Public finances in EMU 2011

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Public finances in EMU - 2011

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This year's report comes at a time when doubts on continued steady output growth have emerged and the optimism of the Spring that the European economy is emerging into the post-crisis world has become more cautious. This optimism is moreover further muted by the risks associated with the Member States with high spreads on their bond yields, as concerns about solvency and sustainability persist.

The issue of sustainability has emerged as the key concern in the immediate post-crisis years. Soaring deficits and off-balance-sheet operations to support the financial sector have led to a large increase in debt for nearly all European Union countries. Despite the fact that a return of GDP growth, a gradual withdrawal of the temporary support measures and the start of consolidation is starting to reduce deficits, debt is still expected to continue increasing for the next year or so in most cases. Once it has reached its peak, the issue is not over. It will not be sufficient to stem the increase; rather, additional consolidation measures will be required to reduce it from its new level, not least because population ageing is due to have an increasingly negative effect on the public finances and put pressure on their sustainability in coming decades.

These issues and the appropriate policy responses to deal with the challenge we have ahead of us are considered in detail in the *2011 Report on the Public Finances in EMU.* The report provides an overview of the current developments, looking at recent outcomes and both the Commission services' and the Member States' own projections for the public finances. This provides the background to discuss the proposed reform to economic and budgetary surveillance which is currently nearing the end of the adoption process and which seeks to put into action the main lessons learnt from the crisis. The report discusses the various parts of the reform in details, looking at the changes to the Stability and Growth Pact (SGP), as well as the other proposals which accompany it and are key to an integrated policy change. It shows how the reform package addresses the weaknesses identified by the crisis, both in terms of the setting of policy and the correction of deviations from the optimal path.

One of the proposals that accompany the changes to the SGP is the inclusion of a directive prescribing minimum requirements for national fiscal frameworks. The first analytical section of the report considers the impact that fiscal frameworks have on bond spreads and finds that an improvement in the quality of national budgetary decision-making can make an important contribution to the magnitude of spreads. This is particularly the case for countries with the weakest processes – which incidentally also tend to be the countries with the largest spreads.

The second analytical chapter discusses the measurement of sustainability and presents a number of extensions to the existing methodology that is used by the European Commission. Being able to accurately estimate the strengths and weaknesses faced by different countries and the challenges they face is key to taking appropriate action and addressing problems in a timely and apposite manner.

Given the difficult times that euro area has faced in recent years, and the central role that debt sustainability has come to play for a number of particularly affected countries, I trust that this year's report will provide a much needed addition to the debate of how to emerge from this crisis economically wiser than we went in.

Marco Buti

Director-General

Economic and Financial Affairs

SUMMARY

The recovery is here – but growth is still delicate.

The economic and financial crisis affected all European Union (EU) countries between 2008 and 2010. After a contraction in 2009 in every EU country (except Poland), growth returned in 2010 in all but five peripheral countries. Despite growth continuing through the beginning of 2011, the depth of the recession was such that the overall output level is expected to only just approach its pre-crisis level by the end 2011. For some countries, however, the effects on output have been much more dramatic; by 2010 Ireland's output was 10% below its 2007 level, Estonia's over 15% below and Latvia's around 20% below its 2007 level. While the recovery was back on aggregate at the beginning of 2011, the overall economic situation remains fragile as is shown by somewhat weaker-than-expected growth in the second quarter of 2011, and in some countries the recovery is yet to be felt.

The consolidation has started and set to intensify in 2011…

Nevertheless, the tentative turnaround that started over the course of 2009 indicates that it is now time to shift the policy focus to the longer term challenges that have resulted from these difficult times, especially in certain EU countries. While in 2010 several countries continued to support their economies through discretionary measures, other countries had less room for manoeuvre given their underlying public finance situation, and were already withdrawing measures and consolidating their public finances. Overall, this resulted in an improvement in the structural balance in both the EU and euro area. In 2011, this consolidation is being stepped up, with all euro area Member States improving their underlying budget balance through fiscal tightenings and both the euro area and EU27 averages showing a stronger structural budgetary position.

…which is crucial as the crisis had a strong impact on the public finances, with a lasting increase in the debt level.

The need for consolidation should not be underestimated. The years of the crisis left behind a legacy, not just of support measures that need to be reversed, but of lasting weaknesses to the public finances. The higher public deficits and below-the-line operations in support of the financial sector combined to drive up public debt. In the EU27, unless additional policy measures are legislated for, debt is forecast to rise from 59.0 % of GDP in 2007 to 83.3% in 2012; for the euro area the corresponding figures are an increase from 66.3% to 88.7%. The challenge is not just to stem the increase in debt – if countries follow through the plans that they set out in their 2011 Stability and Convergence Programmes then overall, stabilisation is expected in 2012 – but also to reverse the increases. Higher debt is costly in terms of interest payments with the additional taxes needed to service it negatively affecting growth and such negative effects being multiplied by the risk premia. The demographic trends are also such that the medium-term future is set to be marked by higher costs of ageing and lower potential growth as fewer working age people shoulder the burden of relatively more older individuals. The issue of the sustainability of the public finances is set to intensify in the coming decades.

The increase in debt has been caused by both the direct impact of the crisis and by policy-making in previous years.

These increases in the level of debt are the result of both the policies introduced during the crisis years and the underlying fiscal positions that developed during the previous period. Over the years 2007 to 2009, fiscal balances deteriorated overall from an average deficit of 0.7% of GDP to 6.3% in the euro area and from 0.9% of GDP to 6.8% in the EU, with the automatic stabilisers being responsible for about half the deterioration. In addition, temporary support measures also contributed to the increases in the deficits

and with the return of growth their fiscal cost will need to be addressed. Moreover, not only was policy after 2007 responsible for the deterioration in the fiscal positions, but so was policy in the run-up to the crisis.

The onset of the crisis exposed underlying weaknesses in many Member States' public finances, which had been allowed to develop over the first decade or so of Economic and Monetary Union (EMU). Before the crisis, assets and particularly real estate booms in some Member States, the counterpart of which was an increase in private debt, temporarily masked an underlying fiscal weakness because tax receipts depended heavily on debt-fuelled consumption and real estate transactions. There has been a large and irreversible impact on fiscal positions from the slump as these revenues plummeted. As these windfall revenues were typically used to fund expenditure programmes, a lasting deficit appeared when the revenues dried up. The consolidation needs for these countries are particularly strong, as the return of growth will not provide enough of a cyclical improvement in the public finances.

EU countries are bound to keep their deficits and debt in check and to aim at long-term fiscal positions that insure them against shocks and promote long-term sustainability.

EU Member States are required by the Treaty to ensure that their government deficits do not exceed 3% of GDP and that their debt levels should be declining to below 60%. Moreover, even when within these limits, countries should aim at a medium-term fiscal position that insures them against shocks and promotes long-term sustainability. The Stability and Growth Pact (SGP) sets out the implementation provisions for looking at both the overall medium-term orientation of fiscal policy in its preventive arm and the way in which excesses over the Treaty values are treated as part of the Excessive Deficit Procedure (EDP) in its corrective arm.

In 2009 and 2010, the Council applied the corrective arm of the SGP to almost all EU Member States. Greece, Latvia, Lithuania, Romania, Malta, Poland, Bulgaria, Denmark. Belgium, the Czech Republic, Germany, Italy, France, Spain, Ireland, the Netherlands, Austria, Portugal, Slovenia Slovakia, Cyprus and Finland were placed under the EDP, while Hungary and the United Kingdom had their prior recommendations amended. Finland's EDP has since been abrogated. In 2010, the Council gave notice to Greece to take measures to correct its excessive deficit by 2012. The requirements of Member States placed under the EDP were set so as to take the particular needs and circumstances of the different countries in the wake of the Great recession into account as allowed by the SGP rules. The deadlines set for the correction of the excessive deficits have been set depending on the size of consolidation that is required, taking wider issues of sustainability and budgetary risks into account.

The latest SCP plans to meet medium term budgetary objectives show a stronger consolidation than the Commission Spring forecasts....

The Stability and Convergence Programmes (SCPs) set out Member States' budgetary strategies to meet the requirements in the EDPs and their progress towards meeting Medium Term Budgetary Objectives (MTOs) over the coming years. The latest round of SCPs covers the years up to 2014 and was presented in early 2011 as part of the newly introduced European Semester, which allows for policy advice to be received by Member States ahead of the approval of their 2012 budgets.

The plans set out in this round of the SCPs are based on growth assumptions that are broadly in line – albeit marginally more optimistic – than those set

out by the Commission in the 2011 Spring forecasts. They show a considerable reduction in the budget deficit over the years under consideration, with the euro area overall reaching the 3% deficit threshold in 2012, somewhat lower than the Commission forecasts.

...based on additional measures being taken.

The main differences between the SCP plans and those forecast by the Commission are due to the inclusion in the SCPs of policies that are not yet specified. While the Commission forecasts are based on a 'no-policy-change' assumption which only considers measures that have been specified and committed to by governments, the SCP figures also consider the policies that governments plan to introduce. The extra consolidation measures included in the SCPs mean, not only that the deficits shrink faster, but that debt is also forecast to reach its inflection point in 2012, and to begin falling as a share of GDP from then on.

The fact that the governments' plans depend on these extra consolidation measures raises the question of whether or not they will actually be realised. There is always the risk that the extra measures will not be introduced, as it is clear that consolidation measures tend to have a political cost. That said, the details given in the SCPs are encouraging – the time profiles of the fiscal tightenings that are given are generally front-loaded, indicating that governments intend to introduce necessary changes in the near future rather than postponing them with uncertain results. Moreover, they tend to be expenditure based. While a consolidation can be the result of a mix of tax increases or spending cuts, evidence from the past indicates that expenditure based consolidations tend to have greater success, in terms of the effect that they have on the overall public finances. Whether a primarily revenue or expenditure based consolidation is appropriate for a particular country depends on its particular characteristics – in some cases it will be difficult to cut spending further, while in others starting high levels of revenue act as a real constraint.

The coming years will be difficult – in part because the pre-crisis years were not prudent enough. The provisions of the SGP were not sufficient to ensure, that prudent policies were pursued.

It is clear that while the recovery is under way, the fiscal repair process – and its attending costs – will last for years to come. This is not just because the recession was particularly severe but also because the imprudent policies of the years before the crisis have left their mark. The preventive and corrective arms of the SGP were meant to ensure that countries maintained an underlying fiscal position in terms of their MTO that was close to balance or surplus, thereby ensuring that the absolute deficit did not exceed 3% of GDP in recession and the debt was brought rapidly below 60%. The objectives were meant to include a potential 'pre-financing' of future age-related expenditure. In practice, even in 2007 – a year of which came after a period of sustained favourable economic conditions – few countries were at their MTO. In addition, although countries were consistently placed under the EDP when their deficits exceeded 3% of GDP, the debt criterion was never explicitly adhered to. In particular, the EU secondary legislation which implements the provisions of the EDP does not provide any specification about the implementation of this criterion. While this absence does not legally exclude the possibility that countries could be placed in EDP for high levels of debt, it does render it more analytically and politically difficult.

Introducing a new reform package which includes...

As a result of the weakness identified in the pre-crisis EU-level budgetary surveillance, the Commission has proposed a reform package with the aim of updating the SGP to take on board the lessons learnt from the crisis and introducing further aspects of surveillance and budgetary policy to improve policy making and avoid mistakes that are now apparent. Specifically, the package seeks to reform both the preventive and the corrective arms of the SGP, strengthen and introduce further sanctions for non-compliance with the SGP, introduce a new European Imbalances Procedure to look at wider issues of economic governance and introduce a new directive on national fiscal frameworks to improve fiscal policy making at a national level. While the adoption of the package was awaiting final approval by the Council and the European Parliament when this publication went to print, all its principal characteristics can be considered to be in place.

...changes to the preventive arm of the SGP and ....

The reform of the preventive arm of the SGP introduces the concept of an expenditure benchmark in assessing whether fiscal policy is appropriate, in the sense of being consistent with maintaining or approaching a country's MTO. The expenditure benchmark will be used alongside the examination of the structural balance in assessing the orientation of fiscal policy both on an ex ante and an ex post basis. It will require that net expenditure growth (that is, expenditure growth, net of any discretionary increases in revenues) be below a reference medium term potential growth rate of the economy. Countries at the MTO will need to show that net expenditure growth is in line with this estimate of economic growth, while those that more than meet their MTO will face looser constraints. This condition aims to ensure that countries no longer finance expenditure growth out of cyclical increases in revenues. Evidence from the years in the run-up to the crisis shows that the positive revenue surprises that many countries experienced tended to be used to increase expenditure rather than to reduce borrowing in debt. This led to insufficient strengthening of the underlying budgetary position, high levels of expenditure that were difficult to reduce once the underlying economic fundamentals changed and higher than desirable levels of debt. By increasing the focus on how government expenditure is financed, the quality of fiscal decision making can be improved.

...changes to the corrective arm. This introduces provisions to operationalise the debt criterion...

Meanwhile, the reform of the corrective arm of the SGP places debt at the centre of the SGP by providing the secondary legislation to operationalise the debt criterion. The requirement to ensure that debt is either at or below the 60% threshold or sufficiently diminishing towards it is placed on an equal footing to the 3% deficit criterion. So far, despite the deficit and debt criteria being on an equal footing in the Treaty, no country has been placed in EDP as a result of its debt. In the future, a breach of either criterion will be sufficient to place a country in EDP. The proposed legislation introduces a numerical benchmark for judging whether debt is sufficiently diminishing and amends the implementation provisions that previously focussed only on the deficit to also take the debt into account. At the same time, reflecting the greater impact on the evolution of the debt ratio of factors beyond the control of the government, non-respect of the benchmark, even adjusted for the cycle, will not necessarily result in the concerned country being placed in EDP. This decision will have to take into account all factors that are relevant in the sense of entering or mitigating the fiscal risks associated with high debt. A special transitional period is foreseen to allow high-debt countries, which are currently all subject to the EDP, to adapt to the new setup, where

deficits below 3% – sometimes significantly so – will be required for compliance with the debt benchmark. The reform also affords greater leeway in taking relevant factors into account before placing a country in EDP in the case of a breach of the deficit criterion, if the country concerned has a public debt of below 60% of GDP. The overall thrust of the reform is therefore on concentrating on gross fiscal policy errors.

…and enhance the enforcement mechanism. Sanctions are also being introduced to the preventive arm of the Pact for the first time.

The changes to the preventive and corrective arms of the SGP should improve the Pact's ability to ensure strong public finances. But this will only happen if the Pact is effectively enforced. So far, it can be argued that the Pact was more binding in difficult than in good times. But even when breaches of the corrective arm were identified, no use was ever made of the more punitive financial sanctions that existed thus weakening the urgency with which corrective action was taken. Conversely, there were no sanctions in the preventive arm, beyond the possibility for the Council to address an "early warning" to Member States whose policy was found to be in breach of the requirements to be at or move towards the MTO.

The reform changes this picture significantly, at least for the euro area countries, which become subject to two new enforcement mechanisms. With the reform, an interest-bearing deposit could be levied on euro area countries that are found not to have made sufficient progress towards their MTOs and fail to comply with a recommendation to take measures. And in the corrective arm, sanctions are enhanced and apply earlier in the process. At the time when an excessive deficit is identified by the Council, the euro area country in question may already become liable to a non-interest-bearing deposit, which is then upgraded to a fine if the country is later found not to have taken sufficient action in response to the initial recommendations to correct the excessive deficit. Both these penalties will apply earlier than the fine originally possible under the SGP, which can be applied only when a country has failed on two successive instances to comply with EDP recommendations.

Beyond the introduction of new sanctions, positive pressure on countries to comply with the SGP may increase as a result of the new provision for economic dialogue introduced in the reform: the competent committee of the European Parliament is expected to hold regular discussions on surveillance involving the Council and the Commission and, in the case of country-specific surveillance measures, the countries concerned.

But the EU rules cannot be effective without national decision-making supporting them, so a new directive on national fiscal frameworks is part of the reform process.

While the European rules set the framework within which fiscal policy is to be determined, it is at the national level that budgetary decisions are actually taken. The quality of the decisions taken and the process for taking them varies greatly from Member State to Member State. In order to ensure that the worst performing Member States learn from the best performing ones and take on board some valuable lessons in policy setting, a directive on national fiscal frameworks is also included in the reform package. It sets out minimum requirements for domestic fiscal frameworks, while allowing Member States to choose the means for complying with them. This is in recognition of the fact that the optimal procedural and institutional set-up for fiscal-policy making will depend on the different characteristics of Member States, meaning that there is no one model that can or should be applied in all cases. The directive covers the quality of accounting and statistics, the

macroeconomic and budgetary forecasts that they use, the numerical fiscal rules that they have in place, the existence of medium-term budgetary frameworks and the transparency of the their finances. By adhering the requirements in the directive, the decision-making process in the worst performing Member States can be enhanced. Adequate processes within Member States are a sine qua non to strong European-wide public finances.

The importance of fiscal frameworks can be seen by estimating their impact on sovereign spreads.

The idea that processes have an impact on fiscal outcomes can be seen by analysing the impact of fiscal governance on sovereign spreads. Sovereign spreads are the differential between a country's sovereign bond yield and the yield of a risk-free bond and are determined by the perceived risk linked to the probability that a government will default on its debt and the associated loss given the default. As fiscal governance procedures are increasingly recognised as determining the quality of fiscal decision making, it would be expected that better procedures should be linked to lower perceived default probabilities and lower spreads. Results from an econometric analysis which looks at the impact of measures of fiscal governance, while controlling for other variables, on the yield spread, confirm this reasoning: holding other characteristics such as the level of the deficit and debt constant, a higher quality of rules based fiscal governance is linked with a lower yield spread. The results also indicate that those countries with the highest deficits and debt have the most to gain from an improvement in their fiscal governance in terms of a reduction in their spreads.

Spreads have increased dramatically since the onset of the crisis, leading to some countries facing the possibility of sovereign default…

The role played by sovereign spreads in the euro zone has increased dramatically with the onset of the crisis. Prior to the crisis, there was little difference in the bond prices of the various euro zone countries. Although the EU had a stated policy of not bailing out any country that might find itself facing sovereign default, the markets had not priced in the possibility that a euro area country might default on its debt. Whether this was due to the perceived credibility of the SGP to contain deficits and debt, or the perceived irrelevance of the so-called no bailout clause, spreads were low and only started to widen in 2009. As a number of countries found themselves facing the possibility of not being able to finance their debt due to the cost imposed by the markets and the financial stability of the euro area as a whole was considered under threat, the EU and its Member States put together assistance packages for Greece, Ireland and the Portugal.

…which is turn has prompted action to create the European Stability Mechanism (ESM).

Alongside the assistance programmes and the temporary vehicles for delivery funds, the euro area Member States have put together the permanent European Stability Mechanism (ESM). Once the relevant Treaty is ratified by all participating Member States, the ESM will be able to offer financial assistance to countries facing difficulties financing their debt on the financial markets, subject to strict conditionality conditions. However, ESM will only provide funding after a fiscal sustainability assessment shows the country to be solvent – it is not a mechanism for taking on a country's debt, but for tiding it over until it is able to access the financial markets again. Such an assessment will typically require two types of analysis: first, an assessment of the short-term liquidity needs of the country, and, second, a medium to long term assessment of debt sustainability which analyses the public sector's ability to pay back its debt. The two aspects of the analysis are both necessary and interconnected.

It is important to be able to assess sustainability and new methodologies are being developed for this purpose.

In order to be able to assess debt sustainability in the future, the Commission services are looking to supplement their traditional sustainability analysis with a number of other methodologies. The first methodology being looked at measures the fiscal risk linked to the banking sector in order to estimate the possible impact that a banking crisis could have on the public finances. It provides a probability distribution of the impact of a banking crisis on the public finances. This is computed in a number of steps. First, an estimate of the probabilities of default of banks' obligors is obtained, to gain an assessment of the probability of default of individual banks. These are then aggregated – taking possible inter-linkages into account – to compute the distribution of the cost of a banking crisis on the public finances.

A second methodology being looked at uses fiscal and macroeconomic variables to identify thresholds which have in the past been linked to the onset of crises. By using historical data to calibrate the thresholds, an indicator of fiscal crisis can be developed which signals the emergence of variable levels that have previously occurred before the onset of crises. By considering the underlying data, such a model can be used to alert policy makers to early signs of a possible impending crisis.

Another methodology being looked at to reinforce the current sustainability gap methodology consists in using country-level fiscal reaction functions which assess how government deficits have in the past reacted to the debt level by controlling for a number of macroeconomic and institutional determinants. The country-level reaction functions can be combined with the EU intertemporal budget constraint to calculate sustainable debt levels under different assumptions for the interest rate-growth rate differential. Current debt levels can then be compared with these thresholds to draw an assessment of whether a Member State is fiscally sustainable.

The aforementioned methodologies are useful tools to assess debt sustainability but require the assumption that the feedback effects between fiscal and economic variables are small. With large consolidations being required in a number of countries, the reaction of the economy to new measures is particularly important when choosing which policies to implement, both because the macroeconomic impact is important in itself and because it limits the revenue-raising potential of measures. To evaluate such limits, a model-based general equilibrium approach is also tested in this report based on the Commission's QUEST model. Revenue maximising tax rates are estimated based on the Laffer curve – which relates taxation revenues with taxation levels – to look at the feasibility of tax-based consolidations. The model provides a way to assess different consolidation composition and timing scenarios can be compared via a measure of their output costs.

Part I

Current developments and prospects

SUMMARY

A slow and tentative recovery from the worst economic crisis since World War II is underway in the EU. Following a deep recession in 2009, GDP growth in the EU came in at 1.8% in 2010 and is expected to remain similar in 2011. Both the recession and subsequent upswing varied greatly across countries; in 2010, GDP growth ranged from over 3% in several Member States to negative growth in Ireland, Romania and Greece and to minor degree in Spain and Latvia.

The economic crisis has also had visible effects on the labour market, with the EU unemployment rate stabilising at around 9.5% between 2009 and 2011. The consequences for the public finances have been and continue to be significant. The EU average budget balance deteriorated by 6.1 percentage points of GDP between 2007 and 2009, to reach a deficit 6.8% of GDP. Half the deterioration was due to the functioning of the automatic stabilisers, while the effect of discretionary temporary support measures enacted by governments and the collapse of tax receipts from certain sectors such as the real estate market contributed to the remainder of the weakening.

In 2010, many EU Member States continued to support their economies with discretionary measures. However, a partial withdrawal of the stimulus measures began in a number of countries and as a result, the structural balance improved overall in both the EU and the euro area. The improvement in the euro area was primarily the result of a lower expenditure-to-GDP ratio, with lower public investment being a key feature. The improvement in the structural balance equals the improvement in the headline deficit, indicating that the overall improvement was structural in nature. However, within the overall total there are large differences between countries. In 2010, Ireland experienced an unprecedented deterioration in its public finances with the deficit reaching 32.4% of GDP owing to extraordinarily large measures to support the banking system, while several other Member States, including Greece, posted significant improvements.

2011 and 2012 should see further improvements in the budgetary positions. Nevertheless, budget deficits are forecast to remain higher than their 2007 or 2008 levels. The aggregate general government deficit of the EU is expected to shrink by 1.7 percentage points to reach 4.7% of GDP in 2011 and to further improve to 3.8% of GDP in 2012, with more than half of this improvement coming from structural measures. A similar profile, albeit with slightly lower deficits, is expected for the euro area. Once again, there are large differences between the figures for different countries.

The economic slowdown, increasing public deficits and below-the-line operations in the context of the support to the financial sector combined to drive up public debt. Debt in the EU is projected to rise from 59.0% of GDP in 2007 to 83.3% in 2012 and from 66.3% to 88.7% in the euro area. The starting levels of debt ranged from 3.7% of GDP in Estonia to 105.4% in Greece. Member States with higher starting levels of debt face both a snowball effect of debt and are more likely to face an increase in the interest rate. There were large differences in the increases seen so far, and those still projected to materialise, with part of the heterogeneity being due to sizeable differences across countries in public interventions to support the financial sector. These developments are examined in Chapter I.1.

The Stability and Growth Pact (SGP) sets out the parameters within which EU countries should manage their public finances. It requires Member States to achieve and maintain medium-term budgetary objectives (MTO) for their budget balances, which are set in cyclically adjusted terms and are net of one-off and temporary measures. It also requires Member States to avoid excessive deficit positions, measured against reference values for deficits and debt of 3% and 60% of GDP, respectively. Chapter I.2 shows that the recent unprecedented economic downturn and the associated deterioration of the budgetary positions have been an important test for European fiscal surveillance. During 2009 and 2010, the Commission and the Council applied the enforcement mechanisms of the SGP against almost all EU Member States. Chapter I.2 reviews the implementation of the framework since January 2010 focussing, in particular, on the excessive deficit procedure (EDP). According to the Commission services' 2011 Spring forecasts, twenty-two Member States had a deficit in excess of the 3% of GDP threshold in 2010; only Denmark, Estonia, Luxemburg, Finland and Sweden had budgetary positions that were within the Treaty limits. On the back of a robust, albeit

geographically dispersed, economic recovery, the fiscal outcomes for some Member States turned out to be better than expected even one year ago. The Commission services' 2011 Spring forecasts project that twenty EU Member States will record deficits in excess of the 3% of GDP threshold in 2011. Bulgaria and Germany are expected to bring their deficit below 3% in 2011, while Hungary is projected to reach a 1.6% of GDP surplus. However, as this is mainly on account of temporary proceeds from a return to the public Pay-As-You-Go system of assets hitherto accumulated in the second private pension pillar, the Commission services expect Hungary to return to a deficit of 3.3% of GDP in 2012, in the absence of any further policy measures.

Chapter I.3 provides an overview of the 2011 updates of the Stability and Convergence Programmes (SCPs) submitted by Member States in the context of the European Semester. The Stability and Convergence Programmes (SCPs) set out Member States' fiscal strategies to return to their medium term budgetary objectives over the coming years. As the SCPs were examined in the context of the European semester for the first time, policy advice was received by Member States ahead of the approval of their 2012 budgets and covered both fiscal and other economic policies in a comprehensive manner. The economic growth assumptions for 2011 and 2012 contained in the SCPs are slightly more optimist (by 0.1 to 0.2pp) than those set out in the 2011 Commission Spring forecasts. The SCPs project euro area growth of 1.7% and 1.9% for 2011 and 2012 respectively while for the EU they forecast growth of 1.8% and 2.1%. Potential growth in the SCPs is not projected to differ much from the Commission's forecasts, as the additional growth in the SCPs is primarily cyclical. The largest differences in growth projections are for Spain, Bulgaria and Sweden on the positive side (so for higher SCP projections relative to the Commission's figures) and Estonia and the Czech Republic on the negative side.

The SCPs projections show considerable reduction in the general government deficit, with the overall figure approaching 3% of GDP by 2012 – the first year fully influenced by the introduction of the European Semester. The Commission forecasts, which are based on unchanged policy assumptions, are however for a larger deficit than appears in the SCPs, 3.5% of GDP for the euro area and 3.8% for the EU. All countries except Austria, Denmark, Germany, Luxembourg, Sweden and Finland are targeting lower deficits than the Commission for 2012. By decomposing the differences in the projections, it is clear that the impact of the 2011 consolidation measures which are included in the SCPs but have not yet been explicitly committed to and so are not included in the Commission figures, makes up nearly all the difference between the two forecasts for the euro area overall. This points to the fact that if countries are to realistically expect to meet the projections set out in the SCPs, they will have to introduce the measures that are outlined in the SCPs over the course of 2011. The policy gap is largest in the cases of Slovenia, Cyprus, Lithuania, Belgium and Latvia, where it exceeds 1 percentage point of GDP.

With economic growth having returned in 2010 and stabilizing in 2011 and 2012, the necessary consolidation is now underway in both the EU and euro area as a whole. Over the years 2010–2014 the EU (the euro area) is projected to improve its fiscal positions every year to reach a deficit of 1.4% (1.3%) of GDP in 2014. Overall, the time profile of the consolidation is front-loaded with the main exceptions being Belgium, Denmark, Luxembourg and Estonia. In these countries the consolidation is back-loaded, although in some cases only to a limited extent. The consolidation is based on reductions to expenditure. According to the proposed reform of the preventive arm of the SGP which are discussed in more detail in Part II, countries should plan for expenditure growth to be in line or below their medium-term rate of potential GDP growth unless the excess is covered by discretionary revenue measures. Plans in the SCPs are broadly consistent with the proposed benchmark, albeit with some exceptions such as Lithuania and Estonia, which plan strong expenditure growth in 2012, only to reverse it between 2013 and 2014.

Debt is expected continue increasing past the point where economic growth returned, until the consolidation has been underway for long enough and gained enough strength to halt and then start reversing the upward trend in debt. This means that the debt ratio in the EU should peak at 82.5% in 2012 before returning at 79.9% of GDP in 2014. This is near the 80% level seen in 2010, but is considerably higher than the pre-crisis starting point. However, for some countries such as

Greece, Ireland, Portugal, the UK and Spain the high increase in the level of debt since the beginning of the crisis means that the reduction by 2014 will be small and reversing the increases seen since the time of the crisis is likely to take many further years. The main indicator (S2) for assessing long-term fiscal sustainability – calculated based on the projected changes in age-related expenditure up to 2060 from the 2009 Ageing Report – shows that nearly all countries are expected to have a lower sustainability gap under the assumption that the fiscal plans in the programmes are implemented with the exception of Luxembourg and Finland. Even assuming the full implementation of the fiscal plans in the SCPs, five countries are over 6%, which is considered to be risky.

1. CURRENT DEVELOPMENTS AND PROSPECTS

1.1. A SLOW AND UNCERTAIN RECOVERY

Un uncertain recovery from the worst economic crisis since World War II is now underway in the EU. However, as the financial crisis compounded the imbalances accumulated earlier in the world economy, the adjustment process is leading to an extensive period of weakness in economic activity. The Commission services' Spring 2011 European Economic Forecast projects real GDP growth for the EU at 1.8% in 2011, ([1]) against a backdrop of 1.8% in 2010 and a very steep recession in 2009 of –4.3%.

The recession has been broad-based across countries, despite sizeable differences. Some EU Member States have been subject to a more pronounced and/or protracted recession, depending on their exposure to the financial crisis and the global manufacturing cycle on the one hand, and on domestic and external imbalances on the other, including competitiveness developments. In the same vein, the subsequent upswing is also occurring at a differing pace across countries. In 2010, GDP growth ranged from high positive rates of over 3% of GDP in several Member States (Sweden, Slovakia, Poland, Malta, Germany, Luxembourg, Estonia, Finland), and negative growth in Ireland, Romania and Greece and to minor degree in Spain and Latvia. In the large Member States, GDP is expected to change by between 4.0% (Poland) and 0.8% (Spain) this year. In Greece and Portugal the output change is forecast to be markedly in the negative.()

The EU economy has returned to positive growth rates on a quarterly basis from the third quarter of 2009, although overall, these have been relatively modest so far and in some countries they have been quite irregular. In 2012, GDP growth is expected to continue at a broadly unchanged rate of 1.9%. In the light of the overall situation of the world economy, the outlook still remains somewhat uncertain, with downside risks.

The economic crisis has also had visible effects on the labour market. From the low of 7.1% in 2008, the EU unemployment rate has risen rapidly, although reacting with a lag to GDP growth. In 2009 it stood at 9.6%. Unemployment is likely to remain at similar levels of around 9.5% this year, before decreasing in 2012. However, developments also differ strongly across countries, with Member States undergoing large-scale fiscal adjustments often experiencing a considerable deterioration in the labour market. On the other hand adverse labour market developments also affect the public finances, which further compounds the major policy challenge for the EU economy to reduce unemployment.

1.2. THE BUDGETARY LEGACY OF THE CRISIS

Three factors explain the marked deterioration in the public finances situation across the euro area and the EU which resulted from the crisis: the role of the automatic stabilisers, the introduction of discretionary measures and the fall in revenues due to the bursting of housing and/or credit bubbles in some countries.

During the first phase of the crisis, between 2007 and 2009, the budget balance deteriorated from an average deficit of 0.7% of GDP to 6.3% in the euro area and from 0.9% of GDP to 6.8% in the EU. Conventionally-measured automatic stabilisers ([2]) represented around half of this deterioration and, as the output gap is not forecast to be closed before 2013, the automatic stabilisers should continue to weigh on headline deficits during the coming years.

With the onset of the crisis, temporary supportive discretionary measures sought to increase demand and to act against the shrinking of the economies. Of course, these measures increased deficits and led to higher debt. Over the medium and long term, the effect of the supportive measures should be better outcomes for the economy and therefore a better outlook for the public finances overall, as the benefits of the extra stabilisation provided outweigh the fiscal costs. However, the balance

([1]) The first estimate of GDP growth for the second quarter of 2011, points to slightly smaller figures.

([2]) The automatic stabilisers vary across countries in their size and composition. Overall, in bad times, governments receive less revenue from taxes while spending levels tend to rise due to an increased burden on the social security system. However, automatic stabilisation mainly works through the inertia of expenditure with respect to cyclical swings in output: their share in GDP increases 'automatically' in downturns and declines in upturns.

between the benefits and costs over the short and long term will depend, in part, on the state of the public finances at the onset of the crisis. This was crucial for deciding whether EU Member States could shoulder the extra burden of the support measures and it was only those countries that had sufficiently strong public finances at the onset of the crisis that were able to provide their economies with this impetus. The country-specific pre-crisis situation was therefore of key importance when determining the level of support which was both possible and appropriate.

In some EU Member States, the rise in public deficits is also due to the bursting of pre-crisis housing/credit bubbles. Although due to the effect of the economy and non-discretionary, such changes in revenues do not form part of conventionally measured automatic stabilisation as their cause is not directly linked to normally understood cyclical variation. Before the crisis, real estate bubbles temporarily masked an underlying fiscal weakness because tax receipts depended heavily on real estate transactions. There has been a large and irreversible impact on fiscal positions from the slump as these revenues plummeted. In parallel, many items of spending, such as the provision of public services, do not tend to fall as the economy weakens, also leading to an increase in the public deficit. Consolidation needs are therefore over and above the cost of the support measures of the crisis because taxes were used to fund expenditure programmes as if they were, effectively, permanent.

