.4	4.7	12.9	7730	74.4
Lithuania	5.5	2.8	3.3	2.4	5.2	72.7	8.0	32.4	0.63	15.4	3.4	8.4	8470	88.6
Malta	6.1	2.9	5.3	3.0	4.9	78.2	5.0		1.47	2.7	3.8	5.2	13160	79.2
Mauritius	4.6	2.2	4.4	3.3	4.2	72.1	17.0		3.26	6.3	4.8	7.3	9860	64.2
Mexico	5.0	2.3	3.3	5.0	3.1	73.4	24.0	53.1	0.70	15.5	2.7	3.1	8430	59.7
Poland	4.8	2.8	3.9	3.7	4.7	73.5	8.0	31.6	2.10	13.2	4.3	13.7	9450	90.9
Portugal	5.8	2.8	5.7	3.0	3.2	75.8	5.0	38.5	1.53	3.3	2.6	5.7	18150	85.2
Romania	3.6	2.0	2.4	5.5	5.9	69.9	19.0	31.1	0.46	58.5	2.1	9.3	5830	79.6
Singapore	6.7	5.1	5.2	1.4	6.5	78.4	3.0	42.5	1.06	1.1	5.1	3.2	22680	74.3
Slovak Republic	5.2	2.2	3.2	1.6	5.6	73.2	8.0	19.5	2.58	8.4	4.2	15.7	11960	74.9
Slovenia	5.8	2.8	4.3	2.0	5.3	75.6	4.0	28.4	3.61	9.7	4.1	7.3	17130	88.6
South Africa	4.9	2.9	5.6	4.5	2.8	47.1	56.0	59.3	2.90	7.3	2.8	25.3	11290	57.2
Thailand	5.1	3.2	4.8	3.7	4.5	69.0	24.0	41.4	0.58	3.6	3.4	3.0	6400	79.8
Turkey	4.1	2.5	3.7	5.7	4.0	69.8	36.0	41.5	0.46	69.8	2.8	7.2	5890	51.3
Average	5.3	2.9	4.3	3.3	4.7	72.4	13.9	37.3	1.7	26.7	3.7	8.7	12635	78.8

1/ Corruption index (1 to 7).

2/ Red tape (burden of regulation) index (1 to 7, good).

3/ Quality of judiciary index (1 to 7, good).

4/ Shadow economy index (1 to 9, bad). We used the following transformation $9-I$, where I is the shadow economy index.

5/ Quality of math and science education index.

6/ Life expectancy at birth, years, 2001.

7/ Infant mortality rate (IMR), 2001. We used the infant survival rate, $ISR=(1000-IMR)/1000$.

8/ Gini coefficient, 2003 or latest year. We used the construction $100-Gini$.

9/ Coefficient of variation (inverse) of average real GDP growth for 1994-2003.

10/ Average inflation, 1994-2003. We used its inverse.

11/ Average GDP real growth rate, 1994-2003.

12/ Average unemployment, 1994-2003.

13/ Per capita GDP, PPP USD, 2001.

14/ Secondary school enrolment ratio, 2001 or latest.

Sources:

1/, 2/, 3/, 4/, 5/ - Global Competitiveness Report, 2003/2004 edition.

6/, 7/, 13/, 14/ - World Bank, WDI 2003.

8/ - World Bank, World Development Report, 2003 edition.

9/, 10/, 11/, 12/ - IMF World Economic Outlook (WEO database).

Table B – Primary data for the non-discretionary factors

	GDP per capita 1/	Property rights 2/	Competence of public officials 3/	Secondary school enrolment 4/	Degree of openness 5/	Public trust of politicians 6/	Transparency 7/
Brazil	7360	5.0	2.4	71.3	29.15	2.2	4.51
Bulgaria	6890	3.2	3.3	87.6	116.20	2.3	
Chile	9190	5.6	2.1	74.5	69.15	2.9	6.64
Cyprus	21190			88.3	95.53		
Czech Republic	14720	4.4	2.3	87.1	126.64	1.9	3.60
Estonia	10170	4.8	3.0	82.8	156.22	2.8	5.96
Greece	17440	5.0	1.8	87.4	48.59	2.5	3.45
Hungary	12340	5.3	2.8	87.2	131.49	2.6	3.50
Ireland	32410	6.1	3.6	85.8	151.31	3.2	5.47
Korea	15090	4.7	3.0	90.9	73.51	2.1	4.21
Latvia	7730	4.3	3.1	74.4	97.51	2.3	
Lithuania	8470	4.2	3.4	88.6	109.46	1.9	
Malta	13160			79.2	163.55		
Mauritius	9860	5.4	2.6	64.2	115.24	2.6	
Mexico	8430	4.6	2.6	59.7	57.30	2.5	4.53
Poland	9450	4.6	2.7	90.9	71.28	2.4	2.21
Portugal	18150	5.3	2.2	85.2	66.59	3.2	5.09
Romania	5830	4.5	2.6	79.6	80.38	3.1	3.23
Slovak Republic	11960	5.2	2.0	74.9	156.87	2.8	4.28
Slovenia	17130	4.8	3.4	88.6	112.97	3.0	3.70
South Africa	11290	5.3	1.9	57.2	53.69	2.9	6.05
Thailand	6400	2.6	2.6	79.8	124.31	2.8	5.66
Turkey	5890	4.2	2.1	51.3	58.05	1.9	4.43

1/ GDP per capita PPP, 2001, USD.

2/ Financial assets and wealth are (1=poorly delineated and not protected by law, 7=clearly delineated and protected by law), 2001-02.

3/ The competence of personnel in the public sector is (1=lower than the private sector, 7=higher than the private sector).

4/ Secondary school enrolment, 2001 or latest.

5/ Degree of openness = (Imports+Exports)/GDP, 2003.

6/ Public trust in the honesty of politicians is (1=very low, 7=very high)

7/ Transparency, highest is best, 2003 data.

Sources:

1/, 4/ - World Bank, WDI 2003.

2/, 3/, 6/ - World Economic Forum: Global Competitiveness Report 2001-2002.

5/ - IMF World Economic Outlook (WEO database).

7/ - IMD World Competitiveness Yearbook 2004.

RELATIVE EFFICIENCY OF HEALTH PROVISION: A DEA APPROACH WITH NON-DISCRETIONARY INPUTS*

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1. Introduction

In this paper we systematically compare the output from the health system of a set of OECD countries with resources employed (doctors, nurses, beds and diagnostic technology equipment). Using data envelopment analysis (DEA), we derive a theoretical production frontier for health. In the most favourable case, a country is operating on the frontier, and is considered as efficient. However, most countries are found to perform below the frontier and an estimate of the distance each country is from that borderline is provided – the so-called efficiency score. Moreover, estimating a semi-parametric model of the health production process using a two-stage approach, we show that inefficiency in the health sector is strongly related to variables that are, at least in the short- to medium run, beyond the control of governments. These are GDP per capita, the education level, and unhealthy lifestyles as obesity and smoking habits.

In methodological terms, a two-stage approach has become increasingly popular when DEA is used to assess efficiency of decision-making units (DMUs). The most usual two-stage approach has been recently criticised in statistical terms.¹ The fact that DEA output scores are likely to be biased, and that the environmental variables are correlated to output and input variables, recommend the use of bootstrapping techniques, which are well suited for the type of modelling we apply here. Therefore, we employ both a more usual DEA/Tobit approach and single and double bootstrap procedures suggested by Simar and Wilson (2007). Our paper is one of the first application examples of this very recent technique.² Our results following this procedure are compared to the ones arising from the more traditional one.

The paper is organised as follows. In section two we provide motivation and briefly review some of the literature and previous results on health provision efficiency. Section three outlines the methodological approach used in the paper and in section four we present and discuss the results of our efficiency analysis. Section five provides the conclusions.

* The opinions expressed herein are those of the authors and do not necessarily reflect those of the author's employers.

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¹ See Simar and Wilson (2000, 2007).

² See Afonso and St. Aubyn (2006) for an application to the education system.

2. Motivation and literature

Health is one of the most important services provided by governments in almost every country. According to OECD (2005), OECD countries expended an average of 8.7 per cent of GDP in 2003 on health institutions, of which 6.3 per cent of GDP were from public sources. In a general sense, health provision is efficient if its producers make the best possible use of available inputs, and the sole fact that health inputs weight heavily on the public purse would call for a careful efficiency analysis. A health system not being efficient would mean either that results (or “outputs”) could be increased without spending more, or else that expense could actually be reduced without affecting the outputs, provided that more efficiency is assured. Research results presented here indicate that there are cases where considerable improvements can be made in this respect.

The fact of health spending being predominantly public is particularly true notably in OECD countries. Table 1 summarises some relevant data for thirty OECD countries concerning health spending. For instance, public expenditure as a share of total spending averaged 72.5 per cent in 2003, ranging from 44.4 per cent in the USA to 90.1 per cent in the Czech Republic. For the EU15, average total spending was 8.8 per cent of GDP in 2003, which is close to the OECD value, slightly up from the 8.1 per cent ratio observed in 1995. On the other hand, average public expenditure as a share of total expenditure in health was, in 2003, lower in the EU15 than in the OECD, the corresponding ratios being equal to 69.9 and 72.5 percent, respectively. Furthermore, data reported in Table 1 show that total per capita health spending is very diverse across OECD countries. Indeed, the country that spends more on health in per capita terms, the USA, expends more than two times the OECD average and eleven times more than the country that spends the least, Turkey, even though the per capita GDP ratio between those two countries is roughly five and a half.

Table 1 – Public and total expenditure on health

	Total expenditure, % of GDP		Public expenditure, % of total expenditure		Total health expenditure per capita US\$ PPP	
	1995	2003	1995	2003	1995	2003
Australia	8.3	9.3	66.7	67.5	1745	2699
Austria	8.5	7.5	69.7	67.6	1973	2302
Belgium	8.4	9.6	1820	2827
Canada	9.2	9.9	71.4	69.9	2051	3001
Czech Republic	6.9	7.5	92.7	90.1	873	1298
Denmark	8.2	9.0	82.5	83.0	1848	2763
Finland	7.5	7.4	75.6	76.5	1433	2118
France	9.5	10.1	76.3	76.3	2033	2903
Germany	10.6	11.1	80.5	78.2	2276	2996
Greece	9.6	9.9	52.0	51.3	1253	2011
Hungary	7.5	8.4	84.0	72.4	676	1269
Iceland	8.4	10.5	83.9	83.5	1858	3115
Ireland	6.8	7.4	71.6	78.0	1216	2451
Italy	7.3	8.4	71.9	75.1	1535	2258
Japan	6.8	7.9	83.0	81.5	1538	2139
Korea	4.2	5.6	35.3	49.4	538	1074
Luxembourg	6.4	6.9	92.4	89.9	2059	3705
Mexico	5.6	6.2	42.1	46.4	382	583
Netherlands	8.4	9.8	71.0	62.4	1826	2976
New Zealand	7.2	8.1	77.2	78.7	1247	1886

	Total expenditure, % of GDP		Public expenditure, % of total expenditure		Total health expenditure per capita US\$ PPP	
	1995	2003	1995	2003	1995	2003
Norway	7.9	10.3	84.2	83.7	1897	3807
Poland	5.6	6.5	72.9	69.9	417	744
Portugal	8.2	9.6	62.6	69.7	1079	1797
Slovak Republic	5.8	5.9	91.7	88.3	543	777
Spain	7.6	7.7	72.2	71.2	1198	1835
Sweden	8.1	9.4	86.6	85.2	1738	2703
Switzerland	9.7	11.5	53.8	58.5	2579	3781
Turkey	3.4	7.4	70.3	70.9	185	513
United Kingdom	7.0	7.7	83.9	83.4	1374	2231
United States	13.3	15.0	45.3	44.4	3654	5635
Mean	7.7	8.7	72.5	72.5	1494.8	2340
Median	7,8	8,4	72,9	75,1	1536,5	2280
Standard deviation	1,9	2,0	14,9	12,7	738,7	1115
Minimum	(TUR) 3.4	(KOR) 5.6	(KOR) 35.3	(US) 44.4	(TUR) 185.0	(TUR) 513
Maximum	(US) 13.3	(US) 15.0	(CZ) 92.7	(CZ) 90.1	(US) 3654.0	(US) 5635
EU 15 average	8.1	8.8	69.9	69.9	1644.1	2525

Sources: OECD Health Data 2005 - Frequently asked data

(http://www.oecd.org/document/16/0,2340,en_2825_495642_208

5200_1_1_1_1,00.html). ..

– non available.

Moreover, the relevance of assessing the quality of public spending and redirecting it to more growth enhancing items is stressed, for instance, in EC (2004) as being an important goal for governments to pursue. Internationally, there is a shift in the focus of the analysis from the amount of public resources used by a government, to services delivered, and also to achieved outcomes and their quality (see OECD, 2003).

In our research, we measure and compare health output across countries using precisely the abovementioned type of quality measures – we resort to the most recent cross-nationally comparable evidence on health variables, as reported in OECD (2005).

Previous research on the international comparative performance of the public sector in general and of health outcomes in particular, including Afonso, Schuknecht and Tanzi (2005) for public expenditure in the OECD, and Gupta and Verhoeven (2001) for education and health in Africa, has already suggested that important inefficiencies are at work. These studies use free disposable hull analysis (FDH) with inputs measured in monetary terms. Spinks and Hollingsworth (2005) assess health efficiency for OECD countries using DEA based Malmquist indexes. They report a mean value of 0.961 for an OECD dataset suggesting that overall, member countries have moved slightly away from the frontier, implying a decrease in technical efficiency, between 1995 and 2000. Using both FDH and DEA analysis, Afonso and St. Aubyn (2005) studied efficiency in providing health and education in OECD countries using physically measured inputs and concluded that if all countries were efficient, input usage could be reduced by about 13 per cent without affecting output. Using a more extended sample Evans et al. (2000) evaluate the efficiency of health expenditure in 191 countries using a parametric methodology. In addition, Afonso and St. Aubyn (2006) also used a two-step approach for education performance in OECD countries.

In this paper, we estimate semi-parametric models of the health production process using a two-stage approach. In a first stage, we determine the output efficiency score for each country, using the mathematical programming approach known as DEA, relating health inputs to outputs. In a second stage, these scores are explained using regression analysis. Here, we show that non-discretionary factors are indeed highly correlated to inefficiency, i.e., they are significant “environmental variables”, using DEA jargon.³ They are, however, of a fundamentally different nature from input variables, in so far as their values cannot be changed in a meaningful spell of time by the DMU, here a country.

3. Analytical methodology

3.1. DEA framework

DEA, which assumes the existence of a convex production frontier, allows the calculation of technical efficiency measures that can be either input or output oriented. The purpose of an output-oriented study is to evaluate by how much output quantities can be proportionally increased without changing the input quantities used. This is the perspective taken in this paper. Note, however, that one could also try to assess by how much input quantities can be reduced without varying the output. Both output and input-oriented models will identify the same set of efficient/inefficient producers or DMUs.⁴

The description of the linear programming problem to be solved, output oriented and assuming variable returns to scale hypothesis, is sketched below. Suppose there are p inputs and q outputs for n DMUs. For the i -th DMU, y_i is the column vector of the outputs and x_i is the column vector of the inputs. We can also define X as the $(p \times n)$ input matrix and Y as the $(q \times n)$ output matrix. The DEA model is then specified with the following mathematical programming problem, for a given i -th DMU:

$$\begin{aligned}
 & \text{Max}_{\lambda, \delta_i} \delta_i \\
 & \text{s. to } \delta_i y_i \leq Y\lambda \\
 & \quad x_i \geq X\lambda \\
 & \quad n1' \lambda = 1 \\
 & \quad \lambda \geq 0
 \end{aligned} \tag{1}$$

In problem (1), δ_i is a scalar satisfying $\delta_i \geq 1$, more specifically it is the efficiency score that measures technical efficiency of the i -th unit as the distance to the efficiency frontier, the latter being defined as a linear combination of best practice observations. With $\delta_i > 1$, the decision unit is inside the frontier (i.e. it is inefficient), while $\delta_i = 1$ implies that the decision unit is on the frontier (i.e. it is efficient). The vector λ is a $(n \times 1)$ vector of constants that measures the weights used to compute the location of an inefficient DMU if it were to become efficient.

3.2. Non-discretionary inputs and the DEA/Tobit two-steps procedure

The standard DEA models as the one described in (1) incorporate only discretionary inputs, those whose quantities can be changed at the DMU will, and do not take into account the presence of environmental

³ Throughout the paper we use interchangeably the terms “non-discretionary”, “exogenous” and “environmental” when qualifying variables or factors not initially considered in the DEA programme.

⁴ See Farrell (1957) seminal work, popularised by Charnes, Cooper and Rhodes (1978). Coelli, Rao, O’Donnell and Battese (2005) and Thanassoulis (2001) offer good introductions to the DEA methodology.

variables or factors, also known as non-discretionary inputs. However, socio-economic differences may play a relevant role in determining heterogeneity across DMUs – either schools, hospitals or countries’ achievements in an international comparison – and influence outcomes. In what health is concerned, these exogenous socio-economic factors can include, for instance, household wealth, eating habits and education level.

As non-discretionary and discretionary inputs jointly contribute to each DMU outputs, there are in the literature several proposals on how to deal with this issue, implying usually the use of two-stage and even three-stage models.⁵

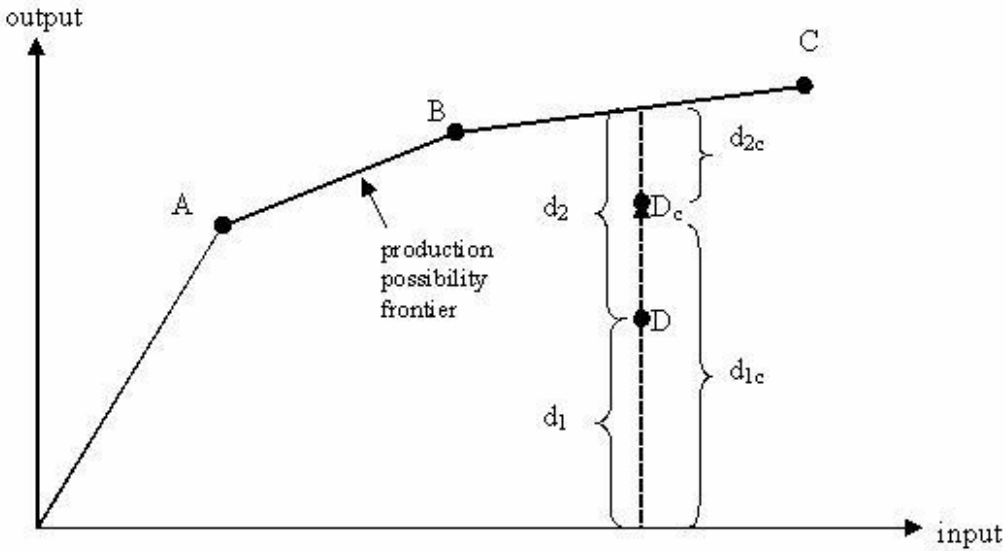
Let z_i be a $(1 \times r)$ vector of non-discretionary outputs. In a typical two-stage approach, the following regression is estimated:

$$\hat{\delta}_i = z_i \beta + \varepsilon_i, \tag{2}$$

where $\hat{\delta}_i$ is the efficiency score that resulted from stage one, i.e. from solving (1). β is a $(r \times 1)$ vector of parameters to be estimated in step two associated with each considered non-discretionary input. The fact that $\hat{\delta}_i \geq 1$ has led many researchers to estimate (2) using censored regression techniques (Tobit), although others have used OLS.⁶

Figure 1 illustrates the basic idea behind a two-stage approach. In a simplified one output and one input DEA problem, A, B and C are found to be efficient, while D is an inefficient DMU. The output score for unit D equals $(d_1+d_2)/d_1$, and is higher than one. However, unit D inefficiency may be partly ascribed to a “harsh environment” – a number of perturbing environmental factors may imply that unit D produces less than the theoretical maximum, even if discretionary inputs are efficiently used. In our example, and if the environment for unit D was more favourable (e. g. similar to the sample average), then we would have observed D_c . In other words, unit D would have produced more and would be nearer the production possibility. The environment corrected output score would be $(d_{1c}+d_{2c})/d_{1c}$, lower than $(d_1+d_2)/d_1$, and closer to unity.

Figure 1- DEA and non-discretionary outputs



⁵ See Ruggiero (2004) and Simar and Wilson (2007) for an overview.

⁶ See Simar and Wilson (2007) for an extensive list of published examples of the two step approach.

3.3. Non-discretionary inputs and bootstrap

The two-stage DEA/Tobit method is likely to be biased in small samples for two reasons. Firstly, the fact that output scores are jointly estimated by DEA implies that the error term ε_i in equation (2) is serially correlated. Secondly, non-discretionary variables z_i are correlated to the error term ε_i . This derives from the fact that non-discretionary inputs are correlated to the outputs, and therefore to estimated efficiency scores.

To surmount this, Simar and Wilson (2007) propose two alternatives based on bootstrap methods⁷. Similarly to the DEA/Tobit procedure, the efficiency score depends linearly on the environmental variables, but the error term is a truncated, and not censored, normal random variable⁸.

The first bootstrap method (“algorithm 1”) implies the estimation of the efficiency scores using DEA, as in the DEA/Tobit analysis. However, the influence of non-discretionary inputs on efficiency is estimated by means of a truncated linear regression. Coefficient significance is then assessed by bootstrapping. We have considered 2000 bootstrap estimates for that effect.

The scores derived from DEA are biased towards 1 in small samples. Simar and Wilson (2007) second bootstrap procedure, “algorithm 2”, includes a parametric bootstrap in the first stage problem, so that bias-corrected estimates for the efficiency scores are produced. These corrected scores replace the DEA original ones, and estimation of environment effects proceeds like in algorithm 1.

4. Empirical analysis

4.1. Data and indicators

OECD (2005) is our chosen health database for OECD countries.⁹ Typical input variables include medical technology indicators and health employment. Output is to be measured by indicators such as life expectancy and infant mortality, in order to assess potential years of added life.

It is of course difficult to measure something as complex as the health status of a population. We have not innovated here, and took two usual measures of health attainment, infant mortality and life expectancy.¹⁰

Efficiency measurement techniques used in this paper imply that outputs are measured in such a way that “more is better.” This is clearly not the case with infant mortality. Recall that the Infant Mortality Rate (IMR) is equal to:

(Number of children who died before 12 months)/(Number of born children)×1000.

We have calculated an “Infant Survival Rate”, *ISR*,

$$ISR = \frac{1000 - IMR}{IMR}, \quad (2)$$

⁷ See also Afonso and St. Aubyn (2006) for an application to education efficiency in OECD countries, where the method is exposed in more detail.

⁸ We implemented these algorithms in Matlab. Programmes and functions are available on request.

⁹ The data and the sources used in the paper are presented in the Annex.

¹⁰ These health measures, or similar ones, have been used in other studies on health and public expenditure efficiency – see Afonso, Schuknecht and Tanzi (2004), and Gupta and Verhoeven (2001).

which has two nice properties: it is directly interpretable as the ratio of children that survived the first year to the number of children that died; and, of course, it increases with a better health status.

We have considered a third output measure, which we call Potential Years of Life *Not* Lost, *PYNLL*. This variable was computed on the basis of the indicator Potential Years of Life Lost, *PYLL*, reported by OECD (2005). This last variable, *PYLL*, equals the number of life years lost due to all causes before the age of 70 and that could be, *a priori*, prevented. Therefore, and for our subsequent DEA analysis, and similarly to the Infant Mortality Rate, a transformation had to be done, in order to provide an increasing monotonic relation between the variable, number of years not lost, and health status.

Our transformed variable is:

$$PYNLL = \lambda - PYLL, \quad (3)$$

where $\lambda=3\ 618\ 010$ is an estimate of the number of potential years of life for a population under 70 years.¹¹

Therefore, our frontier model for health is based upon three output variables:

- the infant survival rate,
- and life expectancy,
- potential years of life not lost.

We compare physically measured inputs to outcomes. Quantitative inputs are the number of practising physicians, practising nurses, acute care beds per thousand habitants and high-tech diagnostic medical equipment, specifically magnetic resonance imagers (MRI).¹² Table 2 reports the relevant statistics for the set of OECD countries.

Table 2 – Summary statistics of the input and output data

	Mean	Standard deviation	Minimum	Maximum
Life expectancy (in years) 1/	77.5	2.8	68.4 (TUR)	81.5 (JAP)
Infant mortality rate (deaths per 1000 live births) 2/	4.5	6.5	2.4 (ICE)	36.3 (TUR)
Potential years of life lost (All causes - <70 year,/100 000) 2/	4083	981.2	2917 (JAP)	7056 (HU)
Practising physicians, density per 1000 population 2/	2.8	0.8	1.4 (TUR)	4.4 (GRC)
Practising nurses, density per 1000 population 2/	8.0	3.4	1.6 (KOR)	14.7 (IRE)
Acute care beds, density per 1000 population 2/	4.2	1.8	1.0 (MEX)	9.1 (JAP)
MRI units, per million population 2/	6.8	6.4	0.2 (MEX)	32.3 (JAP)

Notes: 1/ Average for 2000 and 2003. 2/ Average for 2000-2003.

TUR – Turkey; JAP – Japan; ICE – Iceland; HU – Hungary; GRC – Greece; KOR – Korea; IRE – Ireland; MEX – Mexico.

From Table 2 one notices that practising nurses per one thousand persons, in the period 2000–2003, ranged from 1.6 in Korea to 14.7 in Ireland. For the same period there was also a high range of practising physicians per one thousand persons, from 1.4–1.5 in Turkey and in Korea to 4.3–4.4 in Italy and in

¹¹ See details in the Appendix.

¹² A commonly used indicator of medical technology; see, for instance, Retzlaff-Roberts et al. (2004).

Greece. Additionally, the number of MRI per million persons ranged from 0.2 in Mexico to 32.2 in Japan, and the hospital acute care beds per one thousand persons ranged from 1.0 in Mexico to 9.1 in Japan.

Table 2 also shows that for the period 2000–2003 life expectancy at birth ranged from 68.4 years in Turkey to 81.5 in Japan, and infant mortality ranged from 2.4 in Iceland to 36.3 in Turkey. In addition, the potential years of life not lost per 100000 population was 73 per cent above the average in Hungary and 29 per cent below average in Japan.

4.2. Principal component analysis

In order to go around the eventual difficulties posed to the DEA approach when there are a significant number of inputs and/or outputs, we used principal component analysis (PCA) to aggregate some of the indicators. The use of PCA reduces the dimensionality of multivariate data, which is what we have regarding health status, and the health care resources used.

The idea of PCA is to describe the variation of a multivariate data set through linear combinations of the original variables (see, for instance, Everitt and Dunn, 2001). Generally, we are interested in seeing if the first few components portray most of the variation of the original data set, for instance, 80 per cent or 90 per cent, without much loss of information. In a nutshell, the principal components are uncorrelated linear combinations of the original variables, which are then ranked by their variances in descending order. This provides a more parsimonious representation of the data set and avoids that in the DEA computations too many DMUs are labelled efficient by default.

Usually one applies PCA by imposing that the original variables are normalized to have zero mean. This means that the computed principal components scores also have zero mean, and therefore some of the results from PCA are negative. Since DEA inputs and outputs need to be strictly positive, PCA results will be increased by the most negative value in absolute value plus one, in order to ensure strictly positive data (see, for instance, Adler and Golany, 2001).

We applied PCA to the four input variables, doctors, nurses, beds and MRI units. The results of such analysis (see Table 3) led us to use the first three principal components as the three input measures, which explain around 88 per cent of the variation of the four variables. This also implies that we only take into account the components whose associated eigenvalues are above 0.7, a rule suggested by Jolliffe (1972).

Applying PCA also to the set of our selected output variables, life expectancy, infant survival rate and potential number of years of life not lost, we selected the first principal component as the output measure since it accounts for around 84 per cent of the variation of the three variables (see Table 3).

Table 3 – Eigenvalues and cumulative R-squared of PCA on health input and output indicators

Component	Input indicators (doctors, nurse, beds, and MRI units)		Output indicators (life expectancy, infant survival rate, and potential number of years of life not lost)	
	Eigenvalue	Cumulative R- Squared	Eigenvalue	Cumulative R- Squared
1	1.0799	0.4275	2.5155	0.8385
2	1.1208	0.7077	0.4210	0.9789
3	0.7071	0.8845	0.6342E-01	1.0000
4	0.4621	1.0000		

We report in Table 4 the abovementioned principal components, to be used in the subsequent section in DEA computations.

Table 4 – Principal components used in the DEA calculations

	Output		Input	
	P1	P1	P2	P3
Australia	4.093	3.338	4.886	1.343
Austria	3.890	4.591	4.333	2.641
Belgium		3.452	5.160	3.584
Canada	3.971	3.007	4.546	1.055
Czech Republic	3.125	4.084	5.151	3.412
Denmark	3.496	3.593	4.934	1.385
Finland	4.222	3.329	4.401	1.000
France	3.972	3.178	5.177	2.962
Germany	3.921	4.340	4.792	3.120
Greece	3.735			
Hungary	1.000	3.293	4.455	4.182
Iceland	5.381			
Ireland	3.280			
Italy	4.302	3.756	5.224	3.739
Japan	5.296	5.778	1.000	2.265
Korea	2.921	2.369	2.303	3.501
Luxembourg	3.602	3.992	4.382	2.055
Mexico		1.000	3.757	2.116
Netherlands	3.856			
New Zealand	3.526			
Norway	4.380			
Poland	1.829	2.645	4.016	3.324
Portugal	3.093	2.601	4.780	3.427
Slovak Republic	1.762	3.587	4.658	3.680
Spain	4.299	3.110	4.859	2.395
Sweden	4.871	3.520	5.345	1.280
Switzerland	4.301	4.447	5.006	1.612
Turkey		1.316	3.135	2.412
United Kingdom	3.668	3.026	4.188	1.440
United States	2.707	3.006	4.148	1.334

Note: The original principal components data were increased by the most negative value plus one, in order to ensure strictly positive data.

4.3. DEA efficiency results

In Table 5 we report results for the standard DEA variable-returns-to-scale technical efficiency output scores and peers of each of the considered countries. The specification used includes as inputs the first three components of the PCA performed to the base variables doctors, nurses, beds and MRI units. As output we use the first component of the PCA applied to the base variables infant survival rate, life expectancy, and potential years of life not lost, as explained in the previous section.

It is possible to observe in Table 5 that seven countries would be located on the theoretical production possibility frontier with the standard DEA approach: Canada, Finland, Japan, Korea, Spain, Sweden and the USA¹³. Canada, Finland, Japan, Spain and Sweden are located in the efficient frontier because they perform quite well in the output indicator, getting above average results. On the other hand, Korea and the USA are generally below average regarding the use of resources in all the first three components

¹³ One can briefly compare our results with the ones reported by Afonso and St. Aubyn (2005) that addressed health efficiency for 2000 using a similar set of information but without principal component analysis. Interestingly, they reported that countries labelled as efficient were: Canada, Denmark, France, Japan, Korea, Norway, Portugal, Spain, Sweden, the United Kingdom and the United States, rather along the lines of our results.

selected. Another set of three countries is located on the opposite end – Hungary, the Slovak Republic and Poland. DEA analysis indicates that their output could be substantially increased if they were to become located on the efficiency frontier. On average and as a conservative estimate, countries could have increased their results by 40 per cent using the same resources.

Table 5 – DEA output efficiency results for health efficiency in OECD countries, 3 inputs (PCA on doctors, nurses, beds and MRI) and 1 output (PCA on life expectancy, infant survival rate, and potential number of years of life not lost)

Country	VRS TE	Rank	Peers	Rank 2
Australia	1.101	10	Canada, Sweden, Korea, Finland	10
Austria	1.304	15	Sweden, Japan	15
Canada	1.000	1	Canada	6
Czech Republic	1.592	18	Japan, Sweden	18
Denmark	1.368	16	Korea, Japan, Sweden, Finland	16
Finland	1.000	1	Finland	4
France	1.106	11	Sweden, Spain	11
Germany	1.282	14	Sweden, Japan	14
Hungary	4.386	21	Sweden, Japan, Korea	21
Italy	1.143	12	Sweden, Japan	12
Japan	1.000	1	Japan	2
Korea	1.000	1	Korea	3
Luxembourg	1.372	17	Korea, Japan, Sweden	17
Poland	1.876	19	Spain, Korea	19
Portugal	1.083	9	Korea, Spain	9
Slovak Republic	2.667	20	Korea, Sweden, Japan	20
Spain	1.000	1	Spain	4
Sweden	1.000	1	Sweden	1
Switzerland	1.166	13	Sweden, Japan	13
United Kingdom	1.070	8	Canada, Sweden, Korea, Finland	8
United States	1.000	1	United States	7
Average	1.406			

Note: VRS TE - variable returns to scale technical efficiency. Rank 2 – ranking taking into account the number of times the efficient countries are peers of inefficient countries.

4.4. Explaining inefficiency – the role of non-discretionary inputs

Using the DEA efficiency scores computed in the previous subsection, we now evaluate the importance of non-discretionary inputs. We present results both from Tobit regressions and bootstrap algorithms. Even if Tobit results are possibly biased, it is not clear that bootstrap estimates are necessarily more reliable. In fact, the latter are based on a set of assumptions concerning the data generation process and the perturbation term distribution that may be disputed. Taking the pros and cons of both methods into account, it seems sensible to apply both of them. If outcomes are comparable, this adds robustness and confidence to the results we are interested in.

In order to explain the efficiency scores, we regress them on GDP per capita, Y , educational level, E , obesity, O , and tobacco consumption, T , as follows¹⁴

¹⁴ Educational level is given by the percentage of population that achieved tertiary education in 2000–2003, GDP per capita refers to PPP USD in 2003, obesity refers to the percentage of obese population in 2002, and smoking refers to the percentage of population that consumed tobacco in 2003 (see the Annex for details).

$$\hat{\delta}_i = \beta_0 + \beta_1 Y_i + \beta_2 E_i + \beta_3 O_i + \beta_4 T_i + \varepsilon_i . \quad (4)$$

We first report in Table 6 results from the censored normal Tobit regressions for several alternative specifications of equation (4).

Table 6 – Censored normal Tobit results (19 countries)

	Model 1	Model 2	Model 3	Model 4
Constant	-3.2574 (0.000)	9.0162 (0.029)	-1.1185 (0.092)	9.9146 (0.009)
<i>Y</i>	-4.38E-05 (0.000)		-4.44E-05 (0.000)	
<i>Log(Y)</i>		-1.2476 (0.000)		-1.1546 (0.000)
<i>E</i>			-0.1060 (0.010)	-0.0891 (0.034)
<i>O</i>	0.0895 (0.000)	0.0783 (0.001)	0.0946 (0.000)	0.0841 (0.000)
<i>T</i>	0.1708 (0.000)	0.1453 (0.000)	0.1463 (0.000)	0.122 (0.001)
$\hat{\sigma}_\varepsilon$	0.5677 (0.000)	0.5600 (0.000)	0.4759 (0.000)	0.5088 (0.000)

Notes: *Y* – GDP per capita; *E* – Educational level; *O* – Obesity; *T* – Tobacco consumption. $\hat{\sigma}_\varepsilon$ – Estimated standard deviation of ε . P-values in brackets.

Inefficiency in the health sector is strongly related to the four variables that are, at least in the short to medium run, beyond the control of governments: the economic background, proxied here by the country GDP per capita, the level of education, smoking habits, and obesity. The estimated coefficients of the first two non-discretionary inputs are statistically significant and negatively related to the efficiency measure. For instance, an increase in education achievement reduces the efficiency score, implying that the relevant DMU moves closer to the theoretical production possibility frontier. Therefore, the better the level of education, the higher the efficiency of health provision in a given country. The same reasoning applies to GDP, with higher GDP per capita resulting in more efficiency. On the other hand, efficiency is lower the stronger smoking habits are and the higher the percentage of obese population is.

We also considered other variables as non-discretionary inputs: income inequality via the Gini coefficient, the ratio of public-to-total expenditure in health, spending on pharmaceuticals as a percentage of health expenditure, percentage of population over 65 years, per capita alcohol and sugar consumption, and total calories intake. However, none of these variables prove to be statistically significant and the estimation results are not reported for the sake of space.

Table 7 reports the estimation results from the bootstrap procedures employing algorithms 1 and 2, as described in sub-section 3.3. Estimated coefficients are very similar irrespective of the algorithm used to estimate them. Moreover, they are also close to the estimates derived from the more usual Tobit procedure, and, very importantly, they are highly significant.

Table 7 – Bootstrap results (19 countries)

Algorithm 1				
	Model 1	Model 2	Model 3	Model 4
Constant	-6.6028 (0.009)	7.6945 (0.022)	-1.2825 (0.087)	8.3628 (0.027)
<i>Y</i>	-10.58E-05 (0.026)		-4.729E-05 (0.000)	
<i>Log(Y)</i>		-1.6889 (0.015)		-1.8438 (0.005)
<i>E</i>			-0.1533 (0.000)	-0.06016 (0.029)
<i>O</i>	0.1430 (0.012)	0.0900 (0.033)	0.09536 (0.000)	0.2036 (0.010)
<i>T</i>	0.2874 (0.010)	0.1341 (0.072)	0.1686 (0.000)	0.1155 (0.053)
$\hat{\sigma}_\varepsilon$	0.4910 (0.000)	0.762 (0.010)	0.3746 (0.000)	0.7518 (0.007)

Algorithm 2				
	Model 1	Model 2	Model 3	Model 4
Constant	-6.5738 (0.006)	7.3501 (0.011)	-1.4814 (0.128)	9.9388 (0.022)
<i>Y</i>	-10.61E-05 (0.030)		-5.0726E-05 (0.002)	
<i>Log(Y)</i>		-1.6866 (0.002)		-2.0641 (0.005)
<i>E</i>			-0.2160 (0.007)	-0.06656 (0.068)
<i>O</i>	0.1431 (0.011)	0.09182 (0.005)	0.0908 (0.004)	0.1921 (0.007)
<i>T</i>	0.2878 (0.009)	0.1376 (0.004)	0.1963 (0.000)	0.1287 (0.048)
$\hat{\sigma}_\varepsilon$	0.4876 (0.000)	0.7622 (0.005)	0.6040 (0.000)	0.84062 (0.006)

Notes: *Y* – GDP per capita; *E* – Educational level; *O* – Obesity; *T* – Tobacco consumption. $\hat{\sigma}_\varepsilon$ – Estimated standard deviation of ε . P- values in brackets.

Significance across different model formulations and estimation methods is important and robust empirical evidence that efficiency in health depends directly on a country’s wealth and on education levels, and inversely on tobacco consumption and obesity. In a nutshell, population of poorer countries where education levels are low tend to under perform, so that results are further away from the efficiency frontier. The same reasoning applies to the other two environmental factors, with higher smoking habits and obesity levels drawing countries away from health related efficient performance.

Equation (4) can be regarded as a decomposition of the output efficiency score into two distinct parts:

- the one that is the result of In all methods and models a country’s environment, and given by $\beta_0 + \beta_1 Y_i + \beta_2 E_i + \beta_3 O_i + \beta_4 T_i$;
- the one that includes all other factors that have an influence on efficiency, including therefore inefficiencies associated with the health system itself, and given by ε_i .

In all methods and models, models 1, 3 and 4 provide the best fit (as can be seen by the lower estimated standard deviation of ε). We choose models 1 and 3 for our exercise of correcting for environmental variables in order to use versions with and without education as an exogenous factor.

The first column in Table 8 includes the bias corrected scores for Model 1, the one with the best fit using bootstrap algorithms (as can be seen by the lower estimated standard deviation of ε). Algorithm 2 implies a bias correction after estimating output efficiency scores, taking into account the correlation between these scores and the environmental variables. We also present score corrections for the three environmental variables. GDP, obesity, and tobacco consumption corrections were computed as the changes in scores by artificially considering that Y , O , and T varied to the sample average in each country. Fully corrected scores, presented in column five, are estimates of output scores purged from environmental effects and result from the summation of the previous four columns, truncated to one when necessary.

Table 8 – Corrected output efficiency scores (for Model 1)

	Bias corrected scores (1)	GDP correction (2)	Obesity correction (3)	Tobacco correction (4)	Fully corrected scores (5)=(1)+(2)+ (3)+(4)	Rank
Australia	1.144	0.249	-1.106	1.601	1.889	12
Canada	1.102	0.389	-0.047	2.407	3.851	18
Czech Republic	1.640	-1.098	-0.119	0.364	1.000	1
Denmark	1.428	0.513	0.639	-0.759	1.822	10
Finland	1.091	0.049	0.167	0.910	2.217	15
France	1.157	0.057	0.654	-0.471	1.396	9
Germany	1.326	0.087	0.153	0.306	1.871	11
Hungary	4.597	-1.297	-0.691	-2.428	1.000	1
Italy	1.180	0.027	0.783	0.335	2.325	16
Japan	1.125	0.145	1.541	-1.421	1.391	8
Korea	1.180	-0.943	1.541	-1.450	1.000	1
Luxembourg	1.432	3.825	-0.634	-2.198	2.425	17
Poland	2.092	-1.610	0.368	-0.644	1.000	1
Slovak Republic	2.768	-1.414	-1.207	0.306	1.000	1
Spain	1.057	-0.481	0.124	-0.788	1.000	1
Sweden	1.070	-0.015	0.611	2.263	3.930	19
Switzerland	1.222	0.360	0.897	-0.414	2.065	13
United Kingdom	1.141	0.033	-1.292	-0.183	1.000	1
United States	1.079	1.120	-2.380	2.263	2.083	14
Average	1.518	0.000	0.000	0.000	1.803	

Note: the fully corrected scores do not always add up to the indicated sum since for the cases where the result was below one we truncated it to the unity.

Comparing the ranks in the last column of Table 8, resulting from corrections for both bias and environmental variables, with the previously presented ranking from the standard DEA analysis (see Table 5 above), it is apparent that significant changes occurred. For the purpose of such comparison one should notice that the number of countries considered dropped from twenty-one in the DEA calculations to nineteen in the two-step analysis, since tobacco consumption data was not available for Austria and Portugal.

Some countries poorly ranked previously are now closer to the production possibility frontier – this is the case of Denmark, the Czech Republic, Hungary, the Slovak Republic, and the UK. On the other hand, other countries see a worsening in their relative position after taking into account environmental variables, namely Canada, Sweden, and the US, and to less an extent, Japan. At last, countries like Korea and Spain keep their good positioning.

Additionally, by looking at GDP, obesity and tobacco consumption corrections in Table 8, it is apparent that in some countries, environmental “harshness” essentially results from low GDP per head, as in the

Czech Republic, Korea, Poland and Spain. For instance, for the US, lower than average tobacco consumption is offset by above average obesity, while for Japan, Korea, Luxembourg, and Switzerland we see an opposite pattern. Finally, note that in countries like Germany and Italy, all three environmental variables push down performance, while an inverse result can be observed for Hungary.

Alternatively, a similar analysis can be conducted for Model 3, where we now have four environmental variables: GDP, education, obesity, and tobacco consumption (see Table 9).

Table 9 – Corrected output efficiency scores (for Model 3)

	Bias corrected scores (1)	GDP correction (2)	Education correction (3)	Obesity correction (4)	Tobacco correction (5)	Fully corrected scores (6)=(1)+(2)+ (3)+(4)+(5)	Rank
Australia	1.145	0.119	0.816	-0.702	1.092	2.470	16
Canada	1.055	0.186	1.097	-0.030	1.642	3.949	18
Czech Republic	1.654	-0.525	-0.933	-0.076	0.248	1.000	1
Denmark	1.430	0.245	-0.804	0.406	-0.518	1.000	1
Finland	1.102	0.023	-0.069	0.106	0.621	1.783	14
France	1.167	0.027	-0.696	0.415	-0.321	1.000	1
Germany	1.333	0.041	-0.458	0.097	0.209	1.222	10
Hungary	4.595	-0.620	-0.285	-0.439	-1.656	1.595	12
Italy	1.186	0.013	-1.236	0.497	0.228	1.000	1
Japan	1.078	0.069	0.946	0.978	-0.969	2.102	15
Korea	1.126	-0.451	0.687	0.978	-0.989	1.351	11
Luxembourg	1.440	1.829	-1.193	-0.402	-1.499	1.000	1
Poland	2.050	-0.770	-0.696	0.233	-0.439	1.000	1
Slovak Republic	2.781	-0.676	-1.149	-0.766	0.209	1.000	1
Spain	1.061	-0.230	0.298	0.079	-0.537	1.000	1
Sweden	1.050	-0.007	0.233	0.388	1.544	3.207	17
Switzerland	1.219	0.172	0.082	0.569	-0.282	1.760	13
United Kingdom	1.128	0.016	0.557	-0.820	-0.125	1.000	1
United States	1.044	0.536	2.803	-1.510	1.544	4.416	19
Average	1.508	0.000	0.000	0.000	0.000	1.508	

Note: the fully corrected scores do not always add up to the indicated sum since for the cases were the result was below one we truncated it to the unity.

From the results in Table 9 it is possible to conclude that education correction is not beneficial for countries such as Canada, the US, Japan or Korea. Indeed, and as results from both Tobit and bootstrap analysis indicate, the percentage of population with tertiary education is a relevant exogenous variable in explaining health efficiency scores. On the other hand, the below average results in this variable for several other countries, such as the Czech Republic, Italy and Luxembourg, allow for an improvement in their efficiency rankings after making the corrections related to all four non-discretionary factors used in Model 3.

5. Conclusion

In this paper, we have evaluated efficiency in health services across countries by assessing outputs (life expectancy, infant survival rate, potential years of life not lost) against inputs directly used in the health system (doctors, nurses, beds, MRI units) and environment variables (wealth and country education level, smoking habits and obesity). In methodological terms, we have employed a two-stage semi-parametric procedure. Firstly, output efficiency scores were estimated by solving a standard DEA problem with countries as DMUs. Secondly, these scores were explained in a regression with the environmental variables as independent variables.

Results from the first-stage imply that inefficiencies may be quite high. On average and as a conservative estimate, countries could have increased their results by 40 per cent using the same resources. Countries like Hungary, the Slovak Republic and Poland display significant room for improvement.

The fact that a country is seen as far away from the efficiency frontier is not necessarily a result of inefficiencies engendered within the health system. Our second stage procedures shows that GDP per head, educational attainment, tobacco consumption, and obesity are highly and significantly correlated to output scores – a wealthier and more cultivated environment are important conditions for a better health performance, while a more obese population and prevalence of smoking habits worsen health performance. Moreover, it becomes possible to correct output scores by considering the harshness of the environment where the health system operates. Country rankings and output scores derived from this correction can be substantially different from standard DEA results.

Non-discretionary outputs considered here cannot be changed in the short run. For example, educational attainment is essentially given in the coming year. However, contemporaneous educational and social policy will have an impact on future educational attainment. A similar reasoning applies to smoking habits, which are difficult to change, but where, for instance, tax measures are usually considered and implemented by the governments. Obesity problems also impinge negatively on the performance of the health system, and may be related to cultural traditions.

Finally, note that we have applied both the usual DEA/Tobit procedure and two very recently proposed bootstrap algorithms. Results were strikingly similar with these three different estimation processes, which bring increased confidence to obtained conclusions.

Appendix

In this appendix we explain the derivation of the output variable Potential Years of Life Not Lost. According to OECD (2005), the variable Potential Years of Life Lost per 100 000 population is given by:

$$PYLL_t = \sum_{a=0}^{l-1} (l-a) \frac{d_{at}}{p_{at}} \frac{P_a}{P_n} \times 100000, \quad (A1)$$

where l , the age limit, was set to 70 years, d_{at} is the number of deaths at age a at year t and p_{at} is the number of persons aged a at year t . P_a and P_n are, respectively, the number of persons aged a and the total number of persons in the reference population, the OECD total population in 1980.

Our relevant variable, Potential Years of Life Not Lost, $PYLNL_t$, is defined by us as follows:

$$PYLNL_t = \sum_{a=0}^{l-1} (l-a) \frac{p_{at} - d_{at}}{p_{at}} \frac{P_a}{P_n} \times 100000. \quad (A2)$$

Note that $p_{at} - d_{at}$ equals the number of persons aged a at year t that did not die.

Equation (A2) is equivalent to:

$$PYLNL_t = \sum_{a=0}^{l-1} (l-a) \frac{P_a}{P_n} \times 100000 - \sum_{a=0}^{l-1} (l-a) \frac{d_{at}}{p_{at}} \frac{P_a}{P_n} \times 100000, \quad (A3)$$

where the second term of the difference in the right-hand side is simply $PYLL$. The first term of the right-hand side of (A3) was computed by us via the very same population structure in 1980 used and reported by OECD (2005) when calculating the $PYLL$. It gives (see equation (3) in the text):

$$PYNLL = 3618010 - PYLL, \quad (A4)$$

where 3 618 010 is interpretable as the number of potential years of life for a 100 000 population under 70 years.

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Annex: Data and sources

Table A1. Health indicators

Country	Life expectancy 1/	Infant mortality 2/	Potential years of life lost 3/	Practising physicians 4/	Practising nurses 5/	Acute care beds 6/	MRI units 7/
Australia	79.8	5.0	3502	2.5	10.4	3.7	3.7
Austria	78.4	4.5	3700	3.3	9.3	6.1	12.4
Belgium	77.9	4.4	..	3.9	5.6	4.0	6.6
Canada	79.5	5.3	3554	2.1	9.8	3.2	3.9
Czech Republic	75.2	4.0	4632	3.5	9.2	6.5	2.1
Denmark	77.1	4.6	4014	2.9	10.2	3.4	7.1
Finland	78.1	3.1	3907	2.6	8.8	2.4	11.6
France	79.2	4.2	4098	3.3	7.1	4.0	2.6
Germany	78.2	4.2	3736	3.3	9.6	6.7	5.7
Greece	78.1	5.0	3601	4.4	3.9	..	2.2
Hungary	72.1	7.5	7056	3.2	5.0	6.0	2.3
Iceland	80.2	2.4	3054	3.5	13.4	..	14.9
Ireland	77.2	5.3	4225	2.4	14.7	3.0	..
Italy	79.8	4.5	3287	4.3	5.4	4.0	9.6
Japan	81.5	3.0	2917	2.0	7.7	9.1	32.3
Korea	76.2	6.2	4426	1.5	1.6	5.5	7.3
Luxembourg	78.1	5.3	3939	2.6	10.3	5.8	6.2
Mexico	74.5	21.3	..	1.5	2.2	1.0	0.2
Netherlands	78.3	5.1	3447	3.2	13.0	3.3	..
New Zealand	78.7	5.6	4149	2.2	9.4	..	3.4
Norway	79.1	3.6	3515	3.0	10.4	3.1	..
Poland	74.3	7.4	5974	2.3	4.9	5.0	0.9
Portugal	77.0	4.7	4934	3.3	3.9	3.2	3.6
Slovak Republic	73.6	7.2	5879	3.1	7.0	6.2	2.0
Spain	79.8	4.2	3597	3.1	7.0	3.2	6.0
Sweden	80.0	3.4	2937	3.2	10.0	2.4	7.9
Switzerland	80.1	4.6	3339	3.6	10.7	4.0	13.5
Turkey	68.4	36.3	..	1.4	1.7	2.2	3.0
United Kingdom	78.2	5.3	3721	2.1	8.7	3.7	5.1
United States	77.0	6.9	5101	2.3	7.9	2.9	8.4
Mean	77.5	6.5	4083	2.8	8.0	4.2	6.8
Median	78.2	4.9	3736	3.1	8.8	3.7	5.7
Minimum	68.4	2.4	2917	1.4	1.6	1.0	0.2
Maximum	81.5	36.3	7056	4.4	14.7	9.1	32.3
Standard deviation	2.8	6.5	981.2	0.8	3.4	1.8	6.4
Observations	30	30	27	30	30	27	27

1/ Years of life expectancy, total population at birth. Average for 2000 and 2003. Source: OECD (2005).

2/ Deaths per 1000 live births. Average for 2000-2003. Source: OECD (2005).

3/ All causes - <70 year./100 000. Average for 2000-2003. Source: OECD (2005).

4/ 5/ 6/ Density per 1000 population. Average for 2000-2003. Source: OECD (2005).

7/ Per million population. Average for 2000-2003. Source: OECD (2005).

.. – non available.

Table A2. Non-discretionary factors

Country	Per capita GDP	Education level	Obesity	Tobacco
	1/	2/	3/	4/
Australia	29143	19.5	21.7 [#]	19.8 ^{\$}
Austria	29972	7.0	9.1 [#]	..
Belgium	28396	12.7	11.7 ^{\$}	27.0
Canada	30463	20.8	14.3 [*]	17.0
Czech Republic	16448	11.4	14.8	24.1 [*]
Denmark	31630	12.0	9.5 [#]	28.0
Finland	27252	15.4	12.8 [*]	22.2
France	27327	12.5	9.4	27.0
Germany	27609	13.6	12.9 [*]	24.3
Greece	19973	12.2	21.9	35.0 [#]
Hungary	14572	14.4	18.8 [*]	33.8
Iceland	30657	18.9	12.4	22.4
Ireland	36775	14.3	13.0	27.0 [*]
Italy	27050	10.0	8.5	24.2
Japan	28162	20.1	3.2 [*]	30.3
Korea	17908	18.9	3.2 ^{\$}	30.4 ^{\$}
Luxembourg	62844	10.2	18.4	33.0
Mexico	9136	13.4	24.2	26.4 [*]
Netherlands	29412	21.2	10.0	32.0
New Zealand	21177	14.6	20.9 [*]	25.0
Norway	37063	27.5	8.3	26.0
Poland	11623	12.5	11.4 ^{&}	27.6 ^{\$}
Portugal	18444	7.1	12.8	..
Slovak Republic	13469	10.4	22.4	24.3 [*]
Spain	22264	17.1	13.1 [*]	28.1
Sweden	26656	16.8	9.7 [*]	17.5
Switzerland	30186	16.1	7.7	26.8 [*]
Turkey	6749	8.9	12.0 [*]	32.1
United Kingdom	27106	18.3	23.0 [*]	26.0
United States	37352	28.7	30.6	17.5
Mean	25894	15.2	14.1	26.2
Median	27290	14.4	12.8	26.6
Minimum	6749	7.0	3.2	17.0
Maximum	62844	28.7	30.6	35.0
Standard deviation	10681	5.2	6.4	4.8
Observations	30	30	30	28

1/ GDP per capita - (USD) PPP GDP and population in 2003. Source: World Development Indicators Database, September 2003.

2/ Percentage of population at ISCED 5A = Programmes at the tertiary level equivalent to university programmes (ISCED-76: level 6), and ISCED 6 = Advanced research programmes at the tertiary level, equivalent to PhD programmes. (ISCED-76: level 7). Average for 2000-2003. Source: OECD, Education at a Glance 2005, www.oecd.org/edu/eag2005.

3/ 2002 body weight, obese population (BMI>30kg/m2). Source: OECD HEALTH DATA 2005, Sept. 05. ^{*} - 2003; ^{\$} - 2001; [#] 1999; & - 1996.

4/ Tobacco consumption (% of pop), 2003. Source: OECD HEALTH DATA 2005, Sept. 05. ^{*} - 2002; ^{\$} - 2001; [#] 2000.

.. - non available.

AUSTRIAN APPROACH TOWARDS THE QUALITY OF PUBLIC EXPENDITURES

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Paper completed: October 2004

1. Introduction

Many recent studies have focused on the correlation between (sustainable) growth and the structure of public finances. However, macro analyses have not been generated sufficiently satisfactory results. National case studies should therefore help to get a better insight. This case study will point out the Austrian approach to the "quality" reorientation of public finances. The paper will focus on the expenditure side, noting, however, that the tax structure, tax incentives and the overall tax burden are of equal importance for enhancing the growth potential of the economy.

The Austrian economic policy follows a three-pillar strategy:

- Balancing the budget balance over the business cycle
- Reducing the tax burden by 5 percentage points to 40 % of GDP until 2010
- Enhancing GDP and employment growth through measures to strengthen the supply-side of the economy.

Table 1

in % of GDP	1999	2000	2001	2002	2003	2004
Total expenditures (general government)	53,2	51,3	50,8	50,6	50,7	50,2
Total receipts (general government)	50,8	49,7	50,9	50,1	49,5	48,8
Tax burden	43,7	42,8	44,8	43,7	43,1	42,8
Budget balance (Maastricht)	-2,2	-1,5	0,3	-0,2	-1,1	-1,3
Government debt ratio (Maastricht)	66,5	65,8	66,1	65,7	64,5	64,3
Primary balance	1,3	2,1	3,7	3,1	2,0	1,7

Source: MoF 2004

2. Theoretical background

Most analyses of public budgets are based on static concepts, following the lines of Musgrave. These concepts tend to neglect the time-dimension and dynamics that could result in fundamental shifts in future fiscal policy due to present commitments. The resulting policy changes will then go hand-in-hand with major adjustment and transaction costs and will, in pursuance, drag on GDP growth, employment and welfare. In addition, the credibility of fiscal policy will be hampered severely, as past political commitments will not be able to be fulfilled.

Hence, the Austrian MoF has developed a pragmatic approach, which tries to capture the time-dimension and dynamism in the budgets. For example, spending pressures could come from past commitments and will continue to follow a further upward trend, c.f. due to the ageing of populations. Under the no-policy-change assumption, the share of overall public spending in GDP and thus the tax gap will increase significantly (where the tax burden shows an already high level in many EU countries). Alternatively, when keeping the total level of spending as percentage of GDP constant, spending on public pension and health care will crowd out more productive spending of other budget categories. In both cases, public budgets will exert a clear negative impact on the allocation of resources and thus GDP growth, even compared with today.

The Austrian dynamic approach classifies expenditures along the three different vectors of time: past, present and future. Before the recent reform initiatives in Austria, roughly 2/5 of public spending were related to the past and the present time, respectively, while spending for the future amounted to roughly 1/5. The following examples highlight the three vectors:

- **Expenditures based on past decisions and legal entitlements.** These expenditures are rooted evidently in the past, such as the obligation to pay interest for outstanding public debt or to pay public pensions. They typically belong to the field of income distribution and are thus characterised that they will not give rise to strong supply-side effects in the future. As far as Europe is concerned, expenditures related to past policies have increased significantly over the last three decades, mainly due to rising deficit-induced interest payments. Whilst pension outlays have been high but less dynamic due to fairly favourable demographics, these expenditures are expected to go up by 3 to 5 pp of GDP in most EU countries due to ageing populations.
- **Expenditures designed to serve the present system ("system-keeping" expenditures):** firstly, those necessary to run the economic, legal and social system of a country, such as expenditures for administration, justice and home affairs, defence; secondly, to maintain the productive potential of the work force, such as health care and many social transfers.
- **Expenditures with a positive impact on the future supply-side and the growth potential of the economy.** Among those are public infrastructure investments, spending for R&D, mostly education, and some subsidies to enterprises, etc. As far as Europe is concerned, these expenditures have declined.

This list is not exhaustive and may be categorised differently according to specific circumstances in a country. For instance, subsidies to enterprises might be used to compensate for market failures or in order to avoid bankruptcy (in this case the system of national accounts makes no difference!).

The categorisation is showing the political room for manoeuvre:

- The higher the share of expenditures for the past (to a large extent for the present, and partly for the future) is, the more policy is locked-in into commitments of the past and the smaller is the short-term room for manoeuvre, or, policy risks time-inconsistency (e.g. by writing-off public debt, cutting pensions etc.).
- Expenditures for the future typically show the highest degree for discretion.

When applying this categorisation, economic policy conclusions are clear-cut:

- Spending on the past should be contained as much as possible.
- For spending on the present, efficiency should be checked, inter alia, by international benchmarking.
- Expenditures related to the future should be expanded for reasons of enhancing the growth potential of an economy.

3. Austria's strategy

The current government, which is in office since the year 2000, broadly followed this categorisation, when formulating its strategy. The following are the most important recent policy measures.

Reform of past-related expenditures:

Pension reform:

The pension reform of 2003 has already put the Austrian pension system in a much better position of financial sustainability. Legal (early) retirement ages will increase continuously, early retirement will gradually be phasing-out, a markedly stronger match between contributions and benefits will be introduced, and strong financial incentives to work longer have been implanted into the systems. By January 1st 2005 the newly established harmonized pension accounts will become effective.

In addition to these measures, the government emphasized the second and third pillars of the pension system. Financial incentives have been set up to strengthen these pillars, which have not played a role in the old system. This will also strengthen the Austrian capital market and lead to a better risk diversification.

Table 2

	Base year	Long Run Projections								2005-2050 % change per à
	2005	2015	2020	2025	2030	2035	2040	2045	2050	
Before 2003 reform										
Pension spending in bn €	24,9	33,4	38,2	44,1	50	56	60,3	63,5	66,7	2,2
Pension spending as a % of GDP	10,2	10,8	11,3	12,1	12,7	13,2	13,1	12,8	12,5	
Federal contribution as a % of GDP	2,6	3,2	3,7	4,5	5,1	5,6	5,6	5,2	4,9	
Harmonization 2004										
Pension spending in bn €	24,8	33,1	37,7	42,5	46,8	50,9	53,9	56,2	58,5	1,9
Pension spending as a % of GDP	10,1	10,6	11,1	11,6	11,8	12	11,7	11,3	10,9	
Federal contribution as a % of GDP	2,2	2,7	3,1	3,7	3,9	4	3,8	3,3	3	

Calculations exclude civil servant schemes.

Reform of system-keeping expenditures:

Public sector administration reform:

In order to enhance effectiveness and efficiency in public administration a comprehensive reform agenda has been introduced. The traditional public administration has been reorganised towards new public management, comprising, inter alia, a re-launch of the controlling and reporting systems. Parallel to the modernisation of the central government a steady reduction of staff has taken place. The overriding objective is to provide a better output with fewer, but more qualified personnel. Between 2003 and 2006 staff in the central government is going to drop by 10.000.

The reform measures include:

"Elektronischer Akt" (ELAK): By introducing the electronic file, it will be possible to have an electronic communication within and between Ministries.

- "FINANZonline" in the Ministry of Finance: It enables unlimited and reciprocal electronic communication between the tax administrations, citizens, and economic agents;
- Establishment of the "Buchhaltungsagentur": the previous 32 ministerial accounting offices have been centralised under a central government accounting agency.
- Project "Serviceleistungen im Bund" is aimed at centralising and optimising support tasks.

Also, health care reform will be designed to lower spending for the present.

Additional savings will be achieved by a redistribution of tasks provided by federal state, *Länder* and local authorities ("Finanzausgleich").

Enhancing of spending for the future:

The stimulus and growth packages 2002/03 have strengthened the Austrian economy, implementing measures in the field of R&D, education and infrastructure:

Research & Development:

Substantial additional funds will be directed towards research and development.

- Establishment of a national foundation for research, technology and development with expected yields of €125m per annum
- Use of public funds for R&D in the public and private sectors at a 1:2 ratio
- Rule 25/8: research allowance of 25 % or alternatively a research premium of 8 % for expenditures according to the "Frascati-Manual", research allowance of 35 % for R&D expenditures of value to the economy.

Education:

When consolidating the budget (2000-2003), spending for education was not cut in nominal terms, but emphasis was put on getting more value for money. In order to enhance the effectiveness and the efficiency in education (universities, public schools), the government undertook a large reorganisation of the system, with universities obtaining full autonomy on January 1st, 2004. Within the scope of the Growth Package 2003, universities, universities of applied sciences and schools got app. € 100m for further improvements in equipment and for educational projects on innovation. Furthermore, an education tax allowance of 20 % was introduced.

Infrastructure:

Investments in the transport system will be increased over the coming years (within the framework of the Austrian and TEN strategies for 2010). The network of motorways will be enlarged in general, existing gaps be closed, supplements to the net are to be established, and capacities within the country are to be adjusted. The railroad net will be further extended, and measures have been enacted to reinforce greater efficiency in the system, to provide a better customer service and to increase in individual travel and freight transportation.

4. Assessment and conclusion

The Austrian approach aims at detecting dynamic problems in public finances by analysing the time-structure of public expenditures and its impact on GDP and employment growth.