In 2010, many EU Member States continued to support their economies with discretionary measures. However, a partial withdrawal of the stimulus measures began in a number of countries, particularly on the expenditure side. As a result, the structural balance improved slightly, despite the inertia which creates difficulties in adjusting the level of non-cyclical expenditure.

Similarly, the average headline deficit has started to decrease along with the shrinking of the negative output gap.

At the same time the unfolding of the crisis has put questions of debt sustainability at the centre of the debate. For the first time since the inception of the EMU a number of countries, both inside and outside the euro area, havefound themselves in a position where the markets could not address their debt financing needs. As a consequence they had to negotiate a financial assistance package with the European Union and/or the EU Member States and the IMF, to borrow money subject to strict conditionality conditions (see Box I.1.1 for country specific information). In parallel with the extension of the programmes the European Council has reached an agreement for the establishment of a European Stability Mechanism to provide on a permanent basis financial assistance to euro area Member States (see Box I.1.2.)

Following increasing tensions in the markets, in particular in relation to the budgetary situation and prospects in Greece, where the need for a new assistance programme had become evident, but also to threats of contagion to otehr euro-area countries, the Heads of State and Government of the euro area, meeting in Brussels on 21 July 2011, decided on a set of measures to improve the sustainability of Greek public finances, including the involvement of private-sector creditors, and increasing the flexibility of the financial assistance mechanisms (see Box I.1.3.)

Box I.1.1: **Budgetary developments and policy responses in programme countries**

The EU and its Member States have provided financial support to a number of Member States facing problems in meeting their international payment obligations or financing their debt, on the condition that they implement a closely monitored programme of economic adjustment based on a Memorandum of Understanding. The main objective of the assistance programmes is restoring market confidence in debt sustainability of a country by correcting financial, external and fiscal imbalances in order to allow the government to return to the market at reasonable prices. The programmes have a medium-term policy orientation, as growth is unlikely to be buoyant when the initial corrective fiscal measures are implemented but should resume when the situation is improved. To achieve the programme objectives, all available budgetary, financial and structural policies are used, with a focus on correcting fiscal imbalances and placing debt on a sustainable path, maintaining banking sector stability, increasing potential growth and restoring competitiveness. This involves income and social security policies needed to buttress the budgetary adjustment effort and the restoration of competitiveness with social buffers, and the structural reforms that boost the economy's capacity to produce, save and export and hence are critical for the medium-term recovery. A key principle of the support is to pursue a fair distribution of the adjustment burden, protecting the most vulnerable in society. Fiscal policy is the cornerstone of the programmes and is the focus of this box. Interventions in favour of euro area members versus non-members have a difference legal basis and are thus treated separately.

Non-euro area Member States

The first Member States to benefit from EU support were Hungary, Latvia and Romania. According to Article 143 of the Treaty, the EU can provide assistance to non-euro area Member States when a Member State is in difficulties or is seriously threatened with difficulties as regards its balance of payments. The facility to provide medium-term financial assistance foreseen in the Treaty has been established by Council Regulation (EC) No 332/2002. In all three cases, the support consisted of balance-of-payments assistance designed to ease the country's external financing constraints. The assistance by the EU was provided jointly with the IMF in all cases. Both Romania's and Latvia's programmes also involved the World Bank and EBRD, while in Latvia's case contributions of bilateral loans by regional neighbours were also envisaged but never became necessary.

Hungary received access to balance-of-payments assistance in November 2008 and in 2009, with EUR 5.5 billions having been released in three instalments. However, in view of the improved access to market financing, Hungary has not drawn the remaining billion in the fund since the completion of the reviews in November 2009. The status of the Hungarian programme has been quasi-precautionary since the second half of 2009, when the period covered by the EU assistance ended. A post-programme surveillance framework was established to monitor the situation to ensure continued sound policies and the repayment of the EU funds. A first mission was carried out by Commission services in early April 2011, in close cooperation with the IMF staff.

Latvia was granted support of EUR 7.5 billions (with the EU share being 3.1 billions) in December 2008 subject to a three-year programme which was finalised in January 2009. The programme is very demanding and includes an extensive fiscal consolidation resting mainly on expenditure cuts. Its implementation has occurred alongside an improving external environment. With the economic recovery coming earlier than expected, the public finances have stabilised and fiscal targets have been consistently over-achieved. In 2010, the deficit came in at 7.7% of GDP — well within the target of no more than 8.5%) of GDP — and would have equalled 5.5% in the absence of bank restructuring costs. For 2011 a deficit of 4.5% of GDP is expected, clearly below the target of no more than 6% of GDP. The Latvian authorities aim to reach a deficit of 2.5% of GDP in 2012 and to fulfil the conditions for adoption of the euro by 2014. Given the improved state of government finances and the economic recovery, the Latvian authorities do not intend to draw on the remaining financing available under the programme, in particular as Latvia successfully returned to international financial markets in June 2011.

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Box (continued)

Romania has benefited from assistance since May 2009. The total amount of the loan provided under the first Balance of Payment programme amounts to € 5 billion (with the EU share being € 1.4 billion). The fifth and final tranche of € 150 million was disbursed in June 2011. Following the successful completion of the first Balance of Payments assistance programme in Romania (May 2009 – May 2011), a follow up joint EU/IMF precautionary program started in June 2011. The programme provides precautionary financial assistance of nearly € 5 billion until the end of March 2013.On the fiscal side, significant progress has been recorded since the start of the programme: in 2010 the budget deficit was reduced to 6.4% of GDP from 8.5% in 2009. The cash target for budgetary execution in the first quarter of 2011 was comfortably met, and developments indicate that the budget execution will remain on track to respect the agreed deficit target for 2011 (4.4% of GDP on a cash basis; below 5% on ESA accrual basis). Public sector wage developments continue to respect the limits set out in the 2011 budget and in the medium-term fiscal strategy. For 2012 the Commission services expect a reduction of the budget deficit to 3.6% of GDP in their Spring 2011 forecast.

Euro area Member States: Greece

In May 2010 the euro-area Member States and the IMF provided financial support to Greece in the context of a sharp deterioration of its financing conditions. On 2 May 2010, the Eurogroup agreed to provide bilateral loans pooled by the European Commission for a total amount of EUR 80 billion to be disbursed over the period May 2010–June 2013. On 10 May 2010 the Council adopted a Decision according to articles 126(9) and 136 of the Treaty including the main conditions to be respected by Greece in the context of the financial assistance programme. The financial assistance provided by euro area Member States is part of a joint package, with the IMF financing an additional EUR 30 billion under a stand-by arrangement. This financial assistance package fully covers the government's financing needs related to its fiscal deficit and maturing medium- and long-term liabilities until the beginning of 2012, and progressively less thereafter.

The programme of economic policies, whose implementation is a condition for the financial support, negotiated with the Commission on behalf of the Member States, ECB and IMF staff has been shown to be appropriate. Greece has made significant progress in reducing its macroeconomic and fiscal imbalances. Besides the direct fiscal steps for the budget, a series of important structural fiscal reforms have been initiated, including reforms of pensions, healthcare, taxation, and tax administration. For instance, the normal retirement age has been set to 65 years and early retirement restricted. However, after a strong start in the summer of 2010, reform implementation came almost to a standstill by the end of 2010/early 2011. The insufficient political consensus on various reforms and administrative constraints, have weighed on programme implementation. In Spring 2011, the ESA-based 2010 general government deficit was found to equal 10.5 % of GDP, around 2.5% above the target and 1% of GDP above the estimates of the two previous reviews. This was because of a widening of general government to include a number of loss-making public enterprises, a more severe than anticipated revenue shortfall – including in 2010 taxes which are collected in early 2011 – a worse than estimated balance of the social security sector and the accumulation of arrears in the other -than state sectors. Further to the revenue shortfall, several measures to fight tax evasion have not been fully effective, although part of this underperformance results from the severity of the recession and the liquidity constraints of taxpayers. Nonetheless, the quantitative fiscal performance criteria for the first quarter of 2011 have been met.

Against this background, and in the light of prohibitively high spreads on Greek bonds, a reinvigorated economic adjustment programme with scaled up financing assistance became necessary to prevent the fiscal deficit from getting entrenched at unsustainable levels. (The maturity of the bilateral loans had already been extended and the interest payable lowered.) More imminently, it became necessary to cover the expected financial gap from 2012 onwards and to allow the next loan disbursement. The government has adopted a number of structural measures, also aimed at ensuring the durability of fiscal consolidation. They address various key weaknesses of public finances in Greece, including the overstaffing of the public sector and shortcomings in tax compliance. Important steps have also been agreed to strengthen and accelerate privatisation, while efforts to improve the collection and processing of general government data have been intensified further. If no action had been taken, the government deficit in 2011 would remain close to the 2010 level – above 10% of GDP rather than respecting the ESA-based fiscal deficit ceiling for 2011 of

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Box (continued)

7% of GDP. A medium-term fiscal strategy (MTFS) has been prepared to ensure the durability of fiscal consolidation. The aim is to reduce the government deficit to 2.5% of GDP in 2014 and further in 2015, and place the debt ratio on a downward slope. To this end, the government identified fiscal consolidation measures of about 10% of GDP between 2011 and 2014.

Euro area Member States: Ireland and Portugal

At the time when the pooled bilateral loans were being made available to Greece, a new mechanism and facility were set up. The European Financial Stability Mechanism (EFSM) essentially reproduces for the EU 27 the basic mechanics of the existing balance-of payments-Regulation for non-euro area Member States. When the mechanism is activated, it allows the Commission to borrow on financial markets on behalf of the Union under an implicit EU budget guarantee. The Commission then lends the proceeds to the beneficiary Member State. This particular lending arrangement means that there is no debt-servicing cost for the Union. The interest and loan principal are repaid by the beneficiary Member State via the Commission. The EU budget guarantees the repayment of the bonds in case of default by the borrower. The EFSM has a budget of EUR 60 bn and is a part of a wider safety net available for euro area Member States, which aims to safeguard EU financial stability amid severe tensions in euro area sovereign debt markets. Alongside the EFSM, the European Financial Stability Facility provides up to EUR 440 billion in funds guaranteed by the euro area Member States, while funding from the International Monetary Fund of at least EUR 250 billion brings the total funds available to over EUR 750 billion. In addition, the European Central Bank (ECB) has the possibility of purchasing sovereign debt. The legal basis for the EFSM is Council Regulation (EU) No 407/2010 of 11 May 2010 establishing a European financial stabilisation mechanism adopted on the basis of Article 122 TFEU. It is to be noted that the EFSM Regulation provides for the conclusion of a Memorandum of Understanding, which, in practice, is also used by the EFSF.

The first euro area Member State to use the new mechanism and facility was Ireland. Upon a request from the Irish government, understandings were reached in late November 2010 toward a comprehensive policy package including EUR 85 billion of financial assistance between the Irish government, the IMF and the European Union, in liaison with the ECB. Of this, EUR 17.5 billion comes from domestic and EUR 67.5 billion from external sources. In addition to fiscal consolidation measures, the accompanying conditions provide for a reform of the Irish banking sector and a range of growth-enhancing structural reforms. Fiscal performance has so far been in line with programme targets. In 2010, central government tax revenue was slightly better than expected (by 0.1 percentage points of GDP), although partly offset by higher expenditure. This, together with a better than expected outturn of the local government balance, improved the general government balance in nominal terms by some EUR 0.3 billion, as compared to the programme. Despite weaker growth, the budget deficit is forecast to remain within the programme ceiling in 2011 (10.5% of GDP). Revenue performance so far this year suggests stronger underlying revenue buoyancy than previously assumed and the government's cash-based revenue and expenditure targets to end-May have been met. The gross debt to GDP ratio is forecast to peak at just under 120% in 2013, and decline thereafter, broadly in line with original programme targets. The new government announced a jobs initiative aiming at boosting job creation on 10 May 2011 while respecting the agreed fiscal targets. The jobs initiative is designed to be fiscally neutral over the period 2011 to 2014. A comprehensive review of expenditure has also begun, which is expected to inform the budgetary process in the autumn. The authorities are putting in place a fiscal advisory council and there is a deadline to introduce legislation by the fourth quarter of 2010 to underpin a medium-term expenditure framework with binding multi-annual ceilings. To reinforce long-term fiscal sustainability, legislation was passed in June 2011 to progressively increase the pension age from 65 to 68 between 2014 and 2028.

Following a request by Portugal on 7 April 2011, Commission, ECB and IMF staff negotiated an Economic Adjustment Programme for the years 2011–14. The Programme was formally agreed by the European Council and the IMF Board in May 2011. Its financial package will cover up to EUR 78 billion for possible fiscal financing needs and support to the banking system. One third of this (up to EUR 26 billion) will be financed by the European Union under the European Financial Stabilisation Mechanism (EFSM), another third by the European Financial Stability Facility (EFSF), and the final third by the IMF under an Extended

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Box (continued)

Fund Facility. The fiscal consolidation strategy, supported by structural fiscal measures and better fiscal control over public-private-partnerships and state-owned enterprises, aims at putting the gross public debt to GDP ratio on a firm downward path in the medium term. The authorities are committed to reducing the deficit to 5.9% of GDP in 2011, 4.5% of GDP in 2012 and 3.0% of GDP in 2013. Fiscal consolidation should be maintained in the medium term up to a balanced budgetary position, mainly by containing expenditure growth. Furthermore, the Programme envisages a possible budget-neutral adjustment of the tax structure so as to improve the competitiveness of the economy, once the scope for such a change has been assessed.

Box I.1.2: The ESM, A Permanent Crisis Resolution Mechanism

In the face of one of the direst financial recessions in history, the European Union has taken robust action to limit contagion, reform its supervisory and regulatory framework in order to make the banking sector more resilient, strengthen economic governance, and stimulate growth. Furthermore, reforms of the economic governance package will significantly improve the efficiency and effectiveness of the coordination of economic policies. These comprehensive efforts will not only help reduce the probability of another major financial crisis, but minimize the impact when one does occur. Overall, the EU has made the necessary efforts to ensure a path of sustainable recovery and greater financial and economic stability in the future.

The financial crisis in Europe was exacerbated by the emergence of the euro area's sovereign debt crisis in early 2010. In response to this challenge, in May 2010, the EU and the euro area Member States established two temporary mechanisms – the European Financial Stabilisation Mechanism (EFSM) and the European Financial Stability Facility (EFSF) – to provide funding for those euro area countries in need of financial assistance. The two mechanisms, one backed by the EU budget, the other an entity based on an intergovernmental agreement and able to issue directly on the financial markets, are temporary instruments, intended to act as a safeguard until 2013.

Sustained market stress – but particularly the ongoing pressure on sovereign debt markets – increasingly highlighted the need for a more robust mechanism: one that would better appease market concerns and provide long-term reassurance. By the time the new multi-annual financial framework enters into force in 2014, the EFSM would no longer exist and the EFSF would have lost the legal capacity to provide new financing. The only instrument left would be the Balance of Payments Regulation, which has limited financing power and geographical scope, as it does not cover euro area Member States. Without an adequate response mechanism at its disposal, the euro area could face sustained market uncertainty, jeopardizing longer-term stability.

In that context, policy makers agreed that a permanent mechanism would be needed to handle sovereign debt crises and limit possible contagion effects in order to safeguard the stability of the euro area as a whole. The European Council of November and December 2010 concluded that the European Stability Mechanism (ESM) would be established to assume the role of the EFSM and EFSF in providing external financial assistance to the euro area Member States as of June 2013.

Towards a permanent European Stability Mechanism

On 24 March 2011, the European Council endorsed major decisions regarding the structure of the ESM and the modalities under which financial assistance to Member States will be granted. The decision was a critical step in ensuring that the establishment of a permanent mechanism would come to fruition.

The Term Sheet, the technical document in which structural and practical details of the ESM were laid out, was then developed into an ESM Treaty. The Treaty was signed by the 17 euro area Member States in July, at which point participating Member States began working through the national procedures for the necessary ratification by national Parliaments. The ESM will become effective in 2013.

The possibility to establish such a mechanism will be explicitly referred to in the Treaty on the Functioning of the European Union (TFEU), subsequent to the March European Council's decision to amend Article 136 of the TFEU by adding the following third paragraph: "The Member States whose currency is the euro may establish a stability mechanism to be activated if indispensable to safeguard the stability of the euro area as a whole. The granting of any required financial assistance under the mechanism will be made subject to strict conditionality".

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Box (continued)

ESM major structural features

The function of the ESM will be to mobilise funding and provide financial assistance, during critical times, to euro area Member States. All access to ESM financial assistance will be provided on the basis of strict policy conditionality under a macroeconomic adjustment programme and a rigorous analysis of public debt sustainability, which will be conducted by the Commission together with the IMF and in liaison with the ECB. The beneficiary Member State will be required to put in place an appropriate form of private sector involvement, according to the specific circumstances and in a manner fully consistent with IMF practices.

The highest decision-making body of the ESM will be its Board of Governors, which will consist of the Ministers of Finance of the euro area Member States (as voting members), with the European Commissioner for Economic and Financial Affairs and the President of the ECB as observers. The Board of Governors will take major decisions by mutual agreement, including the granting of financial assistance, the terms and conditions of that assistance, the lending capacity of the ESM, and changes to the menu of instruments/tools at its disposal. All other decisions will be taken by qualified majority, unless otherwise stated. Voting weights on the Board of Governors will be proportional to the Members' respective subscriptions to the capital of the ESM.

The ESM will be set up as an International Financial Institution (IFI), under international public law, and will be located in Luxembourg. With an effective lending capacity of EUR 500bn, including outstanding loans of the EFSF, the ESM will be a robust mechanism and the largest IFI in the world.

The ESM's lending capacity will be ensured by establishing the appropriate mix between paid-in and callable capital. The ESM's capital structure will comprise EUR 700bn of authorized capital, of which EUR 80bn is in the form of paid-in capital (to be phased in over five years, in equal instalments) and EUR 620bn of callable capital. The lending capacity will be formally reviewed on a regular basis. Financial assistance from the ESM will take the form of loans; however, the ESM may also, in exceptional circumstances, intervene in the debt primary market in the context of a programme with strict conditionality.

As it seems reasonable to link the functioning of the ESM to other fiscal changes that also include their own policy conditionality and, thus ensure consistency among the various reforms, a framework could be created under Article 136 for a reinforced economic and fiscal surveillance of Member States requesting financial support outside of the EU framework.

The ESM will be able to lend at fixed or variable rates. Pricing will take into account the debt sustainability of a recipient country while remaining above funding costs, with an adequate mark-up for risk, and be in line with IMF pricing principles. ESM loan rates will have to cover the funding costs of the ESM, supplemented by a charge of 200 basis points applied on the entire loan, with an additional surcharge of 100 basis points for loan amounts outstanding after 3 years. For fixed rate loans with maturities above 3 years, the margin will be a weighted average of the charge of 200 basis points for the first 3 years and 200 basis points plus 100 basis points for the succeeding years.

An adequate and proportionate form of private sector involvement will be sought, in line with IMF practice, on a case-by-case basis where financial assistance is provided. The nature and extent of this involvement will depend on the outcome of a debt sustainability analysis and should take into account the risk of contagion and any potential spillover effects on other EU Member States or third countries. If, on the basis of this analysis, it is concluded that a macroeconomic adjustment programme can realistically restore public debt to a sustainable path, the beneficiary ESM Member shall take initiatives intended to encourage the main private investors to maintain their exposure. Where it is concluded that a macroeconomic adjustment programme cannot realistically restore the public debt to a sustainable path, the beneficiary ESM Member will be required to engage in active negotiations with non-official creditors to secure their direct involvement in restoring debt sustainability. In the latter case, the granting of financial assistance will be contingent on the ESM Member having a credible plan for restoring debt sustainability and demonstrating

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Box (continued)

sufficient commitment to ensure adequate and proportionate privatesector involvement. Progress in terms of implementation will be monitored and taken into account in decisions on disbursements.

Collective action clauses (CACs) will be included, from June 2013 onwards, in all new euroarea government securities with maturities above one year. The objective of including CACs is to facilitate an agreement between the sovereign benefiting from financial assistance and its private sector creditors, in the context of a private sector involvement.

Non-euro area Member States will be associated with ESM operations on a voluntary basis, from the outside, and will be allowed access to all relevant information and appropriately consulted on issues regarding the relevant financial assistance program. The ESM will enjoy preferred creditor status in a fashion similar to the IMF.

1.3. SHORT-TERM DEVELOPMENTS AND PROSPECTS FOR THE BUDGETARY POSITION

In 2010, the budgetary positions in the euro area and the EU started their turnaround by recording a small improvement in comparison to 2009, after having deteriorated dramatically for two years in a row. The euro area average headline deficit came in at 6.0% of GDP, down from the 6.3% in 2009. As Table I.1.1 shows, this is still far above the historically low of 0.7% posted in 2007 before the outbreak of the crisis. As shown in Table I.1.2, a similar budgetary improvement took place in the EU as a whole, where the average general government deficit decreased by 0.4 percentage points reaching 6.4% of GDP in 2010. In both the euro area and the EU, the decrease in the headline deficit was matched by a very similar decrease in the structural deficit, i.e. the headline deficit net of cyclical factors and one-off and other temporary measures. This improved by 0.3 percentage points of GDP in both the euro area and the EU. This suggests that the improvement in the headline deficit was almost entirely of a structural nature.

Within the euro area, Ireland experienced an unprecedented deterioration in the budget balance to 32.4% of GDP in 2010 which was overwhelmingly due to one-off measures in support of the banking sector. Conversely, several other Member States posted significant improvements. Greece, where the deficit deteriorated by about 5 percentage points (after further statistical revisions,) is a case in point. Improvements of between 1 and 2 percentage points of GDP were also posted in Spain, Belgium, Portugal and Estonia, the latter only being a euro area member since 2011. On the other hand Germany, which had been invited under the EERP (European Economic Recovery Plan) to run a sustained discretionary fiscal stimulus in both 2009 and 2010, recorded a minor deterioration from 3.0% of GDP to 3.3% of GDP. In all (current) euro area countries except Luxembourg, Finland and Estonia, the deficit in 2010 exceeded the 3% of GDP reference value of the Treaty. Estonia is the only (current) euro area Member State to post a (very small) surplus of 0.1% of GDP.

2011 and 2012 should see further improvements in the budgetary positions, if economic growth continues at a stable rate as projected in the Spring, although budget deficits are forecast to remain higher than their 2008 or 2007 level. The Commission services' Spring 2011 European Economic Forecasts project euro area (EU) real GDP to increase by a modest 1.6% (1.8%) in 2011. This is in line with the growth recorded in 2010 and a marked improvement on the steep contraction seen in 2009. A slightly higher increase of 1.8% (1.9%) is forecast for 2012 with clear downside risks. Against this growth outlook, the aggregate general government deficit of the seventeen Member States which have adopted the single currency is expected to reach 4.3% of GDP in 2011, 1.7 percentage points lower than the year before. Based on the no policy change assumption, a further improvement to 3.5% of GDP is projected in 2012. Broadly the same profile is expected for the EU as a whole. The deficit is forecast to decline to 4.7% of GDP in 2011, from

Table I.1.1: **Budget balances in EU Member States (% of GDP)**

	Budget balance					Structural balance					Structural primary balance				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
BE	-1.3	-5.9	-4.1	-3.7	-4.2	-1.9	-3.6	-2.9	-2.8	-3.7	1.9	0.0	0.5	0.6	-0.3
DE	0.1	-3.0	-3.3	-2.0	-1.2	-0.2	-0.8	-1.9	-1.4	-0.8	2.5	1.8	0.5	0.9	1.6
EE	-2.8	-1.7	0.1	-0.6	-2.4	-4.0	-0.2	-0.4	-0.9	-1.1	-3.8	0.1	-0.3	-0.7	-0.8
IE	-7.3	-14.3	-32.4	-10.5	-8.8	-7.4	-10.0	-10.5	-9.5	-8.5	-6.0	-7.9	-7.2	-5.7	-3.9
EL	-9.8	-15.4	-10.5	-9.5	-9.3	-9.5	-14.0	-8.6	-7.4	-7.9	-4.6	-8.9	-3.0	-0.7	-0.4
ES	-4.2	-11.1	-9.2	-6.3	-5.3	-3.8	-8.6	-7.0	-4.3	-3.9	-2.2	-6.8	-5.1	-2.1	-1.4
FR	-3.3	-7.5	-7.0	-5.8	-5.3	-3.5	-5.6	-4.9	-3.9	-3.7	-0.7	-3.2	-2.5	-1.3	-0.8
IT	-2.7	-5.4	-4.6	-4.0	-3.2	-3.4	-3.9	-3.1	-2.7	-2.3	1.8	0.8	1.4	2.1	2.8
LU	3.0	-0.9	-1.7	-1.0	-1.1	2.3	1.5	0.1	0.3	-0.4	2.6	1.9	0.5	0.8	0.1
NL	0.6	-5.5	-5.4	-3.7	-2.3	-0.5	-3.6	-3.7	-2.5	-1.3	1.7	-1.4	-1.7	-0.4	0.9
AT	-0.9	-4.1	-4.6	-3.7	-3.3	-2.2	-2.9	-4.0	-3.2	-2.9	0.4	-0.1	-1.3	-0.4	0.0
PT	-3.5	-10.1	-9.1	-5.9	-4.5	-3.5	-8.8	-9.2	-5.4	-3.1	-0.5	-5.9	-6.1	-1.2	1.7
SI	-1.8	-6.0	-5.6	-5.8	-5.0	-4.6	-3.5	-3.0	-2.9	-3.3	-3.5	-2.2	-1.4	-1.1	-1.3
FI	4.2	-2.6	-2.5	-1.0	-0.7	2.5	0.7	0.3	0.8	0.7	3.9	1.9	1.4	2.0	2.1
MT	-4.5	-3.7	-3.6	-3.0	-3.0	-5.6	-3.4	-4.3	-3.1	-3.1	-2.4	-0.2	-1.3	0.0	0.0
CY	0.9	-6.0	-5.3	-5.1	-4.9	-0.1	-5.8	-5.1	-4.6	-4.8	2.7	-3.3	-2.9	-2.1	-2.4
SK	-2.1	-8.0	-7.9	-5.1	-4.6	-4.2	-7.5	-7.3	-4.8	-4.8	-3.0	-6.1	-5.9	-3.3	-3.1
EA-17	**-2.0**	**-6.3**	**-6.0**	**-4.3**	**-3.5**	**-2.5**	**-4.3**	**-4.0**	**-3.0**	**-2.6**	**0.6**	**-1.4**	**-1.2**	**0.0**	**0.6**
BG	1.7	-4.7	-3.2	-2.7	-1.6	-0.2	-3.4	-1.3	-1.2	-0.6	0.6	-2.6	-0.7	-0.3	0.3
CZ	-2.7	-5.9	-4.7	-4.4	-4.1	-4.5	-5.5	-4.1	-3.5	-3.6	-3.4	-4.1	-2.7	-1.8	-1.8
DK	3.2	-2.7	-2.7	-4.1	-3.2	3.0	0.9	0.2	-2.2	-1.8	4.4	2.7	2.0	-0.3	0.2
LV	-4.2	-9.7	-7.7	-4.5	-3.8	-6.3	-6.1	-3.7	-4.0	-4.5	-5.7	-4.6	-2.1	-2.1	-2.5
LT	-3.3	-9.5	-7.1	-5.5	-4.8	-5.4	-7.5	-5.7	-5.3	-5.4	-4.7	-6.3	-3.9	-3.3	-3.4
HU	-3.7	-4.5	-4.2	1.6	-3.3	-4.1	-2.0	-3.1	-5.2	-4.0	0.0	2.7	1.0	-1.4	-0.3
PL	-3.7	-7.3	-7.9	-5.8	-3.6	-4.6	-7.4	-7.4	-5.3	-3.1	-2.4	-4.7	-4.7	-2.6	-0.3
RO	-5.7	-8.5	-6.4	-4.7	-3.6	-8.2	-8.8	-5.5	-3.3	-2.8	-7.5	-7.2	-3.9	-1.5	-1.0
SE	2.2	-0.7	0.0	0.9	2.0	1.4	2.6	1.4	1.3	2.1	3.0	3.6	2.1	2.0	2.9
UK	-5.0	-11.4	-10.4	-8.6	-7.0	-4.8	-8.9	-8.2	-6.5	-5.3	-2.5	-6.9	-5.2	-3.5	-1.9
EU-27	**-2.4**	**-6.8**	**-6.4**	**-4.7**	**-3.8**	**-2.8**	**-4.7**	**-4.4**	**-3.4**	**-2.8**	**0.0**	**-2.1**	**-1.8**	**-0.6**	**0.2**

Source: Commission services' Spring 2011 European Economic Forecast.

6.4% in 2010, and to continue to decrease to 3.8% of GDP in 2012.

Outside the euro area, the general picture is also one of continued deficit reduction. However, only a handful of countries are expected to correct their excessive deficits by bringing the general government net borrowing below 3% of GDP in either 2011 or 2012. Bulgaria is expected to run deficits below the 3% threshold over the forecast horizon, while in Sweden surpluses are projected for both 2011 and 2012. The United Kingdom is forecast a further budgetary improvement with the deficit falling to 8.6% of GDP in 2011, and 7.0% of GDP in 2012. Due in part to the one-off accounting impact of pension reforms, without further action requested by the Council, the deficit in Hungary is forecast to revert to more than 3% of GDP in 2012, following a surplus in 2011.

The structural balance is estimated to improve by 1.0 percentage points of GDP in both the euro area and the EU as a whole. For 2012, further improvements of the order of 0.4 percentage points of GDP in the euro area and of 0.6 percentage points in the EU as a whole are projected. In Greece and Portugal, fiscal policy is forecast to be pro-cyclical in 2011, as growth is still forecast to be negative.

While the number of euro area countries that have achieved their medium-term budgetary objective (MTO) since 2008 had fallen to zero in 2010, structural fiscal positions are forecast to remain weak over the projection horizon. Section I.1.3 considers the MTOs in more detail. Out of the euro area, only Finland is expected to attain its MTO in 2011, while in 2012 Luxembourg is projected to be the only country to join Finland.

Outside the euro area, a similar picture emerges, with Sweden, already at its MTO in 2010, being the only country forecast to be at its MTO in 2011 and 2012. However, it is clear that aiming to attain the MTOs will be a crucial element in any exit strategy from the current economic crisis as also reflected in the country specific recommendations that the Council issued in July 2011 as part of the European semester.

Table I.1.2: **Euro area - The General government budget balance (% of GDP)**

	2007	2008	2009	2010	2011	2012
Total revenue (1)	45.3	44.9	44.5	44.5	44.9	44.9
Total expenditure (2)	46.0	47.0	50.8	50.5	49.2	48.5
Actual balance (3) = (1) - (2)	-0.6	-0.6	-6.3	-6.0	-4.3	-3.5
Interest (4)	3.0	3.0	2.8	2.8	3.0	3.2
Primary balance (5) = (3) + (4)	2.4	2.4	-3.5	-3.2	-1.3	-0.4
One-offs (6)	0.0	-0.1	-0.1	-0.4	0.1	0.0
Cyclically adjusted balance (7)	-1.7	-2.5	-4.3	-4.4	-3.0	-2.5
Cyclically adj. prim. balance = (7) + (4)	1.3	0.5	-1.5	-1.6	0.0	0.6
Structural budget balance = (7) -(6)	-1.7	-2.4	-4.3	-4.0	-3.0	-2.6
Change in actual balance:	0.7	0.7	-5.7	0.3	1.7	0.8
- Cycle	-0.4	-0.4	-1.4	-2.5	1.7	1.4
- Interest	0.1	0.1	-0.2	-0.1	0.2	0.2
- Cycl.adj.prim.balance	0.1	0.1	-1.8	0.3	1.0	0.5
- One-offs	0.0	0.0	0.0	-0.3	0.4	0.0
- Structural budget balance	0.9	1.2	0.6	-1.4	-1.2	0.0

Note: Differences between totals and sum of individual items are due to rounding.
Source: Commission services.

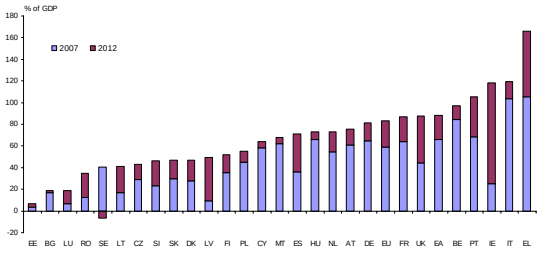
1.4. SHORT-TERM DEVELOPMENTS AND PROSPECTS FOR PUBLIC DEBT

Turning to government debt, the economic slowdown and increasing public deficits combined to drive up public debt. This is shown in Table I.1.3. At the EU level, debt will not start to decrease before 2013.

Member States with higher starting levels of debt face both a snowball effect ([3]) of debt and are more likely to face an increase in the interest rate as markets may doubt their ability to service their debt over the medium term. For this reason, high levels of debt can increase the urgency to consolidate, as there is no overall benefit from providing more support for the economy in the short-term, given the price that will be paid in terms of servicing the resulting debt. But high debt is not the only reason why markets may doubt a country's likelihood of repaying its debt. Other factors such as the outlook for growth in the medium term and the presence of macro-financial imbalances are also key determinants of the reaction of financial markets.

Alongside increasing deficits, below-the-line operations in the context of the support to the financial sector have led to substantially higher government debt ratios over the crisis years and beyond. Graph I.1.1 shows the increases in debt projected between 2007 and 2012. It shows that debt in the EU is projected to rise from 59.0% of GDP in 2007 to 83.3% in 2012 and from 66.3% to 88.7% in the euro area. Within these totals, there is considerable variation in both the starting levels of debt (which ranged from 3.7% of GDP in Estonia to 105.4% in Greece) and the overall increases. While Ireland is being forecast a 92.9 percentage point of GDP increase in its debt, Sweden is being forecast a decrease.

Graph I.1.1: **Short-term fiscal impact of the crisis – general government debt**



Source: Commission services

Part of the heterogeneity in the rise in debt is also due to sizeable differences across countries in public interventions in the financial sector (10.0% of GDP of effective measures of which 2.2% capital injections for the EU as a whole). Countries with large public interventions in the financial sector such as Finland, Ireland, Luxembourg and Denmark, typically have large stock-flow adjustments in Table I.1.3. In Ireland for example, public debt is projected to increase from 25% of GDP to 118% of GDP in 2012. This development stems from the large primary deficit, rising interest

([3]) The snowball effect of debt stems from the interaction between the interest-growth rate differential and the debt level: if the difference between the interest paid on debt and the growth rate is positive – and it will in general increase with debt – the dynamic of debt is explosive and requires an increase in primary balances to escape from the resulting cycle.