Austria has undertaken measures that "dampen" the pressure on "past-related" spending, such as through the pension reform in view of the ageing of the population and the aim to achieve a balanced budget balance over the cycle. The strategy aims at containing expenditures for the past and maintaining the present system. This will help in prioritising expenditures for future investment, without worsening the fiscal balance:

- The long run effects of the Pension Reform 2003 (excl. harmonisation) were estimated to amount to app. 1 % of GDP. Savings in the civil sector pension schemes could add some 0.1 pp until 2010 and up to 0.3-0.4 pp until 2030.

- Since 2000, the public sector administrative reform has contributed to the fiscal consolidation process by producing savings of around €1.1bn. € Between 2003 and 2006, annual savings are planned to increase to €1.3 bn.
- This reorientation has given scope to three budgetary supply-side oriented stimulus packages resulting in an additional real GDP growth of 0.5 % - 0.75 % (Source: WIFO).
- Furthermore, the government passed a major tax reform with estimated growth effects of 0.4 % in 2005 and 0.5 % in 2006 (Source: WIFO).
- The stimulus packages, the growth and competitiveness package and the tax reform will add up to tax revenue losses of €3 415m (1.4 % of GDP) in 2005 and €3 684m (1.5 % of GDP) in 2006.

Finally, it should be clear that public expenditures are only inputs to achieve economic policy goals. Thus, a mechanical interpretation of spending shares according to the three time dimensions cannot replace the proper assessment of public intervention. However, shifts in the shares shed light on potential problems, and in combination with long-run projections the need for reviewing existing policies may become more evident than by other methods.

Annex:

Table 3 - Total General government expenditure, mill. EUR

COFOG (010-100)

Government (S.13), consolidated

COFOG		Total General government expenditure (mill.EUR)							
		1995	1996	1997	1998	1999	2000	2001	2002
010	General public services	16.091	17.195	15.244	17.075	16.763	17.598	18.094	16.826
020	Defence	1.764	1.784	1.821	1.833	1.880	1.958	1.912	1.911
030	Public order and safety	2.653	2.708	2.791	2.888	2.996	2.990	2.992	3.094
040	Economic affairs	8.783	8.510	8.500	9.227	9.540	8.437	11.029	11.273
050	Environment protection	2.383	2.421	699	652	862	842	821	734
060	Housing and community amenities	2.026	2.127	2.022	2.147	1.877	1.827	2.220	1.786
070	Health	13.025	13.302	14.527	15.160	15.480	15.833	12.857	14.559
080	Recreation, culture and religion	1.912	1.958	1.977	2.025	2.292	2.136	2.272	2.297
090	Education	11.114	11.089	11.154	11.422	11.778	12.011	12.097	12.543
100	Social protection	38.924	39.996	39.984	40.948	43.328	44.670	45.690	47.070
010-100	Total	98.676	101.090	98.718	103.377	106.797	108.302	109.984	112.093

Source: Statistic Austria, 2004

Table 4 - Government expenditure by function as a percentage of GDP

	General public services	Defence	Public order and safety	Economic affairs	Environment protection	Housing and community amenities	Health	Recreation, culture and religion	Education	Social protection	Total	GDP at current prices, 2001 (mio EUR)
EU-15	6.7	1.7	1.6	4.2	0.7	0.9	6.3	0.8	5.1	18.8	47.1	8 861 884
eurozone	7.2	1.5	1.5	4.7	0.8	1.0	6.4	0.9	5.0	19.2	48.1	6 842 154
B	9.9	1.2	1.6	4.4	0.7	0.4	6.6	1.0	6.2	17.4	49.4	254 283
DK	8.6	1.7	1.0	3.6	:	0.9	5.4	1.7	8.3	24.2	55.3	177 840
D	6.3	1.2	1.6	4.3	0.6	1.1	6.3	0.7	4.2	21.9	48.3	2 071 200
EL	10.6	3.2	0.8	5.5	0.5	0.4	4.1	0.4	3.8	18.8	47.8	131 026
E	5.5	1.2	2.1	4.4	0.9	1.1	5.4	1.1	4.3	13.5	39.5	651 641
F	6.4	2.4	1.0	5.2	1.3	1.0	7.9	0.8	6.0	20.4	52.5	1 475 584
IRL	3.7	0.7	1.5	5.0	:	1.8	6.3	0.6	4.3	9.7	33.9	114 742
I	9.5	1.1	1.9	4.0	0.8	0.9	6.3	0.9	5.1	17.7	48.5	1 220 147
L	4.7	0.3	1.0	2.8	1.3	0.8	4.9	1.7	4.7	17.1	39.0	21 987
NL	8.2	1.6	1.5	5.6	0.7	1.5	4.1	1.1	4.8	17.5	46.6	429 127
A	8.6	0.9	1.4	5.5	0.4	1.0	5.8	1.0	5.8	21.9	51.9	212 511
P	6.6	1.7	1.9	6.1	0.7	0.9	6.8	1.2	6.9	13.4	46.3	123 054
FIN	6.4	1.5	1.4	4.6	0.3	0.6	6.0	1.2	6.3	20.6	49.1	135 228
S	8.5	2.2	1.4	4.4	0.3	1.0	6.6	1.1	7.7	23.9	57.1	244 905
UK	4.3	2.6	1.9	2.3	0.5	0.4	6.1	0.5	4.6	16.0	40.2	1 596 986

Source: EuroStat

Table 5: Government expenditure by function as a percentage of total government expenditure

	General public services	Defence	Public order and safety	Economic affairs	Environment protection	Housing and community amenities	Health	Recreation, culture and religion	Education	Social protection	Total government expenditure, 2001 (mio EUR)
EU-15	14.4	3.7	3.4	9.0	1.5	1.9	13.5	1.8	10.8	40.0	4 174 495
eurozone	14.9	3.1	3.2	9.8	1.7	2.1	13.3	1.8	10.4	39.7	3 293 997
B	19.9	2.5	3.3	8.9	1.4	0.9	13.3	2.0	12.5	35.2	125 609
DK	15.5	3.0	1.8	6.6	:	1.6	9.8	3.0	15.0	43.8	98 313
D	13.0	2.5	3.3	9.0	1.3	2.3	13.1	1.5	8.7	45.3	1 001 380
EL	22.1	6.6	1.8	11.3	1.0	0.9	8.6	0.9	7.9	39.0	62 582
E	13.9	3.0	5.4	11.0	2.3	2.8	13.6	2.8	11.0	34.1	257 288
F	12.3	4.5	1.8	9.9	2.5	1.9	15.1	1.6	11.5	39.0	774 317
IRL	11.1	2.1	4.4	14.9	:	5.3	18.6	1.7	12.9	28.9	38 947
I	19.7	2.3	4.0	8.3	1.7	1.9	13.0	1.9	10.5	36.7	591 793
L	11.9	0.8	2.4	7.2	3.3	2.0	12.5	4.3	12.0	43.6	8 604
NL	17.6	3.5	3.2	12.0	1.6	3.3	8.8	2.3	10.2	37.5	200 033
A	16.5	1.7	2.7	10.5	0.8	1.8	11.1	1.9	11.1	41.8	109 984
P	14.3	3.8	4.2	13.1	1.4	2.0	14.7	2.5	15.0	29.1	57 015
FIN	13.0	3.1	2.8	9.4	0.7	1.2	12.2	2.4	12.9	42.1	66 445
S	14.9	3.9	2.5	7.7	0.5	1.7	11.6	2.0	13.5	41.7	139 920
UK	11.0	6.6	4.8	5.8	1.3	1.1	15.6	1.3	11.7	40.8	642 265

Source: EuroStat

IMPROVING INNOVATION POLICY: THE SEARCH FOR KNOWLEDGE ABOUT ITS EFFECTIVENESS

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Paper completed: 2005

1. Introduction¹

Productivity growth appears high on the international policy agenda. For instance, in 2000 the European council stressed the importance of productivity by formulating the goal “to become the most competitive and dynamic knowledge-based economy in the world...”. In addition, the European council in 2002 in Barcelona formulated a R&D ambition that in 2010 European R&D-expenditure should approach 3% GDP, of which two-thirds by the private sector. The Lisbon goal suggests that productivity growth is an important policy goal, whereas the Barcelona ambition points to R&D-policy as an important instrument to achieve this goal.

How can the quality of public finance be improved with regard to R&D. In the first paragraph of this paper we first like to make a few qualifications in this respect. In particular within Europe, labour market participation is at least as urgent as productivity growth to achieve GDP growth. In addition, productivity growth differences between countries and sectors as such are not meaningful comparisons, because specialisation occurs on the basis of comparative advantages; which implies that some countries have a higher productivity growth than others. Relative higher productivity growth in a specific country doesn't entirely lead to more welfare growth, because it may partly leak away to other countries through changes in the terms of trade.

Nevertheless, certainly at the global level, productivity growth remains an important determinant for economic growth. Paragraph 2 looks at the theoretical rationale for innovation policy. The economic literature indeed points to external effects of R&D-investments and thus for a role of government policy. On the other hand, the risk of government failure in the field of innovation policy is also present because of information problems about private and social returns, future technological developments and the changes of comparative advantages.

In paragraph 3 we look at the innovative position of the Netherlands and conclude that in international perspective we take an average position in a group of internationally comparable countries. The design and impact of innovation policy in the Netherlands is then described in paragraph 4. We argue that the design of the instruments is related to the perceived market failures. However, at the same time we observe that our state of knowledge of the effectiveness of innovation policy is limited at this time. This leads us to the conclusion in paragraph 5 that in particular for specific policy the risks of government failure are higher and a careful assessment should be made if the potential benefits outweigh these costs of government failure. Our current information restrictions imply that it is more difficult to design a

¹ This is a discussion paper prepared on personal basis and does not necessarily reflect official government policy.

tailor-made policy mix. To improve the effectiveness of future innovation policy we advocate an increasing use of experiments and an increase in evaluation and accountability.

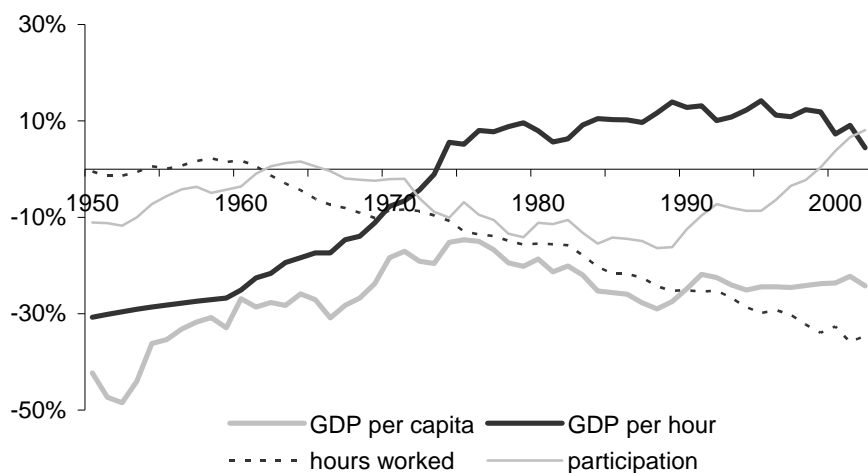
2. Policy aimed at productivity growth: a closer look

Ultimately, productivity growth provides the basis for economic welfare. However, it is useful to make a few remarks to put it in the right perspective.

2.1. Welfare growth: productivity and participation

If we look at the economic position of Europe, it is useful to bear in mind that indicators such as growth rates or the level of GDP per capita are determined both by participation and productivity. Productivity is usually measured as GDP per hour. Based on this indicator, the Netherlands is one of the most productive countries in the world. For example, the Netherlands is more productive than the U.S. (Figure 1)

Figure 1 - Participation and productivity



Source: Groningen University and The Conference Board, GGDC Total Economy Database, 2002, <http://www.eco.rug.nl/ggdc>

Despite the high productivity performance, GDP per capita is considerably lower. Although in the last decade, participation has risen up to the US-level, the number of hours that an average Dutch employee works (1350 hours), considerably stays behind that of his American counterpart (1800 hours). This huge difference is the result of the greater importance of part-time work and the lower full-time workweek in the Netherlands. More than one-third of Dutch employees work 30 hours or less per week compared to 13% in the US. A fulltime job in the Netherlands requires 1700 hours against almost 2000 hours in the US. Hence, when it comes to increasing GDP growth, the possible gains in Europe through stimulating labour market participation are tremendous and remain at least as important and urgent as productivity growth. The ageing of the population in OECD countries strengthens the need to develop a broad and sound economic basis.

2.2. Productivity growth: comparative advantages and terms of trade

At the global level productivity growth is an important determinant of welfare growth. More production can directly be used to increase consumption or to increase investment leading to higher future output and consumption possibilities. However, at the national level the link between higher production growth and consumption growth is somewhat weaker.

From trade theory it follows that as a result of comparative advantages countries specialise in certain sectors. As a consequence, differences in productivity growth between countries and sectors are also likely to occur. Through international trade and relative price changes all countries profit from this specialisation pattern. In competitive domestic and international markets, productivity growth in a sector will be transferred into lower output and export prices. For example, the Netherlands contains a large financial and services sector instead of an ICT-sector, but the enormous productivity gains in the ICT sector have led to welfare gains in the Netherlands through lower prices of computers.

The importance of terms of trade effects caused by (productivity) growth is empirically quite significant. For instance Acemoglu and Ventura (2001) find that a 1%-point faster growth is associated with a 0.6%-point deterioration in the terms of trade. Nahuis and Geurts (2004) find significant effects of productivity growth on relative export prices of industrial goods. Within a year, about a quarter of productivity growth in a country is translated into lower export prices. In a four year period, this share has increased to almost 60%, whereas over a 25 year period 90% of productivity growth has been translated into lower export prices.

Bayoumi and Haacker (2002) investigate the welfare impact of the recent productivity surge in the ICT-sector for 29 countries. They find that welfare benefits mainly accrue to users of ICT, not to producers, because of falling relative prices. Of the five most specialised ICT countries only Singapore has significant welfare gains. The other four countries with a yearly contribution of ICT of more than 1% point to real GDP growth (Ireland, the Philippines, Malaysia and Thailand) suffered such terms of trade losses that the growth of welfare is lower than 0.20% a year. On the other hand, some of the non-ICT producing countries, such as Denmark and Australia, have positive contributions to welfare growth due to an improvement in their terms of trade.

Of course, comparative advantages and the sectors that countries specialise in are subject to change. However, an explicit strategy to promote the development of certain sectors is not without risk. Not only does the government experience information problems about the optimal specialisation pattern, but if too many countries try to specialize in the same sectors with high productivity growth, it may also result in excess supply and inefficient allocation.

To summarize, the welfare effects of a relatively high productivity growth are smaller than expected at first sight. In the long run, the welfare effects of productivity growth are partly offset by a deterioration of the terms of trade of a country.

3. Market and government failures in the market for innovation

Legitimization of innovation policy starts by identifying *market failures* that may lead to suboptimal outcomes for the society as a whole, because external effects may drive a wedge between private and social returns. Theoretical and empirical literature point to both negative and positive external effects of R&D (Jacobs et al, 2001). Firstly, insufficient market power may limit the ability of a firm to internalize all benefits of innovation or knowledge accumulation (rent spillovers). Furthermore, the mobility of researchers and the inability to keep innovations in new products a secret for competitors create knowledge spillovers (Jaffe, 1996). Also, negative spillovers might occur because an innovation may reduce the profits of competitors. On average, empirical evidence points to positive spillovers. Government policy aimed to reduce the gap between private and social returns could increase welfare. In addition to external effects, imperfect information, network effects and market power of incumbent firms may justify policy intervention as well. These market failures may decelerate the diffusion of knowledge, although this is (partly) offset by the monopoly rents of early adopters of new technologies (CPB, 2002a). On the basis of these market failures, there may be room for government intervention.

However, the effectiveness of innovation policy depends on the occurrence of *government failure*. Limited information, limited control over private responses and limited control over bureaucracy can reduce the effectiveness of policy intervention. The risk of ineffective decisions is increased by lobby

groups. Baldwin and Robert-Nicoud (2002) argue that the government will generally pick losers, because losers need to lobby to survive, whereas winners do not. Furthermore, policymakers have to take into account that the financing of policy initiatives require distortionary taxation. Finally, rent seeking and high transaction costs increase the risks of government failure

The effectiveness of public support for specific technologies or sectors in particular is difficult to determine ex-ante, because the government usually has limited information about future technological developments and comparative advantages. The size of external effects is also unknown and differs with each technology. Because innovation processes and technologies tend to become more complex, the information problem increases. A strong policy focus on technology is also not completely clear from a welfare point of view. For example, based on the composition of our export the present comparative advantages of the Netherlands probably lie in more traditional sectors. Trying to influence these comparative advantages in the direction of new technology is a risky business. Finally, implementation costs are higher in the case of specific policy and can amount to 30%

There are thus several potential market failures present with regard to innovation policy that may legitimize policy intervention. However, policy solutions to address these market failures are not without risk. Government failure, the risk of making the wrong selections and the terms of trade effects may lower the effectiveness of government intervention. Authorities should therefore only interfere when market failures are most severe and when the risk of government failure is small.

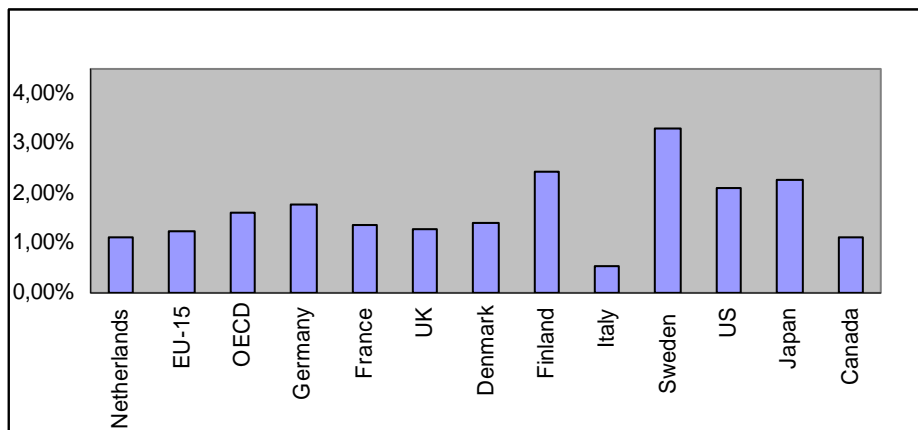
4. The innovative score of the Netherlands

In previous paragraphs we have argued that stimulating productivity growth can be an important element in achieving economic growth and that there is a theoretical basis for innovation policy. In the following two paragraphs we look at the innovative position of the Netherlands and the design of innovation policy.

A commonly used indicator with regard to productivity and innovation policy is the total of R&D expenditure. The Barcelona goal is to spend 3% of GDP on R&D. This should not be interpreted as a goal in itself, but as a benchmark (AWT, 2002: 14). R&D is after all only an input, whereas in the end only the results are relevant. Furthermore, just as other investments, R&D will have diminishing marginal returns and the social optimal level of R&D-expenditure depends on several different factors and should not necessarily be equal to 3%.

Presently, the Netherlands private R&D expenditure of Dutch companies is 1.2%, which is below OECD average (figure 2). The relative low expenditure on R&D can partly be explained by the sectoral composition of the Netherlands. The Dutch economy has few sectors of industry with a high R&D-intensity such as the pharmaceutical industry, ICT-industry and airplane industry. The sectoral composition explains circa 50% of the relative R&D gap compared to a set of high performing OECD countries (Hollander and Verspagen, 1999). R&D investment of seven large companies largely determines total R&D expenditure.

Figure 2 - private R&D expenditure in % GDP



Source: OECD, main science and technology indicators, volume 2003/1

It is also important to note that innovation is more than just R&D. A firm can outsource R&D to (foreign) universities, can learn from (international) contacts, can buy licenses and learn from innovations in (imported) products. This is in particular the case for the Netherlands with three neighboring important R&D-countries (France, Germany and the U.K.) and the international orientation of the economy (Keller, 2002).

If we not only look at R&D expenditure but also at immaterial investments such as royalties, licenses, advertisements, software, the Dutch position improves. In international perspective Dutch companies invest a relatively large amount in business-orientated immaterial investments and especially in royalties and licenses, which illustrates the openness of the economy and the fact that a lot of knowledge is imported.

The environment in which companies operate is also important. The government influences the market conditions with regulation and institutions. More competition increases the necessity to adopt new technologies and incentives to innovate, whereas patent policy may guarantee a company that it may be able to benefit from its innovations. Through streamlining of regulation and competition policy the government can also make an important contribution to innovation policy. Also important is the working of the labour market. An OECD study proves that countries with more flexible regulation have experienced higher labour productivity growth, because there countries were able to adapt themselves to technological developments, shifts in demand and economic shocks (OECD, 2002).

A final indicator of innovative potential is the available labour potential for innovative processes. Based on an international index of available human resources in science and technology, the Dutch position is among the best within the EU in this aspect. The Netherlands have a good fundamental knowledge base and Dutch researchers have relatively many publications in international scientific journals and magazines. Also there are relative many references of foreign researchers to Dutch investigation.

The indicators mentioned above are all input-related. On the basis of these indicators the Netherlands takes a position in the middle group of internationally comparable countries. More relevant however is the output that is achieved.

If we look at output indicators, it turns out that the percentage of companies that are involved in innovative activities in the Netherlands is relatively high. At first sight, this may seem a bit paradoxical given the fact that total R&D is relatively low, but as mentioned before this indicator is disturbed by the large share of R&D investment of large companies in other countries. Therefore, it is still possible to have a large number of companies that are involved in innovative activities. On the other hand, the use of scientific research by private companies is low. Patent applications and references to Dutch scientific research by Dutch companies considerably falls behind the US and European average. Though there may be some measurement problems in this respect it appears that innovative potential is not fully used.

Figures about knowledge transfer from fundamental research towards private companies strengthen this observation.

To summarize, the overall picture is that private companies relatively have low R&D investments and that R&D particularly takes place in public organisations. Total R&D intensity therefore remains on average in international perspective. On this aspect, the economy is thus not characterized by great innovative strength, but based on other indicators a more positive view emerges. A study of the independent bureau of economic analysis of the government (CPB) confirms this. Despite the low R&D expenditure the overall innovative Dutch position is considered as moderately positive.

5. Design and impact of Dutch innovation policy

In this paragraph we describe the design and impact of Dutch innovation policy. We distinguish four objectives and look at the theoretical market failures, the instruments that are used and their potential economic impact.

5.1. Design of innovation policy

The objectives of Dutch innovation policy can roughly be divided into four categories:

- a) More development and use of technological knowledge by individual companies
- b) Strengthening the knowledge base through cooperation between companies and public knowledge centres
- c) More diffusion and application of knowledge within small- and medium-sized businesses.
- d) Increasing the number of starting companies that focus on knowledge development.

These categories are directly linked with the perceived problems mentioned in paragraph 2. An interesting observation is that low private investment and little innovative investments are input-related problems, but a substantial part of the existing shortcomings, such as limited practical use and diffusion of knowledge as well as insufficient cooperation between companies are clearly output-related. Improvements in R&D policy can thus not only be found in increasing the available budget directed for R&D, but also in making better use of existing knowledge.

a) More development and use of technological knowledge by individual companies

Stimulating R&D investment in private companies is an important element in Dutch innovation policy. The rationale for government action is based upon the possible existence of information problems and external effects. The difference between the private and social return of R&D and the fact that a company is unable to internalize all benefits of its investment leads to underinvestment in R&D on an aggregate level. The fiscal subsidy tries to remove this distortion, although the actual extent of the wedge between private and social return is unknown.

The most important instrument within this category is a general fiscal stimulus for companies (WBSO) by means of a tax credit on the wage cost of knowledge workers that are involved in innovative research projects. The effectiveness of a fiscal stimulus can only be ascertained within a full economic analysis, including effects on relative prices and wage costs, but such figures are difficult to obtain, especially with regard to the net effect of the fiscal stimulus, the alternative use of R&D workers and the magnitude of the social return. Given these restrictions, an evaluation of the effectiveness of this instrument has been carried out which concludes that companies that receive the fiscal subsidy spend more on R&D. The direction of the relation however is uncertain but there are indications that stimulus leads to more R&D investment and not vice versa.

The study estimates that for every euro that is spent on this fiscal instrument, R&D investment has increased with 1.02 euro. Interpretation of this result is two-sided. On one hand, effectiveness of 2% seems low and because the fiscal stimulus is available to all companies there will be a certain amount of dead weight loss insofar companies would otherwise also have invested in R&D. On the other hand, total R&D investment increases, which means that the fiscal subsidy did not crowd out private investment and may have catalyzed investments which would otherwise not have occurred. Finally, a general measure directed at all companies could turn out to be more efficient than a measure directed towards specific types of companies or industries, because the latter suffers from government failure of making wrong selections as a result of information problems.

b) More cooperation between companies and public knowledge centres

Another important area that Dutch innovation policy focuses on is stimulating interaction between private companies and knowledge centres and the use of fundamental research. This can have several effects. First of all, fundamental research creates external effects in the form of knowledge spillovers which are not taken into account in the individual investment decision. Limited interaction may also hinder the diffusion of available knowledge through the economy. In addition, imperfect information about the practical relevance and possible use of fundamental research may cause underinvestment. Finally, it can be argued that there needs to be a certain base of publicly available knowledge that is not automatically created within the market, but is necessary for companies to further build upon.

These potential market failures provide the basis for government action, although it is not clear to what extent they actually occur. The Netherlands has created six partly publicly funded knowledge institutions that combine fundamental research with applied research for companies. The two main objectives of these institutes are to make a contribution to theoretical knowledge development as well as to provide a bridge function towards practical application. The public funding of these institutions takes place by means of a fixed amount for maintaining and expanding the existing knowledge base and additional funds for specific programs and research.

An analysis of the impact and effectiveness of these institutions is rare. Concrete figures are not available, because the economic impact is difficult to determine. However, based on practical experience in the past, the impression exists that the results are mixed. These institutions carry out useful research with clear practical application. On the other side, the public institutions indicate that the two different objectives of both fundamental research and practical use can lead to a certain amount of tension or even incompatibility and as a result these institutions seem to focus on one of these two objectives. Furthermore, market distortions can occur because these publicly funded institutions compete with private research institutes in obtaining assignments. On the other side of the spectrum, they compete with universities in the field of acquiring and sharing knowledge sharing, which creates an additional possible negative effect in this regard is that these technological institutes may have an incentive to keep the results of fundamental research to themselves, whereas universities do not. On the positive side, these knowledge institutions do seem to provide a useful function, because universities continue to have difficulties in obtaining assignments and bridging the gap between fundamental research and practical application.

c) More diffusion and application of knowledge within small- and medium-sized businesses.

Another objective of Dutch innovation policy focuses on the diffusion of knowledge within small and medium business. Market failures in this area consist of search costs that may be relatively high for smaller companies. Incomplete information about the most recent technological development may then slow down knowledge diffusion.

To address these information problems, there are several instruments available primarily aimed at giving information and advice. This role is fulfilled by the independent and partly publicly funded institution Syntens. Considering the nature of the market failure and the instruments that are used, the budget available in this category is relatively low. Economic impact could nevertheless be considerable. However, exact impact of innovation policy in this area is almost impossible to establish. Diffusion of

knowledge is a variable that is difficult to observe and if so, measuring the effectiveness of the instruments would suffer from great methodological problems. Given these restrictions, an evaluation has been carried out. It was observed that Syntens achieves good results in reaching new clients and a large share of the companies that have been in contact with Syntens, have increased their innovation effort. Because of the risk of reverse causality, these results should be interpreted carefully, but nevertheless they seem to indicate that government action in this area leads to positive results. Areas where the evaluation found room for improvement is that Syntens could focus more on cooperation with branch organisations and between small- and medium businesses with universities and other knowledge institutions. In addition, a more structured evaluation process has been started up, with recurrent evaluation moments.

d) Increasing the number of starting companies that focus on knowledge development.

This category of innovation policy focuses on the relative low number of starters in innovative sectors. Again, the actual problems and the existence of market failures are difficult to establish. However, the low number of technostarters may partly stem from information problems with potential starters about the possibilities to commercialize business concepts or information problems with potential investors about the viability of the starting companies. These information problems lead to high search and monitoring costs and are also responsible for the relative scarce availability of venture capital.

Information problems that are present are addressed by a comprehensive approach under the name of Technopartner. This programme focuses on mobilising venture capital, giving support to companies in setting up a professional patent policy and creating a platform for starting companies for information sharing and problem solving. Technopartner has only recently been introduced, so an assessment of the effectiveness is not available. However, an ex-ante evaluation has been made to make a more structured evaluation in the near future possible.

Technopartner has arisen from streamlining of several different facilities, which were found not to be effective enough. One of the main problems was that within these facilities the government played a too important and decisive role. Private parties were hesitant to co-finance or did not have enough incentives to take over the role as shareholder in a later stage of the life cycle. These problems partly follow from the government failure of making right selections. Within the new approach of technopartner, the investment decision has been moved more towards private parties.

5.2. Conclusion

With regard to innovation, several market failures potentially exist and mostly relate to external effects, information problems and high search and transaction costs. However, the actual occurrence or magnitude of these market failures are not always fully known. To provide a good basis for innovation policy a regular evaluation of the most important problems is carried out. Subsequently, the design of innovation policy is linked to the identified problems and the instruments are designed in such a way that they can address the potential market failures, so in theory these instruments should be able to make a contribution to an increase in social welfare. However, evidence about the effectiveness is rare, difficult to obtain and hampered by methodological problems.

6. Policy implications

Our previous analysis shows that when it comes to the actual design or measuring the effectiveness of specific instruments, authorities suffer from information problems. In this paragraph we look at the policy implications.

6.1. Generic versus specific policy

There is a trade-off between generic policy measures and policy aimed at specific sectors. Generic policy does not create selection problems, but contains some other drawbacks, the most important of which is dead weight loss. Sectoral policy creates more risks of government failure, though potential gains are higher. A policy aimed at specific sectors may then sometimes lead to a great success, such as the focus of Finland in the 1990s on telecommunication and the rise of Nokia. On the other hand, it can also lead to failures that are easily forgotten.

Specific policy is more appropriate if we are able to observe what the actual and crucial market failures are, what their size is and in which sectors they occur. In particular in case of specific policy, a careful assessment should be made if the potential benefits outweigh the higher risks of government failure. Given our current information restrictions it is more difficult to design a tailor-made policy mix.

6.2. A plea for experiments

Ineffective policy measures can be very costly and more information about the effectiveness would be more than welcome. The most appealing way would be to rely on well designed experiments before introducing new large programs. Most preferably, experiments have a control group so the impact can be compared to a group that did not receive the subsidy. This can be achieved by randomly assigning subsidies if the demand from companies exceeds the available budget or to build in discontinuities in subsidy schemes. In the Netherlands, just as in other countries, these experiments are hardly used in innovation policy. However, a recent exception is that of innovation vouchers. Approximately 800 small businesses have signed up for a voucher which reduces the cost of a research assignment to a public knowledge institute. Out of these 800 applications a notary has randomly drawn 100 applications which will actually get the voucher. By looking at the behavior of all initial subscription the effectiveness of this program is measured. This is a well-designed and controlled experiment which can make a huge contribution to our knowledge of the effectiveness of this instrument. Unfortunately, for the purpose of evaluating (new) policy proposals there is a lot of resistance against experiments, because of the unequal treatment of groups, despite the large information gains. An alternative would be to rely on natural experiments, where coincidentally a comparable control group exists in the real world, for instance due to changing rules, population of subsidy schemes. These kinds of experiments are quite cheap and the results are quickly available.

6.3. A plea for more accountability

Experiments would thus be a welcome supplement to evaluate policy initiatives. However, experiments have their limitations as well. In practice, it is difficult to evaluate complete policy areas or institutional changes. There are other ways to learn from experiences to improve the effectiveness of government policy without a full impact analysis. The most important is that the budgetary process should contain a framework that creates a transparent and accountable evaluation process with respect to input, instruments and result. This means more attention should be paid to the rationale and justification of problem identification and policy design. Such a framework should for example consist of a profound systematic answering of the following questions (Ministerie van Financiën, 2004):

- What is or has been the reason for policy intervention and is the problem still actual?
- What's the cause of the problem?
- Why is their a role for the government in solving the problem?
- Which level of governments is most suited to solve the problem and how is the accountability organized?
- Which objectives are formulated?

- Which instruments are used, what is the cohesion between the instruments and do or don't they overlap?
- What is the administrative burden of executing the instruments?
- What is the contribution of the instruments to the formulated objectives? What are (positive or negative) side effects?
- What's the budgetary importance of instruments and why?

These questions can be extended giving specific circumstances. The question if alternatives are available (with effects and costs) is a quite logic ex ante extension. A structured evaluation process ensures that policy choices and objectives are transparent and that policy design is made accountable. In the Netherlands, we have modified our budgetary framework in recent years to ensure that a structured and accountable policy design is embedded in the decision making process. The goal is to improve the quality of public finance with such a critical and continuous evaluation process. Given the scarcity of public resources

7. Conclusion

With the formulation of the Lisbon and the Barcelona goal, Europe has shown ambition to increase its innovation effort. At the same time this does not mean that we should also continue to focus our attention on stimulating participation where considerable gains in GDP growth might be achieved. Authorities should also bear in mind that a relative high productivity growth in a specific country will partly leak away to other countries through terms of trade effects. Nevertheless, on a global level, productivity growth remains the ultimate basis for growth in economic welfare.

From a theoretical point of view there are good reasons for innovation policy. External effects, imperfect information, network effects and market power are some examples of possible market failures that may occur. Innovation policy and stimulating productivity growth can therefore make an important contribution to economic welfare. However, government failure and the risk of making the wrong selections may lower the effectiveness of government intervention. Authorities should therefore only interfere when market failures are most severe and when the risk of government failure is small.

At first sight, the Dutch economy is not characterized by great innovative strength. Total R&D intensity remains on average in international perspective and R&D particularly takes place in public organisations. However, based on some other indicators a more positive view emerges. Innovation policy in the Netherlands is based on an economic analysis of the areas in which market failures potentially exist. The design of innovation policy is linked to the identified problems and the instruments are chosen in such a way that they can address the potential market failures. In theory, these instruments should thus be able to make a contribution to an increase in social welfare. However the actual occurrence or size of the market failures and the effectiveness of innovation policy to address these market failures is difficult to ascertain and hampered by methodological problems.

In particular with specific policy, the less knowledge we have, the more important it is to make a careful assessment if the potential benefits outweigh the higher risks of government failure. The use of experiments and the creation of a structured evaluation framework would further increase accountability and our knowledge about the impact of innovation policy. Future innovation policy would benefit from such information, which would make a contribution to an increase in the quality of public finance.

Annex: Design of innovation policy in the Netherlands

Objective / instrument	Specification
<i>A. More development and use of technological knowledge by individual companies</i>	
WBSO	Stimulating R&D investment through a tax credit on the wage costs of employees that are involved in the research of new products, processes or programs.
IS	Subsidy program for corporation programs between companies and public knowledge institutions
<i>B. Strengthening knowledge base through cooperation between companies and public knowledge centres</i>	
TNO / GTI	Partly public funded knowledge institutes that combine fundamental research with practical application
TTI	Virtual institute in which multi-disciplined teams from business industry and knowledge institutions work on the commercial and social application of fundamental research
STW	Financing of research projects that are carried out in close cooperation with potential users to create more demand driven research
IOP / ITEA / MEDEA / CVO / PEP	Strengthening long term strategic research directed towards innovation in specific business areas, such as nano electronics, software, civil aircraft and space industry.
BSIK	Creating high quality networks within the existing knowledge infrastructure to signal long term research areas and identify and stimulate innovative projects
<i>C. More diffusion and application of knowledge within small and medium-sized businesses (SME)</i>	
Syntens	Organisation that gives advice and presentations to SME about innovation and tries to signal trends within the SME sector.
SKO / SKB	Increasing knowledge transfer by providing subsidies to individual companies (SKO) or sectors (SKB) that set up a strategy plan, feasibility study or innovation project
<i>D. More starting companies that develop and use technological knowledge</i>	
Technopartner	Increasing the number and quality of technostarters through mobilising venture capital, providing (financial) support to set up a patent policy and creating a platform for problem solving and information sharing.

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IV. COMPOSITION OF REVENUE AND EFFICIENCY OF TAX SYSTEMS

INTRODUCTION:

IV. COMPOSITION OF REVENUE AND EFFICIENCY OF TAX SYSTEMS

Even though much of the discussion on the quality of public finances focussed on the public expenditures, the quality of the revenue side of the public budgets is equally important. Given the challenges of globalisation, ageing and the increasing international mobility of production factors and tax bases, there is a clear need for a growth-friendly and sustainable composition of public revenues and the efficiency of tax systems. This urging issue is best placed in the broader context of the financing of the future, a topic that was raised under the Germany EU Presidency; at the same time, it should not be mixed up with the narrow and often uploaded controversy of tax competition vs. tax harmonisation.

The two papers presented in this chapter reflect this comprehensive economic philosophy and they reveal that growth-enhancing and stable revenues in the future should help the Member States secure the financing of public goods and the European welfare states in particular.

The structure of revenues can impact long-term growth, mostly by affecting the allocation of labour and capital. While there is some evidence that consumption taxes create fewer disincentives for growth than direct taxes, the detailed structure of such taxes need to be carefully considered. Valenduc (2005) explains these challenges for assessing the quality of tax revenue systems and focuses particularly on the choice of indicators which applies in an analysis of the Belgian tax system.

The paper outlines the complexities in determining the quality of revenue systems. On the one hand, tax systems which are neutral and efficient, that means applying a low rate and wide tax base to minimise the deadweight costs of taxation, can be considered to be of high quality. But on the other hand, neutrality and efficiency may conflict with other policy objectives such as redistribution. This trade-off complicates the assessment of the quality of tax system and requires a careful choice of indicators. Valenduc discusses a set of indicators to that measure the tax burden and the tax base and applies the assessment to the Belgian tax system.

The paper by the Commission services reviews trends in tax revenues and reforms. It finds that the overall tax burden has stabilised over the past few years. This was helped by a number of important reforms of tax structures across many Member States, largely driven by the objective to enhance economic growth and ensure fiscal discipline in an environment where effective taxation has become more difficult. Tax reforms, however, varied widely: they included, for example, shifts in the tax burden from low-income workers to high-income groups or from labour to consumption in general. Moreover, additional sources of tax revenue were also sought through a stronger emphasis on environmental taxes and taxes on immovable property, a promising avenue going forward as the paper point out. More generally, the Commission paper stresses that future work on the revenue side of quality of public finances should focus on identifying revenue sources which are growth-enhancing and efficient while at the same time taking into account the individual requirements in each country.

In addition to the link of public revenue and growth, the paper also highlights the close link of national public revenue structures and Member States' policy goals concerning equity and efficiency. As a basic principle, as also pointed out in the paper by Valenduc, equitable and efficient revenue structures should avoid distortions, but encourage risk-taking and entrepreneurship, and create work incentives. To achieve this, tax systems should be fair and simple in design and minimise the risk of tax fraud by relying on a broad tax base. Furthermore, future tax mixes may also rely more heavily on indirect taxation. Going forward, an exchange of experiences across the EU towards a more efficient and simple systems should prove fruitful.

STRUCTURE OF TAX REVENUE AND THE QUALITY OF PUBLIC FINANCE

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This paper summarises the methodological part of the presentation made at the 4th meeting of the working group “Quality of Public Finance” that took place in Brussels, last 27 January 2005. The purpose of the presentation was to suggest a methodology for the evaluation of the quality of tax revenue, with application to the Belgian tax system. We have included further evidence on the recent developments of the Belgian tax system.

Section 1 sets out the framework. Section 2 lists indicators that could be used to assess the quality of public finance. In section 3 we apply the suggested methodology to the Belgian tax system.

1. The framework

Evaluating the quality of public finance is a difficult task. We have well-known indicators about the “quantity of taxes”. Such indicators, as tax/GDP ratios², are however not appropriate – and may be misleading, see below -, since quality and quantity are two very different topics. There is some evidence that changes in the tax/GDP ratio could lead to change in growth and employment but this is only a rough and partial insight into the quality of tax revenue: the two countries that top the tax/GDP ratio ranking (Denmark and Sweden) do not exhibit low employment rates and Finland is quoted as one of the most competitive of the world despite a relatively high tax/GDP ratio. Quality is not necessarily inversely related to quantity but higher the tax/GDP ratio, higher should be the attention given to the quality of tax revenue since most distortions are positively related to the size of tax wedge.

The quality of tax revenue refers more to the structure of the tax system than to the overall level of taxation. There is some evidence, for example, that consumption taxes might be less damaging for growth and employment than direct taxes. But the story is more complicated: some direct (or indirect) taxes might be more distortive than others and the way the taxes are designed matters. The devil might be in the details. The tax wedge on wages, for example, may have very different effects depending on the wage level. Two different tax systems, the first one with one broad base and a low rate for PIT or CIT, the second one with an extensive use of tax expenditures and higher rates on the non-exempted of the tax base, may result in the same amount of revenue collected but this does not mean they equal in quality.

In addition, evaluating the quality of public finance is even more complicated by the conflicting nature of tax policy objectives. “Quality” may refer to a pro-growth or an employment-friendly tax system.

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² Cf. OECD (2007a) and EUROPEAN COMMISSION (2007)

However, there is no tax policy that is deliberately against growth or that aims to increase unemployment. Policymakers face trade-off and the way they balance various conflicting objectives shapes the structure of tax revenue. An efficient and neutral tax system has interesting properties but in many cases pursuing neutrality and efficiency conflicts with redistribution. This means that defining quality as neutrality conflicts with the view that the tax system may be an appropriate tool to achieve some redistribution. It may also conflict with the view that some tax incentives may be welcomed, if well targeted.

We decide not to make any reference to an “absolute optimum” and we hold decisions about the trade-off between efficiency and equity, or neutrality and incentive to be political decisions that are not subject to evaluation *per se*. We consequently consider that it is more appropriate to assess separately efficiency losses and non-neutralities, the effect of taxes on income distribution and the effects of tax incentives. “Quality” requires that neutrality should be properly achieved if considered as a tax policy goal, that a progressive tax system effectively redistributes income and that incentives lead to input and/or output additionality.

Using a large set of diversified indicators enables us to investigate if and to what extent the various policy goals have been achieved, without imposing a specific choice between them.

Tax policymakers often consider that complexity should be avoided and that quality require simplicity. The complexity of the tax system is however very difficult to assess and we do not account for this.

2. Indicators

2.1. Efficiency and neutrality

Efficiency requires minimising the tax rate, preferring inelastic tax base to elastic ones, or following a “broad base, low rate” approach. Neutrality requires that price distortions induced by taxes should be kept to a minimum, what a “broad base, low rate” approach will also ensure.

The best indicators are the marginal cost of public funds and estimates of the deadweight cost. Such indicators are however not available on a regular basis and their computation is subject to many assumptions, some of them being disputable.

Efficiency also refers to effective taxation and its dispersion across the tax base. This means that tax burden indicators may give some indication about the quality of tax revenue. Another option might be to test the broadness of the tax base.

2.1.1. Tax burden indicators

The **tax/GDP ratio** is well known but is **not the relevant one** for the assessment of the quality of public finance. It aggregates the whole set of taxes, while tax structure is a key element of the quality of tax revenue. Moreover, differences in the tax treatment of transfer may affect comparisons across countries and over time³; different treatments of in-work benefits may affect the indicator and result in misleading comparisons and more broadly the choice between tax expenditures and direct expenditures made any assessment of the quality of public finance based on the tax/GDP ratio difficult⁴.

³ The OECD work on net social expenditures illustrates how the taxation of transfer differs across countries. See ADEMA e.a (2005). Sweden and Denmark, that top the tax/GDP raises taxes and social security contributions from transfer that amounts to 3.6 and 4.1% of GDP, compared with 1.7% of GDP for Belgium.

⁴ Cf. OECD (2000)

Changes in tax/GDP ratio also have the drawback of mixing the effect of tax policy and changes in GDP composition. Let us assume for example that gross compensation as a share of GDP increases while income from property of households as a share of GDP decreases. As in many EU countries taxation of labour is higher than the taxation of income from capital, the tax/GDP ratio will be pushed up by the change in the structure of GDP, even if no change in tax policy.

The **tax mix** may give some insights into the quality of public finance. The usual categories (direct and indirect taxes, social security contributions) are perhaps not the most relevant ones, since they essentially rely on administrative concepts. In such an approach payroll taxes, social security contributions and personal income tax should be split in the three categories while they are part on the tax wedge on wages. We prefer to use the split provided by the European Commission that separates out taxes and social security contributions in five categories (a) labour employed, (b) income from self-employment, (c) capital, (d) consumption and (e) social transfers, with a sixth but non-additive category for the environmental taxes.

Implicit tax rates (ITR) are more interesting indicators since they use the national accounts to assess separately the taxation of labour, capital and consumption. They build on the categorisation of taxes that we suggest to use for the description of the tax mix and relate each of these sub-categories of taxes to a macro-economic measurement of the tax base.

It is worthwhile to remind that the political debate from which they originate is related to the quality of public finance. The work on these indicators started in the mid-nineties, following the *White Paper* of the European Commission “*Growth, Employment and Competitiveness*”. Chapter 9 of this publication suggested changing the tax mix in a way that could be more pro-employment. During the discussion on the follow-up of this policy recommendation, the point was made that we lacked from indicators to assess the taxation of labour, capital and consumption. The work culminated in a regular publication of The European Commission on the structure of taxation. The last edition, renamed “Taxation trends in the EU” contains interesting improvements of this methodology: taxation of companies and taxation of savings are estimated separately and an indicator for the taxation of energy is suggested⁵.

The main advantage of the ITR methodology is its disaggregated approach. It illustrates how the change in the tax mix, if any, translates into changes in the taxation of labour, consumption and capital or simply reflects GDP composition effects. It obviously says more on the tax policy stance than the single tax/GDP ratio does. The ITR methodology may help in the assessment of the quality of tax revenue because it disentangles the tax revenue in components that have different effects on growth and employment.

Some of ITR are however more meaningful than others. The ITR on wages is a straightforward indicator and it is generally easy to make the link between the tax policy stance and the changes in the ITR over time. This is not so straightforward for the ITR on capital. Even when using the disaggregated approach, that separates out the taxation of companies and the taxation of household savings, it might be very difficult to explain the changes in the ITR and to link them with the tax policy stance. The main reasons for this is that the tax base might be very different from national accounts definition of profits of corporations and of property income of household, and the business cycle also affects the ITR on corporations.

The main drawback of the ITR methodology is that implicit tax rates are backward looking, while an assessment of the effect of taxes on economic behaviour requires forward-looking indicators.

The **OECD “Taxing wages” methodology**⁶ provides a more disaggregated indicators for the taxation of labour. It illustrates how the tax wedge varies according to the wage level (low, average, high) and to specific family situations (single or married couples, with or without children). This approach has several

⁵ Cf. EUROPEAN COMMISSION (2007) for the most recent results.

⁶ Cf. OECD (2007b).

advantages, among them a low data requirement, flexibility and a definition of the effective tax rate that is straightforward and meaningful. A similar methodology can be used to detect potential poverty and employment traps, by comparing income in work and out of work for typical situations.

There is a large economic literature on the **taxation of income from capital**. King and Fullerton (1984) provided an interesting framework for computing marginal effective tax rates and DEVEREUX and GRIFFITH (1998) extended it to average effective tax rates⁷. Both indicators are well known and have been largely used in empirical studies on corporate taxation at the national and international level.

They rely on key parameters of the tax code: the nominal tax rate, depreciation rules incentives, the tax treatment of interest, dividends and capital gains. The METR refers more to the effect of taxes on investment in the extensive margin (how much to invest in a given location), while the AETR is more convenient to assess to effect the tax system on the comparison of various locations. Both indicators illustrate the non-neutralities across assets and way of financing (debt versus equity). They also highlight the effects of tax incentives and preferential tax regimes. EATR and METR are so interesting indicators: they shed some light on the neutrality of the tax system.

They however only give a partial view of the disparities of effective taxation, since they do not incorporate all the relevant features of the tax system, including tax planning techniques⁸.

An alternative approach is to compute effective tax rate on micro-data. The ETR may be defined by dividing the CIT liability by a measurement of profits based on profits and losses accounts⁹. HALLEUX and VALENDUC (2007) use a similar approach and define the ETR at the micro-level by dividing the CIT liability by the benchmark tax base (what the tax base should be without tax expenditures). Such indicators are not forward-looking but they tell more on the dispersion of effective taxation compared to the highly stylised approach of EATR and METR.

Studies on **effective tax rate of savings** are not so common¹⁰, while useful. In a small open economy, taxation of savings and taxation of investment have to be assessed separately, especially in the Euro—zone. Small open economies are price-taker on capital markets. The consequence is that taxation of companies has no effect on savings, while domestic taxation of savings has no effect on the cost of capital, which equals the sum of the world interest rates and of the investment tax wedge (in which corporate taxes are factored in).

Our methodology defines “effective tax rate of savings” as the difference between gross and net real rate or return, divided by the gross real rate of return¹¹. Computations are made under simplifying assumptions; no risk, infinite horizon, no change in interests and inflation. Effective tax rates are computed for bonds, shares, pension savings, owner-occupied housing and real estate investments.

⁷ VALENDUC (2004a) compares properties of effective and implicit tax rates and concludes that both type of indicators are useful to assess the taxation of profits. They are more complements than substitutes.

⁸ This holds for the basic definition of EATR and METR and for most of the studies that use them at the national and international level. It is however possible to include tax planning techniques in the framework. VALENDUC (2004a) includes in the framework triangle structures with a Belgian Coordination centre. Recent OECD work (OECD 2008) provides very interesting example of the effect of tax planning techniques on AETR and concludes that conventional indicators that do account for tax planning overestimate the effective tax burden and underestimate the dispersion of AETR and non-neutralities in corporate income taxation.

⁹ Cf OECD (2003).

¹⁰ See OECD (1995).

¹¹ Cf. VALENDUC (2003).

2.1.2. Broadness of the tax base

An alternative approach for the assessment of efficiency and neutrality might be test the broadness of the tax base. Such an approach faces several difficulties. Statistical information on the tax base is scare compared to data collection on tax revenue.

The OECD initiated a study on personal income tax base in the early nineties¹² but did not update this very interesting approach. As far as we know, there has been no other tentative to gather comparable information on the tax bases across countries and over time.

Comparison will obviously be made with figures from the national accounts but a departure from national accounts does not necessarily mean a move away from neutrality. It might be the result of conceptual differences between the tax system and national accounting.

This point is particularly relevant for the taxation of income from capital. Neutrality requires uniform taxation of income and capital gains, subject to adjustment for inflation. Consequently, the tax base of a neutral tax system should include capital gains that are not included in the national accounts.

The C-efficiency ratio of VAT¹³ may be used to test the broadness of the VAT tax base. It divides an implicit tax rate of VAT (VAT Revenue divided by national consumption) by the nominal tax rate. A high registration threshold or an extensive use of exemptions will reduce the C-efficiency ratio, what is consistent with the intention of the C-efficiency ratio to test for the broadness of the tax base. Reduced rates will have a similar effect. The indicator might however be ambiguous: non-deductible VAT will increase the C-efficiency ratio, what could be interpreted as a progress neutrality while this is more a departure from neutrality.

2.2. Income distribution

KAKWANI (1977) provided a well-known methodology to assess the effect of taxes and transfer on income distribution. Redistribution is computed as the difference between GINI Indexes of income before tax (or transfer) and after tax (or transfer) and further separated out in two components: the effect of the average tax rate and the effect of progressivity (defined as the difference between the distribution of taxes and the distribution of pre-tax income). Refinements of the method have been proposed by PFÄLHER (1990) to separate out the effect of the progressive tax schedule and of various tax credits.

2.3. Effects of tax incentives

Information on tax expenditures is available in most EU countries¹⁴. The cost of the budget is usually computed by using the “revenue forgone” approach. This method estimates the cost of tax expenditures, one by one, without taking into account any behavioural effect.

As tax incentives result in tax expenditures, this could be a convenient way to assess the effect of tax incentives. We however face two problems: (a) there is no common definition of the “benchmark system” from which tax expenditures depart and this makes impossible any comparisons between countries on the use of tax expenditures and on the magnitudes of tax incentives; (b) coverage varies between countries and some important tax incentives may not be included in the tax expenditures reports.

¹² OECD (1991)

¹³ See OECD (2006) for example. EUROPEAN COMMISSION (2007) also uses the C-efficiency ratio to discuss the broadness of the VAT tax base and to discuss the figures from the ITR on consumption.

¹⁴ See POLACKOVA e.a (2003) for the theoretical aspects of tax expenditures reporting and recent experiences from developed and transition economies.

The revenue forgone only gives a rough indication of the economic cost, that should predominate in a assessment of the quality of public finance. The assessment of the effect of tax incentives should rely on their effectiveness (input or output additionality).

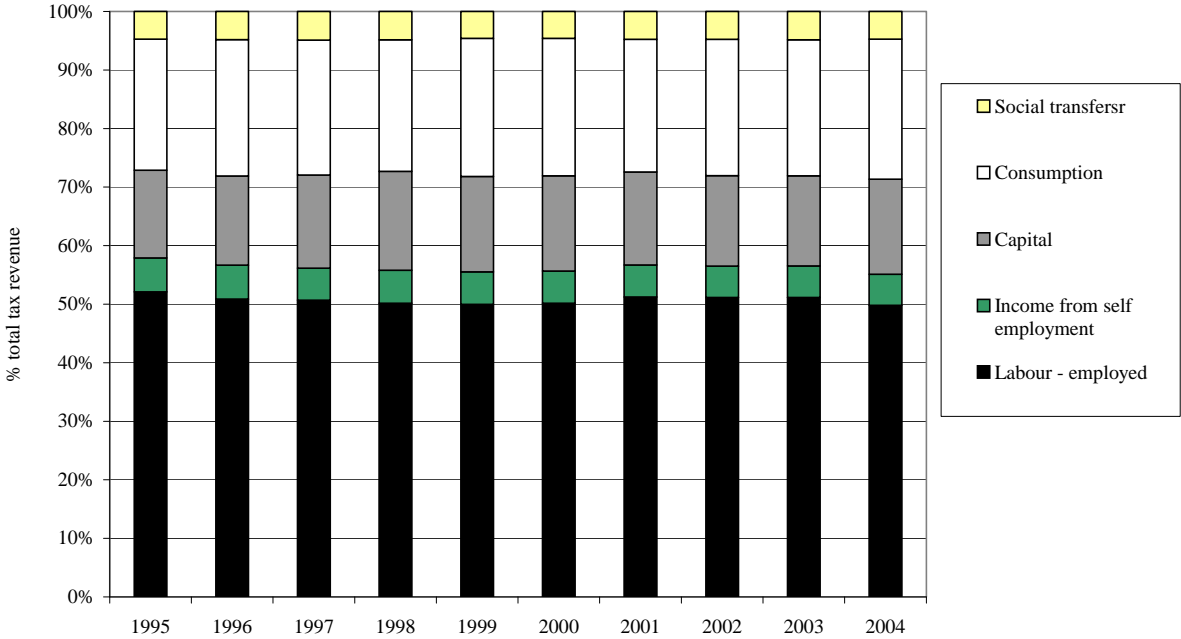
3. An application to the Belgian tax system

Belgian has a high tax/GDP ratio. It ranks just after Denmark and Sweden in the OECD ranking. This means that the assessment of the quality is particularly relevant. We will consider most of he indicators suggested in Section 2, starting with the tax mix. We next turn to tax burden indicators and to the trade-off between efficiency and equity in personal income taxation. The final section gives some figures on the revenue forgone from tax expenditures.

3.1. The tax mix

Figure 1 gives the structure of tax revenue for the 1995-2004 period. The tax mix is roughly stable over time, with the higher component being the taxation of labour.

Figure 1 - The tax mix: 1995-2004



Source: Belgostat – Tax statistics, Ministry of Finance, own calculations

Taxation of wages amounts to one half of the whole amount of tax revenue and taxation of labour and capital amounts to 70%. On the opposite, the share of consumption is low. This clearly indicates that taxation relies more on primary income than on consumption.

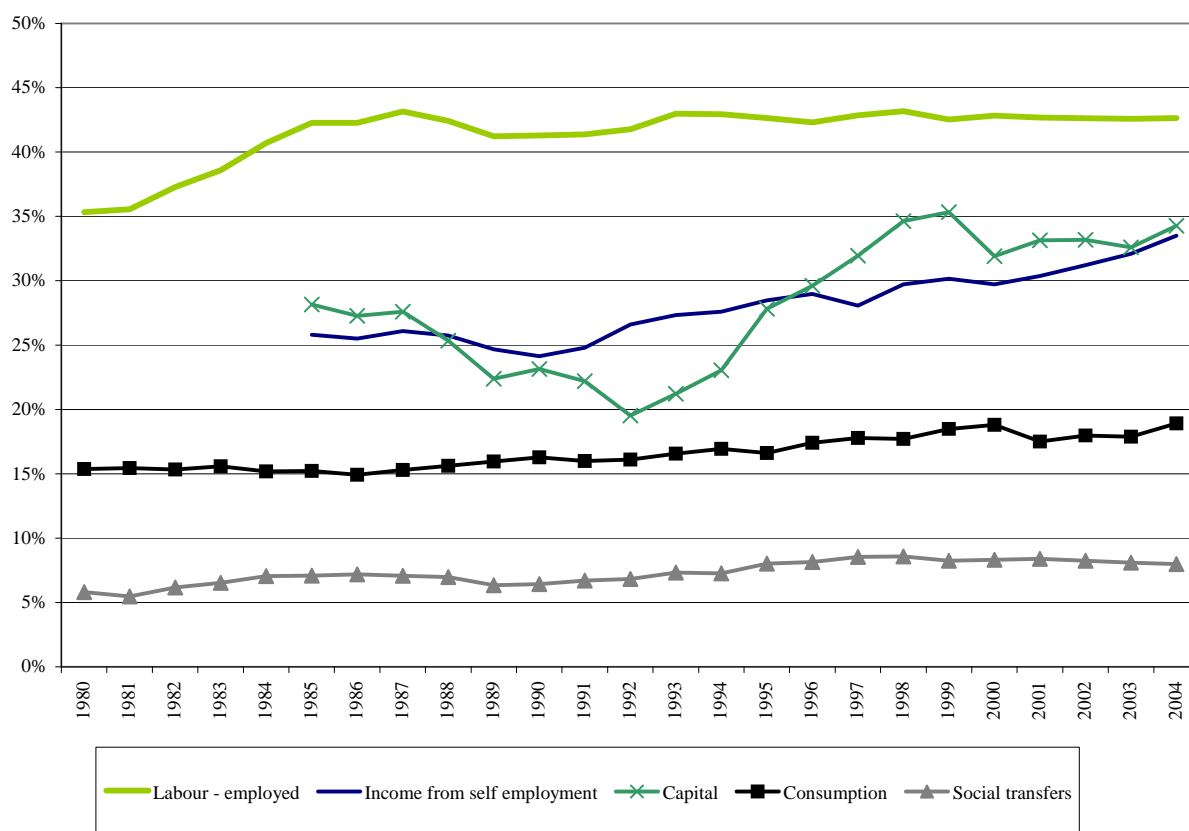
3.2. Tax burden indicators

3.2.1. Implicit tax rates

We could presume from the picture that arises from the tax mix that the taxation of labour and capital will be higher than the taxation of consumption, what Figure 2 confirms. The taxation of employed labour is roughly stable around 43-44% over the past ten years. Taxation of labour (employed) is higher

than the taxation of income from self-employment and than the taxation of income from capital. The taxation of consumption is lower than the taxation of primary income.

Figure 2 – Implicit tax rates



Source: Update of VALENDUC (2004)

Table 1 - Implicit tax rates – 2000-04

	2000	2001	2002	2003	2004
Labour	42.8%	42.7%	42.6%	42.6%	42.6%
Income from self-employment	29.7%	30.4%	31.2%	32.1%	33.5%
Capital	31.9%	33.1%	33.2%	32.6%	34.3%
Consumption	18.8%	17.5%	18.0%	17.9%	18.9%
Social transfers	8.3%	8.4%	8.2%	8.1%	8.0%

Source: Update of VALENDUC (2004)

The hierarchy of ITR is roughly stable over time: tax reforms only result in small changes but do not change the fundamental message that arises from the ITR and their implications for the quality of tax revenue: taxation relies more on primary income than on consumption and among various types of incomes, labour is more heavily taxed than capital.

- A slight increase took place in the early nineties. Two important changes that were made in the tax system increased the PIT component of labour taxation. The additional crisis surcharge (3% of PIT) was introduced and the indexation of PIT was partially suspended. The tax policy stance changed in 1999: the additional crisis surcharge was phased out, automatic, full indexation of PIT was reintroduced and a tax cut in personal income tax, which amounts to roughly 4 billion € (1.3

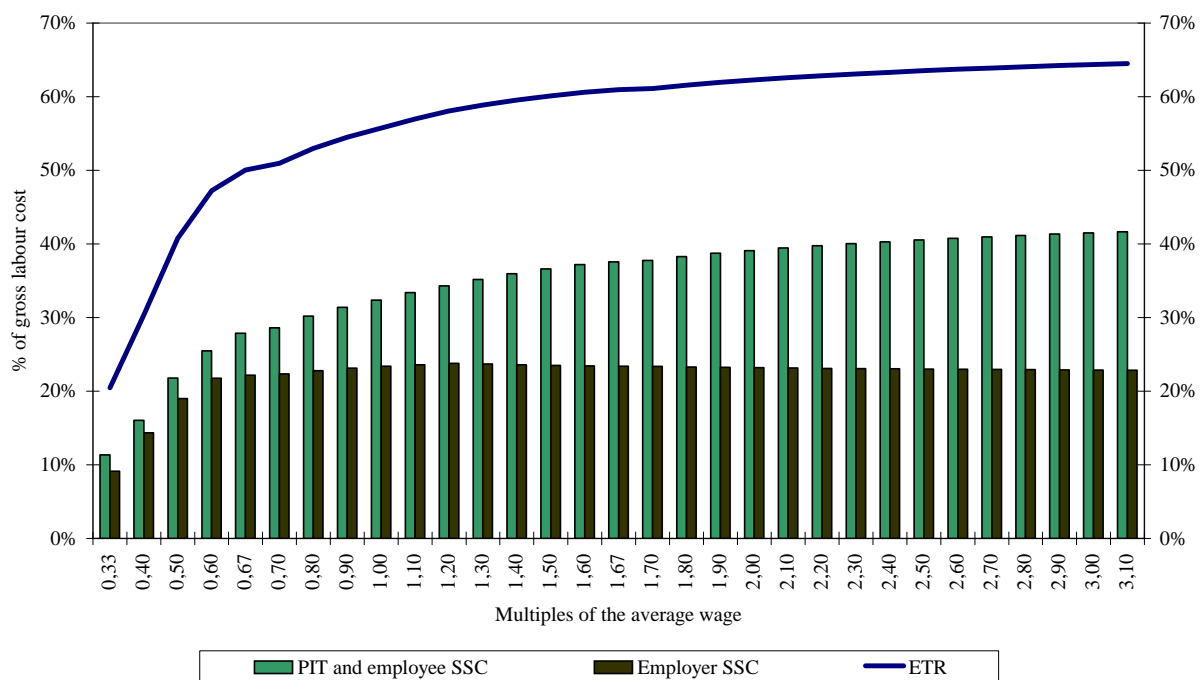
% GDP) was passed in 2001 and came into force over the period 2002-06. The 2001 PIT reform seems to have no effect on the ITR on labour, which remains high and stable. Most of the effect of the tax reform was postponed to the years 2005-06, that are not covered in Figure 2 and Table 1. We have also to keep in mind that, due to the progressivity of income tax and the targeting of social security contributions on low wages, a “no change policy” results in an increase in the taxation of labour. Consequently, stability is the combine result of the tax reform and of the spontaneous upward trend of the ITR on labour.

- The upward trend of the ITR on capital is partially the consequence of the broadening of the tax base that took place in the nineties and partially due to a business cycle effect .
- Taxation of consumption remains low, but increased steadily and slowly over the past ten years. Increased excise duties were the main policy changes that explain the slight increase of the ITR on consumption.

3.2.2. Effective tax rates on wages

The ITR on labour points out the wages are heavily taxed in Belgium. Figure 3 complements the macro-economic approach and uses the ETR on wage to illustrate how the taxation of labour varies according to the wage level for a single worker. The effective tax rate amounts to 55.7% at the average wage level. The ETR are lower at the left-hand side of the wage scale but the ETR curve exhibits a steep profile around the minimum wage (roughly 50% of the average wage level).

Figure 3 – Effective tax rates on wages – 2007



Belgium faces high and structural unemployment and the unemployment is highly concentrated in low qualified workers. This is the reason for **the targeted tax cuts that have been introduced over the past 5 years**: reductions in employer and employee social security contribution have been targeted to low wages. This **explains the low values of ETR at the left-hand side of the wage scale and the targeting**

of these provisions explains the steep profile of the ETR around the minimum wage. The phasing-out of these reductions however also increases marginal tax rates.

The ETR analysis complements the macro-economic approach. The message it delivers for the assessment of the quality of tax revenue is that taxation of labour, that is globally high, has been significantly reduced for low wage earners, who are also the most concerned by structural unemployment.

3.2.3. Taxation of companies

The computation of EATR and METR exhibits some of the non neutralities of the system ¹⁵. The preferential tax treatment for debt is not specific to Belgium but the non taxation of capital gains favours retained earnings compared to new shares issues. This holds mainly for small companies for which we may consider that the PIT treatment of interest, dividend and capital gains is factored into the cost of capital. Small companies may however enjoy reduced CIT rates, they add to the non-neutralities of the tax system. Other non-neutralities arise from the preferential tax regimes, the most important one being the coordination centre regime. VALENDUC (2004a) concludes that the preferential tax regime of the Belgian coordination centres makes METR negative. This may create a misallocation of resources, since it makes non-profitable investment profitable after tax (incentives).

The introduction of the Allowance for Corporate Equity (ACE) on 1st January radically changes the picture. The discrimination between debt and equity has been partially removed and the coordination centre regime has been phased out.

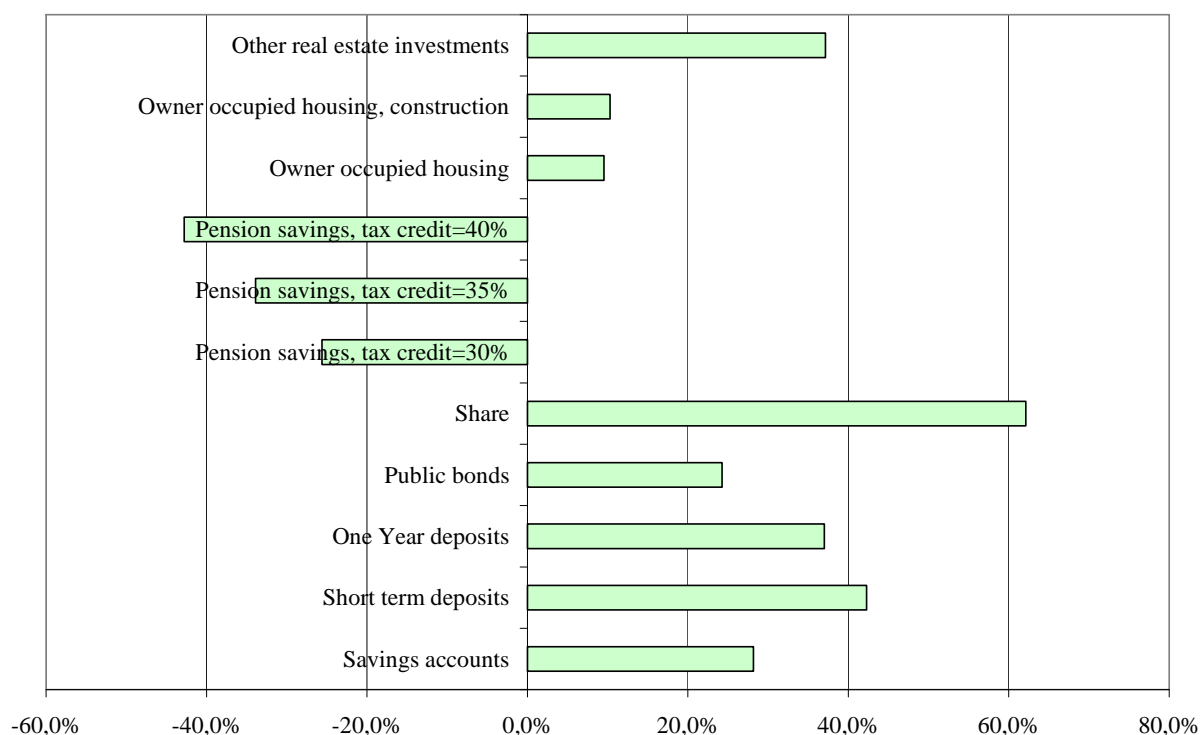
As indicated above, METR and AETR do not tell the whole story about the dispersion in effective taxation. HALLEUX and VALENDUC (2007) compute backward looking ETR at the micro-level, based on a data set that combines tax and accounting data. They conclude that the dispersion of effective taxation is high and broadly unrelated to the size of the company. “Disregarded charges” ¹⁶ are the main reason for the dispersion of effective taxation. These have been increased over the past 5-10 years, so that they presume that CIT has not move to greater neutrality over time.

¹⁵ See VALENDUC (2004a) and VALENDUC (2005), for detailed investigations.

¹⁶ Disregarded charges are expenses that are not deductible from the tax base.

3.2.3. Taxation of savings

Figure 4 – Effective tax rate on savings 2001-03



Source: VALENDUC (2003)

Figure 4 illustrates how effective tax rates vary across assets. Pension savings enjoy negative tax rates, due to their EET treatment. Compared with the ETR on public bonds, that could be considered as the benchmark¹⁷, investment in the owner-occupied housing also enjoys a preferential tax treatment: imputed income and capital gains are not subject to tax and capital repayments of mortgages are deductible, up to a limit, against earned income. Most of the positive taxation arise from registration duties (12.5%, among the highest in Europe) and from the property tax, which is mainly a local tax. Other investments in real estate are more heavily taxed than financial assets. Shares faced a higher ETR than bonds and deposits, due to the classical system that still applied for the period under review, but since then the introduction of the ACE has strongly reduced the tax discrimination against shares. Finally, savings accounts that are not subject to tax face an “quasi-tax”, due to interest rate regulations.

It is clear from Figure 4 that **the tax treatment of savings is far away from neutrality**. Differentiations across assets are even larger, as indicated in VALENDUC (2005), when we account for the effect of the non-taxation of capital gains. Financial assets that convert interest into capital gains are common (“SICAV” and “bons d’assurance”) and they attract an increasing share of the household portfolio over time.

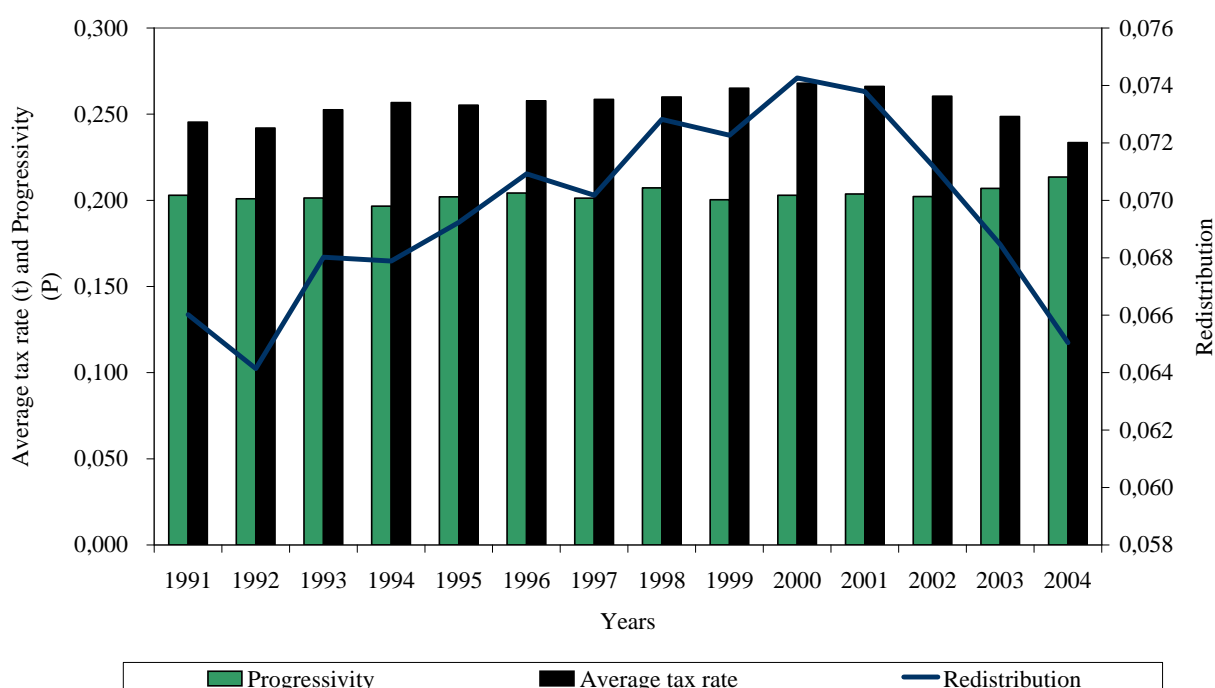
¹⁷ Differences in ETR between public bonds, one year deposits and short-term deposits simply reflect differences in real rates or return. Since taxation applies to nominal income, the same tax rate may result in differences in ETR if real rate of returns are not equal across assets.

3.3. The Efficiency-Equity trade-off

Our examination of effective taxation points out a high but progressive taxation of labour. Labour income is the main component of the tax base and the counterpart of progressive taxation should be income redistribution.

Figure 5 and Table 2 apply the KAKWANI's methodology for the measurement of income redistribution. The redistributive effect of Personal Income Tax effectively increased during the nineties. According to DECOSTER e.a (2002), the explanation lies in the reforms that were introduced for the budget consolidation **during the nineties**: as indicated above, an additional crisis surcharge (3% of PIT) was introduced and the automatic indexation of the personal income tax was partially suspended. Those reforms increased average and marginal tax rates but also resulted in increased redistribution through personal income tax. **Equity was clearly favoured compared to efficiency.**

Figure 5 – Personal income tax and redistribution



Source: Statistics Belgium – Own calculations

Table 2 - Inequality, progressivity and redistribution 2000-2004

	2000	2001	2002	2003	2004
Income inequality, before tax	0.388	0.384	0.405	0.414	0.432
Income inequality, after tax	0.313	0.310	0.334	0.345	0.367
Redistribution	0.074	0.074	0.071	0.068	0.065
Progressivity	0.203	0.204	0.202	0.207	0.213
Average tax rate	26.8%	26.6%	26.0%	24.9%	23.4%

Source: Statistics Belgium – Own calculations

The recent tax reform was aimed to be neutral from a distributional point of view, according to the simulations performed prior to the reform¹⁸. Post reform data¹⁹ indicates that inequality has increased and that the redistributive effect has decreased. This might partially be explained by the introduction of refundable tax credits: households that were not subject to tax were not included in the tax statistics before the reform but are included now that they enjoy a refund of their tax credit. There has indeed been a strong increase of the number of households in low taxable income brackets. Other explanations might be a change in economic conditions or behavioural effects of the tax reform that were not captured on the ex-ante simulations²⁰.

More work is clearly needed to understand the difference between ex-ante simulation and ex-post data.

Despite this, the redistributive effect of taxation is still significant: the drop recorded over the 2002-04 period brings it to the level recorded in the early nineties.

3.4 The use of tax incentives: insight from the tax expenditure reports

As indicated above, the “revenue forgone” only gives a rough indication of the economic effects of tax expenditures. Apart from bringing transparency in the budget process, its main merit is to indicate where further examination is required.

Table 3 - Revenue forgone from tax expenditures

	2000	2001	2002	2003	2004
(a) Personal income tax	12.4%	12.3%	12.3%	13.5%	n.a
(b) Corporate income tax	28.0%	34.6%	32.7%	29.4%	n.a
(c) Withholding tax on interest and dividends.	15.9%	14.9%	17.1%	18.8%	19.9%
(d) Excise duties	3.8%	4.0%	4.5%	3.7%	3.5%
(e) VAT	4.5%	5.5%	5.7%	5.9%	5.5%

Source: Tax expenditure reports

Tax expenditure reports indicate that there is significant room for base broadening in CIT, taxation of savings and Personal income taxation. On the corporate income tax side, the main tax expenditure is the preferential tax regime for coordination centres. This regime is phased out and has been replaced by the ACE system. The allowance for corporate equity will not expand the tax base, but will anyway bring more neutrality into the tax system. On the PIT side, the main tax expenditures are the tax breaks for transfer income, for pension savings and owner-occupied housing. The exemption of withholding tax for savings accounts is the largest tax expenditure under item (c).

Apart from the tax breaks for transfer income, the main tax expenditures are in the taxation of savings: the “revenue forgone approach” highlights the consequence of the non-neutralities in the taxation of savings that the ETR methodology already pointed out.

¹⁸ Cf. VALENDUC (2002) for the ex-ante simulations.

¹⁹ Table 2 refers to taxable periods; this means that income and tax are recorded for the period during which income has been earned. It is a fully accrual view. As the tax reform was fully implemented in 2004, the latest year of Table 2 may be interpreted as post reform. This does not hold for Table 1, that uses ESA recording. As most of the effects of the tax reform was not included in the withholding tax on wages but postponed until assessment, the effect is postponed to 2005-06 in the conceptual framework used for Table 1.

²⁰ The simulations were conducted with a static model.

4. Summary and conclusions: what does the methodology tell us about the quality of tax revenue in Belgium?

Belgium has a high tax./GDP ratio. This means that the assessment of the quality of tax revenue is particularly relevant. Examining the tax mix, we note that most of the taxation of primary income procures 70% of the tax while consumption taxes are responsible for 25% of tax revenue. ITR confirms that taxation is concentrated on primary incomes. Among them, labour is heavily taxed and tax reforms have not been able to reduce the taxation of labour in a significant way. Taxation of capital increased over the pas 5-10 years but part of the upward is due to a cyclical effect and might not be structural.

The heavy tax burden on labour is questionable for a country that faces high long-term unemployment. Effective tax rates on wages indicate that the tax cuts that have been introduced and that are targeted on low-wages significantly reduce the ETR at the left-hand side of the wage scale.

Effective tax rates on income from capital and on savings indicate that taxation is far from being neutral. On the corporate side, the recent introduction of the allowance for corporate equity reduces most of the distortions but the non taxation of capital gains still favours retained profits compared to new equity. Taxation of savings is far from being neutral across assets and we may presume that these distortions have strong effects on the composition of savings, what is confirmed by recent evidence on household's portfolio. These non-neutralities raise questions on the quality of tax revenue. The tax privilege for housing is questionable. Tax incentives for pension savings are common in OECD countries, but the tax privileges that result from the non-taxation of capital gains do not seem to have any obvious policy rationale that could justify the departure from neutrality.

The indicators we use indicate that the trade-off between equity and efficiency could have been reversed recently. During the nineties, the increased taxation of income resulted in more redistribution through the tax system but the recent tax reform seems to have reduced the redistributive effect of PIT. Further work is however required to explain why the outcome differs from ex-ante simulations, that indicated that the tax reform was neutral from a distributional point of view.

The revenue forgone from tax expenditures indicates room for base broadening. A significant part of the revenue forgone just confirms the preferential tax treatment of specific forms of household's savings.

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TAX REVENUES IN THE EUROPEAN UNION: DEVELOPMENTS AND ECONOMIC ISSUES

European Commission

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1. Introduction.

Tax structures and levels of revenues have always been monitored with scrutiny and interest. First, taxes are the main financial source of most States for financing of many desirable policies. Second, taxes – by altering relative prices – distort economic choices – some of these distortions being desirable, others not. Furthermore, taxation may be necessary to correct market failures. Third, taxes need public acceptability, which can be difficult because taxes reduce available income or consumption, they can be levied on various tax bases and structures, and taxes can be powerful instrument of redistribution. Overall, the levels and structure of taxation systems have a microeconomic as well as a macroeconomic impact, shaping many aspects of the economy. The macroeconomic consequences of taxation are materialised by its stabilisation, redistribution and (dis)incentive effects. Tax systems must contribute to ensuring budgetary discipline. This is particularly the case in the context of the EMU because the loss of the monetary policy instrument for individual countries requires better functioning product, labour and capital markets, as well as enhanced automatic stabilisation potential of fiscal policy. Tax policy will impact both.

Over the last years, tax collection has been impacted by structural developments and growing challenges. Economic integration and the increasing mobility of factors of production, in particular capital, have made it easier for tax bases to relocate and taxes are one element determining this choice. In the face of the growing challenges of ageing and globalisation, Member States have been progressively more concerned by the perspective of vanishing tax bases or the progressive shift of the tax burden from mobile to immobile tax bases which could ultimately threaten their capacity to finance their social model(s). Taxes are indeed closely linked to the objectives of the welfare state. These objectives can be conveniently classified according to the following categories: efficiency of the economy, supporting the living standards at all stage of life or in case of adverse events, reducing inequalities, promoting social integration, protecting citizens, and ensuring an intelligible and abuse-free administration¹. To meet these aims, taxation can be used in different ways². First, taxation can be used as a source of financing for public interventions such as the production of public goods, the transfer of income or the provision of insurance with compulsory membership. Second, taxation can also be used to directly correct market failures or to promote (resp. discourage) the consumption of merit goods (resp. demerit goods) for which positive (resp. negative) externalities are not internalised.

¹ See Barr (1992) for a review. An alternative classification deals with the three 'R's' of the welfare state: Redistribution between people, Risk and insurance, and Reallocation over the life cycle (de Mooij, 2006).

² Note that besides taxation, regulation, public production, income transfers and subsidies are other alternative or complementary instruments in the hands of governments.

It naturally follows that the level – and to some extent the structure – of taxation is closely linked to the level of public expenditures. Several factors are shaping the degree of government intervention in the economy³. First, the level of economic development is impacting the efficiency of markets and hence the need for policy intervention. In more developed economies, for which basic needs are fulfilled, citizens may express a higher desire for larger social programmes, a phenomenon known as the Wagner Law or Law of Increasing State Spending⁴. Next, the level of technological development may shape government spending in several directions. Technological improvements may break natural monopolies and hence create less scope for direct public intervention. Innovation can also reduce the cost of existing technologies but in the same time bring new ones that are more costly – a well-known phenomenon in health care expenditures. Third, the degree of openness of the economy may increase the need for a larger public sector that acts as a buffer against external shocks⁵. Finally and foremost, social attitudes, mainstream economic or political thinking, and historical developments help understanding the evolution of the size of the government⁶. As evidenced by table (1), during the period between the 1870 French-German war and WWI, total public expenditures to GDP were at a meagre 10-15%. Following the post-WWII Keynesian revolution and the oil shock of the early 1970s, public expenditures soared to reach levels above 50% of GDP in most countries. Over the last decade, public expenditures have somewhat retreated in Europe.

Table 1 - Total public expenditures as a percentage of GDP – selected countries

	1880	1913	1920	1937	1960	1968	1974	1987	1995	2004
Austria	n.a.	n.a.	14.7 ^c	14.8	35.7	40.6	41.9	52.4	53.2	50.6
Belgium	n.a.	13.8 ^c	22.1 ^c	21.8 ^c	34.5	41.7	45.0	58.1	53.4	49.3
France	11.2	17.0	27.6	29.0	34.6	40.3	39.3	50.9	54.4	53.4
Germany*	10.0 ^a	14.8	25.0	34.1	32.4	39.1	44.6	47.3	57.1	46.8
Italy	n.a.	11.1 ^c	22.5 ^c	24.5 ^c	30.1	34.7	37.9	50.8	52.3	48.5
Netherlands	n.a.	9.0 ^c	13.5 ^c	19.0 ^c	33.7	43.9	47.9	62.4	59.6	48.6
Spain	n.a.	11.0 ^c	8.3 ^c	13.2 ^c	18.8	21.3	23.1	40.5	46.0	38.6
Sweden	n.a.	10.4	10.9	16.5	31.0	42.8	48.1	59.4	66.8	57.3
UK	9.9	12.7	26.2	30.0	32.2	39.3	44.8	42.9	45.2	43.9
USA	n.a.	7.5	12.1	19.7	27.0	30.3	31.7	36.3	35.7	36.5 ^d
Japan	9.0 ^b	8.3	14.8	25.4	17.5	19.2	24.5	32.7	36.3	38.2 ^e

Sources: adapted from Maddison (1995) for 1880, Tanzi and Schuknecht (1997) for 1913-1960, OECD (1999) for 1968-1995, OECD (2005a) for 2004.

Notes: For 1913 and 1920: general government expenditures. *: Western Germany for 1960-1987. a: 1881. b: 1885. c: central government. d: 2003. e: 2002. Because the table is aggregated from various sources, slight differences in the definition across years can appear.

The analysis contained in this report shall be read in the light of historical perspectives and current social preferences towards the extent and functions of the welfare state. It shall also recognise the strong link between taxation and the level of public expenditures, especially because of the need to ensure fiscal discipline.

³ See Tanzi (1997) for a discussion.

⁴ Named after German economist Adolph Wagner (1835-1917).

⁵ See Rodrik (1998).

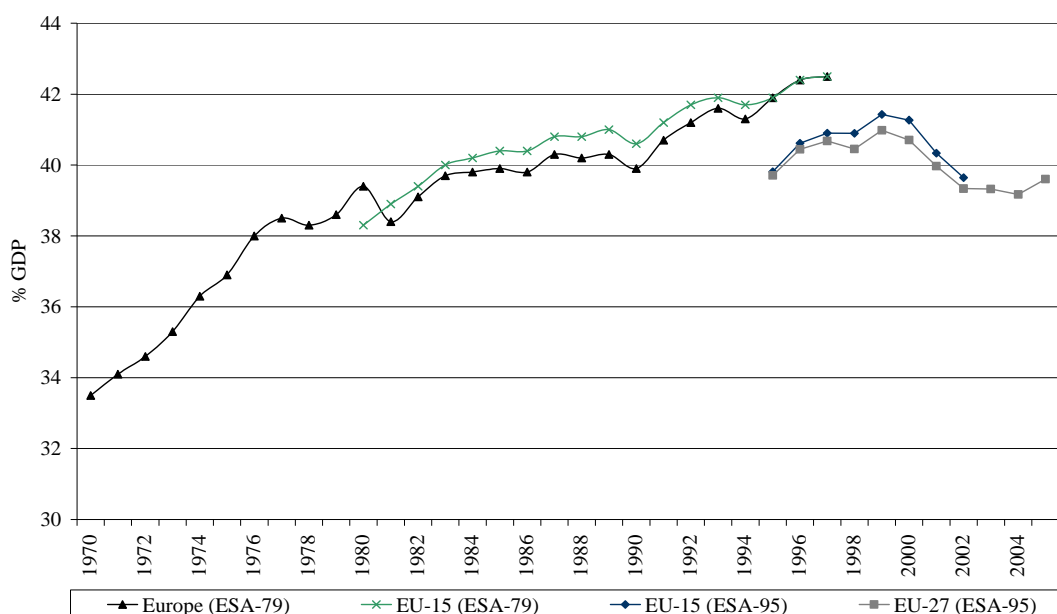
⁶ For example, most of the 19th century was characterised by low levels of government expenditure, reflecting the dominant doctrine of Laissez-faire, itself possibly a consequence of 18th century's interventionism. Tanzi and Schuknecht (1997). See also Musgrave (1985) for an enlightening review of history of fiscal doctrine.

2. Structure of taxation in the European Union.

2.1. Total tax burden: turning the tide?

Between the early 1970s and the late 1990s, total tax burden in percentage of GDP⁷ has soared in the European Union⁸. On average, the rate of growth was of half a percentage point per year during the 1970s, a period of rapid growth of public expenditures. The growth of the total tax burden slowed down in the 1980s – with an average annual growth of less than a tenth of a percentage point per year – before growing again in the 1990s at an annual average rate of 0.3 percentage-points. The total tax-to-GDP in Europe peaked at the turn of the century before decreasing by 0.2 percentage-points per year on average. The latest data however show a pickup at the current end. Overall, the tax ratio is by now at the same level as ten years ago.

Figure 1 - Total taxes (including SSC) in percentage of GDP

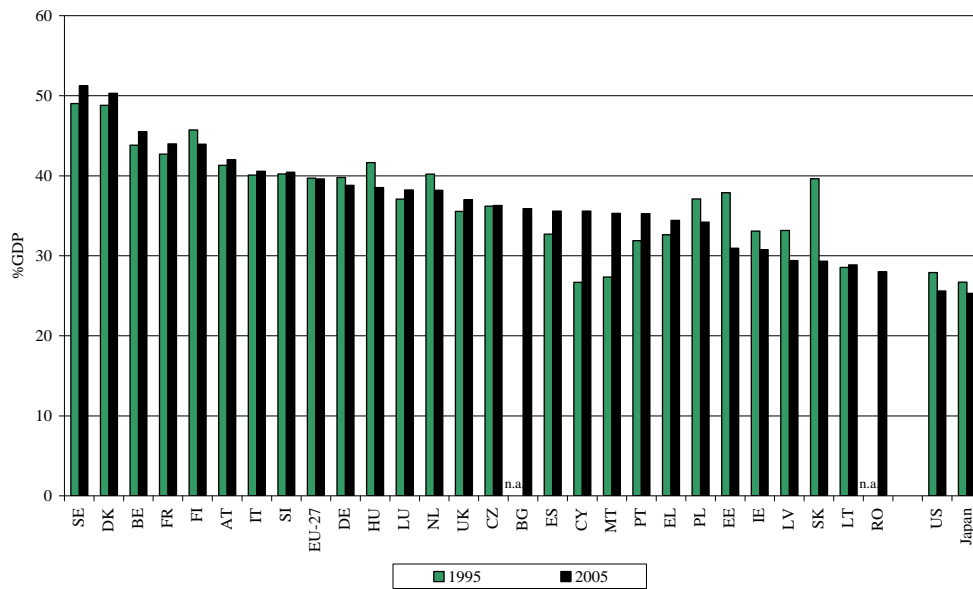


Source: European Commission (2006). Note the statistical break due to a change in classification at Eurostat. All data are GDP-weighted. Europe refers to the GDP-weighted average for Member States in the respective years.

⁷ Despite its simplicity – or rather because of it – the total tax-to-GDP ratio remains a rough indicator that carries interesting summary information but also suffers from deficiencies. The indicator cannot be seen in isolation of the level of public expenditures and of the use of other alternative means for government intervention such as regulation. Moreover, total tax revenues convey very little information on the impact – in terms of distortions and in terms of redistribution – of tax systems.

⁸ Several data limitations put constraints on the analysis. First, tax data for the EU-15 is only available from 1980. An indicator for 'Europe' is available from 1970 and is an average for each year for the countries that were member of the European Union (or Community) during this year. Second, data for the ten member states that joined the EU in 2004 (and hence an EU-25 indicator) is only available from 1995. Third, ESA-95 data for Bulgaria and Romania exist only for the most recent years. Finally, there is a statistical break around 1995 due to the change in classification at Eurostat as the statistics changed from the ESA-79 to the ESA-95 classification. The GDP-weighted data for the EU-15 and the EU-25 (or EU-27) are very similar. Unless specified otherwise, EU-15 data are used – because of longer time-series – but the conclusions can be transposed to the EU-25 or EU-27. Most data are available until 2004 or 2005.

Figure 2 - Total taxes (including SSC) in percentage of GDP in 1995 and 2005



Source: European Commission (2006), OECD (2005b). US and Japan: 1995 and 2003.

When looking at the evolution of individual countries, several exceptions stand out. First, some countries have been particularly successful to stabilise their total tax-to-GDP ratio either from the 1970s – this is the case of Ireland and United Kingdom – and this at levels around 35%, or from the 1980s – such as Germany (at about 40%), Belgium, Luxembourg, and the Netherlands (all at about 45%). Second, the level of taxes in the economy has dramatically increased – by some 10 percentage-points – in Finland, Greece, Italy, Portugal and Spain in the 1980s and 1990s, although starting at comparatively low levels. The same 'catch-up' effect occurred in Cyprus and Malta over the last decade. Third, for the most recent period, some of the recent Member States have experienced important decreases in their total tax burdens. This is the case of the Slovak republic (about 10 p.p.), Estonia (7 p.p.), Latvia (about 4 p.p.), Poland and Hungary (both about 3 p.p.). Interestingly, the bulk of these changes have occurred in the second half of the 1990s.

Finally, about half of the Member States have experienced a decrease in their tax-to-GDP ratio between 2000 and 2005. This decrease was especially marked in Germany, Greece, Finland, the Netherlands, Slovak republic, and Sweden. In 2005, latest year available, the GDP-weighted average for the EU-27 was at 39.6%. It ranges from 28.0% in Romania to 51.3% in Sweden.

2.2. The three tax pillars.

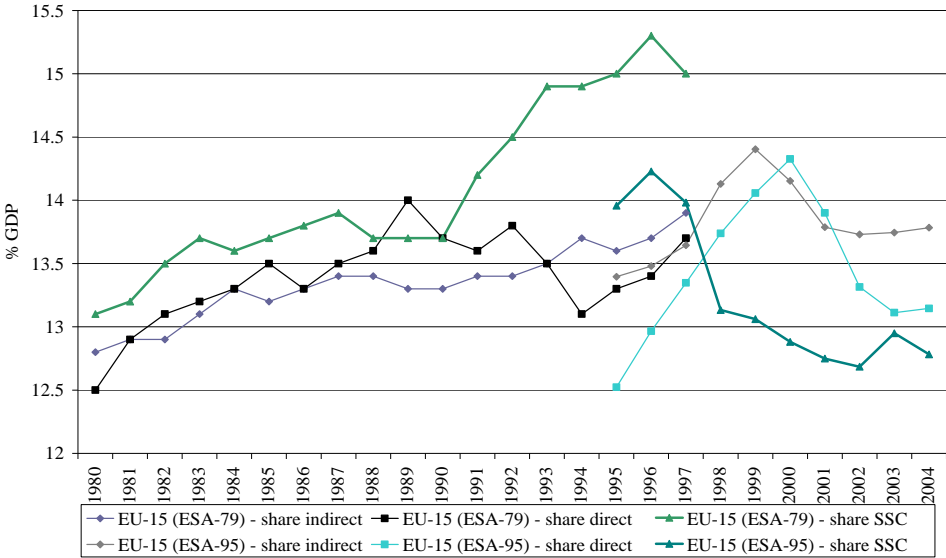
Most tax systems in the world rely on three pillars: direct income taxes, indirect taxes on consumption and social security contributions. The European Union does not differ in that respect, although it generally relies proportionally more on consumption taxes (because of its developed VAT system) and on social security contribution than other developed economies.⁹ The respective shares of these three components have been quite close over time, staying within the 30-35% range. Direct taxes are volatile and largely influenced by the business cycle. The ratio of indirect taxes to GDP steadily increased until 1999 before slightly levelling off in the most recent years (but the share of indirect taxes in the total has increased over the last decade). This increase is due to developments in VAT collection that represented about 5% of GDP in 1970 to reach over 7% in 1999, partly explained by the creation of VAT systems in Portugal (1986), Spain (1986), Greece (1987) and Finland (1995). At 13.8% of GDP and 35% of total

⁹ See for example OECD (2001).

taxes, indirect taxes remain the main source of tax revenues in the European Union, followed by direct taxes at 13% of GDP (or 33% of total taxes). There also seems to be a trend in recent years towards more reliance on indirect taxes, as exemplified most recently by the German decision to increase VAT by three points and use part of the proceeds to cut social contributions.

Social security contributions constitute a third important source of taxes. EU Member States increasingly relied on social security contributions until the mid-1990s, with a dramatic change in 1996-1998 when the need to decrease labour costs materialised in a decline in social security contributions¹⁰. However, measures were mostly targeted or of limited scope so that little if any marked reduction in EU averages is visible since the turn of the century.

Figure 3 - Direct taxes, indirect taxes and SSC in % of GDP



Source: European Commission (2006). Note the statistical break due to a change in classification at Eurostat. All data are GDP-weighted.

The structure of taxation varies widely across countries. The share of indirect taxes in total taxation varies from about 30% in Belgium and in Germany to around 50% in Bulgaria and Cyprus. Direct taxes take on less than 20% of total taxes collected in Bulgaria and Romania but reach over 62% in Denmark. Finally, social security contributions represent only about 2.2% of the total in Denmark but over 40% of the total in Germany and Czech Republic.¹¹

¹⁰ This development was however mainly driven by a reduction in social security contributions for employees in France and in the Netherlands.

¹¹ Some statistical facts stand out. While the correlation between the share of indirect taxes and the two alternative sources of taxation is only about -.25, the correlation between social security contributions and direct taxation reaches -.87, indicating some form of trade-off between these two forms of revenues and probably reflecting a choice in the source of financing of social security expenditures as well as the fact that indirect taxes are relatively harmonized across Member States. This is confirmed by the correlations between these sources in percentage of GDP. The correlation between direct taxation and social security contributions is -.37, while it is .51 with indirect taxation. The correlation between indirect taxation and social security contribution is not economically significant at -.06. Second, while the correlation between the level of total taxes in percentage of GDP and the share of social security contribution is low (at -.09), there is a strong positive correlation between that level and the share of direct taxes (.43) and an even stronger negative correlation with the share of indirect taxes (-.70). This could be an indication that large governments might be mainly financed by larger direct taxes.

Figure 4 - Share of indirect taxes in total taxation (2005)

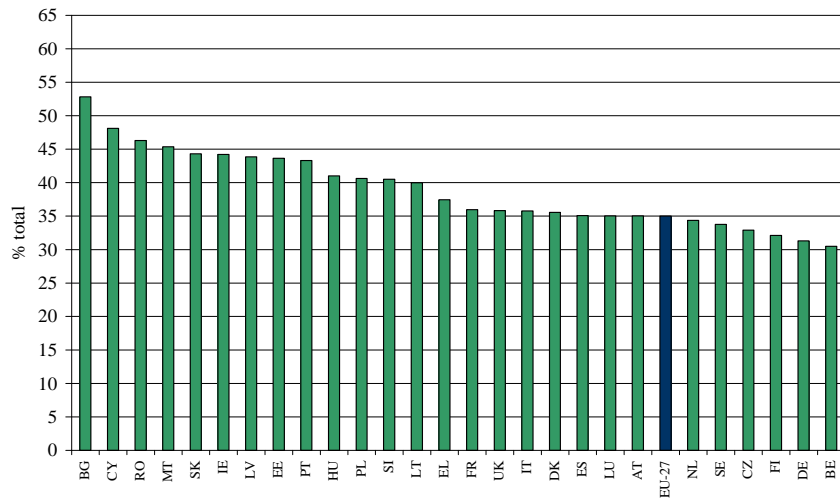


Figure 4b - Share of direct taxes in total taxation (2005)

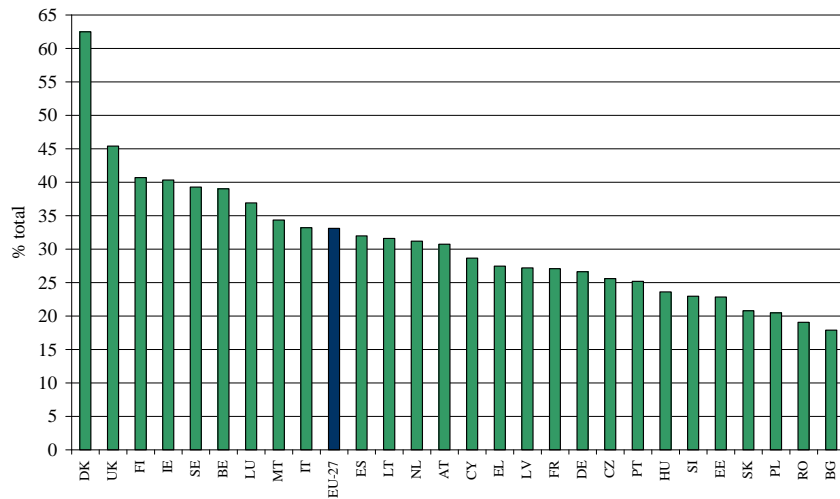
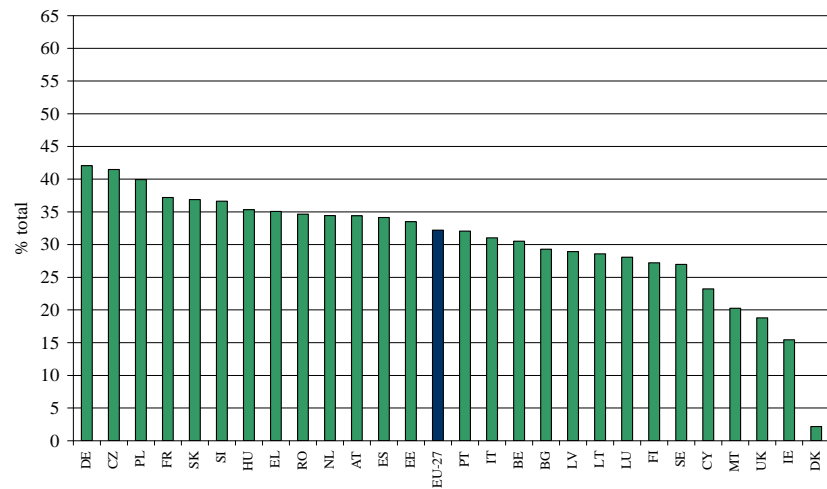


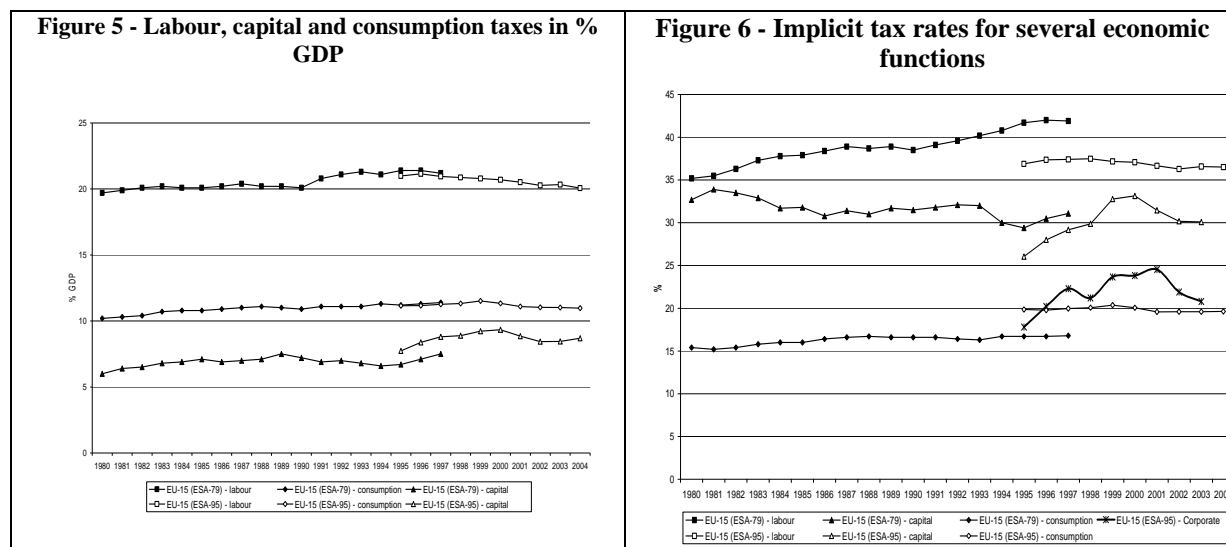
Figure 4c - Share of social security contributions in total taxation (2005)



Source: European Commission (2006), EU-27 is GDP-weighted. PT: direct taxes for 2004.

2.3. Taxing labour, capital or consumption.

Tax revenues from labour, capital and consumption in percentage of GDP have not shown major changes since the 1980s. Taxes on labour represent about 20-21% of GDP, while the weight of taxes on capital – contrary to common believe – has actually slightly increased from 6-7% to 9% of GDP. Finally, taxes on consumption make up for 10-11% of GDP. Differences in taxes as a percentage of GDP between economic functions do not necessarily mean that one source is more taxed than another. This is because their bases may well have different weights in the economy. To account for these different weights, one needs to compute implicit tax rates¹² which allot each tax to its respective tax base. The implicit tax rate on labour shows a less positive picture of the overall reduction in the burden of labour taxation as the decline is much less marked and more or less stopped after 2001, although some progress has been made in reducing the tax wedge on the lowest incomes. One shall also note that the implicit corporate tax rate – a sub-category of capital taxation – mimics the (cyclical) trend of capital taxation.



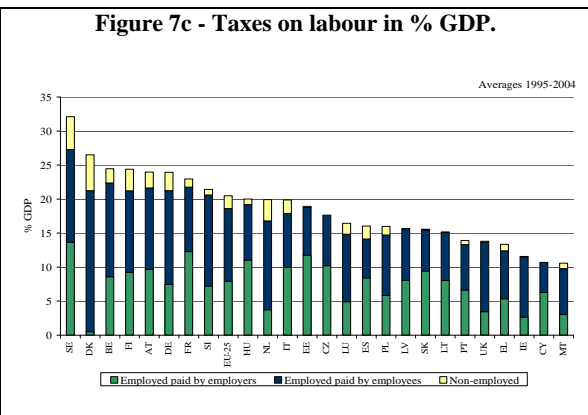
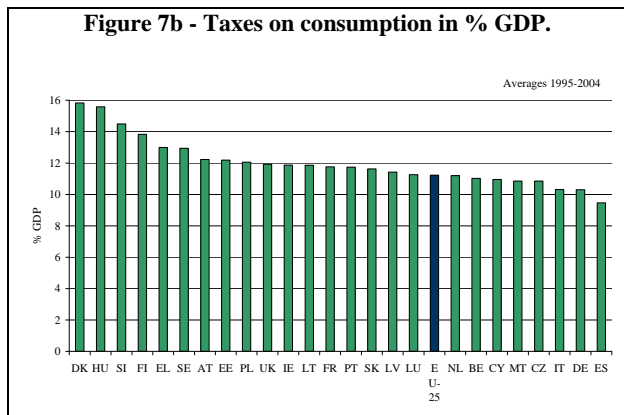
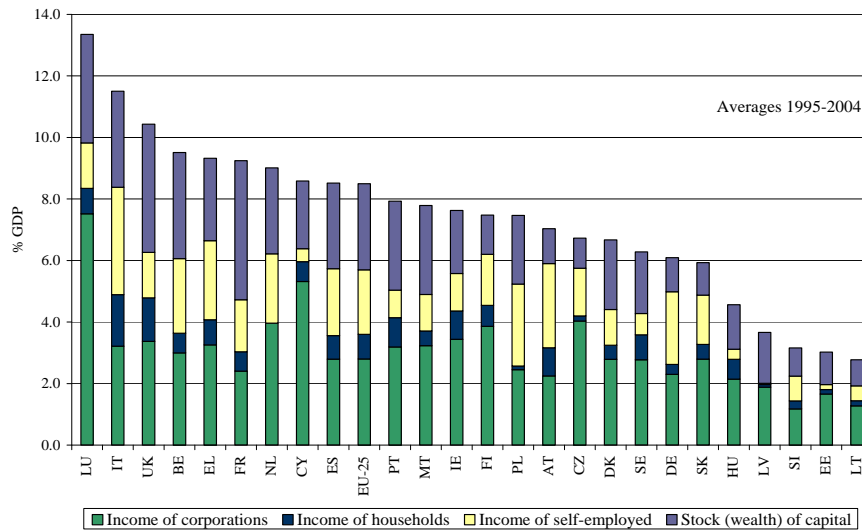
Source: European Commission (2006). EU-15 is GDP-weighted.

Taxes on consumption carry a relatively similar weight across Member States. There is much more variation across Member States in the taxation of labour and capital¹³. Taxes on labour vary from slightly above 10% of GDP in Cyprus and Malta to over 30% in Sweden. There was also more variation over time as the weight of labour taxation in GDP decreased since the mid-1990s in most countries. EU Member States still largely rely on taxes on labour but they differ as whether those taxes are borne by employees or employers. On average, about 42% of taxes on employed workers are paid by employers but it varies from 2% in Denmark to 60% in a range of countries. Interestingly, labour market reforms targeting employed workers have been focussed on reducing the burden for either employers or employees, but rarely both. Moreover, a decrease in the tax burden for one source was often partially offset by an increase in the tax burden for the other.

¹² These rates are also called 'backward-looking effective tax rates'.

¹³ The coefficients of variation for consumption, labour and capital are 12.9, 29.3 and 35.7% respectively.

Figure 7a - Taxes on capital in % GDP



Source: European Commission (2006). EU-25 is GDP-weighted

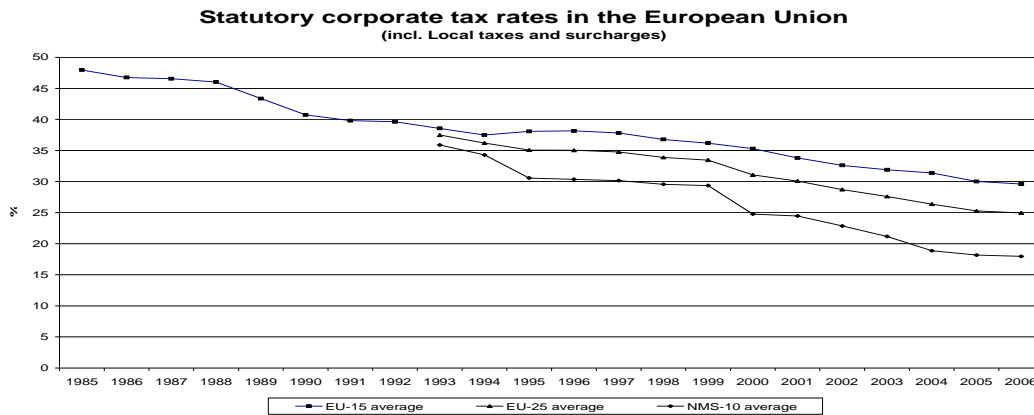
2.4. Do the newly-accessed Member States differ from the EU-15?

The recent accessions of new Member States have fuelled some debates in the 'old' Member States because statutory rates – notably on companies – were perceived to be substantially lower in the new Member States. Some perceived this situation as unfair given the fact that they were also recipients of EU regional aid. In addition, some of the new Member States have cut taxes aggressively, introducing e.g. zero rates on retained profits, or embraced inherently less progressive tax models such as the so-called flat tax regime. This perceived feeling of tax competition was also fuelling fears of a failure to finance social model(s).

Comparing tax collection in percentage of GDP in the EU-15 and the NMS-10 exposes interesting facts. First, taxes in the new Member States are indeed lower than in the EU-15 between 1995 and 2004, with a ratio of total taxes-to-GDP in the NMS-10 constantly about 5 percentage-points below that of the EU-15. This difference in level can be almost fully attributed to lower direct taxes in the new Member States,

where the levels in percentage of GDP are almost half of the ones in the EU-15¹⁴. This difference has fuelled discussions about a possible risk of corporate tax competition to attract capital.

Figure 8 - Evolution of statutory corporate income tax rates in the European Union.



Source: de Mooij and Nicodème (2006). The rates include local taxes and applicable surcharges.

During the past two decades, statutory corporate tax rates in Europe have fallen considerably, with a drop of the average tax rate in the EU-15 from slightly below 50% in 1985 to 30% in 2006. The decline in corporate tax rates has induced fears of a race-to-the-bottom in the European Union, i.e. a process in which competing governments successively undercut each others tax rates in order to attract mobile tax bases¹⁵.

Looking at the data, and contrary to common belief, the bulk of the difference in direct tax-to-GDP ratios is to be attributed to a lower collection of personal income taxes in new Member States, and not to lower corporate income taxes. Moreover, while personal income taxes in percentage of GDP is clearly below the level of the EU-15 (5.0% compared to 9.4%), the ratio of corporate income taxes to GDP in the NMS-10 still tops the one in the EU-15 (2.5% compared to 2.4%). However, some statistical artifices distort the comparison. In particular, in some large Member States such as Germany, the vast majority of companies do not pay the corporate income tax but their owners are taxed instead at the personal income tax, which artificially drives down the EU-15 average corporate tax-to-GDP. The arithmetic average personal income tax-to-GDP for the EU-15 and the NMS-10 is 10.4% and 5.7% in 2004 respectively, confirming the large difference. Furthermore, although the respective values for corporate income tax to GDP are 3.1% in the EU-15 and 2.7% in the NMS-10, this difference grows significantly if one excludes Cyprus and Malta, as the NMS-10 ratio falls to 2.3%¹⁶. Furthermore, the economies of the New Member States have been growing very fast, which boosts their tax revenues from capital.

All in all, the data are relatively inconclusive about the extent and the effects of corporate tax competition that could threaten tax collection. In particular, it is difficult to assess to what extent the above-mentioned factors are responsible for the fact that so far we do not observe a visible and marked

¹⁴ All NMS-10 have lower direct taxes to GDP ratios (from 6.1% in Slovak Republic to 9.4% in Czech Republic and 12.4% in Malta in 2004) than the EU-25 average (12.9% in 2004). However, there are also marked differences as for example the Central European New Member States (with the exception of Slovak Republic) tend to have tax ratios that are closer to the EU-15 average than the Baltics.

¹⁵ Enlargement has reinforced such fears as new Member States apply corporate tax rates that have gradually reached levels of more than 10%-points lower than in the EU-15 countries. See Nicodème (2006) for a review of the literature on corporate tax competition. See also de Mooij and Nicodème (2006) for a discussion on corporate tax rates and bases developments.

¹⁶ This said, the implicit tax rates on consumption, on labour and on corporate income are all higher in the NMS-10. One noticeable difference is that the implicit tax rate on capital is much higher in the EU-15, indicating that wealth and capital income of self-employed is more heavily taxed. Those figures shall be taken with caution because of a lack of data for several countries.

erosion of tax collection. The large differences in statutory tax rates might also reflect a stronger choice towards lower rates and larger bases in the new Member States. However, there are limits to base widening as it cannot offset forever continuing rate cuts. Another problem is that very low corporate income tax rates threaten the so-called "backstop function" of that tax, which is to protect personal income tax revenue from the risk of individuals subject to personal income tax acquire the legal form of corporations to reduce their tax bill; if this happens the erosion of tax revenues would be more apparent in the revenue from the personal income tax rather than from the corporate income tax¹⁷.

¹⁷ See de Mooij and Nicodème (2006) for a discussion.

Table 2 - Taxes in percentage of GDP in the EU-15 and in the NMS-10.

	EU-15										NMS-10										
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
Total taxes	39.8	40.6	40.9	40.9	41.4	41.3	40.3	39.6	39.7	39.6	38.0	36.8	36.2	35.8	36.0	34.7	34.5	34.9	34.6	34.5	
Indirect taxes	13.4	13.5	13.6	14.1	14.4	14.2	13.8	13.7	13.7	13.8	14.6	14.5	13.9	13.7	14.0	13.5	13.0	13.2	13.3	13.7	
<i>Of which</i>																					
VAT	6.7	6.7	6.8	6.9	7.1	7.0	6.9	6.8	6.8	6.8	6.3	6.4	6.8	6.7	7.1	7.3	7.1	7.3	7.3	7.3	7.7
Excise duties	2.9	2.9	2.9	2.9	2.9	2.8	2.7	2.8	2.8	2.7	3.8	3.9	3.3	3.5	3.7	3.5	3.5	3.6	3.7	3.9	3.9
Other taxes on products	1.7	1.7	1.8	1.8	1.9	1.9	1.8	1.8	1.8	1.9	3.2	2.9	2.5	2.2	1.9	1.4	1.1	1.2	1.2	1.3	1.3
Other taxes on production	2.1	2.2	2.2	2.5	2.5	2.4	2.4	2.4	2.3	2.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.1	1.0	1.2	1.2
Direct taxes	12.5	13.0	13.3	13.7	14.1	14.3	13.9	13.3	13.1	13.1	10.7	9.8	9.9	9.6	8.2	8.0	7.8	8.2	8.0	7.8	
<i>Of which</i>																					
Personal income taxes	9.3	9.4	9.4	9.9	10.1	10.1	10.0	9.7	9.6	9.4	6.7	6.7	6.5	6.5	5.2	5.0	5.0	5.1	5.0	5.0	5.0
Corporate income taxes	2.0	2.4	2.8	2.6	2.7	2.8	2.6	2.3	2.2	2.4	3.2	2.7	2.9	2.7	2.6	2.5	2.3	2.4	2.5	2.5	2.5
Other direct taxes	1.2	1.2	1.2	1.2	1.3	1.4	1.3	1.2	1.4	1.4	0.7	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.5	0.4	0.4
Social Security Contributions	14.0	14.2	14.0	13.1	13.1	12.9	12.7	12.7	12.9	12.8	12.8	12.6	12.6	12.6	13.9	13.2	13.9	13.8	13.5	13.2	
<i>Of which</i>																					
Paid by employers	7.5	7.7	7.6	7.4	7.4	7.3	7.3	7.3	7.4	7.3	8.4	8.1	8.1	8.1	7.8	7.7	7.5	7.5	7.4	7.2	7.2
Paid by employees	4.8	4.7	4.6	4.2	4.2	4.1	4.1	4.0	4.1	4.0	4.1	4.2	4.2	4.2	5.6	4.7	5.1	4.9	4.7	4.6	4.6
Of self-employed	1.7	1.8	1.7	1.5	1.5	1.4	1.4	1.4	1.5	1.5	0.5	0.5	0.5	0.5	0.7	1.1	1.5	1.6	1.6	1.4	1.4
Implicit taxes																					
Consumption	19.9	19.8	20.0	20.1	20.4	20.1	19.6	19.6	19.6	19.6	23.0	22.2	21.1	20.9	21.3	20.4	19.5	20.4	20.9	21.7	21.7
Labour	36.9	37.4	37.4	37.5	37.2	37.1	36.7	36.3	36.6	36.5	38.4	37.7	37.5	37.3	39.0	36.9	36.9	37.0	36.9	38.9	38.9
Capital	26.0	28.0	29.2	29.9	32.8	33.1	31.5	30.2	30.1	n.a.	22.1	19.5	21.2	18.4	20.7	20.8	21.0	22.4	19.8	n.a.	n.a.
Corporate income	17.8	20.2	22.3	21.2	23.7	23.8	24.5	21.9	20.8	n.a.	29.4	22.3	28.8	21.7	34.5	29.8	31.1	32.4	21.2	n.a.	n.a.

Source: European Commission (2006). GDP-weighted averages. Totals may be affected by rounding

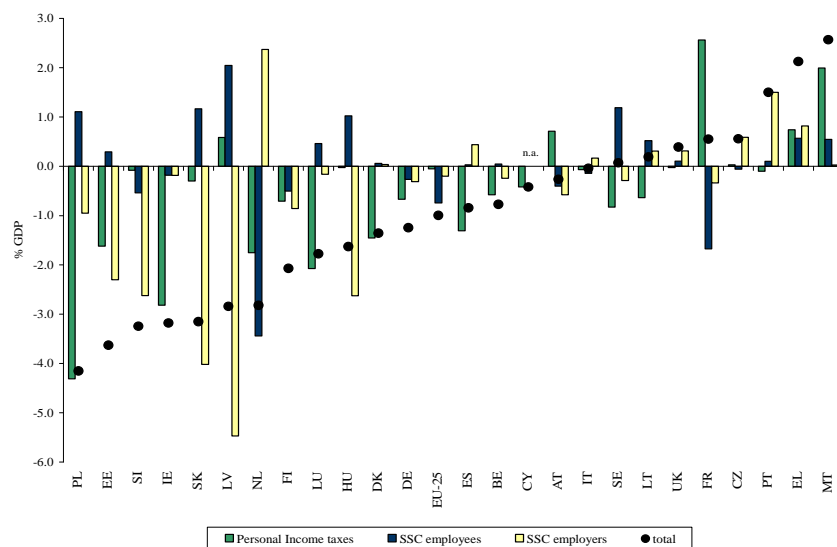
3. Recent trends in tax reforms.

Over the last years, Member States have carried out important reforms of their tax systems. These reforms were driven by several factors. First, high unemployment rates and low participation rates represent a loss of human capital and create social tensions. European Labour markets are distorted by taxes and Member States have sought to create a more employment-friendly labour taxation. Doing this, they have also faced the difficulty of finding alternative tax bases to finance their expenditures. Second, globalisation has increased the mobility of capital and of some categories of workers. This increased mobility has fuelled fears of adverse consequences of a shift from mobile to immobile sources of taxation. Third, Member States have done efforts to rationalise and simplify their tax systems. This potentially brings economic benefits but also bring forward the question of a possible trade-off between efficiency and fairness. Finally, globalisation and ageing have raised the issue of the financing of the European Social Model(s). In particular, the constraints imposed by these challenges make it necessary to find alternative and robust tax bases. Although it goes beyond the scope of this paper to analyse each and any tax reform, this section will review these four issues in turn, illustrating them with concrete reforms.

3.1. Employment-friendly labour taxation.

Taxation is a source of distortion in the labour markets and will affect both the supply of and the demand for labour¹⁸. The impact taxes on wages and employment depends on the interactions between labour supply and demand, labour market structure and the institutional design such as the wage bargaining process. Taxes and social security contributions drive a wedge between the cost for the employer and the net compensation received by the employee. Although theoretically such tax can increase or decrease labour supply, depending on which of the income and substitution effect dominates, empirical evidence points to a negative impact of labour taxes, albeit with different magnitude for different groups of workers. In particular, the effect seems largest for the second member of the household and for lone-parent families. In parallel to the effect of labour taxation on labour supply, taxes and social security contributions, to the extent they are reflected in higher labour costs will also decrease labour demand as costs increase.

Figure 9 - Evolution of the components of labour taxation in % GDP 1995-2004.



¹⁸ See Carone and Salomaki (2001) for a review.

Source: European Commission (2006). EU-25 is GDP-weighted. Portugal: 1995-2003. Slovak republic: 1995-2003 for personal income taxes.

As documented in table (3), tax wedges on labour remain high in most countries, reaching 50% in several Member States. Looking at the size and components of the tax wedge, it can be seen that the lion's share (about 45%) of the total tax wedge is accounted for by employers' social security contributions, while the remaining is made up of personal income taxes (30%) and employee's social security contributions (25%). This situation contrasts with the US, for which the total tax wedge is about a third lower than in Europe and equally borne by personal income taxes and social security contributions.

Member States have carried out many reforms, with a majority of them paying particular attention to the reduction of taxes on labour for low-skilled workers and making work pay. The reductions in personal income taxes and social security contributions have often been accompanied by increases in tax allowances. In 2005, the GDP-weighted personal income taxes in the EU-27 were at 9.2% of GDP, the same level as 1995. In the same period, social security contributions paid by employers decreased from 7.5% to 7.3% of GDP and those paid by employees declined from 4.7% to 4.0% of GDP. The total decline in taxation of labour corresponds therefore to about slightly more than 1% of GDP¹⁹.

Given the objectives of budgetary discipline in the European Union, revenue-neutral tax reforms have to shift the tax burden from labour to other tax bases. Ideally, the new tax base shall be wide to be able to impose a low tax rate and minimize distortions, as well as stable as to ensure certainty in revenue collection. Several candidates have been thought of or implemented in the Member States.

Some countries, starting from Scandinavian countries in the early 1990s, have introduced a dual income tax system that tax personal capital income at low and proportional tax rates while keeping higher and progressive tax rates on labour income. One of the objectives of such a move has been to reduce the incentives for capital exports and tax avoidance and evasion.

¹⁹ This is of course a broad estimate that does not control for the economic cycle, nor for the share of wages in the economy. The analysis per country does not reveal strong correlations between the components, except a negative one between social security contributions of employers and of employees.

Table 3 - Total tax wedge on labour.

	Single person without children at average wage (100% AW)					
	2000	2005	Difference	Part PIT (2005)	Part SSC employee (2005)	Part SSC employer (2005)
Austria	47.3	47.4	0.1	10.9	14.0	22.6
Belgium	57.1	55.4	-1.7	21.4	10.7	23.3
Czech rep.	42.7	43.8	1.1	8.6	9.3	25.9
Germany	53.9	51.8	-2.2	17.3	17.3	17.3
Denmark	44.3	41.4	-3.0	30.2	10.6	0.5
Greece	38.4	38.8	0.4	4.3	12.5	21.9
Spain	38.6	39.0	0.4	10.7	4.9	23.4
Finland	47.8	44.6	-3.2	20.1	5.1	19.4
France	49.6	50.1	0.5	10.8	9.6	29.7
Hungary	52.7	50.5	-2.2	14.3	10.0	26.3
Ireland	28.9	25.7	-3.2	11.4	4.7	9.7
Italy	46.4	45.4	-1.0	13.6	6.9	24.9
Luxembourg	38.2	35.3	-2.9	11.1	12.3	11.9
Netherlands	39.7	38.6	-1.1	9.5	19.7	9.5
Poland	43.2	43.6	0.3	5.3	21.3	17.0
Portugal	37.3	36.2	-1.1	8.1	8.9	19.2
Sweden	50.1	47.9	-2.2	18.1	5.3	24.5
Slovak rep.	41.8	38.3	-3.4	6.9	10.6	20.8
UK	32.1	33.5	1.4	15.7	8.2	9.6
EU*	45.2	44.4	-0.8	n.a.	n.a.	n.a.
USA	29.7	29.1	-0.6	14.6	7.3	7.3

Source: OECD, Taxing wages report. * GDP-weighted average for those countries above. From January 2005, Slovak Republic has introduced the fully funded pillar. Under this system, 9 percentage point of the social security contributions paid by the employer to the pension insurance go directly to pension funds and not to the social insurance company as previously. The pension funds are treated outside of the general government so that these contributions are not accounted for in the OECD calculations. Hence, the 2005 employers' social security contributions are assumed to be 26.2% (OECD, taxing wages report).

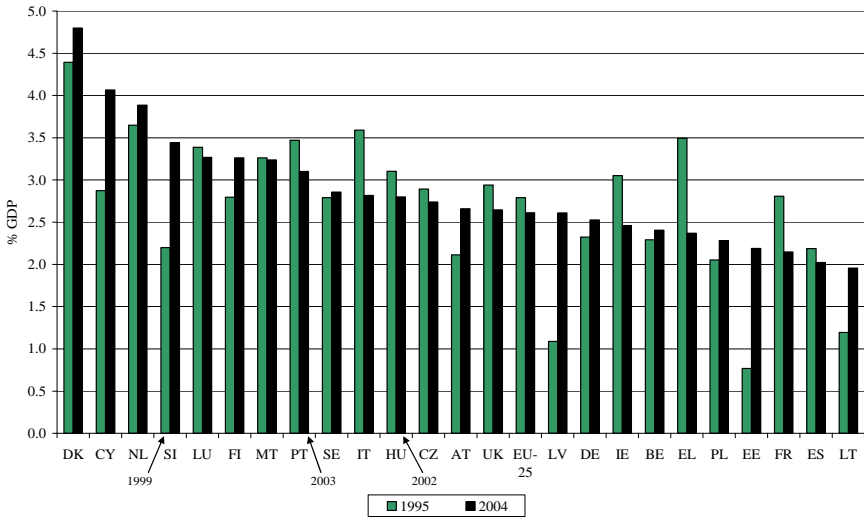
Another change has been to reduce the tax burden on low-income. To guarantee the same amount of revenues, higher rates may be applied to high-income groups. According to some scholars, if the labour market is imperfectly competitive, increasing tax progressivity will have a positive effect on employment because it stimulates wage moderation. Alternatively, if the labour market is competitive, such an increase will have a negative effect on employment because of the substitution effect from consumption to leisure. The overall effect ultimately depends on the respective wage elasticities of low-paid and high-paid workers. To the extent that it is much higher for workers at the low-end, an increase in progressivity may both increase employment and reduce the overall excess burden of the tax. There is however a growing constraint to this. The international mobility of skilled workers and the possibility to change the "label" of labour income (especially for self-employed) to capital income puts a limit to top marginal personal income tax rates.