Table I.1.3: **Composition of changes in the government debt ratio in EU Member States (% of GDP)**

	Gross debt ratio						Change in debt ratio	Change in the debt ratio in 2007-12 due to:		
	2007	2008	2009	2010	2011	2012	2007-12	Primary balance	Interest &growth contribution	Stock-flow adjustment
BE	84.2	89.6	96.2	96.8	97.0	97.5	13.3	1.5	5.0	6.8
DE	64.9	66.3	73.5	83.2	82.4	81.1	16.1	-3.1	4.8	14.4
EE	3.7	4.6	7.2	6.6	6.1	6.9	3.2	6.3	0.7	-3.8
IE	25.0	44.4	65.6	96.2	112.0	117.9	92.9	58.3	20.1	14.5
EL	105.4	110.7	127.1	142.8	157.7	166.1	60.7	24.7	31.3	4.7
ES	36.1	39.8	53.3	60.1	68.1	71.0	34.9	26.2	6.9	1.7
FR	63.9	67.7	78.3	81.7	84.7	86.8	22.9	15.6	5.3	2.0
IT	103.6	106.3	116.1	119.0	120.3	119.8	16.2	-4.4	17.3	3.2
LU	6.7	13.6	14.6	18.4	17.2	19.0	12.4	-0.3	-1.2	13.9
NL	45.3	58.2	60.8	62.7	63.9	64.0	18.7	5.6	4.6	8.4
AT	60.7	63.8	69.6	72.3	73.8	75.4	14.7	2.9	5.5	6.3
PT	68.3	71.6	83.0	93.0	101.7	107.4	39.1	15.3	18.0	5.9
SI	23.1	21.9	35.2	38.0	42.8	46.0	22.9	16.5	3.8	2.7
FI	35.2	34.1	43.8	48.4	50.6	52.2	17.0	-3.7	0.4	20.3
MT	62.0	61.5	67.6	68.0	68.0	67.9	5.9	2.4	1.1	2.4
CY	58.3	48.3	58.0	60.8	62.3	64.3	6.0	8.0	1.5	-3.5
SK	29.6	27.8	35.4	41.0	44.8	46.8	17.2	20.4	0.2	-3.3
EA-17	**66.3**	**70.0**	**79.4**	**85.5**	**87.9**	**88.7**	**22.3**	**7.4**	**7.9**	**7.0**
BG	17.2	13.7	14.6	16.2	18.0	18.6	1.4	6.6	-0.5	-4.7
CZ	29.0	30.0	35.3	38.5	41.3	42.9	14.0	14.3	3.6	-4.0
DK	27.5	34.5	41.8	43.6	45.3	47.1	19.6	0.6	4.7	14.2
LV	9.0	19.7	36.7	44.7	48.2	49.4	40.4	22.4	7.5	10.5
LT	16.9	15.6	29.5	38.2	40.7	43.6	26.6	22.5	2.4	1.8
HU	66.1	72.3	78.4	80.2	75.2	72.7	6.6	-6.3	7.9	5.1
PL	45.0	47.1	50.9	55.0	55.4	55.1	10.1	15.3	-2.7	-2.4
RO	12.6	13.4	23.6	30.8	33.7	34.8	22.2	21.6	0.5	0.2
SE	40.2	38.8	42.8	39.8	36.5	33.4	-6.9	-9.2	-0.7	3.0
UK	44.5	54.4	69.6	80.0	84.2	87.9	43.5	28.7	5.4	9.5
EU-27	**59.0**	**62.3**	**74.4**	**80.2**	**82.3**	**83.3**	**24.3**	**10.1**	**8.6**	**5.6**

Notes: Differences between the sum and the total of individual items are due to rounding.
Source: Commission services' Spring 2011 European Economic Forecast.

expenditure and falling nominal GDP but also from the bank rescue measures which account for more than 20% of GDP in the form of promissory notes included in the government deficit and debt.

On the whole, the total current effective support level is slowly declining (from the 13.0% end-2009 peak to 10% in April 2011), signalling financial sector recovery and reducing the exposure of Member States to potential losses on support provided.

In a historical perspective, the sharp rise in the debt ratio is consistent with developments observed in past financial crisis episodes. In fact, data on the deterioration of debt in previous financial crisis episodes show that the change in the public debt-to-GDP ratio between the year prior to the crisis and the end of the crisis is 18 percentage points of GDP on average (estimates based on 49 crisis episodes). Moreover, financial crises have long-lasting implications: on average, countries did not manage to bring the debt-to-GDP ratio down to its pre-crisis level even eight years after.

The rising debt-to-GDP ratios reflect the deteriorating public finances, ailing economies, and public interventions in the financial system. In the euro area, in 2010 the debt rose by 5.8 percentage points relative to 2009 to 80.2% in the EU, and by 6.1 percentage points to 85.5% in the euro area. This can partly be explained by the steep increase in Germany which is significant part of the EU and euro area, while the EU average was also very much affected by the large increase in the debt of the United Kingdom. Debt increase in Portugal, Greece and Ireland were particularly notable, with Irish debt increasing by an unprecedented 30.6 percentage points. A further increase to 88.7% of GDP by 2012 is projected in the euro area and to 83.3% in the EU, as primary deficits are coupled with a weak contribution from economic growth and the additional effect of rising interest expenditure. Over the short-term, there remains the risk of further debt increases from any further public intervention in the financial sector.

Aggregate figures tend to mask diverging developments at the country level. There are several Member States which before the current financial and economic crisis had low or very low

Table I.1.4: **Euro Area – Government revenue and expenditures (% of GDP)**

	2007	2008	2009	2010	2011	2012
Total revenue	**45.3**	**44.9**	**44.5**	**44.5**	**44.9**	**44.9**
Taxes on imports and production (indirect)	13.5	13.0	12.8	13.0	13.1	13.1
Current taxes on income and wealth	12.4	12.2	11.4	11.3	11.5	11.6
Social contributions	15.1	15.3	15.7	15.6	15.6	15.5
of which actual social contributions	14.0	14.2	14.5	14.4	14.4	14.4
Other revenue	4.4	4.5	4.6	4.6	4.7	4.7
Total expenditure	**46.0**	**47.0**	**50.8**	**50.5**	**49.2**	**48.5**
Collective consumption	7.9	8.1	8.7	8.6	8.4	8.3
Social benefits in kind	12.1	12.4	13.4	13.3	13.0	12.8
Social transfers other than in kind	15.8	16.1	17.7	17.8	17.6	17.3
Interest	3.0	3.0	2.8	2.8	3.0	3.2
Subsidies	1.2	1.2	1.4	1.4	1.3	1.3
Gross fixed capital formation	2.6	2.6	2.8	2.5	2.3	2.2
Other expenditures	3.4	3.5	4.0	4.1	3.5	3.5

Notes: Differences between the sum and the total of individual items are due to rounding.
Source: Commission services.

debt levels, which however have been rising sharply. This group of countries includes Ireland, Spain and the United Kingdom, and, starting from lower levels, Latvia, Lithuania and Slovenia. Moreover, four euro area countries are expected to have debt above 100% of GDP by 2011. Italy already had a public debt-to-GDP ratio above 100% of GDP before the crisis. In Greece the already very high debt ratio of 142.8% of GDP, continually on the increase since 2007, is also expected to steeply increase further over the forecast horizon, up to 166.1% of GDP in 2012 (under the usual no policy change assumption). In Ireland and marginally also in Portugal the debt-to-GDP ratio exceeded the 100% of GDP in 2010 and is set to continue growing (again under the no policy change assumption). Belgium, Germany, France, Cyprus, Hungary, Malta, the Netherlands and Austria also have debt ratios above the 60% threshold in 2010 and further increases of these ratios are projected in all of them except Germany and Hungary, while the Maltese debt ratio is expected to remain broadly constant. Aside from these three countries, the debt ratio is projected to start declining in Italy, Poland and Sweden in 2012.

1.5. GOVERNMENT REVENUE AND EXPENDITURE

In 2010, the slight improvement in budgetary positions in the euro area was entirely the result of a lower expenditure-to-GDP ratio which was mainly due to lower public investment. This is shown in Table I.1.4, which also shows that the revenue ratio remained stable overall between 2009 and 2010, while expenditure fell. Somewhat higher than expected growth alongside some consolidation measures contributed to this pattern.

Table I.1.5 shows the expenditure and revenue ratios for all EU countries and shows, that according to the Commission services' Spring 2011 Economic Forecast, the expenditure ratio in the euro area will continue to decrease over the forecast horizon, while the revenue ratio will increase only very little. On the revenue side in particular, composition effects are expected to be small.

The improvement on the expenditure side of the budget in 2010 explains the improvement of structural balances over the forecast horizon in most Member States. The improvement in the balance is only partly explained by the reduced operation of automatic stabilisers, and much of it consists of the withdrawal of discretionary measures.

Overall Member States budgetary plans for 2011 and 2012 have still been compiled against a background of uncertainty and continue to exhibit various risks, on both the revenue and expenditure sides. ([4])

([4]) See Part I.3 of this report.

Table I.1.5: **Government revenue and expenditure (% of GDP)**

	Revenue					Expenditure				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
DK	55.2	55.6	55.3	53.4	53.6	51.9	58.3	58.0	57.5	56.8
EE	37.0	43.4	40.1	39.2	38.0	39.9	45.1	40.0	39.8	40.4
IE	35.5	33.9	34.6	35.0	35.1	42.8	48.2	67.0	45.5	43.9
EL	39.9	37.3	39.1	40.2	40.2	49.6	52.7	49.6	49.7	49.5
ES	37.1	34.7	35.7	36.5	36.7	41.3	45.8	45.0	42.9	42.0
FR	49.5	48.7	49.2	50.1	50.1	52.8	56.2	56.2	55.8	55.4
LT	34.1	34.5	34.2	33.5	33.5	37.4	44.0	41.2	39.0	38.3
MT	39.0	39.5	38.7	39.7	39.4	43.5	43.2	42.3	42.7	42.4
NL	46.6	45.9	45.9	46.5	47.1	46.0	51.4	51.3	50.2	49.4
PL	39.5	37.2	37.8	40.0	40.1	43.2	44.5	45.7	45.8	43.7
RO	32.6	32.1	34.3	34.1	34.5	38.3	40.6	40.8	38.8	38.1
SK	32.9	33.6	33.1	33.6	32.9	35.0	41.5	41.0	38.8	37.4
HU	45.2	46.1	44.6	52.0	42.0	48.9	50.6	48.8	50.4	45.3
IT	46.1	46.5	46.0	45.9	46.1	48.9	51.9	50.6	49.9	49.2
SI	42.3	43.1	43.4	43.3	43.1	44.1	49.0	49.0	49.1	48.1
UK	42.5	40.2	40.6	41.2	41.6	46.3	47.3	48.3	49.3	50.3
BE	48.8	48.1	48.9	49.3	49.4	50.1	54.0	53.0	53.1	53.6
BG	39.3	36.0	34.5	34.7	35.0	37.6	40.7	37.7	37.4	36.6
CZ	40.2	40.1	40.5	41.2	41.2	42.9	46.0	45.2	45.6	45.2
DE	43.9	44.5	43.3	43.3	43.2	43.8	47.5	46.6	45.3	44.3
CY	42.6	39.8	41.3	41.0	41.0	41.7	45.8	46.6	46.1	45.9
LV	34.6	34.6	35.2	36.9	36.5	38.8	44.2	42.9	41.4	40.4
LU	39.8	41.3	39.5	39.3	39.0	36.9	42.2	41.2	40.3	40.1
AT	48.3	48.8	48.3	48.7	48.7	49.2	52.9	53.0	52.4	52.0
PT	41.1	39.7	41.5	41.8	42.4	44.6	49.8	50.7	47.7	46.9
FI	53.5	53.4	52.3	52.8	52.9	49.3	56.0	54.8	53.7	53.5
SE	53.9	54.2	52.7	52.4	52.7	51.7	54.9	52.7	51.5	50.6
EA-17	44.9	44.5	44.5	44.9	44.9	47.0	50.8	50.5	49.2	48.5
EU-27	44.6	44.0	44.0	44.5	44.5	46.9	50.8	50.3	49.1	48.3

Source: Commission services' Spring 2011 Economic Forecast

Box I.1.3: The meeting of the Euro Area Heads of State or Government of 21 July 2011: main decisions

The summit of the euro area Heads of State or Government reaffirmed the commitment to the euro and to do whatever is needed to ensure the financial stability of the euro area as a whole and of its Member States.

As to **Greece**, a new programme was endorsed which, including the contribution of the IMF and the voluntary contribution of the private sector, would fully cover the financing gap until 2014 included. The total official financing would amount to an estimated 109 billion euro. This programme would decisively improve the debt sustainability and refinancing profile of Greece, notably through extended maturities and lower interest rates. Specifically, the maturity of future EFSF loans to Greece would be lengthened to the maximum possible, to a range between 15 and 30 years, while the maturities of the existing Greek facility would be extended substantially. The loans will be provided at lending rates equivalent to those of the Balance of Payments facility (currently around 3.5%), close to the EFSF funding cost. The summit took note of the willingness of the financial sector to support Greece on a voluntary basis through a menu of options, its net contribution being estimated at 37 billion euro. In addition, a debt buy-back programme would contribute up to 12.6 billion euro, bringing the total private sector contribution to 50 billion euro Credit enhancement would also be provided to underpin the quality of collateral, so as to allow its continued use for access to Eurosystem liquidity operations by Greek banks. Adequate resources will be provided to recapitalise Greek banks if needed. A comprehensive strategy for growth and investment in Greece was also called for, involving the mobilisation of EU funds and institutions such as the EIB. In this connection the Commission announced the creation of a Task Force working with the Greek authorities to target the structural funds on competitiveness and growth, job creation and training. Exceptional technical assistance would be provided by the Commission and Member States to help Greece implement its reforms. .

Regarding **private sector involvement** more generally, at the same time the summit made clear that the approach taken in the case of Greece was exceptional and all other euro countries solemnly reaffirmed their inflexible determination to honour fully their own individual sovereign signature and all their commitments to sustainable fiscal conditions and structural reforms.

As to the **stabilisation tools**, in order to improve the effectiveness of the EFSF and of the ESM and to address contagion, it was agreed to increase their flexibility linked to appropriate conditionality, allowing them to:

- act on the basis of a precautionary programme;

- finance recapitalisation of financial institutions through loans to governments including in non-programme countries;

- intervene in the secondary markets on the basis of an ECB analysis recognising the existence of exceptional financial market circumstances and risks to financial stability and on the basis of a decision by mutual agreement of the EFSF/ESM Member States, to avoid contagion.

Where appropriate, a collateral arrangement will be put in place so as to cover the risk arising to euro area Member States from their guarantees to the EFSF.

Regarding **fiscal consolidation and growth** more broadly, Ireland's and Portugal's resolve to implement their programmes was welcomed and it was decided to apply the EFSF lending rates and maturities agreed upon for Greece also to these two countries. Heads of State and Government re-iterated earlier commitments to fiscal targets and to growth-enhancing reforms. Finally, the Commission and the EIB were invited to enhance the synergies between loan programmes and EU funds in all countries under EU/IMF assistance, including through a temporary increase in co-financing rates, in order to stimulate growth and employment.

2. IMPLEMENTATION OF THE STABILITY AND GROWTH PACT

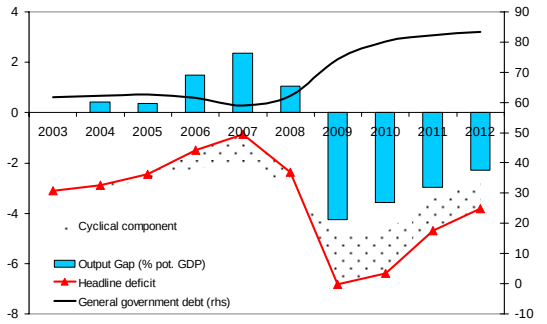
2.1. INTRODUCTION

The EU fiscal framework aims at ensuring budgetary discipline through two main requirements set out in the Treaty.([5]) Firstly, Member States are required to achieve and maintain medium-term budgetary objectives (MTO) which are given as cyclically adjusted targets for the budget balance, net of one-off and temporary measures. Secondly, they must avoid excessive deficit positions, measured against reference values for deficits and debt of 3% and 60% of GDP, respectively. The rules-based framework of the Treaty and the provisions for implementation in the Stability and Growth Pact (SGP) include both preventive and dissuasive elements, both of which are backed by enforcement procedures. The recent unprecedented economic downturn and the associated deterioration of the budgetary positions have been an important test for European fiscal surveillance. During 2009 and 2010, the Commission and the Council applied the enforcement mechanisms of the SGP against almost all EU Member States. This chapter reviews the implementation of the framework since January 2010 focussing on the excessive deficit procedure (EDP) and distinguishing between euro and non-euro area Member States.

According to the Commission services' 2011 Spring forecasts, the government deficit exceeded 3% of GDP in twenty-two Member States in 2010. These breaches of the 3% threshold have been taken into account in the EDPs. Only Denmark, Estonia, Luxemburg, Finland and Sweden had deficits within the 3% reference level. In the case of Denmark, unexpected and temporary revenue windfalls related to volatile revenue components (in particular the pension yield tax) ([6]) brought the deficit temporarily below 3% of GDP in 2010. It is expected to rise to 4.1% in 2011. ([7]) On the back of a robust, albeit geographically dispersed, economic recovery, the fiscal outcomes for some Member States turned out to be better than expected even one year ago. The Commission services' 2011 Spring forecasts projects that twenty EU Member States will record deficits above 3% of GDP in 2011. Bulgaria and Germany are expected to bring their deficits down below the 3% threshold, while Hungary is projected to reach a 1.6% of GDP surplus, mainly on account of temporary proceeds from a return to the public Pay-As-You-Go system of assets hitherto accumulated in the second private pension pillar. However, unless further policy measures are taken by the Hungarian government (as requested by the Council in July 2011,) the Commission services' 2011 Spring forecasts see the budget balance returning to 3.3% of GDP deficit in 2012.

In order to visualise to what extent the weakness of public finances is related to the crisis, Graph I.2.1 ([8]) shows the relation between the output gap and the government deficit since 2003 in the EU as an aggregate. Between 2007 and 2009 the public finances across the euro area were hit by a set of factors including the working of automatic

Graph I.2.1: **Deficit and cycle in the EU**



Source: Commission services

([5]) Article 126 of the Treaty lays down an excessive deficit procedure (EDP) which is further specified in Council Regulation (EC) No. 1467/97 'on speeding up and clarifying the implementation of the excessive deficit procedure'. The Council Regulation (EC) No. 1466/97 'on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies' lays down and specifies the obligation for the Member States to achieve and maintain their MTO. These two regulations are a part of the Stability and Growth Pact (SGP), representing its dissuasive and preventive arm, respectively. Relevant legal texts and guidelines can be found at: http://ec.europa.eu/economy_finance/sgp/legal_texts/index_en.htm

([6]) The pension yield tax is a flat-rate tax levied on the annual gains of pension portfolios.

([7]) This is still in line with the Danish excessive deficit procedure that is to end in 2013.

([8]) It should be noted that while figures for years up to 2010 are observed or estimated data, figures for 2011 and 2012 are forecast. This holds throughout the Report.

stabilisers, discretionary measures and a fall in revenues due to the burst of housing/credit bubbles in some countries. This was followed by a second phase in 2010 during which the fiscal stance was broadly neutral as many Member States continued to support their economies with discretionary measures while others began a partial withdrawal of the stimulus. A phase of consolidation has begun in 2011 with the EU general government deficit projected to shrink from 6.4% of GDP in 2010 to 3.8% of GDP in 2012 according to latest Commission forecast, alongside the closure of the output gap.

2.2. THE EXCESSIVE DEFICIT PROCEDURE

This section focuses on the implementation of the excessive deficit procedure (EDP) since January 2010. The historical country-specific developments are summarised in Tables II.2.1.-II.2.3.([9])

Euro-area Member States

Table I.2.1 shows the EDP steps taken for all euro area countries except Greece, which is shown in Table I.2.2. Proceeding in a chronological order, in February 2010, the Council considered that Malta had taken effective action in compliance with the Council recommendations issued in July 2009, but following unexpected adverse economic events with major unfavourable consequences for government finances and on a recommendation from the Commission, adopted new recommendations under Article 126(7), extending the deadline for correcting the excessive deficit by one year.

In the Spring 2010 EDP notification validated by Eurostat on 22 April 2010,([10]) the government of Cyprus reported a breach of the 3% threshold in 2009, while the Finnish authorities notified a planned breach of this threshold for 2010. As a result, the Commission adopted reports under Article 126(3) for both countries in May 2010.([11]) In July 2010, following an opinion of the Commission and on the basis of proposal from the Commission, the Council decided that an excessive deficit existed in both countries in accordance with Article 126(6). On the basis of the Commission's recommendation, the Council issued recommendations under Article 126(7) and set deadlines for correction of the excessive deficits.

In June 2010, the Commission assessed the actions taken in compliance with the December 2009 Council recommendations by Ireland, France, Spain, Belgium, Germany, Italy, the Netherlands, Austria, Portugal, Slovenia and Slovakia. It concluded in all cases that no further steps in the excessive deficit procedure were needed at that time.

In December 2010, on the basis of a recommendation from the Commission and following unexpected adverse economic events with major unfavourable consequences for government finances, the Council adopted new recommendations under Article 126(7) to end the excessive deficit situation in Ireland, extending the deadline for correction by one year. Ireland has received a deadline for taking effective action by 7 June 2011. An assessment of the action taken will follow in the Summer of 2011.

In January 2011, the Commission concluded that effective action had been taken in compliance with the July 2010 Council recommendations by Cyprus and Finland. The Commission also considered that Malta had taken effective action in compliance with the February 2010 Council recommendations. Developments in the budget balance were judged to be on course for a timely correction of the excessive deficits.

In the Spring 2011 EDP notification, Finland reported that its general government deficit remained below 3% in 2010. Therefore the Commission adopted a recommendation in June

([9]) All the country-specific developments regarding the excessive deficit procedure (EDP) can be followed at: http://ec.europa.eu/economy_finance/sgp/deficit/countries/index_en.htm

([10]) Eurostat Press Release 55/2010 - 22 April 2010, Provision of deficit and debt data for 2009 - first notification, to be found at: http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/2-22042010-BP/EN/2-22042010-BP-EN.PDF

([11]) Also the government of Luxemburg notified the planned breach of 3% for 2010, however following the Commission report under Article 126(3), it was concluded that both the deficit and debt criteria in the second paragraph of Article 126 would be respected and next steps under the excessive deficit procedure should not be considered.

2011 for the abrogation of the EDP. The Council adopted a decision in this sense on 12 July 2011.

In the case of Greece, the excessive deficit procedure was stepped up in February 2010 when the Council adopted (on a recommendation from the Commission) a decision to give notice under Article 126(9). Also on a recommendation from the Commission, the Council adopted further amendments to the Council decisions in September and December 2010 and in March and July 2011, in parallel to the program of economic adjustment agreed between Greece and the Commission on behalf of the lenders, in liaison with the ECB and the IMF.([12]) The Greek fiscal consolidation is combined with more fundamental structural and institutional reforms, to the point that the excessive deficit procedure is superseded by the aforementioned macroeconomic adjustment programme. As can be seen in Table I.2.2, the Greek authorities report on fiscal plans and developments on a quarterly basis. In line with the timetable, reviews took place in Summer and Autumn 2010 as well as in Spring 2011.

Non euro-area Member States

Table I.2.1 shows the EDP steps taken for the non euro area countries. Proceeding in a chronological order, in January 2010, the Commission assessed the action taken in compliance with the July 2009 Council recommendations by Hungary and Latvia. It concluded that no further steps in the excessive deficit procedure were needed at that stage. In February 2010, the Commission reached the conclusion that effective action had also been taken in compliance with the July 2009 Council recommendation by Poland.

In February 2010, the Council considered that Lithuania and Romania had taken effective action in compliance with the Council recommendations issued in July 2009, but following unexpected adverse economic events with major unfavourable consequences for government finances, on a recommendation from the Commission adopted new recommendations under Article 126(7), extending the deadline for correcting the excessive deficit by one year.

In the Spring 2010 EDP notification, the Bulgarian authorities reported a breach of the 3% of GDP threshold in 2009, while the government of Denmark notified a planned breach of the 3% of GDP threshold for 2010, validated by Eurostat on 22 April 2010. ([13]) As a result, the Commission adopted reports under Article 126(3) for both countries in May 2010. In July 2010, following an opinion of the Commission and on the basis of proposal from the Commission, the Council decided that an excessive deficit existed in both countries in accordance with Article 126(6). On the basis of the Commission's recommendation, the Council issued recommendations under Article 126(7) and set deadlines for correction of the excessive deficit.

In June 2010, the Commission assessed the action taken in compliance with the December 2009 Council recommendations by the Czech Republic. It concluded that no further steps in the excessive deficit procedure were needed at that point in time. In July 2010, the Commission reached the conclusion that effective action had been also taken in compliance with the December 2009 Council recommendation by the UK. In September 2010, the Commission considered that effective action had been taken in compliance with the February 2010 Council recommendations by Lithuania and Romania. In January 2011, the Commission concluded that effective action had been taken in compliance with the July 2010 Council recommendations by Bulgaria and Denmark. In all cases, developments in the budget balance were judged to be on course for a timely correction of the excessive deficits.

([12]) See Memorandum on Economic and Financial Policies and Memorandum of Understanding on Specific Economic Policy Conditionality (both 3 May 2010). All the documents related to the implementation of the EDP in the case of Greece can be found at: http://ec.europa.eu/economy_finance/sgp/deficit/countries/greece_en.htm

([13]) Eurostat Press Release 55/2010 - 22 April 2010, Provision of deficit and debt data for 2009 - first notification, to be found at: http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/2-22042010-BP/EN/2-22042010-BP-EN.PDF

Table I.2.1: Overview of EDP procedure: euro area Member States

Steps in EDP procedure	Treaty Art.	Country														
		IE	FR	ES	MT	BE	DE	IT	NL	AT	PT	SI	SK	CY	FI	LU
Starting phase																
Commission adopts EDP-report = start of the procedure	126(3)	18.02.2009	18.02.2009	18.02.2009	13.05.2009	07.10.2009	07.10.2009	07.10.2009	07.10.2009	07.10.2009	07.10.2009	07.10.2009	07.10.2009	12.5.2010	12.5.2010	12.5.2010
Economic and Financial Committee adopts opinion	126(4)	27.02.2009	27.02.2009	27.02.2009	29.05.2009	27.10.2009	27.10.2009	27.10.2009	27.10.2009	27.10.2009	27.10.2009	27.10.2009	27.10.2009	27.5.2010	27.5.2010	27.5.2010
Commission adopts:																
opinion on existence of excessive deficit	126(5)	24.03.2009	24.03.2009	24.03.2009	24.06.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	15.6.2010	15.6.2010	15.6.2010
recommendation for Council decision on existence of excessive deficit	126(6)	24.03.2009	24.03.2009	24.03.2009	24.06.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	15.6.2010	15.6.2010	15.6.2010
recommendation for Council recommendation to end this situation	126(7)	24.03.2009	24.03.2009	24.03.2009	24.06.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	15.6.2010	15.6.2010	15.6.2010
Council adopts:																
decision on existence of excessive deficit	126(6)	27.04.2009	27.04.2009	27.04.2009	07.07.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	13.7.2010	13.7.2010	
recommendation to end this situation	126(7)	27.04.2009	27.04.2009	27.04.2009	07.07.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	13.7.2010	13.7.2010	
deadline for taking effective action		27.10.2009	27.10.2009	27.10.2009	07.01.2010	02.06.2010	02.06.2010	02.06.2010	02.06.2010	02.06.2010	02.06.2010	02.06.2010	02.06.2010	13.01.2011	13.01.2011	
fiscal effort recommended by the Council*		at least 1.5% of GDP in 2010-2013	at least 1% of GDP in 2010-2012	at least 1¼% of GDP in 2010-2012	-	¾% of GDP in 2010-2012	at least 0.5% of GDP in 2010-2013	at least 0.5% of GDP in 2010-2012	¾% of GDP in 2011-2013	¾% of GDP in 2011-2013	1½% of GDP in 2010-2013	¾% of GDP in 2010-2013	1% of GDP in 2010-2013	at least 1½% of GDP in 2011-2012	at least 0.5% of GDP on 2011	
deadline for correction of excessive deficit		**2013**	**2012**	**2012**	**2010**	**2012**	**2013**	**2012**	**2013**	**2013**	**2013**	**2013**	**2013**	**2012**	**2011**	
Follow-up of the Council recommendation under Art. 126(7)																
Commission adopts communication on action taken		-	-	-	-	15.06.2010	15.06.2010	15.06.2010	15.06.2010	15.06.2010	15.06.2010	15.06.2010	15.06.2010	27.01.2011	27.01.2011	
Council adopts conclusions thereon		-	-	-	-	13.07.2010	13.07.2010	13.07.2010	13.07.2010	13.07.2010	13.07.2010	13.07.2010	13.07.2010	15.02.2011	15.02.2011	
Commission adopts recommendation for NEW Council recommendation to end situation of excessive deficit	126(7)	11.11.2009	11.11.2009	11.11.2009	27.01.2010											
Council adopts recommendation for NEW Council recommendation to end situation of excessive deficit	126(7)	02.12.2009	02.12.2009	02.12.2009	16.02.2010											
deadline for taking effective action		02.06.2010	02.06.2010	02.06.2010	16.08.2010											
fiscal effort recommended by the Council*		2% of GDP in 2010-2014	above 1% of GDP in 2010-2013	above 1.5% of GDP in 2010-2013	¾% of GDP in 2011											
revised deadline for correction of excessive deficit		**2014**	**2013**	**2013**	**2011**											
Follow-up of the NEW Council recommendation under Art. 126(7)																
Commission adopts communication on action taken		15.06.2010	15.06.2010	15.06.2010	06.01.2011											
Council adopts conclusions thereon		13.07.2010	13.07.2010	13.07.2010	18.01.2011											
Commission adopts recommendation for Council decision establishing inadequate action	126(8)	-														
Council adopts decision establishing inadequate action	126(8)	-														
Commission adopts recommendation for NEW Council recommendation to end situation of excessive deficit	126(7)	03.12.2010														
Council adopts recommendation for NEW Council recommendation to end situation of excessive deficit	126(7)	07.12.2010														
deadline for taking effective action		07.06.2011														
fiscal effort recommended by the Council*		9½% of GDP over 2011-2015														
new deadline for correction of excessive deficit		**2015**														
Abrogation of excessive deficit procedure																
Commission adopts recommandation for EDP abrogation	126(12)														29.06.2011	
Council abrogates EDP	126(12)														12.07.2011	

Source: Commission services.

Table I.2.2: **Overview of EDP procedure: Greece**

Steps in EDP procedure	Treaty Art.	
		EL
Starting phase		
Commission adopts EDP-report = start of the procedure	126(3)	18.02.2009
Economic and Financial Committee adopts opinion	126(4)	27.02.2009
Commission adopts:		
opinion on existence of excessive deficit	126(5)	24.03.2009
recommendation for Council decision on existence of excessive deficit	126(6)	24.03.2009
recommendation for Council recommendation to end this situation	126(7)	24.03.2009
Council adopts:		
decision on existence of excessive deficit	126(6)	27.04.2009
recommendation to end this situation	126(7)	27.04.2009
deadline for taking effective action		27.10.2009
fiscal effort recommended by the Council		-
deadline for correction of excessive deficit		**2010**
Follow-up of the Council recommendation under Art. 126(7)		
Commission adopts recommendations for Council decision establishing inadequate action	126(8)	11.11.2009
Council adopts decision establishing inadequate action	126(8)	02.12.2009
Commission adopts Council recommendation for decision to give notice	126(9)	03.02.2010
Council decision to give notice	126(9)	16.02.2010
deadline for taking effective action		15.05.2010
fiscal effort recommended by the Council		at least 3½% of GDP annualy in 2010 and 2011, at least 2½% of GDP in 2012
new deadline for correction of the excessive deficit		**2012**
Follow-up of the Council decision		
Commission adopts communication on action taken		09.03.2010
Council adopts conclusions thereon		16.03.2010
Commission adopts recommendation for NEW Council decision to give notice	126(9)	04.05.2010
Council decision to give notice	126(9)	10.05.2011
fiscal effort recommended by the Council		at least 10% in cumulative terms over 2009-2014
new deadline for correction of the excessive deficit		**2014**
Follow-up - 1st review		
Commission adopts communication on action taken		19.08.2010
Council adopts conclusions thereon		07.09.2010
Commission adopts recommendation for Council decision amending the Council deicision to give notice	126(9)	19.08.2010
Council decision amending the Council decision to give notice	126(9)	07.09.2010
new deadline for correction of the excessive deficit		**2014**
Follow-up - 2nd review		
Commission adopts communication on action taken		09.12.2010
Council adopts conclusions thereon		20.12.2010
Commission adopts recommendation for Council decision amending the Council deicision to give notice	126(9)	09.12.2010
Council decision amending the Council decision to give notice	126(9)	20.12.2010
new deadline for correction of the excessive deficit		**2014**
Follow-up - 3rd review		
Commission adopts communication on action taken		24.02.2011
Council adopts conclusions thereon		07.03.2011
Commission adopts recommendation for Council decision amending the Council deicision to give notice	126(9)	24.02.2011
Council decision amending the Council decision to give notice	126(9)	07.03.2011
new deadline for correction of the excessive deficit		**2014**

Source: Commission services.