The debate has also revolved around the possibility of shifting the tax burden from labour to capital. Such a shift has been popular among some policy-makers because there is a perception that globalisation was shifting the tax burden the other way around and that some correcting measures would be politically desirable. Such move has not really happened so far because it faces two major constraints. First, the capital tax base is smaller than the labour tax base and would therefore require a much higher tax rate to be revenue-neutral, probably leading to big distortions. Second and foremost, capital is much more mobile and this creates difficulties to enforce taxation in the absence of international coordination. In addition, economic theory shows that the burden of taxing the mobile tax base (capital) ultimately falls on the immobile factors (labour and land) because, in the absence of location-specific rents, the emigration of the mobile factor lowers the progressivity of the immobile ones. It will reduce domestic

immobile factors incomes by more than the amount of the tax collected from the mobile factor and it would therefore be better to directly tax those immobile factors - especially because by doing this one avoids the additional tax distortion on the immobile factor²⁰.

An interesting alternative tax base is a tax on polluting activities. Environmental taxes are a classic case for applying taxation that discourages the consumption of de-merit goods or "bads"²¹. A lot of ideas have been launched recently, especially as the debate on the need to act against global warming is heating up. For example, car taxation will be based to a large extent in the future on their emissions. Some proposals have also been made to modulate property taxes with the degree of insulation of the habitation or to tax products based on the pollution created by their fabrication process. It seems however that despite some remarkable exceptions, going from rhetoric to practice has proven hard in most Member States. Over the last ten years, the EU-25 GDP-weighted average level of environmental taxation has declined from 2.8% of GDP to 2.6%²². It is true that a sizeable amount of environmental non-tax instruments of command and control exist and that, in theory, an efficient green tax is one that deters polluting activities instead of collecting revenues. However, the pessimistic view is that the low collection results rather from the fact that environmental taxes are not widely used.

Figure 10 - Environmental taxes in percentage of GDP



Source: European Commission (2006).

Next, taxes on immovable properties could be an alternative instrument to raise additional revenues because they are difficult to relocate. The share of taxes on immovable properties in total taxes remains low in most Member States at between 1 and 3%²³. One specific problem of property taxation is that, to favour home-ownership, some Member States are offering deductions of interest and/or capital payments to the personal income tax base. Those reductions have potential perverse effects as they may simply increase demand and prices²⁴. Alternatively, registration taxes on properties create a sunk cost and may reduce the liquidity of the asset, with adverse consequences on the mobility of labour.

²⁰ Razin and Sadka (1991).
²¹ Also called Pigouvian taxation.
²² Environmental taxes fall into three main categories defined by the European Commission (2006): those on the use of energy, those on the use of transport, and those on polluting activities with 2.1%, 0.6% and 0.1% of GDP respectively for the EU-25 GDP-weighted 1995-2004 average.
²³ Own calculations based on OECD (2005b).
²⁴ Another problem is that in some cases these deductions are offered at the highest marginal tax rate of individuals, they reduce the progressivity of the tax system.

Finally, a widely-discussed alternative would be to shift the tax burden from labour to consumption. The choice between taxing consumption or income has been the focus of a large amount of theoretical and empirical research. Both types of taxes discourage work by leaving leisure untaxed. However, consumption taxes treat current and future consumption in the same way while income taxes impose a higher burden on future consumption, discouraging savings. The intuition behind this result is that under a consumption tax²⁵, savings can be accumulated tax-free. This can increase investment, raise the capital stock, and boost productivity and the size of the economy. The tax can be indirect (possibly with differentiated tax rates) and applied to commodities, or it could be direct and applied on expenditure. In this later case, the tax base is the income minus the savings. Taxing consumption rather than income is also often seen by policy-makers as positive because it applies to a larger tax base, which shall allow a lower tax rate and hence reduces distortions. Although theoretically the tax base for consumption shall be smaller than the one for income (because consumption taxes, unlike income taxes, leave savings untaxed), multiple exemptions for taxation of income may make the base larger in practice²⁶. Next, Consumption taxes may also allow taxing elements that may be hidden from the income tax declaration. Consumption taxes are however not exempt of fraud either. Finally, consumption taxes also solve some of the inequities linked with the timing of income collection. Under a classical progressive income tax, receiving revenues on one single occasion will push the taxpayer into higher marginal tax rates compared to a taxpayer that earns the same amount but over several periods. One shall note however that this argument holds only if the consumption tax is proportional and the income tax progressive, two conditions that may not hold in practice.

The main objection against consumption taxes is that they are seen as regressive, falling more heavily on those with lower incomes. This can be true if the ratio of consumption to income falls with higher incomes and if there is a decreasing marginal utility of revenues. One counter-argument however is that consumption taxes can be made progressive. Such a system would be similar to those on income taxes in the case of an expenditure tax and differentiated tax rates or with a system of allowances in the case of commodity taxation. In practice, many countries apply low VAT rates on goods considered as basic needs, although the theoretical case for using commodity taxation for redistribution purposes is far from obvious in the economic literature²⁷. Another objection is that (commodity) consumption taxes may be less visible because the consumer pays little by little over his/her consumption patterns and he/she may also not notice the tax if prices are shown tax-included. This lower visibility may increase acceptance.

In practice, countries do not necessarily face a choice between consumption and income taxes as many of them have both. In addition, most consumption taxes and income taxes depart from their standard models and are actually hybrid systems. There is widespread feeling that countries have increasingly relied on consumption taxes over the last decade, although the figures do not necessarily suggest substantial changes²⁸. A dramatic move from income to consumption taxes – possibly to finance the welfare state – would carry important transition problems, not the least the problem of the retired generation who would then have paid high taxes on their income when active and now face high taxes on their consumption once retired.

²⁵ Consumption taxes have many names: expenditure tax, consumed-income tax, cash-flow tax. In addition, they can be applied to both individuals and businesses. The 'Haig-Simons' definition of income is the sum of consumption and (positive) changes in wealth. An expenditure tax will mimic consumption by taxing income and the decrease in wealth.

²⁶ In the EU, the tax base for consumption taxes is approximately a third higher than the tax base for labour (i.e. total amount of gross compensation per employee).

²⁷ See box.

²⁸ The EU-27 GDP-weighted average indirect taxes to total taxes ratio has increased from 33.8% to 35.0% between 1995 and 2005. The same ratio for VAT (a sub-category of indirect taxes) moved from 16.8% to 17.5%.

Box 1 - Is there a case for differentiated VAT rates?

An important question for policy is whether or not to have differentiated commodity taxes such as reduced VAT rates. Alongside the Community's interest to avoid distortions of consumption and VAT revenues, Member States have put forward four main cases which could justify their interest in having differentiated VAT rates. First, taxes or subsidies shall promote merit goods or discourage the consumption of de-merit goods or bads. This view has certainly some good points, although the choice of merit goods may be arbitrary and subject to specific lobbying. Second, differentiated tax rates could be used to redistribute income by taxing lightly goods of first necessity such as food. The problem with this rule is that it is far from clear that consumption taxes is an efficient instrument of redistribution both theoretically (income taxes are shown to act much better²⁹) and empirically (as a sizeable part of the VAT reduction benefits the rich). Third, reduced VAT rates are seen as having positive effects on employment, an argument that shall be qualified. Value-added taxes seem to act on the demand for labour but not so much on the supply, leaving ambiguous the effect on employment. In addition, the reduction of other taxes may have similar if not larger effects as it is the case for taxes on labour. Fourth and finally, Member States may want to have reduced VAT rates because it can raise productivity. Recent research shed new light on this issue³⁰. To put things simple, this research departs from the traditional goods-services market production by including a third sector: the household production of services such as house cleaning, baby care, car-washing, or do-it-yourself activities. It can be shown that a high tax on these activities, which are complement to leisure, are not an efficient way to stimulate labour supply, as they will tend to encourage substitution of home production for market production.

The traditional view is that taxes or subsidies shall correct externalities and that uniform VAT is not necessarily optimal from an efficiency perspective. On the other hand, neutral and uniform VAT taxes may be the best solution as a lot of guiding variables are in practice unobservable. Indeed, very little is known about the cross-price elasticities between leisure and all goods and services (we have difficulties in identifying them), so the best practical policy may be to act as if they were all equally substitutable and try to tend to uniform VAT taxation. This view is also reinforced by the fact that: (a) a non-linear income tax is more optimal for redistribution purposes than differentiated VAT rates, (b) uniform VAT is easier to administrate and less prone to fraud (by re-labelling goods), (c) there is no need to change the relative rates when tastes or technologies are changing, and (d) uniform VAT rates better prevent wasteful lobbying. Even though there may be a theoretical case for non-uniform commodity taxation, it seems desirable to maintain neutrality as the general norm. This is because governments may not have full information on the adequate parameters to fine-tune their taxes and non-uniform taxes are subject to lobbying. Hence, the burden of the proof shall always be carried by those who argue for deviations from uniformity³¹.

3.2. Globalisation, tax competition and the shift from mobile to immobile tax bases.

Another point of concern for tax authorities is the potential effects of globalisation and tax competition that could force them to shift the tax burden from (geographically) mobile to immobile tax bases. The impact of tax competition has been the focus of a sizeable amount of academic research³², especially in relation to corporate taxation. As we have seen above, statutory corporate tax rates in Europe have fallen considerably during the last 25 years and this decline in corporate tax rates has induced fears of a race-to-the-bottom in the European Union. This could ultimately erode corporate tax revenues and impose a threat to the financing of the European welfare states.

One important question is of course whether the decline in corporate tax rates is the result of tax competition and whether there is a "race to the bottom". Several authors have tried to estimate whether jurisdictions of various natures were setting taxes in an interdependent fashion. Many studies found some

²⁹ See Atkinson and Stiglitz (1976).

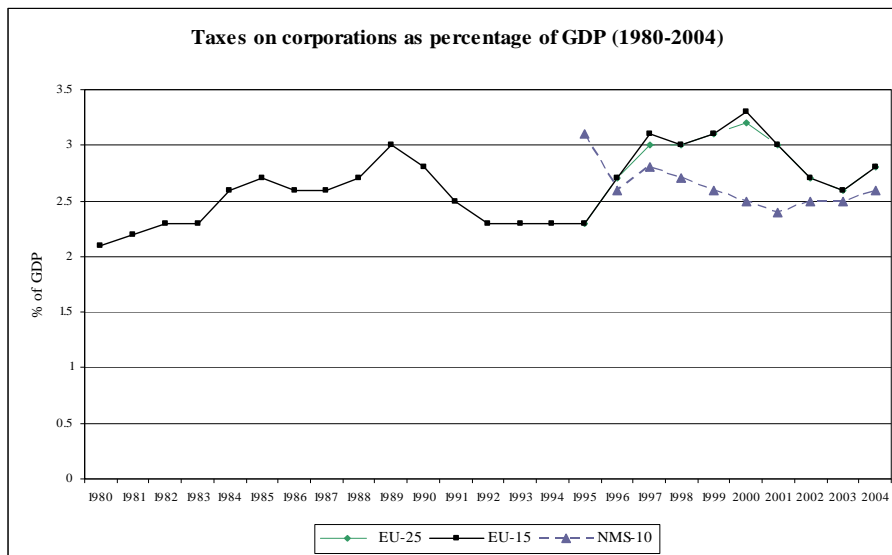
³⁰ See Kleven (2004) or the discussion in Sorensen (2006)

³¹ Sorensen (2006).

³² See Nicodème (2006) for a recent review with a focus on the European Union.

form of interaction, although the choice of tax indicators is extremely important³³. In addition, even if accepting that there are tax setting interactions, there is uncertainty in the literature about the reason behind these interactions, that is, whether it is the result of tax competition to attract mobile tax bases, treasury effects³⁴, yardstick tax competition in which countries try to mimic each other's tax policy or simply convergence across countries in economic structures and/or dominant economic thinking. Indeed, despite the reduction in corporate tax rates, corporate tax revenues have maintained remarkably stable and actually increased somewhat during the last decade.

Figure 11 - Corporate income tax in percentage of GDP



Source: European Commission (2006). Measures are GDP-weighted.

Apparently, the corporate tax base has broadened, which made up for the revenue losses from rate reductions. However, several studies suggest that base broadening is unlikely to have been sufficient to make up for the ex-ante revenue losses from rate reduction. An increase in the profitability of companies has been another candidate for (partially) explaining this puzzle. The problem is that measures do not univocally show a large increase in profitability. Finally, some studies³⁵ point to the possibility that falling corporate tax rates and a widening of the gap between personal income and corporate income taxes have created incentives for entrepreneurs to incorporate. This is important because it means that one possible effect of corporate tax competition is to shift some tax revenues from the personal income to the corporate income³⁶.

The mobility of capital can also take various forms, which render the analysis of a potential shift even more complicated. Usually, it is thought through the relocation or the development of real activities. For example, the median value of the semi-elasticity of tax to FDI shows that an increase in the tax rate by one percentage-point will reduce FDI inflows by 2.9%³⁷. Several other studies also show that taxation has an impact on location decision³⁸. Furthermore, recent research³⁹ has shown that profit-shifting activities

³³ Using tax collected in percentage of the tax base or of GDP does not show any interactions for example.

³⁴ Member States that host many foreign subsidiaries from countries applying a tax credit system have an incentive to closely follow the tax setting from those countries. This is because the tax ultimately paid by the parent will be its domestic tax, irrelevant of the tax rate applied in the country of the subsidiary (to the extent that the dividend is repatriated and that the foreign tax does not exceed the domestic tax liability).

³⁵ See de Mooij and Nicodème (2006).

³⁶ With of course a loss in total.

³⁷ De Mooij and Everdeen (2006)

³⁸ For example, Devereux and Griffith (1998).

in the form of transfer pricing or debt-shifting were sizeable. All this suggests that the mobility of capital may erode some tax bases, whether the capital one or even the labour tax base. The mobility of labour is even more complex to study. In recent years, there has been an increasing amount of special regimes for expatriates and wealthy workers. The general view however remains that taxation is a major obstacle to labour mobility alongside difficulties in social security and pension portability. The general recommendation of the OECD is that workers shall be taxed in the country where they spend 183 days a year. This rule does not apply however to the increasing number of workers who are sent across Europe for short-term missions as they may end up spending less than 183 days in any of the countries. They then have to refer to all bilateral tax treaties. This creates a lot of uncertainty and risks of no or double taxation, especially since the rules may differ across tax treaties and not all Member States has a tax treaty with all the others. The absence of a multilateral tax treaty or common rules is an important hurdle to labour mobility in Europe.

The analysis of a possible tax shift from mobile to immobile tax bases is complex because the effects can take various forms. A more formal analysis by way of regressing the changes in the ratio of labour taxes in percentage of GDP on the changes in the ratio of capital taxes in percentage of GDP does not bring statistically significant results. Figures (5) and (6) above, respectively showing capital and labour in percentage of GDP and in percentage of their own tax base does not suggest either that a major shift may have occurred. More in-depth analysis may however be needed. It is possible for example that the distinction between capital and labour as representing mobile and immobile tax bases is ill-defined and that the analysis shall have to distinguish between mobile and immobile categories in both capital and labour factors.

3.3. Tax simplification and tax-cuts-cum-base-widening tax reforms.

Recently, Member States have shown a trend towards simplifying their tax systems. In the absence of comprehensive tax reforms, targeted tax reforms may have accumulated and rendered the system very complicated with sometimes measures with conflicting effects. Tax systems are frequently used to provide a favourable treatment to specific tax-payers or activities. These special provisions are called 'tax expenditures' and can take various forms⁴⁰. Governments may provide exemptions for certain types of income. They can also take the form of deductions from taxable income, tax credits, and special rates relief, accounting conventions or deferral possibilities. Such tax expenditures are not always easy to detect or quantify but they are considered to be sizeable. They are a substitute for direct cash or in-kind public expenses and can be a powerful instrument to encourage certain types of behaviour that are deemed desirable by tax authorities. Examples include encouraging home-ownership, supporting private gifts to charities, pushing for energy-saving investment, or trying to raise maternity rates. Going through the tax system may be a good idea if this requires less marginal administrative costs compared to setting up new specific programs. However, the experience with tax expenditures calls for caution. Tax expenditures may sometimes induce effects that are in full opposition to the intended ones⁴¹ and they in addition may distort the features of income tax systems. Deductibility is indeed often done at the highest marginal income tax rate, meaning that high-revenues taxpayers benefit the most from those measures. This can dramatically reduce the effective progressivity of tax systems. In addition, they are subject to less public or parliamentary scrutiny than direct expenditures, which make them popular to lobbies, and they complicate the tax system. Their level is also more subject to cyclical and behavioural fluctuations than fixed direct expenditure⁴². Finally, they narrow the tax base, which limits the scope for tax rates

³⁹ See Huizinga and Laeven (2006) and Huizinga, Laeven and Nicodème (2006).

⁴⁰ Hagemann, Jones and Montador (1987). See OECD (1996) for a review of some practices.

⁴¹ This can be for example the case in housing taxation where tax deductibility of mortgage interest and/or capital payments – a measure intended to help first-time owners – may simply translate into higher property prices.

⁴² Arguably, this may be a good thing if counter-cyclical.

reductions and may decrease efficiency. Such tax expenditures shall therefore rather be used by parsimony and in well-defined situations.

A parallel trend has been to accompany the simplification of the tax system – allowing often for a widening of the tax base – with a reduction of marginal tax rates. For personal income taxes, one has observed a clear reduction in the number of tax brackets with a decrease in marginal tax rates either at the low-end or at the top-end, if not both. The base-widening-cum-tax-cuts strategy has obviously also been applied to corporate taxes for which statutory rates have declined and the tax base has widened – for a great deal thanks to the abolition of a multitude of special regime (sometimes within the framework of the code of conduct). Turning to international activities, we have seen above that the absence of a multilateral tax treaty or common rules in personal income taxation is an important hurdle to labour mobility in Europe. A similar problem applies with taxation of capital as studies show that exchange of information between tax authorities is not well-developed⁴³. There seem also to be large difficulties in VAT, despite the harmonization of the tax base and cooperation between tax authorities. A recent survey⁴⁴ on 700 European companies stressed difficulties for repayment and refund of VAT, especially coping with procedures for refunds, such that an estimated 53.5% of large companies have not requested refunding at some point. Finally, in the specific case of corporate income taxation, the difficulty to deal with 27 accounting and tax systems, the uncertainties in the treatment of transfer pricing as well as the general absence of cross-border loss relief are seen as a major tax obstacle to doing business on a pan-European basis.

3.4. Are flat taxes, the way forward?

An interesting case is the flat tax which cumulates some of the arguments developed here above as its proponents see it as reducing the burden on labour and stimulating labour supply, reducing the tax on high-wage workers to avoid their move, and simplifying the tax system. This section reviews these arguments. Personal income tax systems in most developed countries have increasingly been perceived by public opinions as too complicated with many variables to account for and a high compliance cost. This perception also coincides with trends towards downsizing the role of governments. Hence, the belief that simple taxation is necessarily good taxation has emerged. The same drift believes that the existence of multiple tax brackets is itself a factor in the complexity of the tax systems while in fact this is the simplest part of the tax declaration and computation⁴⁵. Given this background, one form of taxation has naturally attracted a lot of attention over the last years: the flat tax. The flat tax debate really started in 1983 following the release of Robert Hall and Alvin Rabushka's book on flat tax. The debate was rather US-centred – given the complexity of the US tax code – and attracted publicity during the 1992 and 1996 US presidential campaigns. It regained vigour in the recent years in the EU with enlargement to countries that have adopted such a system. Most scholars date the beginning of flat tax experiment in 1994 in Estonia, which introduced a single uniform rate of 26% on personal incomes. Actually, some dependent territories seem to have introduced such a system as soon as the 1940's. Today, at least sixteen countries (of which five current Member States) have introduced a flat tax, but the detailed provisions vary a lot across countries⁴⁶. Discussions on the flat tax have also occurred in many western European countries but

⁴³ See Keen and Ligthart (2005, 2006).

⁴⁴ European Commission (2004).

⁴⁵ Hagemann, Jones and Montador (1987, page 11). The authors note however that multiple rates provide incentives to smooth revenues between years and individuals, leading to necessary rules on income shifting, which may add complexity.

⁴⁶ Note that no country has adopted anything close to the original pure form of the Hall and Rabushka proposal which combined a cash-flow tax on business income with a single marginal tax rate on personal income. Both taxed at the same rate. In this system, real investments are immediately expensed (that is depreciation is 100% in the first year) while financial investments are exempted. This proposal is essentially an expenditure tax.

in all countries, "a notable and troubling feature (...) is that it has been marked more by rhetoric and assertion than by analysis and evidence"⁴⁷.

Table 4- Flat taxes on personal income in the world

Country	Flat Tax Rate	Year of introduction	Country	Flat Tax Rate	Year of introduction
Jersey	20% ⁽ⁱ⁾	1940	Ukraine	13% ^(viii)	2004
Hong Kong	16% ⁽ⁱⁱ⁾	1947	Iraq	15%	2004
Guernsey	20% ^{(i),(iii)}	1947	Slovak republic	19% ^(vii)	2004
Estonia	26% ^(iv)	1994	Georgia	12% ^(ix)	2005
Lithuania	33% ^(v)	1994	Romania	16%	2005
Latvia	25% ^(v)	1995	Kyrgyzstan	10%	2006
Russia	13% ^(vi)	2001	Macedonia	12% ^(x)	2007
Serbia	14% ^(vii)	2003	Iceland	35.73% ^(xi)	2007
			Mauritius	15%	2009

Source: Rabushka (2007), The Economist (2005), Teather (2005), Grecu (2004). (i) Applied to personal and corporate incomes for both Jersey and Guernsey. None have VAT. The channels islands do not tax dividends, interest or capital gains. (ii) Taxpayers have the choice between being taxed at a 16% flat tax or under a progressive tax system with marginal tax rates ranging from 2 to 20%. Hong Kong does not tax dividends, wealth, and capital gains and has no VAT, sales tax or payroll tax. (iii) Capped at £250,000, making it therefore regressive as soon as revenues reach £1,250,000. From 2007, the corporate tax rate is reduced to zero. (iv) Reduced to 24% in 2005, 23% in 2006, 21% in 2007, 20% in 2008. Estonia has a zero corporate tax rate on retained earnings but taxes distribution (mainly dividends) at 21%. This is accompanied by a general non-deductibility of interest payments.(v) Both Lithuania and Latvia's corporate tax rates are set at 15% in 2007. (vi) Accompanied by a 24% corporate tax rate. (vii) On both corporate and personal incomes. (viii) 15% since 2007. (ix) With no basic allowance. (x) 10% from 2008. (xi) Corporate tax rate is at 18% and capital income taxed at 10% under a Dual Income Tax System.

Flat taxes seem particularly attractive because their proponents propose low levels of tax rates. However, one problem with this is that the low rates are not by themselves a characteristic of the flat tax. For example, a progressive tax system with two rates at 10% and 20% could be more attractive than Lithuania's flat tax of 33%. Another argument is that flat taxes are attractive because they are transparent and easy to administrate. Transparency is indeed an interesting feature of the flat tax, notably because each worker knows about its marginal tax rate (something more difficult to assess in a progressive tax system). It shall be nevertheless said that because social security contributions continue to be non-proportional due to ceilings or progressivity, and because these contributions have generally gained importance in countries having adopted a flat tax structure, effective taxation on labour is far from being flat in practice⁴⁸. Flat taxes are also easy to administrate because they are usually accompanied by a removal of most (complex) tax deductions from the tax base to replace them with a general tax allowance. However, it is difficult to quantify the exact saving by tax administrations and the few studies available so far tend to give unrealistically high estimates.

Proponents of the flat tax also claim that it raises more tax revenues, because of an alleged Laffer curve effect⁴⁹. It is indeed true that tax revenues have increased in some countries after the flat tax has been introduced - albeit not in all of them – but research has not found Laffer effects or sizeable labour supply effects⁵⁰. It seems that a large part of the outcome was due to the fact that the introduction of the flat tax was generally accompanied by stricter rules to combat tax fraud and improve compliance. It is therefore far from being clear-cut whether these positive results can be reproduced in all countries, especially those

⁴⁷ Keen, Kim and Varsano (2006).

⁴⁸ Keen, Kim and Varsano (2006), page 5.

⁴⁹ Named in 1978 after economist Arthur Laffer, this concept states that tax rates and tax collection are linked by an inverted U-curve relationship. If one country is on the right-hand side of the peak, then reducing tax rates shall increase revenues (thanks to more economic activity).

⁵⁰ Keen, Kim and Varsano (2006).

with allegedly lower tax fraud. Next, reforms towards flat taxes are not neutral in terms of redistribution. These effects obviously depend on the details of each single proposal. However, flat tax reforms tend to favour the lower-end and top-end classes of revenues whilst increasing the tax burden on the middle-class⁵¹. Finally, because there is a tax-free allowance, a flat tax is still a progressive tax (maybe less sharp than in the case of a progressive system with several tax brackets although here again it depends on the details of each system).

At the end of the day, the choice of whether adopting a flat tax relates to the degree of redistribution that shall be achieved by taxation, the choice of how to tax capital and labour and the desired equity-efficiency trade-off. Hence, the merits or demerits of a flat tax are normative issues that shall be left to voters. For some of the EU Member States, the level of revenues currently collected by the personal income tax is relatively high so that the flat tax system would have to apply a relatively high rate and a small allowance to be revenue-neutral. This is not necessarily a benign scenario, especially in terms of redistribution.

3.5. The financing of social models in the EU

The European Union, like many industrialised countries, use their taxes to finance public expenditure, among which social spending represents a sizeable share. In 2003, gross average social protection expenditure accounted for 28% of GDP in the EU-25⁵². The major share of it related to old age and survivors' benefits. This share was at 45.7% of the total on average but reached more than 50% in several member States. In addition, expenditure on sickness and health care and on disability represented the second and third sources of social expenditure in the EU-25 with respectively 28.3% and 8.0% of the total. The coming challenge of ageing is likely to increase the need for these categories of social spending and to decrease the labour tax base. At the same time, globalisation may render it increasingly difficult to collect taxes from mobile tax bases. The need for financing may well lead to a need to increase in tax rates⁵³. There is therefore a need to find alternative means of financing by ways of robust tax revenues. This may well request a more efficient tax structure that is broad, simple, non-fraud prone, and that allows Member States to pursue their objectives in term of equity and efficiency.

A first step would then be to try to link the structure of expenditures and their performance with the structure and levels of taxation. A formal analysis would go beyond the scope of this paper but a useful point of departure could be the traditional typology of the main four types of European Social Models: the *Anglo-Saxon countries* (IE, UK, EE, LT, LV) performing well in terms of efficiency but poorly in terms of equity, the *Continental countries* (AT, BE, FR, DE, LU, HU) that do relatively well in terms of equity but poorly in terms of efficiency, the *Nordic countries* (DK, FI, SE, NL, SI, CZ) that perform well on both account and the *Mediterranean countries* (EL, IT, PT, ES, PL, SK) that do relatively poorly on both criteria⁵⁴. The question is therefore whether one could see a link between these categories and their

⁵¹ In a recent study for Germany, Fuest, Peichl, and Schaefer (2007) use micro data to analyse the effects of a revenue-neutral flat tax on the German economy. They found that all scenarios - combining a flat rate and an allowance - yield an increase in inequality and redistribution in favour of the highest incomes. In most scenarios, the middle-class is the main loser and the poorest also somewhat loose. In terms of efficiency, all scenarios lead to a decrease in labour supply, the more so with lower marginal rates and smaller allowance. Finally, in terms of welfare, scenarios with high rates and high allowances lead to large decrease in welfare while those with low rates and allowances lead to small welfare gains but concentrated mainly in the highest decile.

⁵² See Eurostat (2006).

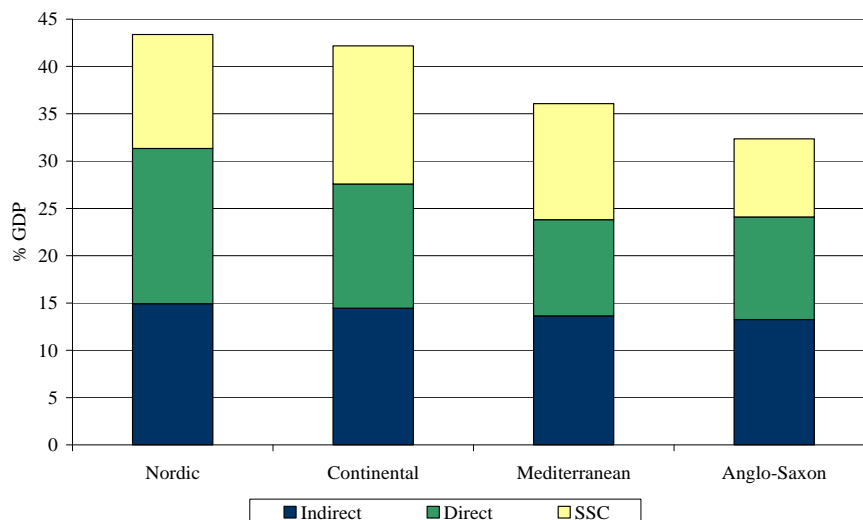
⁵³ Reforms on the expenditure side are of course an important part of the policy.

⁵⁴ This classification is from Sapir (2005) and from Sapir's presentation at the OECD in November 2005 for the new Member States, based on the performance in terms of equity and efficiency. MY and CY are more difficult to classify. Note that the analysis does not change if Portugal moves to the Anglo-Saxon category and Austria to the Nordic category as suggested by Sapir (2005). Equity is defined as the capacity to avoid poverty and efficiency as the capacity to reach high levels of employment.

characteristics in terms of level and structure of taxation. One shall be extremely prudent in drawing conclusions but the following picture appears.

First, it is interesting to notice that the two models doing well in terms of equity have a significantly higher average total tax-to-GDP than the two models doing less well on this criterion. Correlation does not mean causation but it would be interesting to investigate whether tax systems in Europe do so poorly in terms of redistribution as often thought⁵⁵. Interestingly as well, both models doing well in terms of efficiency are also those which rely proportionally less on social security contributions with 25.7% and 29.1% respectively for the Anglo-Saxons and the Nordics, compared to 34.5% and 34.7% for the Mediterranean countries and the Continentals. In addition, the Nordic countries, faring well on both accounts, are also those that relies the most on direct taxes with a share of 36.5% (comp. to 33.3%, 31.1%, and 28.1% for the Anglo-Saxons, the Continentals and the Mediterranean countries respectively). In particular, their share of personal income taxes is higher than for the others (26.9% of the total compared to 24.2% for the Anglo-Saxons, 21.7% for the Continentals and only 17.3% for the Mediterranean countries).

Figure 12 - Total taxation in percentage of GDP and social models



Source: European Commission (2006) and own calculations. Averages are arithmetic averages of the 1995-2004 averages per country.

This is also reflected in their mix of taxes on consumption, labour, and capital. Whereas, here again, correlation is not causation and caution shall be taken as the structure of expenditures is obviously also one element that affects the performances in terms of redistribution and raising employment, it is interesting to see that the picture seems to suggest that the models that fare the best in terms of equity are those relying relatively more on labour income taxes while those that fare the best in terms of efficiency are those that rely the least on taxes on capital.

Table 5 - Shares of consumption, labour and capital and social models

In % of total	Consumption	Labour	Capital
Nordic	30,7	54,2	15,2
Anglo-Saxon	36,8	46,6	16,7
Continental	28,7	52,1	19,6
Mediterranean	32,4	44,6	23,7

Source: European Commission (2006) and own calculations. Averages are arithmetic averages of the 1995-2004 averages per country.

⁵⁵ Sapir (2005) stresses rather the role of human capital and education.

A second question relates to the impact of ageing on the level and composition of tax revenues. The economic impacts of ageing will be severe and diverse⁵⁶: growth rates will fall below those currently observed, productivity will become the predominant source of growth because of a shrinking working-age population, and a larger share of the total population will be in older age. A key challenge will be to develop policies on labour markets and reforms of the welfare state that are sustainable in the face of these demographic developments. The consequences in terms of financing the welfare states will certainly be a lower share of labour taxes in percentage of GDP, at least for those countries in which pensions are untaxed. A decline in savings is also to be expected, meaning potentially less taxes on this type of capital (although the net effect will also depend on interest rates). Empirical studies⁵⁷ suggest a negative correlation between the dependency ratio and both tax rates and the generosity of social transfers. They also suggest that the tax-contribution rates that would balance social security systems in the future are much higher than current statutory rates⁵⁸. This therefore calls for reforms now as to avoid larger pains in the future.

A third question is about the possible consequences of a shift from social security contributions to general taxation. The traditional view is that all the components of the tax wedge on labour cost, that is personal income tax, employers' and employees' social security contributions and consumption taxes, have the same impact on wages⁵⁹, so that any change in the composition of the tax wedge (for any given level of tax wedge) does not affect labour costs and hence labour markets outcome. There is however a wide and increasing strand of the literature that shows that even revenue neutral shift of taxes on labour can alter the labour market outcome⁶⁰. With reference to the degree of shift of social security contributions on wages, it is worth stressing that this is not only function of the real wage downward or upward rigidity and the bargaining power of wage earners, but it is also function of the degree to which workers value the benefits linked to the payment of social security contributions. If workers take into account the benefits that they are buying with their payroll taxes - i.e. they consider the reduction of their after tax wage as counterpart of the financing of an insurance - any change (increase) in the payroll tax will lead to a lower change (increase) in wages, a smaller change in compensation costs and, thus, a lower impact on employment. For example, in countries where the pension system is characterized by a close link between benefits and contributions (so-called "*Bismarckian*" systems), pension contributions are a form of mandatory saving, and people do not regard them as a tax, unless and to the extent that they are higher than would be required to obtain the same amount of retirement income by other means⁶¹. Thus, by enabling individuals to see more clearly the link between the contributions and benefits, one can reduce any adverse incentive effects arising from a failure to see the link". To sum up, if workers value the benefits that they are buying with their payroll taxes, the impact of this change on the employment will be more limited, if any⁶².

Currently, the main sources of funding of social protection are social contributions with 60% and general government contributions derived from taxes at 37% in 2003.⁶³ National differences are due to historical reasons but there is a tendency for revenue sources to converge. The share of social contributions in the total receipts for funding social protection has declined over time, although remaining the main source,

⁵⁶ See Carone et al. (2005) and European Commission –EPC (2005) for a review.

⁵⁷ See Razin, Sadka, and Swagel, (2002).

⁵⁸ Razin, Sadka and Woon Hang (2005).

⁵⁹ This is the so-called Invariance of Incidence Proposition (IIP).

⁶⁰ See Rasmussen (1997a, 1997b).

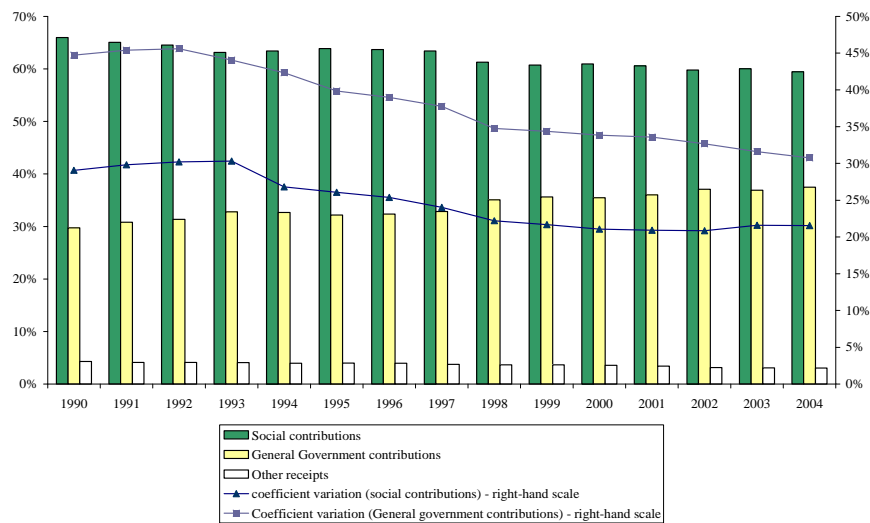
⁶¹ See Cigno (2005), according to whom public pensions will necessarily discourage labour only if the system is of the Beveridgean type. As individual pension benefits are independent of individual contributions, the marginal return to labour does in fact coincide with the marginal take-home pay, and any pension contribution will thus reduce the incentive to supply labour. If return to labour is higher than the take-home pay. The labour decision can then be distorted only if the scheme is not actuarially fair, or if the agent is credit rationed.

⁶² See Arpaia and Carone (2004).

⁶³ Eurostat (2006).

and general government contributions have increased in proportion. There is also a tendency for the shares to converge across countries as indicated by the coefficients of variation⁶⁴.

Figure 13 - Social production receipts by type (as % of total receipts) in EU-15



Source: Eurostat and own calculations.

Finally, a last question is whether globalisation, possibly increasing tax competition, has put constraints on the financing and the delivery of the European Social Model(s). The question is difficult to answer. We have seen that one consequence would be the shift from mobile to immobile tax bases and table (5) seems to suggest that the social models that have fared the best are actually those that have been able to do this shift. This does not however mean that this is the result of globalisation and tax competition. In terms of revenues, we have seen above that the collection of corporate taxes has not suffered from declining statutory corporate tax rates and that many effects were at play. More in-depth studies⁶⁵ show that notwithstanding increasing integration and globalisation, there is still room for independent economic policies and that the views that globalisation has altered the composition of government expenditures and reduced its financing are not fully supported by empirical analysis. Several explanations have been put forward. First, the share of mobile activities in total taxes is still relatively small. Second, globalisation may equally increase profitability and hence tax revenues, for any given tax rate. Finally, on the expenditure side, globalisation may increase the need for more social spending.

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⁶⁴ Data for the EU-25 is only available from 2000 and show similar characteristics.

⁶⁵ Hines (2006), Dreher (2006), and Dreher, Sturm and Ursprung (2006).

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**V. CASE STUDIES ON IMPROVING
THE QUALITY OF PUBLIC FINANCES:**

**REDIRECTING SPENDING AND
IMPROVING FISCAL INSTITUTIONS**

INTRODUCTION:

V. CASE STUDIES ON IMPROVING THE QUALITY OF PUBLIC FINANCES: REDIRECTING SPENDING AND IMPROVING FISCAL INSTITUTIONS

The question of redirecting public spending and improving fiscal institutions has been at the heart of the quality of public finances agenda. As there is no single blueprint for improving public sector efficiency, the methodological approach of the Working Group was to answer three empirical questions: (i) which priorities for redirecting public expenditure have been identified at the national level; (ii) how and through which institutional mechanisms will expenditure be (or has been) redirected towards the identified priorities and (iii) what have been or may be the impacts of this policy on outcome indicators related to trends in productivity growth.

EU Member States have developed different individual reform approaches including structural and institutional reform measures. The following case studies by the Czech Republic, Finland, Germany, Italy, Malta, Poland, Portugal, Spain and the United Kingdom represent a comprehensive sample of experiences against the background of the specific national challenges, structural differences and respective institutional settings. The studies clearly confirm that cross-country comparisons and the exchange of best practices are vital in order to develop national strategies towards improving efficiency in the Member States. The case studies show that the degree to which a particular type of expenditure (e.g. education, R&D, infrastructure) has a positive impact on productivity differs from country to country, calling for a detailed and country-specific decision-making to guide the composition of national public expenditure. Moreover, it can be seen that some objectives are agreed by all case-study countries but the strategies and supporting institutions to achieve them differ.

Regarding the formulation of the strategic goals, all countries start from the overriding objective of achieving or maintaining fiscal discipline. Within this context, priority is then given to restructuring the budget and enhancing growth and employment. In several cases strong priority must necessarily be given to fiscal consolidation, providing the room for restructuring opportunities. Where issues of fiscal consolidation are less pressing, the focus is more on the restructuring of budgets. Overall, once budgets are able to fulfil the requirement of aggregate discipline in a sustainable way, the issues of allocative and technical efficiency receive more attention.

The studies show that changes in the composition of public expenditure and their impact on policy outcomes take around 10 to 15 years to materialise of, depending on different starting positions and other factors. Some countries were early in introducing institutional reforms and prioritising certain expenditure items which already paid off in terms of policy outcomes (e.g. Finland), while for other countries (including several new Member States such as the Czech Republic, Malta and Poland) a more forward-looking approach may be appropriate.

As regards shifting spending priorities, the importance of expenditure related to R&D, innovation, education and infrastructure has been confirmed through the case studies, although they vary by country needs. For example, Poland and Italy prioritise public investment in technical infrastructure, while the UK emphasises the importance of health spending. Room for manoeuvre is to be created through different avenues including pension, health and labour market reforms, cutting down subsidies and tax expenditures and improving the efficiency of the public administration.

The studies also reveal that most countries have established expenditure priorities but only few have introduced systematic and extensive medium-term strategies of priority formulation, implementation and evaluation. As a result and given the 'soft' nature of expenditure priorities formulated in government programmes and political declarations, they are easily crowded out by other expenditure pressures during the budgetary decision-making process and in the course of budget implementation.

Another recurrent theme in the case studies are the challenges that arise from a large share of fixed expenditure, due to legal obligations. They make it difficult to reduce public spending in the short run (examples are the Czech Republic, Germany and Poland). Moreover, past commitments complicate

efforts to redirect public expenditure towards prioritised items. Thus, several studies (e.g. the one on Germany) emphasise the importance of long-term structural reform programmes that allow a steady and sustainable decline in expenditures commitments. However, a temporary problem is that such reforms could induce additional costs in the short run, while they would yield positive effects for potential growth and sustainability in the long run.

Another topic of the case studies is the role of fiscal institutions in improving public sector efficiency. To raise public sector productivity in Italy, the paper identifies the need for institutional improvements. The 2007 Financial Law includes reforms in four areas: (i) a spending review, (ii) reform of the budget transparency and accountability through budget reclassification, (iii) re-examination of parliamentary procedures and (iv) the use of performance-based budgeting. The paper on the United Kingdom lays out in detail the new public spending framework that was adopted in 1997 with the objective of improving the quality and cost-effectiveness of public services. One main focus of the framework has been a shift from input to outcome orientation. At the same time there has been more medium-term orientation as part of the medium-term budgetary framework, including the year departmental expenditure limits. The case study on Spain discusses the role of the law of Budgetary Stability and the paper on the Czech Republic describes the introduction of fiscal targeting and medium-term expenditure frameworks. Broader issues of fiscal governances are tackled in a number of papers in Section III.

PUBLIC FINANCE REFORM IN THE CZECH REPUBLIC

Ministry of Finance of the Czech Republic

Paper completed: December 2005

1. Introduction and key challenges

In 2004 the reform of public finances was initiated. The concept of public finance reform is a result of the long-term process as it has been prepared for the whole last decade. Only in 2003 there was political will to put the reform into the practice. It is aimed at gradually reducing the budgetary deficits and also at improving the quality of public finances. Its implementation is crucial for Czech fiscal policy in the nearest future and its main principles can be summarized as follows:

- Reducing the fiscal imbalance and slowing down the rate of public debt accumulation
- Well-balanced fiscal consolidation
- Improving composition of public spending
- Strengthening institutional framework for conduct of fiscal policy

Reducing the fiscal imbalance and slowing down the rate of public debt accumulation

As the Czech Republic is currently reporting an excessive deficit (see following table), which is not in line with convergence criteria, the public finance consolidation and gradual budgetary deficit reduction are the main government priorities. The government adopted the budgetary deficits reduction strategy, which would result in deficit lower than 3% of GDP in 2008. Introduction of fiscal targeting and medium-term expenditure frameworks should help to fulfill this aim.

Table 1 - General government deficit/surplus and debt development

(% of GDP)	2000	2001	2002	2003	2004 (1)	2005 (2)	2006 (2)	2007 (2)
Government deficit (-) / surplus (+)	-3.7	-5.9	-6.8	-12.6	-5.2	-4.7	-3.8	-3.3
Government expenditure	42.1	45	46.9	54.5	47.6	45.8	44.7	43.9
Government revenue	38.5	39.1	40.2	41.9	42.4	41.1	40.9	40.6
Government debt	18.2	25.3	28.8	37.8	38.6	38.3	39.2	40

Forecasts, (2) Trend values or period averages

Source: Convergence Programme of the Czech Republic

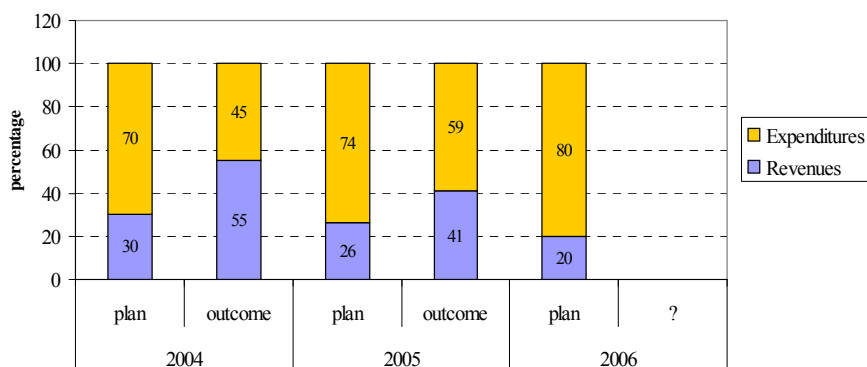
1.1. Well-balanced fiscal consolidation and improvement in expenditure composition

Apart from the commitment to reduce the deficit, the government has taken up changing the structure of taxes and government expenditure, with the aim of strengthening the supply side of the economy and of establishing conditions for the acceleration of potential growth. The share of legally determined

expenditures¹ is very high and it is difficult to cut these expenditures as the majority are social expenditures. Therefore the change of expenditure structure is inevitable step to reallocate more resources for investment.

The reform was drawn up to stress mainly on the expenditure side. Unfortunately, this target was met only partially, as can be seen from following chart.

Figure 1 – Structure of the reform measures



The government declared following expenditure priorities:

- Research and development
- Education
- Transport infrastructure
- Programmes co-financed from the EU budget.

The reform consists of two phases; the first is concentrated on the consolidation of public finances and the second on the measures enhancing economic growth. The preparation of public finance reform was based on the principle that in the process of deficit reduction expenditure savings should prevail over tax changes. Fiscal consolidation will particularly affect government consumption, social transfers and subsidies. In accordance with government priorities, government investments will increase and some of them will also be possible to fund from the Structural Funds and the Cohesion Fund.

1.1.1. Spending reforms

In the first stage of public finance reform a number of measures focused on rationalising public expenditure came into force. Although the primary objective of these measures was to accomplish budgetary savings, many of these measures improve economic incentives and strengthen the supply side of the economy. The most significant spending reforms are in the area of sickness benefits, pensions, state social support and assistance and central government employment. Improvement in the composition of public spending is reached through the cuts in consumption and social transfers in order to create an additional room for public investments.

1.1.2. General government revenues

General government revenues are monitored on the basis of the development of the tax quota, which reflects both the impact of tax changes and the composition of GDP growth. Tax receipts in relation to GDP should rise only slightly due to the sources of GDP growth, which is driven mainly by investments

¹ Expenditures of the state budget in the Czech Republic amounts 908,416 mld. Kč and 67,5 % of them are legally determined expenditures (incl. so-called quasi mandatory expenditures – wages and social insurance of state employees). Social mandatory expenditures amounts 41,8 % of state budget, that is 379,418 mld. Kč.

and in future a significant source of growth will be net exports. Both these sources of growth do not directly lead to large tax incomes.

The tax measures approved in the first stage of the reform were predetermined by the effort to consolidate public finances and by the requirement to harmonise tax legislation with EU requirements. This stage started the reshuffle of the tax burden from income taxation towards indirect taxation, which does not harm economic activity so significantly.

Summary of tax changes is as follows:

- Increase in indirect taxation
 - VAT – transfer of goods and services from reduced into standard rate, reduction in the standard rate from 22 to 19 %
 - Excises – rise in tax on mineral fuels, spirits and tobacco
- Reduction in income taxes
 - CIT – decrease in CIT rate, higher depreciations, increase in tax-deductible allowances for donations in the area of Research and development
 - PIT – joint taxation for married couples, non-wasteable tax credit for a child
- Higher taxation of self-employed
 - Broadening of the assessment basis for state social support, introduction of minimum assessment basis for PIT and state social support.

The tax changes are directed to the reinforcement of indirect taxes that are compensated by a fall in income taxes. The changes were introduced in two stages. The first stage was designed with the regard to the obligation of the Czech Republic to harmonise its tax legislation with the appropriate EU directives and at the same time it contributed to a reduction in the public finances deficit. On the other hand, the second tax package is perceived as an instrument of structural reforms and strives to promote potential growth in the Czech economy.

The second stage of the reform is aimed at the acceleration of economic growth (strengthening of the supply side of economy). These measures reduce effective taxation of corporate profits and are achieved by the acceleration of depreciations and by an increase in R&D allowance.

Accelerating character of long-term GDP growth can be influenced by the support of families with children. The abolition of child allowance and its replacement by tax credit, including tax bonus, is to have a positive impact. The resulting financial benefit should be stimulating to a more active participation in the labour market. With the same effect the joint taxation of married couples was introduced.

These measures enhancing economic growth will be financed by an increase in indirect taxes. The majority of goods and services previously taxed by the reduced VAT rate became taxed by the standard rate. Only socially sensitive items are excluded from the standard VAT rate.

Alongside fiscal consolidation, one of the main current challenges in the area of economic policy is the need to create suitable conditions for doing business and for the functioning of the labour market. These areas are crucial for **accelerating potential growth**, enhancing the competitiveness of the Czech economy and thus providing for faster convergence of the Czech Republic.

Increasing flexibility in the supply side of **the labour market** is being pursued by the new Act on Employment. The most important changes include:

- the creation of institutional framework allowing for the successful functioning of private labour agencies

- the introduction of new tools of active employment policy for reducing the frictional unemployment
- the tightening of conditions on the long-term unemployed – they have to agree to carry out eight hours of community-useful jobs a month, in order to keep their entitlement to social benefits
- subsidies for employers promoting the creation of new jobs in regions that are worst affected by unemployment

Besides above-mentioned changes, government tries to increase the flexibility of graduates to suit the needs of quickly changing society and quickly changing labour market requirements. The objective is to create an open system of continuing education which should restrict neither the providers of education nor those who want to be educated. The aim is to strengthen the links between initial and continuing education.

Other measures concerning the labour market:

- pensioners, women on maternity leave are allowed to work, either as employees or entrepreneurs, while keeping their pensions
- reduction in marginal effective tax rate for lower income employees (see annex)

Improvement of business and investment environment consists mainly of tax burden reduction for the businesses, support of research and development and programmes oriented towards small and medium-sized enterprises and towards support of technological and business centres (see annex). The corporate income tax rate is gradually being reduced; in 2004 to 28%, in 2005 to 26% and in 2006 to 24%. Since January 1, 2005 the time period for the depreciation of movable property is shortened. This measure is partially offset, e.g. by restricting the option to depreciate a loss from 7 to 5 years.

2. Implementation²

2.1. Strengthening institutional framework for conduct of fiscal policy

The Organic Budget Law No. 218/2000 specifies the budgetary process and principles in the Czech Republic. In 2004 the amendment of this Law was approved (No. 482/2004). This amendment brought stronger control over public finances, reduction of public finances fragmentation and introduction of binding medium-term expenditure frameworks. The complex of measures introduced by this amendment will make a significant contribution to the reinforcement of aggregate fiscal discipline, improvement of allocation efficiency of public budgets and the so-called operational effectiveness of government-controlled organisations.

The most important change is the introduction of fiscal targeting, based on medium-term fiscal outlooks, applicable both to the state budget and state funds, and binding medium-term expenditure frameworks based on the mentioned outlooks.

The medium-term fiscal outlook for the state budget includes the government's expectations and intentions concerning revenues, expenditures and balance of the state budget and state funds (in particular intended changes of laws and other legal regulations), expected total revenues and expenditures of the state budget (subdivided by chapters) and state funds for individual years, programme expenditures and participation of the state budget in their funding and expenditures needed for programmes or projects co-financed from the EU budget (subdivided into individual chapters of the state budget and state funds).

² Spending and revenue reforms have already been mentioned in previous chapter.

Time scope of such a fiscal outlook is based on the n+2 principle and there is a link to fiscal expenditure frameworks. The medium-term frameworks are based on the so-called sliding principle, comprising the total expenditure on the state budget and state funds for each year of the medium-term outlook. The figure for the medium-term expenditure framework for the first year of the medium-term outlook is based on the medium-term expenditure framework for the same year and may be adjusted for selected expenditure items. This way figure for the second year of the medium-term outlook becomes the figure for the first year of the outlook. This figure can be adjusted to some expenditure (e.g. expenditures incurred due to unforeseen circumstances or significantly different development of consumer prices, expenditures in the same volume as incomes from EU budget for programmes and projects co-financed from this budget etc.). State guarantees approved before April 30, 2004 and refundable financial assistance is excluded from the expenditure framework. The act also specifies the procedure for the preparation of the draft state budget for the following year, on the basis of amounts specified in the medium-term expenditure framework, is also defined therein. The expenditure frameworks are debated by the government and subsequently approved by the Chamber of Deputies in the form of a resolution regarding the draft act on the state budget. The medium-term framework is binding and government must justify all deviations.

Despite the positive influence on budgetary discipline, we find out some weaknesses e.g.:

- Additional expenditures, which will increase the expenditures of the state budget above approved limits in mid-term expenditure frameworks, should be completed for the decrease of other expenditures automatically.
- The budgetary frameworks should be determined for every chapter of the state budget instead of being determined only for central government³ as a whole.
- More dubious is the tendency to enlarge what normally be expenditures (and is there fore restricted by the ceilings) with tax reductions (on the revenue side of the budget and thus not restricted by the ceilings).

The midterm principle has also been reinforced by an amendment of the Rules of Government Procedure. All proposals submitted to the government must contain an impact evaluation of proposed changes on public budgets (estimates of future expenditures and proposed source of financing), at least over a period of three years in accordance to this amendment.

Measures were also put to control the indebtedness of local governments:

- The Act on Debentures (190/2004), effective May 1, 2004, requires MoF approval of debt issues before the local governments could approach the Securities Commission for approval.
- Based on the government resolution on “Regulation of Municipalities and Regions Indebtedness” (resolution 346 of April 2004) the MoF should calculate on annual basis “debt service limit indicators” for each municipality and region. If the actual debt service of a local government exceeds 30 percent of its indicative limit, the MoF will seek an explanation and will discuss with the local authorities its plans to reduce its indebtedness.
- Effective from August 1, 2004, a new act established procedures for auditing the accounts of local governments. Accordingly, the MoF will audit the regions, while the municipalities will have the option of being audited by the regions (free of charge) or by external auditors (at their own expense). All audit reports will have to be submitted to the MoF. The MoF will review the audit reports, analysing closely the report of those municipalities, which are the recipients of EU or are on the MoF’s watch list of high debt indicators.

In accordance with the Public Finance Reform Concept, measures are being prepared that will conclude the activities of individual privatisation funds and other extra-budgetary agencies and funds of the state.

³ Central government consists of the state budget and state funds.

These measures represent very important step towards the better public finance management, enhancing of their transparency and quality

The National Property fund (privatisation fund) has nearly fulfilled its role as a transformation institution and has finalised the privatisation of the vast majority of state property. Therefore its operation should be concluded without liquidation by the end of 2005. Another step aimed at concluding privatisation process is the termination of the activities of the Land Fund of the Czech Republic (privatisation fund), planed to take place at the end of 2009. On the basis of the governments' resolution the ČKA⁴ should conclude its operation without liquidation by December 31, 2007. Insofar as the effort aimed at decreasing the number of extra-budgetary funds are concerned, the Chamber of Deputies has approved an act on the conclusion of the activities of the Sate Fund for Land Fertilisation that should take place as of January 1, 2006.

3. Results

As the reform was initiated in year 2004, we do not have enough data, which can indicate the contribution of the public sector to GDP growth and public finance quality.

Annex 1: Spending reforms

In 2004 a number of legislative measures focused on rationalising public expenditure came into force. Although the primary objective of these measures was to accomplish budgetary savings, many of these measures improve economic incentives, contribute to a greater use of the labour force and strengthen the supply side of the economy. Among measures with such effects can be included the increase in the retirement age, substantial tightening of early retirement schemes, reduction in the generosity of sickness benefits and abolition of the restrictions on earning while drawing some social benefits.

To provide an overview of the reform steps, this box summarizes all important spending measures that affect public expenditures as of 2004.

Parametric changes in the pension system:

- Abolition of early retirement schemes with only temporarily reduced pension benefits;
- The statutory retirement age will continue to rise till the target age of 63 years for men and childless women is reached;
- Indexation of pension benefits will be kept to the statutory minimum (corresponding to consumer price inflation and a third of the real growth in average wages);
- Restriction of study years (after reaching 18 years of age) recognized as contributory periods and acquired before January 1, 1996;
- Abolition of the restriction on drawing pension benefits simultaneously with earnings in the first 2 years following retirement.

⁴ ČKA is a financial institution of non-banking nature that neither accepts deposits from the general public nor provides loans. ČKA is a legal successor of Konsolidační banka. At the same time it is authorized to exercise all rights, possibilities, and tools which KOB used to enjoy. The Government guarantees the liabilities of ČKA. ČKA, by law, will cease to exist by 31.12.2007 without wind-up. The legal successor of ČKA is the Government represented by the Ministry of Finance that will take over its rights and liabilities by the date of cessation of ČKA

System of sickness benefits

- Lowering the level of sickness benefits for the first three calendar days of sick leave from 50 % to 25 % of the daily assessment basis;
- Reduction of the assessment basis from 100 % to 90 % for the first 14 days of sick leave;
- Freezing of the current reduction caps for defining the assessment basis;
- Extension of the decisive period for the assessment basis from 3 to 12 months.

System of state social support

- Abolition of transportation benefit that proved ineffective;
- Removal of the upper limit on the earnings of parental allowance recipients;
- When assessing the eligibility of self-employed persons for benefits, it will be presumed that they earn a minimum notional income of 50 % of the average wage;
- The level of the subsistence minimum decisive for eligibility for benefits and the level of benefits will be increased only by the minimum required by law (i.e. on the basis of CPI growth for the entire household).

Wages and employment in the government sector

- A decrease in the number of employees at the level of central government with the goal of reducing their number by 6 % (approximately 29 thousands posts) in the period 2004 to 2006;
- Introduction of the 16-class salary tariff in a form that will significantly limit the fiscal impact of this step;
- Freezing of salaries of MPs and government officials, judges, state attorneys and similar officials at their 2003 level throughout the period 2004-2006.

Other measures and discretionary changes

- Reduction in the state subsidy for housing savings schemes;
- Lower military spending;
- Lower subsidies to businesses;
- Reduction of the operation costs of individual ministries.

Annex 2: Tax changes

The common denominator of the changes contained in the two tax packages put forth at the first and the second stage of public finance reform, is the reinforcement of indirect taxes, compensated for by a fall in income taxes. The first stage was designed with regard to the obligation of the CR to harmonise its tax legislation with the appropriate EU directives and at the same time it contributed to a reduction in the public finance deficit. On the other hand, the second tax package is perceived as an instrument of structural reforms and strives to promote potential growth in the Czech economy.

Value added tax

- In accordance with EU regulations selected goods and services were transferred from the reduced (5 %) to the standard rate. The change took place in two steps - a part from 1 January 2004 (e.g. telecommunications) and the remaining items from 1 May 2004 (e.g. construction works);

- From 1 October 2003, the turnover threshold for obligatory VAT registration was reduced from CZK 3 mil. to CZK 2 mil. a year and from 1 May 2004 further to CZK 1 mil. a year;
- The VAT law will contain provisions regulating intracommunity trade between EU Member States.
- From 1 May the standard VAT rate was reduced by 3 percentage points (from 22 % to 19 %). The reduced rate remains unchanged and it covers only a narrowly defined list of socially sensitive commodities (food, drugs, construction works for housing, heat etc.)

Excises

- The excise duties on commodities where Czech rates were lower have been raised above the level of the minimum rates applied in the EU. From January 1, 2004 excise duty on mineral oils was raised. The tax burden on the most frequently sold type of cigarettes will be gradually increased to reach 57 % or at least 60 € per 1000 cigarettes by January 1, 2007;
- A rise in the excise duty on spirits and tobacco products will be accompanied by measures aimed at the prevention of tax evasion (stamping of spirits, restrictions on stand selling);
- A new regulation on excise duties, which will introduce changes concerning duty suspension arrangements through so-called tax warehouses, has been accepted.

Income taxes

- The amended Income Tax Act introduces a common system of taxation for parent companies and subsidiaries from different Member States and a common system of taxation applicable to mergers, transfers of assets and exchanges of shares concerning companies from different Member States;
- The corporate income tax rate was reduced to 28 % from 1 January 2004 and will be further reduced to 26 % as of 1 January 2005, and finally to 24 % as of 1 January 2006;
- Faster depreciation of items listed in the first three amortisation groups (e.g. computers, selected means of transport, machinery).
- Increased R&D allowance amounting to up to 10 % of the tax basis.
- Self-employed persons have to pay at least a minimum amount of tax corresponding to a notional income at the level of 50 % of the average wage.
- Joint taxation of married couples became effective, serving as a tool to support families with children and replacing child allowance by tax credit, including tax bonus.

Social contributions

A gradual rise in the assessment base of the self-employed between 2004 and 2006 from the current 35 % to 40, 45 and eventually 50 % of the difference between revenues and costs, whereby this difference may not fall below 50 % of the average wage;

A budgetary neutral rearrangement of social contributions - a decrease in the contribution for the active employment policy compensated for by a 2 p. p. increase in pension contributions.

Real estate transfer tax

The real estate transfer tax was cut by 2 p.p. (from 5 % to 3 %) as of 1 January 2004, and the tax is payable within the deadline for filing one's tax return.

FINNISH EXPERIENCES ON REDIRECTING PUBLIC EXPENDITURES

Ministry of Finance of Finland

Paper completed: December 2005

1. Introduction

Key objectives and challenges

In the past 15 years the development of general government expenditure has been strongly affected by the unusual economic events of the economy. General government expenditure increased very rapidly in the early 1990s, primarily as a result of the economic recession that swept the country. At the same time total output actually slipped into negative territory, and consequently the expenditure-to-GDP ratio increased by double digits in the space of five years. Measures to restore general government finances and the onset of rapid economic growth turned things around in the mid-1990s. General government expenditure as a proportion of GDP peaked at 65 per cent in 1993, since when the figure has fallen back to 51 per cent in 2004. The fall in expenditures was a consequence of several decisions to cut down benefits and measures implemented to regain the sustainability of public finances. Much of this reduction has come in social security expenditure and general government interest expenses. The decrease in social security expenditure during this period is greatly due to pension reforms and lowered unemployment security costs following the recovery of employment after the recession.

Although the Finnish economy is in reasonably good balance and its short-term prospects are rather bright, the longer term prospects are not without risks. The population in Finland is ageing faster than in other EU countries, which is causing tensions in the labour market and in public finances. Ageing presents a formidable challenge particularly for the sustainable funding of general government: on the one hand there are growing pressures in ageing related expenditure. The pressure of increasing expenditure is greatest in pensions and health and social care services. It is estimated that by 2030, changes in the age structure will drive up the combined share of these expenditure items by 6 percentage points as a proportion of GDP. Finland is prepared for these expenditure pressures for instance by reforming the pension system and increasing prefunding of pensions. In addition, securing balanced general government finances in the longer term will require proper allocation of public sector resources and assigning task priorities. It is important that there is the flexibility to reallocate resources from one task area to another according to changes in the population age structure and the regional structure and according to the new priorities of service needs.

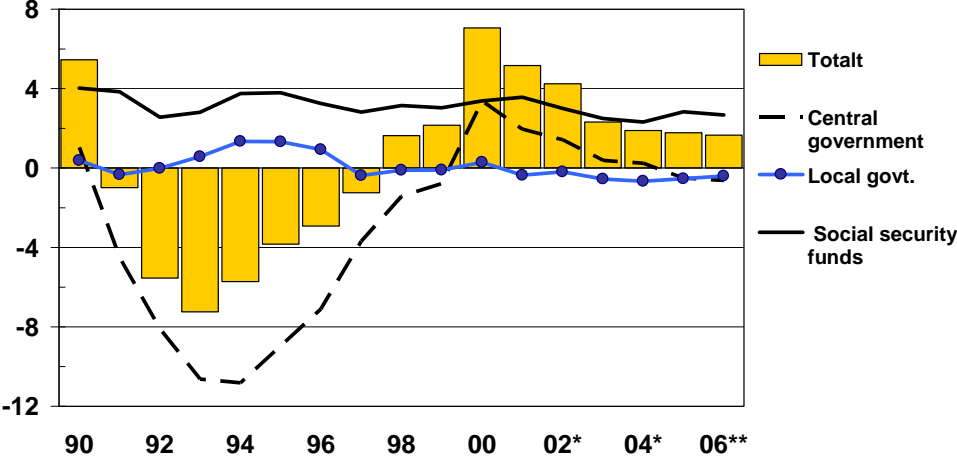
The budgetary procedures and the implementation of the government programme have been developed significantly during the past years. Since 2003 the development of public expenditures has been controlled by setting spending limits for the whole electoral term. Control of central government expenditure is vital for a stable economic policy, which in turn is needed to ensure investment revival and long-term economic growth. The Government is also aiming at securing balanced central government finances under normal conditions of economic growth at the end of the electoral period, as measured in terms of national accounting. Furthermore, the Government expects that even in conditions of adverse economic development, the deficit in central government finances, as measured in national accounting terms, shall not exceed $2\frac{3}{4}$ per cent of GDP.

A new programme management system for the implementation of the government programme was introduced in 2003 with the aim of ensuring a coherent and coordinated implementation of government policies. New policy programmes, which cover the most important intersectoral subject matters, are included in the Government Strategy Document. The document also includes concrete impact objectives and defines indicators for the monitoring of each policy programme. Currently there are four policy programmes i.e. the employment policy programme, entrepreneurship policy programme, information society policy programme and civil participation policy programme.

The biggest challenge for economic policy is to raise productivity. Improved productivity opens up significant opportunities to curb the growth of expenditures and to reallocate resources. In 2003 the Government launched a comprehensive Productivity Action Programme with the aim of achieving significant productivity gains in the entire public sector. As the labour input continues to dwindle, the total labour force in the public sector can not grow; instead, the functions and services of public administration as a whole must be enhanced and resources reallocated so that the growing need for services can be satisfied, avoiding price competition for the labour supply, which would be detrimental for the national economy, and securing availability of labour for other sectors.

The increased focus on public sector productivity applies also to the municipal sector. The municipal and service structure project set up by the Government has an important role in curbing public expenditure. The aim of this project is to make sure there is a sound enough structural and financial basis for the future production and provision of services that are currently the responsibility of the local government sector and at securing the cost-effective provision of those services.

Figure 1 - The financial balance of general government subsectors in ratio to GDP, per cent



Government Programme

The main aim of the Government is to develop the welfare state by enhancing growth and employment and by improving basic services. Government measures to secure employment and growth focus on action plans consisting of controlling the growth of public expenditure, reviving public finances and reforming their structures, improving the position of the least well-off citizens and strengthening economic growth potential through support for education, research, product development and growth enterprises. The main goal of the Government’s economic policy is to reduce unemployment and to find jobs for 100,000 persons during its term in office. This would imply an increase in the employment rate to around 70 per cent.

According to the Budget Proposal for the year 2006 issued in September the Government is paying special attention to improving the position of the least well-off. To support employment of the long-term unemployed, the Government is implementing a labour market subsidy reform and a social guarantee for the long-term unemployed, which will offer all unemployed target group members either work or active

measures. Refusing suitable work offered or measures promoting employment will lead to temporary suspension of the right to labour market subsidy. Furthermore, the demand for labour in labour-intensive enterprises and services will be supported by cutting employer contributions. The budget proposal also includes a number of measures to reduce structural unemployment and to increase employment. The Government proposes inputs of EUR 100 million in low-wage support for employers in order to encourage older and low-productivity labour to continue working and to be re-employed.

The Government supports the competence base of economic growth by increasing resources for research and development and by improving the harmonization of research and its commercial applications. It will also reform education to strengthen economic growth and to secure the labour supply by bringing forward the average age for embarking on a career. Another aim is to reduce the risk of social exclusion among young people.

The reform of health insurance financing will take effect in 2006. The purpose of the reform is to safeguard the sufficiency of financing for benefits granted on the basis of sickness. The health insurance financing will be divided into two parts, medical care insurance and earned income insurance. The cost effect of the reform will be neutral in terms of general government finances, employers and the insured.

Decisions made by the current Government have reduced taxation on work by a total of EUR 1.4 billion. By the end of the electoral period, taxation on work will have been reduced by a total of EUR 2.8 billion. As a result of the reductions for the electoral period, the tax rate of a medium-income employee will be reduced by some 3 percentage points.

2. Decision making process and implementation

The Government's fiscal policy objective is to maintain strong central government finances. This is essential if public finances are to cope with the implications of population ageing over the next few decades without placing an unreasonable tax burden on future generations. Stability and sustainability in general government finances require steps to curb and control public expenditure, to increase productivity and to strengthen the growth potential of the economy. The requirement of a cautious expenditure policy applies to both central government and the municipal sector.

2.1. Formulation and execution of the budget

The formulation of the budget proposal begins in March each year following Government approval of the spending limits of the ministries. Based on these spending limits and on directives issued by the Ministry of Finance, budget formulation progresses in the ministries, which issue their own directions to agencies and departments under their purview. The agencies draw up their draft budgets in the course of the spring. The ministries then formulate a draft budget for the whole of their branch of government from the plans submitted by the agencies. This draft budget is handed to the Ministry of Finance in May. In addition, ministries can propose changes to their spending limits in matters on which they have drawn up proposed adjustments, and the proposed changes are submitted to the Government for consideration together with the budget proposal.

The draft budgets of the ministries are processed at the Ministry of Finance in the course of the spring and summer. The Minister of Finance decides his position on the budget proposal in July or August and hands the proposed budget to the ministries. Based on the position paper of the Ministry of Finance, a series of negotiations on the draft budgets are held between the Ministry of Finance and each of the other ministries with a view to settling any differences of opinion on the size of appropriations. Following this round of negotiations, the whole Government considers the draft budget prepared by the Ministry of Finance in the Government budget session held in August. At the budget session, the Government substantively endorses the contents of the budget proposal.

Once the Ministry of Finance has finalised the budget proposal, it is officially approved by the Government and the President of the Republic and is submitted to Parliament for consideration at the

start of the autumn session. The budget is adopted in a plenary session of Parliament in December. If essential needs to revise the adopted budget arise, supplementary budget proposals can be presented to Parliament. In general, the same procedures are applied in formulating supplementary budget proposals as in formulating the budget.

Table 1 – Government budgetary expenditure by administrative sectors in the financial accounts and State Budget, EUR million

	2002	2003	2004	2004	2005	2006 (proposal)
21. Parliament	84	111	94	8	97	104
22. The President of the Republic of Finland	6	7	9	101	9	11
23. Cabinet Office (Council of State)	37	45	49	48	49	73
24. Ministry of Foreign Affairs	698	709	778	766	826	895
25. Ministry of Justice	570	641	671	671	662	693
26. Ministry of the Interior	1 302	1 419	1 425	1 443	1 507	1 546
27. Ministry of Defence	1 712	2 006	2 131	2 073	2 149	2 274
28. Ministry of Finance	5 455	4 987	5 113	5 345	5 553	5 788
29. Ministry of Education	5 437	5 786	5 970	6 054	6 197	6 457
30. Ministry of Agriculture and Forestry	2 448	2 544	2 645	2 687	2 725	2 700
31. Ministry of Transport and Communications	1 397	1 755	1 889	1 778	1 774	1 723
32. Ministry of Trade and Industry	1 027	914	941	964	976	972
33. Ministry of Health and Social Affairs	8 098	8 571	9 363	9 364	10 028	11 263
34. Ministry of Labour	1 984	2 092	2 183	2 305	2 164	1 965
35. Ministry of Environment	622	657	680	676	691	752
36. State debt interest expenses	3 624	4 653	2 381	2 782	2 447	2 238
37. State debt reduction	1 010	-	-	-	-	-
OVERALL EXPENDITURE	35 511	36 896	36 320	37 065	37 855	39 452

When the Budget has been approved the ministries must confirm a breakdown of budgetary accounts for their administrative branch for implementing the budget, at least to the degree of detail specified by Parliament. The breakdown of budgetary accounts forms the basis for budget accounting, which is used to monitor the execution of the budget. Government returns and expenses are also monitored by commercial accounting. The ministries carry out performance target negotiations with the agencies for which they have responsibility in order to make concrete the preliminary performance targets outlined in the budget proposal. Once performance agreements have been contracted with the agencies, the ministries must make their performance targets public.

At the start of the autumn session the Government submits a Financial Status Report to Parliament outlining how well performance targets have been met. The report sets out the effectiveness of each administrative branch. Administrative branches also report on budget execution and performance targets in their reports on operations by administrative branch, which are submitted to Parliament in mid-May.

2.2. Spending limits

In order to promote a sustainable and credible fiscal policy, the Government has committed itself to a new spending limits procedure whereby approximately three-quarters of total budget appropriations are allocated to spending limits that cover the whole electoral term. This objective is included in the Government Programme. In May 2003, a separate Government resolution was issued on the matter, and Parliament was notified. The spending limits for the electoral term are expressed at 2004 price and cost levels, and where necessary they are revised in line with technical changes in the budget structure. Expenditures affected by cyclical fluctuations, other variable costs not dependent on Government decisions, and also expenditure caused by administrative rearrangements or technical adjustments in the budget proposal, with the exception of changes in spending principles, are excluded from the scope of the spending rules. These include the following:

- unemployment security costs, housing allowances and transfers to the Social Insurance Institution; these expenditure items are, however, covered by the spending rules insofar as they are affected by changes in their principles;
- debt interest payments;
- any compensation to other tax recipients deriving from tax changes decided by central government;
- changes in transfers to the Social Insurance Institution caused by changes in social security contributions;
- expenditure corresponding to revenues from the European Union;
- expenditure corresponding to national gambling and lottery receipts and profit entered as revenue from the Slot Machine Association;
- capital expenditure.

Supplementary budget proposals, on the other hand, are included in the spending limits. The Government's declared aim is to secure balanced central government finances under normal conditions of economic growth at the end of the electoral period, measured in terms of national accounting. Furthermore, the Government's guiding premise is that even in conditions of adverse economic development, the deficit in central government finances, as measured in national accounting terms, shall not exceed 2¾ per cent of GDP. In addition, the Government has agreed, as a supplement to the Government Programme, that if annual proceeds from the sale of shares exceed 500 million euros, a maximum of 10 per cent of the excess amount can be used on a discretionary basis for non-recurring supplementary expenditures, primarily for infrastructure investments as well as for promoting R&D activities, notwithstanding the expenditure rules and regulations or the spending limits for the electoral term.

The allocation of appropriations by administrative branch is revised annually on the basis of a decision on central government spending limits. In preparation of that decision ministries submit their own four-year action and financial plans as well as their own spending limits proposal for the administrative branch. The spending limits established by the Government provide a framework within which each administrative branch works to prepare their proposals for the following year's budget. The Government Programme requires that more action strategies be included in ministries' spending limit plans. Steps have been taken to promote the integration of the spending limits procedure into the ministries' action plans. The aim has been to establish a system whereby resource priorities within and between ministries can be steered by joint Government decisions. Furthermore, the aim has been to strengthen the political control of the Government in the process of drawing up these plans.

The motivating force behind the spending limits for 2006-2009 has similarly been to support the Government's economic policy objectives and to persist with a fiscal policy that secures stable growth. The starting-point is a cautious expenditure policy where strict economy is exercised in all administrative branches. This also helped to create economic leeway for political decision-making.

2.3. Productivity action programme

The Government has made clear its commitment to securing continued access to public sector services and the quality of those services in the future. To this end the public sector shall be developed to achieve maximum efficiency and economy. In 2003 the Government launched a productivity programme for the electoral period via which the performance of the entire public sector will be boosted. The programme was initially drawn up in 5 pilot ministries and this year the procedure was extended to all administrative domains. Among the measures included in the action programme launched by the Ministry of Finance are to continue with the policy of transforming civil service departments and agencies into unincorporated state enterprises and private companies; to purchase services from the private and third sector; to improve and upgrade structures and strategies of service provision; to take better advantage of

economies of scale from specialisation and larger units; to make more efficient use of ICTs; and to improve the efficiency of purchasing.

According to Ministry of Finance estimates, some 35,000 people out of the total state sector workforce of around 124,000 will be retiring or moving to another employer by 2011. This provides a good opportunity to reallocate resources, to develop job tasks and skills, and to carry out even major structural and strategic reforms in line with the principles of good human resources policy.

At the first stage of the productivity action programme in 2003-2004, productivity programmes were drawn up by each ministry for their respective administrative areas, detailing the specific measures for improving productivity and their impacts on personnel numbers, spending limits and the budget. All administrative domains and departments are expected to improve the efficiency of general administration, purchasing, ICT use and support services. The ministries' productivity programmes involved a total of more than 150 productivity projects. Implementation is currently underway.

At the second stage of the productivity action programme, revised productivity plans for 2005-2007 were drawn up by each ministry. The operational and structural changes entailed by these plans will generate an increase in productivity corresponding to the labour input of 17,500 persons by 2011. The aim is to streamline operations and structures in such a way that only every other job vacancy created through natural turnover is filled. This means an average annual reduction of over 2 per cent in personnel and a corresponding growth in productivity.

Steps to increase the efficiency of finance and human resources administration in ministries, departments and agencies will include the general streamlining of operations and the coordination of services through newly created service centres. The first service centres in central government finance and human resources administration have been set up or will be set up in 2006 within the administrative branches under the Ministry of Justice, the Ministry of the Interior and the Ministry of Finance. The target for 2009 has been set at a 40 per cent increase in productivity. Resources thus saved will be reallocated to core tasks. The Government has decided that all administrative branches shall establish their own service centres by 2007, or they shall purchase the services they require from existing service centres.

Productivity in state administration and services shall also be increased by streamlining supervision and decision-making in IT operations and by coordinating IT services. The specific measures aimed at improving productivity and accounts on exactly how the proposed measures will reduce personnel needs, are detailed in the productivity programmes drawn up for each administrative branch. The Government will include the main productivity measures for each administrative branch in the decision on central government spending limits for 2007-2010.

Steps will also be taken to improve service provision and the productivity of public administration by developing electronic and interactive services on the Internet and by launching a joint online service, which will be phased in from 2006. In addition, these efforts will be boosted by setting up a joint public administration platform for electronic identification and payment and by developing recommendations made by public administration.

2.4. Curbing public expenditure in the municipal sector

The cautious expenditure policy also applies to the municipal sector. Local government finances will remain constrained over the coming years. In the longer term population ageing will cause escalating demand and funding pressures related to basic services. According to the Government Programme the balance in financing municipal functions and obligations will be improved through a basic services programme covering the Government's entire term in office and agreed upon jointly by central and local government, and through a related annual basic services budget drawn up jointly by central and local government and endorsed by the Government. The basic services programme will assess income and expenditure on municipal functions and other obligations in municipality groupings and the measures needed to balance them. The basic services programme shall be attached to the decision on central

government spending limits and it shall be revised annually in connection with the spending limits procedure.

An important part of the basic services programme is the reform of the system of local government funding and central government transfers to local government, which will be implemented in two stages. The first stage from the beginning of 2006 will involve the revision of certain criteria for central government transfers and other changes to make the system clearer and increase its incentive effect. Furthermore, the current system of cost-sharing adjustment between central and local government will be replaced by a system where adjustments to the central government transfer percentage are enforced by law. In making these adjustments it will be necessary to consider factors affecting the cost trends in basic services, the current financial situation in central and local government, as well as the outlook and challenges lying ahead. In order to secure operational precondition for all municipalities the Government can grant discretionary financial assistance to municipalities that are in need of additional help mainly due to economic problems of an exceptional or temporary nature. In the reform the conditions for discretionary grants for municipalities facing special circumstances are to be reviewed with the aim of setting stronger requirements for each municipality concerned to draw up a fiscal consolidation plan.

Following the changes in the environment in which local authorities operate, fiscal austerity, and increasing migration, there has been more and more talk about municipal mergers. Considering the large number of comparatively small municipalities, mergers should lead to economies of scale. For municipal mergers to be instrumental in meeting the fiscal objectives, a more active approach to inducing consolidation and co-operation among the many municipalities focused clearly on improvement in cost efficiency is therefore needed. The Government is trying to speed up the process of mergers between municipalities by granting special assistance to municipalities involved in them.

Productivity challenges are essential also in the municipal sector. As an example, the national health programme and social sector development programme (2004 - 2007) launched on the strength of a Government decision-in-principle in 2002 also includes the aim of increased productivity, primarily through improved information management and more effective procedures. This will release an extra 200 million euros a year for reallocation to the development of health care. The first calculations and estimates suggest that the targets will be met. Programme implementation is currently underway. Furthermore, innovation and R&D related to the productivity, efficiency and quality of health services is supported by programmes set up by the Finnish National Fund for Research and Development Sitra and the National Technology Agency Tekes¹.

The municipal and service structure project set up by the Government has an important role in curbing public expenditure. The objective of the project to restructure municipalities and services is a sound structural and financial basis for the services that municipalities are currently responsible for in order to secure the organisation and provision of such services in the future with due regard to the required standard of quality, effectiveness, availability, efficiency, and technological advancement. Both organisation and production of the services will be considered in the project. The project was set up by the Government on 11 May 2005.

The basic principles set out by the government are that the size and population base of municipalities must be sufficiently large to ensure professional service provision, and in particular specialised health care should be provided by larger units. To improve cost effectiveness, it is also envisaged to involve a wider variety of providers including incorporation of current public entities and more purchase of service from private sector entities in order to benefit from economies of scale. These principles are to be followed up by an action plan leading to a genuine reform of the municipal structure.

¹ The Finnish National Fund for Research and Development Sitra is an independent public foundation under the supervision of the Finnish Parliament. Its mission is to promote economic prosperity in the country. The fund is financed from the yield of its own endowment capital and the return on its venture capital investments. The National Technology Agency Tekes activates and provides funding for research and development projects undertaken by business companies, universities and research institutes. Tekes comes under the Ministry of Trade and Industry.

2.5. Policy programmes

Implementation of the Government Programme has been monitored since 1973. In spring 2003, a new programme management system was introduced to improve coordination of the implementation of the Government Programme. One important aim of this programme management is to make state administration adhere more efficiently to the priorities set out in the Government Programme. Another aim is to systemise follow-up to policies and improve networking among ministries.

In practice, programme management covers the most important intersectoral subject matters in the Government Programme, namely the policy programmes. The policy programmes group together ministries' projects and appropriations. The implementation and monitoring of the Government Programme is based on Government Strategy Document, which is revised every year. In addition to the policy programmes, the strategy document includes other intersectoral Government policies and annual plans and measures for the implementation of the Government Programme. Currently there are four policy programmes included in the Strategy Document i.e. the employment policy programme, entrepreneurship policy programme, information society policy programme and civil participation policy programme.

Box 1 - The policy programmes currently in operation

The objective of the **Employment Policy Programme** is to reduce unemployment and promote enterprises' access to labour. The programme's most important projects include the reform of employment services, activation of labour market subsidies, education and employment policy measures and attempts to lengthen the time spent by employees in the labour market.

The principal aims of the programme are: (1) to reduce structural unemployment and prevent social exclusion, (2) to ensure the supply of skilled labour and provide for scarcity of labour due to demographic changes, (3) to lengthen the time spent by individuals in the labour market, increase the productivity of labour and improve the organisation of work and job satisfaction.

The Government implements the **Entrepreneurship Policy Programme** as part of its economic and industrial policy. The main objectives are to safeguard a stable and predictable operational environment for enterprises and to ensure that the resources available for promotion of entrepreneurship in various administrative branches will be utilised to the full. The programme underlines the importance of enterprises and entrepreneurs in the construction of economic growth and employment.

The main focus of the Entrepreneurship Policy Programme is on concrete projects that support entrepreneurship. The programme consists of five sub-sectors: (1) entrepreneurial training and consultancy, (2) establishment, growth and internationalisation of enterprises, (3) entrepreneurial taxes and payments, (4) regional entrepreneurship, and (5) provisions governing entrepreneurship and the functioning of markets.

The **Information Society Programme** will focus on the utilisation of the opportunities offered by the information society. The aim of the programme is to boost competitiveness and productivity, to promote social and regional equality and to improve citizens' well-being and quality of life through effective utilisation of information and communications technologies. The Information Society Policy Programme aims to maintain Finland's status as a leading producer and user of information and communications technology.

The Information Society Programme consists of seven sub-sectors: (1) telecommunication infrastructure and digital television, (2) citizens' ability to utilise the information society and secure information society, (3) training, working life, research and development, (4) utilisation of ICT in public administration, (5) electronic commerce and digital contents, (6) legislative measures, and (7) international dimension.

The **Civil Participation Policy Programme** aims to reinforce the functioning of representative democracy and encourage civil participation. The objective is to improve electoral participation and provide opportunities for active civil participation between elections. The programme will place particular emphasis on those groups whose participation and influence have remained low in the past.

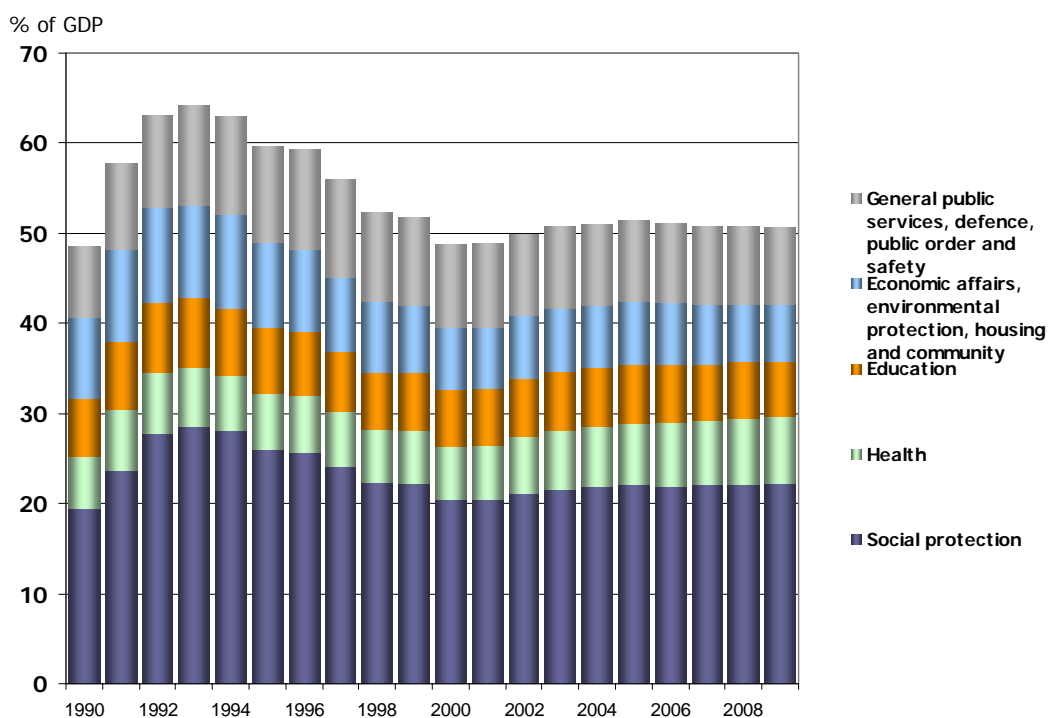
The Strategy Document also sets out concrete impact objectives and details the concrete measures by which the targets shall be pursued. The desired societal impacts of each policy programme are also

determined. In addition, the Strategy Document defines indicators for the monitoring of each policy programme and their sub-programmes. The attainment and influence of the set objectives is examined in connection with the annual revision of the Strategy Document. The funding of the policy programmes is agreed on in the Government spending limits.

3. Public expenditures in the medium term

General government expenditure increased very rapidly in the early 1990s, primarily as a result of the economic recession. At the same time total output growth fell into negative territory, and consequently the expenditure-to-GDP ratio increased by double digits in the space of five years. General government expenditure as a proportion of GDP peaked at 65 per cent in 1993, since when the figure has fallen back to 51 % of GDP in 2004 as a consequence of several retrenchment measures. The decrease in social security expenditure during this period is greatly due to pension reforms and lowered unemployment security costs following the recovery of employment after the recession.

Figure 2 – General government expenditure by function



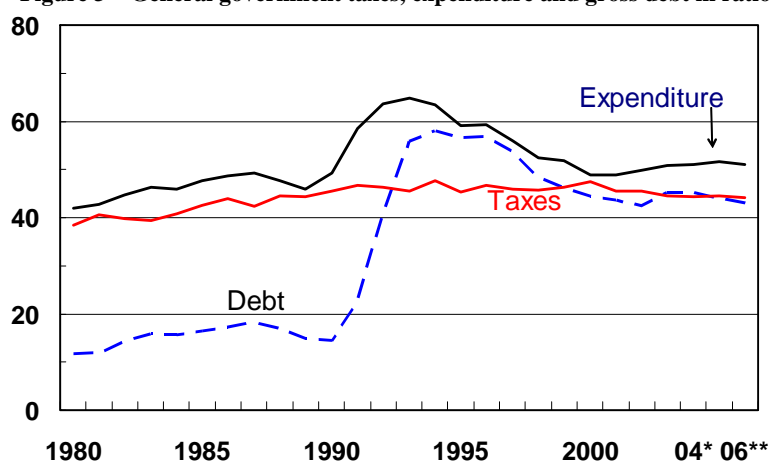
In 2005 the general government expenditure-to-GDP ratio will rise somewhat from the previous year to 51½ per cent because the value of GDP growth will remain modest. In 2006 it is projected that the ratio will return to 51 per cent. In 2007-2009, the ratio of general government expenditure to GDP is expected to remain stable. The Government Programme sets out in quite some detail the principles for key income transfers over the current electoral period, i.e. through to 2007. The central government spending limits procedure will also facilitate the management of public spending.

The biggest public expenditure categories are social security, health care and education, which in 2004 accounted for 21.9, 6.7 and 6.5 per cent of GDP, respectively. Although it is thought there will be no major changes in this general structure of tasks in 2005-2009, there are already some early indications of future structural changes, i.e. the growing share of social and health care expenditure and the decrease in general administrative costs.

It is forecast that social security expenditure will increase somewhat, even though the pension reforms that are now in place are beginning to retard the growth in pension expenditure, inflation adjustments to pensions will be exceptionally small and unemployment will decline. However, population ageing and the ensuing growth of pension and social care expenses means that there is growing pressure towards an increased proportion of social security expenditure in the longer term as well. It should be noted that due to the prefunding of pensions the future increase in pension contribution rate is less steep than the increase in pension expenditure rate.

It is expected that health care expenditure will continue to rise somewhat with the launch of the national health programme, and in the long term there will also be growing expenditure pressures in health care as a result of population ageing. Sickness insurance compensation and the reimbursement of medical expenses in particular, will continue to rise apace. The share of the education expenditure is estimated to decrease slightly. The ongoing changes in the population structure will in the short term help to relieve pressures on education expenditure. It is projected that expenditure in general public services will decrease over the next few years among other things on account of the productivity action programme and the drive to cut back on personnel in central government.

Figure 3 – General government taxes, expenditure and gross debt in ratio to GDP



4. Assessment and conclusions

The experiences of the new spending limits procedures are good. Spending limits set for the whole electoral period have enhanced the medium term aspects of the public finances and helped to curb public expenditure during the budget negotiations. In May 2003, the Government set the spending limits for 2004 at 28,049 million euros, which was subsequently revised for technical reasons to 28,089 million euros. The total sum of the 2004 budget and supplementary budgets was around 80 million euros below the revised spending limits, so expenditure was well within the framework established. Spending is also on track to remain within the 2005 framework: when the spending limits for the second supplementary budget are taken into account, there still remains some 87 million euros of unallocated provision.

In its Budget Proposal for 2006 the Government submits that the expenditure included in the spending limits remain 232 million euros below the limits set for 2006. The amount of this unallocated provision is almost the same as the corresponding expenditure needs in the current year and in 2004. Decisions already made are causing expenditure pressure for 2007 and beyond, and therefore the preparation of the next spending limits for 2007-2011² is a challenging task. However the Government is committed to the

² The central government spending limits will exceptionally be drawn up for a five-year period because the personnel reduction targets included in the productivity action programme extend to 2011.

spending limits and managed to agree on cutbacks in the spending limits decision for 2006-2009 in order to remain on target.

Besides expenditures, tax reliefs and taxation overall, public lending and financial subsidies must be considered to get a whole picture of the quantity and effectiveness of public finances. Tight spending limits can lead to alternative ways to attain public support. International comparisons of public expenditures alone are somewhat debatable.

Because of the ageing population Finland is facing major challenges particularly for the sustainable funding of general government. Finland is continuing to prepare for the challenges by several structural measures. These include reducing levels of public debt, reforming the pension system, increasing prefunding of pensions, launching productivity action programme, promoting skills and competitiveness, and seeking to drive up the employment rate. Several pension reforms over the past ten years have had the effect of significantly increasing the sustainability of the pension system among other things by encouraging people to stay longer in the labour market.

The productivity action programme and the basic services programme in the municipal sector form an extensive reform package, which aims at securing the quality and provision of public services in the future. Many of the measures included in the package are in an early stage of implementation, but the future effects of the programmes are expected to be substantial. There are 432 municipalities and 231 joint municipal authorities in Finland that have responsibility for the provision of the bulk of welfare services in the country. Therefore, measures to rationalise municipalities' service production and enhance productivity in the municipal sector can have a considerable impact on the productivity and quality of the general government expenditures.

GERMAN EXPERIENCE ON REDIRECTING PUBLIC BUDGET

Federal Ministry of Finance Germany

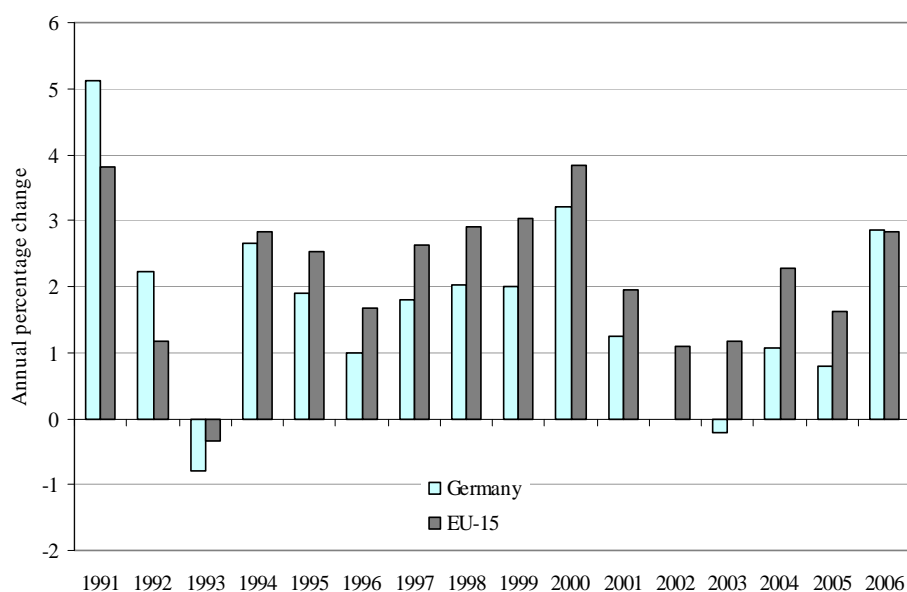
Paper completed: December 2005

1. Challenges and strategy

The main challenges for German financial and economic policy lie in improving growth and employment, as well as securing the sustainability of public finances. The quality of public finances is one important component of this strategy both in a more direct and indirect perspective. Direct influences arise for example from tax measures as well as from certain expenditure programs, which serve the direct restructuring of public budgets. Indirect influences, on the other hand, are given by medium- and long-term reforms of the labour market and the social security systems.

In the early 1990s, Germany had above-average growth rates by European comparison, partially as a result of the reunification boom. Since the second half of the nineties, however, German growth performance has faltered compared to the EU average. The gross domestic product grew much more slowly in Germany than in the other European Union countries (cf. Figure 1). This situation has been aggravated by the phase of economic stagnation over the last three years and the fact that domestic demand remains weak.

Figure 1 - Development of the real gross domestic product



At the same time, the tax ratio and rate of levies rose sharply, and extensive government transfers to the former East Germany in the first half of the nineties were largely financed by rapidly rising government indebtedness (the debts of the overall public budget rose from approx. 40% to about 60% of GDP between 1991 and 1998).

The need for structural reforms on the labour market and in the social-security systems, too, became increasingly evident, not only as a result of rising unemployment levels and higher social-security contributions, but also in view of demographic developments.

Against this background of a difficult overall economic situation, the federal government has developed a financial- and economic-policy strategy based on three pillars – **structural reforms, tax cuts and consolidation** – in which measures needed to limit the government debt are backed up by reforms aimed at strengthening the forces of growth. The main elements of this three-pronged strategy are the Agenda 2010, the 2000 Tax Reform and quantitative and qualitative consolidation measures.

These three elements have an effect on the quality of public finances in the sense of a change in the functional structure of public budgets. They can be roughly divided into two groups: one that has a direct effect and one with an indirect impact. The effects of the structural reforms on the quality of public budgets are essentially indirect: the burdens on public budgets will be reduced in the medium and long term by social transfers; incentive structures and productivity are being improved; and there will be structural shifts between the private and public financing of social security. The result will be a positive long-term effect on production potential. On the other hand, the tax-policy reforms and the measures aimed at quantitative and qualitative consolidation in the stricter sense will make a direct contribution towards improving the quality of public budgets.

Agenda 2010 – structural measures

With the Agenda 2010, the federal government has implemented a package of structural-reform measures – as an integral part of its financial- and economic-policy strategy – that focuses most urgently on the **labour market and social security** and aims to create a new balance between government safeguards and increasing citizens' personal responsibility.

Labour market

The new labour-market policy is based on the "four laws for modern service providers in the labour market", whose aim it is to reduce labour costs and create more incentives for people to take up employment. The idea is to gradually replace the present system of government support for the unemployed by a system that helps people get jobs and makes job centres more efficient. Alongside measures aimed at improving and speeding up placement services, the reforms contain sweeping changes to the systems for granting substitute wage payments and supplementary benefits. Supplementary benefits and unemployment relief – hitherto separate, parallel schemes – were merged on 1 January 2005. This reorganization ended the former coexistence of two state welfare benefits and the related shunting of costs between different agencies: the municipalities and the Federation.

→ **Effect on the quality of public finances:** Although these structural-reform measures were not explicitly planned with the aim of improving the quality of public budgets, they nevertheless indirectly contribute towards a sustainable increase in the quality of overall public finances. On the one hand, the change in the system aims to reduce the total amount the government spends on benefits; on the other, the pure transfer payments will be replaced by payments which encourage productive work and improve resource allocation.

Statutory pensions and health insurance

The aim of the reforms in the field of pensions and health insurance is to place the social-security systems onto a solid financial basis in the medium and long term. In the sense of a direct and indirect qualitative improvement of public budgets, this is achieved on the one hand by making changes to the

systems themselves, and on the other by effecting structural shifts between private and public funding. Among other things, this is done in pensions insurance by increasing tax subsidies for capital-covered old-age provision, and in health insurance by changing regulations on co-payments and financing.

Pensions:

As in most western industrialised nations, the population in Germany will age considerably over the coming decades due to low birth rates and increasing life expectancy. These shifts in the population structure required and require additions to – and reforms of – the existing system of old-age provision, which is mainly financed on a pay-as-you-go basis by contributions from the insured people and their employers. Alongside the main pillar of statutory pensions insurance, corporate pension schemes and private old-age provision form the second and third pillars of old-age provision. These supplementary pillars are gaining in importance when it comes to safeguarding living standards for senior citizens. The reforms in the field of old-age provision therefore impact all three pillars.

The first reforms of statutory pensions insurance were initiated back in 2001. The pension-adjustment system that has been in force since 1992, which was related to net wages, has been replaced by a modified adjustment related to gross wages. Although this still takes into account the annual change in gross total wages and salaries per average employed employee, the actual pension adjustment is reduced if contribution rates or the share dedicated to private old-age income provision rise – and vice-versa. Furthermore, income from the Ecological Tax Reform (introduction of electricity tax, increase in mineral oil tax) has also been used to reduce contributions to statutory pensions insurance by the labour factor. Parallel to this – and this is the reform's fundamentally new element – voluntary contributions to a supplementary, capital-covered old-age provision are now supported by tax subsidies.

These measures were supplemented in mid-2004 by the Pension Insurance Sustainability Act. Its most important change was the introduction on 1 July 2005 of a sustainability factor that takes into account the change in the ratio between pension recipients and contribution payers. If the number of contribution payers declines relative to the number of people drawing pensions, the pension adjustment is reduced and the contribution rate is stabilised. Furthermore, the tax-credit periods allowed for training were reduced, and the age limit for an early pension following unemployment or partial retirement was raised to 63. The measures are being supplemented by a gradual transition, up to 2040, to the downstream method of taxing retirement income. In return, expenditure on old-age provision will gradually become tax-free up to 2025, so that the overall result will be substantial tax relief.

Overall, the reforms aim to keep the statutory pension financeable and avoid increasing the burden on the labour factor. The objective is to prevent the contribution rate from rising above 20% by 2020 and 22% by 2030. Without the measures taken, it would have been about one contribution-rate point higher in 2004 and about 0.6 points higher in 2005. Moreover, with the Pension Insurance Sustainability Act the government has committed itself to examining (every four years, starting in 2008) whether the present data and assumptions on the future demographic and labour-market developments are still valid in view of the more up-to-date economic and demographic data that will then be available – and whether legislation is needed to raise the statutory retirement age beyond 65.

Health:

Statutory health insurance also faces major challenges. The wage-centred contributory incomes¹ of insured people – and therefore the revenues of the statutory health insurance funds – depend on the employment situation and ultimately on the economic situation. The development of contributory income per member has been weak and the change in the member structure of statutory health insurance (rising proportion of contribution-paying pensioners) have among other reasons a negative effect on the income side of the social insurance schemes. In addition the demographic development and medical progress causes higher expenditure.

¹ Incomes subject to the liability to pay social insurance contributions

The Act on the Modernisation of Statutory Health Insurance (GMG), which has been in force since January 2004, is aimed at improving efficiency and quality with medium term financial objectives.

Central elements of the reform package include structural measures to strengthen both competition (e.g. amending the regulations on the administration of medicines) and the personal responsibility of insured people, as well as new rules on financing. The changes in the financing of the health services provide among other things for greater participation by the insured people themselves – by excluding certain services and requiring higher co-payments – as well as federal government grants to cover benefits not calculated according to actuarial principles.

The measures will help improve revenues and limit expenditure on benefits and administrative costs, thus creating the necessary scope for a gradual consolidation of the health insurance funds. At the same time they will serve to stabilise non-wage labour costs. However, it is also evident that further reforms are necessary to improve the efficiency of service provision. Future reforms of the health system will have to develop financing and control mechanisms which meet the demands of sustainability, reduce the burdens on the labour factor and achieve greater distribution equity.

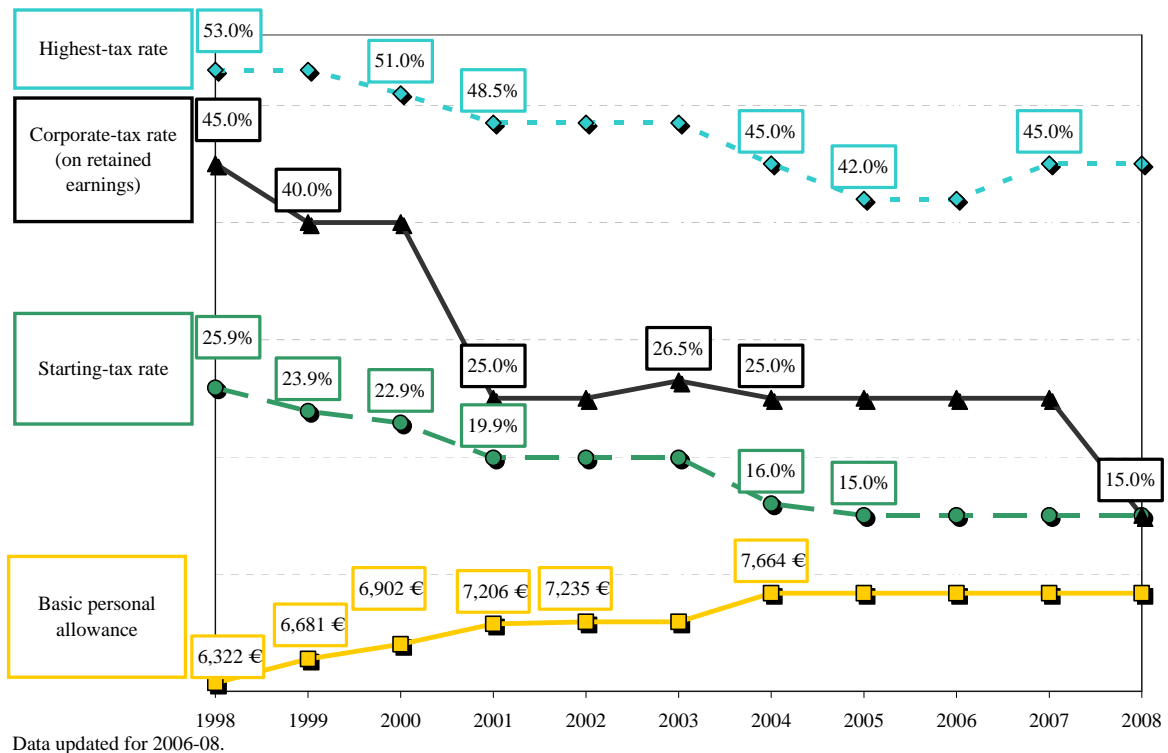
→ Effect on the quality of public finances: With a view to the aspect of quality it should be made clear that the reforms of the social-security systems (health, pensions) outlined above primarily achieve a structural reduction in past-oriented expenditure commitments, while at the same time improving the revenue base of public budgets in a future-oriented way. Calculations on the sustainability of public finances corroborate the success of the measures that have been carried out. For example, the IMF and the Ifo Institute, Munich, among others, confirm that the reforms have contributed to a marked improvement in the sustainability indicators. According to calculations by the Ifo Institute, the reforms have reduced the sustainability gap by about 20%.

2000 Tax Reform

The role of taxation policy within the framework of the federal government's economic- and financial-policy strategy is to ensure sufficient finance for public expenditure that has been legitimised by parliament and to contribute towards more growth and employment. Achieving these two objectives simultaneously requires a tax-system structure that is characterised by low tax rates and a broad assessment basis and is able to adjust to changing overall conditions – such as demographic developments or the increasing internationalisation of the economy. Furthermore, the tax system should be simple and avoid not only macroeconomic efficiency losses caused by distorting regulations, but also opportunities tax evasion.

Tax conditions in Germany have improved in many ways since the 2000 Tax Reform, the last stage of which came into force on 1 January 2005. Figure 2 shows the development of income-tax and corporate-tax rates since 1998. The first-bracket income-tax rate has been cut by more than 40% to 15% since 1998; in the same period, the top rate has been reduced by more than 20% to currently 42%. Moreover, the basic tax-free amount (€7,644) is now more than 20% higher than in 1998.

Figure 2 - Development of tax rates and the basic tax-free amount 1998-2005



In addition to lowering income-tax rates, which relieves not only private households but also unincorporated companies, which are very common in German corporate landscape, fundamental reforms have been carried out in the field of corporate taxation. The competitiveness and European compatibility of the corporate taxation system has been markedly improved by the cutting of the corporate-tax rate to 25% on distributed profits and profits retained for use in the business, and as well as by the introduction of the half-earnings taxation procedure. Unincorporated companies can take now credit trade tax as a lump sum against their income-tax debt. As a result, most unincorporated companies pay little or no trade tax. Overall, the annual savings to the taxpayers made possible by the tax laws adopted since 1998 total almost €60 billion (taking full effect in 2009).

In addition to the completion of the 2000 Tax Reform, the selective cutting of tax privileges and tax expenditures is one of the main priorities of tax-reform policy. Appreciable progress has been made in reducing owner-occupied housing allowance, professional expenses employees' blanket deductions, travelling allowance for commuters and in restriction of tax privileges on capital life-sum insurance policies.

As a result of these measures, the overall rise in tax privileges can be stopped in 2006. Even so, further action is needed, and the issue of cutting back tax privileges remains on the agenda despite the progress that has already been made. However, the necessary reduction can only be achieved if agreement can be reached between the different federal levels (Federation and Länder). Reducing tax privileges usually requires the agreement of the *Bundesrat* (Upper House of Parliament), so that different political interests can lead to coordination problems that make it more difficult to find a consensus.

In view of the extensive tax relief that has already been granted and the present situation of public budgets, no further net tax relief is planned for the future. However, the ongoing and increasing internationalisation of the economy and the growing influence of European jurisdiction amount to continuous challenges for taxation policy, particularly in the field of corporate taxation. The federal government sees a need to harmonize corporate taxation in Europe in the medium term. The current need is to weaken incentives to engage in tax planning and shift profits abroad by reducing the nominal tax burden on joint-stock companies. At the same time it is important to guarantee that the measures are fully

backed up by the necessary finance, so as not to jeopardise the necessary consolidation of public budgets. In order to make overall conditions for investment and employment in Germany sustainably competitive, it is moreover necessary to fundamentally review the system of taxing companies and income from capital. Such a fundamental reform would aim to increase economic neutrality and remove incentives for tax planning. Against this background, the German Council of Economic Experts was asked to draw up an expert opinion on the needs for reform and the possibilities of a reform of corporate taxation and report by the end of 2005.

→ **Effect on the quality of public finances:** The quality of the tax structure has been greatly improved by the measures described – according to the conceptional requirements of the EU KOM presented to the AG and the more profound analytical targets presented in the Belgian working paper. For example, the cuts in the tax rates have reduced the distorting effects of the tax system and at the same time boosted incentives to work and invest. The tax ratio has reached the historically low level of 21.8% in the meantime. Furthermore, the reduction of tax privileges has extended the tax base; this also helps to reduce the distorting effects of the tax system further.

Quantitative and qualitative consolidation in the stricter sense

The structural reforms of the labour market and the social-security systems, as well as the fiscal-policy measures, are supplemented by specific (packages of) measures aimed at the restriction of overall expenditure and the explicit, directly qualitative restructuring of the public budgets.

One example from the recent past of the direct restructuring of public budgets towards a more future-oriented focus is the **Future Investment Programme 2000**, in which specific revenues have been redirected towards a concrete investment use. In this context, all the actual proceeds from the auction of the UMTS licences – approximately €50 billion – were used to repay debt, while the Federation's simultaneous interest savings about €2.5 billion per annum were tied to investment and flowed into a large number of different projects, mainly in infrastructure but also in education, research and development, and renewable energy.

These forms of qualitative consolidation in the stricter sense are to be further developed in the coming years. According to the federal government's financial-policy strategy, funds saved by cutting subsidies, especially in the field of tax privileges, are to be used to strengthen expenditure on (primarily) education, research and innovation, and to develop measures making it easier for people to reconcile work and family life. In the education field the programmes' priorities lie in measures to improve facilities for young children. An important component of the innovation offensive is the mobilisation of the R&D potential in small and medium-sized companies.

Important successes have already been achieved in both fields:

- In 2003 the Federation and Länder launched the "Investment Programme in the Future of Education and Childcare". In this €4 billion programme, the government is promoting the establishment and development of all-day schools. This is based on agreements to "expand and further develop" new all-day schools, to "create additional places" at existing all-day schools, and "develop the quality" of all-day facilities. The funds will be available up to the end of 2008. In line with their federal responsibility for education policy, the Länder are responsible for deciding which schools and school forms are to be promoted, as well as for choosing the teaching content and providing the staff.
- investment in research and development has been rising again since 1998, so that total expenditure on R&D as a percentage of the gross domestic product has gone up from 2.31% to 2.55%
- Furthermore, the government wants to greatly improve care facilities for children under the age of three with its new law on the quality-oriented and needs-related expansion of day-care for children, which has been force since the beginning of this year.

Despite these successes, there is further need for improvement.

Improving the quality impact of public expenditure and programmes:

In the R&D field, for example, the findings compiled by the WPA-AG show that, when it comes to qualitative improvements in individual policy areas, not only the assignment of public funds is important, but above all the efficiency of the assigned funds. The economic effect of public funds spent on research and development (R&D) in Germany can be optimised by a complementary allocation to private-sector R&D investment; in this way, private funds and initiatives can also be mobilised more strongly than up to now. There is also the question of improved methods for measuring the output of public R&D investment in Germany. Although highly developed evaluation systems are used, there is still unquestionably a considerable need for reform.

Stronger strategic orientation:

In conceptional terms, many of the reform measures described are individual programmes that need to be integrated even more strongly into a financial-policy strategy that is systematically geared to growth and quality improvement. In this connection, the focus should be continue to be on the kind of long-term structural reforms that are suitable for achieving a constant and sustainable reduction in budgetary expenditure commitments.

2. Implementation and institutions

The reform measures described – particularly those relating to the social security systems – are not part of ongoing budget processes and only have a partial, indirect effect on the functional composition of the public budgets. It was therefore not necessary to adapt institutional regulations or create new procedures in order to implement the measures.

On the whole, Germany has an effective budget-planning system; on the one hand it is based on tried-and-tested structures, on the other it also offers room for further development. There are numerous statutory and institutional arrangements, in both the budget-preparation and the budget-execution phases, which aim at guaranteeing solid budgets. Germany's medium-term financial planning in particular has proved its worth as an effective instrument for ensuring a stable financial policy.

In Germany the federal states are by constitution independent in their budgetary policy. It is by law not possible that the central government gives prescriptions of the federal states for both levels of government have equal rights. However, there are important rules in place that clearly restrict the budgetary acting of both layers of government.

The 1969 budget reform created a binding, uniform framework for the budgetary law of the Federation and the Länder. On the one hand, the Basic Law's constitutional regulations on the budget were reformulated (Articles 109 to 115), on the other, the Law on Budgetary Procedures (HGrG) was passed, containing the common principles on budgeting which must be adhered to by the Federation and the Länder².

In their budget management, the Federation and the Länder have to take into account the requirements of macroeconomic equilibrium (price stability, high level of employment, equilibrium in the balance of payments, and constant and appropriate economic growth – Article 109, paragraph 2 of the Basic Law). Borrowing may not exceed the total expenditure set for “investment,” except under conditions of “sustained disturbance of macroeconomic equilibrium”, that has to be substantiated by the federal government (**constitutional limit on indebtedness**) [Article 115 Grundgesetz]. This prominent emphasis

² Based on the constitutional distribution of responsibilities and the extensive tax pool, cooperation on legislation between the Federation and the Länder (via the Bundesrat) is also vital on the revenue side – for instance with the aim of improving the tax structure.

on the macroeconomic implications of budget policy is forward-looking and encourages identifying at an early stage the fiscal impact of new spending and taxation measures, as well as the putative limits on fiscal policy action in the medium-term.

Budget management

German budget management is to be based on a financial plan covering a five-year period, the current fiscal year, the draft budget for the next fiscal year, and forecasts for the following three years. The five-year medium-term plan rolls forward with each fiscal year—every time a new draft budget is prepared, the following three years' forecasts are updated.

The Medium-Term Financial Planning process in Germany offers:

1. an explicit recognition of the macroeconomic implications of overall fiscal stance (and thus a reminder of the idea of medium-term constraints on budgets);
2. coordination between Federal- and State-level financial officials, particularly on expenditure, taking the overall situation and mandates into account;
3. enhanced transparency in the budget process, both by giving experts from civil society a voice in formulating tax revenue estimates and by annually announcing five-year projection for major fiscal categories.

Drawing up the budget

The Federal Ministry of Finance is responsible for drawing up the federal budget and the Federation's financial plan. The main objective when preparing the budget is to implement the political targets of the Federation's budgetary and financial policy, thus reflecting the federal government's political priorities.

The preparation of the budget begins decentrally when the individual ministries present and justify their financial needs. Deciding which overall government tasks – and therefore which expenditures – are necessary is not only a purely financial or economic question; it is also a political value judgment. In order to make sure that the right priorities are set, it is crucial that, when the budget is drawn up, there is **keen competition between all requests for expenditure** for the scarce funds. All requests are at the Minister of Finance's disposition when under examination and have to win through in competition with other ideas. According to Ministry of Finance's rules on the preparation of the budget, new initiatives and programmes must, on principle, be financed by restructuring within the respective ministerial budget. In cases when individual ministries have sufficient control over their expenditure, their individual budgets are largely negotiated as upper limits.

The process of drawing up the budget and **medium-term financial planning** involves laying down for each individual title not only the framework for the next financial year, but also a rough draft for the coming three years. All expenditure titles (approx. 5200) and all revenue titles (approx. 1000) are subjected to meticulous scrutiny. This also forces everyone concerned to consider the consequences of every measure. On addition to planable expenditures, therefore, financial planning also includes provisions for risks that could occur in the medium-term planning period. The cycles of financial planning are the same as the procedure for drawing up the budget.

The basis of planning here is the federal government's macroeconomic medium-term projection, which is drawn up in April of each year. The basis for predicting revenue development is provided in May of each year by the estimate of the **"Revenue Forecasting" working group**, a body that also includes independent financial and economic experts.

Parliament focuses intensely on the budget after the government's bill is tabled. Along with the legislature the plan is also released to the public, although expenditure figures are not broken down in full detail.

Between two three-to-four-day **detailed political debates on general principles** in the Bundestag, the **parliamentary committees** examine more specific aspects of the budget (specialised committees, decision-making process in the Budget Committee, rapporteur meetings). Here, too, the detailed estimates result in all individual items being subjected to a further critical examination. By contrast, the financial plan is only passed on to the legislative bodies for information purposes.

The **principles of economic efficiency and thrift** are observed during both the preparation and the execution of the budget (section 7 of the Federal Budget Code).

Budget execution

The execution of the budget is the exclusive responsibility of the ministries: every minister is responsible to Parliament for the proper management of their budget. In the event of an unexpected and unavoidable need, the Ministry of Finance with the participation of the Budget Committee may agree to **over-budget or unbudgeted expenditure**. A **budget freeze** – the extend of which is decided by the Ministry of Finance – can be imposed to restrict the power of disposal of the individual ministries.

Evaluation and control in the budget process

The efficiency of all expenditures is systematically examined during the process of drawing up the budget. The individual ministries are obliged to file documents along with their budget submissions justifying their financial needs. The Ministry of Finance then examines the objective necessity and amount of the expenditure in its "shadow departments", each of which is specialised in the field of activity of one of the ministries. There are no standardised procedures for efficiency monitoring apart from this.

Effectiveness monitoring, i.e. observing the effect of government measures (outcome), begins in the individual ministries. For the most part, the ministries also determine the consequences (cutting or cancelling programmes or redistributing the funds) on their own responsibility. There is no central agency that carries out studies according to standardised procedures. As already mentioned, however, effectiveness criteria are comprehensively and systematically taken into account – and appropriate steps taken when results are poor – in the context of the budget process and medium-term financial planning.

Furthermore, the appropriate processes in each case are used in the individual research sections, e.g.

- **Evaluations** are used predominantly in the field of programme expenditures that can be structured and are at the ministries' disposal (e.g. employment promotion measures, the research field).
- As a rule, **projections** are used in the field of statutory services (e.g. advance calculations on the financial development of statutory pensions insurance).
- **Cost-benefit analyses** are prescribed by law for all suitable measures of major financial importance (section 7 of the Federal Budget Code) and are mainly conducted in the preparation of investment decisions. These analyses are constantly being updated.
- **Subsidy reporting** is an additional instrument for regularly reviewing financial aids and tax privileges. Every two years the Federal Government submits a report to Parliament on the development, types and amounts of subsidies. This report forms the basis for policy on subsidies; its main focus is directed towards subsidy cuts.
- A subsequent efficiency control is carried out by the **Federal Audit Office** in its function of monitoring the Federation's budgetary activities. Among other things the Federal Audit Office publishes annual reports on areas where efficiency improvements are possible. As the "agency responsible for operational efficiency in the administration," it also gives advice before projects and measures are launched.

Enhancements and reforms of the budget process

The essential features of the budgetary system have proved their worth; the system also leaves scope for innovations, however:

The 1997 "Statute on the Further Development of Budgetary Law" introduced **more flexibility** into the management of administrative costs in title management; it enabled the authorities to react quickly to changes in this field and to set financial priorities on their own responsibility. This meant that the first step had been taken towards a form of distribution of existing funds that went further towards meeting needs. Social security expenditure makes up a high proportion of the federal budget (about 50% of total expenditure) compared to the budgets of the Länder and the local authorities. Personnel costs and material administrative costs play a comparatively small role by contrast (together accounting for approx. 14 % of total expenditure).

Cost and results accounting has been introduced in Germany in suitable areas. The primary aim here is to encourage an awareness of costs and performance standards and an efficient use of existing resources.

A pilot project is currently running in Germany in which the purely cameralistic representation of the budget is supplemented by a product-oriented budget. The product-oriented budget is based on cost and results accounting, and focuses on the authority's "output".

The authorities taking part in the **product budget pilot project** include the Press and Information Office of the Federal Government (BPA), the Federal Statistical Office (StBA), the Federal College for Public Administration (FH Bund), the Federal Motor Transport Authority (KBA), the Federal Railway Authority (EBA), and a subsection of the customs administration.

Product budgets in the form of tables were included for the first time as an annex to the respective budget chapters in the 2001 Federal Budget. In 2001 and 2002 the tables had to be limited to information on the structure of the product fields and groups; in the meantime, however, all the pilot authorities can back up their product budgets with figures. In the 2005 Federal Budget, the product-related part was emphasised and placed at the beginning of the budget chapters for three pilot authorities (BPA, KBA, StBA); the cameralistic part was shortened. When the 2006 Federal Budget was drawn up for these authorities, an attempt was made for the first time to conduct the budget negotiations between the respective ministry concerned and the Ministry of Finance on the basis of the product budget. The pilot project will be completed at the end of the year. The aim is to clarify by then whether and to what extent product budgets should serve as a permanent supplement to the present budgetary procedure and where they can best be used.

The financial planning council

For the most part, the national regulations and procedures for drawing up the budget and implementing structural reforms described here for the Federation also exist on the Länder level. The regulations of the Law on Budgetary Procedures and the Federal Budget Code apply either directly in the Länder or are largely taken over by local provisions.

The necessary coordination of budgetary and financial planning between the various levels of government is carried out by the **Financial Planning Council (FPC)**, a coordination body at minister level; alongside the coordinating Ministry of Finance, its members include the finance ministers of the Länder and representatives of the local authority associations. Among other things, the Financial Planning Council issues recommendations on budget discipline and decides on an expenditure line as an orientation for the budgetary planning of the Federation and the Länder. The development of the expenditure structure and matters of financial-policy strategy are also discussed there (e.g. for Länder that find themselves in a budgetary crisis or relating to where the new Länder might invest supplementary federal appropriations to cover special requirements). If actual developments deviate from the agreed recommendations, the Financial Planning Council discusses the reasons and any necessary countermeasures. The Financial Planning Council is thus a federal institution which is fundamentally also able to discuss qualitative aspects of the public budgets in individual cases.

As part of its obligations as a member of the European Currency Union, the Federal Republic of Germany has to meet criteria on the state deficit (no more than 3% of gross domestic product) and the total amount of national debt (no more than 60% of gross domestic product). Since in Germany the Länder and the Federation are independent when drawing up their budgets (Art. 109 of the Basic Law), agreement must be reached on expenditure policy in order to meet the Maastricht criteria. For this reason, in 2002 the Financing Planning Council introduced section 51a into the Law on Budgetary Procedures, laying the foundations for a so-called "national stability pact".

The key components of the arrangement are:

- Federal government and federal states make efforts to reduce net borrowing with the aim of achieving budget balance;
- The FPC's coordination function is given stronger legislative obligation and is made more specific with regard to EU legal requirements.
- The FPC assesses economic and fiscal factors and makes recommendations regarding budgetary discipline.
- In particular, it is in charge of recommending an expenditure rule designed to ensure implementation of European requirements.
- The members discuss compatibility of the budgetary development with the provisions of the SGP. If required, the FPC gives recommendations for the restoration of budgetary discipline.

In particular the FPC agreed on a medium term expenditure line (from 2004 to 2006 no more than 1% expenditure rise in annual average). The agreed expenditure line has clear advantages within the monitoring process of the FPC. Bund and Länder can directly influence the expenditures side of the budget by limiting and restructuring of expenditures and, if necessary, by implementing corrective measures. Over the business cycle automatic stabilizers on the revenue sides can fully operate. However one problem of expenditure rules could be that they are vulnerable to "creative accounting". Although such manipulations cannot be excluded in principal, they should not be of significant relevance in the long term.

In sum, the experiences with expenditure rules in a federalist country like Germany are to a large extent positive. The increase in expenditures could be kept limited; however, the deficit increase to be deplored could not be prevented. Insofar the options of the finance ministers in that specific institutional setting are exploited.

As the expenditure limits are not legally binding, they lay emphasis on peer pressure among equal partners in a cooperative environment (political commitments). The decisions of the FPC on a commonly recognised expenditure line are used as a guide for the budgets of the Federal government and federal states (including local authorities).

In addition, the technical ability of the governments and the Financial Planning Council to monitor and control the evolution of the budgets is of importance. In Germany the high standards of transparency of the Public Budget system support this monitoring process. Therefore the FPC is able to strengthen the process of budgetary discipline at federal and lower level.

Additional rules

Rules for States in fiscal stress

The Law on General Principles (Maßstabengesetz) which is together with the basic constitution the main reference for the fiscal equalization law exposes principal requirements to be fulfilled in order to receive support by the collective of Bund and Länder while a general no-bail-out clause is not in line with the German federalist system.

One of the most important principles is that the state in fiscal stress has to prevent a fiscal crisis to or to make sufficient efforts to get out of the fiscal crisis in order to receive support.

In the past specific expenditure rules were designed for certain cases of States in fiscal stress (Bremen and Saarland) which go beyond the regular expenditure lines. It was agreed that the increase of the consumption expenditures has to be 0.5 percentage points below the regular expenditure line. This particular expenditure line has clear quality features as it distinguishes productive and unproductive categories in a traditional sense (consumption vs. investment).

In addition, rules concerning the usage of the so-called grants for financial reorganisation and reporting obligations were implemented under the surveillance by the FPC. The experience with the German cases of States in fiscal stress reveals that the prime target of fiscal policy should be to reduce the deficit and the debt burden, and only with that room for manoeuvre a growth oriented policy strategy can be pursued.

Rules for the usage of investment grants in the new Länder

Another example relevant for the case of Germany is the system of investment promotion in the new Länder. The aim is to coordinate the individual promotional instruments better to prevent frictional losses and thus support the structurally weak regions of East Germany more precisely than before.

There was a clear need to restructure the spending priorities of the state and local governments in East Germany in favour of projects which reduce bottlenecks to GDP growth, notably in the area of transport. Against that background, in the Solidarity Pact II, the grants given to the new states for investment purposes were changed from extremely conditioned to nearly unconditioned.

The main stipulations are Progress Reports, which are required to support the efficient allocation of resources in a macroeconomic perspective and which will be assessed in the FPC. The experiences in Germany led to the conclusion to prescribe the measures of efficiency of public investment in a more general way than done by outcome-related, legally binding project evaluations as currently proposed by the OECD.

Other institutions - Independent scientific advisory bodies

Furthermore, Germany has a pronounced system of independent, scientific policy counselling with various thematic priorities and profiles. Important examples include the Council of Economic Experts, non-university research institutes, and the Advisory Boards to some ministries.

The Council of Economic Experts was set up by law in 1963 to appraise macroeconomic development in the Federal Republic of Germany and to support decision-making by all levels of government responsible for economic policy – and opinion formation among the public. The Council's task is to analyse the macroeconomic situation and its foreseeable development. It examines how price stability, a high level of employment, equilibrium in the balance of payments, and constant and appropriate economic growth can be simultaneously guaranteed in the context of the free-market system. In accordance with its statutory commission, the Council writes and publishes an annual report (in mid-November), as well as special reports on current issues – either in special problem situations or by order by the federal government.