Table I.2.3: Overview of EDP procedure: non-euro area Member States

Steps in EDP procedure	Treaty Art.	Country								
		HU	UK	LV	PL	LT	RO	CZ	BG	DK
Starting phase										
Commission adopts EDP-report = start of the procedure	126(3)	12.05.2004	11.6.2008	18.02.2009	13.05.2009	13.05.2009	13.05.2009	07.10.2009	12.05.2010	12.05.2010
Economic and Financial Committee adopts opinion	126(4)	24.05.2004	25.6.2008	27.02.2009	29.05.2009	29.05.2009	29.05.2009	27.10.2009	27.05.2010	27.05.2010
Commission adopts:										
opinion on existence of excessive deficit	126(5)	24.06.2004	02.07.2008	02.07.2009	24.06.2009	24.06.2009	24.06.2009	11.11.2009	06.07.2010	15.06.2010
recommendation for Council decision on existence of excessive deficit	126(6)	24.06.2004	02.07.2008	02.07.2009	24.06.2009	24.06.2009	24.06.2009	11.11.2009	06.07.2010	15.06.2010
recommendation for Council recommendation to end this situation	126(7)	24.06.2004	02.07.2008	02.07.2009	24.06.2009	24.06.2009	24.06.2009	11.11.2009	06.07.2010	15.06.2010
Council adopts:										
decision on existence of excessive deficit	126(6)	05.07.2004	08.07.2008	07.07.2009	07.07.2009	07.07.2009	07.07.2009	02.12.2009	13.07.2010	13.07.2010
recommendation to end this situation	126(7)	05.07.2004	08.07.2008	07.07.2009	07.07.2009	07.07.2009	07.07.2009	02.12.2009	13.07.2010	13.07.2010
deadline for taking effective action		05.11.2004	08.01.2009	07.01.2010	07.01.2010	07.01.2010	07.01.2010	02.06.2010	13.01.2011	13.01.2011
fiscal effort recommended by the Council*		-	at least 0.5% of GDP in 2009/10	at least 2¾% of GDP in 2010-2012	at least 1¼% of GDP in 2010-2012	at least 1½% of GDP in 2009-2011	at least 1½% of GDP in 2010-2011	1% of GDP in 2010-2013	at least ¾% of GDP in 2011	at least 0.5% of GDP in 2011-2013
deadline for correction of excessive deficit		**2008**	**fin. year 2009/10**	**2012**	**2012**	**2011**	**2011**	**2013**	**2011**	**2013**
Follow-up of the Council recommendation under Art. 126(7)										
Commission adopts communication on action taken		-	-	27.01.2010	03.02.2010	-	-	15.06.2010	27.01.2011	27.01.2011
Council adopts conclusions thereon		-	-	16.02.2010	16.02.2010	-	-	13.07.2010	15.02.2011	15.02.2011
Commission adopts recommendations for Council decision establishing inadequate action	126(8)	22.12.2004	24.03.2009			-	-			
Council adopts decision establishing inadequate action	126(8)	18.01.2005	27.04.2009			-	-			
Commission adopts recommendation for NEW Council recommendation to end excessive deficit situation	126(7)	16.02.2005	24.03.2009			27.01.2010	08.02.2010			
Council adopts NEW recommendation to end excessive deficit situation	126(7)	08.03.2005	27.04.2009			16.02.2010	16.02.2010			
deadline for taking effective action		08.07.2005	27.10.2009			16.08.2010	16.08.2010			
fiscal effort recommended by the Council*		-	beyond 1% of GDP in 2010/11-2013/14			at least 2¼% of GDP in 2010-2012	1¾% of GDP in 2010-2012			
new deadline for correction of excessive deficit		**2008**	**fin. year 2013/14**			**2012**	**2012**			
Follow-up of the NEW Council recommendation under Art. 126(7)										
Commission adopts communication on action taken		13.07.2005	-			21.09.2010	21.09.2010			
Council adopts conclusions thereon		-	-			19.10.2010	19.10.2010			
Commission adopts recommendations for Council decision establishing inadequate action	126(8)	20.10.2005	-							
Council adopts decision establishing inadequate action	126(8)	08.11.2005	-							
Commission adopts recommendation for NEW Council recommendation to end excessive deficit situation	126(7)	26.09.2006	11.11.2009							
Council adopts NEW recommendation to end excessive deficit situation	126(7)	10.10.2006	02.12.2009							
deadline for taking effective action		10.04.2007	02.06.2010							
fiscal effort recommended by the Council*		-	1¾% of GDP in 2010/11-2014/15							
new deadline for correction of excessive deficit		**2009**	**fin. year 2014/15**							
Follow-up of the NEW Council recommendation under Art. 126(7)										
Commission adopts communication on action taken		13.06.2007	06.07.2010							
Council adopts conclusions thereon		10.07.2007	13.07.2010							
Commission adopts recommendations for Council decision establishing inadequate action	126(8)	-								
Council adopts decision establishing inadequate action	126(8)	-								
Commission adopts recommendation for NEW Council recommendation to end excessive deficit situation	126(7)	24.06.2009								
Council adopts NEW recommendation to end excessive deficit situation	126(7)	07.07.2009								
deadline for taking effective action		07.01.2010								
fiscal effort recommended by the Council*		at least 0.5% of GDP in cumulative terms in 2010-2011								
new deadline for correction of excessive deficit		**2011**								
Follow-up of the NEW Council recommendation under Art. 126(7)										
Commission adopts communication on action taken		27.01.2010								
Council adopts conclusions thereon		16.02.2010								

Source: Commission services.

3. STABILITY AND CONVERGENCE PROGRAMMES SET OUT THE CONSOLIDATION PLANS OVER THE MEDIUM TERM

This chapter provides an overview of the Stability and Convergence Programmes (SCPs) that Member States submitted in Spring 2011 (it has to be noted that some countries have since then announced measures corresponding to updated strategies.) For the first time, SCPs were examined in the context of the European semester, aimed at giving comprehensive economic policy advice to Member States ahead of the approval of their budgets for next year. Recommendations based on the SCPs were issued by the Council in July 2011 on the basis of a Commission recommendation. This chapter gives special attention to 2012, examining the deficit targets set out in the SCPs against the background of the Commission services' Spring 2011 forecasts. It then presents the adjustment paths, the time profile and the composition of the consolidation over the whole horizon of the programmes. The chapter finally outlines the implications of the fiscal plans for the debt path.

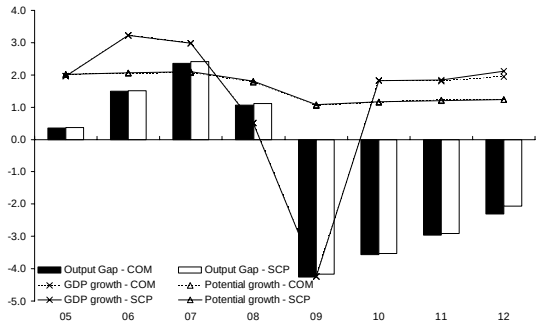
3.1. MACROECONOMIC SCENARIOS

The economic growth assumptions for 2011 and 2012 contained in the SCPs are, on average, broadly in line with the 2011 Commission Spring forecasts, as shown by the Graphs I.3.1 and I.3.2. For the euro area, the SCPs project growth of 1.7% and 1.9% for 2011 and 2012 respectively while for the EU they project growth of 1.8% and 2.1%. These SCP projections are broadly equal to the Commission ones for 2011, while for 2012 they are 0.1pp of GDP higher for the euro area and 0.2pp higher for the EU. Potential growth in the SCPs is not projected to differ much from the Commission's forecasts, so the additional growth that the SCPs project is primarily cyclical.

While the overall growth averages projected in the SCPs are close to the Commission's figures, there is a significant gap for some individual countries. With higher growth pencilled in their SCPs for both 2011 and 2012, Spain, Bulgaria and Sweden show the greatest differences in their growth projections relative to the Commission for the next two years. Spain has growth higher by 0.5pp in 2011 and 0.8pp in 2012, Bulgaria's by 0.8pp and 0.4pp and Sweden's by 0.4pp and 1.3pp. Cumulatively, these countries are therefore basing their public finance projections on over 1pp more growth over the two years 2011 and 2012.

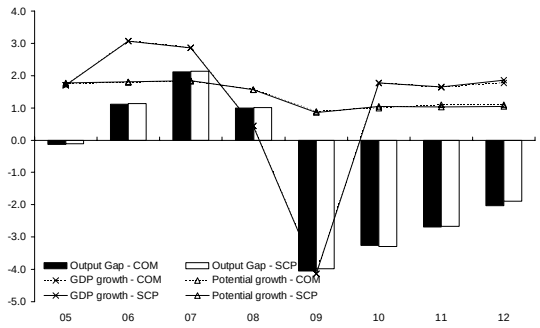
Conversely, a number of countries are projecting weaker growth than the Commission, the most significantly for Estonia (-0.9pp in 2011) and the Czech Republic (-0.6pp in 2012.)

Graph I.3.1: **Growth assumptions (EU)**



Source: SCPs, Commission Services.

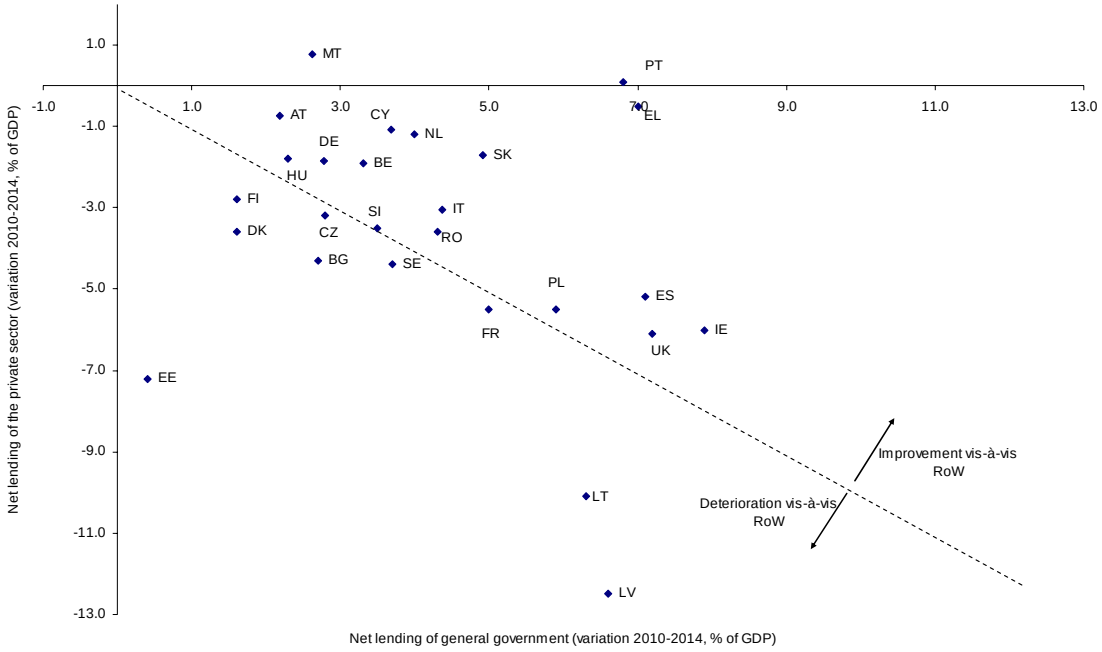
Graph I.3.2: **Growth assumptions (euro area)**



Source: SCPs, Commission services.

The sectoral breakdown of growth is also worth considering. In order to generate growth during a time of expenditure-driven fiscal consolidation, the private and/or the external sector must fill the shortfall arising from the restraint in the public sector. Internal demand (consumption, investment) from the private sector can serve to close the demand gap arising from a reduction in general government spending, while an increase in net exports can also serve the same function.

Graph I.3.3: **Sectoral net lending and relative unit labour cost changes (2010-2014)**



(1) The change in the private sector balance stems from the following accounting identity: change in the net lending of the general government + change in the net lending of the private sector + change in the net lending vis-à-vis the rest of the world = 0. There is an implicit assumption of no change in statistical discrepancy.
(2)The position of the country with respect to the -45° line allows an assessment of the contribution of the external sector.
Source: SCPs, Commission services.

Graph I.3.3 shows that, from 2010 to 2014, all countries except Malta and Portugal are showing a combination of a tightening in general government alongside an expansion in the private sector. In most cases, the expansion in the private sector is smaller than the retraction in the public sector, meaning that an increase in the current account is expected. An improvement in the external sector is set to play a significant role in Portugal, Greece, Malta, Cyprus, the Netherlands and Slovakia.

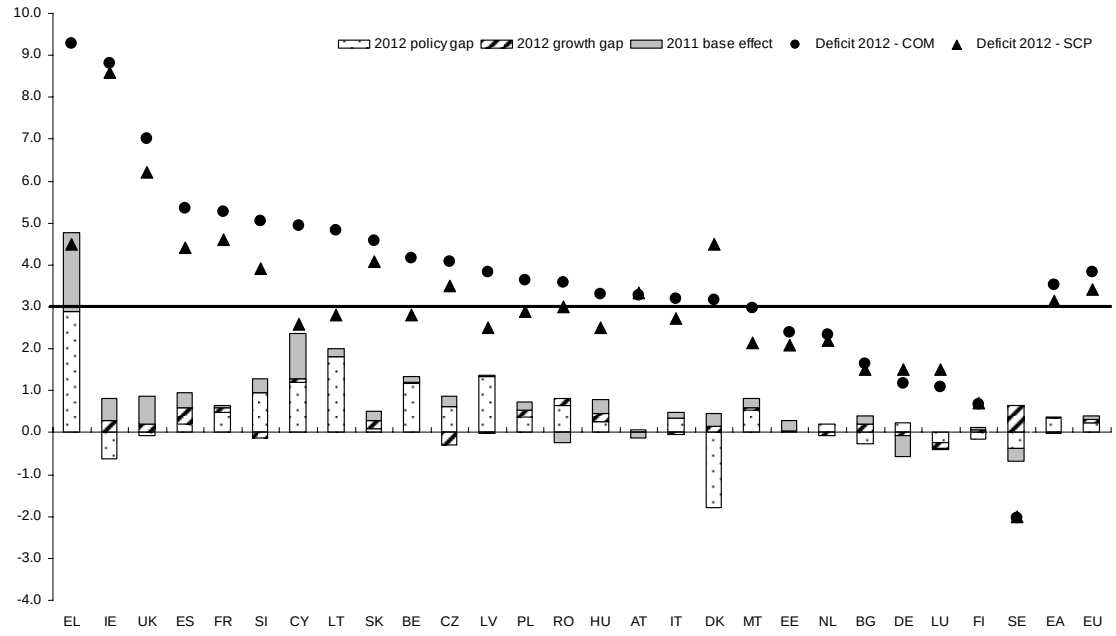
For Finland, Denmark, the Czech Republic, Bulgaria, Sweden, France, Estonia, Lithuania and Latvia, the increase in demand from the private sector is projected to more than make up for the decrease expected in the public sector. As a result, these countries are projecting a current account deterioration to absorb the excess internal demand.

3.2. DEFICIT DEVELOPMENTS IN 2012

This section looks at the differences in the general government deficit for 2012 as this is the year into whose budgets the European Semester is expected to contribute. In line with this timetable, the recommendations were issued to Member States in July 2011, on the basis of the plans that they set out in their SCPs. Overall, both the SCP projections and the Commission forecasts show considerable reductions in the general government deficits, which should approach the 3% of GDP threshold, on average. This can be seen in Graph I.3.4, which sets out the deficit projections for 2012.

The Commission forecasts, which are based on unchanged policy assumptions, are however for a larger deficit than appears in the SCPs. For the euro area, the Commission is forecasting a 3.5% of GDP deficit, while the SCPs show an expected deficit of 3.1% of GDP. For the EU, the deficits are greater, with the Commission forecasting a 3.8% of GDP deficit and the SCPs showing one of 3.4% of GDP. All countries except Austria, Denmark, Germany, Luxembourg, Sweden and Finland are targeting lower deficits than the Commission for 2012, within at most 0.4pp of the

Graph I.3.4: **General government deficit for 2012: decomposition of the gap between the SCP projections and the COM forecasts**



(1) One-off measures for Ireland (2010) and Hungary (2011) have been replaced for the sake of clarity. This has been done along this chapter anywhere it is relevant.
(2) The case of Denmark is unusual, as the policy gap is in the opposite direction. Denmark is in the process of undertaking a retirement reform which should be adopted by the parliament shortly, and will involve reimbursements to people no longer eligible to the pension scheme. Denmark is projecting a higher deficit than the Commission, and a policy gap of 1.8pp of GDP leads to a deficit which is higher by 1.3pp of GDP.
Source: SCPs, Commission services.

Commission figures, with the exception of Denmark whose target is 1.3 pp of GDP higher than the Commission's. The remaining Member States are projecting lower deficits than the Commission for 2012. In the case of Slovenia, Belgium and Latvia, the SCPs project deficits that are over 1pp lower the Commission's, while Lithuania and Cyprus's SCPs forecast deficits over 2pp lower .([14])

Graph I.3.4 also breaks down the differences in the projections in terms of three components. The first is the difference in the starting deficit conditions in 2011 (labelled the '2011 base effect') and stems from differences in the growth assumptions for 2011 and/or from differences in assessing the impact of the 2011 consolidation measures. The second component is the difference in the growth assumptions for 2012 (labelled '2012 growth gap') and is calculated using the standard semi-elasticities to estimate the impact that the real growth assumptions have on the public deficit. The residual difference is labelled the '2012 policy gap' as it is assumed to stem from the quantification of the consolidation measures to be taken for 2012 to achieve the targets set out in the SCPs. Indeed, the SCPs contain estimates of all the planned – although not necessarily legislated for –- consolidation measures, while the Commission forecasts are undertaken on an unchanged policy basis, meaning that only measures already specified and legislated for are taken into account.

Overall, it is the '2012 policy gap' that makes up nearly all the difference between the two forecasts for the euro area overall: as Graph I.3.4 shows, it accounts for 0.3pp of the 0.4pp gap between the forecasts, with the remaining difference stemming from the slightly higher growth forecast in the SCPs for 2012. For the EU, the '2012 policy gap' is half of the whole gap, and corresponds to 0.2pp of

([14]) The figures for Greece also show a deficit that is almost 5pp of GDP stronger than forecast by the Commission. However as Greece figures come from the latest programme for the assistance for Greece, they are not SCP figures and are therefore not of primary concern in this analysis.

the 0.4pp difference. The '2011 base effect' and the '2012 growth gap' each account for 0.1pp.

The fact that the difference is mainly driven by the policy effect, points to the fact that if countries are to realistically expect to meet the projections set out in the SCPs, they will have to introduce the measures that are outlined in the SCPs. ([15]) The policy gap is near or above 1pp of GDP in the case of Slovenia, Cyprus, Lithuania Belgium and Latvia.

3.3. FISCAL CONSOLIDATION

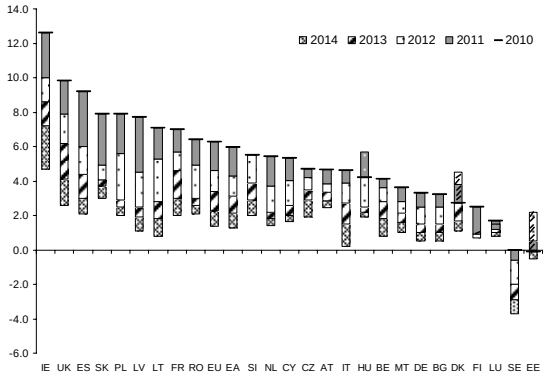
3.3.1. Size and time profile consolidation

With economic growth having returned in 2010 and stabilizing in 2011 and 2012, the necessary consolidation is now underway in both the EU and euro area as a whole. Graphs I.3.5 and I.3.6 show the planned changes in government deficits and in the structural deficits over the 2010–2014 horizon, as set out in the SCPs. It shows that, on aggregate, both the EU and the euro area are projected to improve their fiscal positions every year between 2010 and 2014. In the EU, the general government deficit is planned to fall from 6.3% of GDP in 2010, to 4.6% in 2011, 3.4% in 2012, 2.3% in 2013 and 1.4% in 2014. Meanwhile, the corresponding figures for the euro area are 6.0%, 4.3%, 3.1%, 2.1% and 1.3%. In structural terms also, deficits are projected to decrease faster during 2011–2012 than during 2013–2014. The time profile of the consolidation is therefore one that is front-loaded – an aspect which points to a commitment by Member States to ensure that consolidation is indeed undertaken.

Of course, there are variations in the time profile. For some countries such as Belgium, Denmark, Luxembourg and Estonia, the adjustment is back-loaded, although in some cases only to a limited extent, in the sense that the decrease in both the general government deficit and the structural deficit is projected to be higher during the second half of the timeframe of the programmes (2013–2014) than during the first half (2011–2012).

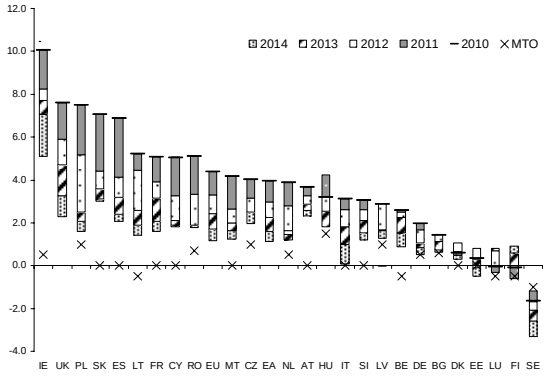
([15]) This is also stressed by the Council in its country-specific recommendations of July 2011.

Graph I.3.5: **Planned changes in government deficits over 2010–2014 in the SCPs**



Source: SCPs, Commission services.

Graph I.3.6: **Planned changes in structural government deficits over 2010–2014 in the SCPs and the MTOs**



Source: SCPs, Commission services.

Within the first half of the programmes' timeframe, countries such as Lithuania, Poland, Italy, Estonia, Belgium, Germany, Sweden and Bulgaria are projecting that their consolidation effort will be higher in 2012 than in 2011. A back-loaded adjustment in 2012 – compared to 2011 – is also projected in the more extreme case of Slovenia, where the deficit is projected to stabilize in 2011, and Hungary, where, net of one-offs, the general government deficit is projected to increase in 2011.

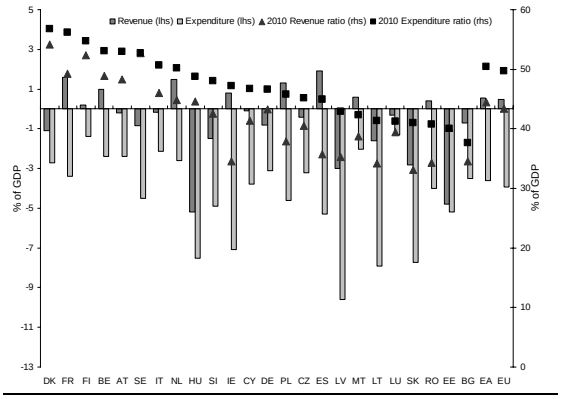
In countries for which a high '2012 policy gap' has also been revealed, the back-loading of the adjustment can be seen as posing a particular extra risk in terms of whether projections will be realised. This especially refers to Belgium, Lithuania and Slovenia.

3.3.2. Composition of the consolidation

Graph I.3.7 looks at the split between revenue and expenditure measures. Overall, in the euro area, the consolidation is due to be primarily expenditure based. While the revenue ratio is due to increase by 0.5pp of GDP between 2010 and 2014, the expenditure ratio is set to shrink by 3.6pp of GDP. A similar pattern exists in the EU, with revenue ratio due to increase by 0.5pp of GDP and expenditure ratio due to shrink by 3.9pp of GDP.

The country specific information contained in Graph I.3.7 shows that the overall picture of an expenditure-based consolidation holds true for the vast majority of countries. However, a number of countries are cutting revenues alongside expenditure. For these countries, greater cuts in expenditure will be necessary in order to ensure that deficits return to within the 3% ceiling specified by the SGP.

Graph I.3.7: **Planned changes in revenue and expenditure over 2010–2014**

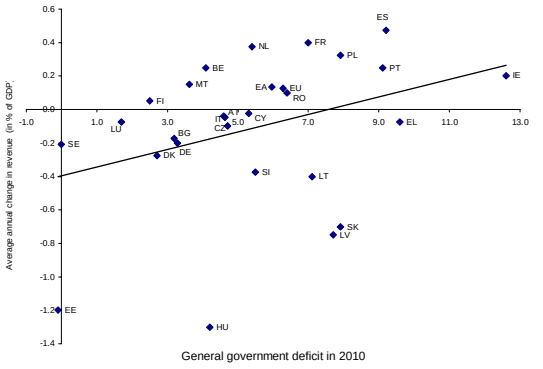


(1) As the UK has not provided revenue and expenditure figures for 2014, it is excluded from this graph. Figures for the period 2010 to 2013 show a 5.7pp reduction in the deficit, split between a 1.2pp increase in revenues and a 4.5pp reduction in expenditure.
Source: SCPs, Commission services.

In the cases of France and to some extent Belgium, it should be noted that the consolidation effort is in part relying on increases in revenue ratio, despite the fact that these countries have amongst the highest starting tax burdens in the EU. Conversely, despite a low starting level, the tax ratio is projected to decrease significantly through 2014 in Hungary, Latvia, Slovakia, Estonia and to some extent Slovenia and Lithuania, ([16]) adding to the cuts to expenditure that will be required to close the deficit. As many of these countries have low starting levels of expenditure, there is an added risk that it may prove difficult to realise the projected expenditure – and by extension deficit – cuts.

Graphs I.3.8 and I.3.9 provide further analysis on the components of the consolidation. They show that while there is a weak, if any, relationship between the level of the deficit and the magnitude of the revenue-based consolidation being planned, the relationship between the deficit and the expenditure-based consolidation is stronger. It is countries with the largest deficits that are planning the biggest decreases in expenditures. As there is considerable evidence that expenditure-based consolidations are more likely to succeed than revenue based ones, it is a positive sign that the countries that are most in need to consolidate are turning to expenditure to reduce their deficits.

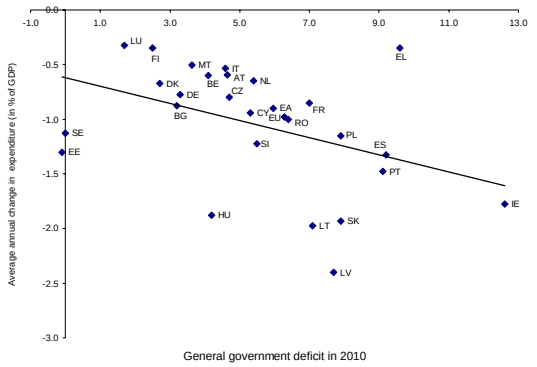
Graph I.3.8: **Average annual change in the revenue ratio planned over the 2010–2014 period versus the general government deficit in 2010**



Source: SCPs, Commission services.

([16]) For some of these countries however, the reduction of the tax ratio is mainly driven by the deceleration of the absorption of EU funds. Since EU structural funds are neutral on the deficit, this is mirrored by a decrease of the expenditure ratio.

Graph I.3.9: **Average annual change in the expenditure ratio planned over the 2010–2014 period versus the general government deficit in 2010**



Source: SCPs, Commission services.

Empirical evidence on consolidation episodes suggests ([17]) that expenditure cuts do not materialize to the extent initially envisaged and that, by contrast, revenues often turned out above expectation, because of favourable cyclical developments in macroeconomic or asset price conditions and/or the introduction of (temporary) revenue measures to offset difficulties in implementing expenditure cuts.

Table I.3.1 presents the differences between planned and actual data on expenditures and revenues as observed in the past and as projected in the SCPs. The table computes averages between 1999 and 2007, ([18]) highlights the 2010 outcome and then presents the projections for 2011–2014. Given the years shown in the table, it should be stressed that the past outcomes do not relate to consolidation episodes, but to the years before the onset of the crisis. The averages presented are unweighted, so they represent the average programme, but are not informative about the plans versus outcomes of the EU on average.

Table I.3.1: **Actual versus planned fiscal adjustment for EU 27 (unweighted average)**

	1999–2007 average	2010		2011	2012	2013	2014
	Planned Δ	Actual Δ	Planned Δ	Actual Δ	Planned Δ	Planned Δ	Planned Δ	Planned Δ
Revenues	6.3%	7.7%	3.0%	3.2%	6.5%	4.5%	3.9%	3.9%
Expenditure	5.5%	7.1%	2.4%	1.3%	2.6%	2.3%	1.9%	2.1%
Government balance	0.3pp	0.2pp	0.2pp	0.9pp	2.3pp	0.7pp	0.8pp	0.7pp

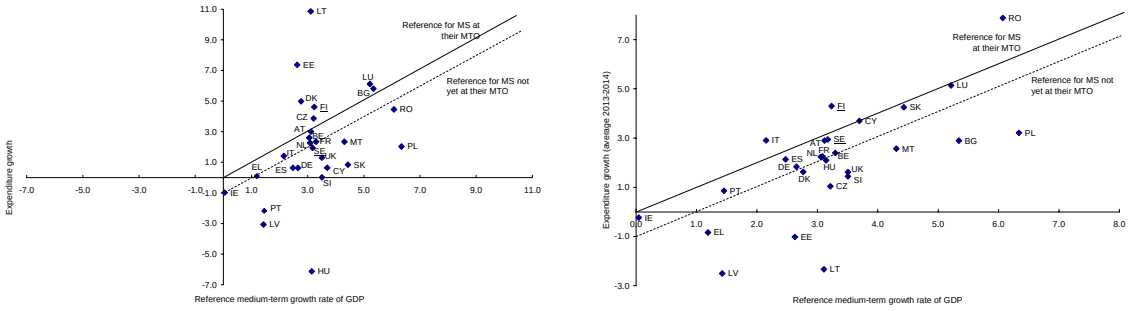
(1) These figures represent the percentage increase in nominal values. The change in the public balance is given in % of GDP
Source: SCPs, Commission services.

As can be seen from the 1999–2007 data, while revenues typically came in stronger than had been planned, the higher outcomes are particularly true for expenditure. While the programmes had a planned expenditure increase of 5.5%, the actual increase in expenditure averaged at 7.1%. Taken together, this meant that the public balance improved by slightly less than was planned for. In the last year, 2010, expenditure restraint was successful however. While expenditure was planned to increase by 2.4%, it actually went up by a significantly lower 1.3% as, due to the stress in sovereign their debt market, some countries implemented new consolidation measures along the way. With revenues being slightly stronger than planned, this meant that the improvement in the public balance was stronger than planned for. The table also shows the SCP plans for 2011 to 2014. Overall, it can be seen that the SCPs are forecasting much stronger increases in revenues than in spending, resulting in improvement in the public balance. The Commission forecasts for 2011 and 2012 are broadly in line on the expenditure side while they are lower on the revenue side. As a result, the unweighted planned government balance increase is slightly lower than in the SCPs in 2011 and 2012.

This section also assesses the expenditure plans for 2012 and for 2013–2014 against an illustrative benchmark. According to the reform to the preventive arm of the SGP currently under discussion, the reference benchmark against which expenditure plans should be assessed is the medium-term rate of potential GDP growth determined on the basis of forward-looking projections and backward-looking estimates. For the sake of this illustrative assessment, the reference benchmark used is based on three years

([17]) See for example IMF (2011).
([18]) The years 2008 and 2009 are not included as they were years when most countries ran discretionary fiscal stimuli.

Graph I.3.10: **Expenditure growth in 2012 and in 2013/2014 versus a reference medium-term growth rate of GDP**



Note: SE and FI are planning to achieve their MTOs by 2011. For them the unbroken line provides the appropriate guide, whilst for the other countries the dotted line is applicable
Source: SCPs and Commission services.

of backward-looking data and seven years worth of projections. ([19])

According to the proposed reform of the preventive arm, countries that have achieved the MTO should plan for expenditure growth to be in line with their medium-term rate of potential GDP growth unless the excess is covered by discretionary revenue measures. This is meant to ensure that increases in expenditure are accounted for by revenue measures and ensures that spending cannot be increased using cyclical or one-off revenues, which experience shows are likely to disappear leading to lasting deficits. In countries that have not yet achieved their MTO, planned expenditure growth should be below the medium-term rate of GDP growth so as to achieve an improvement in the structural balance to the order of at least 0.5% of GDP, unless the excess is matched by discretionary revenue measures.

Graph I.3.10 indicates whether the SCP plans are consistent with the above described expenditure benchmark, for 2012 and 2013–14. Each figure shows the reference medium term growth rate of GDP for the period in question on the horizontal axis and the planned expenditure growth (in nominal terms) on the vertical axis. Countries at their MTO should have a planned expenditure growth in line with the medium term growth rate: in the figures this corresponds to their point lying on the solid grey line that represents the 45° line. According to the SCP plans, the two countries to which this applies are Sweden and Finland. Countries not at their MTO, should have points lying below the dashed line, which represents expenditure growth being 1pp lower than the medium term growth rate of GDP. ([20]) Plans in the SCPs are broadly consistent with the proposed benchmark; in the context of the majority of Member States being subject to the EDP, it could be expected that planned expenditure growth be well below the benchmark. Graphs I.3.10 show that this is the case. Nevertheless, within the overall pattern, there are countries whose plans stand out, such as Lithuania and Estonia, which plan strong expenditure growth in 2012, only to reverse it between 2013 and 2014.

3.4. DEBT IMPLICATIONS

This section assesses debt implications of the macroeconomic scenario and of the consolidation plans. Overall, it should be expected that debt will continue to increase past the point where economic growth returned (around 2010) until the consolidation has been underway for long enough

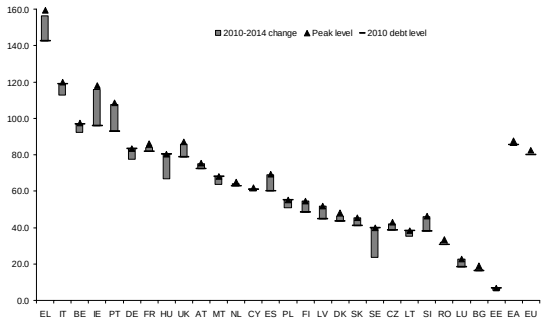
([19]) Since 2010 is the last year for which actual data are available, the benchmark requires potential GDP growth forecasts until 2017. We have thus taken actual real growth outcome from 2008 to 2010, the COM Spring forecast for 2011 and 2012. The remaining potential growth estimates until 2017 consist of the agreed Output Gap Working Group methodology up to 2015 (based on the COM Spring 2011 forecast and allowing for the output gap to be closed by 2015) and converging to the Ageing Working Group potential GDP projections by 2020.

([20]) The dashed line is plotted under the hypothesis of an expenditure ratio around 50% of GDP, so that a Member State that has not yet achieved its MTO should implement a growth rate of expenditure 1pp below the reference medium-term growth rate of GDP in order to improve the structural balance of 0.5% of GDP (provided that the tax elasticity to GDP growth is equal to 1 and there is no change to tax policy).

to halt and then start reversing the upward trend in debt. Graph I.3.11 shows that in both in the euro area and EU overall there is expected to be little change in debt between 2010 and 2014. This effectively means that within this period debt continued to increase before the increase reversed, in time to come down to broadly the 2010 level by 2014.

The underlying figures tell the story in a bit more detail. For the euro area, debt starts at 85.4% of GDP in 2010, before reaching a peak of 87.0% and then returning to 85.1% by 2014. For EU 27, debt starts at 80.0% of GDP before reaching a peak of 82.5% and returning to 79.9% of GDP. In both cases, the peak is reached in 2012. The implication for the medium term is that as long as the consolidation measures are not reversed beyond 2014, debt should be on a declining path for the years after the SCP programme horizon. All countries except Finland, Latvia and Luxembourg are projecting that they will reach their peak debt before 2014 and that the debt reduction will have started by then. However, for some countries such as Greece, Ireland, Portugal, the UK and Spain the high increase in the level of debt during the crisis means that the reduction by 2014 will be small and reversing the increases seen since the time of the crisis is likely to take many further years.

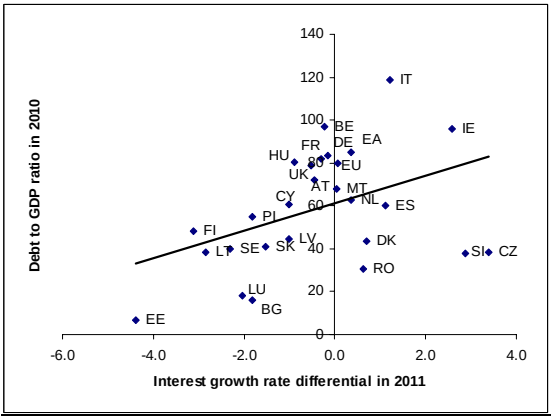
Graph I.3.11: **2010-2014 planned changes in public debt**



Source: SCPs, Commission services.

While consolidation is a necessary prerequisite to debt going down, debt dynamics also depend crucially on the interest rate-growth differential. ([21]) The larger the differential (*r-g*), the larger the increase in the primary balance required to stabilise a given debt ratio. Thus, *r-g* plays a key role in determining an appropriate strategy to achieve a given debt target. Conversely, the debt ratio that can be sustained by the (perceived) largest feasible primary balance is inversely related to the differential.

Graph I.3.12: **Interest-growth differential and debt**



Source: AMECO

Empirical evidence suggests that the differential is positively correlated with the level of public debt: the larger the public debt ratio, the higher the differential tends to be. ([22]) This is shown in Graph I.3.12. The causality can be expected to work in both directions leading to a snowball effect of debt, whereby high debt causes high interest payments which in turn increase debt further. There is evidence that once debt exceeds a given level, the interest rate starts to rise, reflecting the additional risk involved in holding debt from a highly indebted country.

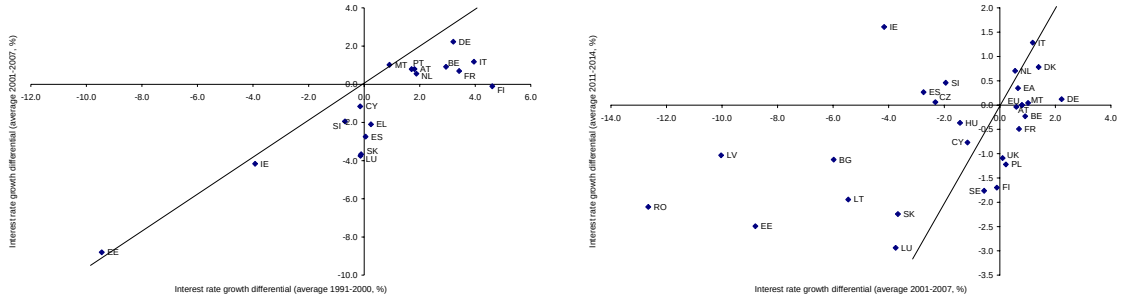
([21]) The change in the gross debt ratio can be decomposed as follows:

$$\frac{D_t}{Y_t} - \frac{D_{t-1}}{Y_{t-1}} = \frac{PD_t}{Y_t} + \left(\frac{D_{t-1}}{Y_{t-1}} * (r_t - g_t) \right) + \frac{SF_t}{Y_t}$$

where *t* is a time subscript; *D, PD, Y* and *SF* are the stock of government debt, the primary deficit, nominal GDP and the stock-flow adjustment respectively, and r and *g* represent the average real interest rate and real rate of GDP growth. The term in parentheses represents the "snow-ball" effect, measuring the combined effect of interest expenditure and economic growth on the debt ratio.

([22]) See Baldacci and Kumar (2010)

Graph I.3.13: **Comparing changes in the interest-growth rate differential (2001-2007 versus 1991-2000 and 2011-2014 versus 2001-2007)**



Source: SCPs, Commission services..

Graph I.3.13 looks at the relationship between the interest-growth rate differential and the debt from a slightly different angle, using the SCP data. They plot the interest growth rate differential for an earlier time period on the horizontal axis and for a later one on the vertical axis. Specifically, the first figure compares 1991–2000 on the horizontal axis with 2000–2007 on the vertical, while the second figure compare 2000–2007 on the horizontal axis with 2011–2014 on the vertical. On the graph on the left, we observe that most points lie below the 45° line: the differential was slightly lower for nearly all countries in 2001–2007 compared with 1991–2000. Indeed the differences in both periods were mainly driven by the rates of growth, in a context of risk premia convergence during the early 90's. Since there was little risk differentiation between EU countries during the 2000–2007 period, countries with the highest growth rates were those facing the lowest interest-growth differential, which in a number of cases was negative. Between 2000–2007 and 2011–2014 however, bigger changes are evident. While some countries continue to reduce their differential, fiscal risk has re-entered the pricing of debt and countries displaying this risk see marked increases in their differential. This can be seen in Graph I.3.13 where 14 more countries have moved north-west, indicating an increase in their differentials.

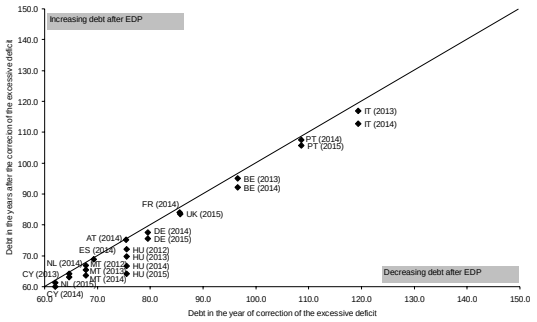
The consolidation underway is expected to reverse the trend in debt over the current SCP time-period. Graph I.3.14 looks at whether and to what extent debt will be on a declining path for individual countries under EDP, once the deadline for correcting their excessive deficit according to their current EDP recommendations has been reached. As the proposed amendments to the corrective arm of the Pact include the operationalisation of the debt criterion, in the future a sufficiently declining debt ratio will be a requirement to keep countries out of EDP (if their debt exceeds the 60% reference value). Although the interpretation of "sufficient progress towards compliance" during the transition period to the new corrective arm has not yet been defined, there are no doubts that an increase in debt would clearly not represent "sufficient progress".

Graph I.3.14 therefore shows the debt levels foreseen in the SCPs in the year of the correction of the excessive deficit and the years after the correction. Where the points lie below the black line, debt is forecast to be decreasing; and by looking at the points for a number of years it can be seen whether debt is expected to continue to decrease. The illustration is only partial for some countries, as the SCP horizon does not extend beyond their deadline for the correction of the excessive deficit. By contrast, for Member States expected to correct early (for example Italy, whose deadline is 2012), the graph presents the projected path. It is clear that all the countries illustrated are expecting debt to be on a declining path in the years after the correction of the excessive deficit. While this may not always be sufficient to be consistent with the provisions of the transition to the debt criterion, it is at the very least a necessary condition and should be seen as an encouraging sign.

Comparing the projections for 2012 and using a similar methodology as for Graph I.3.4, which compared the deficit projections, Graph I.3.15 shows the level of debt projected by both the SCPs

and the Commission and decomposes it into the '2011 base effect', the '2012 growth gap' and the residual '2012 policy gap'.

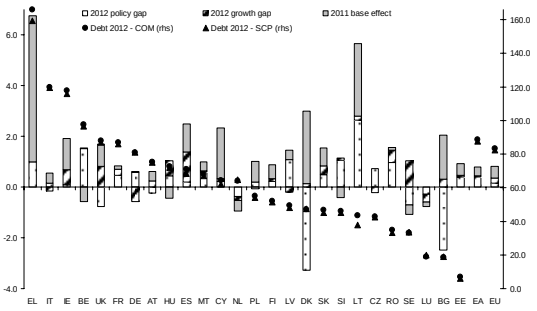
Graph I.3.14: **The level of debt in EDP closing year and the years after**



Source: SCPs, Commission services.

The graph shows that for both the euro area and EU, the Commission forecasts slightly higher debt in 2012. For the euro area, the Commission expects debt to come in at 88.5% of GDP, while the SCPs forecast 87.4%. For EU the difference between the two is smaller; while the Commission forecasts debt of 83.3% the SCPs forecast 82.2%. The '2012 policy gap' accounts for 0.4pp of the difference in the euro area debt, and 0.2pp in the EU. A significant contributor to the difference is also the '2011 base effect' which accounts for 0.3pp in the euro area and 0.5pp in the EU.

Graph I.3.15: **General government debt for 2012: decomposition of the gap between the SCP projections and the COM forecasts**



(1) It is assumed differences in the stock-flow adjustment between the Commission forecast and SCP projections enter the '2012 policy gap'. That's why this '2012 policy gap' is different between Graph I.3.4 and I.3.14.
Source: SCPs, Commission services.

These large effects of the '2011 base effect' are driven by a number of countries that show very significant differences in their SCPs, to the Commission figures. Greece has a starting difference of over 5% of GDP, while Denmark and Lithuania's differences are over 2.5% of their GDPs. Bulgaria and Ireland also have sizeable differences. As with the differences in the deficit projections, the fact that many countries have significant policy changes pencilled in is both a risk and a challenge, as it is necessary to ensure that consolidation measures are effectively implemented, to ensure that the outcomes are not weaker than the plans. ([23])

3.5. LONG-TERM FISCAL SUSTAINABILITY

This section assesses the longer term implications for fiscal sustainability taking account of the projected changes in age-related expenditure, the macroeconomic scenario and the consolidation plans. Three scenarios are compared:

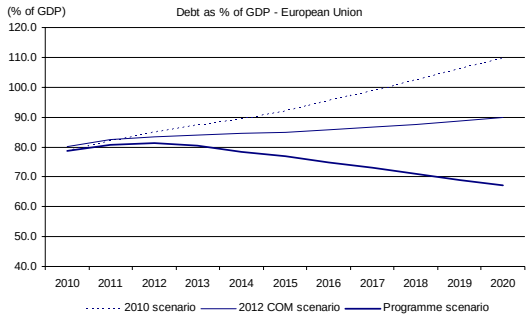
- the "2010" scenario (structural primary balance/GDP ratio kept constant at 2010 actual level;)
- the "2012 COM" scenario, with structural primary balance/GDP ratio kept constant at 2012 estimated level as in Spring 2011 Commission forecasts (reflecting the "unchanged policy" assumption;)
- the "programme" scenario (structural primary balance/GDP ratio kept constant at end of programme levels in the SCPs), reflecting planned changes in fiscal policies as reported in the SCPs. ([24])

Graph I.3.16 shows the projected evolution for the government gross debt ratio (including the projected increase in age-related expenditure) up to 2020. The gross debt-to-GDP ratio would rise steadily over the projection period in the "2010" scenario while in the "programme" scenario the debt-to-GDP ratio would start to decrease after 2013; however it would remain above the 60% of

([23]) The European semester and where applicable the ongoing excessive deficit procedures are designed to ensure that.
([24]) In the "programme" scenario, the macroeconomic assumptions up to 2014 (or last year of programme) are those reported in the SCPs .

GDP Treaty threshold in 2020. The "2012 COM" scenario shows that debt would increase slightly on the basis of the Spring 2011 Commission forecast. ([25])

Graph I.3.16: **Medium-term projections for the EU**



(1) Portugal is not included in the calculation and for Greece and Ireland, the adjustment programmes are incorporated in the 2012 COM scenario.
Source: SCPs, Commission services.

Even without taking into account ageing costs, debt would only stabilise at its 2012 level by 2020 in the "2012 COM" scenario for the EU and euro area. Nonetheless, there is considerable diversity among Member States. An increase in the period up to 2020 in more than half of the countries in the COM 2012 scenario would materialize. In fact, in 7 countries (Estonia, Cyprus, Latvia, Romania, Slovenia, Slovakia and the UK), the debt-to-GDP ratio would increase by 10 p.p. of GDP or more, pointing to the importance of a determined implementation of a consolidation strategy in the medium-term and beyond, notably for those countries where debt would still be above the Treaty threshold.

Graph I.3.17 shows the adjustment in the structural primary balance required up to 2020 in order to reach the 60% Treaty threshold for government debt by 2030, according to three scenarios described above.

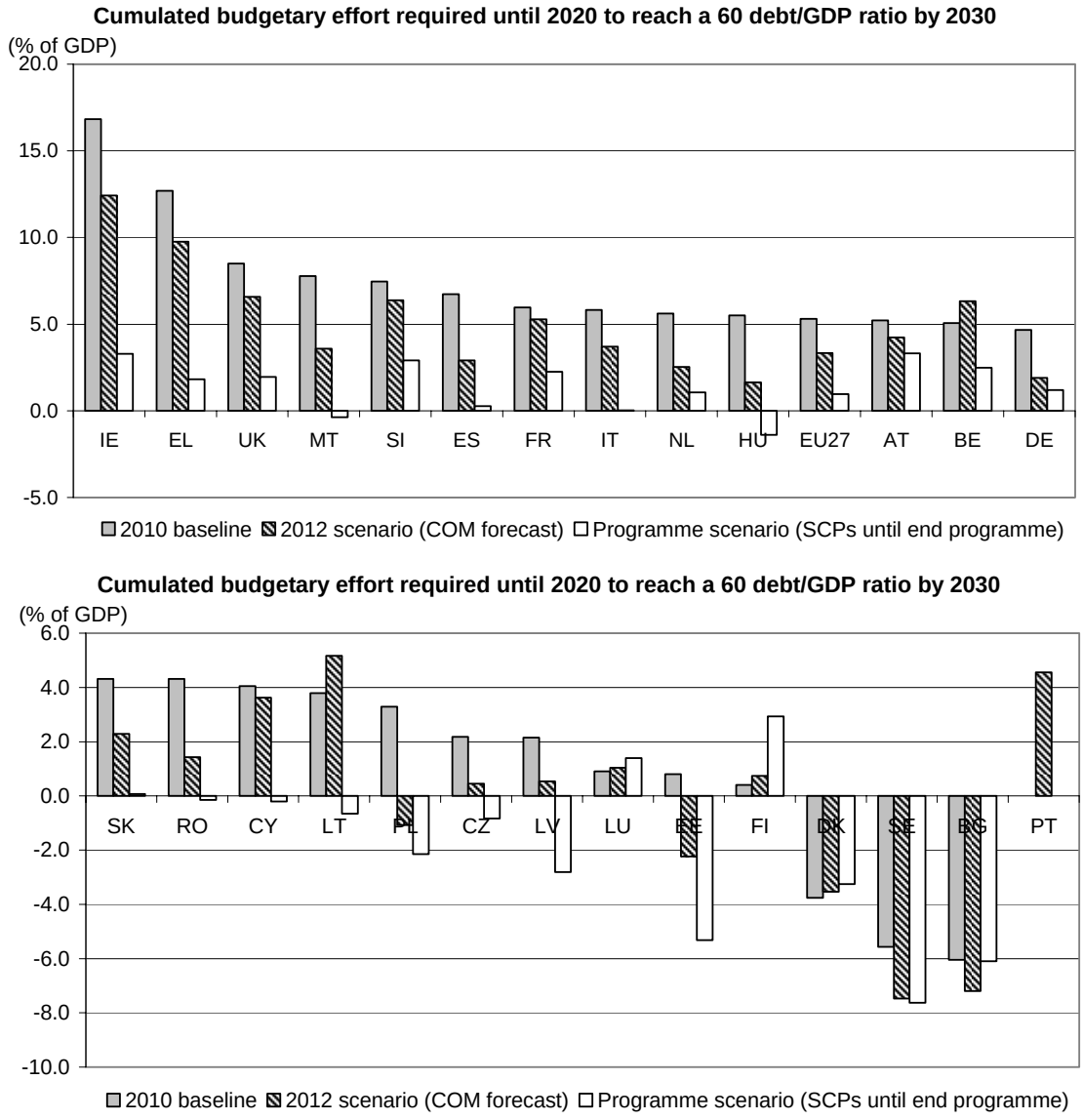
As shown in Graph I.3.17, substantial fiscal adjustment will be required over the medium term in many countries to push the debt ratio down further (to 60% of GDP). On the basis of the 2010 budgetary position, the improvement required in the structural primary balance to achieve a debt-to-GDP ratio of 60% of GDP by 2030 amounts in the EU to 5.3 percentage points of GDP over the period 2011–2020, i.e., an average budgetary consolidation effort of just above ½ percentage points of GDP per year. In other words, the average structural primary balance would have to improve from a deficit of 1.7% in 2010 to a surplus of 3.6% in 2020. The required consolidation effort varies significantly across countries depending on the initial structural primary balances, starting debt ratios and the growth prospects over the next 20 years. The required adjustment of the structural primary balance would be particularly demanding (a budgetary consolidation effort of at least 6 percentage points of GDP) in Ireland, Greece, the United Kingdom, Malta, Slovenia, Spain and France. Furthermore, a significant consolidation effort of above 5 percentage points of GDP is estimated in Italy, the Netherlands, Hungary, Austria and Belgium.

When the "2012" COM scenario is considered, the cumulated consolidation effort for the EU as a whole amounts to 3.3 percentage points of GDP, i.e., by just under ½ of a percentage point per annum for the remaining period until 2020.

Finally, adherence to the fiscal plans in the SCPs throughout the programme period would give rise to a lower outstanding adjustment requirement in the EU, amounting to 1.0 percentage point of GDP (i.e. 0.15 percentage points of GDP per annum) given the ambitious consolidation plans in the later years. Nevertheless in many countries the remaining annual consolidation effort until 2020 after the programme horizon, is still ½ a percentage point or more of GDP (in Ireland, Austria, Slovenia and Finland).

([25]) The macroeconomic scenarios in the SCPs may be on the optimistic side (a phenomenon repeatedly observed). By using the latest independent COM forecast, this potential effect would be reduced.

Graph I.3.17: **Fiscal adjustment required until 2020 to reach a 60% public debt/GDP ratio by 2030 (as a percentage of GDP)**

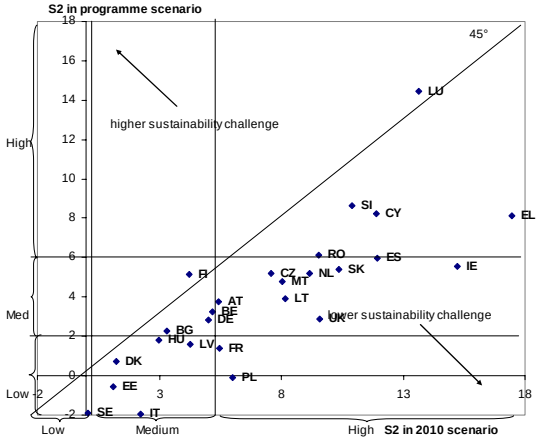


Source: Commission services.

Graph I.3.18 shows the main indicator (S2) for assessing long-term fiscal sustainability. The indicator is calculated based on the projected changes in age-related expenditure up to 2060 (from the 2009 Ageing Report) with two different starting points: (i) the "2010" scenario (the 2010 actual budgetary position) and (ii) the "programme" scenario (SCP plans until 2014/the end of the programme period). The latter scenario thus shows the extent to which the implementation of the fiscal consolidation plans would contribute to ensuring fiscal sustainability. Nearly all countries are expected to have a lower sustainability gap under the assumption that the fiscal plans in the programmes are implemented (as shown a position below the 45° degrees line in the figure.) However, two countries would have a higher sustainability gap in the programme scenario (Luxembourg and Finland). Even assuming the full implementation of the fiscal plans in the SCPs, more than two thirds of the Member States would still have sustainability gaps in excess of 2 percent and 5 countries over 6

percent. ([26]) The recommendations issued to countries as part of the European semester take this into account and stress the importance of attaining the MTO in order to achieve medium-term sustainability.

Graph I.3.18: **Assessing sustainability on the basis of current and prospect S2 indicators (S2 based on 2010 and end of SCP fiscal position)**



(1) Portugal is not included in the calculation.
Source: SCPs, Commission services.

([26]) The calculations do not take into account the recent pension reforms in Greece and Romania, which would significantly reduce the ageing component of the sustainability indicators and thus significantly improve the long term sustainability of public finances in the two countries.

Table I.3.2: **Overview of the most fiscal-policy relevant Council recommendations of 12 July 2011 – summary and policy invitations**

AT	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underpinning the budgetary projections is plausible, and too favourable towards the end of the Stability Programme period. The main goal of the medium-term budgetary strategy, presented in the latest update of the Stability Programme, is to gradually reduce the general government deficit from 4,6 % of GDP in 2010 to 2,4 % of GDP in 2014, chiefly by expenditure restraint. There are mainly downside risks to these targets due to the fact that the measures to underpin the consolidation path at the sub-national level are unspecified and the fact that savings from some of the measures adopted at the federal level will not materialise, e.g. gains from the anti-tax-fraud campaign the predicted impact of which seems to be highly speculative. On the other hand, a positive risk factor is the multi-annual expenditure framework introduced for the federal government in 2009, which seems to have contributed to enhancing predictability of the budgetary process in the medium term, albeit only at the federal level. The Stability Programme stipulates that the debt-to-GDP ratio will grow from 72,3 % in 2010 to 75,5 % in 2013 before declining to 75,1 % in 2014. However, there are some risks attached to this projection, which relate to the growing debt of state-owned companies classified outside the government sector and potential further burden stemming from support measures to the banking sector. At the same time, however, the debt ratio might turn out lower as it is probable that the banks which received the public support during the crisis will pay it back ahead of the schedule that is assumed in the Stability Programme. According to the Stability Programme, the general government deficit is expected to fall below the 3 % reference value in 2013, which is in line with the deadline set by the Council. However, the annual average fiscal effort of 0,2 % of GDP envisaged by the Stability Programme in the period 2011-2013 is well below the 0,75 % of GDP effort that the Council invited Austria to provide. According to the Commission's latest assessment, the risks with regards to long-term sustainability of public finances appear to be medium. **Recommendation:** Accelerate the correction of the excessive deficit, which is planned mainly on the expenditure side, thus bringing the high public debt ratio on a downward path, taking advantage of the ongoing economic recovery, in order to ensure an average annual fiscal effort of 0,75 % of GDP over the period 2011-2013 in line with the Council recommendations under the EDP. To this end, adopt and implement the necessary measures, including at the sub-national level. Specify measures as needed to ensure adequate progress towards the medium-term objective in line with the Stability and Growth Pact (SGP) after correction of the excessive deficit. Take steps to further strengthen the national budgetary framework by aligning legislative, administrative, revenue-raising and spending responsibilities across the different levels of government, in particular in the area of health care. In consultation with the social partners and according to national practices, take steps to further limit access to the current early retirement scheme for people with long insurance periods and take steps to reduce the transition period for harmonisation of the statutory retirement age between men and women to ensure the sustainability and adequacy of the pension system. Apply strictly the conditions for access to the invalidity pension scheme. Reduce, in a budgetary neutral way, the effective tax and social security burden on labour, especially for low and medium-income earners.
BE	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underpinning the budgetary projections in the Stability Programme is plausible. Although it is based on slightly less favourable growth assumptions for 2011, it is broadly in line with the latest Commission services' spring 2011 forecast. After a better-than-expected deficit of 4,1 % in 2010, the objective of the budgetary strategy outlined in the Stability Programme is to further reduce the deficit to 3,6 % in 2011 and below the 3 % reference value by 2012, the deadline set by the Council for correcting the excessive deficit. The reduction in the deficit planned for 2011 seems feasible in view of the rather cautious economic projections. However, the fiscal effort is likely to be below the 0,75 % of GDP average annual effort recommended by the Council, in particular in 2011 and 2012 when it would only amount to 0,4 and 0,3 % of GDP in structural terms respectively. Moreover, the deficit targets for 2012 and subsequent years are not supported by specific adjustment measures. Lastly, the medium-term objective (MTO), which is a structural surplus of 0,5 % of GDP, is not expected to be achieved within the 2011-2014 Stability Programme period. In view of the better-than-expected outcome recorded in 2010, a more ambitious reduction in the deficit in 2011, and faster-than-projected progress towards the 3 % of GDP threshold, would be appropriate. Moreover, it will not be possible to bring the excessive deficit to an end by 2012 and to continue to make progress towards the MTO without further consolidation measures. Since the tax burden, especially that on labour income, is already very high in Belgium, these consolidation measures should be essentially expenditure-based. **Recommendation:** Take advantage of the ongoing economic recovery to accelerate the correction of the excessive deficit. To this end, take the necessary specified measures — mainly on the expenditure side — by the time of the 2012 budget to achieve an average annual fiscal effort in line with the recommendations under the EDP, thus bringing the high public debt ratio on a declining path. This should bring the government deficit well below the 3 % of the GDP reference value by 2012 at the latest. Ensure progress towards the medium-term objective by at least 0,5 % of GDP annually.

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Table (continued)

	Take steps to improve the long-term sustainability of public finances. In line with the framework of the three-pronged EU strategy, the focus should be put on curbing age-related expenditure, notably by preventing early exit from the labour market in order to markedly increase the effective retirement age. Measures such as linking the statutory retirement age to life expectancy could be considered. Improve participation in the labour market by reducing the high tax and social security burden for the low-paid in a budgetary neutral way and by introducing a system in which the level of unemployment benefits decreases gradually with the duration of unemployment. Take steps to shift the tax burden from labour to consumption and to make the tax system more environmentally friendly.
BG	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underpinning the fiscal projections is based on more favourable growth projections than those of the Commission services forecast. The updated Convergence Programme foresees a correction of the excessive general government deficit in 2011 in compliance with the Council Recommendation of 13 July 2010, and further reductions afterwards. After a considerable and frontloaded budgetary adjustment of more than 2 percentage points in structural terms in 2010, the fiscal effort in 2011 is well below the recommended adjustment of at least 0,75 % of GDP but on average, for the whole EDP period, the fiscal effort remains above 1 % of GDP. For the period 2012-2014 the update does not provide sufficient details of the planned budgetary measures to achieve the fiscal targets in these years. The downward revised medium-term objective (MTO) of a structural deficit of 0,6 % of GDP, scheduled for 2014, is still more ambitious than the minimum required level. It reflects the objectives of the Stability and Growth Pact and it is foreseen to be achieved by the end of the Convergence Programme period (2014). However, the envisaged annual average structural fiscal effort in 2012-2014, after the planned correction of the excessive deficit in 2011, is well below the recommended minimum annual structural improvement of 0,5 % of GDP. In view of the gradually improving economic outlook, the Convergence Programme should aim for a faster progress towards the achievement of the MTO. When assessed against a prudent estimate of medium-term potential output growth, the projected budgetary expenditure growth in 2012-2013 seems to be on the optimistic side, posing a risk to the structural fiscal position in the medium term. Correcting the excessive deficit as envisaged by the end of 2011 will help regain confidence and strengthen the credibility of government policies. Over the medium term, achieving the objective of a small structural deficit of 0,6 % of GDP is important to ensure that fiscal policy is supportive to the monetary regime in place. However, fiscal consolidation is hindered by inefficiencies in the public sector which may lead to considerable expenditure pressures while budget revenues are likely to be structurally lower than in the pre-crisis boom years. Ambitious public finance reforms are thus needed in order to carry out the necessary fiscal adjustment and help secure funding for the implementation of necessary structural reforms, including the co-financing needed for EU-supported projects. **Recommendation:** Proceed with effective budget implementation so as to correct the excessive deficit in 2011, in line with the Council Recommendation of 13 July 2010 under the EDP. Specify the measures underpinning the budgetary strategy for 2012-2014. Take advantage of the economic recovery to ensure adequate progress towards the medium-term objective, primarily by keeping tight control over expenditure growth, while prioritizing growthenhancing expenditure. Take further steps to improve the predictability of budgetary planning and the implementation control, including on an accruals basis, in particular by strengthening fiscal governance. To this end, design and put in place binding fiscal rules and a well-defined medium-term budgetary framework that ensures transparency at all government levels. Implement the agreed steps with social partners under the current pension reform, advance some of its key measures that would help to increase the effective retirement age and reduce early exit, such as through the gradual increase of the social insurance length of service, and strengthen policies to help older workers to stay longer in employment.
CY	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underpinning the budgetary projections is plausible until 2012, but rather favourable thereafter, as assessed against the Commission services' spring 2011 forecast. The Stability Programme aims to reduce the budgetary deficit to 4 % of GDP in 2011 and 2,6 % in 2012, in line with the Council Recommendation of 13 July 2010, and to continue consolidation afterwards. The programme projects the debt ratio to peak in 2012 and to decline thereafter. The annual average improvement in the structural balance for the period 2011-2012 is 1,5 % of GDP, in line with the Council Recommendation of 13 July 2010. However, the structural improvement is set to be below the requirements of the Stability and Growth Pact in both 2013 and 2014. The medium-term objective (MTO), which is reaffirmed as a balanced budget in structural terms, will not be reached within the programme period. Overall, there are downside risks to the consolidation path mapped out in the programme, associated with the continued rebalancing towards a less tax-rich growth pattern, the practice of adopting supplementary budgets during the course of the year and the timely implementation of measures which are still to be agreed with the social partners and others still to be specified (e.g. containment of current expenditure). In view of these risks, additional measures may need to be adopted if macroeconomic or budgetary developments turn out to be worse than expected. **Recommendation:**

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Table (continued)

	Adopt the necessary measures of a permanent nature to achieve the budgetary target in 2011 and the correction of the excessive deficit by 2012, in line with the Council recommendations under the EDP. Take measures to keep tight control over expenditure and make use of any better-than-expected budgetary developments for faster deficit and debt reduction. Ensure progress towards the medium-term objective by at least 0,5 % of GDP annually and bring the public debt ratio on a downward path. Accelerate the phasingin of an enforceable multiannual budgetary framework with a binding statutory basis and corrective mechanisms, as from the preparation of the 2012 Budget. The Programme and Performance Budgeting should be implemented as soon as possible. Improve the long-term sustainability of public finances by implementing reform measures to control pension and healthcare expenditure in order to curb the projected increase in age-related expenditure. For pensions, extend years of contribution, link retirement age with life expectancy or adopt other measures with an equivalent budgetary effect, while taking care to address the high at-risk-of-poverty rate for the elderly. For healthcare, take further steps to accelerate implementation of the national health insurance system.
CZ	**Summary Assessment:** The Council is of the opinion that the macroeconomic assumptions underpinning the Convergence Programme are plausible in the first two years of the Programme and favourable thereafter, when assessed against the Commission's medium-term projections of potential output according to the commonly agreed methodology. The Convergence Programme is based on a lower growth projection for 2012 compared with the Commission services 2011 Spring forecast, mainly on account of a further sustained reduction in real government consumption expenditure, which is not taken up in the Commission services' no-policy-change forecast for 2012. The Convergence Programme foresees a reduction of the general government deficit below 3 % of GDP in 2013 and further to 1,9 % of GDP in 2014. The planned consolidation is mainly based on expenditure restraint. The proposed measures are broadly sufficient to reach the target by 2013, as recommended by the Council, but there are risks to the actual budgetary outcome of measures as presented in the Convergence Programme. Moreover, the attainment of the targets for the outer years of the Convergence Programme seems to rely on favourable cyclical conditions and further efficiency gains in public administration, which may become increasingly difficult to materialise. The achievement of the medium-term budgetary objective is foreseen beyond the horizon of the Convergence Programme. The average annual fiscal effort over the period 2010-2013 is slightly below 1 % of GDP recommended by the Council under the EDP procedure of 2 December 2009. The Convergence Programme set out a clear objective to bring the deficit in public finances below 3 % of GDP by 2013. The challenge will be to ensure that measures underlying the path for the deficit reduction in 2011-2013, as well as in subsequent years, do not compromise long-term growth, especially by safeguarding expenditure on education and public R&D, and that they provide an adequate buffer for increases in expenditure entailed by demographic developments. **Recommendation:** Implement the planned consolidation in 2011 and take countervailing measures of a permanent nature as needed in case of any revenue shortfalls or expenditure slippages. Adopt fiscal measures as planned in the Convergence Programme for 2012 and underpin the target for 2013 by more specific measures; subject to this, avoid cutting expenditure on growth-enhancing items. Improve the efficiency of public investments, and continue efforts to exploit the available space for increases in indirect tax revenue to shift taxes away from labour, improve tax compliance, and reduce tax evasion. Ensure an average fiscal effort over the period 2010-2013 of 1 % of GDP, in line with the Council recommendations on correcting the excessive deficit, which will allow meeting the EDP deadline with a sufficient margin in 2013. Implement the planned pension reform in order to improve the long-term sustainability of public finances and to ensure the future adequacy of pensions. Additional efforts should focus on further changes to the public pillar to ensure that the system is not a source of fiscal imbalances in the future, and on the development of private savings. With a view to raising the effective retirement age, measures such as a link between the statutory retirement age and life expectancy could be considered. Ensure that the envisaged funded scheme attracts broad participation, and is designed to keep administrative costs transparent and low.
DK	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underlying the Convergence Programme is plausible. While based on slightly more favourable growth assumptions for 2012 and beyond, it is broadly in line with the Commission services' spring 2010 forecast. The budgetary strategy set out in the Convergence Programme aims at bringing the deficit below the 3 % reference value by 2013, in line with the Council Recommendation of 13 July 2010, and reaching the revised medium-term objective (MTO) of firstly structural budget balance not below -0,5 % of GDP by 2015 and secondly budget balance by 2020. The adjustment path towards this objective is appropriate. Measures included in the Convergence Programme and adopted by Parliament in spring 2010 are considered adequate to underpin the budgetary targets and would represent an annual fiscal effort of around 1 % of GDP over the period 2011-2013. Denmark will reach its revised MTO within the Convergence Programme horizon. Risks to the budgetary targets are broadly balanced. **Recommendation:** Implement fiscal consolidation measures in 2011, 2012 and 2013 and ensure an average annual fiscal effort of 0,5 % of GDP over the period 2011-2013 as planned and correct the excessive deficit by 2013 in line with the Council recommendation under the EDP. Thereafter ensure, as planned, an appropriate adjustment path towards the medium-term objective. Accelerate the reduction of the general government deficit if economic conditions turn out better than currently expected. Strengthen expenditure control by adopting binding multiannual spending ceilings for local, regional and central government which are consistent with the overall medium-term general budget targets.