The tasks of the six mainly publicly financed non-university economic research institutes include observing and analysing economic processes at home and abroad and developing the scientific foundations for financial- and economic-policy decisions. Twice a year (in the spring and autumn) the institutes submit a joint report with predictions and policy recommendations on national and international economic developments; their special value lies in the empirically founded analyses and the fact that they consider different priorities and reflect the different approaches of the research institutes involved.

Furthermore, for more than 50 years the Federal Ministry of Finance has benefited from the services of a Advisory Board made up of economists and legal experts, which advises the Ministry on all question of financial policy. This advice has a more medium-term focus and looks at fundamental issues.

→ **Link to Quality:** The influence on the quality of public finances of the above-mentioned institutions stems above all from the fact that they provide important initiatives for reforms in various fields and draw attention to areas where things are going wrong. For instance, the various advisory bodies made a substantial contribution to the discussion on the general direction and detailed design of the structural reform measures that have been carried out.

3. Results and conclusions

In the light of the federal government's reform agenda described above, the structure of public budgets in Germany is described in the following. On the one hand, the empirical data already indicate successes; on the other, they reveal a need for further action.

The development of the tax ratio and the Government Expenditure as Percent of GDP are positive elements from the point of view of quality. The tax ratio has been reduced to a historically low value; the public-sector share of GDP reached 46.9% in 2004, the lowest level since 1991.

Table 1: Development of the Government Expenditure as Percent of GDP

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000 ²	2001 ³	2002	2003	2004
Central, regional, and local authorities ¹	27.2	28.0	28.3	27.8	27.9	27.9	27.1	27.0	26.9	26.5	26.2	26.2	26.2	25.7
Social insurance ¹	18.0	19.2	19.9	20.0	20.6	21.4	21.2	21.1	21.1	21.1	21.3	21.7	21.9	21.3
Total	46.3	47.2	48.2	47.9	48.1	49.3	48.4	48.0	48.1	47.6	47.5	47.9	48.1	46.9

¹ Direct expenditure (without expenditure on other government levels)

² Without proceeds from the UMTS auction

³ From 2001: provisional results; data collected in April 2005

This is also reflected in the functional composition of the public budgets. For instance, expenditure on general public administration has been cut to a share of 13%. With regard to the economic composition of public budgets, the reductions in subsidies and interest costs should also be emphasised from the qualitative point of view.

Table 2: Public expenditure functional classification (COFOG 1), share of total expenditure³⁴

State as a whole	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
General public administration	14.4	14.0	14.1	13.9	12.2	13.6	13.7	13.9	13.5	8.6 ¹	13.1	13.0	13.0	13.0
Defence	4.0	3.7	3.3	3.0	2.5	2.7	2.6	2.6	2.6	2.7	2.5	2.5	2.4	2.4
Public order and security	3.2	3.3	3.4	3.4	3.0	3.4	3.4	3.4	3.4	3.6	3.4	3.4	3.3	3.3
Economic affairs	11.5	11.0	10.2	9.5	20.3 ²	8.8	8.2	8.3	8.9	9.2	9.0	8.3	8.0	7.7
Environmental protection	2.1	2.3	2.2	2.2	1.7	1.7	1.6	1.5	1.4	1.4	1.2	1.2	1.1	1.1
Housing and municipal facilities	2.1	1.9	1.7	1.8	1.5	1.6	1.8	1.9	2.0	2.3	2.3	2.4	2.4	2.4
Health	12.5	13.1	12.5	12.9	11.4	12.9	12.8	12.8	12.8	13.7	13.1	13.2	13.3	13.0

³ In general it has to be seen that because of the distribution of responsibilities in Germany's federal system of government, a considerable proportion of the expenditure that will become effective in the future is made by the Länder and local authorities. This applies especially to areas such as education and research, family and children's services, health, environmental protection and nature conservation. Altogether, future-effective expenditure makes up about 40% of Länder spending

State as a whole	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Leisure, sport, culture and religion	1.9	1.8	1.8	1.7	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.4	1.4
Education	8.9	9.1	9.3	9.2	8.0	9.0	9.1	9.0	8.9	9.3	8.7	8.6	8.5	8.4
Social security	39.4	39.9	41.5	42.4	37.9	44.7	45.3	45.1	45.0	47.7	45.1	46.1	46.6	47.3

¹ Entry of the proceeds from the auction of the UMTS licences

² Takeover of the Treuhandanstalt's liabilities

Table 3: Public expenditure by economic classification, share of total expenditure

State as a whole	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Gross capital formation + Acquisitions less disposals of land and other tangible non-produced assets	5.6	5.8	5.4	5.1	3.8	4.0	3.7	3.6	3.7	-1.7 ¹	3.5	3.3	2.9	2.8
Compensation of employees	19.0	19.1	18.9	18.4	16.0	17.7	17.6	17.3	17.1	17.9	16.5	16.3	16.1	16.1
Subsidies	4.6	4.0	3.8	4.3	3.8	4.0	3.7	3.8	3.7	3.7	3.3	3.0	2.8	2.7
Investment income	5.8	6.7	6.6	6.6	6.4	7.1	7.0	7.0	6.5	7.0	6.4	6.1	6.1	6.1
Social benefits and social transfers in kind	47.1	48.6	49.6	50.9	45.6	53.6	54.4	54.1	54.1	57.3	54.7	55.7	56.4	56.8
Other current transfers	3.9	2.9	3.2	3.0	2.2	2.6	2.8	3.0	3.4	3.8	3.5	3.5	3.7	3.7
Capital transfers	4.2	3.4	3.3	2.8	14.6 ²	2.6	2.5	2.9	2.8	3.2	3.6	3.4	3.4	3.2
Intermediate consumption + Other	9.7	9.5	9.2	8.9	7.6	8.4	8.3	8.4	8.6	8.9	8.5	8.7	8.5	8.6
Percentage of consumption expenditure	41.2	41.5	40.7	40.7	35.7	40.2	40.1	39.9	40.1	42.1	39.9	40.0	39.8	39.8

¹ Entry of the proceeds from the auction of the UMTS licences

² Takeover of the Treuhandanstalt's liabilities

At the same time, the consequences of the economic stagnation of the past few years can also be clearly seen, leading to a rising level of debt and a simultaneous increase in social-security spending. Since 1991, the percentage of expenditure allocated to social security has risen from 47.1% to 56.8%. This development is all the more serious because it has been accompanied by a decline in investment. The percentage of expenditure on "Gross capital formation + Acquisitions less disposals of land and other tangible non-produced assets" has fallen from 5.6% to 2.8%.

There are many reasons for the described development. The exposure of the German case reveals that the financial- and economic-policy strategy based on three pillars **structural reforms, tax cuts and consolidation** clearly aims at strengthening long-term growth. The main elements Agenda 2010, the 2000 Tax Reform and quantitative and qualitative consolidation measures influence the quality of public finances by changing the functional structure of public budgets, directly and indirectly.

The reform measures are partly of a structural nature, so that their effect will be medium-term. From these structural reforms short-term improvements on the expenditure side are therefore not to be expected. In addition, the effects of economic stagnation have to be taken into account. These automatically lead to higher expenditure and lower revenues in the social-security systems. Revenue development has not kept pace with the contribution to consolidation on the expenditure side, resulting in rising debt.

Furthermore, a considerable share of public expenditure is laid down by law and can therefore not be reduced at short notice, so that in some cases consolidation measures to limit public indebtedness had to be taken in flexible expenditure areas such as investments. Both effects have a negative impact on the quality of public finances and simultaneously increase the amount of effort that will be required in the future to improve the quality of public budgets.

Fundamentally the budgetary scope for short-term, explicit restructuring measures in public budgets has narrowed over the past years, since major steps have already been undertaken to reduce expenditure through consistent cuts in subsidies, reductions in personnel costs and privatisations. On the one hand,

this has reduced the public-sector share of GDP the lowest since 1991; on the other, such action restricts the scope for further expenditure reductions. For these reasons it does not seem possible to implement further short-term restructuring measures at present. Any remaining scope for cutting expenditure (including tax expenditure) must be used to reduce the government debt. In addition the focus must be on long term structural reform programmes that achieve a steady and sustainable decline in expenditures commitments.

On the institutional side there is a well developed system of rules and budgetary institutions place which substantially limits expenditure growth and public deficits and are in principal able to focus the process of budgetary decision-making on quality aspects of public finances. On that ground, a close exchange with other EU Member States on best practises of institutions which could be adapted to the German system seems fruitful. The exchange can promote more effective budgetary rules which focus on the quality aspect of public finances an help sharpening the relevant institutions like the Financial Planning Council in order to reach maximum efficiency and effectiveness in the budgetary process.

REDIRECTING PUBLIC EXPENDITURE IN ITALY

PUBLIC SPENDING EFFICIENCY AND BUDGET REFORM

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1. Objectives and key challenges

For almost two decades now Italy has been suffering from low economic growth compared to other major advanced countries, resulting in stagnant population, productivity which does not increase and loss of competitiveness. Low economic growth is compounded by the need to reduce the public deficit and general government debt. Under the described scenario, important measures have been introduced by 2007 Budget Law in order to:

- (i) define a credible path to get rid of budget deficit (close to balance) by 2011;
- (ii) reduce public debt as a percentage of GDP close to (below) 100%;
- (iii) improve the quality and efficiency of public expenditure.

As far as net borrowing is concerned, according to the 2008 Forecast and Planning report¹, it amounts to 2.4 of GDP and it is forecasted to go from 2.2 per cent of GDP in 2008 to 1.5 per cent of GDP in 2009, and 0.7 per cent in 2010, prior to reaching a balanced budget in 2011 (see table 1).

¹ The complete report is available on the internet site:
http://www.tesoro.it/web/DFP/index_int_RPP.asp?rrp=2008&docId=18234

Table 1 – Public Finance, policy scenario and scenario based on unchanged legislation (as % of GDP)

	2003	2004	2005	2006	2007	2008	2009	2010	2011
Net borrowing at unchanged legislation:									
DPEF (June 2007)	-3.5	-3.5	-4.2	-4.4	-2.5	-2.2	-1.9	-1.4	-1.3
Update (September 2007)	-3.5	-3.5	-4.2	-4.4	-1.9	-1.8	-1.6	-1.2	-1.0
2007 Decree Law and 2008 Budget:									
Net borrowing after additional budget package									
	-3.5	-3.5	-4.2	-4.4	-2.4	-2.2	-1.9	-1.5	-1.2
Tax burden*	41.4	40.6	40.6	42.3	43.0	43.0	42.8	42.6	42.5
Current primary expenditure*	39.1	39.3	40.0	39.9	39.8	40.0	39.3	38.8	38.6
Primary surplus	1.6	1.3	0.3	0.1	2.5	2.6	3.0	3.4	3.6
Net borrowing, policy scenario:									
DPEF (June 2007)					-2.5	-2.2	-1.5	-0.7	0.1
Update (September 2007)					-2.4	-2.2	-1.5	-0.7	0.0
Package as to be adopted as of 2009							-0.4	-0.4	-0.4
Public debt	104.3	103.8	106.2	106.8	105.0	103.5	101.5	98.5	95.1
Preliminary estimates									

Source: Forecast and Planning Report for 2008, Ministry of Economy and Finance, September 2007

The current level of the debt-to-GDP ratio is also an important item in terms of risk to public finance sustainability, since a principal challenge facing Italian public finances is to reduce the public debt ratio.

According to the last Italy's Stability programme², in 2006 the debt-to-GDP ratio increased by 0.6 per cent compared to 2005, from 106.2 to 106.8 per cent. This increase was 0.4 per cent below the forecast made in the 2006 Update to Stability Programme. In future years the reduction rate of the ratio is expected to be in line with last year's forecasts. In 2008 the decline is approximately 1.5 per cent of GDP compared to 2007 (as in the last Update) while in 2009 the decrease reaches 2 per cent compared to 2008 (0.1 per cent more than in the last Update). In the final years of the forecast the rate of change is more marked compared to last year's Update. Even though both reports expect a balanced budget to be achieved by 2011, in this year's Update the cash requirements are projected to decrease more rapidly. The debt-to-GDP ratio decreases below 100 per cent as early as 2010 (a year earlier compared to the 2006 Update) reaching 95.1 per cent in 2011 (see table 2).

Table 2 – Debt-to-GDP ratio

	2005	2006	2007	2008	2009	2010	2011
Government debt							
Debt	106.2	106.8	105.0	103.5	101.5	98.5	95.1
% change in debt	2.4	0.6	-1.8	-1.5	-2.0	-3.0	-3.4
<i>Contributions to change in Government debt (as % of GDP)</i>							
Primary balance (accrual basis)	-0.3	-0.1	-2.5	-2.6	-3.4	-4.2	-4.9
Snow-ball effect	2.1	0.8	0.1	0.9	1.5	1.5	1.6
of which: Interest expenditure (accrual basis)	4.5	4.6	4.8	4.9	4.9	4.9	4.8
Stock - flow adjustment	0.6	-0.1	0.6	0.2	-0.1	-0.3	-0.1
of which: <i>Difference between cash and accrual basis</i>	-0.3	-1.5	-0.3	0.0			
<i>Net accumulaztion of financial assets</i>	1.0	0.8	0.5	0.4			
of which: <i>Privatisation proceeds</i>	-0.3						
<i>Evaluation effects of Government debt</i>	-0.1	0.2	0.3	0.1			
<i>Other</i>	-0.1						
p. m. Tasso di interesse implicito sul Debito	4.4	4.5	4.7	4.8	4.9	5.0	5.1

1) Decimals may not add due to rounding to the first decimal place.

2) The 2005 and 2006 data include changes in cash holdings on the Treasury deposit account held at the Bank of Italy. In particular 2006 data includes the increase in cash holdings needed to cover the pre-funding of the VAT reimbursements related to the ECJ 2006 sentence

Source: Italy's Stability Programme, Ministry of Economy and Finance, November 2007

² The complete report is available on the internet site: <http://www.tesoro.it/web/DFP/index.asp?doc=705>

One of the main causes of slow growth is the low productivity of the public sector, which makes up about 50 per cent of Italy's economy.

Improving the productivity of the public sector is believed to be one of the key drivers of economic growth and sustainable public finances as it would free up resources for new spending priorities.

- (i) Key institutional drivers that may contribute to improve public sector efficiency could be found, mainly, in:
- (ii) budgetary reform (focused on performance);
- (iii) streamlining roles and responsibilities of the public administration (e.g. redistribution of responsibilities, definition of new regulatory roles, reduction of bureaucracy),
- (iv) functional and political decentralisation to sub-national governments;
- (v) certain human resource management practices (e.g. performance evaluation and merit systems, human resource planning and internal labour mobility, training, pay increase and incentives, public servants' mobility between public and private, recruitment effectiveness such as capacity to attract and keep top talent);
- (vi) using of the new technologies (e-government, e-procurement).

Improving the productivity of the public sector entails increasing its effectiveness, efficiency, quality and the benefits of services which citizens require in exchange for paying taxes.

“*Productivity of public spending*”³ is seen as the synthesis and solution to the main priorities of Italy's economy: the productivity and the sustainability of public finances.

It is therefore one of the main challenges which the government has to face and one of the critical success factors if growth is to pick up again.

The Italian government has identified the spending review as the modern tool for public finance planning to improve the quality and efficiency of public services while ensuring a cost-effective use of resources.

2. Outline of 2007 Budget Law

The strategic priority of the 2007 budget package is to reconcile the structural adjustment of public finances with measures aimed at supporting economic growth and greater social justice.

The goal is to bring developments in public finance, especially current expenditure, back onto a track leading to a balanced budget and sustainable public finance in the medium/long term through the reduction and rationalisation of public spending.

In 2007 Financial Law, the effort to review public expenditure programs is based essentially on four actions:

- (i) the spending review;
- (ii) reforming the budget transparency and accountability through the budget reclassification;
- (iii) the reexamination of parliamentary procedures;
- (iv) performance based budgeting (definition of performance indicators).

³ See: Padoa Schioppa, T, speech “*Presentation of the OECD 2007 Economic Review Italy*”, Rome 4th June 2007, available on the internet site http://www.tesoro.it/web/area_Ministro/disind.asp?mCod=30&docType=2

2.1. The spending review

The spending review aims at improving the effectiveness and cost-efficiency of public spending programmes (introducing a spending revision by functions, defining priorities for public spending, evaluating outcomes and outputs).

It can create fiscal leeway for meeting new spending priorities, while further reducing the general government deficit and debt.

In addition, it can increase the transparency of the allocation of budgetary resources and the value that the public gets from their taxes in terms of public goods, services and transfers.

The spending review will enable the Government to take action on the mechanisms of funding reallocation, so as to save money to be reinvested in priority areas.

The Government's draft budget for 2008 will already show the first results that will enable such funding reallocation.

The spending review entails a shift away from a system in which the budget is drawn up incrementally based on marginal changes to historical spending towards a Zero Base Budget criterion in which needs and priorities are periodically reviewed.

Spending programmes are reviewed on a regular and systematic basis with a view to assessing their ability to respond to their original objectives as well as new priorities.

An analysis and evaluation of central government spending is carried out by identifying critical issues, options for resource reallocation, possible strategies to improve the results that can be obtained with the allocated resources on the basis of quality and cost-effectiveness criteria.

Depending on the critical areas that may be revealed by the spending review reallocation proposals (possibly through the identification of new priorities) and programmes are put forward that may increase the efficiency of spending.

Therefore the purpose of the review is not just to define standard criteria for budget chapters, but to prepare a series of initiatives that can adequately reduce spending, thereby allowing a new reallocation or redefinition of priorities, deciding the allocation of new resources and ensuring the ongoing fiscal consolidation with a view to delivering standard fiscal discipline, efficient allocation and operation while ensuring that spending is promptly curbed.

This issue is also linked to fiscal federalism domain, as the problems of the efficiency of public spending directly affect the latter in its entirety and not just central government spending.

As far as fiscal federalism issue is concerned, the government believes the regional, provincial and municipal authorities play a key role in spending and is therefore committed to fully implementing Title V of the Constitution in order to achieve true fiscal federalism by undertaking - together with the regional and local authorities - a sweeping review of the funding system of regional and local authorities, whereby the spending requirements of the authorities are no longer determined on the basis of historical spending but on the standard costs of the services provided.

State transfers will basically depend on spending requirements and the costs sustained by the most efficient authorities.

The action aimed at reducing and rationalising spending focuses first and foremost on four major parts of spending:

- a) general government, through a rationalisation aiming at increasing its efficiency and effectiveness;
- b) decentralised agencies, through a new formulation of the Internal Stability Pact;

- c) health, through a new agreement on health;
- d) welfare, through a new organisation of the welfare system.

The spending review and the green book of public expenditure: improving quality and efficiency of public expenditure

In April 2007 the Prime Minister indicated the first five ministries that will carry out a spending review (Justice, Home Affairs, Infrastructure, Transport and Education), which account for about a third of the State's current expenditure (net of other interest costs and other financial accounts).

The Green Paper on public spending was submitted in September and provides clear indications on how to improve the effectiveness and efficiency of some sectors of public spending⁴.

Measuring the effectiveness and efficiency of public spending is not an easy task; it requires paying great attention to homogeneous spending sectors and aggregates on the basis of a rigorous analysis: this is the approach that has been followed in drawing up the Green Paper.

The approach to the spending review followed in drawing up the Green Paper, which is based on microeconomic analysis, also envisages an analysis of individual programmes within the various spending areas.

In addition to the spending review programme, a Technical Public Finance Commission has been set up with the task of coordinating the activities of Ministry experts and consultants.

The first data⁵ gathered through this activity shows that it is necessary to proceed with four major types of action:

- (i) rationalisation of the regional and local government organisation;
- (ii) review of administrative procedures and staff organisation;
- (iii) review of the public transfers policy;
- (iv) review of the structure of budgets and relations with the Ministry of Finance.

Problems have been identified in the distribution of resources at regional and local level, especially in the cases of the Ministry of Home Affairs and the Ministry of Justice.

The spending review has also pointed out the need for some ministries to overhaul their administrative and organisational procedures, especially with regard to work organisation and manning strength.

With regard to the public transfers policy – especially as far as infrastructure is concerned – inefficient practices have been identified, such as transfers to firms for temporary purposes that have gradually become permanent and which need to be reviewed on a cost-benefit- analysis basis.

The spending review is actually showing that a critical issue is the actual transparency, simplicity and usefulness of the current ways in which budgets are drawn up and relations of local government entities with the Ministry of Finance are maintained (off-budget debts of general government, sizeable and constant discrepancy between initial and final appropriations leading to a delayed allocation of funds, failure to reallocate typical revenues, revenues for which individual ministries are responsible that are not booked by the Ministry of the Economy and often only partly and belatedly transferred to the relevant ministries).

An important contribution to the rationalisation of spending has also been made by the Prime Minister's Directive laying down the guidelines for the drawing up of the 2008 Budget envisaging that local

⁴ The complete report is available on the internet site: <http://www.tesoro.it/web/apri.asp?idDoc=18185>

⁵ See Mid - Term Review on Public Expenditure available on the internet site: <http://www.tesoro.it/web/apri.asp?idDoc=18406>

government bodies should submit any requests for more funding by drawing up a list of priorities and putting forward saving proposals to offset the impact of higher funding requests.

The new accounting system SIOPE: a grip on the cash flows

In recent years the implementation of fiscal and administrative devolution and the subsequent focus shift in public finance on local authorities has highlighted the need to directly access timely and reliable information on financial flows and stocks also with a view to better meeting the EU requirements on compliance with the rules of the Stability and Growth Pact.

SIOPE (Sistema informativo sulle operazioni degli enti pubblici – information system on operations of public entities) is an effective tool for this objective; it was introduced by the 2003 Budget (Law No. 289/2002) and is an effective tool for monitoring public accounts.

SIOPE's main contributions are:

- (i) it improves accounting information in terms of quality and surveying time compared to the present quarterly data of cash flows;
- (ii) it eliminates the differences existing between the accounting systems currently used by individual entities through the use of a standard code for the same type of entity.

SIOPE allows real-time surveying of the borrowing requirements of general government thus providing a more accurate drawing up of the quarterly statistics of national accounting.

SIOPE'S implementation included a number of stages: at the beginning in 2003 it was applied to state budget payments, in 2005 it involved 49 entities including regional and local authorities as well as universities, in 2006 it involved the regional, provincial and municipal authorities with more than 20,000 inhabitants as well as universities, in 2007 it was extended to include municipalities with less than 20,000 inhabitants, mountain municipalities, unions of municipalities and consortia of local authorities and research institutions; as of January 1st, 2008 SIOPE will also survey health authorities.

SIOPE is an “interactive” system, i.e. all the information gathered can be accessed also by the entities being surveyed, allowing the latter to devise budget policies and monitor the use of resources more easily.

The system feeds information into an archive at the end of each working day: data flows into the archive arranged in aggregates on the basis of codes identifying the revenues and expenditure of the state and the other public entities.

The archive is the core of an information system in which all logged-in users interact with SIOPE through a two-way system: data flows from users to the archive (archive feeding) and from the archive to its users (use of data for public-finance purposes and to measure the efficiency and effectiveness of entities).

Bank of Italy has been entrusted with the task of developing and managing the SIOPE information system through a special agreement it entered into with the Ministry of the Economy and Finance that decides on how the system can be accessed.

SIOPE may give a relevant contribution to the quality of fiscal surveillance, since it can give also early signals on the course of fiscal policy, thus giving a significant contribution to fiscal analysis and allowing policy makers to better calibrate their measures in case of any deviation from plans.

Fiscal federalism

The 2001 constitutional law reform has shaped the legislative framework for federalism system.

The constitutional reform defines the exclusive central government competencies and the concurrent areas of spending and legislative power to be shared both at the central and regional levels (see table 3).

**Table 3 - Sub-National Government Competencies
According to the 2001 constitutional reform**

Responsibilities of municipalities	Responsibilities of provinces	Regions
Town planning	Road network maintenance	Health
Social housing	Transport	Health centres and hospitals
Aid to disabled	Secondary schools (construction of building)	Vocational training
Local public transport	Environment including protection and improvement of the energy resources	Culture
Road network maintenance	Cultural heritage	Town planning
Local police	Household waste and sewage	Road networks, civil engineering and regional railway transport
Pre-elementary, primary and vocational schools (building construction and maintenance and teachers' pay)	Some health services	Agriculture
Culture	Vocational teaching	Country planning and economic development
Sport	Economic development	Environment
Sewage and waste disposal	Management of employment services and subsidies	Social services
Upkeep of pharmacies in rural areas		Education

Source: OECD and ISAE

Power sharing in the areas of concurrent responsibility was not clear and became a matter of disagreement.

The financing system is based virtually on complete revenue autonomy for the decentralised spending bodies with only a marginal role of the central government transfers to finance extraordinary expenditure, but also the separation of powers regarding the precise revenue sources was not clear.

That was the reason why the current government presented two draft laws clarifying spending tasks (code of local autonomy) and liberalising the supply of local services (local service reform) and a draft law on fiscal federalism.⁶

The Government's bill for the enabling act for fiscal federalism has the objective of ensuring that Title V of the Constitution will be fully implemented⁷.

The government's bill is based on the essential principle for efficient and equitable fiscal federalism: the principle of correlation or the principle of benefit, so as to establish close links at a financial level - and therefore, at a political level - between autonomy and responsibility and between decisions about spending and those about financing. The increased accountability resulting from moving in this direction should have a significant positive impact on the consolidation of the public accounts.

Decentralised finance that is orderly and responsible can make the effort to consolidate Italy's accounts more efficiently and less costly, while it can also promote greater social fairness since the decision-making spans various levels of government.

Complying with the European requirements on public budgets also means that the public finance constraints imposed on the central government are to be fulfilled by - and partially transferred to - decentralised government entities, according to the internal Stability Pact. The process of establishing

⁶ Documents are available on the internet site : <http://www.affariregionali.it/>

⁷ See Forecast and Planning report for 2008 available on the internet site: <http://www.tesoro.it/web/apri.asp?idDoc=18304>

accountability must naturally occur without any challenge to the state's legal and financial unity. On the contrary, the unity of the state should end up being strengthened if the process of dividing up the fiscal responsibility occurs in accordance with a responsible and efficient plan.

Building up the decentralised government entities, in addition to increasing their responsibilities at a fiscal and financial level and thus making the entities more accountable to citizens and to the local electorate, will be able to contribute significantly to improving the allocation of public resources and to promoting the economic development and the income of the more deprived regions.

The Government's action plan included in the bill for the enabling act is aimed at planning and achieving federalism that is not only responsible, but also has shared concerns, and hence, “the measures regarding matters that are part of the constitutional protection of “essential levels” (Article 117, Paragraph 2, Letter m) must conform to the criterion of the full coverage of needs”, while for “the autonomous regional entities, which in other words are not representative of the absolute needs of social fairness and of citizenship, it is possible to prefigure financing systems in which the equalising role of the state is less pervasive.”

The equalisation mechanism has particular significance since it is based on methods of standardising revenues and expenditures that are suitable for getting beyond the historical expenditure criterion at all institutional levels. The objective is to establish standard parameters for expenditures based on the spending purpose, considering needs and the costs of meeting them in a balanced and level comparison of the different areas needs of the country.

Completing the plan for an orderly system of financial relationships between the various levels of government means that three principles guaranteed by the Constitution (as reformed in 2001) must be reconciled:

- a) the financial autonomy of regions and local entities, which entails territorial differences in the rendering of services;
- b) the equalisation necessary for uniformity in the essential levels of services, which requires important equalising transfers;
- c) the sustainability of the overall condition of the public accounts, which means that coordination is needed between the disbursing entities and that, as part of such coordination, the central government must have a leading role in defining the budget.

The system for financing decentralised entities establishes that regional and local taxes and joint participation in state taxes will be the main source of financing the functions for which the decentralised entities are responsible. Regional and local taxes are to be earmarked for the task of guaranteeing the manageability of budgets, the adaptation of the levels of public intervention to the local situations, and the responsibility of the local administrations. In turn, the joint participation in the tax system will guarantee the stability - including in a dynamic sense - of the volume of financial resources.

The financing system has been designed so as to respond to the needs for stability and autonomy. At the same time, the exercise of civil and social rights across the entire nation is to be guaranteed by a system of equalising transfers which are capable of ensuring the full financing of (i) essential levels of services which concern such rights and (ii) the fundamental functions of local entities (as defined in Article 117 of the Constitution).

With regard to the responsibility for expenditures not referring to essential services or fundamental functions, the equalisation is to be transparent and based on fiscal capacity.

For such expenditures, the possibility of differentiation in the levels of public intervention from area to area is acknowledged.

The design of the equalising system thus includes two components that reconcile the needs for uniformity and autonomy.

With reference to the coordination of the tax system, a decision was made to put the taxes of the various government levels on “equal footing”, with the exclusion of measures, without simultaneous offsetting, about taxable income bases and about tax rates referable to other government levels. In exercising their fiscal autonomy, the regions may institute regional and local taxes with respect to transactions not subject to taxation by the state, and they may determine the framework within which the fiscal autonomy of the local entities may be exercised and the transactions subject to local taxation.

Fiscal autonomy is also guaranteed by the possibility of the application of state law, in the absence of a regional law.

With regard to the framework for financing the provinces and municipalities, and in particular, the coordination role played by the state and regions (which, according to the Constitution, have a concurrent legislative responsibility on the subject), the bill for the enabling act envisions a framework for municipal finance, that is differentiated according to the range of services carried out by the municipalities (and therefore, the demographic reach). On the one hand, this framework affirms the municipal tradition value of the Italian system, and on the other hand, it assigns a fundamental role to the regions in designing the specific means for the coordination of the financing of smaller municipalities (in respect, with regard to the equalisation, of the general criteria set by state regulations).

Finally, with regard to the concrete objectives for the equalisation formats, the spending needs must be precisely defined. With the final framework, spending needs will no longer simply have to coincide with historical expenditures (as occurs today). The bill for the enabling act defines the institutional framework of the financial relationships between various government levels, and sets the general criteria for embarking on a gradual plan that can restore rationality to the distribution of resources, making the distribution consistent with objective measures of needs and with the standard cost of the services provided.

Federalism has positive potential from the standpoint of democratic participation, citizens control and competition between local communities and governments. In order to ensure that that positive potential is actually be realised, the playing field must be level for everyone. With the full implementation of Article 119 of the Constitution, the country is moving beyond a period marked by fragmentary measures, often dictated by urgent needs to ensure the financial balance of the public accounts as a whole, and is defining a framework of stability and certainty that is needed in order to allow individual local and regional entities to plan their activity in a meaningful manner. The revenue and spending measures with repercussions on regional and local finance are today part of the Budget. In the future, such measures will be part of a specific legislative bill presented in June, after having been evaluated and discussed jointly with the regions, provinces and municipalities. Such bill will then legally become part of the state budget package to be passed into law by the end of October. Two important results will be achieved as a consequence: on the one hand, the new system will streamline the legislative session for approving the state budget, and on the other hand, it will guarantee the local and regional entities a sufficient timeframe for being able to formulate their autonomous budget policies.

Fiscal federalism reform needs to be implemented mainly by strengthening budget constraints for local spending bodies, making the Internal Stability Pact stronger and reviewing the functioning of sanctions and their credibility, in particular for health sector.

Internal Stability Pact

In the current scenario, there are two fiscal rules, particularly significant, aiming at making local budget policy aligned to the general objectives set out in the DPEF and the Finance Law.

According to the first rule (known as the “*golden rule*”, which is permanent) the local governments can borrow only to finance their investment expenditures, preventing the local administrations from the use of debt for financing operating activities

The second rule (known as the '*Internal Stability Pact*') consists of a series of criteria for defining specific financial targets that the local entities must meet, together with a system for sanctioning any defaulting entities. The pact is to be reviewed annually at the time of the preparation of the Finance Law.

The 2007 Finance Law identified the budget balance as the key parameter to respect, but it is considered as an experiment for the regions, due to the presence of specific financial provisions regarding the health sector.

As stated in the last Italy's Stability Programme, the 2008 Finance Law has taken the process one step further by formulating the fiscal rules that have the broadest application and are the most indicative of the fiscal autonomy granted to local entities. For the first time, the revision of the Internal Stability Pact was preceded by a specific agreement between the government and local entities.

For the regions, the objective remains the same for 2008, i.e. limiting the trend of spending, net of spending on healthcare. An experimental project got under way in October 2007 with regard to the application of the new rule referring to the budget balance. There are 11 regions participating in the project, with the aim of integrating the rules indicated in the Healthcare Pact into the Internal Stability Pact.

For the municipalities and provinces, the 2008 parameter of reference will be the budget balance. The average financial balance for the 2003-2005 three-year period remains the policy objective; this framework is designed to give the entities stability and the possibility of planning over the medium term.

Several changes to the accounting criteria have been introduced for the purpose of computing the target balance to be used for determining compliance with the Pact. More specifically, a mixed cash/accrual criterion is to be used whereby the entries to the current accounts will be based on accrued amounts while entries to the capital accounts will be based on cash flows.

The new criterion will facilitate the use of expenditure arrears for financing capital spending and will bring the reference balance closer to that to be calculated *ex post* for the purpose of the excessive deficit procedure⁸.

2.2. Reforming budget transparency and accountability: the budget reclassification

The wide range of initiatives aimed at financial consolidation, economic growth and greater social justice initiated through the 2007 budget envisages a new structure for the State budget.

The State budget has three main tasks:

- (i) to inform (on how public funds are used);
- (ii) to allocate resources (as a political decision-making tool);
- (iii) to execute (it is a tool for managing appropriated resources).

Specifically, the budget reform enhances the functional content of spending, emphasizing the fact-finding function of the budget through a more direct identification of goals and targets to be met.

Greater transparency and possibility for citizens to check on government action are the main features of the new budget structure where there is a clear link between the resources that are allotted and the action that is taken, which can therefore be controlled more easily.

The reform initiatives have led to the restructuring of the budget, which is now drawn up based on the identification of 'Missions' and 'Programmes' (see box).

The Budget is divided into missions and programmes: this significantly improves the readability of public accounts and increases the budget flexibility as government agencies have greater discretion in relation to the use of resources within spending programmes.

⁸ The Decree Law No. 159/2007, linked to the 2008 Budget Law, contains provisions for annual contributions to give local entities incentives for using surpluses for the prepayment of mortgages and bonds.

Financial resources are classified according to two new aggregates: *missions* and *programmes* which can be linked to the COFOG classification also to allow international comparisons.

More specifically, the 34 missions that are sometimes shared between more Ministries represent macro-areas where the Government takes action.

A series of programmes (168 altogether) have been identified in each mission which specify the remit of the action taken by the various Ministries in greater detail. As the programmes have been defined on the basis of the goals they intend to pursue, they will be a clear reference point in identifying the use of resources, thus allowing more effective control over it.

The budget reclassification of spending programmes also provides a key starting point for developing the spending review process.

Table 4

	STATE BUDGET BY MISSIONS	2008 €million	% of total	Change vs. 2007
1	Financial relationships with local government	100,023	22.1	1,608
2	Public debt ¹	78,226	17.3	3,203
3	Pensions	66,903	14.8	1,574
4	Education	41,609	9.2	228
5	Italy in Europe and the world	24,048	5.3	-580
6	Welfare rights, welfare solidarity and family	24,046	5.3	-132
7	National defence and security	19,172	4.2	-1,557
8	Funds to be allocated	17,286	3.8	-3,074
9	Law, order and public security	9,422	2.1	-129
10	Economic, financial and budgetary policies ²	8,875	2.0	159
11	University education	8,168	1.8	-216
12	Right to mobility	7,960	1.8	-1,222
13	Justice	7,275	1.6	-354
14	Competitiveness and business development	5,574	1.2	1,769
15	Development and reduction of regional disparities	4,545	1.0	124
16	Research and innovation	3,968	0.9	86
17	Infrastructures and logistics	3,778	0.8	-24
18	Civil aid	3,710	0.8	184
19	Constitutional bodies, other bodies with constitutional relevance, and Presidency of the Council of Ministers	3,233	0.7	88
20	General and institutional services of public administration	2,920	0.6	-164
21	Employment policies	2,701	0.6	-432
22	Immigration	1,427	0.3	71
23	Protection of cultural heritage and natural landscape	1,380	0.3	-91
24	Agriculture, food and farming policies and fishery	1,255	0.3	-19
25	Housing and urban organisation	1,060	0.2	-8
26	Youths and sport	902	0.2	-72
27	Communications	896	0.2	-516
28	Healthcare	702	0.2	-18
29	General administration and backing to the general representation of Government and State over the country	353	0.1	13
30	International trade and policies to assist Italian businesses with international expansion	234	0.1	-1
31	Tourism	113	0.0	-6
32	Sustainable development and environmental protection	1,017	0.2	0
33	Energy and diversification of energy sources	59	0.0	-43
34	Market regulation	16	0.0	-18
	Total	452,856		431

1) Net of State debt's repayments

2) Net of account regulation tax repayments and reimbursements.

Source: Italy's Stability Programme, Ministry of Economy and Finance, November 2007

The reform of the classification system for the State budget (which goes into effect with the budgeting session for 2008) is aimed at achieving greater transparency of the public accounts and more flexible, results-oriented public-budget management that will make it possible to adopt appropriate spending policies and procedures for the sustainability of Italy's public finances.

2.3. The re-examination of parliamentary procedures

An important element of the reform is re-examination of budget procedures.

The parliamentary budget commissions are working on a proposal to improve budget approval process⁹ aiming at better defining the Economic and Financial Planning Document (DPEF) with general indications about possible measures to support strategic priorities, limiting the content of the Finance Law and reducing the amendments.

This effort to make the budget procedures more effective and better consistent with government priorities needs a change of the parliamentary procedures, to be approved by the majority of Parliament.

2.4. Performance based budgeting

Performance based budgeting is a kind of budget in which funds are allocated to measurable results evaluated in the form of outputs and outcomes.

The new structure of the budget facilitates results oriented management of resources, aiming at shifting the emphasis of budgeting, management and accountability away from a system focused on inputs and formal compliance with laws towards results measured in the forms of outputs and outcomes.

Performance based budgeting is not an end in itself but it is a tool in order to boost performance, accountability and overall outcomes of the public administration, since the budget is the most important vehicle to respond to economic and social needs and priorities.

Measuring the efficiency of public administration is not an easy task due to the complexities in measuring efficiency in the public sector and to the problem of isolating the effects of specific institutional reforms on efficiency from other external influences.

Having regard to these complexities and in order to respond to the public expectations of high quality services, the budget must be transparent, accessible and responsive to news demands and changing needs.

3. Open issues and possible further reform steps

The reforms taken by the Italian government are an important step in order to boost the efficiency and effectiveness in delivering public services.

Some issues have yet to be solved and show that there is scope for improvement.

More specifically, it is necessary to improve the transparency of the budget, the full financial accountability of public spending decision-making centres and greater administrative streamlining is also needed and could be achieved by reducing the number of accounting documents.

It is also necessary to continue the spending review programme that has been initiated and work towards mainstreaming better spending into central government practices as well as undertake a strong

⁹ See Parliament Report “*Debate on the reform of budget approval process*”, available at <http://legxv.camera.it/banchedatiKM/Documenti/Leg15/Dossier/Testi/BI0179.htm> and <http://www.senato.it/service/PDF/PDFServer?tipo=BGT&id=264008>

commitment to review of the way in which local authorities are funded so as to start and implement an effective fiscal federalism.

The full implementation of the above mentioned measures could make the reforms successful, but it requires, above all, a culture of action and accountability for results, rather than for legal compliance.

MALTA: REDIRECTING PUBLIC EXPENDITURE

Ministry of Finance Malta

Paper completed: December 2005 (updated 2007)

1. Introduction

Over the past few years, Government's main macroeconomic policy programme has focused on consolidating public finances, achieving a stable macroeconomic framework and on implementing structural reforms aimed at improving the competitiveness of the Maltese economy. In order to attain a stable and sound macroeconomic framework, Government has implemented policies aimed at securing a sustainable fiscal position and remains committed to pursue further fiscal consolidation, notably by adopting expenditure restraint measures. This should enable Malta to reach its medium-term objective (MTO) of a balanced structural budget. As set out in the fiscal targets presented in Malta's Stability Programme, the MTO will be achieved in 2010. The increasing primary surpluses, together with GDP growth, will enable the debt-to-GDP ratio to maintain a declining path, such that the debt ratio will fall to 60 per cent of GDP in 2008 and continue to decrease further thereafter.

Fiscal consolidation is necessary to ensure the sustainability of the Government's financial position and to re-establish the role of fiscal policy as an instrument for stabilisation purposes. The long-term economic benefits of sound public finances are also important. The elimination of the budget deficit is essential to regain fiscal flexibility that would spur long-term economic growth. In fact, fiscal consolidation promotes productive investment not only by releasing financial and other resources for use by the private sector, but perhaps even more importantly by removing uncertainty regarding the future tax burden.

Government's fiscal policy has been directed not only towards the maintenance of fiscal prudence, but also to enhance the growth potential of the Maltese economy. Indeed, over the past years, fiscal programmes have provided for the necessary investment in the development of infrastructure, education as well as the environment, aided by the effective and efficient absorption of EU funds. Furthermore, Government has announced a number of measures aimed at improving the incentive to work, in order to encourage an increase in the labour force participation rate, particularly in the Budget for 2007 and 2008.

Enhancing competitiveness is a key challenge in order to achieve sustainable economic growth. In this context, promoting the development of high value added growth sectors constitutes a high priority in Government's economic policy agenda. Furthermore, Government will continue to implement productivity enhancing structural reforms. The National Reform Programme provides a comprehensive agenda of the main structural reforms underway, with the main relevant measures targeting the areas of the business environment, the attraction of foreign direct investment, product and labour market reforms and the promotion of research and innovation. These reforms will also instil further flexibility in the economy, thus facilitating national adjustment capacity within the Monetary Union.

The overall goal of Government's economic and fiscal policy is to achieve a growing economy which is capable of sustaining improvements in the standard of living of the Maltese population. This should

encompass not only economic well-being, but also a wider concept of the quality of life, to include the environmental and social aspects.

2. Objectives and key challenges

2.1. Sustainable public finances

Government's fiscal policy framework remains geared towards the achievement of a sustainable fiscal stance so as to ensure a stable and sound macroeconomic framework which is conducive to price stability, sustainable economic growth and employment creation. Indeed, as a result of Government's efforts to correct the excessive deficit, Malta's general Government deficit maintained a downward path declining below the 3.0 per cent reference value in 2006. Government's medium-term fiscal plan is based on the principle of maintaining fiscal consolidation and on the sustainability of public finances in the long-term. Indeed, in the Budget Speech for 2008, Government reaffirmed its priority to achieve fiscal consolidation wherein the general Government deficit is projected to fall to 1.6 per cent in 2007 and to continue to improve thereafter to a budget surplus of 0.9 per cent by 2010.

Government's fiscal consolidation programme is designed such that, whilst fiscal sustainability is ensured, a number of fiscal measures are implemented to stimulate further economic activity and employment as well as social cohesion, thereby contributing to the key goals of the Lisbon Strategy. Progress in the fiscal consolidation process is ensured through consolidation measures primarily on the expenditure side such that fiscal consolidation is achieved without undermining the competitiveness of the economy.

Government's fiscal consolidation process entails a reduction in the ratio of expenditure to GDP from around 46 per cent in 2004 to around 44 per cent in 2006, and is expected to continue to decline thereafter. Government is taking various measures in order to contain public expenditure. These include undertaking public sector reforms as necessary, such as through the amalgamation of public entities to avoid duplication, restricting employment in non-essential categories in the public sector and cutting down on administrative costs without compromising efficiency, reducing bureaucracy, and attacking abuse. Concurrently, Government is redirecting its public expenditure towards measures that are growth enhancing and which have the potential to generate jobs, focusing on business promotion, tourism, education, the labour market and the environment.

Furthermore, in December 2006, Parliament adopted a pension reform, with impacts on both revenue and expenditure, and which Government considers to be a valid effort to improve the adequacy and long-term sustainability of the public pension system in Malta. This pension reform together with the reduction of the debt ratio will contribute to improve the long-term sustainability of public finances.

2.1.1. Public sector reform

Service quality improvement

Following a public sector reform initiated in 1990, in 1999 the Office of the Prime Minister launched an initiative for the introduction of Quality Service Charters in the Public Service. Charters spell out the rights of citizens as customers of a public service and specify the quality of service that can be expected. A department with a Charter commits itself to stated performance targets; typically on waiting times, quality of product, courtesy and information provided. The service delivery mechanisms are rationalized so that the cost of the service provided is kept to the absolute minimum possible. Departments that introduce a Charter publish annual results on their performance against service delivery standards. To date, there are around 60 chartered departments, including the health and education sectors.

The electronic Government programme has made possible remote service delivery of as many public services as possible. In addition to remote service delivery via the internet, other modes of remote service delivery are used, such as local council offices and mobile phone messaging.

A Customer Care System was introduced in November 2002 and enabled members of the public to submit complaints and requests to Government departments via the internet. Requests were tracked and forwarded to the relevant ministry, and was dealt with by the customer care units in the ministries.

Restructuring and consolidation of public entities

Government's policy is that of focusing its role in the economy on the regulatory aspect, facilitating rather than participating as an operator in economic activities. Thus, public sector reform is also directed to the restructuring of public sector entities that have a strategic role to reflect their core business, with functions identified as non-core transferred to the private sector. As a result of these measures, the efficiency of public entities is improved and reliance on Government assistance decreases. A case in point is the restructuring of the shipyard, as a result of which subsidies are to be phased out by the end of 2008. Consequently, expenditure previously directed towards consumption and subsidies is redirected towards growth-enhancing measures.

Concurrently, Government began a process of consolidation of its entities in order to minimise duplication and establish greater synergies, thereby reducing administrative costs. Cases in point include the merger of the Malta Development Corporation, the Malta External Trade Corporation, and the Institute for the Promotion of Small Enterprise into Malta Enterprise Corporation; the Central Information Management Unit which was integrated with the Malta Information Technology and Training Services Ltd.; whilst the Malta Centre for Restoration was merged with Heritage Malta.

Moreover, Government has embarked on an initiative to review and redesign work practices, thereby reassigning resources as appropriate. Such task has already been completed successfully at the Water Services Corporation and the Malta Tourism Authority.

2.1.2. Public sector employment

Measures were implemented by Government to contain outlays on compensation for employees. In particular, Government's policy is to restrict recruitment in non-essential categories in the public sector. Hiring in the public sector, both new and replacements, requires vetting by an ad hoc committee co-chaired by the Permanent Secretaries within the Office of the Prime Minister and the Ministry of Finance, duly assisted by the Management and Personnel Office within the Office of the Prime Minister, the Budget Affairs Division and the Financial Management Monitoring Unit within the Ministry of Finance, and is being done on a strictly need basis. The development of online service by the public sector is also contributing to contain recruitment requirements in front-office operations.

Table 1 portrays the trend of public sector employment as from 1999. Figures indicate both a reduction in the absolute number of employees in the public sector, as well as a reduction in the ratio of public sector employees to the gainfully employed population, reflecting both the measures aimed to contain employment as well as privatisation of public sector entities.

Table 1 - Public Sector Employment*

	1999	2000	2001	2002	2003	2004	2005	2006
Public Sector Employees	47,455	48,031	48,487	47,154	46,826	45,747	44,970	42,827
Gainfully Occupied Population	134,193	136,759	137,662	137,588	136,911	137,393	137,900	138,666
Ratio of public sector employees to gainfully employed population (%)	35.4	35.1	35.2	34.3	34.2	33.3	32.6	30.9
*excluding temporary employees								

Source: The Employment and Training Corporation (ECT).

In 2003, a Collective Bargaining Unit was set up within the Ministry of Finance with the aim to monitor the financial aspect of the collective agreements signed on behalf of enterprises or corporations owned or run by the state. This initiative also aims to minimise pressures for salary increases by employees' representatives particularly in cases involving the creation of new public entities and to maintain relativity within the public sector salary regime.

During the fourth quarter of 2005, an agreement was reached between Government and the employees' representatives over a renewed collective agreement for employees in the public service. The agreement covers a six-year period and is backdated from 1 January 2005. Amongst the highlights of the new collective agreement, one notes the establishment of a conciliation mechanism in the case of industrial disputes. The new agreement provides for improvements in the working conditions particularly by enabling employees to better combine work and family responsibilities. The agreement also promotes employee flexibility particularly by enabling the Government to introduce new work schedules in areas where public services to the business and tourism sectors are involved and the extension of private-public partnerships with an aim of retraining and redeploying underemployed employees. These measures thus contribute to increasing productivity of public service employees.

As regards, the compensation of employees in the public service, the salary increases awarded over the period 2005-2010 are inclusive of the cost of living adjustment (COLA). In the case where the COLA awarded in a particular year is higher than the prescribed salary increase, then the difference will be awarded as a cash payment. Since the difference in compensation will be paid in cash, it will leave the hourly and overtime rate of pay unaffected.

Senior managers in the Public Service of Malta are appointed on the basis of performance agreements lasting from three to five years (five years in the case of Assistant Directors, three years in the case of higher positions). Subsequent reappointment is not guaranteed and depends on performance. Each performance agreement includes provision for the setting of annual performance plans against which the officer's performance is subsequently reviewed and, if merited, a performance bonus is awarded. The conferment of performance bonuses is also assessed against the achievement of financial targets set up for the department or entity concerned. The annual performance planning and review process is carried out in accordance with guidelines issued by the Principal Permanent Secretary.

The Performance Management Programme (PMP) is a results-oriented employee appraisal system which applies to staff below senior management level. The Management and Personnel Office within the Office of the Prime Minister regularly undertakes compliance and quality audits on the use of PMP in all ministries and departments, and also provides feedback to these entities on the basis of the findings of the audits.

2.1.3. Attacking abuse

A Financial Management Monitoring Unit was set up to ensure that all entities necessarily administer public funds within stricter financial control, discipline and cost effectiveness and to aid the Government in reducing public spending.

In addition, a case in point where efficiency of the use of public funds is being addressed is the area of social benefits. The fight against the abuse of social benefits has been intensified and a Benefit Fraud and Investigations Directorate was set up within the Ministry for the Family and Social Solidarity on 1 November 2005 to carry out investigations in fraud of social benefits as well as in other areas of social policy. Consequently, social benefits are more effective as they target better the most needy.

In order to strengthen the investigative powers of both the Tax Compliance Unit and the Benefit Fraud and Investigations Directorate, amendments to the Income Tax Act (Cap. 123) have enabled the sharing of tax and social benefits information.

In parallel with these measures, the Law Compliance Unit within the Employment and Training Corporation (ETC) plays an important role in identifying any abusers of the social system by taking action, amongst others, against job seekers who register for employment and simultaneously hold an occupation.

2.1.4. Privatisation

As a result of a policy that dates back to the late 1980s in favour of privatisation, the role of the Government in the economy has been significantly reduced. Conscious of the benefits arising from a more structured and planned approach, Government's efforts in divesting public assets have been recast in terms of a privatisation programme within a White Paper published in 2000. The programme involves the sale of high quality assets and aims to attract strategic partners which satisfy the criteria of price, quality of business plan and employment safeguards.

Along the years, Government's holdings in the direct productive sector have been largely privatised. In the services sector too, a number of enterprises have been divested through sales of shares either to the public or to strategic partners.

In 1999, Mid-Med Bank was taken over by HSBC Bank Malta plc. such that the Maltese Government is no longer a shareholder in the bank. In 2002, the sale of 60 per cent of Government's shareholding in Malta International Airport plc and 35 per cent equity stake in Maltapost took place. The privatisation process continued to progress in 2004, when the National License Lottery and Malta Freeport Terminals Ltd. were also privatised. In 2005, Government sold a further 20 per cent of the shares in Malta International Airport plc, privatised Sterling Travel and Tourism Ltd, and also Air Supplies and Catering Co. Ltd. Subsequently, in 2006, the privatisation of a major telecommunications operator was completed. In 2007, Government sold 74 per cent of its shareholding in an operating company licensed to carry out towing activities within and between the harbours of Malta and divested 25 per cent of its shareholding in the local postal services company. The latter was fully privatised in January 2008.

2.1.5. Growth enhancing measures

Within Government's fiscal consolidation process, public expenditure is being redirected towards growth enhancing investment in an effort to boost the economic growth potential of the local economy. Growth enhancing measures mainly focus on industry and the labour market, tourism, and education in an effort to increase Malta's competitiveness.

Growth enhancing measures for industry are directed towards the development and upgrading of industrial zones, as well as towards programmes to enhance the competitiveness of industry, particularly through investment in IT, life-long learning and further specialisation of employees. Furthermore, tax

credits are provided to firms investing in ICT, research and development, back office service work and e-business services.

In tandem with these measures, effort is directed towards increasing labour market participation, especially the participation rate of females and older workers, and to increase the productivity of employees. Regarding the latter, it is pertinent to note the abolishment of compensation by additional days of vacation leave for public holidays that fall on weekends. Furthermore, in the 2007 and 2008 Budgets, the income tax bands were revised such that the income tax paid by employees is reduced by extending the tax-free range of household income and by broadening the income tax brackets. Furthermore, regulations stipulating a lump sum minimum National Insurance (NI) contribution, which was perceived to constitute a disincentive to work especially at low levels of income, were replaced with a proportional 10 per cent of gross income. In a bid to raise female participation in the labour market and increase the incentive to work, the Budget for 2007 announced measures aimed to alleviate the costs of childcare services both to employees as well as employers. In order to further promote employment amongst disadvantaged groups, the Budget for 2008 announced a measure to exempt long-term unemployed aged over forty-five years who start-up their own business from national insurance contribution during their first year of operation. In addition, a measure was introduced whereby persons who reach pension age but decide to continue working will receive a pension irrespective of the income earned. Previously, such persons, if under 65 years of age, were disqualified from receiving a pension if they earned a weekly income which exceeded the National Minimum Wage. In order to encourage entrepreneurship further, persons working in a family business can register as employees for fiscal purposes, thus having the opportunity to enjoy all social benefits.

In an effort to further sustain the tourism sector, which is a main contributor towards GDP, various measures have been put in place to increase Malta's attractiveness as a tourist location. In particular, funds were allocated to carry out a comprehensive branding exercise of Malta and for the management of tourist zones. Plans for the future of tourism are encompassed in two main policy documents, finalised in the beginning of 2007 and outline the direction and thrusts to be pursued to augment the tourism sector in Malta in a sustainable manner.

2.2. Education

The level and standard of education have an important impact on economic activity, particularly when considering the requirements of certain high value added sectors that are key for Malta's economy and which require a highly skilled and adaptable workforce. Over the past decade, the education sector has experienced various reform measures that intended to develop the country's human resources. These measures included, amongst others, the creation of the Malta College for Arts, Science and Technology (MCAST) in order to provide post-secondary vocational education, the development of a local examination system (MATSEC), the use of ICT in education, and the introduction of a new National Minimum Curriculum for primary and secondary education.

A reform of the Students' Maintenance Grants system was announced during the third quarter of 2005. The changes were twofold: a reform of the normal grant to students attending full-time courses at the University of Malta whilst strengthening the social element through the introduction and extension of means-tested supplementary grants and other special grants. The reform of the system of normal grants was aimed at extending the incentives to students attending courses considered important in the context of the socio-economic development of Malta. These courses are mainly science-oriented and include information technology and engineering. At the same time the grant received by students attending other courses was reduced. This reform applies for students attending the first year of an undergraduate course at the University of Malta from October 2005.

Government has embarked on an educational reform with the aim of further improving the educational sector. In 2006, Government amended the Education Act (Cap. 327) with a view to strengthen and improve the quality of the educational system and deter early school leavers. At the moment a pilot

project is being carried out whereby state schools are being redistributed into a number of colleges in order to create a better teaching and learning setting, with thoroughly improved college infrastructure, organisation, quality of teaching delivery and complementary high PC-to-student ratio. The educational reform also encompasses the revision of the structure of the Education Division into two separate directorates - the Malta Educational Directorate and the Educational Services Directorate. The Malta Educational Directorate will act as a central national policy maker and regulator for the Maltese educational system and will be responsible for the setting of standards and ensuring the delivery of quality education. Meanwhile, the Educational Services Directorate is responsible for the co-ordination of the operation of educational services and schools, and fulfils the role of a support and services resource. As part of the educational reform, the Maltese Government has also embarked on extending the current school stock by building new and refurbishing existing state schools. For the purpose of a fully comprehensive education system, the Institute for Tourism Studies today also falls under the responsibility of the Ministry for Education, Youth and Employment.

Government's policy is to promote life long education and training and to provide the required institutions and programmes in order to offer the widest possible range of opportunities to satisfy the needs of individuals as well as of a changing economy. Consequently, the Employment and Training Corporation, the Further Studies and Adult Education Department within the Education Division, MCAST, and the University of Malta provide courses in a wide range of subjects for updating professional skills of employees. Furthermore, in 2006 the National Commission for Higher Education (NCHE) was established with the aim of ascertaining the needs and the aspirations of further and higher education, informing the public of issues connected with sustainable development of further and higher education sectors in Malta in order to meet the needs of society; and providing advice to Government on any matter which is connected with further and higher education in Malta. The NCHE will conduct a widespread sectoral skills gap analysis project through 2008. The project will consist of identifying the major sectors to be reviewed, appointing experts to conduct a short review of long term developments, and subsequently analysing the readiness of the educational system to develop such skills. Through this exercise Government will be able to determine the priorities for educational investment in terms of skills for specific sectoral development.

The promotion of life long learning together with non-formal learning have been the major contributors towards creating the need of qualifications framework. In fact, the Malta Qualifications Council has launched the National Qualifications Framework for Life Long Learning in June 2007. This framework is based on the European Commission's proposal of a European Qualification Framework. Furthermore, the Malta Qualifications Council initiated the drafting of a policy document on the recognition of informal and non-formal education and launched a draft passport of vocational qualifications which include the recognition and validation of informal and non-formal learning.

Given the importance of education in the fields of science and ICT, full tax credits are provided for those companies who pay the studies of employees in the areas of science and IT, and tax credits for persons following advanced studies leading to a PhD in science. Furthermore, funds have been allocated for the 'Government of Malta Scholarship Scheme' for studies and research at Master and PhD levels.

2.3. The environment

The quality of the environment impinges directly on the quality of life of both the local inhabitants, as well as on tourism. Government's environment strategy is based on instilling a culture that respects the environment, on investment to manage responsibly generated waste with the least negative impact on the environment, and on the regeneration of the environment. Concurrently, in view of Malta's dependency on oil for the generation of electricity and water, measures implemented include incentives to households for the purchase of solar heating energy savers and electric cars, and investment in plants for wastewater treatment.

In an effort to decouple economic growth from environmental degradation, public expenditure is redirected towards improving the environment. In this context, priorities include the development of a National Biodiversity Action Plan, carrying out marine scientific surveys for Special Areas of Conservation, developing a Regional Project for Marine and Coastal Protected Areas, strengthening the institutional capacity for the implementation of the Nature Protection Acquis, and the treatment of sewage in Malta and Gozo.

Malta has drafted its first Environmental Technologies Action Plan (ETAP) which includes a number of fiscal incentives so as to further promote technologies that have a positive impact on the Maltese environment. The sourcing of environmentally friendly products which in turn promotes environment technologies is also being pursued by Government through the preparation of a Green Public Procurement Plan. The Polluter Pays Principle is another action which is being pursued by Government in order to improve the environment. Between 2005 and 2007, the Malta Environment and Protection Authority in collaboration with the Ministry of Finance has implemented an EU-funded project entitled "Building Capacity to Introduce the Polluter Pays Principle through Economic Instruments to Implement the EU Environment Acquis". The overall objective of this project was to build the necessary capacity in the Maltese Government to devise and implement a package of environmental economic instruments applying the Polluter Pays Principle in practice. The Malta Environment and Planning Authority plays regulatory and watchdog roles to ensure that the country's regulations for the environment sector are adhered to.

Malta is also contributing towards the fight against climate change by tackling waste management, transport and better utilisation of non-conventional sources of water. Malta is at the moment in the process of rehabilitating former dump sites. These dump sites shall be rehabilitated through the capturing of methane and landscaping. Moreover, Government has also embarked on a waste separation educational campaign. With the significant rise in oil prices and the growing concern about stable, secure and environmentally friendly energy supplies, the promotion of bio fuels use in transport is being given importance. In order to further promote bio fuels, Government has exempted a 1 per cent excise duty on bio fuels. This has led to an increase in the demand of bio fuels from 0.1 per cent in 2004 to 0.25 per cent of total fuel sales in 2005.

3. Implementation

The conduct of an appropriate fiscal policy with a view to attaining sound and sustainable public finances is a crucial element in Malta's economic policy making. In the short-run, fiscal policy plays an important role in achieving a growth supportive environment. In the long-term, fiscal policy coupled with adequate structural and labour market reform measures, helps to achieve national economic policy objectives.

The Maltese Government attaches importance to fiscal governance in order to ensure that the budgetary targets are achieved. Furthermore, the effective and efficient functioning of public administration, encompassing accountability and control, the measurement of results, public sector employment practices and transparency in government activities, play an important role in achieving a growth supportive environment. In this context, the Maltese Government recognises the need of a consistent and transparent administration of public finances, supported by an appropriate institutional framework.

3.1. Budgetary procedure

Planning of public expenditure and revenue takes place through three-year Business and Financial Plans prepared by Ministries and Government Departments in perspective of Government's overall economic and social targets within the framework of the fiscal consolidation process. These Financial Business Plans are in turn reflected in the Budget presented and discussed on an annual basis in Parliament, with discussions leading to the approval of the Financial Estimates of the various Ministries.

As has been the practice in the last three years, Government publishes a pre-Budget document outlining the state of the economy and Government's vision for Malta's economic and social development as well as Government's policies in various spheres. The document also presents Government's views and options regarding the priorities and measures under consideration for the forthcoming Budget. This consultation document, intended as a precursor to the Budget, has become a well-established practice and is the basis for consultation well before the Budget is formally presented to Parliament. This consultation process has been extended to engage all society, social partners, civil society and the general public in addition to the Malta Council for Economic and Social Development (MCESD).

3.1.1. Control and effectiveness of public expenditure

Once the Financial Estimates of the various Ministries are approved by Parliament, it is the responsibility of Permanent Secretaries and Heads of Department to ensure that the Budget is implemented as planned and that the global financial allocation is not exceeded.

During 2007, procedures have been introduced concerning proposals for capital projects to improve the effectiveness of their implementation and especially in order for objectives to be achieved in a timely manner, at the quality expected and according to budget.

The performance review process, applicable for the performance of officers whose appointment is regulated by a Performance Agreement (i.e. senior management positions in the public service), pays particular attention to the results attained in relation to national priority initiatives as well as financial objectives and budgetary targets.

3.2. Fiscal targets and institutions supporting the budget framework

Fiscal policy and budgetary surveillance are formulated on the basis of national objectives within the context of the Stability and Growth Pact. Annual fiscal targets on deficit and debt ratios are set by Government and act as guiding principles for conducting fiscal policy, in particular expenditure commitments. These targets are backed by political commitment and ownership from national political representatives and by appropriate monitoring and enforcement administrative systems.

The Budget Affairs Division, within the Ministry of Finance, monitors the financial performance of Ministries and Departments, as well as public sector organisations, including those that either depend on a Government subvention for their operations or those that contribute towards the Government Budget through part of their profits. In doing so, it ensures that the annual contributions voted in the Financial Estimates in favour of public organisations are efficaciously utilised. More specifically, the Financial Management Monitoring Unit, within the Ministry of Finance, supervises the financial operations of public entities.

The Budget Affairs Division regularly monitors closely recurrent and capital expenditures and revenue collection performances with the aim that budgetary targets and projections are adhered to, making recommendations in order that Government may take corrective measures well in time where trends indicate overspending or revenue shortfalls by year-end. This is made possible through the monthly evaluation of financial reports of Government Departments and management accounts of public entities. In addition, procedures ensuring more effective monitoring and review of budgetary performance by Ministries and Departments have been put in place.

Public funds are also managed and supervised by the Accountant General who is also responsible for the day-to-day cash-flow position of the operations of Government. Moreover, the system and procedure used in Government accounting within Ministries and Government Departments is scrutinized by the Internal Audit and Investigations Directorate. Furthermore, the accounts of all departments and offices of Government are audited and reported upon annually by the Auditor General to the House of Representatives. Further scrutiny on the financial conduct of Government Departments is exercised by

the Parliamentary Standing Committee on Public Accounts, which is chaired by a member of the Opposition to ensure a more transparent scrutiny of how public finances have been utilised.