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	In order to strengthen employment and the sustainability of public finances, take further steps to increase long-term labour supply, by implementing the recently concluded reform on the voluntary early retirement pension (VERP) scheme, reforming the disability pension and better targeting subsidised employment schemes (the "flex-job" system) towards the most vulnerable groups. Consider preventive action to strengthen the medium-term stability of the housing market and the financial system including reviewing the functioning of the mortgage and property tax systems.
EE	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underpinning the budgetary projections is plausible. The medium-term budgetary strategy of the Stability Programme is to achieve the medium-term objective, defined as structural balance, by 2013, and to maintain it throughout the rest of the Stability Programme period, by aiming at structural surpluses in 2013 and beyond. The headline general government budgetary position is projected to reach surplus by 2013, while in the short term the headline deficit is expected to deteriorate somewhat due to the one-off impact of environmental investments on carbon credits. The budgetary adjustment of the Stability Programme relies on holding back growth in government consumption expenditure. The Stability Programme provides some information regarding measures to reach the targeted position and the previous track record of meeting the fiscal targets mitigates the risk of missing them in the coming years. In particular, the envisaged reforms seek efficiency gains in several areas, such as education and active labour market policies. Risks to the budgetary targets thus appear to be broadly balanced. Nevertheless, it will be important for the upcoming budgets to provide the key details of measures to further enhance the efficiency of public spending, thus underpinning the implementation of the Stability Programme. **Recommendation:** Achieve structural surplus by 2013 at the latest, while limiting deficit in 2012 to at most 2,1 % of GDP, keeping tight control over expenditure and enhancing the efficiency of public spending. Take steps to support labour demand and to reduce the risk of poverty, by reducing the tax and social security burden in a budgetary neutral way.
FI	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underlying the Stability Programme is plausible for 2011-2012, but slightly too favourable thereafter. For 2011-2012, the macroeconomic scenario is in line with the Commission services spring forecast. For 2013-2015, the Stability Programme projects growth of about 2 % of GDP, which is slightly above the potential growth estimate of 1,5 % and could therefore be subject to some downside risks. The objective of the budgetary strategy is to bring the deficit down to 0,9 % of GDP in 2011 and 0,7 % in 2012, reflecting the cyclical improvement in the economy and some consolidation measures already decided by the previous government. However, the Stability Programme update does not plan any further fiscal consolidation over 2013-2015. Risks to the budgetary targets appear to be balanced. The most notable risk factor stems from the global macroeconomic environment, which has traditionally had a strong impact on the export-reliant Finnish economy. **Recommendation:** Continue the fiscal consolidation using any windfall revenue to reduce the deficit, while taking additional measures to maintain the fiscal position above the medium-term objective, in particular through compliance with the medium-term expenditure benchmark. Take further measures to achieve productivity gains and cost savings in public service provision, including structural changes, in order to respond to the challenges arising from population ageing. In view of the already existing system of linking pension benefits to life expectancy, consider a link between the statutory retirement age and life expectancy.
FR	**Summary Assessment:** the Council is of the opinion that the macroeconomic scenario underpinning the budgetary projections is favourable, especially as expected growth levels remain well above the potential growth in later years. After a better-than-expected deficit of 7 % of GDP in 2010, the Stability Programme plans to bring it down to 3 % of GDP in 2013, which is the deadline set by the Council for correcting the situation of excessive deficit, and to continue consolidation thereafter. Starting from a debt of 82 % of GDP in 2010, the debt ratio is set to increase until 2012 (86 %), after which it will decline slightly. The deficit and debt adjustment paths are subject to risks, which include the possibility of a macroeconomic scenario that could turn out to be less favourable, the fact that the measures are not sufficiently specified to reach the targets from 2012 onwards, and the fact that targets have often been missed in the past, notwithstanding the better-than-expected outcome in 2010. Therefore, it cannot be ensured that the excessive deficit will be corrected by 2013 unless further measures will be taken as needed. The medium-term objective of a balanced budget in structural terms will not be reached within the Stability Programme period. The average annual fiscal effort over the 2010-2013 period as recalculated by the Commission services according to the commonly agreed ethodology is slightly below what was included in the Council Recommendation of 2 December 2009 ('above 1 % of GDP'). Implementation of fiscal consolidation remains a major challenge. Avoiding expenditure slippages by means of a strengthened fiscal effort based on fully specified measures is vital to re-establishing a sustainable fiscal position, especially since the 2013 target does not provide any safety margin below the 3 % of GDP threshold. Moreover, as specified in the 2011-2014 Multiyear Public Finance Planning Act voted in December 2010 it would be appropriate to use all windfall revenues to accelerate the deficit and debt reduction. According to the Commission's latest assessment, the risks with regards to long term sustainability of public finances appear to be medium.

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	To improve the long-term sustainability of public finances, France adopted a new pension reform in 2010. The planned measures, including the gradual increase in the minimum retirement age from 60 to 62 and in the statutory retirement age from 65 to 67, as well as the phasing out of early retirement schemes, should have an impact on the low employment rate of older workers. Moreover, the pension system is expected to be in balance by 2018. A deficit is likely to appear thereafter unless further measures are taken. The latest pension reform has also created a new public body, the "Comité de pilotage des régimes de retraite", which is in charge of presenting annual assessments of the budgetary situation of pension accounts and, if there is any likelihood of a deterioration, of proposing corrective measures. **Recommendation:** Ensure the recommended average annual fiscal effort of more than 1 % of GDP over the period 2010-2013 and implement the correction of the excessive deficit by 2013, in line with the Council recommendations under the EDP, thus bringing the high public debt ratio on a downward path, and ensure adequate progress to the medium-term objective thereafter; specify the necessary corresponding measures for 2012 onwards, take additional measures if needed and use any windfall revenues to accelerate the deficit and debt reduction as planned; continue to review the sustainability of the pension system and take additional measures if needed. Increase the efficiency of the tax system, including for example through a move away from labour towards environmental and consumption taxes, and implementation of the planned reduction in the number and cost of tax and social security exemptions (including 'niches fiscales').
DE	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underlying the Stability Programme is cautious for 2011 and plausible thereafter, also as assessed against the Commission services spring 2011 forecast. The Stability Programme projects real GDP to grow by 2,3 % in 2011, before slowing to 1,8 % in 2012 and to an average of 1,5 % in 2013-2015. The Stability Programme plans to bring the deficit below the 3 % GDP reference value already in 2011, two years ahead of the deadline established by the Council, and to make further progress towards achieving the medium-term objective (MTO) – a deficit of 0,5 % of GDP in structural terms – in 2014. Following the expected correction of the excessive deficit, the pace of adjustment towards the MTO under the Stability Programme falls below the 0,5 % of GDP benchmark in 2013 and 2014. While the debt-to-GDP ratio rose by almost 10 percentage points in 20101, it is projected to start falling as of 2011 The risks to the budgetary projection appear broadly balanced for 2011, but the outcomes thereafter could be weaker than expected, since some savings might not materialise as envisaged. Certain measures are still subject to debate (e.g. energy and financial transaction tax) and others remain to be specified (e.g. efficiency improvements in public administration). Moreover, further financial market support measures cannot be excluded. According to the Commission's latest assessment, the risks with regards to long term sustainability of public finances appear to be medium. **Recommendation:** Implement the budgetary strategy for the year 2012 and beyond as envisaged, thus bringing the high public debt ratio on a downward path, in line with the Council recommendations under the EDP. Ensure an adequate structural adjustment effort towards the medium-term objective thereafter. Complete the implementation of the budgetary rule at the Länder level and further strengthen the corresponding monitoring and sanctioning mechanism. Maintain a growth-friendly consolidation course, in particular by safeguarding adequate expenditure on education and by further enhancing the efficiency of public spending on health-care and long-term care. Enhance participation in the labour market by improving equitable access to education and training systems and by taking further steps to reduce the high tax wedge in a budgetary neutral way and improve work incentives for persons with low income perspectives.
EL	**Summary Assessment:** Greece did not submit any SCP. **Recommendation: Detailed recommendations are set out in a Memorandum of Understanding.**
HU	**Summary Assessment:** The Council is of the opinion that, based on the Commission services 2011 spring forecast, the macroeconomic scenario underpinning the budgetary projections is slightly favourable, in particular regarding the development of domestic demand. The update aims to correct the excessive deficit by the 2011 deadline set by the Council, to be achieved with a surplus of 2 % of GDP thanks to the significant one-off revenues from the pension assets. The budget would turn into a deficit of 2,5 % of GDP in 2012 and thereafter gradually decline to 1,5 % of GDP in 2015, mainly based on expenditure restraint. The update confirms the country's medium-term objective (MTO) for the budgetary position in structural terms, a deficit of 1,5 % of GDP. The consolidation strategy is expected to reduce the budgetary deficit in a structural way and put the debt on a downward path to reach 64 % of GDP by 2015. However, it appears to be rather back-loaded with structural improvement starting only from 2012, whereas the cumulative structural deterioration of over 3 % of GDP over 2010 and 2011 is not in line with the Council recommendation of July 2009 asking Hungary to achieve a structural adjustment of at least 0,5 % of GDP. The spring forecast shows a deficit of 3,3 % of GDP in 2012, which assumes some implementation risks of 0,5 % of GDP; on this basis it cannot be excluded that the threshold may be breached again in that year unless further measures are taken. In addition, the projected structural deficit path, as re-calculated by the Commission, does not provide for the necessary adjustments that would ensure achievement of the MTO by the end of the Convergence Programme period; in particular, there is no further structural adjustment beyond 2013, though the margin to the MTO is small.

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	Finally, the abolishment of the mandatory private pension pillar results in additional one-off and permanent revenues but also increases the long-term liabilities. The ensuing likely deterioration of the long-term fiscal sustainability taking into account that part of the pension funds' assets are used to finance current expenditure, is partly offset by several announced steps related to the pension system in the context of the structural reform programme (e.g. the partly already implemented parametric changes in the public pillar). According to the Commission's latest assessment, the risks with regards to the long-term sustainability of public finances appear to be medium. Fiscal consolidation remains a major challenge. Without rigorous implementation of the measures announced and additional measures of a structural nature as needed, it cannot be ensured that the excessive deficit is corrected on a sustainable basis and appropriate progress is made towards the MTO. Moreover, fiscal consolidation will also help to put debt reduction on an appropriately declining path and improve long-term sustainability which appears to be at medium risk. Making full use of windfall revenues could help accelerate the fiscal consolidation. Against this background, the authorities' bi-annual Excessive Deficit Procedure progress reports will serve as a useful tool for closely monitoring progress of fiscal consolidation. **Recommendation:** Strengthen the fiscal effort in order to comply with the Council recommendation to correct the excessive deficit in a sustainable manner, inter alia by avoiding the structural deterioration in 2011 implicit in the planned 2 % of GDP budget surplus and ensure that the budget deficit is kept safely below the 3 % of GDP threshold in 2012 and beyond, contributing to the reduction of the high public debt ratio. Fully implement the announced fiscal measures and adopt additional measures of a permanent nature if needed at the latest in the 2012 budget to secure the budgetary target for that year. The 2012 budget should also identify the additional measures in order to attain the 2013 target in the Convergence Programme. Ensure progress towards the medium-term objective (MTO) by at least 0,5 % of GDP annually until the MTO is reached and use possible windfall revenues to accelerate the fiscal consolidation. Adopt and implement regulations specifying the operational aspects of the new constitutional fiscal governance framework, including, inter alia, the numerical rules that will be implemented at the central and local level until the debt ratio has declined to below 50 % of GDP. Regarding the fiscal framework, implement and strengthen multiannual fiscal planning, improve the transparency of public finances and broaden the remit of the Fiscal Council. Enhance participation in the labour market by alleviating the impact of the tax reform on low earners in a budget-neutral manner.
IE	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underpinning the budgetary projections in the Stability Programme is plausible. The medium-term budgetary strategy of the Stability Programme is to bring the headline general government deficit below the 3 % of GDP reference value by the deadline foreseen in the Council Recommendation of 3 December 2010. The Stability Programme targets deficits of 10,0 % of GDP in 2011, 8,6 % in 2012, 7,2 % in 2013, 4,7 % in 2014 and 2,8 % by the end of the Stability Programme period in 2015. This path is underpinned by consolidation measures of 3,8 % of GDP implemented in the budget for 2011, and broad consolidation measures of 5,9 % of GDP in 2012-14 and a further unspecified consolidation effort of more than 1 % of GDP in 2015. The Stability Programme restates the medium-term objective (MTO) for the budgetary position of -0,5 % of GDP, which is not reached within the Stability Programme period. According to the Commission's latest assessment, the risks with regards to long term sustainability of public finances appear to be high. Achieving sufficient primary surpluses over the medium-term and further reforming the Irish social security system are necessary to improve the sustainability of public finances. **Recommendation: Detailed recommendations are set out in a Memorandum of Understanding.**
IT	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underlying the programme is plausible. The programme plans to bring the general government deficit below 3 % of the GDP reference value by 2012, based on further expenditure restraint and additional revenues from improved tax compliance. Following the correction of the excessive deficit, the programme plans to achieve the medium-term objective (MTO) of a balanced budgetary position in structural terms by the end of the programme period (2014), backed by a commitment to further restrain primary expenditure. The programme projects the government debt ratio to peak in 2011 and to decline at an increasing pace thereafter, as the primary surplus increases. The planned average annual fiscal effort over the period 2010-2012 is above the 0,5 % of GDP recommended by the Council under the EDP, and the envisaged pace of adjustment after 2012 is well above the provisions in the Stability and Growth Pact. Reaching the above deficit and debt outcomes will require a strict budgetary implementation, while more information on the planned consolidation measures for 2013 and 2014 is needed to increase the credibility of the programme. Given the very high government debt, which stands at around 120 % of GDP in 2011, the pursuit of a durable and credible consolidation and the adoption of structural measures to enhance growth are key priorities for Italy. According to the Commission's latest assessment, the risks with regards to long term sustainability of public finances appear to be medium. For the period until 2012, the achievement of the targets for the general government deficit set in the stability programme, and thus the correction of the excessive deficit by 2012, relies on the full implementation of the measures already adopted. Additional action would be required if, for instance, revenues from improved tax compliance are lower than budgeted or if difficulties arise in achieving the planned restraint in capital expenditure. For 2013-2014, the new three-year budgetary framework prescribes that the concrete measures underpinning the consolidation Although the budgetary framework has been strengthened considerably in recent years, the introduction of enforceable expenditure ceilings and further improvements to budgetary monitoring across all government sub-sectors would foster fiscal discipline and strengthen the credibility of the medium-term budgetary strategy. **Recommendation:**

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	Implement the planned fiscal consolidation in 2011 and 2012 to ensure correction of the excessive deficit in line with the Council recommendations under the EDP, thus bringing the high public debt ratio on a downward path. Building on recently approved legislation, fully exploit any better-than-expected economic or budgetary developments for faster deficit and debt reduction and stand ready to prevent slippages in budgetary implementation. Back up the targets for 2013-2014 and the planned achievement of the medium-term objective by 2014 with concrete measures by October 2011 as provided for in the new multi-annual budgetary framework. Further strengthen the framework by introducing enforceable ceilings on expenditure and improving monitoring across all government sub-sectors. Take steps to promote greater participation of women in the labour market, by increasing the availability of care facilities throughout the country and providing financial incentives to second earners to take up work in a budgetary neutral way.
LV	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underpinning the budgetary projections in the Convergence Programme is plausible although the inflation projection may be on the low side for 2011. The mediumterm budgetary strategy of the Convergence Programme is to bring the headline general government deficit below the 3 % reference value by the deadline foreseen in the Council Recommendation of 7 July 2009. Taking into account the measures implemented since the issuance of the recommendation to correct the excessive deficit situation and additional consolidation implied in the updated Convergence Programme, the planned fiscal effort for 2011-2012 is in line with the required adjustment. In view of the starting point, the Convergence Programme does not foresee the achievement of the medium-term objective (MTO) by the end of the programme period, while the planned fiscal effort to reach the MTO after the correction of the excessive deficit situation could be accelerated in particular in 2013. The fiscal consolidation path envisaged in the Convergence Programme is mostly expenditure based. The budgetary targets are subject to downside risks, as the Convergence Programme does not provide full information on measures to underpin the achievement of the set targets. These measures are expected to be provided in the forthcoming budgets. Reducing the primary deficit over the medium term, as foreseen in the Convergence Programme, would help reduce the risks to the sustainability of public finances. **Recommendation: Detailed recommendations are set out in a Memorandum of Understanding.**
LT	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underlying the 2011 Convergence Programme is plausible although economic growth and inflation may turn out higher than currently projected. While based on somewhat more favourable growth assumptions for 2011, it is broadly in line with the latest Commission forecast for 2012. The Convergence Programme plans to bring the deficit below the 3 % reference value by 2012, the deadline set by the Council, but is not sufficiently underpinned by measures for 2012. The accelerating economic momentum may lead to better 2011 budgetary outcomes than expected in the Convergence Programme. However, if temporary consolidation measures that will expire at the end of 2011 are not renewed and complemented by sizable permanent measures, the Convergence Programme's budgetary targets for 2012 risk not being met despite the improving macro-economic outlook. The average annual fiscal effort over the period of 2010-2012 is well below the 2,25 % of GDP recommended by the Council under the excessive deficit procedure (EDP) adopted on 16 February 2010. As economic growth and tax revenues are substantially stronger than expected at the time of the Council EDP Recommendation of 16 February 2010, implementation of the required fiscal effort should allow for faster deficit reduction and progress towards the medium-term objective (MTO). The MTO of a structural surplus of 0,5 % of GDP is not foreseen to be achieved within the Convergence Programme period. In view of the sizable adjustment required to meet the 2012 EDP target and make progress towards the MTO, and the need to secure the necessary co-financing in order to frontload the absorption of EU structural funds and increase productive investment in the economy, identifying further consolidation measures will be a challenge. Improvements in public sector efficiency could create additional room for expenditure adjustments without compromising the quality of public services. In the absence of further reform, age-related expenditure will increase at a rate above the EU average over the next few decades. In June 2010, the government approved the broad outline of a comprehensive social security and pension system reform. The proposal included significant increases in the pensionable age, changes to the way pensions are calculated and the integration of state pensions into the general scheme of social insurance. The approval and successful implementation of all aspects of these proposals will be critical for long term fiscal sustainability and could help increase the labour supply by providing stronger incentives to work for older workers while ensuring the adequacy of pensions. Moreover, long-term fiscal sustainability would also require a stronger fiscal framework. In particular, in the run-up to the crisis, the fiscal framework did not prevent recurrent sizeable revisions of expenditure targets and pro-cyclical expenditure growth financed by revenue windfalls. Excessive expenditure growth financed by boom-related revenues was at the origin of the large fiscal imbalances that emerged during the crisis. They also contributed to overheating the economy. According to the Commission's latest assessment, the risks with regard to long term sustainability of public finances appear to be high. **Recommendation:** Adopt additional fiscal measures of a permanent nature by the time of the 2012 budget to correct the excessive deficit in line with the Council recommendations under the EDP. Reinforce tax compliance and take full advantage of the economic recovery to further accelerate deficit reduction and ensure progress towards the medium-term objective by at least 0,5 % of GDP annually. Strengthen the fiscal framework, in particular by introducing enforceable and binding expenditure ceilings in the medium-term budgetary framework. Adopt the proposed implementing legislation on Pension System Reform. In order to enhance participation in the labour market, remove fiscal disincentives to work, especially for people at pensionable age.
LU	**Summary Assessment:**

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	The Council is of the opinion that the macroeconomic scenario underpinning the budgetary projections is slightly cautious when compared with the Commission services 2011 spring forecast. According to the Stability Programme, the target for 2011 is a deficit of 1,0 %, which is in line with the Commission services spring forecast. The Stability Programme, under an unchanged policy scenario, projects a deterioration of the headline deficit in 2012 to 1,5 % of GDP before it improves gradually again to 0,8 % of GDP by 2014. The Commission services' forecast is slightly more optimistic projecting a deficit of 1,1 % of GDP in 2012, based on a more favourable macro-economic scenario and a slower increase in expenditure. The Stability Programme does not foresee the achievement of the medium-term objective (MTO), which is defined as a structural surplus of 0,5 % of GDP, within the 2011-2014 programming period. On the contrary, the structural balance (recalculated by Commission services based on the information in the Stability Programme, following the commonly agreed methodology) is expected to deteriorate gradually from a 0,3 % surplus in 2011 to a 0,8 % deficit in 2014. **Recommendation:** Take advantage of the improving cyclical conditions, strengthen the fiscal effort and use unexpected additional revenue in order to further reduce the headline deficit and reach the medium-term objective in 2012. Propose and implement a broad pension reform to ensure the long-term sustainability of the pension system, starting with measures that will increase the participation rate of older workers, in particular by discouraging early retirement. With a view to raising the effective retirement age, measures such as a link between the statutory retirement age and life expectancy, could be considered.
MT	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underpinning the budgetary projections is slightly favourable, especially in the later years of the Stability Programme period. From 3,6 % of GDP in 2010, the Stability Programme plans to bring the general government deficit below the Treaty reference value by 2011. Thereafter, gradual progress towards the medium-term objective (MTO) of a balanced position in structural terms is to be backed up by a commitment to ensure a sustainable, largely expenditure-based consolidation. However, the Stability Programme does not envisage the achievement of the MTO within the Stability Programme horizon. The debt ratio is projected to decline from its 2010 peak of 68 % of GDP to 63,7 % in 2014, due to a positive and strengthening primary balance. The average annual structural adjustment effort in the period 2012-2014, as calculated by the Commission, is broadly in line with the Stability and Growth Pact. However, budgetary outcomes could be worse than targeted because of possible expenditure overruns and the lack of information on the measures underpinning the consolidation effort after 2011. Pursuing fiscal consolidation to achieve the MTO is a key challenge for Malta. While the budget for 2011 put in place measures to correct the excessive deficit in 2011, additional action would be required in case of slippages. The credibility of the medium-term consolidation strategy, which is not yet underpinned by concrete measures, would be enhanced by a stronger multi-annual budgetary framework. A key weakness is the non-binding nature of the multi-annual targets, which implies a relatively short fiscal planning horizon. The Stability Programme states that the introduction of an expenditure rule is being considered. **Recommendation:** Ensure correction of the excessive deficit in 2011, in line with the EDP recommendations, standing ready to take additional measures so as to prevent possible slippages, and adopt concrete measures to back up the 2012 deficit target. Bring the high public debt ratio on a downward path and ensure adequate progress towards the MTO. With a view to strengthening the credibility of the medium-term consolidation strategy, define the required broad measures from 2013 onwards, embed the fiscal targets in a binding, rule-based multi-annual fiscal framework and improve the monitoring of budgetary execution. Take action to ensure the sustainability of the pension system such as by accelerating the progressive increase in the retirement age and by linking it to life expectancy. Accompany the higher statutory retirement age with a comprehensive active ageing strategy, discourage the use of early retirement schemes and encourage private pension savings.
NL	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underpinning the budgetary projections presented in the Stability Programme is plausible. The Stability Programme is based on slightly more prudent growth projections for 2011 and 2012 than the Commission services' spring 2011 forecast. The Stability Programme plans to reduce the general government deficit below the 3 % reference value in 2012, which would be one year ahead of the deadline set by the excessive deficit procedure. Based on the figures in the Stability Programme, the medium-term objective (MTO), namely, a structural deficit of 0,5 % of GDP, will be almost achieved by the end of the Stability Programme period, as the structural balance calculated by the Commission comes out at -0,8 % of GDP in 2015. The budgetary strategy is fully underpinned by sufficiently specified measures up to 2015, though their implementation is subject to some risks, mainly with respect to the ability to offset health care overruns and to monitor local government expenditure. The average annual fiscal effort is 0,75 % of GDP over the period 2011-2013, in compliance with the Council Recommendation of 2 December 2009 under the EDP procedure. For the years following the deadline for correcting the excessive deficit (2014 and 2015), the recalculated structural balance is to improve by 0,25 % in 2014 and 0,5 % in 2015, thereby slightly falling short of the required 0,5 % improvement in the structural balance until the MTO is reached. **Recommendation:** Implement the budgetary strategy for the year 2012, in line with the Council recommendations on correcting the excessive deficit, setting the high public debt ratio on a downward path. Thereafter, progress towards the medium-term objective in line with the Stability and Growth Pact requirements, respecting the overall spending ceilings and consolidation requirements, thereby ensuring that consolidation is sustainable and growthfriendly, by protecting expenditure in areas directly relevant for growth such as research and innovation, education and training.

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	Take measures to increase the statutory retirement age by linking it to life expectancy, and underpin these measures with others to raise the effective retirement age and to improve the long-term sustainability of public finances. Prepare a blueprint for reforming long-term care in view of an ageing population. Enhance participation in the labour market by reducing fiscal disincentives for second-income earners to work and draw up measures to support the most vulnerable groups and help them to re-integrate within the labour market.
PL	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underpinning the budgetary projections is plausible, while based on slightly too favourable growth assumptions for 2012. The Convergence Programme plans to bring the deficit below the 3 % of GDP reference value by 2012, the deadline set by the Council. The average annual fiscal effort over the period 2010-2012 is fully in line with the 1,25 % of GDP recommended by the Council under the excessive deficit procedure (EDP) on 7 July 2009. Achievement of the medium-term objective (MTO) is not envisaged during the Convergence Programme period. The amendment to the pension reform reducing the structural budget deficit by 0,7 % in 2011 and by a further 0,5 % of GDP in 2012 does not substantially improve the underlying budgetary situation as an improvement in the initial budgetary position is accompanied by an increase in long-term liabilities. Risks to budgetary targets are tilted to the downside. In particular direct tax revenues might turn out lower than projected because of optimistic assumptions on elasticities with respect to the tax base, programme projections on social contributions rely on favourable scenarios for employment and wage growth; and potential implementation delays and changes to the deficit-reducing measures, also beyond the direct control of the government, could result in a slippage in the consolidation path. **Recommendation:** Implement the measures announced in the draft 2012 Budget Law and take additional measures of a permanent nature if needed to reduce the general government deficit to below 3 % of GDP in 2012, in line with the Council recommendations under the EDP. While ensuring adequate progress towards the medium-term objective, minimise cuts in growth-enhancing expenditure in the future. Enact legislation with a view to introducing a permanent expenditure rule by 2013. This rule should be based on sufficiently broad budgetary aggregates and should be consistent with the European system of accounts. Moreover, take measures to strengthen the mechanisms of coordination among the different levels of government in the medium-term and annual budgetary processes. Raise as planned the statutory retirement age for uniformed services, continue steps to increase the effective retirement age, such as linking it to life expectancy. Establish a timetable to further improve the rules for farmers' contributions to the social security fund (KRUS) to better reflect individual incomes.
PT	**Summary Assessment:** On 23 March 2011, the Portuguese government submitted a Stability Programme for 2011-2014 to the national parliament, which rejected it. **Recommendation: Detailed recommendations are set out in a Memorandum of Understanding.**
RO	**Summary Assessment:** The Council is of the opinion that the macroeconomic assumptions underpinning the projections in the programme are plausible. The Convergence Programme aims to correct the excessive deficit by the 2012 deadline set by the Council in its recommendation of 16 February 2010. The programme targets headline deficits of 2,6 % of GDP in 2013 and of 2,1 % of GDP in 2014, with the envisaged consolidation being mostly expenditure-based. According to the structural balance recalculated by Commission services, the medium-term objective (MTO) will not be achieved within the programme period. The consolidation strategy appears to be frontloaded with the structural improvement being concentrated in 2011 and 2012. By contrast, there is no improvement in the structural balance in 2013 and 2014. The deficit path foreseen is appropriate in 2011 and 2012, but not in 2013 and 2014. The main risks to the budgetary targets are implementation risks, the arrears of state-owned enterprises which represent a serious contingent liability for the budget, and the reservations expressed by the Commission (Eurostat) about Romania's excessive deficit procedure notification. In view of the latter, Romania has committed to give priority to improving the compilation of government finance statistics in ESA 95 within the National Statistical Institute. **Recommendation:Detailed recommendations are set out in a Memorandum of Understanding.**
SK	**Summary Assessment:** the Council is of the opinion that the macroeconomic scenario underlying the Stability Programme is plausible for the initial two years but favourable towards the end of the Stability Programme period. The Stability Programme plans to bring the deficit below the 3 % of GDP in 2013, in line with the deadline set by the Council and further to 2,8 % of GDP in 2014. Beyond 2011, the adjustment is broadly expenditure-based. There are downside risks to budgetary targets mainly due to the implementation of proposed measures. The Stability Programme does not foresee the achievement of the medium-term objective. Meeting the budgetary targets would imply for the period 2011-2013 an average annual fiscal effort of around 1,4 % of GDP. **Recommendation:** Rigorously implement both the 2011 budget as envisaged and the planned specific measures of a permanent nature in 2012 and 2013, to reduce the deficit below 3 % of GDP by 2013 in line with Council recommendations on correcting the excessive deficit and ensure adequate progress towards the medium-term objective. Subject to this, safeguard growth-enhancing expenditure, and use available room to increase revenue through environmental and property taxes and by increasing the efficiency of VAT collection. Strengthen fiscal governance by adopting in 2011 and implementing from 2012 binding multi-annual expenditure ceilings, covering the central government and the social security system. In addition, introduce an independent Fiscal Council and ensure timely publication of budgetary data at all levels of the government.