As regards Public Debt, the Treasury implements the borrowing plan based on the strategy approved by Government. Moreover, it prepares debt sustainability analysis to assess the long-term sustainability of projected public sector borrowing levels. Overall, the Public Debt Management Committee, under the chairmanship of the Permanent Secretary within the Ministry of Finance, is charged with the policy making mechanism relating to public debt management issues.

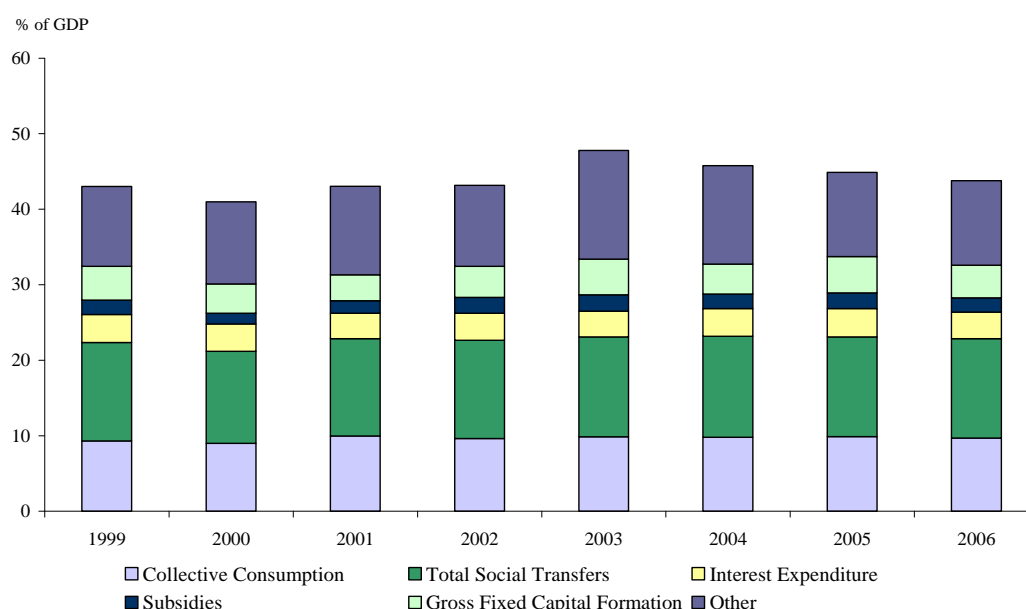
4. Results

4.1. Economic classification of expenditure

After reaching a peak of 47.8 per cent of GDP in 2003, the ratio of total expenditure to GDP followed a downward trend, declining to 44.9 per cent in 2005 and reaching 43.8 per cent of GDP in 2006. In this context, it is noteworthy that the expenditure ratio in 2003 was highly influenced by a one-off operation related to the restructuring of the shipyards. Furthermore, apart from being underpinned by a rise in economic growth that outweighed the rise in absolute levels of expenditure components, this decline was also attributable to a decreasing rate of growth of the 'Other' component of expenditure. It is noteworthy that as from 2005, Government has made use of substantial amounts of EU funds that are reflected both under revenue and expenditure categories, with expenditure including also the element of co-financing from national funds. Moreover, since 2004, Government expenditure includes an annual contribution of around Lm23 (€3.6) million towards the EU budget.

The main developments in the main components of General Government expenditure by economic classification for the 1999-2006 period are presented in Figure 1

**Figure 1 - Composition of General Government Total Expenditure
(economic classification)**



Collective consumption, that mainly comprises compensation of employees, fell from 9.3 per cent of GDP recorded in 1999, to 9.0 per cent in the following year and peaked at 10.0 per cent in 2001,

subsequently falling to 9.6 per cent of GDP in 2002. In the four years to 2006, the ratio of collective consumption expenditure hovered at around 9.8 per cent of GDP, reaching 9.7 per cent in 2006. Developments in the ratio of collective consumption expenditure mainly reflect the Government's strategy with respect to employment in the public sector and the Collective Agreement for Public Service Employees.

During the period under review, the ratio of total social transfers hovered around the 13 per cent mark, reaching a high of 13.4 per cent in 2004 and declining slightly thereafter to 13.2 per cent in the following two years. In this context, it is pertinent to note the concerted effort being undertaken to curb abuse of social benefits which was intensified with the setting up of the Benefit Fraud and Investigations Directorate within the Ministry for the Family and Social Solidarity in 2005. Meanwhile, the ratio of subsidies to GDP reached a peak in 2003 at 2.2 per cent and then declined to 1.9 per cent in 2006.

The ratio of gross fixed capital formation to GDP stood at 4.5 per cent in 1999 and declined to a low of 3.4 per cent in 2001, thereafter increasing to 4.7 per cent in 2003, mainly reflecting a notable increase in capital outlays on social development, particularly aimed towards the hospital project. Subsequently, the ratio of gross fixed capital formation declined by 0.7 percentage points to 4.0 per cent in 2004, and rose to a high of 4.8 per cent in 2005, mainly reflecting projects financed through the Fifth Italian Financial Protocol and EU Structural Funds as well as investment related to the new hospital project. In 2006, the ratio fell to 4.3 per cent, mainly due to a decline in investment outlays financed through the Fifth Italian Protocol when compared to outlays registered in the previous year.

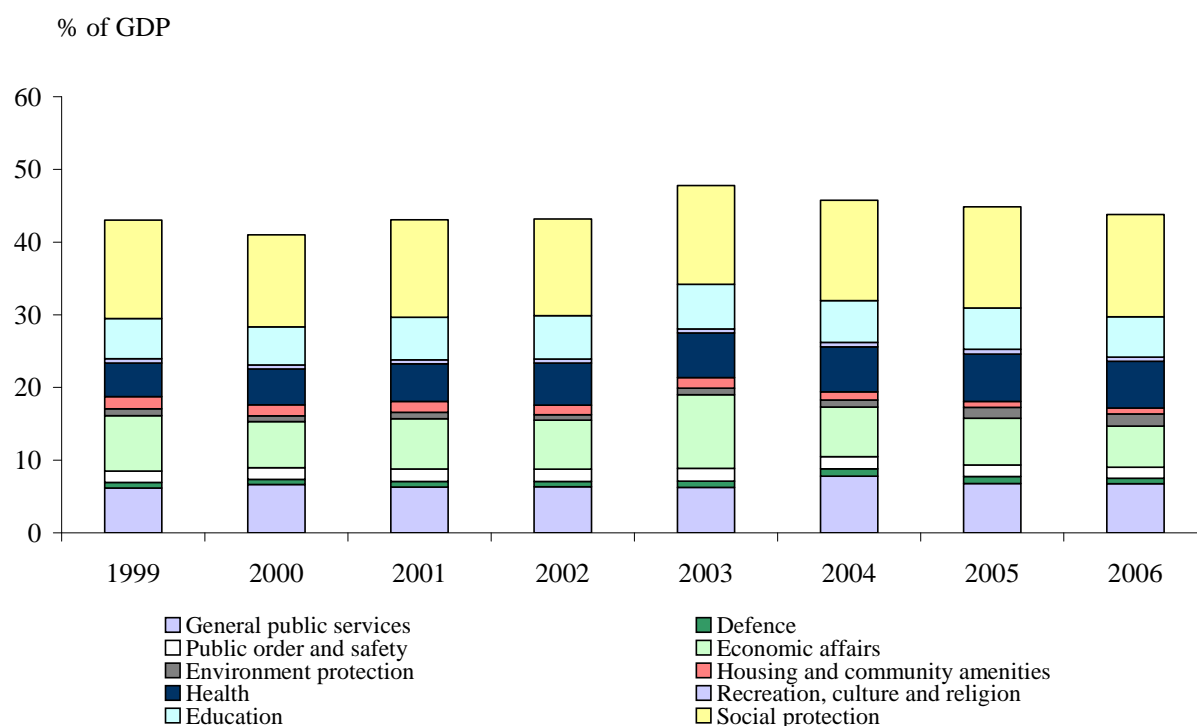
Interest expenditure, which mainly comprises of interest payments on long-term local loans fell from 3.7 per cent of GDP recorded in 1999 to 3.4 per cent of GDP in 2001, thereafter rising to 3.7 per cent in 2004 and 2005. It declined to 3.5 per cent of GDP in 2006.

4.2. Functional classification of expenditure

The following section reviews the main components of general Government expenditure by functional classification, namely, Social Protection, General Public Service, Health, Economic Affairs and Education, as well as Environmental Protection. Figure 2 presents the developments in the components of General Government expenditure by functional classification for the 1999-2006 period. It is noteworthy that Government's policy with respect to general Government expenditure is twofold since the achievement of fiscal consolidation does not exclude expenditure directed towards the achievement of sustainable economic growth and employment creation.

The ratio of expenditure to GDP on General Public Service rose from 6.1 per cent in 1999 to 6.6 per cent in the following year, hovered at around 6.3 per cent in the following three years and rose to 7.8 per cent in 2004. Thereafter, the General Public Service expenditure ratio fell to 6.7 per cent in 2006, reflecting Government's efforts to restrain expenditure outlays of a recurrent nature including compensation of employees.

**Figure 2 - Composition of General Government Total Expenditure
(functional classification)**



The share of expenditure on Economic Affairs to GDP fell to 6.4 per cent in 2000 from 7.6 per cent recorded a year earlier, then stood at around 7 per cent in the following two years before rising to 10.1 per cent in 2003. Thereafter, the ratio of expenditure on Economic Affairs followed a declining trend reaching 5.7 per cent in 2006, mainly reflecting lower levels of subsidies.

The increased importance of a sustainable natural environment in Government's policy strategy is reflected in the ratio of expenditure directed towards Environment Protection. The ratio of expenditure on Environment Protection did not exceed 1 per cent of GDP in the 1999-2004 period, but followed an upward trend thereafter, reaching 1.7 per cent of GDP in 2006 mainly reflecting expenditure earmarked for the development of infrastructure for waste management activities.

The ratio of expenditure on Health to GDP followed an upward trend, rising from 4.6 per cent in 1999 to 6.5 per cent in 2005, thereafter declining marginally to 6.4 per cent in 2006, largely reflecting Government's investment in the new hospital over the period under review.

Over recent years Government has directed resources towards investment in human capital through education and training for the labour force to be better equipped to face the challenges presented by an ever dynamic and competitive environment. Expenditure on Education as a proportion of GDP rose from 5.2 per cent in 2000 to 6.1 per cent in 2003. The ratio of expenditure on education followed a declining trend thereafter and stood at 5.6 per cent in 2006, reflecting relatively high capital outlays recorded in 2003.

Expenditure on Social Protection comprises the largest component of total expenditure, mainly reflecting outlays on pensions. On average, the ratio of social protection expenditure hovered around 13.4 per cent between 1999 and 2002. However, Social Protection expenditure as a share of GDP followed an upward trend thereafter, rising from 13.6 per cent in 2003 to 14.1 per cent in 2006.

5. Conclusion

The Maltese Government acknowledges the importance of the Lisbon Strategy. Indeed, Government considers sound fiscal policies and strong macro-economic policy coordination as a pre-condition for achieving other reform priorities. To this end, Government took the necessary action to correct the excessive deficit and in fact, the target of a deficit-to-GDP ratio below 3 per cent was reached in 2006, with the excessive deficit procedure being abrogated in June 2007. Furthermore, Malta is taking steps to achieve its Medium Term Objective in 2010.

Government is not solely addressing the current imbalance in public finances, but importance is also being attached to the need to redirect public expenditure towards growth enhancing categories, in line with the Lisbon Strategy. Indeed, growth enhancing policies mainly focus on industry and the labour market, tourism, and education in an effort to increase Malta's competitiveness, whilst improving the environment so as to ensure that sustainable development is also being given priority.

PUBLIC FINANCE REFORM – POLISH EXPERIENCE

Ministry of Finance Poland

Paper completed: December 2005

1. Introduction

Decentralization of the State that happened since 1989 besides having a political impact also has an economic impact, because it is connected with changes in public finance sector and offers best chances for public spending. The situation of the Polish economy at the beginning of the 21st century is delicate. On the one hand, the economic transformation is still under way, which calls for the application of economic instruments adequate to the problems of the transitional phase between central planning and the market. On the other hand, Poland has joined the European Union, which is a group of institutionally mature market economies. It follows that the instruments of fiscal policy should be compatible with the market-economy standard. This also requires Poland to have a medium-term strategy for determining and achieving priorities in the composition of total public expenditure.

Membership in the European Union poses a challenge to Polish economic policy-makers – in particular, those responsible for fiscal policy. The Minister of Finance remains the main policy-maker in Poland responsible for fiscal policy. His decisions concerning this area are discussed amongst others at the Council of Ministers.

As Poland acceded to the EU, its' public finances are subject to further restrictions. As an EU member Poland have to fulfil obligations, for example the so called Millennium Developments Goals and first of all increase R&D expenditures according to the Lisbon Strategy.

Another factor that we have to take into account while planning the challenges for Polish fiscal policy ahead is the much looked forward to next step of Poland's integration with the European Union – accession to the Euro zone. The Ministry of Finance in Poland considers the fulfilment of the Maastricht criteria in the next few years (as to ensure that Poland can join the economy & monetary union) as the most important reform of the budget and public finances. The last prognosis prepared by polish Ministry of Finance the deficit of public finance sector in 2007 will achieve reference value amounting to 3% of GDP.

Fiscal sector is regularly changing. Let's have a look at this process, starting from the nineties, when fiscal sector was significantly transformed.

First of all, revenues of fiscal sector measured versus GDP increased from 38.4% in 2003 to 40.0% in 2006, at the same time expenditures were reduced from 44.6% GDP in 2003 to 43.8% in 2006. In accordance with prognosis in the years 2007-2010 sector revenues will decrease from 39.9% GDP in 2007 to 38.3% GDP in 2010. Expenditures decreased from 42.9% GDP in 2006 to 40.8% GDP in 2010.

Second of all, budget share in revenues and expenditures of public finances sector decreased successively. In 2001 adequate shares were 48.0% of revenues and 24.3% expenditures and in 2006 shares were 46.4% of revenues and 25.0% expenditures. Simultaneously budget supplies other sector

units by money transfers. In 2001 those transfers engaged 54% of expenditures and in 2006 amounted to 50% of expenditures.

The most important problems which have to be solved is that in the same time the quantitative and qualitative adjustment has to be done.

In 2006 the public debt reached 47.6% of GDP. The debt to GDP ratio, after declining to 46.9% (i.e. by 0.7 percentage points) in 2007, is expected to increase slightly in the years 2008-2010, under the assumptions adopted in Convergence Programme it will reach 47.3% of GDP in 2008 and 47.6% of GDP in 2010, which means that the first threshold of 50% provided for in the Public Finance Act will not be exceeded and the risk of exceeding the constitutional limit of 60% is minimal

At the same time, membership in the EU compels Poland to reduce the scale of fiscal imbalance, as we are required to comply with the EU regulations, which stipulate discipline in public finance. On the other hand, fiscal adjustment consisting in a reduction of deficit is tantamount to restricting the internal demand generated by the state. To avoid a situation when such a reduction of public consumption affects aggregate demand and, consequently, growth rate, the demand created by the state must be replaced with other components of global demand, such as private consumption, investment or exports.

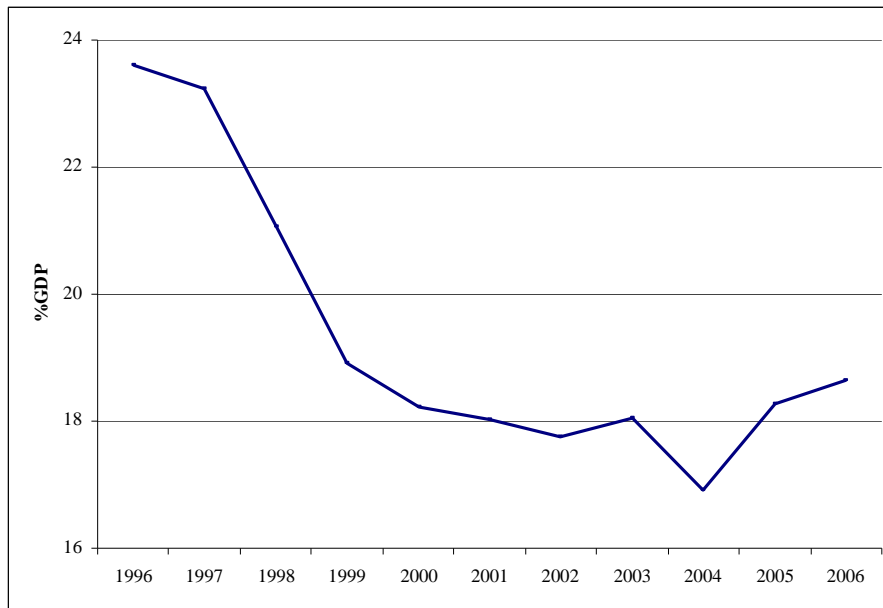
Favourable macroeconomic conditions, in particular stable public finance and high employment rate, are necessary for the economic policy to face the challenges of the Polish economy, such as making it modern and competitive, improving the condition for technical and social infrastructure, enhancing rural development and regional and social cohesion.

The Convergence Programme should first of all support the improvement of the quality of the Polish public finance. These are not only the general government balance and debt developments that should be taken care of but also the efficiency of public finance. Therefore, apart from striving for low deficit and debt, institutional enhancement is necessary to transform the public finance sector into a modern, efficient and economical sector.

Maintenance of fast and sustainable economic growth and increase in employment leading to the improvement of the level and quality of the citizens' standards of living, remains the priority of the Government's economic policy. The policy is also oriented towards ensuring the achievement and then maintenance of the long-term fiscal balance through the reduction of general government deficit and debt to GDP ratios. It will be conducted in the environment of high economic growth and increasing employment and on the other hand, of systematically growing level of resources for co-financing of the EU projects, and costs of implemented necessary structural reforms, pension and labour cost reforms in particular.

The need for fiscal consolidation in Poland is unquestionable. The debate should thus concentrate on how, rather than whether to curb budget deficit. Very generally speaking, budget equilibrium can be restored in two ways: by increasing revenues (higher taxes, larger tax base) or by decreasing public spending.

Figure 1 - State budget revenue to GDP ratio (%GDP)



Source: Ministry of Finance

Figure 1 indicates that the fiscal policy choice taken in Poland has been to reduce the tax burden. Unfortunately, the lowering of taxes was not matched by corresponding adjustments on the expenditure side. Lower taxes did not translate into faster growth, either, and even had an opposite effect. Growth dynamics was markedly weakened after 1997, causing the tax base to shrink, while the inertia of public expenditure resulted in a significant growth of deficit.

In 2004, a further marked reduction of budget revenues was put into effect. This was not only a consequence of lower taxes (corporate income tax reduced from 27 to 19 percent, linear personal income tax for the self-employed), but also of changes in the financing of local governments. These changes mainly took the form of increasing the proportion of local government revenues financed from centrally levied taxes (CIT and PIT), which obviously reduces state budget revenues.

In 2005 and 2006 the increase of state budget revenue is observed. This is a consequence of faster economic growth and access to EU. Poland received from the EU additional financial resources allocated for the budgetary compensation and the adjustment of EU external borders, as well as resources from The Technical Assistance Operational Programme. Moreover excise duty rates on some products were increased.

Considerations of international credibility of the country and consistency in fiscal policy reduce the scope for backing away from the already introduced tax cuts, and thus the brunt of fiscal adjustment has to be borne entirely by the expenditure side of the public finance system. In practice, the only possibility left on the revenue side is to abolish the system of excessive tax exemptions and benefits. Observation indicates that sectors which received support through the system of tax benefits, with respect to both indirect and direct taxes (for instance, housing construction) not only fail to expand dynamically, but are stagnant or may even be contracting. Assuming that a tax benefit only makes sense if a given form of economic behavior would not take place without it, one is forced to conclude that the exemptions and benefits in the Polish fiscal system fails to meet this requirement. The system does, on the other hand, support sectors with a strong political representation or those which can effectively lobby for particularistic interests, at the expense of a considerable loss of budget revenues.

Thus, the most important part of the fiscal adjustment has to be done at the expenditure side of the budget. Public expenditures restructuring should lead to problem solutions of public finances and to decrease relation of deficit comparing to GDP, including new expenses connected with EU accession in

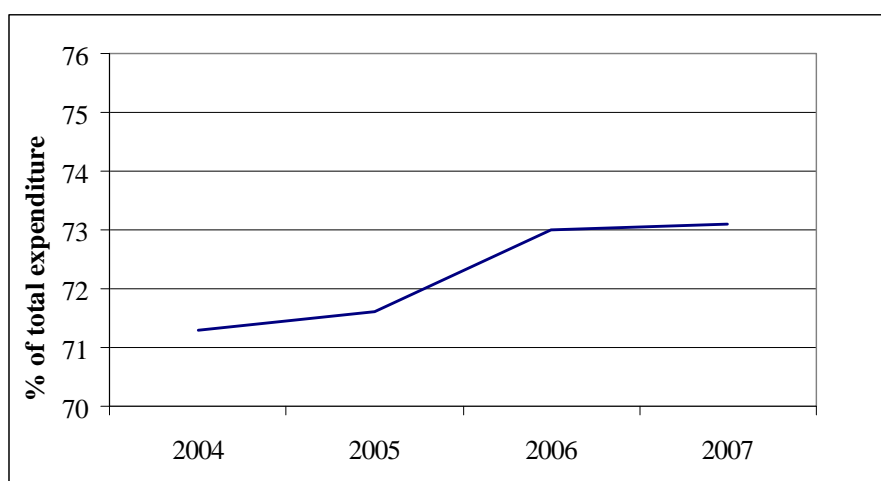
amount of 2% of GDP. Such expenses reduction doesn't mean the necessity of their real decrease; it depends on GDP growth. If the real GDP growth in the years 2005-06 exceed 6%, there will be even possibility of expenditures increase. Therefore changes in public expenditure structure must take place, what would cause decrease of real expenditures level in some fields.

2. Growth-friendly structure of public expenditures

The government aims at the consolidation of public finance in order to increase the efficiency of the allocation of public funds. It was to be achieved by putting from the beginning of 2008 into force solutions provided for in the new public finance act. However, the works on the project submitted to the Parliament have been suspended. On the other hand, the process aimed at the introduction of the performance budgeting has been started. The first pilot draft budget in such a system, including certain general government entities (in particular the ministries and voivodship authorities), was presented in the draft budget act for 2008.

The efforts aimed at further increase in the EU funds absorption have been continued. Ensuring the funds for the project financing is one of the main objectives of the draft budget act for 2008 adopted by the government in September. The emphasis is also put on the implementation of activities included in the National Reform Programme 2005-2008 (NRP). The government has also begun works on another programme for 2008-2011. Due to the early stage of the works, the detailed consequences of all new NRP priorities for the fiscal path are difficult to evaluate at present. However, they should not have a significant impact on the envisaged general government deficit reduction.

Figure 2 – Rigid expenditure in the state budget



Source: The justification to the draft budget act for 2008.

A pro-growth fiscal policy (increasing the share of investment outlays) is hampered by the very high proportion of so-called legally determined expenditures in the budget. It is hardly possible to allocate more resources to investment, if nearly 75 percent of the total budget expenditures lie in practice outside the scope of political decisions. Therefore, room for shaping the fiscal policy is very limited.

From the economic point of view, the rigid component of public finances in Poland increases, rather than drop, from 2004 onwards, since accession to the EU requires the payment of the membership contribution, financed by the state budget. However, the funds Poland may obtain from the EU in the framework of the structural funds and Cohesion Fund, largely exceed Poland's financial obligations towards the Union and, therefore, the net result of integration with the EU is unequivocally favorable for the Polish economy. Yet access to the available EU funds depends on finding resources within the Polish system to co-finance the projects. Thus, from the point of view of public finances (and especially the

state budget, responsible for the membership contribution) EU membership presents a considerable challenge, as it necessitates the provision of additional funds that will allow Poland to utilize fully the opportunities opened up by the EU accession.

Undergoing activities aim mainly at the rationalisation of expenditure and the increase in efficiency of disbursed funds. It was necessary in the forecasts concerning the fiscal path to reconcile these aims with costly development-oriented activities and the tasks aimed at solving the current social problems. Apart from the structural reforms, the additional burden on the sector's expenditure will in near future result from the implemented changes related mainly to the old-age and disability pension system and, to a lesser extent, from the activities in the field of health care and social care. From 2008 the annual indexation of old-age and disability pensions will be restored (according to the following formula: average annual CPI + 20% of the real growth of the average wages) and from 2008 the pensioners will receive the benefits calculated on the basis of the base amount increased to 100% of average wage adopted to establish the amount for the benefit on the date on which it was granted (the liquidation of the so-called old portfolio). In addition, the period in which the rules governing the right to early retirement on the current conditions are in force was prolonged by the end of 2008.

As regards the changes in the health care system, the act was adopted which introduced the mechanism allowing for gradual increase in remuneration of people employed in the independent public health care units and retained the possibility for the National Health Fund to transfer the financial resources for the increase in wages of the benefit providers. The change will not have an impact on the general level of the National Health Fund's expenditure but will influence the division of funds from the contracts in the independent public health care units. Another act was passed which increased the basis for the calculation of the health insurance contribution paid from the State budget for some groups of people (increase in the expenditure of the State budget and the increase in the revenues of the National Health Fund). The basis for the calculation of the health insurance contribution for the farmers who carry out the activities under the special divisions of the agricultural production was also changed (increase in the revenues of the National Health Fund, the decrease in the revenues of the State budget). The acts aimed at the optimal use of the health care resources (draft act on the hospital network was sent to the Parliament in July this year) and the computerization of the health care service (the government works on this project) are at the draft stage.

The adopted new solutions with regard to alimony and maintenance disbursement should not have a negative impact on the social expenditure. Within the framework of the family support activities, the government adopted and submitted to the Parliament a set of solutions aimed at i.a. gradual extension of the maternity leave and the periodical exemption of the persons who return to work after the maternity or child care leaves from the obligation to pay contributions to the Labour Fund and the Employee Guaranteed Benefits Fund.

Table 1 - General government expenditure by function (COFOG)

% of GDP	COFOG Code	2005	2010
1. General public services	1	6.1	5.9
2. Defence	2	1.1	1.1
3. Public order and safety	3	1.7	1.8
4. Economic affairs	4	3.8	4.0
5. Environmental protection	5	0.6	0.6
6. Housing and community amenities	6	1.4	1.3
7. Health	7	4.5	5.0
8. Recreation, culture and religion	8	1.0	0.8
9. Education	9	6.2	5.9
10. Social protection	10	17.0	14.5
Total expenditure		43.3	40.8

Source: 2005 – CSO, forecast for 2010 – Ministry of Finance.

Between 2005 and 2010 the expenditure to GDP ratio will decrease by 2.5 percentage point. The social protection expenditure to GDP ratio will be most significantly reduced (by 2.5 percentage points). The decrease in the ratio results from the lower growth rate of the expenditure for social purposes than the GDP growth rate, which is related to the decreasing number of people using the social benefits, as a result of e.g. reduction of unemployment. The lower social expenditure growth rate is to a significant extent compensated by the introduction of the family support tax allowances on the revenue side. The expenditure for general public services to the GDP ratio will also decrease (by 0.2 percentage point) as a result of the decrease in the debt servicing costs to GDP ratio (by 0.3 percentage point). The ratio of the expenditure for education to the GDP will also decrease (by 0.3 percentage point), but in 2010 the expenditure for education will be nominally higher by over 40% than the expenditure in 2005. The ratio of the health care expenditure to the GDP will increase (by 0.5 percentage point) which will reflect the government policy in this regard. The increase in the ratio (by 0.2 percentage point) will also be recorded in the economic affairs, mostly due to the increase in expenditure for infrastructure¹.

3. What has to be done?

Main domestic fiscal rules and rules governing the budgetary process in Poland are included in the Constitution of the Republic of Poland and the public finance act. In addition, the issues related to the financial management, including some rules concerning the planning and execution of the budgets and financial plans and incurring liabilities were also regulated in specific acts.

The works of the Team for general government statistics are continued. The Team was appointed by the head of the Central Statistical Office in order to agree the methodology of the general government statistics which would be common for the Central Statistical Office, the Ministry of Finance and the National Bank of Poland. In the near future they will concentrate mainly on ensuring the compliance of financial accounts with non-financial accounts and the notification of the general government deficit and debt.

¹ By the end of December 2007 the Central Statistical Office will send table entitled "Expenditure of general government according to function" with data for 2006 to Eurostat

In order to rationalise public expenditure and increase the control of the public funds, the government prepared the public finance system reform. Within the framework of the second stage of the public finance reform, on 26 June 2007 the Council of Ministers adopted and submitted to the Sejm two draft acts: public finance act and the act – regulations implementing the public finance act. These two proposals of acts are nowadays a subject of detailed analysis carried out by new government and the decision concerning further procedure will be made in due course. The main assumptions of the second stage of the reform refer to the following:

- Consolidation: subject (liquidation of the certain management forms), organisational (transformation of a part of organisational units into budgetary units, e.g. Social Insurance Institution and the Farmers' Social Insurance Fund; of some funds in BGK into earmarked funds, the introduction of a new organisational and legal form, namely, the executive agency) and functional (permanent linking of the financial plans of all units of the central government subsector with the budget act);
- Budget procedure: assigning the target nature to the main stages of the budgeting procedure in the basic areas of the state activity and the extension of the planning period covering a budget year by further 2 years;
- Fiscal rules: tightening of the prudential procedure when the debt to GDP ratio exceeds 55%, the implementation of the balanced budget of the local government units with regard to current expenditure, the establishment of an individual debt ratio for local government entities;
- Implementation of regulations concerning the external audit of the annual financial statement of the sector entities.

The justification to the draft budget act for 2008 submitted to the Parliament in September this year for the first time included the performance budget draft covering a part of the sector entities. The preparations to this stage included inter alia the preparation of methodological assumptions, analysis of foreign solutions and training. The analytic and methodological works, as well as the works on the monitoring and evaluation of the execution of the performance budget are to continue in the following years. Such a budget is to be implemented first in the State budget (2010). Starting from 2011 the budget in the new form is to be prepared by all units of the central government subsector and the social security funds, and from 2012 by the local government entities. The last stage of works is to include the implementation of the complete accrual-based accounting².

Considering the long-term impact on the economy and public finance, the Government introduced a substantial tax wedge cut. Reduction in social contributions together with changes in the personal income tax should contribute to an improvement of the labour market and strengthen upward trends in the economy, at the same time limiting the scope of hidden economy. Reduction in the tax wedge also means implementation of the recommendation for Poland formulated in this year's update of the Broad Economic Policy Guidelines.

In the medium term, following changes are expected in the Polish fiscal sector:

1. The priority of the government economic policy remains the maintenance of fast and sustainable economic growth, as well as employment growth. The implemented policy aims at ensuring the achievement and maintenance of a long-term fiscal balance through putting emphasis on the reduction of the general government deficit and debt to GDP ratios. According to the latest estimations, in 2006 the general government deficit equaled 3.8% of GDP. In 2007, the deficit is planned to be reduced to the reference level of 3.0% of GDP. Draft 2008 budget act adopted by the Council of Ministers on 25 September 2007 assumes further gradual reduction of general government deficit. Despite the significant encumbrance of the budget with reform costs (mainly tax wedge and old-age pension reform costs), general government deficit to GDP ratio in 2008 should remain unchanged as compared to 2007 and fall below 3% of GDP in 2009. The debt-to-

² Data from the report prepared by the Performance Budget Department of The Chancellery of The Prime Minister

GDP ratio will remain much below the 60% reference value (2006 – 47,6% of GDP, 2007 – 47,0% of GDP, 2008 – 47,6% of GDP, 2009 – 47,8% of GDP 2010 – 47,8% of GDP).

2. The government aims at the consolidation of public finance in order to increase the efficiency of the allocation of public funds. It was to be achieved by putting from the beginning of 2008 into force solutions provided for in the new public finance act. However, the works on the project submitted to the Parliament have been suspended. On the other hand, the process aimed at the introduction of the performance budgeting has been started. The first pilot draft budget in such a system, including certain general government entities (in particular the ministries and voivodship authorities), was presented in the draft budget act for 2008.
3. The efforts aimed at further increase in the EU funds absorption have been continued. Ensuring the funds for the project financing is one of the main objectives of the draft budget act for 2008 adopted by the government in September. The emphasis is also put on the implementation of activities included in the National Reform Programme 2005-2008 (NRP).
4. Fixed expenditure play a considerable role in the structure of the general government expenditure. It should be stressed, however, that the division of total expenditure into legally determined and flexible ones is a matter of convention. Legally determined expenditure (stemming from legal provisions of international agreements, inter alia: retirement and disability pensions, unemployment benefits, housing allowances, contribution to the EU budget, debt serving costs) is the major part of fixed expenditure. Flexible expenditure includes mainly remunerations, expenditures on purchases of goods and services, subsidies to business, transfers to entities outside the general government.

4. Conclusions

Fiscal policy must be designed, on the one hand, to be a factor stabilizing the economic situation of the state, so as to ensure the credibility (and hence stability) of the economy both in domestic and international contexts. On the other hand, the fiscal system should be flexible enough to allow the use of a whole gamut of fiscal instruments, so that quick and adequate economic responses can be made if and when problems arise.

In years to come, fiscal policy in Poland will be very carefully watched, as our country faces a series of key decisions that will shape the structure of its revenues and expenditures for years. The main problem nowadays is the massive disequilibrium of state finances; therefore, fiscal adjustment is now the most often mentioned problem of Poland. It is vital that the badly needed reduction of the deficit of state finances should not adversely affect the real sphere of the economy.

In this paper, we have endeavored to present some assumptions on which, in my opinion, fiscal policy in Poland should be based, if it is to foster rapid and sustained economic growth. Fortunately, some of them have already been implemented (for instance the principles of local government financing), others wait to be put into practice. One should hope that, as we implement the strategy of fiscal reform, we will not lose sight of the long-term consequences of specific decisions, while resisting current pressures, which threaten to outweigh the multi-year perspective – for it is only through rapid and sustained economic growth that Poland can close the distance to the highly developed economies. This is not to say that we don't feel that there is always room for improvements in expenditure prioritization, expenditure management and control systems and hence shall pursue this continuously.

REDIRECTING PUBLIC EXPENDITURE IN PORTUGAL

Ministry of Finance and Public Administration Portugal

Paper completed: December 2005

1. Objectives and challenges

Portugal has currently a strong fiscal imbalance (6.0% of GDP in 2005) and therefore the key target of fiscal policy is to reduce the government deficit and to put an end to the excessive deficit situation. This objective and the trajectory to attain it were laid down in the last update of the stability programme for the period 2005-2009 and in the State Budget for 2006. Since 2002, apart from measures on the revenue side, a number of measures aiming at curbing expenditure growth have been taken. Albeit those measures concerned mainly the social security systems, the education and health sectors were as well object of consolidation. Efforts that have been made to limit nominal growth of education and health expense are mainly directed at eliminating waste and enhancing efficiency in those areas, which is also in line with the Lisbon Strategy. At present, a far-reaching public administration reform is being planned. Such a reform announced both in the Stability and Growth Programme and in the 2006 Budget, will trigger a reallocation of civil servants and a reduction of their total number. Besides a deep overhauling of public institutions, the reform will comprehend a change in the incentive schemes given to civil servants as well as of the existing professional careers.

Besides the stability programme and the State Budget, the government presented to the Parliament a Technological Plan¹ on 24th November, on which there are laid down priorities for public expenditure. This Technological Plan defines a five-year period growth strategy to improve Portuguese competitiveness and has three main axes: 1. Knowledge – improving the average level of education, organizing lifelong learning and spreading the access to Information and Communication Technology; 2. Technology —promoting scientific culture namely in technological areas; reinforcing the number of investigators and increasing investment in R&D; 3. Innovation – reinforcing the diffusion and adoption of the outcomes from R&D activities to improve competitiveness and productivity. Therefore, this plan aims at enhancing the quality of public expenditure.

The main measures that have been taken and its relationship with quality and efficiency of expenditure are examined in the next section.

¹ The National Action Plan for Growth and Employment 2005-2008 (*Plano Nacional de Acção para o Crescimento e Emprego*), which specifies measures in the framework of the Lisbon Strategy, has 3 axes: 1. Macroeconomic stability (defined in the stability program), Employment (defined in the National Plan for Employment) and Competitiveness (defined in the Technological Plan).

2. Measures on the expenditure side – impact on quality of public finances

State Budget for 2006 restates that social security system, health care and education are priority areas in the public administration reform. Also it sets down a restructuring of public administration, that includes a rationalization of public departments and infra-structures. These reforms are laid down in a multi-annual programme (2006 to 2009) for reducing public expenditure. The Technological Plan, on the other side, sets goals to be reached by 2010 redirecting public expenditure to enhance growth.

2.1. Health

Public sector hospitals are being transformed into public corporations, which are financed and managed according to market principles. These hospitals have contracts with the Health Ministry, which foresee that they are financed according to their output. Since this process started at the end of 2002, the results will become evident only in some years, but it is expected that the efficiency and savings gains will contribute towards a more sustainable growth path of health expenditure growth.

Also the drugs policy changed, involving the promotion of generic drugs, the diminution of reimbursements, and the liberalization of medicines not subject to medical receipt.

2.2. Social security

A reform of general social security retirement scheme was implemented in 2001, which changed the benefit formula and retirement age rules. There have been also important changes in civil servants pension scheme since 2004, aiming towards a convergence to the less generous general system scheme. As the civil servants subsystem will close by end-2005 the transition period to the general system scheme is as follows:

- all civil servants taken on after 1 January 2006 will accede the general system;
- there will be a gradual increase of the retirement age from 60 to 65, to be completed by 2015. There will be as well an increase of the period that confers the right for a complete pension from 36 to 40 years by 2013;
- there will be an adjustment of the pension benefit formula so that pension will be based on the wages during the entire working career instead of the last wage received.

Additionally, all special retirement schemes not complying with the general system rules will be eliminated and a pension ceiling will be introduced.

The alignment of civil service regime to the less generous private sector regime has been an important step in the social security reform. Nevertheless, more remains to be done to ensure the sustainability of the overall pension system. Realizing that, the government has commissioned a report to assess the long-term sustainability of the social security that is scheduled for the last quarter of the current year.

2.3. Education

Current measures for reducing expenditure in basic and secondary education are aimed at making better use of existing resources. Schools with a reduced number of pupils in basic and secondary education are being progressively closed down and there have been changes in teachers job descriptions (aiming at curbing underutilisation of teachers working time). Some gains are expected due to the increase in efficiency and better allocation of resources.

The Government, in the Technological Plan, reassures this area as one of its priorities, and specifies the following goals:

- improving secondary education attainments
- improving basic education by improving teachers qualifications, increasing the curricula (e.g. English and experimental science) and the supply of extra-curricula activities; pre-school to all children with 5 years;
- reforming higher education along with the Bologna process and increasing the percentage of population with higher education and in particular promoting science and technologic courses.

2.4. Infrastructure

Consolidation efforts have led to a slight decline in the capital expenditure to GDP ratio². Nevertheless, given the potential positive impact of this sort of expenditure on growth and the situation of Portugal in terms of infrastructure stock, part of capital expenditure has not been affected by budgetary cuts, notably the national co-financing of projects within the framework of EU Funds. On the other hand, PPP contracts have been increasingly used in order to spread the impact on public accounts of some investments over an extended number of years.

2.5. Public administration reform

Public administration reform will comprise a restructuring of central government targeting a rationalization and improved management of central government. The reform prosecutes the double aim of generating significant savings and enhancing the quality of provided services.

Besides, some reforms that will affect the number of civil servants and the wage bill as a new civil servants wages and career structure (from 2007 onwards) and the continuation of a rule for new admissions in central government. Additionally, civil servants health subsystems are being brought into line with civil servants general health system³.

2.6. Technological plan

This programme defines a five-year strategy aimed at improving Portuguese competitiveness. Besides redirecting public expenditure towards R&D and reinforcing reforms in education, this plan comprises other actions of administrative simplification and easing the access to ICT technologies.

3. Implementation and institutions

Medium-term budgetary strategy is laid down in the Stability and Growth Programmes. The main instrument for implementation of this strategy on an annual basis is the annual budget, which is drawn up by the Ministry of Finance. Reforms in the different expenditure areas (and also on the revenue side) are sometimes, though not necessarily, enacted through the budget law. The updates of the Stability and Growth Programme are drawn up by Government, and presented to Parliament, which does not have to approve them. The budget law has to be approved by Parliament.

In recent years some improvements have been put in place regarding the way expenditure is budgeted, notably by the introduction of spending programmes, which encompass both current and capital outlays. The spending programmes make it possible to relate public expenditure with policy objectives and to

² It should be noted that capital expenditure is recorded net in National Accounts and is therefore negatively affected by temporary measures like sales of non-financial assets. This was the case of Portugal, for instance, in 2002. When this happens, total capital expenditure may not properly reflect public investment effort.

³ Some were already integrated by 1 October 2005 (Armed Forces, Police – GNR and PSP - and Justice Ministry).

check consistence of expenses made by different public services. Another recent development was the inclusion in the annual budget of information concerning expenditure compromises for future years (for instance, resulting from PPP contracts), which enhances the transparency of the budgetary exercise.

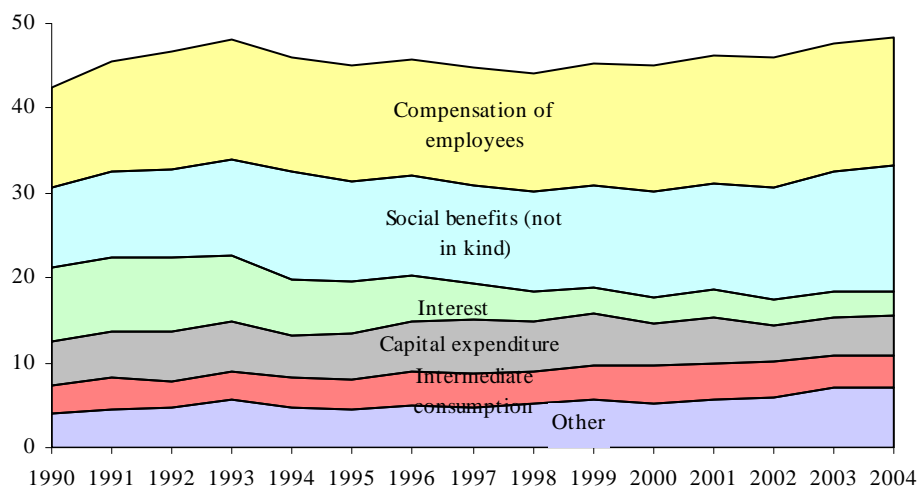
4. Results and main trends

Budgetary consolidation reforms that have been implemented since 2002, albeit producing some results, have not yet been able to put a halt to expense growth, in particular in social security and health areas. Further consolidation measures are thus warranted for the coming years. Figures⁴ concerning the functional breakdown of general government expenditure are currently available until 2003 and concerning the economic breakdown until 2004. Therefore, there is not yet clear evidence about the way consolidation policies are affecting the composition of expenditure⁵.

Considering the last 15 years, government expenditure has changed substantially both in terms of size and of composition. In 1990, total expenditure was 42,5% of GDP, and Portugal was the country in the euro area with the lowest expenditure ratio. By 2004 this ratio reached 48,4% (almost the same as the 48,6% euro area average). Primary expenditure increased almost 12 points of GDP. Hence, the substantial reduction in interest payments of 5,8 points of GDP⁶ was offset by an increase in other expenditure items.

The categories that increased the most were social benefits to households (5,5 points of GDP) and compensation of employees (3,1 points of GDP). Investment had slightly decreased by 0,5 points of GDP, remaining at 4,7% of GDP in 2004 (2,6% of GDP in the euro area).

Figure 1 - Composition of government expenditure, % of GDP (economic classification)



Considering the composition of expenditure in their functional classification (Chart 2), it is clear that social protection expenditure represented the main contribution to the expenditure increase, with an increase of 5,7 points to 15,7% of GDP (19,5% in euro area). Spending in health increased 3,1

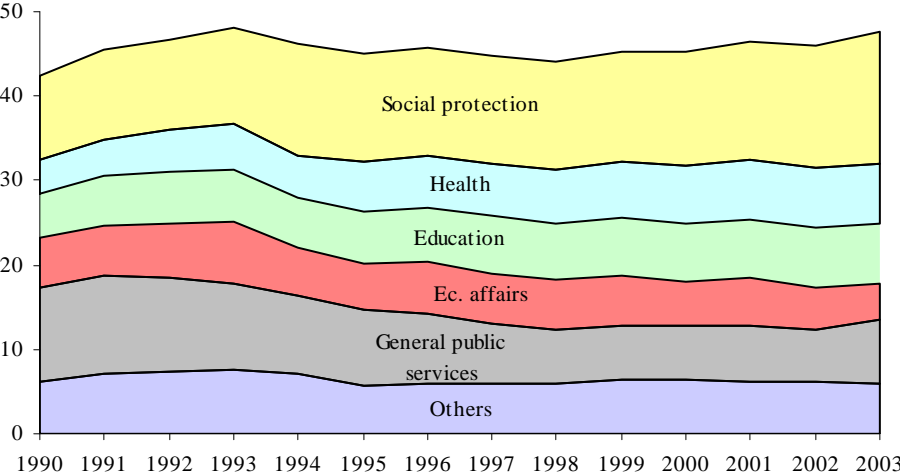
⁴ Data are in National Accounts, ESA 1995 – 1995 basis.

⁵ Also because some of these policies, while working in the right direction in the long run, have short-term effects that go in the opposite way.

⁶ Mainly due to the decrease in market interest rate, as debt ratio remained almost the same.

percentage points to 7,1% of GDP (6,6% in euro area) and education accounted for an increase of 1,8 percentage points to 7% (5% in euro area).

Figure 2 - Composition of government expenditure, % of GDP(functional classification)



Note: Other functions include defence, public order and safety, environment protection, housing and community amenities and recreation, culture and religion.

5. Conclusion

After a period when social expenditures, aimed at deepening social cohesion, increased markedly, the Portuguese public administration began generating excessive deficits. Having in mind that those deficits, besides exceeding the limits considered in the Pact, are hindering the convergence process, the government elected as its main aim the prosecution of a consolidation policy. Considering the magnitude of the present deficit, the budget consolidation is being done through policy measures both from expenditure and revenue sides. Most of the measures, albeit described and quantified in the last update of the Stability Programme as well as in the 2006 Budget proposal, didn't produce, yet, tangible results. This is the case, for instance, of public administration reform, or the changes being done in the old-age pension regime of civil servant. Besides, it seems reasonable to expect that an important part of expenditure-driven consolidation efforts would generate significant effects upon the quality of public finances.

Annex 1:

Public spending by functio

Public spending by function (continuation)

Health (COFOG 2), as percent of GDP

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total	5,9	6,1	6,2	6,3	6,6	6,8	7,1	7,0	7,1
Medical products, appliances and e	1,0	1,1	1,1	1,2	1,1	1,1	1,2	1,2	1,3
Outpatient services	1,9	1,9	1,6	1,8	1,9	1,9	2,0	2,0	2,1
Hospital services	2,9	3,0	3,3	3,2	3,4	3,7	3,8	3,7	3,6
Public health services	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,02	0,02
R&D Health	0,02	0,02	0,02	0,02	0,01	0,01	0,02	0,02	0,02
Health n.e.c.	0,04	0,04	0,19	0,05	0,06	0,07	0,08	0,07	0,06

Health (COFOG 2), share of total respective expenditure

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Medical products, appliances and e	17,6	17,4	18,1	18,3	16,9	15,9	16,7	16,6	18,3
Outpatient services	31,6	31,8	25,9	29,2	29,6	28,6	28,5	29,1	29,6
Hospital services	49,6	49,6	52,3	51,2	52,1	54,2	53,3	52,8	50,6
Public health services	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,3	0,3
R&D Health	0,3	0,3	0,3	0,3	0,2	0,2	0,2	0,2	0,2
Health n.e.c.	0,6	0,6	3,1	0,8	1,0	1,0	1,1	0,9	0,9

Education (COFOG 2), as percent of GDP

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total	6,3	6,5	6,8	6,7	6,9	6,9	7,0	7,1	7,0
Pre-primary and primary education	1,3	1,3	1,4	1,4	3,0	1,3	1,2	1,2	1,2
Secondary education	3,2	3,2	3,4	3,1	1,7	3,3	3,5	3,8	3,9
Post-secondary non-tertiary educati	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Tertiary education	1,0	1,0	1,0	1,1	1,2	1,3	1,3	1,3	1,2
Education not definable by level	0,2	0,2	0,3	0,2	0,1	0,1	0,1	0,1	0,1
Subsidiary services to education	0,3	0,3	0,3	0,2	0,2	0,2	0,2	0,2	0,2
R&D Education	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Education n.e.c.	0,4	0,4	0,4	0,7	0,7	0,6	0,5	0,4	0,4

Education (COFOG 2), share of respective total expenditure

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Pre-primary and primary education	20,6	20,2	19,9	21,6	43,1	19,0	17,1	16,7	16,8
Secondary education	51,0	49,8	50,7	45,8	24,0	48,9	49,9	54,0	55,4
Post-secondary non-tertiary educati	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Tertiary education	15,2	15,8	15,3	16,8	18,0	18,7	18,3	18,1	16,9
Education not definable by level	2,7	3,1	3,7	2,4	1,5	1,6	1,6	1,8	1,3
Subsidiary services to education	4,4	4,6	4,3	3,4	3,2	3,1	2,2	3,0	3,1
R&D Education	0,2	0,2	0,1	0,1	0,1	0,1	0,0	0,0	0,0
Education n.e.c.	6,0	6,2	5,9	9,8	9,7	8,6	6,5	6,3	6,2

Public spending by function (continuation)

Social protection (COFOG 2), as percent of GDP

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total	12,8	12,9	12,7	12,9	13,1	13,5	13,9	14,5	15,7
Sickness and disability	2,3	2,3	2,2	2,2	2,1	2,2	2,0	2,2	2,3
Old age	6,5	6,5	6,5	6,6	6,7	7,0	7,1	7,7	8,4
Survivors	1,3	1,4	1,4	1,3	1,4	1,4	1,4	1,5	1,6
Family and children	1,0	1,0	0,9	0,9	0,9	1,0	0,7	1,1	1,1
Unemployment	0,8	0,8	0,7	0,6	0,7	0,7	0,7	0,7	0,8
Housing	0,3	0,0	0,4	0,4	0,0	0,4	0,0	0,4	0,0
Social exclusion n.e.c.	0,0	0,0	0,0	0,3	0,3	0,3	0,3	0,3	0,3
R&D Social protection	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Social protection n.e.c.	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,7	0,7

Social protection (COFOG 2), share of respective total expenditure

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Sickness and disability	17,6	17,8	17,4	16,7	16,1	16,0	14,5	14,8	14,8
Old age	50,6	50,6	51,0	50,9	50,8	51,6	51,1	53,3	53,2
Survivors	10,5	10,6	10,8	10,4	10,4	10,3	10,4	10,4	10,4
Family and children	7,7	7,6	7,2	7,1	7,1	7,3	5,1	7,4	7,2
Unemployment	6,1	6,1	5,6	5,0	5,1	5,1	5,1	5,1	5,1
Housing	2,4	0,2	2,9	2,9	0,0	2,7	0,0	2,5	0,0
Social exclusion n.e.c.	0,3	0,2	0,2	2,0	2,5	2,2	2,0	2,0	2,0
R&D Social protection	0,0	0,0	0,0	0,0	0,1	0,0	0,0	0,0	0,0
Social protection n.e.c.	4,8	4,7	4,9	5,0	4,9	4,8	4,3	4,6	4,4

SPANISH EXPERIENCE ON REDIRECTING NATIONAL PUBLIC BUDGETS

Ministry of Finance Spain

Paper completed: January 2005

1. Introduction: A new pattern of growth for the Spanish economy anchored on productivity through a reorientation of public expenditures

In recent years, productivity in Spain has contributed less to our economic growth than has employment. Between 1996 and 2003, productivity grew just by 0.7%, compared with an average of 1.7% in the previous fifteen years. While employment creation explains 78% of economic growth during the last eight years, productivity has contributed only 22%.

The Spanish pattern of growth has been characterised by being very labour intensive in recent years and has undoubtedly conditioned our productivity behaviour. The main factor behind these developments has been a buoyant internal demand fuelled by a structural reduction of long term real interest rates associated with our incorporation to the EMU. This increase in demand has primarily concentrated on the labour intensive sectors of the economy, in particular the construction sector and other services.

In response to this strong demand, and helped also by a more flexible labour market, Spain has created employment at an average annual growth rate of 2.7% since 1996. This has made possible a substantial reduction of the Spanish still relatively high unemployment rate

The new government is convinced that a more balanced pattern is necessary for a sustained growth and has therefore decided to reorient its economic policy towards improving productivity: in the medium and long term, productivity growth will have a positive impact on job creation and will reinforce our potential growth and competitiveness.

In this context, actions in the following areas will be implemented: greater competition in markets for goods and services; improvements in the regulatory framework; further reforms in the factors markets - with actions in both the financial and labour markets- and progress in terms of technological investment, development and innovation, with increased public spending on infrastructure and education.

This paper focuses only on the budgetary aspects of this Spanish new pattern of growth. It is structured in four sections: Spanish medium term strategy; Political priorities on public expenditures; Ways to achieve these priorities, and Main results obtained until now.

2. Spanish medium term strategy for determining and achieving selected priorities in the composition of total public expenditure

The Spanish medium term strategy consists of two different kinds of measures:

- First of all, fiscal policy is committed to **the balanced budget principle**, by continuing with the fiscal consolidation process implemented over recent years and by fully respecting the EU commitments agreed upon into the SGP framework.

Table 1 includes public finances forecasts for the next five years (Stability Programme Update)

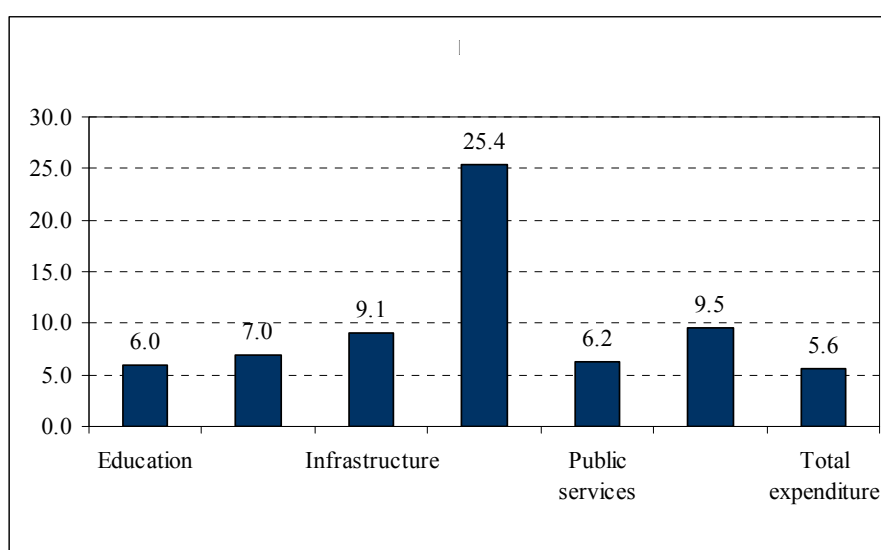
Table 1 – General Government Accounts
(National Accounts, ESA-95. As % of PIB)

Item	2003 (A)	2004 (F)	2005 (F)	2006 (F)	2007 (F)	2008 (F)
Total revenues	40,0	39,9	39,9	40,0	40,1	40,2
- Tax revenues	36,2	36,3	36,4	36,4	36,5	36,6
Direct	10,6	10,5	10,6	10,6	10,6	10,6
- Households	7,2	7,1	7,1	7,1	7,1	7,1
- Companies	3,4	3,4	3,5	3,5	3,5	3,5
Indirect	12,0	12,0	12,1	12,1	12,2	12,2
Social contributions	13,7	13,7	13,7	13,7	13,8	13,8
Total expenditures	39,6	40,6	39,8	39,8	39,8	39,8
- Current	34,8	35,1	34,8	34,7	34,6	34,6
Interest charges	2,5	2,3	2,1	2,0	1,9	1,9
- Capital	4,8	5,5	5,0	5,1	5,2	5,2
Gross Capital formation	3,5	3,7	3,6	3,6	3,7	3,8
General Government Surplus (+) or deficit (-)	0,4	-0,8	0,1	0,2	0,4	0,4
Central Government	0,7	-1,0	0,2	0,3	0,4	0,4
State and Autonomous agencies	-0,3	-1,8	-0,5	-0,4	-0,3	-0,3
Social Security	1,0	0,8	0,7	0,7	0,7	0,7
Territorial Government	-0,3	0,2	-0,1	-0,1	0,0	0,0
Autonomous Communities	-0,2	0,2	-0,1	-0,1	0,0	0,0
Local government	-0,1	0,0	0,0	0,0	0,0	0,0
Gross debt	50,7	49,1	46,7	44,3	42,0	40,0
Primary surplus	2,9	1,5	2,2	2,2	2,3	2,3
Gross saving	4,4	4,1	4,4	4,6	4,8	4,9
(A) Advance						
(F) Forecast						
Source: IGAE and Ministry of Economy and Finance						

- Secondly, this fiscal stability gives the Spanish authorities sufficient leeway to improve the quality and sustainability of public finances by mainly gearing public finances to those priorities with high impact on productivity.

In fact, the General State Budget for 2005 includes a clear shift in spending by prioritising and strengthening those items with the largest impact on medium and long term potential growth, in particular by raising the allocation for active labour market policies, R&D&I, education and infrastructure (Figure1).

Figure 1 - Expenditure Policies – 2005 Public Budget (Percentage change 2004)



3. Policy priorities with higher impact on productivity

Employment creation

Employment creation is one of the main economic policy objectives for the new government. In 2005, public expenditure devoted to labour market active policies will increase by 7% in respect to previous assignments. There are three key objectives in the area:

- To reduce temporary contracts;
- To facilitate job seeking, by ameliorating Public Job Agencies, making them more efficient;
- To improve workers formation by fostering education and live-long learning activities.

R&D&I

The objectives of the Spanish R&D&I policy are to reinforce the resources allocated to this area, optimise their use, and improve interaction among the science-technology-business system's actors with the general objective of attaining the EU average in the medium term. The commitment to reinforce R&D&I is illustrated by General State Budget for 2005, where the research allocation increases by 16,3% with respect to the previous year and by 25,4% when excluding military research. A significant portion of this increase will be in the form of soft loans for R&D&I. It pursues the following strategic objectives:

- Strengthen public sector's role in generating fundamental knowledge and foster the internalisation process of the Spanish scientific system;
- Improve the standards of the system by increasing human resources and quality in the public and private sector.
- To achieve these objectives, the highest increases in budget allocations are concentrated in scientific coordination, health, telecommunications, industry, energy and environment, fishing, oceanography and astrophysics.

Infrastructure

The public sector's investment efforts in physical capital focuses on investment in infrastructure, whose allocation is 9.1 % higher than in 2004. The priority here is to increase factor productivity and mobility, stimulate private investment and foster social and regional cohesion, while maintaining infrastructure

safety, upkeep and quality. Priority is being given to terrestrial transport: investments will concentrate on high capacity motorways networks in the framework of the future Infrastructure and Transport Strategic Programme. The budget allocation for road infrastructure in 2005 is 7,5% higher than in 2004. In relation to rail infrastructure, particular attention is devoted to high-speed rail networks and freight transport will be fostered.

Education

Another qualitative change in public spending relates to the educational policy, with a state budget allocation 6% (10.5% increase in grants) higher than in 2004, raising its relative weight in the total budget. The regional authorities have the bulk of the power in this area and they directly manage education spending in their territories. Action by the central administration includes most notably an increase in the funds for grants and allowances within the Educational Promotion Programmes, which represent 56% of the total and have increased by 10.5% with respect to 2004.

4. Procedures and institutions responsible for implementing those priorities. Spanish national experience

The Spanish commitment on budgetary discipline finds its institutional expression in the legislative corpus comprising the Laws of Budgetary Stability and some implementing laws.

Law 18/2001 of 12 December of Budgetary Stability (LBS)

The law of Budgetary Stability establishes the general framework for the financial stability in Spain. It states that the public sector and its different agencies should close their books in balance. Deficits are only contemplated in exceptional circumstances and when they do arise, the agent responsible must present an adjustment plan for restoring budgetary equilibrium within three years at most. The law lays down four principles as the cornerstones of fiscal policy design:

- Transparency: full and timely information on the financial position of all government branches, with records of the financial flows between each;
- Fiscal co-responsibility: each branch of government must close the year in balance or surplus. In the event of deficit, an action plan will be presented setting out remedial measures.
- Limits on the growth of central government spending: the Law stipulates the preparation of multi-annual budget projections, so management efforts are focused on mid-term efficiency. This implies the setting of an annual ceiling on spending growth.

After two years applying the LBS some shortcomings arose relating to the non-adaptability of the stability principle to the economic cycle, the lack of incentives to the Territorial Government to run their accounts in equilibrium, and difficulties monitoring the adherence of the Territorial Government to the fiscal rules.

- Firstly, the rigid nature of the stability principle does not permit the formulation of a counter-cyclical fiscal policy. According to the stability rule, every year and every institution within the General Government should formulate and run the budget in equilibrium without paying attention to the cyclical situation of the economy. Meanwhile during the upswing of the cycle it could be advisable to cut expenditures to get equilibrium in the fiscal accounts. Reducing expenditures to increase revenues during the downswing of the cycle could decelerate economic activity.
- Secondly, even though the Central Government fixes a three-year stability objective by for the overall General Government, there are no measures to warrantee the attainment of this objective at the regional level.

- Lastly, there is a need of more information on a quarterly basis in terms of borrowing requirements and future commitments to analyse and follow the fiscal stance of the Territorial Governments.

As a consequence of these shortcomings, the Government is planning to introduce some changes in the Law of Budgetary Stability with the following objectives:

- Reinforce the commitment to fiscal discipline by all levels of government and make it more effective;
- Redefine the balance budget rule over the economic cycle to avoid possible pro-cyclical consequences and permit the counter-cyclical game exercised by the automatic stabilizers;
- Improve the transparency of the economic transactions of all the levels of the government, specifically with a view to strengthening their recording of these transactions according to ESA-95 methodology.

General Budget Law 47/2003 of 27 November (GBL)

In line with the LBS, the GBL sets a stability objective for the Public Sector, and establishes a regime whereby budget management is bound by the ceiling set on non-financial State expenditures. It also introduces multi year budget scenarios in surplus or in balance with a three year horizon, as framed by successive Stability Programme Updates. These should set out the targets to be met, the means and activities to be employed, an investment schedule for the three-year period and the indicators used to track compliance. This multi year scenario provides both a guide and a check on the commitments that may be assumed annually in the National Budget.

To avoid expenditures overruns, the GBL introduces a General Contingency Fund in the budget equivalent to 2 percent of the annual spending ceiling, to meet unforeseen non discretionary expenditures during budget execution, and stipulate that any increase in budgeted appropriations can only be funded by drawing on this reserve.

The GBL connects the medium-term planning with performance budgeting. It prescribes the obligation for the managers to formulate the budgets in terms of multi-annual objectives and report the achieved results. To strengthen performance budget, the Central Government has started reviewing the quality of their budget programs through a pilot project which includes the examination of six programs. The main objectives of this project include looking at the adequacy of objectives and indicators, and checking the existence of a proper link between financial management and performance budgeting.

Inputs (see Table 5 in Annex I)

Since the midst of 1990s Spain has experienced a successfully fiscal consolidation going from a deficit in 1996 of about 5 percent of GDP to a small surplus in 2003 of 0.4 percent of GDP. While the objective to comply with Maastricht criteria to participate in EMU played an important role in the consolidation, the analysis of the components of the adjustment indicates its structural nature (Table 2).

Although the bulk of the fiscal consolidation was based on the expenditures side, the good performance in revenues collections contributed also to the process. The reduction in interest payment, due in part to our EMU entry, played an important role in the adjustment of expenditures following cuts in personnel, investment, and goods and services.

Since the enactment of our Constitution, Spain has been experiencing an in-depth process of political decentralization affecting as much expenditure responsibilities as revenue powers, making our country one of the most decentralised OECD countries.

Thus, during the two latest decades, Territorial Governments in Spain increased their presence within the Public Sector now managing almost a half of the expenditures of the General Government. The Autonomous Governments created in 1979 have played a significant role in the decentralization process, assuming responsibilities during the period for health, education, active labour market polices, social services, culture, and some public investment.

Table 2 - Net lending(+) or net borrowing (-) of the general government (as a percentage of GDP, 1996-2000-2003)

CONCEPTS	1996	2000	2003(p)	Difference
	(a)	(b)	(c)	(c)-(a)
1.Total revenues	38,8	39,1	40,0	1,2
2.Total expenditure	43,7	39,9	39,6	-4,1
Non-interest current expenditure	33,3	32,1	32,3	-1,0
Interest payment	5,3	3,3	2,5	-2,8
Capital expenditure	5,1	4,5	4,8	-0,3
3.Primary Balance	0,4	2,4	2,9	2,5
4.Net lending(+) or net borrowing(-)	-4,9	-0,9	0,4	5,3
5. UE-15 Net lending(+) or net borrowing(-)	-4,2	1,0	-2,7	1,5

(p) Provisional

Source: Intervención General de la Administración del Estado

Although between 1996 and 2003 the size of the General Government in terms of expenditure of GDP fell by around 4 percentage points of GDP, the Territorial Government increased its participation on the total expenditures by 3.4 percentage points explaining the fall of the Central Administration (Central Government and Social Security System) within said total expenditure of about 7.5 percentage point (Table 3).

Table 3 - Institutional classification of the expenditures of the General Government (as a percentage of GDP, 1996-2000-2003)

SUBSECTORS	1996	2000	2003(p)	Difference
	(a)	(b)	(c)	(c)-(a)
1. Central Government	14,1	10,4	9,5	-4,6
2. Autonomous Governments	9,8	10,7	12,8	3,0
3. Local Governments	4,9	5,1	5,3	0,4
4. Social Security Funds	14,9	13,7	12,0	-2,9
5.Total expenditures of the General Government	43,7	39,9	39,6	-4,1

(p) Provisional

Source: Intervención General de la Administración del Estado

After Ireland, Spain ranks the second lowest size of the General Government measured by its level of expenditures as percentage of GDP. Meanwhile the average of public expenditures for the EU-15 countries reached almost an average of around 47 percent of GDP in 2002. Spain closed its public books 7.4 percentage points below the EU-15 average. The greatest differences in public expenditures in terms of GDP with respect to EU-15 average are in Social Protection—5.5 percentage points--, Health—1.2 points, General Public Services—1.4 points, and Education—0.7 points (Table 4).

Table 4 - Classification of the expenditures of the General Government by functions (as a percentage of GDP, 2002)

FUNCTIONAL GROUPS	EU-15	De	Es	Fr	Ie	It	Nl	Se	Uk
01.General public services	6,8	6,3	5,3	7,2	3,5	9,3	8,2	8,9	4,2
02.Defence	1,7	1,2	1,2	2,4	0,7	1,2	1,5	2,1	2,5
03.Public order and safety	1,7	1,7	2,1	1,0	1,5	2,0	1,6		2,1
04.Economic affairs	4,0	4,1	4,5	4,8	5,0	3,8	5,5	4,9	2,4
05.Environmental protection	--	0,6	1,0	1,2	--	0,9	0,8	0,3	0,6
06.Housing and community amenities	0,8	1,1	1,1	1,0	2,1	0,1	1,6	0,9	0,5
07.Health	6,5	6,4	5,4	8,4	6,4	6,5	4,5	7,1	6,4
08.Recreation,culture and religion	0,9	0,7	1,4	0,8	0,5	0,9	1,1	1,1	0,5
09.Education	5,2	4,2	4,4	6,0	4,3	5,0	5,0	7,5	5,0
10.Social protection	19,0	22,5	13,5	20,6	9,3	18,2	18,0	24,0	15,7
TOTAL EXPENDITURES	47,3	48,7	39,9	53,5	33,3	48,0	47,8	58,2	39,7

Source: Eurostat

Output outcomes

The results of R&D+i policy are significant (see Figure 1):

- **Domestic R&D spending (public and private)** totalled 1.03% of GDP in 2002, breaking the 1% barrier for the first time. This was a record in R&D spending in Spain in absolute terms and in relation to the income level, with a 15.5% increase in gross terms and a 7 basis point rise in relation to GDP;
- **Companies spent €11 million on technological innovation in 2002**, i.e. 1.59% of GDP, a 9% rise with respect to 2000 and an average annual increase of 4.4% in the 2000-2002 period. The data also reflect companies' greater role in R&D+i spending. In 2002, 54.6% of R&D spending was by business, of which 49.6% was subsidised, compared with 52.4% and 48%, respectively, in 2001;
- **R&D+i spending under the Programme to Reinforce Human Resources** in research and universities increased by 11.1% in 2003, providing training for 3,165 trainee researchers and 649 postdoctoral interns, among other features;
- **Substantial progress was also made in human resource indicators.** In 2002, around 7.3% of the working population worked in R&D activities (6.9% in 2001). The ratio of researchers reached 4.5% of the working population in 2002. Moreover, the private sector has become the largest R&D employer.

5. Findings and conclusions

This analysis is focused only on the spending side, however to improve the quality of public finance it is necessary to achieve the right public revenues and expenditure balance. In this sense, on the revenue side, fiscal authorities are working on a reform of direct taxation to be approved next year. This future reform aims at boosting fiscal efficiency by providing a more neutral tax treatment of investment and savings decisions and by simplifying tariffs in order to ease the tax pressure on earned income. Another important objective is to increase fiscal equality.

Summing up, the main conclusions of the Spanish recent experience on “redirecting public spending towards growth enhancing activities” are:

- This is a very relevant topic for the Spanish authorities, particularly in the context of a **new pattern of growth** based on productivity. In this sense, the Spanish budgetary policy gives priority

to those items with the greatest impact on productivity and growth, by stepping up public investments in infrastructure, human capital and knowledge.

- In this regard, **budgetary stability over the full economic cycle** remains essential to reach a better budget composition as it releases resources to be redirect to those priority spending. In view of an ageing population, it becomes even more relevant to generate surpluses in good times in order to have the capacity to devote more public resources to productive areas.
- The **institutional mechanisms** in place have increased the Spanish government capability to control public spending by stimulating rational expenditure and efficient resource assignment. The new government is working on improving certain aspects of it, such as the guarantee of compliance with the stability objective by all level of government and some procedural issues.
- This exercise has allowed us to reinforce our position concerning **the need to improve the data availability** on the composition of public finances, and to devote more resources to this exercise. The functional classification of government expenditures has proved to be a very useful tool to the analysis.

Annex 1: Public Expenditures in Spain by Functions and Sub-functions in 2002

Table 5I - Classification of expenditure by functions, 2002(millions €)

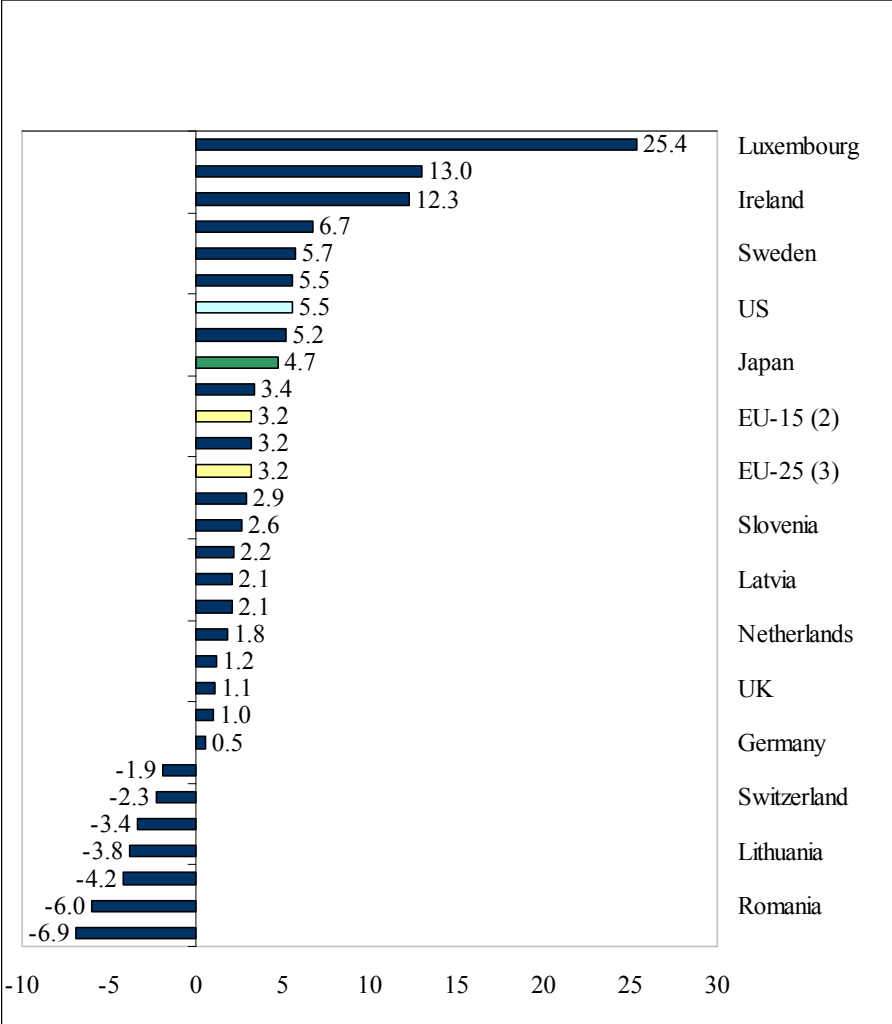
Functions / Sub--functions		% of Total
01 General public services	37.135	13,3
01.1 Executive and legislative organs, financial and fiscal affairs, external affairs	9.415	3,4
01.2 Foreign economic aid	471	0,2
01.3 General Services	6.804	2,4
01.4 Basic research	1.427	0,5
01.5 R&D General public services	20	0,0
01.6 General public services n.e.c.c.	25	0,0
01.7 Public Debt Transactions	18.973	6,8
01.8 Transfers of a general character between different levels of government	-	
02 Defence	8.602	3,1
02.1 Military defence	7.922	2,8
02.2 Civil defence	-	
02.3 Foreign military aid	362	0,1
02.4 R&D Defence	318	0,1
02.5 Defence n.e.c.	-	
03 Public order and safety	14.743	5,3
03.1 Police services	9.818	3,5
03.2 Fire-protection services	1.097	0,4
03.3 Law courts	2.394	0,9
03.4 Prisons	1.082	0,4
03.5 R&D Public order and safety	1	0,0
03.6 - Public order and safety n.e.c.	351	0,1
04. - Economic affairs	31.370	11,2
04.1 General economic, commercial and labour affairs	7.622	2,7
04.2 Agriculture, forestry, fishing and hunting	4.491	1,6
04.3 Fuel and energy	973	0,3
04.4 Mining, manufacturing and construction	1.417	0,5
04.5 Transport	13.046	4,7
04.6 Communication	206	0,1
04.7 Other industries	2.459	0,9
04.8 R&D Economic affairs	871	0,3
04.9 Economic affairs n.e.c.	285	0,1
05. Environmental protection	6.756	2,4
05.1 Waste management	3.474	1,2
05.2 Waste water management	1.281	0,5
05.3 Pollution abatement	344	0,1
05.4 Protection of biodiversity and landscape	1.078	0,4
05.5 R&D Environmental protection	10	0,0
05.6 Environmental protection n.e.c.	569	0,2
Expenditures 01+ 02+ 03+04+05	90.004	32,3

Table 6 II - Classification of expenditure by functions, 2002(millions €)

Functions / Sub-functions		
06. Housing and community amenities	7.815	2,8
06.1 Housing development - 06.2 Community development	6.234	2,2
06.3 Water supply	1.198	0,4
06.4 Street lighting	299	0,1
06.5 R&D Housing and community amenities	1	0,0
06.6 Housing and community amenities n.e.c.	83	0,0
07. Health	37.793	13,6
07.1 Medical products, appliances and equipment	8.794	3,2
07.2 Outpatient services - 07.3 Hospital services	27.001	9,7
07.4 Public health services	832	0,3
07.5 R&D Health	213	0,1
07.6 Health n.e.c.	953	0,3
08. Recreation, culture and religion	9.531	3,4
08.1 Recreational and sporting services	2.050	0,7
08.2 Cultural services	4.041	1,4
08.3 Broadcasting and publishing services	2.431	0,9
08.4 Broadcasting and publishing services	845	0,3
08.5 R&D Recreation, culture and religion	-	
08.6 Recreation, culture and religion n.e.c.	164	0,1
09. Education	30.849	11,1
09.1 Pre-primary and primary education	11.070	4,0
09.2 Secondary education	11.207	4,0
09.3 Post-secondary non-tertiary education	7	0,0
09.4 Tertiary education	6.243	2,2
09.5 Education not definable by level	434	0,2
09.6 Subsidiary services to education	577	0,2
09.7 R&D Education	41	0,0
09.8 Education n.e.c.	1.270	0,5
10. Social protection	94.305	33,8
10.1 Sickness and disability	15.496	5,6
10.2 Old age	45.926	16,5
10.3 Survivors	13.691	4,9
10.4 Family and children	3.333	1,2
10.5 Unemployment	11.452	4,1
10.6 Housing	225	0,1
10.7 Social exclusion n.e.c.	1.859	0,7
10.8 R&D Social protection	12	0,0
10.9 Social protection n.e.c.	2.311	0,8
TOTAL	278.899	100,0

Annex 2:

Figure 2 - Public spending on R&D Government R&D budgets - average annual real growth rates (%), 1997- 2003 (1)



RE-DIRECTING PUBLIC EXPENDITURE –THE UK EXPERIENCE

HM Treasury

Paper completed: December 2006 (updated February 2008)

1. Introduction: objectives / key challenges

The UK Government's principal objective is to build a strong economy and a fair society with stability, security and opportunity for all. Spending decisions are made in support of this objective.

The Government's priorities for public expenditure can be grouped under four key themes.

1.1. Stronger and more productive economy

To raise productivity and deliver balanced growth across the UK, the UK has the following spending priorities:

- a ten year ambition to increase the ratio of UK R&D spending to GDP to 2.5 per cent, with science spending over £1 billion higher in 2007-08 than in 2004-05, an annual average growth rate of 5.8 per cent in real terms;
- invest in learning and skills, with total spending on education in England £12 billion higher in 2007-08 than in 2004-05 and average per pupil funding rising to at least £5,500 by 2007-08.
- a major programme of investment in affordable housing and housing decency, with spending on housing £1.3 billion higher in 2007-08 than in 2004-05, delivering a 50 per cent increase in new social housing building;
- increase investment in transport and provide additional resources to put the railways on a sustainable footing, with real terms growth in transport spending of 4.5 per cent a year on average over 2005-06 to 2007-08 and expenditure in 2007-08 £2.4 billion higher than in 2004-05;
- devolve additional resources and responsibilities to the Regional Development Agencies to support small business, invest in skills, improve business-university links and promote economic development and regeneration in the regions.

1.2. A fairer society with stronger communities

To increase opportunity for all and ensure stronger, safer communities, spending priorities include:

- providing significant additional resources for children, delivering 2500
- Children's Centres by 2008, on the way towards achieving the Government's goal of a Children's Centre in every community;

- a commitment to eradicate child poverty, with a target to halve the number of children in relative low-income households by 2010, on the way to eradicating child poverty by 2020;
- increased resources for health, with health spending growing at an annual average of 7.2 per cent a year in real terms between 2002-03 and 2007-8;
- tackling crime, with spending on crime and justice £3.5 billion higher in 2007-08 than in 2004-05;

1.3. Global security and prosperity

To combat terrorism and create a safer, fairer world for all, spending priorities include:

- development spending increasing to nearly £6.5 billion in 2007-08, reaching a ratio of official development assistance to Gross National Income of 0.47 per cent, the highest level since 1979;
- resources to enable UK Armed Forces to respond to global threats, with defence spending growing by, on average, 1.5% a year in real terms continuing the longest period of period of real terms growth in planned defence expenditure since the 1980s; and
- the resources necessary to ensure the UK is prepared for the threat from international terrorism, with over £1 billion more for counter-terrorism by 2007-08, raising spending in this area to double the pre 11th September 2001 level.

1.4. Better public services

To ensure excellent and efficient public services for all, spending priorities include:

- stretching efficiency targets, agreed for all departments, delivering over £20 billion a year of efficiencies across the public sector by 2007-08, a gross reduction of over 84,000 civil service posts and the relocation of 20,000 others out of London and the South East;
- strengthens and refines the Public Service Agreement framework, with clear outcome-focused national targets for further improvements in public services, developed in consultation with front-line staff; and
- devolves greater responsibility for delivery to local managers and the front line, confirming the abolition of over 500 input and process targets.

2. Decision-making Process and Implementation

2.1. Experiences pre-1997

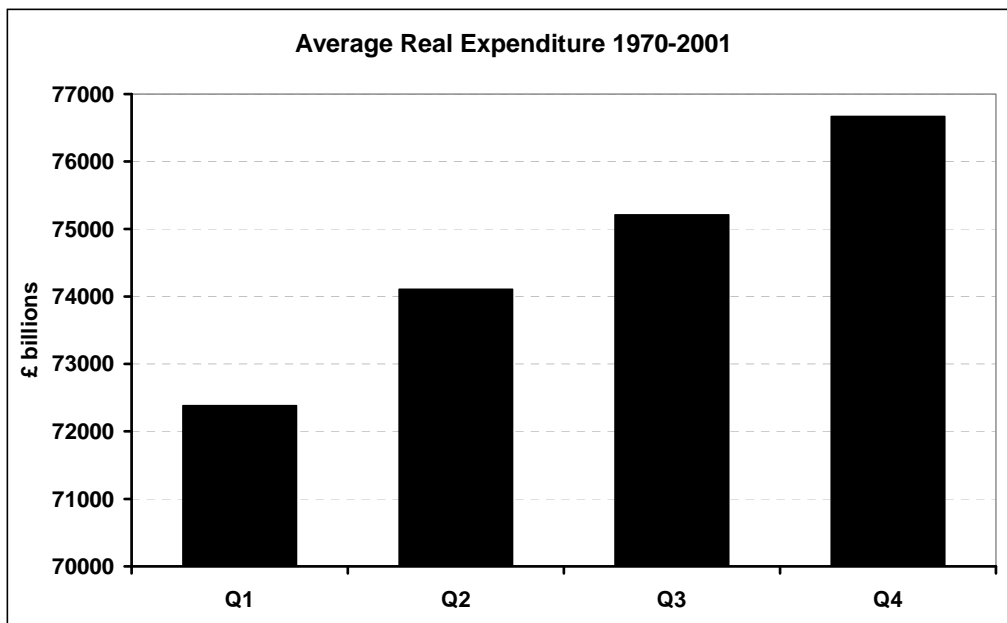
The planning and control of public expenditure is vital to ensure that public services demand equate with supply and that available resources are used as efficiently and effectively as possible.

Pre-97 the Government operated a regime of annual public expenditure Surveys, which set spending limits for departments for one year ahead. As these plans came up for renegotiation every year, a lot of effort was put into bidding for resources rather than focussing on delivery. Additionally there was less scope for longer-term planning. Participants therefore viewed them with scepticism and so neither the Treasury nor departments could rely upon the plans to achieve either effective planning of, or control over, expenditure.

In addition, an annuality rule was also in operation meaning that money not spent in one year could not be carried over to the next. This encouraged departments to use up all their resources before the end of the financial year. Figure 1 shows that on average in the past there has been a surge of spending at the

end of the year. Poor value for money was inevitable in these circumstances that rushed end of year spending.

Figure 1 - Evidence of rushed Q4 spending



Before 1997, the control of inputs into public expenditure was seen as the defining factor. Little effort was made to define measurable outcomes that the public could expect public spending to yield. This led to a lack of focus on what outcomes public expenditure was expected to achieve and encouraged a political debate around public spending which focussed on winners and losers in input terms rather than holding the Government to account for its achievements against measurable objectives.

Another flaw with the system of public expenditure was that spending was planned on an entirely departmental basis. This was despite widespread acceptance that many policy issues required a coordinated response from public agencies. So departments were encouraged to maximise their own resources without regard for the impact of their programmes on common objectives across Government.

2.2. The New Public Spending Framework

In 1997 a new spending framework was implemented with the objectives of improving the quality and cost-effectiveness of public services while ensuring sound public finances. The framework would aim to deliver:

- consistency with a long-term, prudent and transparent regime for managing the public finances as a whole;
- measurements of success by policy outcomes rather than resource inputs;
- strong incentives for departments and their partners to plan over several years and plan together where necessary; and
- the proper costing and management of capital assets to provide the right incentives for public investment.

The new public expenditure framework was underpinned by the Government's fiscal policy framework. The fiscal policy framework is based on the five key principles set out in the Code for Fiscal Stability – transparency, stability, responsibility, fairness and efficiency. Based on these principals the Government has set two fiscal policy objectives:

- over the medium term, to ensure sound public finances and that spending and taxation impact fairly within and between generations and;
- over the short term, to support monetary policy and in particular, to allow the automatic stabilisers to help smooth the path of the economy.

To help meet these objectives the Government set itself two fiscal rules against which it can be judged:

- the golden rule: over the economic cycle, the Government will borrow only to invest and not to fund current spending and;
- the sustainable investment rule: public sector net debt as a proportion of GDP will be held over the economic cycle at a stable and prudent level. Other things being equal, net debt will be maintained below 40 per cent of GDP over the economic cycle.

The fiscal rules ensure sound public finances in the medium term while allowing flexibility in two key respects:

- the rules are set over the economic cycle. This allows the fiscal balances to vary between years in line with the cyclical position of the economy, permitting the automatic stabilisers to operate freely to help smooth the path of the economy in the face of variation in demand; and
- the rules work together to promote capital investment while ensuring sustainable public finances in the long term. The golden rule requires the current budget to be in balance or surplus over the economic cycle, allowing the Government to borrow only to fund capital spending. The sustainable investment rule ensures that borrowing is maintained at a prudent level.

The fiscal rules underpin the Government's public spending framework, by informing an 'envelope' for spending as set out in the Budget. The golden rule increases the efficiency of public spending by ensuring that public investment is not sacrificed to meet short-term current spending pressures. The sustainable investment rule sets the context for the Government's public investment targets and ensures that borrowing for investment is conducted in a responsible way.

The framework for public expenditure is divided between:

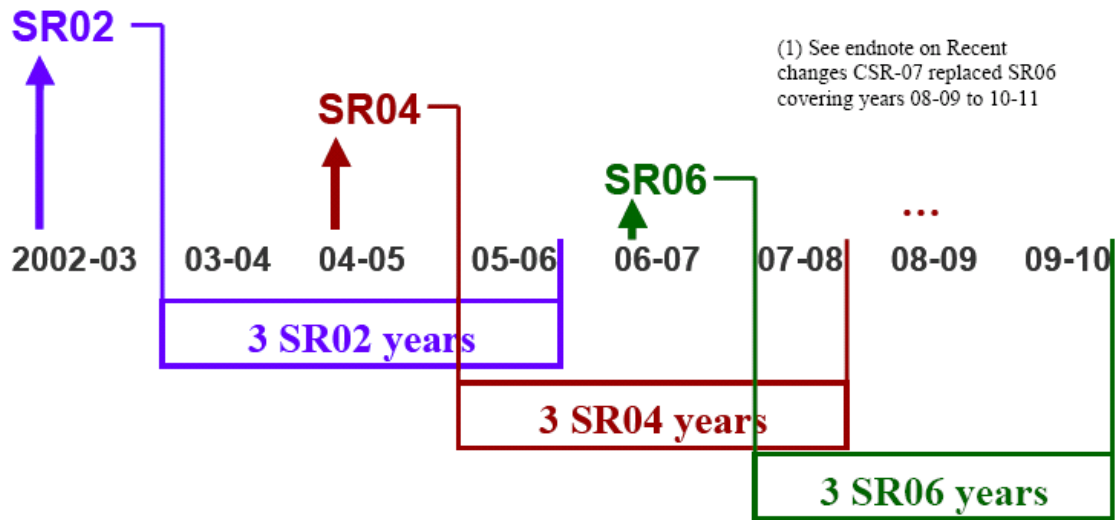
- Departmental Expenditure Limit (DEL) spending, which is planned and controlled on a three year basis in biennial Spending Reviews; and
- Annually Managed Expenditure (AME), which is expenditure which cannot reasonably be subject to firm, multi-year limits in the same way as DEL. AME includes social security benefits, local authority self-financed expenditure, payments under the Common Agricultural Policy, debt interest, and net payments to EU institutions.

2.3. Spending Reviews

The starting point for the total amount of money involved (the envelope) is set in the Budget, in March to April. This is set to be consistent with the fiscal rules. Governments then set out DEL spending between departments according to priorities, as set out above, and evidence of need from departments. Parliament is informed of the decisions but it is the Government who ultimately decide.

Spending plans are set for three year periods in the biennial Spending Review, meaning only the third year ever comes under review, as shown in Figure 2. This establishes a longer term horizon to public spending planning, giving departments the budgetary flexibility and certainty they need to plan and deliver services efficiently and effectively, whilst ensuring sound public finances.

Figure 2 - The timing of Spending Reviews



To encourage departments to plan over the medium term and avoid wasteful ‘end year surges’, departments may carry forward unspent DEL provision from one year into the next. For the full benefits of this flexibility and of three year plans to feed through into improved public service delivery, it is important that end-year flexibility and three year budgets are cascaded from departments to executive agencies and other budget holders.

Three year budgets and end-year flexibility give those managing public services the stability to plan their operations on a sensible time scale without the fear that resources may be cut back in the following year. While departments now have certainty over the budgetary allocation over the medium term, these multi-year DEL plans are strictly enforced. Departments are expected to prioritise competing pressures and fund these within their overall annual limits, as set in Spending Reviews. Resources from the very limited, centrally held DEL Reserve are available only for genuinely unforeseeable contingencies which departments cannot be expected to manage within their DEL. For example some of the spending on the Foot and Mouth outbreak was financed from the DEL reserve.

So the credibility of medium-term plans has been enhanced at both central and departmental level. Departmental Expenditure Limits provide a clear incentive for departments to control their own costs. End-year flexibility also removes the perverse incentive for departments to use up their provision as the year end approaches without regard to value for money.

Longer term budgets have been set for health of five years (in the 2002 Budget) and transport with a ten year plan, recognizing the need for longer-term planning and stable growth in these areas.

2.4. Resource and capital budgets

To correct a natural bias against capital expenditure and to ensure consistency with the Government's fiscal rules, since the 1998 Spending Review departments have been set separate resource (current) and capital budgets. This is consistent with the fiscal rules and prevents the tendency to cut capital expenditure, the benefits of which may only be seen in the medium or long term, to fund current pressures.

To remove the ingrained bias against investment spending capital budgets have grown considerably greater in real terms relative to resource budgets. Only in exceptional circumstances are departments

allowed to switch expenditure from capital to resource budgets. However they are given unlimited flexibility to move spending from resource budgets to capital.

2.5. Annually Managed Expenditure (AME)

AME typically consists of:

- programmes which are large, highly volatile and demand-led, and which therefore cannot reasonably be subject to firm multi-year limits. The biggest single element is social security spending, and the related Housing Revenue Account Subsidy (HRAS). Other items include Common Agricultural Policy payments and negative income taxes classified as public expenditure, including Mortgage Interest Relief and the Working Families Tax Credit. These tax credits (which are classified as expenditure by the ONS because they are given to non-taxpayers as well as taxpayers) appear under "accounting and other adjustments";
- Local Authority Self Financed Expenditure (LASFE) and Scottish Parliament spending financed by non-domestic rates and higher income tax; and lottery spending.

AME is not subject to the same three year expenditure limits as DEL, but is still part of the overall envelope for public expenditure. Affordability is taken into account when policy decisions affecting AME are made. The Government has committed not to take policy measures which are likely to have the effect of increasing social security or other elements of AME, without taking steps to ensure that the effects of those decisions can be accommodated prudently within the Government's fiscal rules.

Given an overall envelope for public spending, forecasts of AME affect the level of resources available for DEL spending. Cautious estimates and an AME reserve - the AME margin - are built in to these AME forecasts and reduce the risk of overspending on AME.

2.6. Resource Accounting and Budgeting (RAB)

A key reform to the public expenditure planning and control regime has been the introduction of resource accounting and budgeting (RAB), resource accounting applies the best commercial accounting and reporting practices to central Government, while resource budgeting uses this information as the basis for planning and controlling public spending. RAB addresses the limitations of the previous cash-based regime (which had changed little since the mid-19th century), and builds on the other significant reforms to the public expenditure framework described above.

Resource budgeting supports the Government's agenda for high quality public services by delivering:

- new incentives for the management of assets and investment;
- a long-term planning framework removing distortions and perverse incentives intrinsic in the old budgeting system, and building in new incentives to reward good management;
- better information for managers on the costs of providing public services on which to base decisions, and better information for Parliament and the public; and
- higher quality financial management throughout Government.

The change in measurement for departmental spending does not have any effect on measurement of the Government's adherence to its fiscal rules. These will continue to be measured on a different basis.

2.7. Performance Management

Spending Reviews are not just about budgeting. Reviews also set targets known as Public Service Agreements (PSA) for key Government priorities. PSA's represent an agreement between the Government and the public, explaining what departments plan to deliver in return for significant extra

investment. By setting targets the public are given a clear statement of what the Government is trying to achieve so improving the accountability of the Government. PSA's give the Government a means of monitoring what is, and what is not working, so providing a clearer sense of direction, and enabling the Government to focus on delivering results. PSA's are now an integral part of spending plans, focusing public spending on the outcomes the Government seeks to achieve, rather than crude inputs or processes.

Decisions about PSA's are made alongside department's budgets during the Spending Review. The Ministerial Committee on Public Services and Public Expenditure (PSX) considers PSA's so the outcomes that departments are aiming to deliver are linked to the money they are allocated.

Each large department has a PSA that sets out its aim, a number of objectives, and performance targets usually linked to the objectives. Departments should aim to have no more than ten targets, the average per department in Spending Review 2004 was less than six.

In many cases, the delivery of PSA's will depend on the actions of those outside central government, such as local authorities or agencies. As far as possible, delivery staff should be consulted and involved in the preparation of PSA's. This should help to ensure the relevance and quality of PSA's, and give those responsible for delivery a sense of ownership

A good PSA target should be:

- Outcome-focused – focused on the ultimate result the Government seeks to achieve from its activities;
- SMART – Specific, Measurable, Achievable, Relevant, Timed;
- Understandable by the public;
- Deliverable;
- Not open to distortion – PSA's should not create perverse incentives or encourage staff to massage or misrepresent performance data; encourage staff to focus on easy-win cases above more problematic and important cases; or lead people to compromise quality in order to achieve a measured target.

As an example the Department for Education and Skills has the following PSA objective and targets.

Objective I: sustain improvements in primary education.

Targets:

1. Raise standards in English and maths so that:

- by 2004 85% of 11 year olds achieve level 4 or above and 35% achieve level 5 or above with this level of performance sustained to 2006; and
- by 2006, the number of schools in which fewer than 65% of pupils achieve level 4 or above is significantly reduced.

3. Results

The next section gives a broad overview of the recent trends in UK spending, and then looks in more detail at spending on the Governments key areas of education, health and transport.

3.1. Overall spending

Spending on Government priorities needs to be seen within a general increase in expenditure. Between 1997-98 and 2004-05 Total Managed Expenditure (TME) increased from £372.6bn to £474.7bn (real 2003-04 prices), a total real increase of over 25 per cent or an annual average increase of 3.1 per cent.

See Figure 3. In the last four years TME as a proportion of GDP has also increased by 4 percentage points from 37 per cent to 41 per cent. See Figure 4. This recent growth has taken place during relatively strong economic conditions, suggesting the recent increase in spending reflects almost entirely a structural change in spending, rather than cyclical effects.

Figure 3 - Total Managed Expenditure (£bn)

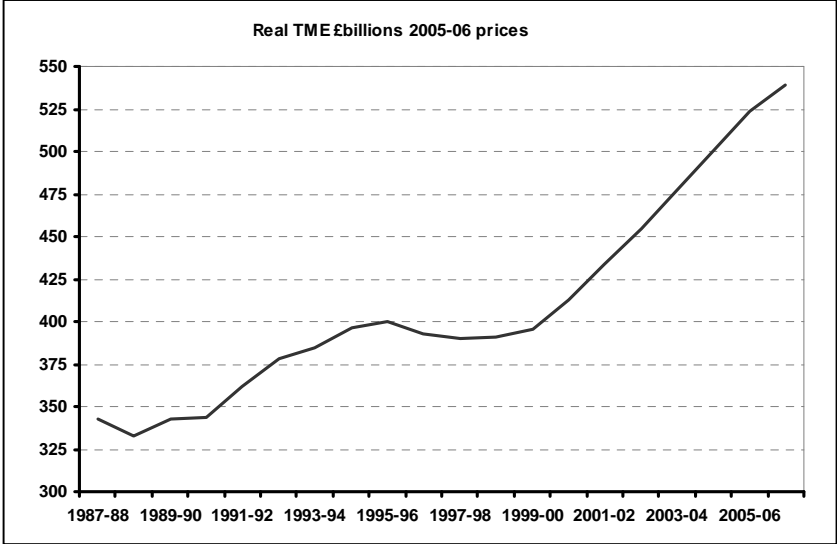
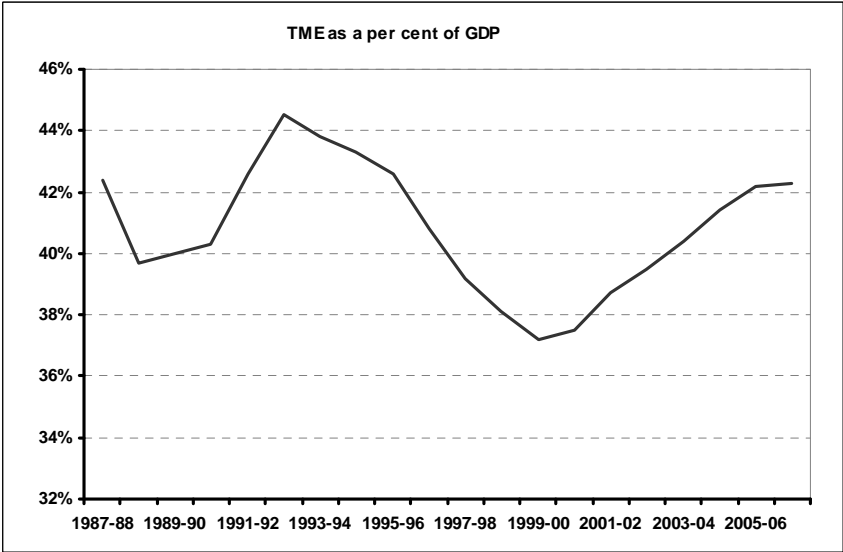


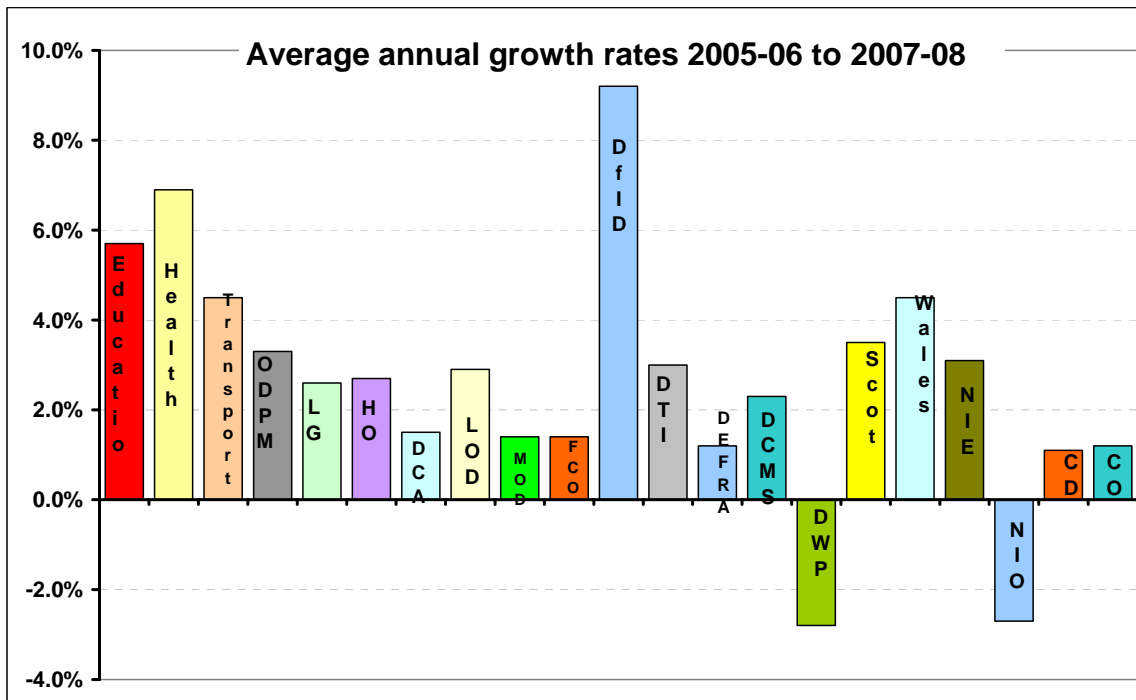
Figure 4 - Total Managed Expenditure (%GDP)



3.2. Departmental spending

Spending Review 2004 sets out spending for the next three years and reflects the Governments priorities of increasing spending on health, education, transport and overseas aid, as shown in Figure 5. Falling unemployment and rising economic participation have allowed savings to be made in welfare spending. A detailed a breakdown of all types of spending in real terms and as a proportion of GDP can be found at the end of the paper, in Tables 1 and 2.

Figure 5 - Spending Review 2004 spending plans

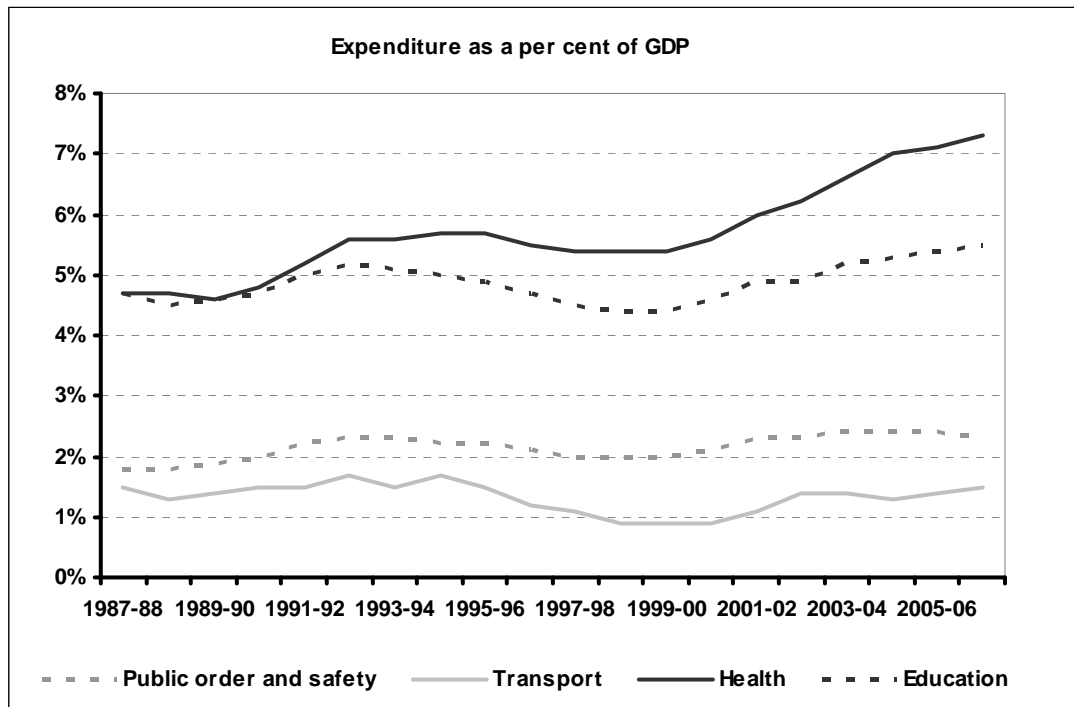


ODPM- Office of the Deputy Prime Minister – Local and regional Government (Housing, planning, communities)

- LG – Local Government
- HO – Home office (Public order and safety, immigration)
- DCA – Department for Constitutional Affairs
- LOD – Law Officers Department
- MOD – Ministry of Defence
- FCO – Foreign and Commonwealth Office
- DFID – Department for International Development (Overseas aid)
- DTI – Department for Trade and Industry
- DEFRA – Department for Environment, Food and Rural Affairs
- DCMS – Department for Culture, Media and Sport
- DWP – Department for Work and Pensions
- NIE – Northern Ireland Executive
- NIO – Northern Ireland Office
- CD – Chancellor’s Departments (HM Treasury, tax collection, customs)
- CO – Cabinet Office

To date the departments who have had the greatest increase in funding are the Department of Health and the Departments for Education and Skills who have seen their share of spending increase from 5.4 and 4.5 per cent to 7 and 5.4 per cent respectively. Transport and public order and safety have also experienced significant increases in funding since 1997-98. See Figure 6. Spending on science and technology has doubled as a proportion of GDP since 1998-99, to 0.2 per cent of GDP.

Figure 6 - Expenditure on health, education, transport and public order and safety (%GDP)



The final section looks more closely on spending in the Governments key areas: education, health and transport. Giving examples of the departments performance against specific PSA's and a look at their overall performances.

3.3. Education

Spending on education has increased by over 40% in real terms since 1997, increasing from 4.5 per cent of GDP in 1997-98 to a 5.5 per cent in 2007-08. The latest spending plans set out in the 2007 Comprehensive Spending Review provide for UK education spending to grow by 2.8 per cent a year in real terms from £77.7 billion in 2007-08 to £92.0 billion in 2010-11. Between April 1979 and March 1997 the average annual increase in real education spending stood at just 1.5 per cent.

The area of education that has seen the greatest proportional since 1997 is spending on the under fives, where growth increased by over 70 per cent in real terms between 1998-99 to 2003-04, equating to an average annual real growth of 11.4 per cent. The Comprehensive Spending Review provided for total funding of over £1.6 billion over the 2007-08 to 2010-11 period for Sure Start, childcare and early years. This will contribute to the delivery of 3,500 Sure Start Children's Centres, one in every community, by 2010 and to extending the weekly entitlement for 3-4 year olds to free early years education from 12½ to 15 hours by 2010.

School capital investment will rise from £700 million in 1997 to £6.4 billion in 2007-08 to £8.2 billion in 2010-11. A total of 675 primary schools are expected to be benefiting from investment under the Government's Primary Capital Programme by 2010-11. 1,000 secondary schools expected to be benefiting from investment under the Building Schools for the Future programme by 2010-11.

These increases in funding for education since 1997 have resulted in a measurable improvement in standards. Over the past ten years, the proportion of 11 year olds achieving expected levels in reading and maths has risen by 17 percentage points and 15 percentage points respectively, and almost 59 per cent of 15-16 year olds achieved five or more A* to C grade GCSEs in 2006, compared to 45 per cent in 1997.

Below is an example of the Department for Children, Schools and Families PSA objectives and targets. Chart 8 shows progress against this target.

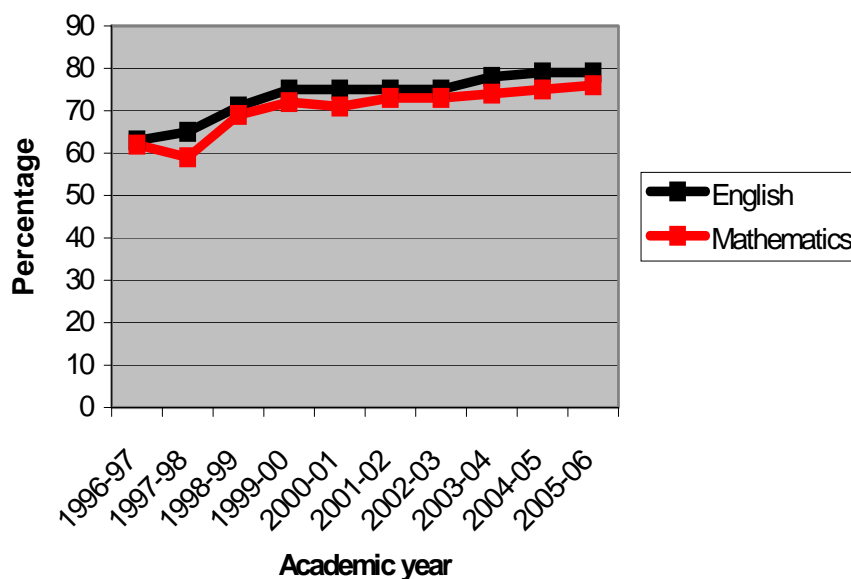
Objective I: Raise standards and tackle the attainment gap in schools.

Targets:

1. Raise standards in English and mathematics so that:

- by 2006, 85% of 11 year olds achieve level 4 or above, with this level of performance sustained to 2008; and
- by 2008, the proportion of schools in which fewer than 65% of pupils achieve level 4 or above is reduced by 40%.

Figure 8 - Progress against education PSA



Attainment of 11-year-olds: percentage of pupils achieving level 4 or above.

As Figure 8 demonstrates, 2005-06 results of National Curriculum Key Stage 2 tests show that 79 per cent of 11-year-olds achieved level 4 or above in English and 76 per cent achieved level 4 or above in mathematics.

New PSA targets have since been laid down in the 2007 Comprehensive Spending Review, including:

Raise the educational achievement of all children and young people:

- attainment of early years foundation stage;
- proportion achieving Level 4 in both English and Mathematics at Key Stage 2;
- proportion achieving Level 5 in both English and Mathematics at Key Stage 3;
- proportion achieving five A*-C GCSEs (or equivalent) at Key Stage 4 including English and Mathematics;
- proportion of young people achieving Level 2 at age 19; and
- proportion of young people achieving Level 3 at age 19.

3.4. Health

Spending on the Department of Health has increased by £30bn since 1996-97 from £51bn in 1996-97 to £81bn in 2004-05, an increase of almost 60 per cent and an increase from 5.5 per cent to 7 per cent of GDP.

Needless to say most of this money has gone to the National Health Service (NHS) where spending has increased from just £33bn in 1996-97 to a projected £92bn in 2007-08. Between April 1997 and March 2004 spending has increased at an average annual rate of 5.8 per cent, which is set to increase to 7.2 per cent up to 2007-08. This compares with 3.1 per cent average annual increase between April 1979 and March 1997.

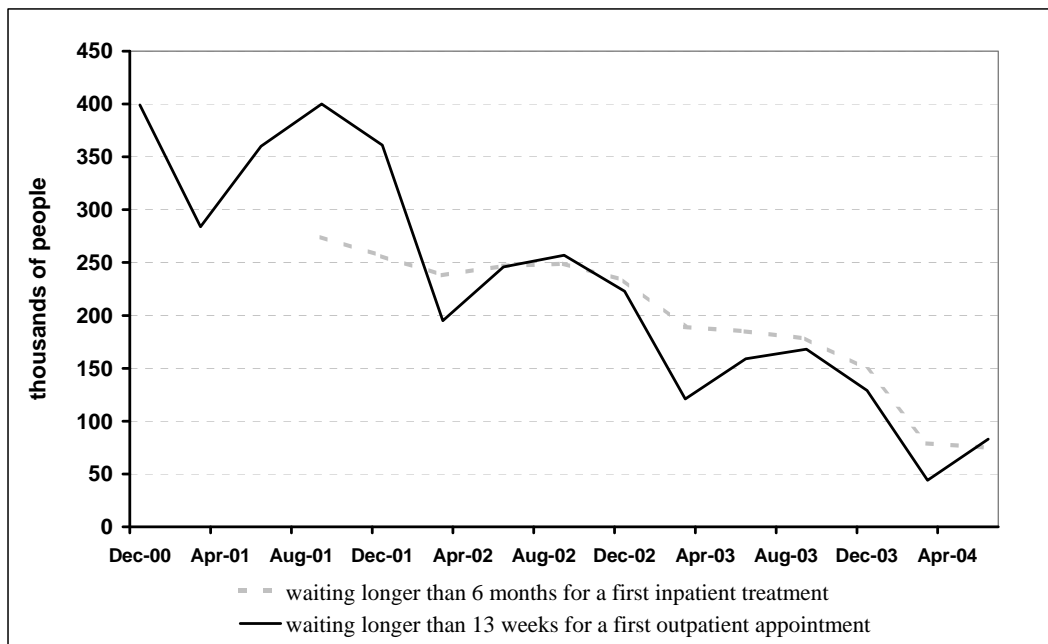
This sustained investment has led to significant improvements in the NHS. Compared to 1997-98, there are now for example 450,000 more NHS operations and 860,000 more elective admissions per year. Maximum waiting times for an operation have been halved from 18 months in 1997 to nine months in April 2004, and there are 264,000 fewer patients waiting for treatment.

Again below is an example of the Department of Health’s objectives and performance targets. Chart 9 shows performance against one of these targets.

Objective: improve service standards.

- Reduce the maximum wait for an outpatient appointment to 3 months and the maximum wait for inpatient treatment to 6 months by the end of 2005, and achieve progressive further cuts with the aim of reducing the maximum inpatient and day case waiting time to 3 months by 2008
- Guarantee access to a primary care professional within 24 hours and to a primary care doctor within 48 hours from 2004.

Figure 9 - Progress against health PSA



As the above Figure shows the number of people who, 1) wait over six months for inpatient treatment and 2), wait longer than 3 months for an outpatient appointment have significantly fallen over the last few years. Those waiting for inpatient treatment fell ten per cent each quarter since August 2001 and those waiting for an outpatient appointment by 3 per cent. Although

there was a slight increase in the number waiting over 3 months for an outpatient week in June 2004 the Government do look to be on track to meet their PSA target.

Transport

Historically a lot less has been spent on transport compared with the Governments two other key areas education and health. The Transport Ten Year Plan 2000: Delivering Better Transport – Progress Report, provided an unprecedented commitment to deliver improved transport through a programme of sustained, long-term funding. Since 2000-01 spending on transport has increased by over 80 per cent in real terms, at an annual average of over 13 per cent. Spending Review 2004 provides average annual growth of 4.5 per cent in real terms over the three year period covered by the review, and so by 2007-08 expenditure on transport will be over 60 per cent higher in real terms than the equivalent amount spent a decade earlier.

This increased expenditure, together with key reforms, have started to correct decades of under-investment in transport infrastructure. Now more passenger trains are in use than have been for the past 40 years, an increase in passenger journeys of over 25 per cent since 1996-97. Train performance has been increased by 2 per cent with train punctuality increased since 2002-03. Maintenance is also increasing with Network Rail replacing over 800 miles of track in 2003-04 compared to less than 300 a decade earlier.

4. Assessment and conclusion

The Government's fiscal and public spending framework has been designed specifically to avoid the mistakes of the past.

- The new macroeconomic framework is delivering a platform of low inflation and economic stability. The clear fiscal rules are delivering sound public finances and set out a transparent framework for the long term against which policy can be judged.
- The new macroeconomic framework is delivering a platform of low inflation and economic stability. The clear fiscal rules are delivering sound public finances and set out a transparent framework for the long term against which policy can be judged.
- Incremental annual spending rounds have been abolished; departments are now set firm multi-year spending limits, allowing them to plan ahead.
- Estimates of cyclically adjusted fiscal balances and trend growth are published regularly, allowing proper scrutiny of policy decisions. Key assumptions are audited by the National Audit Office.
- The public finances forecasts are underpinned by deliberately asymmetric, prudent and cautious assumptions.
- Capital is now planned and managed separately from current spending in the control framework, protecting vital investment against short term pressures and ensuring that the fiscal rules are met.
- Through the Public Service Agreements, planning is now firmly focused on the real-life outcomes of Government activity. Joint budgets and targets are unlocking effective co-ordination across departments and ensuring that solutions are designed around what public service users need.

Further work:

- Improved output and productivity measurement. For example increased funding on education leading to smaller class sizes has the perverse effect of reducing productivity. The Atkinson Review has recently looked at measuring productivity in the National Health Service.
- Greater regional policy dimension to Spending Reviews.
- Relationship of Generally Accepted Accounting Practice (GAAP) departmental budgets and national accounts fiscal framework.

Endnote

(1) Since this paper was delivered SR06 was replaced by the more wide ranging Comprehensive Spending review CSR-07 covering years the 08-09 to 10-11.

Table 1 Total Expenditure on Services by COFOG in real terms⁽¹⁾, 1987-88 to 2006-07

	National Statistics																				accruals, f billion	
	cash, f billion																				2005-06	2006-07
	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	estimate	
1. General public services	47.1	45.7	45.9	42.7	38.6	38.9	40.3	43.7	46.9	46.9	47.3	47.2	43.1	44.4	40.5	39.2	41.0	43.5	45.7	47.1		
of which: domestic general public services	6.7	6.9	8.0	8.0	8.4	8.3	8.1	8.1	8.1	8.0	7.7	8.8	9.5	9.3	10.5	10.9	11.6	12.6	13.0	13.4		
of which: international services	3.5	3.7	3.8	3.8	4.2	4.3	4.3	4.4	4.4	3.9	3.7	3.8	4.3	4.8	4.8	4.8	5.4	5.6	6.0	6.1		
of which: public sector debt interest	36.9	35.2	34.1	30.9	26.1	26.3	27.9	31.1	34.4	35.0	35.9	34.6	29.3	30.3	25.2	23.5	24.1	25.2	26.6	27.6		
2. Defence	35.7	33.9	34.2	33.2	33.0	32.9	31.6	30.9	28.9	27.5	26.2	28.8	29.0	29.3	28.3	29.2	30.2	30.6	30.7	31.6		
3. Public order and safety	14.9	15.4	16.4	17.4	18.5	19.6	19.9	20.3	20.2	20.2	20.4	20.9	21.0	22.9	25.4	26.4	27.8	28.9	29.3	29.8		
4. Economic Affairs	35.5	32.6	32.0	32.7	30.5	32.2	32.1	31.6	30.1	29.0	26.0	23.1	24.8	27.1	30.8	33.1	35.0	34.5	35.3	37.1		
of which: enterprise and economic development	12.1	11.7	11.4	10.5	7.7	7.4	7.4	6.2	5.7	5.4	5.2	3.6	5.1	5.6	5.6	6.4	6.7	6.9	6.4	6.4		
of which: science and technology	1.9	1.8	1.8	1.8	1.8	2.0	2.0	1.5	1.5	1.7	1.7	1.6	1.6	1.6	1.9	2.3	2.4	2.5	2.9	2.8		
of which: employment policies	5.5	4.7	3.8	3.6	3.9	4.0	4.1	4.2	3.9	3.4	3.0	3.4	4.0	4.3	3.7	3.3	3.4	3.3	3.4	3.5		
of which: agriculture, fisheries and forestry	4.1	3.5	3.1	4.1	4.0	4.0	5.1	4.5	5.0	6.7	5.7	5.2	4.9	5.3	7.0	5.1	5.5	5.5	5.6	5.2		
of which: transport	11.9	10.9	11.8	12.6	13.1	14.9	13.5	15.2	14.0	11.8	10.5	9.2	9.1	10.3	12.6	16.0	17.0	16.3	16.9	19.2		
5. Environment protection	4.5	4.6	4.7	4.8	4.9	4.9	4.5	5.0	5.3	4.5	4.9	5.1	5.7	5.8	6.1	6.5	6.5	7.1	8.4	9.4		
6. Housing and community amenities	8.6	6.2	8.6	9.0	9.6	9.8	8.4	8.2	7.8	7.1	6.0	6.5	5.4	6.2	7.2	6.1	7.1	8.3	10.9	11.0		
7. Health	38.0	39.3	39.6	41.1	44.2	47.4	49.4	52.4	53.4	53.4	54.0	55.5	57.3	62.0	66.7	71.6	78.5	84.4	88.7	92.8		
8. Recreation, culture and religion	6.6	6.7	7.0	7.3	7.1	7.1	6.8	7.0	7.1	7.1	7.7	8.5	8.9	8.9	9.5	10.0	10.0	10.2	10.6	11.1		
9. Education (includes training)	39.5	40.3	42.0	42.2	44.4	45.5	46.4	47.8	47.4	46.8	46.5	47.1	48.6	52.2	56.9	58.6	63.3	65.8	69.3	72.2		
of which: education	37.8	38.1	39.7	40.5	42.1	44.0	44.8	46.2	45.9	45.1	45.1	45.5	47.0	50.5	55.2	56.6	61.2	63.7	67.1	69.8		
of which: training	1.8	2.2	2.3	1.8	2.4	1.6	1.6	1.6	1.5	1.7	1.5	1.6	1.6	1.7	1.7	2.0	2.1	2.1	2.2	2.3		
10. Social protection	102.9	99.2	99.8	103.0	114.2	125.7	132.1	135.1	138.3	140.2	138.3	135.7	142.1	146.4	152.7	156.6	163.1	167.4	171.1	172.9		
EU transactions	-2.9	-4.4	-2.5	-3.4	-5.8	-4.6	-6.3	-5.7	-5.3	-6.4	-4.5	-3.1	-3.1	-2.9	-5.4	-2.0	-2.2	-0.9	-0.6	-2.0		
Unallocated(2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.9		
Total Expenditure on Services	330.3	319.7	327.8	330.0	339.2	359.3	365.2	376.3	380.3	376.2	372.9	375.3	382.6	402.3	418.6	435.4	460.5	479.8	499.4	512.1		
Accounting adjustments	12.0	13.2	14.7	13.7	22.7	18.9	19.6	19.9	19.9	16.5	17.1	15.7	13.1	10.3	14.6	18.7	17.2	21.2	24.0	26.8		
Total Managed Expenditure	342.3	332.9	342.5	343.7	361.9	378.2	384.8	396.2	400.2	392.7	389.9	391.1	395.7	412.6	433.2	454.1	477.7	501.0	523.4	538.8		

(1) Real terms figures are the cash figures adjusted to 2005-06 price levels using GDP deflators. For years 1987-88 to 2005-06 deflators are calculated from the latest data from the Office for National Statistics (released 28th March 2007). From 2006-07, GDP is consistent with the March 2007 Financial Statement and Budget Report.

(2) Includes allowance for shortfall and departmental unallocated provision.

Table 2 Total Expenditure on Services by COFOG as a percentage of GDP⁽¹⁾, 1987-88 to 2006-07

	based on cash												based on accruals							
	National Statistics																			
	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
1. General public services	5.8%	5.5%	5.4%	5.0%	4.6%	4.6%	4.6%	4.8%	5.0%	4.9%	4.8%	4.6%	4.0%	4.0%	3.6%	3.4%	3.5%	3.6%	3.7%	3.7%
of which: domestic general public services	0.8%	0.8%	0.9%	0.9%	1.0%	1.0%	0.9%	0.9%	0.9%	0.8%	0.8%	0.9%	0.9%	0.8%	0.9%	1.0%	1.0%	1.0%	1.1%	1.1%
of which: international services	0.4%	0.4%	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%	0.5%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%
of which: public sector debt interest	4.6%	4.2%	4.0%	3.6%	3.1%	3.1%	3.2%	3.4%	3.7%	3.6%	3.6%	3.4%	2.8%	2.8%	2.3%	2.0%	2.0%	2.1%	2.1%	2.2%
2. Defence	4.4%	4.0%	4.0%	3.9%	3.9%	3.9%	3.6%	3.4%	3.1%	2.9%	2.6%	2.8%	2.7%	2.7%	2.5%	2.5%	2.6%	2.5%	2.5%	2.5%
3. Public order and safety	1.8%	1.8%	1.9%	2.0%	2.2%	2.3%	2.3%	2.2%	2.2%	2.1%	2.0%	2.0%	2.1%	2.3%	2.3%	2.3%	2.4%	2.4%	2.4%	2.3%
4. Economic Affairs	4.4%	3.9%	3.7%	3.8%	3.6%	3.8%	3.6%	3.5%	3.2%	3.0%	2.6%	2.2%	2.3%	2.5%	2.8%	2.9%	3.0%	2.8%	2.8%	2.9%
of which: enterprise and economic development	1.5%	1.4%	1.3%	1.2%	0.9%	0.9%	0.8%	0.7%	0.6%	0.6%	0.5%	0.4%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.5%	0.5%
of which: science and technology	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
of which: employment policies	0.7%	0.6%	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%	0.4%	0.4%	0.3%	0.3%	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
of which: agriculture, fisheries and forestry	0.5%	0.4%	0.4%	0.5%	0.5%	0.5%	0.6%	0.5%	0.5%	0.7%	0.6%	0.5%	0.5%	0.5%	0.6%	0.4%	0.5%	0.5%	0.5%	0.4%
of which: transport	1.5%	1.3%	1.4%	1.5%	1.5%	1.7%	1.5%	1.7%	1.5%	1.2%	1.1%	0.9%	0.9%	0.9%	1.1%	1.4%	1.4%	1.3%	1.4%	1.5%
5. Environment protection	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.7%	0.7%
6. Housing and community amenities	1.1%	0.7%	1.0%	1.1%	1.1%	1.1%	1.0%	0.9%	0.8%	0.7%	0.6%	0.6%	0.5%	0.6%	0.6%	0.5%	0.6%	0.7%	0.9%	0.9%
7. Health	4.7%	4.7%	4.6%	4.8%	5.2%	5.6%	5.6%	5.7%	5.7%	5.5%	5.4%	5.4%	5.4%	5.6%	6.0%	6.2%	6.6%	7.0%	7.1%	7.3%
8. Recreation, culture and religion	0.8%	0.8%	0.8%	0.9%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.8%	0.8%	0.8%	0.8%	0.9%	0.9%	0.8%	0.8%	0.9%	0.9%
9. Education (includes training)	4.9%	4.8%	4.9%	5.0%	5.2%	5.4%	5.3%	5.2%	5.0%	4.9%	4.7%	4.6%	4.6%	4.7%	5.1%	5.1%	5.4%	5.4%	5.6%	5.7%
of which: education	4.7%	4.5%	4.6%	4.7%	5.0%	5.2%	5.1%	5.0%	4.9%	4.7%	4.5%	4.4%	4.4%	4.6%	4.9%	4.9%	5.2%	5.3%	5.4%	5.5%
of which: training	0.2%	0.3%	0.3%	0.2%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
10. Social protection	12.8%	11.8%	11.6%	12.1%	13.5%	14.8%	15.0%	14.8%	14.7%	14.6%	13.9%	13.2%	13.3%	13.3%	13.6%	13.6%	13.8%	13.8%	13.8%	13.6%
EU transactions	-0.4%	-0.5%	-0.3%	-0.4%	-0.7%	-0.5%	-0.7%	-0.6%	-0.6%	-0.7%	-0.5%	-0.3%	-0.3%	-0.3%	-0.5%	-0.2%	-0.2%	-0.1%	0.0%	-0.2%
Unallocated(2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.1%
Total Expenditure on Services	40.9%	38.1%	38.2%	38.7%	40.0%	42.2%	41.6%	41.2%	40.5%	39.1%	37.4%	36.6%	35.9%	36.6%	37.4%	37.9%	38.9%	39.6%	40.2%	40.2%
Accounting adjustments	1.5%	1.6%	1.7%	1.6%	2.7%	2.2%	2.2%	2.2%	2.1%	1.7%	1.7%	1.5%	1.2%	0.9%	1.3%	1.6%	1.5%	1.8%	1.9%	2.1%
Total Managed Expenditure	42.4%	39.7%	40.0%	40.3%	42.6%	44.5%	43.8%	43.3%	42.6%	40.8%	39.2%	38.1%	37.2%	37.5%	38.7%	39.5%	40.4%	41.4%	42.2%	42.3%

(1) For years 1987-88 to 2005-06 using GDP consistent with the latest figures from the Office for National Statistics (published 28th March 2007). From 2006-07, GDP is consistent with the March 2007 Financial Statement and Budget Report.

(2) Includes allowance for shortfall and departmental unallocated provision.