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	Enhance the long-term sustainability of public finances by further adjusting the pay-as-you-go pillar of the pension system also by changing the indexation mechanism and implement further measures with a view to raising the effective retirement age, in particular by linking the pensionable age to life expectancy. Introduce incentives to ensure the viability of the fully-funded pension pillar so as to progress towards fiscal sustainability while assuring adequate pensions. Take steps to increase employment and to support labour demand for the low-skilled unemployed by reducing the tax wedge for low-paid workers.
SI	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underpinning the budgetary projections of the programme is plausible in the near term, and favourable towards the end of the programme period. Starting from 5,6 % of GDP in 2010, the programme plans to bring the general government deficit below the 3 % of GDP reference value by 2013, through a broad-based containment of primary expenditure. After correcting the excessive deficit, the programme envisages some progress towards, but not achievement of, the medium-term objective (MTO) of a balanced budgetary position in structural terms within the programme period. Although the MTO is set at a more ambitious level than in the previous programme, it does not appear to ensure sufficiently rapid progress towards long-term sustainability of public finances. The average annual change in structural balance over the period 2010-2013, as calculated by the Commission services based on the information in the programme following the commonly agreed methodology, is planned to be around 0,5 percentage points of GDP, below the level recommended by the Council. Moreover, deficit and debt outcomes could fall short of the targets. Additional measures are expected to be adopted as part of a supplementary budget to achieve the 2011 deficit target. After 2011, the programme does not specify measures to contain expenditure and the possibility of additional financial rescue operations affecting deficit and debt cannot be excluded. While the general government deficit has narrowed since its peak in 2009, further consolidation to correct the excessive deficit by 2013 and achieve the MTO thereafter is a key challenge for Slovenia. In line with the consolidation strategy pursued in recent years, the further expenditure savings envisaged in the Stability Programme for the period 2011-2014 mainly affect the public sector wage bill, social transfers (including pensions) and public investment. However, the Stability Programme offers no detailed information on the planned measures beyond 2011. Further corrective action is being taken in the context of a supplementary budget to achieve the 2011 deficit. The credibility of the medium-term consolidation strategy would be enhanced by adopting more structural expenditure-containing measures — as opposed to the temporary interventions that have characterised recent consolidation efforts — and by a more binding medium-term budgetary framework. The Stability Programme confirms the introduction of an expenditure rule but key provisions, for instance on the definition of non-compliance, remain to be worked out. Finally, comparatively low spending efficiency, for example in healthcare and education, implies that Slovenia may have additional scope for expenditure-based consolidation without compromising the quality of public services. The Stability Programme announces initiatives to rationalise public services and transfers and introduce a unified public procurement system, but the detail of some of these is lacking. **Recommendation:** Achieve the 2011 deficit target, underpin the 2012 deficit target with concrete measures and implement the necessary consolidation rigorously, standing ready to adopt additional measures to prevent possible slippages. Underpin this required adjustment process over the programme period with additional measures to ensure the average annual fiscal effort in line with the Council recommendations under the EDP and adequate progress towards an appropriate medium-term objective. To this purpose, use structural measures to contain expenditure and address identified inefficiencies and implement a more binding medium-term budgetary framework. Accelerate the reduction of the deficit if economic or budgetary conditions turn out better than currently expected. Take the required steps to ensure the long-term sustainability of the pension system, while preserving the adequacy of pensions.
ES	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underpinning the budgetary projections in the Stability Programme is favourable in 2011 and 2012. The Stability Programme plans to bring the budget deficit below the 3 % reference value by 2013, in line with the Council recommendations of April 2009, and reduce the deficit further to 2,1 % of GDP in 2014. The Stability Programme does not foresee the achievement of the medium-term objective, which remains a balanced budget, in the Stability Programme horizon. This adjustment path is appropriate. The annual average improvement of the structural balance is 1,5 % of GDP on average for 2010-2013, in line with the Council recommendation, and an additional 0,3 % of GDP in 2014. The debt-to-GDP ratio is projected to rise from 60,1 % of GDP in 2010 to 69,3 % in 2013 and decline slightly in 2014. There are downside risks to the consolidation path related to the underlying macroeconomic assumptions and to the respect of budgetary targets at the regional level. Regions account for a large share of total public expenditure and 9 out of 17 exceeded their fiscal objectives in 2010. However, deficit and debt control mechanisms for regional governments have already been strengthened and the Spanish government has committed to take additional measures, if needed to meet the budgetary targets. Achieving the foreseen fiscal consolidation in 2011 and 2012 requires strict application of the deficit and debt control mechanisms that have been put in place for regional governments. Achieving the budgetary targets in the event that macroeconomic and budgetary developments turn out worse than expected in 2011 and 2012, will require additional measures that the Spanish government has committed itself to taking. For 2013 the Expenditure Revision Plan identifies a few measures to underpin the budgetary targets. According to the Commission's latest assessment, the risks with regards to long term sustainability of public finances appear to be high. **Recommendation:**

(Continued on the next page)

Table (continued)

	Implement the budgetary strategy in 2011 and 2012 and correct the excessive deficit in the year 2013 in line with the Council recommendation under the EDP, ensuring the achievement of deficit targets at all levels of government, including by strictly applying the existing deficit and debt control mechanisms for regional governments; adopt further measures in case budgetary and economic developments do not turn out as expected; take any opportunity including from better economic conditions to accelerate the deficit reduction; set out concrete measures to fully underpin the targets for 2013 and 2014 which should bring the high public debt ratio on a downward path and ensure adequate progress towards the medium-term objective. Keep public expenditure growth below the rate of medium-term GDP growth, by introducing a binding expenditure rule at all levels of government, as envisaged. Further improve the provision of information in relation to regional and local government budgets and their execution. Adopt the proposed pension reform to extend the statutory retirement age and increase the number of working years for the calculation of pensions as planned; regularly review pension parameters in line with changes to life expectancy, as planned. Explore the scope for improving the efficiency of the tax system, for example through a move away from labour towards consumption and environmental taxes while ensuring fiscal consolidation plans.
SE	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underpinning the budgetary projections is plausible, except for 2012 when it appears favourable compared with the Commission services' spring forecast. The budgetary strategy, as outlined in the updated Convergence Programme, is appropriate, as it would contribute to meeting Sweden's medium-term objective (MTO) of 1 % GDP surplus over a cycle. This would provide some margin against breaches of the 3 % of GDP reference value in any future downturn. The programme projects the general government surplus to widen from 0,6 % of GDP in 2011 to 3,7 % of GDP in 2014, the last year of the programme. This improvement would result from assumed strong economic growth, as the programme does not envisage any consolidation efforts in these years. Risks to the budgetary targets are broadly balanced. As the revenue forecast presented in the programme is somewhat cautious for 2011, budgetary outcomes could turn out slightly better this year, whereas downside risks to budgetary projections from 2012 onwards are linked to favourable macroeconomic assumptions. As the government has indicated that further expansionary fiscal measures envisaged in the 2011 Budget Bill (including a fifth step in the in-work tax credit for wage-earners, a further rise in the threshold for paying state income tax, lower VAT on restaurant services, and lower taxes on pensions) could be implemented as from 2012, if there is sufficient fiscal space, here is a risk of a pro-cyclical fiscal policy stance. Considering also the demographic outlook, it is important that fiscal policy is kept on a path that ensures that the MTO continue to be met. According to the Commission's assessment, the risks with regard to long-term sustainability of public finances appear to be low. **Recommendation:** Keep fiscal policy on a path that ensures that the medium-term objective continues to be met.
UK	**Summary Assessment:** The Council is of the opinion that the macroeconomic scenario underpinning the budgetary projections is plausible except for 2012 when it may be slightly too favourable. The Convergence Programme does not include a medium-term objective (MTO) as foreseen by the code of conduct although it can be derived from targets therein. The objective of the budgetary strategy is to bring down the deficit from 9,9 % in 2010-2011 to 1,7 % in 2015-2016, mainly based on expenditure restraint, a strategy consistent with evidence on fiscal consolidations that have supported growth. The Convergence Programme plans to bring the deficit below the 3 % reference value by 2014-2015, the deadline set by the Council. Starting from a debt ratio of 78,7 % in 2010-2011, the budgetary projections in the Convergence Programme foresee the debt ratio increasing to 87,2 % by 2013-2014 before beginning to fall slowly. The average annual fiscal effort over the period of 2010-2011 to 2014-2015 is 1,6 %. This is slightly below that recommended by the Council in December 2009 (1,75 % of GDP) but is nevertheless appropriate given that the effort is being pursued from a significantly lower-than-expected budget deficit in 2009-2010 and is therefore consistent with reducing the headline deficit to below the reference value by 2014-2015. According to the Commission's latest assessment, the risks with regard to the long term sustainability of public finances appear to be high. The long-term cost of ageing is above the EU average and the current budgetary position compounds the cost of ageing. Based on the current fiscal position, debt would increase to 128 % of GDP by 2020. However, the full implementation of the Convergence Programme would be enough to put debt on a downward path but would still be above 80 % by 2020. Beyond its consolidation plans, the UK Government has announced measures to support long-run sustainability; these include bringing forward the date of the planned rise in the State Pension Age from 65 to 66 and changes to the method of up-rating certain benefits and tax thresholds. Implementing the proposed fiscal consolidation remains a major challenge. Ensuring no slippage from published spending plans will be vital to re-establishing a sustainable fiscal position. Subject to this, the historically low rates of public infrastructure investments, particularly as regards transport, mean that growth-enhancing expenditure should be prioritised. Ensuring sufficient primary surpluses over the medium term, as already envisaged in the Convergence Programme, will improve the sustainability of public finances. **Recommendation:** Implement the planned fiscal consolidation aiming at a deficit of 6,2 % of GDP in 2012-2013, in line with Council recommendations on correcting the excessive deficit, and setting the high public debt ratio on a downward path when the excessive deficit is corrected by the end of the programme period. Ensure no slippage from the ambitious spending reduction targets, thereby strengthening long-term sustainability; and, subject to this, prioritise growth-enhancing expenditure.

Source: Commission services

Part II

Evolving budgetary surveillance

SUMMARY

The economic and financial crisis had widespread effects on the public finances of the Member States. In addition to the increases in government deficits and debt levels once the crisis hit and countries bore both the consequences of the downturn in macroeconomic conditions and the cost of the support measures that they introduced, the crisis also exposed underlying weaknesses in the public finances.

In the EU, the Stability and Growth Pact (SGP) sets out the provisions according to which the Treaty requirements to ensure fiscal discipline are implemented. The SGP contains two parts; the preventive and corrective part. Both apply to both euro area and non euro area countries, although the sanctions that are part of the corrective arm are only applicable to euro area countries.

The preventive arm seeks to ensure that fiscal policy making is undertaken in a prudent and forward-looking manner, while the corrective arm sets out the procedure to be followed when it is clear that deficits have exceeded the reference values set in the Treaty. In particular, the preventive arm looks at whether Member States' plans for their public finances, as given in the Stability and Convergence Plans they submit, are consistent with countries' deficits approaching or staying at or above their Medium Term Objectives (MTOs) over the near term. All countries have an individual MTO for their budgetary position, set in structural terms, which takes into account the specificities of their economic and budgetary situation, which they should aim to be at. Being at this structural MTO is consistent with a prudent and sustainable underlying fiscal position and should ensure that the deficit stays within the requirements of the corrective arm over the ups and downs of typical economic cycle. While countries that are deemed to be planning imprudent fiscal policy can be issued a warning and a recommendation by the Council to take corrective action, there is no stronger enforcement mechanism. The preventive arm of the Pact is therefore an exercise that seeks to pre-empt the consequences of fiscal plans, but does not have any hard legal instruments to ensure that countries adjust their plans accordingly. It functions on the basis of peer pressure.

The corrective arm of the Pact implements the obligations in the Treaty under the Excessive Deficits Procedure (EDP) for Member States to keep their deficits below 3% of GDP and government debt at, below or sufficiently declining towards 60% of GDP. So far, the EDP has focussed on the deficit criterion; the debt criterion has not been operationalised. A necessary and sufficient condition for the launch of an EDP is that the deficit is considered to be in breach of the 3% benchmark. A deficit slightly above 3% may in some cases not lead to an EDP being launch if the breach is shown to be "small and temporary" and if "other factors" such as pension liabilities and economic conditions are deemed to play an important role in this breach. Once an EDP is launched, a series of steps are followed whereby a country is called upon to correct the deficit within a given timeframe and assessments are made to ensure that adequate measures are taken. If the progress made is not deemed to be sufficient, euro area countries can be subject to sanctions; first a non-interest bearing deposit is payable, and this can then be converted into a fine if a lack of progress continues to be observed.

Taken together, the two parts of the SGP should ensure that the public finances of the euro area countries are healthy and sustainable. As Chapter II.1 illustrates, between 2007 and 2009, all countries but one saw an increase in their borrowing and widespread breaches of the 3% borrowing reference value emerged. While in 2007, three countries were in breach of this value, by 2009 twenty-two countries had borrowing that was higher. Meanwhile, average debt in EU27 climbed from 59.0% of GDP in 2007 to 74.4% in 2009 and has continued to increase since. These deteriorations in the public finances clearly have difficult political and economic consequences and for some countries these are particularly acute. While the SGP allowed countries to provide support for their economies during the crisis years by containing enough flexibility to adjust to these difficult times, and is proving a valuable anchor for fiscal consolidation that is now underway, it is clear that fiscal policy in the run-up to the crisis did not leave many Member States' public finances in a strong enough position to weather the storm. For countries that faced insolvency/illiquidity and required financial assistance, the problems that emerged are particularly acute.

An obvious lesson learnt from the crisis is thus that the SGP was not able to ensure sound public

finances throughout the EU. Beside weakness in its implementation that were evident already before the crisis, e.g. limited use of the instrument of early warnings by the Commission and even more limited follow up of these early warning by the Council, flaws in design have also emerged.

By focusing on purely fiscal indicators the SGP was not equipped to prevent the accumulation of macroeconomic imbalances. These resulted in deferred but massive impacts on the public finances of some Member States that showed apparently sound fiscal position before the recession (see Chapter IV.3.) Even delivery on fiscal positions was less than satisfactory. Excessive reliance on the change in the structural balance as a way of assessing the adjustment towards the MTO masked a widespread use of windfall revenues to offset expenditure developments. Accordingly, the European Commission has proposed changes to the economic and budgetary surveillance framework. These are currently undergoing the legislative process which is expected to be completed in the coming months. The changes consist of amendments to the two regulations that implement the preventive and the corrective arms of the SGP, a new directive on minimum provisions for national fiscal frameworks and a new regulation that introduces sanctions to the preventive arm of the Pact and strengthens those applicable under the corrective arm. The reforms are part of a package that also includes two new regulations to introduce a new economic imbalances procedure.

Chapter II.2 presents the proposed changes to the preventive arm of the Pact. The amended regulation introduces the concept of an expenditure benchmark in judging whether fiscal policy is considered prudent, in the sense of being consistent with staying at or reaching a country's MTO. The expenditure benchmark will be used alongside the examination of the structural balance in assessing fiscal policy both on an ex ante and an ex post basis. It will require that net expenditure growth (that is, expenditure growth, net of any legislated discretionary increases in revenues) be below a medium term potential growth rate of the economy. Countries at the MTO will need to show that net expenditure growth is in line with this estimate of economic growth, while those that more than meet their MTO will face looser constraints. This condition aims to ensure that countries are no longer financing expenditure growth out of cyclical increases in revenues – evidence from the years in the run-up to the crisis shows that the positive revenue surprises than many countries experienced tended to be used to increase expenditure rather than to reduce borrowing in debt. This led to insufficient strengthening of the underlying budgetary position, high levels of expenditure that were difficult to reduce once the underlying economic fundamentals changed and higher than desirable levels of debt. By increasing the focus on the relationship between how government expenditure (which tends to be permanent) is financed, the quality of fiscal decision making can be improved.

Chapter II.2 describes the changes to the preventive arm in detail, discusses issues relating to their implementation and presents simulations that look at how fiscal policy outcomes might look given certain stylised conditions. In addition, it discusses the part of the sanctions regulation that will apply to the preventive arm; for the first time, financial sanctions will be part of the preventive arm, as countries can be required to make an interest bearing deposit if their policy setting is not in line with the assessments made under the preventive arm.

Chapter II.3 presents and discusses the changes to the corrective arm of the Pact. The new regulation places debt at the centre of the SGP by providing the legislation to operationalise the debt criterion. The requirement to ensure that debt is either at or below the 60% threshold or sufficiently diminishing towards it is placed on an equal footing to the 3% deficit criterion. So far, despite the deficit and debt criterion being on an equal footing in the Treaty, no country has been placed in EDP as a result of its debt and no provision had been made for actually implementing the debt criterion. In the future, a breach of either criterion will be sufficient to place a country in EDP, although whether or not a breach exists will be judged taking into account a number of features that are described in the legislation.

Although monetary sanctions exist under the unreformed corrective arm, the sanctions regulation strengthens and accelerates the application of sanctions for euro area countries, thereby implicitly increasing the penalties to be faced for imprudent fiscal policy. Sanctions will

apply earlier in the EDP process, with a non-interest bearing deposit being payable as soon as a Council decision confirming the existence of an excessive deficit is taken, while fines will also be due earlier.

Finally, Chapter II.4 presents the new directive on national budgetary frameworks. This requires that Member States adhere to certain minimum standards for domestic fiscal frameworks. The use of a directive rather than a regulation is important – it is in recognition of the fact that the optimal procedural and institutional set-up for fiscal policy- making will depend on the different characteristics of Member States, meaning that there is no one model that can or should be applied in all cases.

Instead, the directive allows countries to choose the manner in which they will comply with requirements on the quality of accounting and statistics, the macroeconomic and budgetary forecasts that they use, the numerical fiscal rules that they have in place, the existence of medium-term budgetary frameworks and the transparency of the their finances. Research has shown that the best performing countries meet certain minimum standards. By requiring that all Member States adhere to them in their own way, the quality of national decision-making can be enhanced for the worst performers. After all, while fiscal policy is supervised at European level, it is set at national level. Adequate processes within Member States are a sine qua non, to effective European-wide results.

1. INTRODUCTION

As Chapter I illustrates, the economic and financial crisis had widespread effects on the public finances of the Member States. Between 2007 and 2009, all countries but one saw an increase in their borrowing and widespread breaches of the 3% borrowing reference value emerged. While in 2007, three countries were in breach of this value, by 2009 twenty-two countries had borrowing that was above. Meanwhile, average debt in EU climbed from 59.0% of GDP in 2007 to 74.4% in 2009 and has continued to increase since. These deteriorations in the public finances clearly have difficult political and economic consequences and for some countries these are particularly acute. As the possibility of the illiquidity or insolvency of both EU and euro area Member States arose for the first time since the launch of the euro, questions were asked about both the quality of the fiscal policy making before the crisis and the adequacy of the overall budgetary surveillance at European level.

The economic crisis came after a period of strong macroeconomic conditions that characterised the first decade of the EMU. During that period, growth was sustained, inflation low and the conditions were such that the public finances had every opportunity to be on a strong path. Nevertheless, once the crisis hit, the impact on most countries' public finances revealed widespread underlying weaknesses. Cyclically adjusted borrowing was slightly higher in 2007 than it had been in 2000. While debt did decline over the period from 2000 to 2007, the reduction was small with overall debt going from 61.8% of GDP in 2000 to 59.0% in 2007 for the EU. The spread of debt levels within this average is significant, with 3 countries having debt over 80% in 2007, and of these two had levels of debt in excess of 100% of their GDP.

Overall, the crisis therefore brought attention to the way fiscal policy had been conducted in the years before it hit and thus to the lack of implementation of the common fiscal framework and/or possible faults in its design. Specifically, Member States are required by the Treaty to avoid excessive deficits([27]) and to ensure coordination of their economic policies and sustained convergence of their economic performance. ([28]) The Stability and Growth Pact (SGP) provides the secondary legislation that defines these obligations in greater detail and thus sets out the framework within which fiscal policy making is to be set and monitored at European level.

The SGP was introduced as a continuation of the Maastricht convergence criteria, which set out the conditions that countries' economies and public finances have to fulfil, in order to join EMU. The Maastricht criteria were set up to ensure that countries becoming part of the single currency had economies that were healthy enough to not jeopardise the functioning of the monetary union. After the run up to euro, the importance of ensuring public finances remained strong, both for Member States that had not yet completed the convergence process and for those joining the euro area. The SGP was set up to ensure that all countries had sufficient incentive to pursue prudent fiscal policies. Countries outside currency unions typically bear a high share of the cost of imprudent fiscal policy, and the credit markets price their debt according to the perceived risk of holding their bonds. Within a currency union however, there are significant spillovers, as more integrated economic and financial systems mean that other countries bear a higher share of the cost of one country's profligacy than would otherwise be the case. Moreover, the market reaction tends to be more muted; the effects of high debt on the interest rate are watered down by the presence of other countries which also affect the interest rate, while bond prices are expected to be more tempered. The absence, or dampening, of market mechanisms to act as an incentive for fiscal prudence led to the introduction of a common framework, which monitors and constrains the public finances of European Union countries.

The SGP contains two arms; the preventive and corrective arm. Both apply to both euro area and non euro area countries, although some of the provisions, in particular concerning sanctions, of the corrective arm are only applicable to euro area countries. The preventive arm seeks to ensure that fiscal policy-making is undertaken in a prudent and forward-looking manner, while the corrective arm sets out the procedure to be followed when it

([27]) Article 126 of the Treaty on the Functioning of European Union (TFEU).

([28]) Article 121 TFEU.

is clear that gross errors have been made. Taken together, the two parts of the SGP should ensure that the public finances of the euro area countries are healthy and sustainable. The SGP was already subject to a first revision in 2005, which added some flexibility to the assessment of whether a deficit was excessive and the process of judging whether adequate action was then taken, in particular in relation to the possibility to take into account unexpected economic developments.

It is impossible to know what would have happened to countries' public finances had the SGP not existed at all. In any case, it was not able to ensure that all countries' public finances were able to withstand the shock of the crisis without either seriously weakening their fiscal situation or being subject to punitive market conditions on their debt. The experience of the crisis pointed to a need to overhaul the SGP and its functioning, to address the weaknesses that have been identified and to ensure that it is able to provide the required framework to guide the Member States towards strong public finances in the future, thus anchoring expectations for exit from the current fiscal situation.

In order to update the Pact in the light of the lessons learned, it is important to look at how the SGP works as a whole, and how it interacts with other aspects of both European and national economic policy-making. In its communications of 12 May and 30 June 2010, the Commission outlined a comprehensive set of measures that were considered urgent to reinforce economic governance in the EU and announced the preparation of related legislative proposals. A package comprising six proposals was presented by the Commission on 29 September 2010. This package included revisions to the two existing regulations that make up the SGP as well as a new regulation which will strengthen the enforcement mechanism for euro area Member States on its corrective arm and introduce them on the preventive arm. As experience showed that effective enforcement of the EMU budgetary coordination framework cannot be expected to derive only from provisions established at EU level, a new directive on national budgetary frameworks was also proposed to complement the reform of the SGP.

The different parts of the package have been prepared together, taking into account the overall functioning of budgetary and economic surveillance, and are being complemented with a new regulation on an Economic Imbalances Procedure (EIP), which will introduce the concept of monitoring wider imbalances in Member States' economies as well as a Regulation outlining the enforcement procedure under the new EIP. This will provide a more holistic view of the strengths and weaknesses of Member States economies and allow a timely assessment of where risks are emerging.

On 15 March 2011 the economic and financial affairs ministers of the Member States agreed on the Council's general approach related to the six proposals, which enabled the Council's presidency to start negotiations with the European Parliament. The Economic and Monetary Affairs Committee of the European Parliament held their first public discussion on the legislative package on 22 March. On 20 April 2011, the Economic and Monetary Affairs Committee agreed on a negotiating position for the Parliament.

Subsequent negotiations between the two co-legislators have allowed an agreement on nearly all the relevant issues to be achieved. The only currently outstanding issue of disagreement – as recognised by the conclusions of the 21 July 2011 euro area heads of State and Government meeting, which called for its quick resolution – concerns the voting procedure in the decision establishing non-compliance with a recommendation to correct a significant deviation in the preventive arm of the SGP. Accordingly, the following chapter analyses the reform of the SGP and the directive on national budgetary frameworks as they emerge from the current state of negotiations between the European Parliament and the Council. While this implies a number of differences with respect to the proposals presented by the Commission on 29 September 2010, the thrust of the Commission's proposals has been broadly retained.

2. REFORM OF THE PREVENTIVE ARM OF THE SGP

2.1. THE PREVENTIVE ARM OF THE PACT

The preventive arm of the Stability and Growth Pact (SGP) is based on Article 121 of the Treaty and implements the provisions on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies.([29]) It aims to ensure that Member States pursue prudent and coordinated budgetary and economic policies and details the rules against which national policies are judged within a structure of multilateral surveillance.

The preventive arm of the SGP requires that Member States aim for, achieve and maintain medium term budgetary objectives (MTOs) which are determined according to the specifics of each country's economic and budgetary circumstances. The MTOs are set in structural terms – that is, they are cyclically adjusted to be net of the estimated effects of the economic cycle and of one-off and temporary measures. This is so that the targeted measures reflect the underlying health of the budgetary position as much as possible and provide incentives for Member States to pursue the kind of budgetary and economic policies that will lead to strong public finances over the medium-term. The MTOs currently range from a deficit of 1½% of GDP to a surplus of 1% of GDP, with most countries having the MTO of balance. According to the preventive arm of the Pact, the norm should be an MTO of balance or surplus although deviations are possible and euro area and ERM II countries may not have an MTO which has a deficit greater than 1% of GDP. All countries' MTOs must provide a safety margin with respect to the 3% of GDP government deficit ratio and ensure rapid progress towards sustainability while allowing room for budgetary manoeuvre. In particular, ensuring sustainability includes differentiating MTOs in relation to debt ratios and the projected budgetary cost of ageing.([30])

As part of the preventive arm, Member States submit annual Stability and Convergence Programmes (SCPs) which, amongst other information, set out their MTOs and their adjustment paths towards the MTO if they have not already attained it. The economic assumptions underlying their budgetary projections and the budgetary measures that are included in those projections are also specified. The preventive arm specifies that countries that are on the adjustment path to their MTOs should plan for and pursue an annual improvement of at least 0.5 percentage points of GDP in structural terms, with greater adjustments being required in economic good times. Conversely, in economic bad times, a more limited effort may be appropriate. In specifying the appropriate adjustment path to the MTO the effect of long-term structural reforms and pension reforms in particular can be taken into account.

The SCPs are submitted to the Commission and the Council, and are examined, based on an assessment by the Commission, by first the Economic and Financial Committee and then the Economic and Financial Affairs Council (ECOFIN.) The ECOFIN Council delivers an opinion on the SCPs based on the Commission's recommendation. Where the Council considers that the objectives and contents of a SCP should be strengthened, the Council invites the Member State concerned to adjust its programme. The Council also monitors the implementation of the programmes, in particular with a view to identifying an actual or expected significant divergence from the MTO or the adjustment path towards it. If such a significant divergence is identified, in order to prevent the occurrence of an excessive deficit, the Council addresses to the Member State concerned an 'early warning' to take the necessary adjustment measures, in order to prevent the occurrence of an excessive deficit. If the Council then judges that the divergence is persisting or worsening, in accordance to Article 121(4) of the Treaty, it makes a recommendation to the Member State in question to take prompt corrective measures. In both cases, the Council acts on the basis of a Commission recommendation.

In principle, the preventive arm of the SGP should ensure that sustainable and credible public finance plans are set out and implemented. In practice,

([29]) The secondary legislation that implements the preventive arm of the SGP is Council Regulation (EC) No 1466/97 of 7 July 1997. On 27 June 2005, the original Regulation (OJ L 209, 2.8.1997) was amended by Council Regulation (EC) No 1055/2005 (OJ L 174, 7.7.2005).

([30]) European Commission (2010).

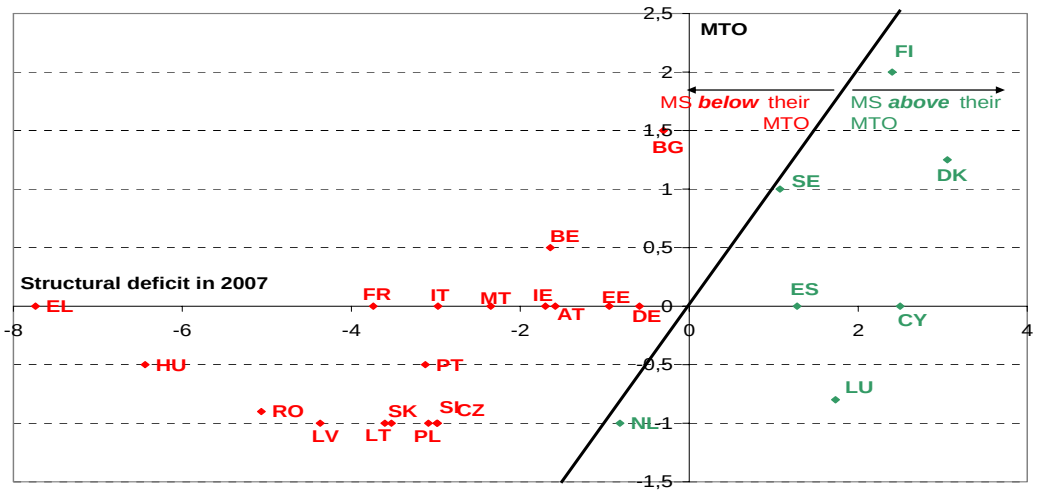
while the plans in the SCPs typically showed structural positions moving towards the MTOs, the implementation often diverged from the plans. Graph II.2.1 shows the structural deficits and the MTOs in 2007. It shows that few countries were at their MTOs in 2007; this occurred despite the helpful economic conditions. The nearly 10 years of strong growth before the crisis, were marked by more limited progress to the MTOs than was typically set out in the plans. As a result, the underlying public finances were not as strong as they should have been, had the requirements of the preventive arm been strictly adhered to.

Instead of being marked by consistent improvements in the structural balance, the first decade of the euro showed persistently lax fiscal policy. European Commission (2007) discusses this in detail, and shows that the overall lack of planned improvement in the government balance occurred as a result of persistent spending overruns. Graph II.2.2 shows the planned and final outcomes for nominal expenditures, over the years 1998-2006. It shows that higher than anticipated expenditure was a recurrent feature of fiscal policy-making over that period – as a result the underlying structural positions typically came out weaker than planned for. Conversely, as European Commission (2007) shows, revenue projections tended to be more realistic, pointing to expenditure being the weak link in fiscal policy.

In addition to slippages in the implementation of plans, once the crisis arrived, there was emerging evidence that the assessment of the structural balance was imperfect and masked weaknesses that became apparent. In particular, the estimate of the structural balance depends on correctly estimating both the output gap and the relationship between the output and key fiscal aggregates such as revenues. Assessing the output gap is an imperfect art, and assessing it in real time is particularly likely to result in errors. Meanwhile, the relationship between the output gap, the change in individual tax bases and resulting revenues is imperfectly estimated. Over the years preceding the crisis insufficient account was taken of revenue windfalls and shortfalls that were not directly related to the economic cycle, particularly where these were related to housing and financial market assets cycles. Recurrent positive revenue surprises were in many cases ascribed to an improved underlying relationship between the output gap and revenues, without adequate attention being paid to the effect of asset cycles. With the onset of the crisis, these revenues disappeared, giving way to a larger deficit than the estimated underlying fiscal position indicated.

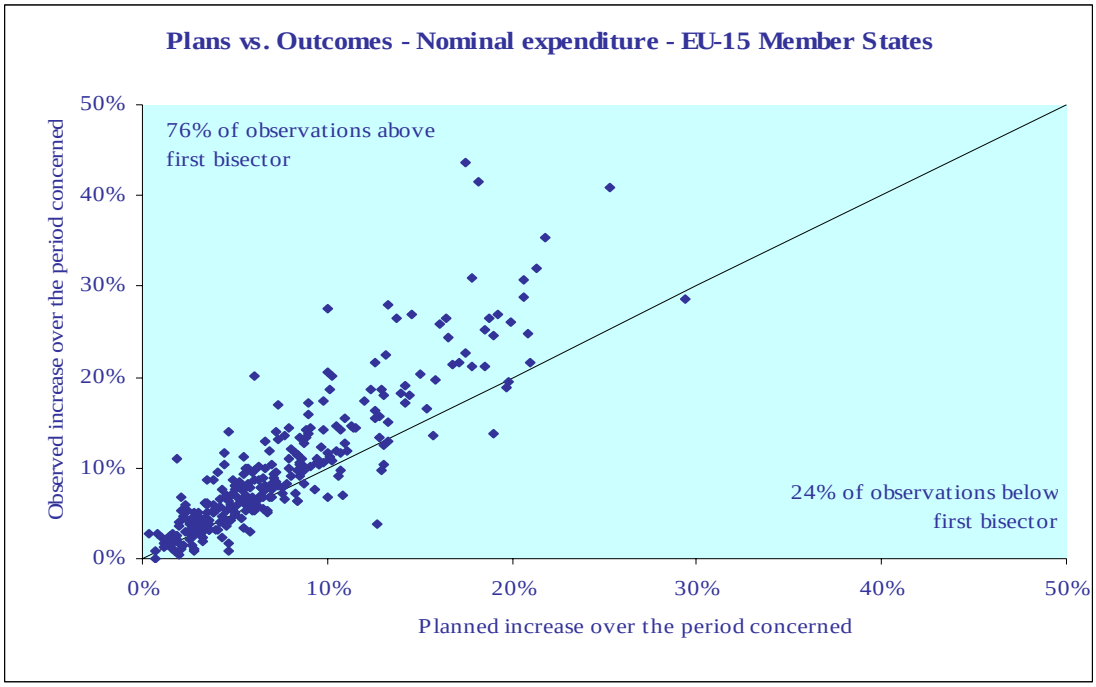
The experience of the years before the crisis also indicated that peer pressure was underused. The Commission has recommended the issuance of an early warning to four countries: Germany and

Graph II.2.1: **The structural balance and the MTOs in 2007**



Source: Commission sources.

Graph II.2.2: **Planned versus final expenditure levels, 1998-2006**



Source: Commission services

Portugal in 2002, France in 2003 and Italy in 2004. However, the Council only acted on these recommendations in the case of France, when in fact the breach of the 3% of GDP deficit threshold had already occurred. The lack of willingness to use the early warnings and the lack of possible punitive measures to be taken in the case where persistent breaches of policy are observed have been identified as a particular weakness of the preventive arm.

2.2. THE REFORM OF THE PREVENTIVE ARM

The reform of the preventive arm of the SGP consists of an amendment to Regulation 1466/97 and is complemented by a new Regulation which introduces new enforcement mechanisms for budgetary surveillance in the euro area, including in the preventive arm of the SGP. The idea behind the reform is to set out more detailed parameters for how the SCP public finance plans are formulated in order to increase the likelihood that sustainable policies will actually be pursued and stronger underlying public finances will ensue; to strengthen the assessment of whether MTO or its adjustment path have been adhered to; and to back the new rules with sanctions that can be imposed where insufficient progress has been identified.

2.2.1. The expenditure benchmark and the MTOs

The reformed SGP maintains the MTOs as a reference for the conduct of fiscal policy, but progress towards it and hence compliance with the provisions of the preventive arm is assessed based on a 'two-pillar approach'. The first pillar remains the change in the structural balance, with reference to a 0.5 of a percent of GDP improvement as a benchmark. The second pillar introduces an expenditure benchmark, which countries must meet when adjusting towards the MTO.

The expenditure benchmark is not aimed at constraining the size of the government, as it explicitly allows for a discretionary revenue offset: its ultimate goal remains a strong underlying fiscal position. Overall, the MTO and expenditure approach should be broadly equivalent. Specifically, to be consistent with the MTO or the adjustment towards it, expenditure growth needs

not to exceed – and if the MTO has not been achieved, remain clearly below – a reference medium-term rate of potential growth unless

(i) the excess of expenditure growth over the rate is matched by discretionary expenditure measures;

(ii) the MTO has been more than attained.

Expenditure is defined as primary expenditure, i.e. excluding interest payments. Additionally, unemployment benefits and expenditure offset by revenue increases mandated by law are also excluded from the aggregate. Finally, some smoothing is envisaged to reduce the volatility of capital expenditure, which can be particularly high in small countries.

The idea behind the expenditure benchmark is to ensure that any plans for increases in expenditure are properly financed without leading to a weakening of the underlying fiscal position. For this reason, expenditure that is not under the control of the government or is automatically matched by revenue is not included. Its application retrospectively means that any revenue windfalls (that is, increases in revenues that are not the result of discretionary changes and of the standard – unit – elasticity of revenue to output growth) are not absorbed by increasing spending, but must instead contribute to reducing the deficit and, by implication, the debt.

From an analytical point of view the structural (or cyclically adjusted) approach and the expenditure threshold analysis share a common basis. This is explained in more detail in Box II.2.1. In both the cyclically adjusted and the expenditure benchmark approaches, fiscal policy is assessed with respect to a benchmark of medium-term economic growth, which is a rate of growth that does not reflect the ups and downs of the cycle. The main assumption behind interpreting a positive (negative) change of the cyclically adjusted budget as expansionary (contractionary) is that expenditure growth exceeds (falls short of) potential GDP growth, while revenues, under unchanged policy, are taken to have a unit elasticity with respect to GDP. The same principles apply to the expenditure threshold approach: expenditure growth is assessed with respect to a reference rate of economic growth, while revenues are allowed to fluctuate in line with economic activity. If expenditure grows faster than the prudent rate of economic growth there is an expansion, if they grow less there is adjustment. The substantial difference between assessing changes of the cyclically adjusted budget and the expenditure threshold approach is that with the latter the focus moves towards budgetary aggregates that are observable and under the control of government, that is, primary expenditure and discretionary revenue measure; while revenues at unchanged policies can follow their "natural course". By focussing on these observable budgetary aggregates, the relationship between the estimate of whether policy is appropriate or not, and the measures that a government would have to take at any one point to ensure that it is, is more direct and more transparent.

In line with the broad equivalence between the cyclically adjusted budget and the expenditure benchmark, countries that are not at their MTOs would need to keep expenditure growth net of discretionary measures on the revenue side 1 percentage point below GDP growth. Assuming a government size of around 50% of GDP, and taking into account that over the medium term government revenues generally have unit elasticity with respect to GDP, this should result in a structural improvement in line with the 0.5 of a percentage point of GDP requirement.

The new expenditure benchmark is therefore not a completely additional requirement, but a means of making the surveillance mechanism of the preventive am of the pact more transparent and, by extension, more effective. By explicitly judging the conduct of fiscal policy on concrete existing figures rather than on estimates of underlying positions, it becomes easier for Member States' plans and outcomes to be judged against the requirements set out by the preventive arm, while the simple requirements of the expenditure benchmark provide more explicit guidance to Member States in terms how to determine their policy in any given year to ensure compliance with the preventive arm. ([31]) One of the main downsides of using only the adjustment path towards the MTO to judge the appropriateness of fiscal policy is that inherent statistical difficulties and subsequence re-estimations of the cyclical position render any estimation of how a country is

([31]) The reference growth rate is adjusted at a frequency lower than one year to reduce its variance.

progressing towards its MTO subject to much uncertainty and this takes away from the tractability of this measure as an effective guide to policy. Instead, using also the expenditure benchmark approach circumvents this issue by providing fixed policy guidance and a firmer ground for assessing outcomes.

Moreover, the use of an expenditure threshold approach goes some way to automating the consideration of the cyclical conditions that is included in regulation 1466/97 in the requirement to make a greater adjustment on the structural balance during good times, while allowing smaller improvements in economic bad times. The expenditure threshold approach allows the free operation of the automatic stabilisers, as long as expenditure is on a sustainable path over the cycle. If the MTO is achieved, by making reference to the medium-term rate of growth of the economy, the expenditure benchmark automatically accommodates increases in the expenditure ratio owing to the rate of growth of the economy falling below its medium term average. Needless to say, the policy that results from the application of the expenditure benchmark will depend in part on the rate of economic growth that is chosen to judge compliance with the benchmark. The choice of the rate of growth is crucial, as it serves as an anchor to the system and acts to cancel out the denominator effect that exists in the nominal expenditure ratio over the economic cycle.

As such, it should represent the average growth rate of the economy over a cycle. Choosing a growth rate that is too high will result in expenditure rising faster than actual growth and will lead to a deterioration in the underlying public finances.

Conversely, choosing one that is too low will lead to the expenditure rule requiring tight fiscal policy, which while prudent, may not be appropriate for growth and to enable the funding of government services and transfers for which tax receipts are raised. Choosing the appropriate growth rate is a forecasting exercise and may prove especially difficult in the current economic climate, where past growth rates may be a particularly imperfect guide to future growth of the European economies. Adjusting the growth rate as more information becomes available should not be undertaken often, as the stability of the growth rate is key to the transparency and efficacy of the expenditure approach.

The reform foresees that the reference medium-term rate of potential GDP growth will be determined on the basis of forward-looking projections and backward-looking estimates. It also envisages that projections should be updated at regular intervals and that the Commission will be in charge of publishing the methodology and the results. The balance between backward-looking and forward-looking elements will need to take into account, on the one hand, the degree of stability of estimates of the past relative to projections of the future, on the other hand the need for an appropriate gauge for trends on future expenditure, not least in the light of the structural break introduced by the recession.

Simulations are presented in Box II.2.2 to show the potential benefits of an expenditure benchmark-based fiscal surveillance and the potential beneficial effects from adopting a counter-cyclical fiscal policy in all economic times.

Box II.2.1: The relationship between the cyclically adjusted budget (CAB) and the expenditure threshold benchmark approach

This box examines the analytical basis the CAB and its link with the expenditure benchmark approach. Starting with the CAB, the budget can be described as the sum of two components a structural and cyclical. Expressing all budgetary variables in percent of GDP we have:

$$(1) \qquad b_t = r_t - g_t = r^s - g^s + (\varepsilon_r - \varepsilon_g)\left(\frac{y_t}{y_t^P} - 1\right)$$

where r, g, y and y^P are total revenues, total expenditures, actual GDP and potential GDP respectively. The cyclical component of the budget balance is typically modelled as a function of the output gap $\left(\frac{y_t}{y_t^P} - 1\right)$ scaled by the difference between cyclical sensitivity of revenues and expenditures ε_r and ε_g. The structural components of the budget balance are indicated by the superscript *s*.

The total differential of equation (1) gives the change of the budget balance:

$$(2) \qquad db_t = \left(\frac{\partial r_t^s}{\partial y_t^P} y_t^P - \frac{\partial g_t^s}{\partial y_t^P} y_t^P\right)\frac{dy_t^P}{y_t^P} + \left(\varepsilon_r - \varepsilon_g\right)\left[\frac{dy_t}{y_t} - \frac{dy_t^P}{y_t^P}\right]\frac{y_t}{y_t^P}$$

Subtracting the cyclical component from the change in the headline balance yields the change in the CAB

$$(3) \qquad dcab_t = db_t - \left(\varepsilon_r - \varepsilon_g\right)\left[\frac{dy_t}{y_t} - \frac{dy_t^P}{y_t^P}\right]\frac{y_t}{y_t^P} = \left(\frac{\partial r_t^s}{\partial y_t^P} y_t^P - \frac{\partial g_t^s}{\partial y_t^P} y_t^P\right)\frac{dy_t^P}{y_t^P}$$

Turning to the expenditure benchmark-based approach we know that

$$(4) \qquad dcab_t = dr_t^s - dg_t^s = \left(\frac{\dot{R}}{R^s} - \frac{\dot{Y}^p}{Y^p}\right)\frac{R^s}{Y^p} - \left(\frac{\dot{G}}{G^s} - \frac{\dot{Y}^p}{Y^p}\right)\frac{G^s}{Y^p}$$

where capital letters indicate levels of the respective variable and a dot a change with respect to time. This expression tells us how the underlying budget, i.e. the CAB, evolves depending on how fast revenues and expenditures grow relative to potential GDP.

Keeping in mind that in the EU government revenues *R* have an elasticity with respect to GDP equal or close to 1, the first term on the right hand side of equation (4) is equal to zero. In that case, the change of the CAB can only be zero if expenditure *G* grows in line with potential GDP. In terms of equation (3) it means that the increase in expenditure equals the increase in revenues implied by an increase in potential GDP.

Similarly, assuming a government size (G/Y) of around 0.5 an improvement of the CAB in the order of 0.5% of GDP requires that expenditure growth is one percentage point lower than potential GDP growth, unless higher expenditure growth is compensated by discretionary revenue measures, which would go on top of the 'natural' increase of *R*.

2.2.2. Using the expenditure benchmark as part of multilateral surveillance

Both the change in the structural balance and the expenditure benchmark will be assessed on an *ex ante* and on an *ex post* basis.

The *ex ante* assessment of will take place when examining countries' plans as set out in their SCPs, where there is a possibility for the Member State to be ordered to strengthen its programme in case of the planned adjustment towards the MTO being insufficient. In particular, sufficient progress towards the medium-term budgetary objective will be evaluated on the basis of an overall assessment with the structural balance as the reference, including an analysis of expenditure net of discretionary revenue measures.

The *ex post* assessment will take place when assessing whether there has been a significant observed deviation on the basis of actual data. For a Member State that has not reached the MTO, the assessment of whether the deviation is significant will take into account both the change in the structural balance and the expenditure developments. When assessing of the change in the structural balance, the deviation will be considered significant if the structural balance has not improved at all in one single year or if, for two consecutive years, it has not improved by at least ¼ of a percent of GDP on average per year. When assessing compliance with the expenditure benchmark, the deviation will be considered significant if, net of discretionary revenue measures, its impact on the government balance amounts to at least ½% of GDP in one single year, or cumulatively over two consecutive years. For a Member State that has overachieved the MTO, a worsening in the structural balance does not represent a source of particular concern and even a deviation from the expenditure benchmark is not considered, barring the existence of significant revenue windfall and budgetary plans that jeopardise the MTO over the programme period.

The deviation is also not considered in the case of severe economic down-turn for the euro area or the EU or when resulting from an unusual event outside of the control of the Member State concerned.

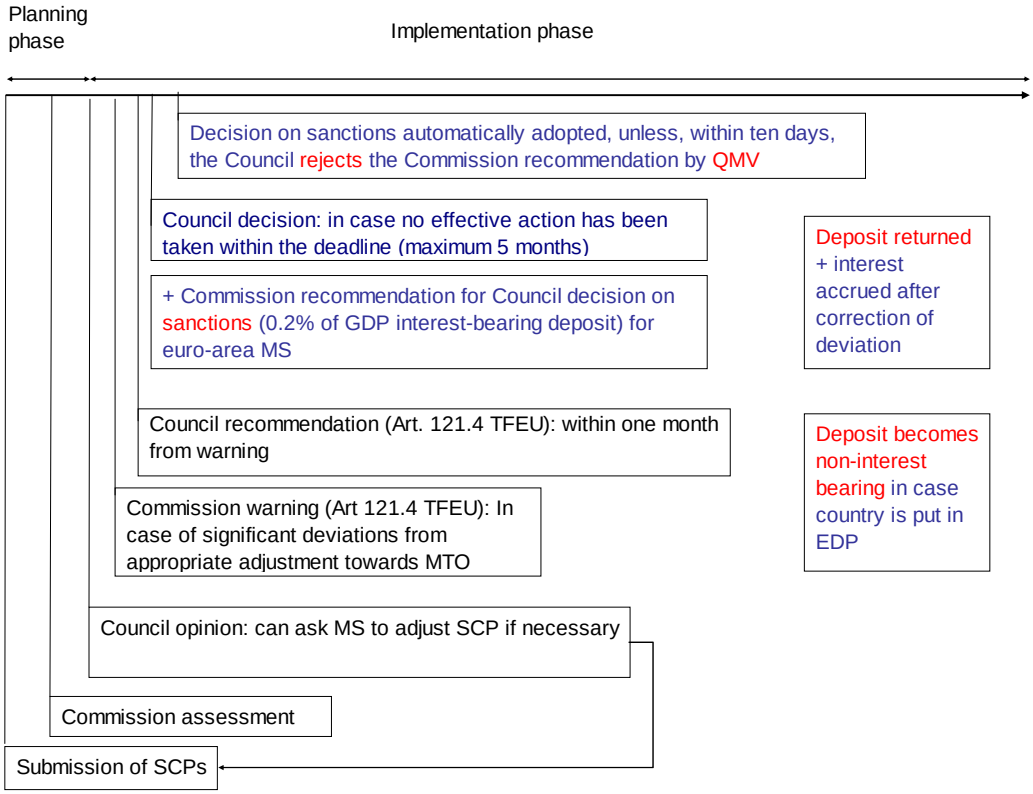
Where the assessment establishes that a significant observed deviation has occurred, a warning is to be issued by the Commission in accordance with article 121(4) of the Treaty, where 'early warnings' in order to prevent the occurrence of an excessive deficit were previously issued by the Council.

On the basis of a Commission recommendation, the Council examines the situation and issues recommendations for the necessary policy measures in accordance with Article 121(4), within one month from the adoption of the warning by the Commission. The Council recommendation should set a deadline of no more than five months for the Member States to adopt the measures necessary to address the deviation. A Council decision establishing that the Member State concerned has taken no effective action within the deadline established by the recommendation under Article 121(4) would be backed, for euro area countries only, by an interest bearing deposit of 0.2% of GDP. ([32])

Specifically, the Council decision establishing that no effective action has been taken is followed by a recommendation by the Commission to the Council to impose such deposit. The deposit would be payable unless the Council decides to the contrary by qualified majority within 10 days. In this way, the voting procedure is reversed, with a qualified majority being required to reject rather than to accept the Commission's recommendation. Once the Council is satisfied, on the basis of a Commission recommendation, that adequate measures have been taken and the situation giving rise to the imprudent fiscal policy has ended, the deposit is returned along with the interest it has accrued.

([32]) The possibility to introduce, for the first time, financial sanctions in the preventive arm of the SGP has been made available by a legal basis specific to Member States whose currency is the euro (Article 136 of the Treaty), including with a view to strengthen their coordination and surveillance of budgetary discipline. It is on this Article, as well as on Article 121 that the new regulation on effective enforcement of budgetary surveillance in the euro area envisaging, inter alia, the interest-bearing deposit in case of a significant observed deviation is based.

Graph II.2.3: **Fiscal surveillance – preventive arm : stylised course of events**



Source: Commission services

The idea behind this sanction mechanism is to address the weakness in the preventive arm. With absence of financial penalties associated with deviations from the adjustment towards the MTO, peer pressure alone proved insufficient to encourage countries to adhere to its requirements.

A further potential source of pressures comes in the form of the economic dialogue provisions in the reform, whereby the competent committee of the European Parliament may hold hearings on the conduct of surveillance by the Commission and the Council, with Member State concerned by the above-mentioned measures also invited to appear.

Box II.2.2: The potential benefits of an expenditure benchmark approach for fiscal performance

This box presents a simple mechanical exercise in which the actual course of public finances as measured by the budget balance in a selection of EU countries (BE, DE, EL, ES, EI, FR, IT, NL, PT, FI) in 1997-2009 is compared with a counterfactual path where the growth rate of government primary expenditure follows an expenditure threshold approach as set out in the Commission's proposal. The principles of the expenditure threshold approach are simulated as follows:

- If in year t-1 the fiscal balance, i.e. the cyclically adjusted balance (CAB), falls short of the MTO, government primary expenditure growth in year t is capped at one percentage point below the medium-term rate of GDP growth so as to have a progressive adjustment towards the MTO over the cycle. ([1])

- If in year t-1 the fiscal balance, i.e. the CAB, is at or above the MTO, government primary expenditure growth in year t is set equal to the medium-term rate of GDP growth.

- For the sake of the simulation, the medium-term rate of GDP growth used in year t is defined as the ten-year forward-looking average of the long-term projections of the AWG. ([2])

The message from the simulations is fairly clear. In most, but not all of the countries considered, expenditure paths consistent with an expenditure benchmark would have generated sounder fiscal positions especially in the years preceding the economic and financial crisis.

For each country, two graphs are shown below. The first graph compares the actual budget balance in % of GDP with the counterfactual balance (also in % of GDP) obtained by applying the principles of an expenditure benchmark approach. The second graph sets out the actual rate of real primary expenditure growth against the rate implied by an expenditure benchmark approach.

Three groups of countries can be distinguished:

The **first group** includes Greece, Portugal, France, Italy and Belgium which in 2007 (the last year before the crisis) recorded more or less sizeable deficits, i.e. their room for manoeuvre during the downturn was already limited or exhausted at the onset of the crisis. Had they applied an expenditure benchmark throughout the sample period, these countries would have entered the crisis with sizeable budgetary surpluses.

The **second group** of countries comprises Spain, Ireland and the Netherlands, which in 2007 posted a more or less sizeable surplus. Adhering to an expenditure benchmark approach throughout the sample period would have resulted in significantly higher buffers.

The **third group** of countries is composed of Germany and Finland, where the fiscal performance implied by a prudent expenditure path over the sample period is worse or broadly in line with the actual course of fiscal-policy making.

([1]) With a government size (expenditure-to-GDP ratio) of around 0.5 and assuming that over the medium term revenue growth keeps broadly pace with GDP growth, an excess of expenditure growth over GDP growth of 1 percentage points results into a deterioration of the budget balance of 0.5% of GDP.

([2]) In the years prior to 2006, not covered by the long-term projections of the Ageing Working Group, the 10-year averages of potential output growth from the 2006 vintage of the Commission autumn forecast are used.

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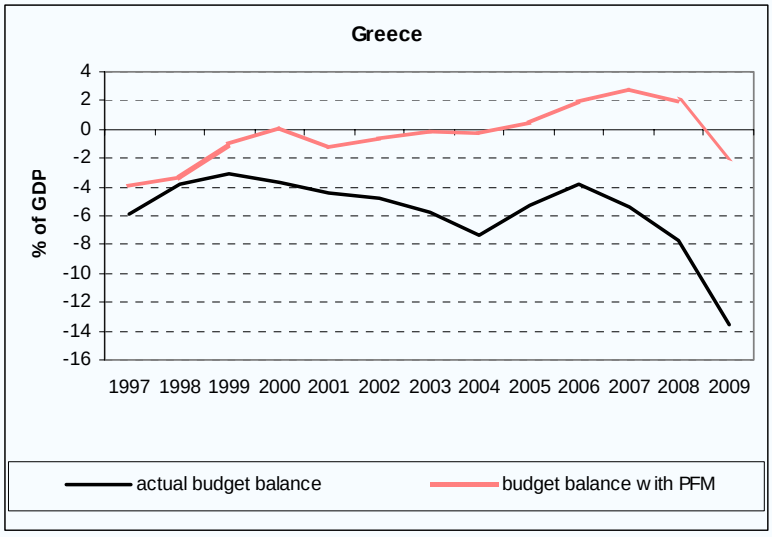
The fact that the expenditure threshold approach yields a stronger underlying fiscal stance when compared with actual outcomes does not mean that its implementation in real time would necessarily lead to those outcomes. Using retrospective data to compare outcomes against a stylised rule, does not take into account whether the rule would indeed lead to the correct decisions being made in actual fact. In particular, an effective surveillance framework must give the right signals and policy guidance at the right time.

The EU fiscal surveillance framework consists of both ex ante assessments based on official projections presented in the SCPs and on the Commission forecasts, and ex post assessments based on outcome data. The ex ante assessments are therefore based on forecast data, which are usually subject to revisions in retrospect, both in terms of the starting magnitudes for revenues and spending, the costs of measures introduced and the macroeconomic situation. The quality of the ex post assessments are also subject to uncertainties; the sooner they are undertaken the lower the reliability of the data they are based on, but the greater their policy relevance.

Evidence from detailed analysis undertaken on a small number of countries using the data available at the time of actual assessments over the 2000–07 period suggests that the expenditure threshold approach is subject to similar uncertainty as the structural balance approach on an ex ante basis, but that the magnitude of the uncertainty makes it somewhat more robust a policy guide. In terms of the ex post assessments, qualitative assessments are broadly similar in both approaches, but in particularly sensitive years the expenditure approach provides clearer signals. This appears to be the case in years with significant revenue windfalls and a large uncertainty concerning the size of the output gap, such as during (extended) boom periods or in periods when economic fortunes are about to change.

First group of countries: Greece, Portugal, France, Italy and Belgium



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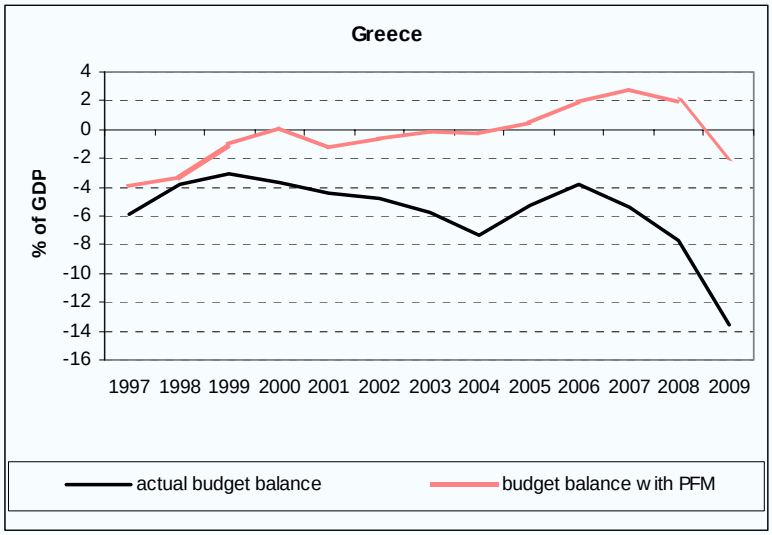

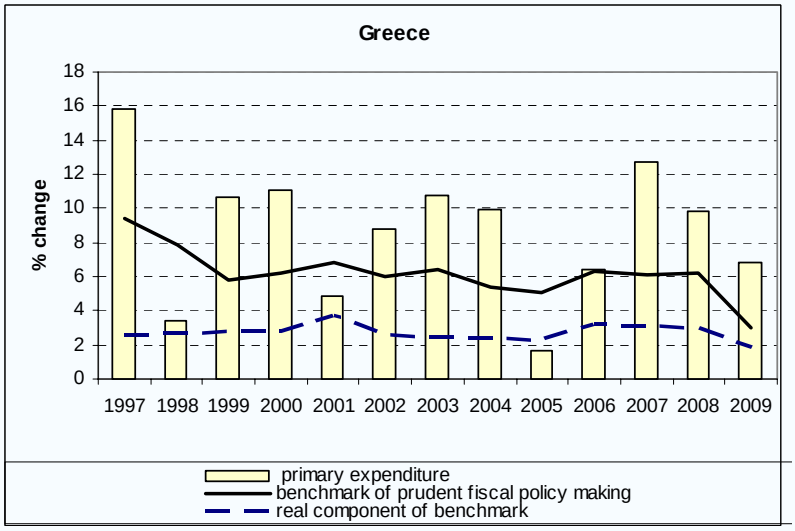

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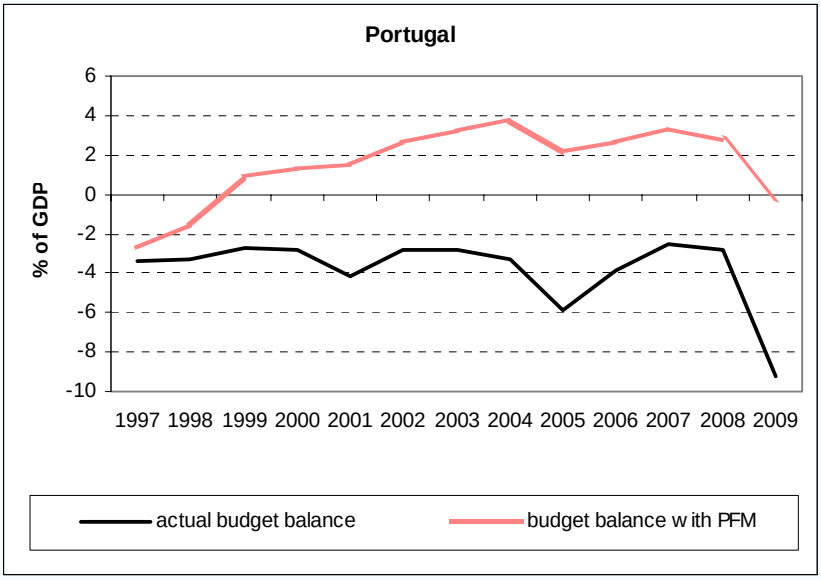

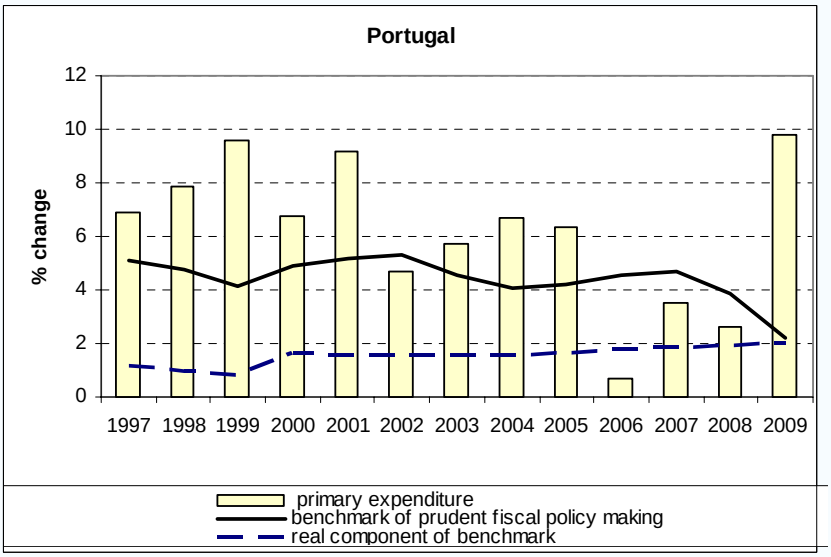

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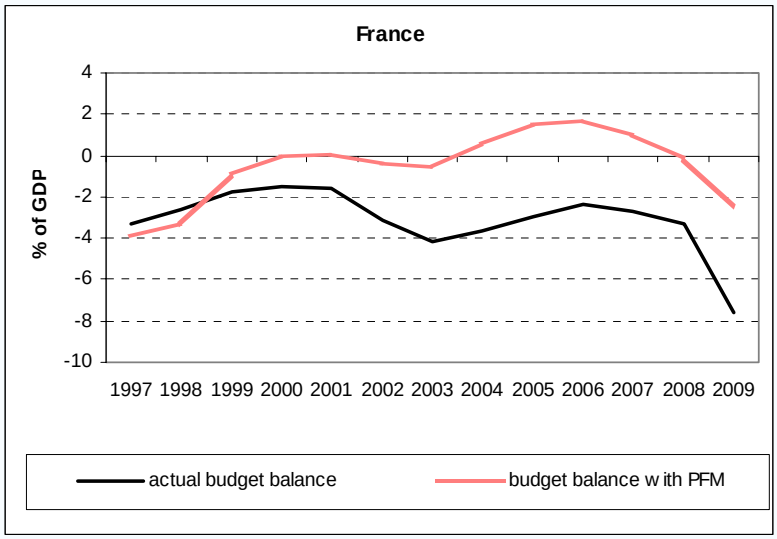

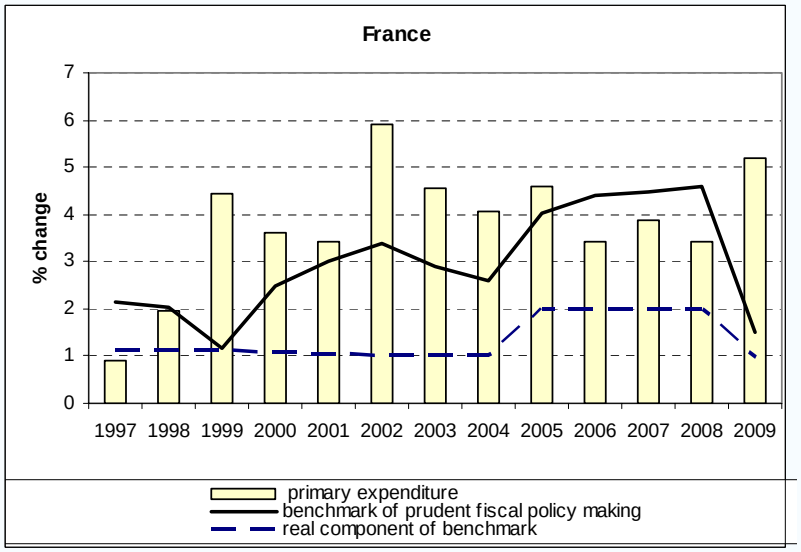

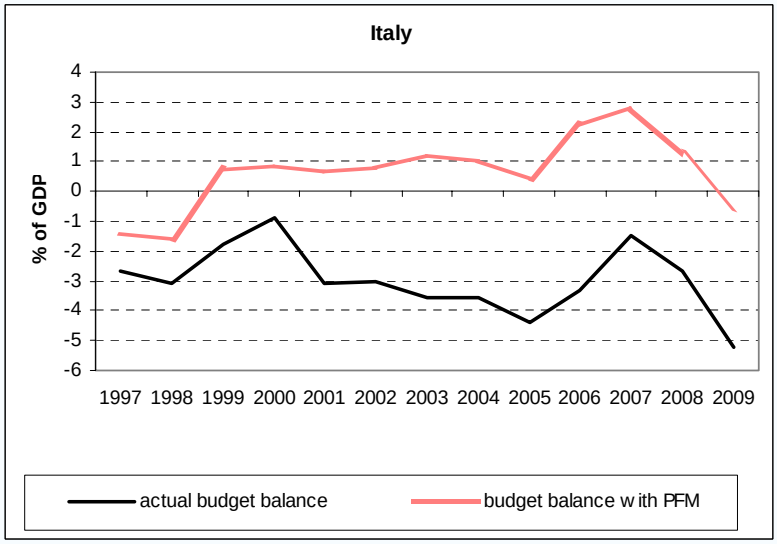

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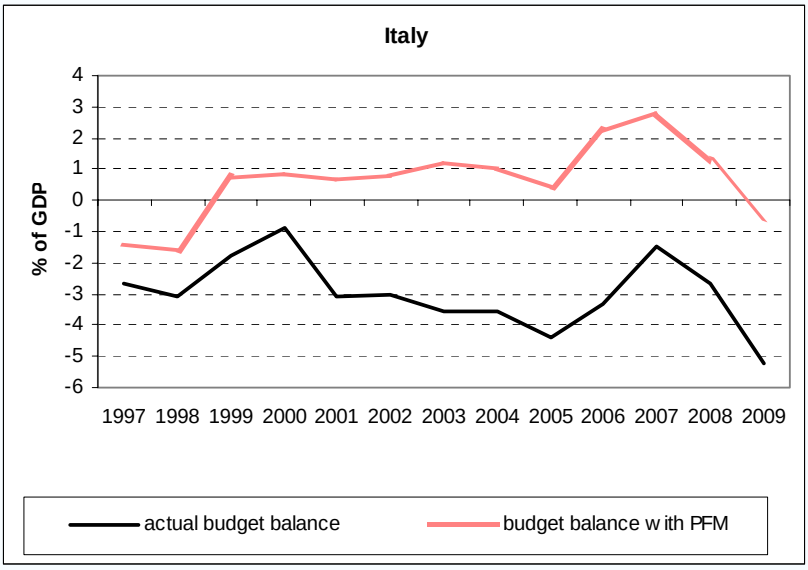

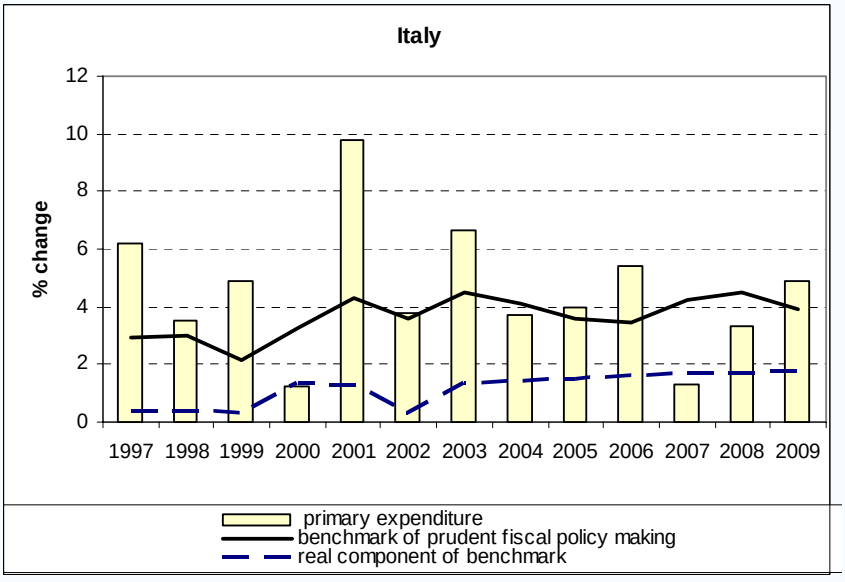

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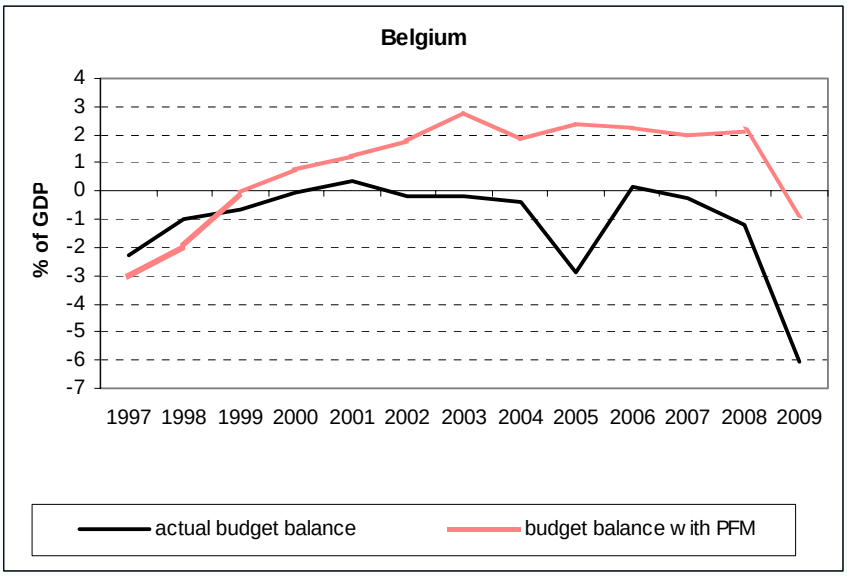

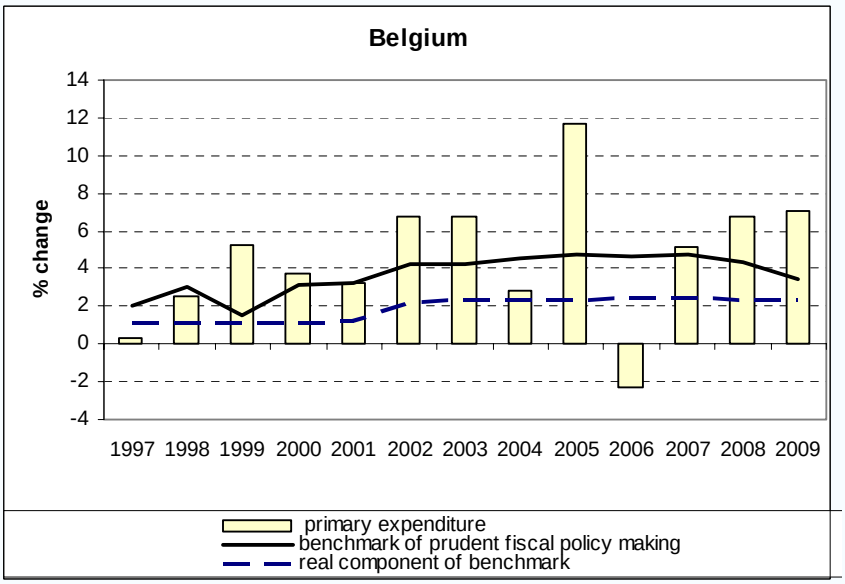

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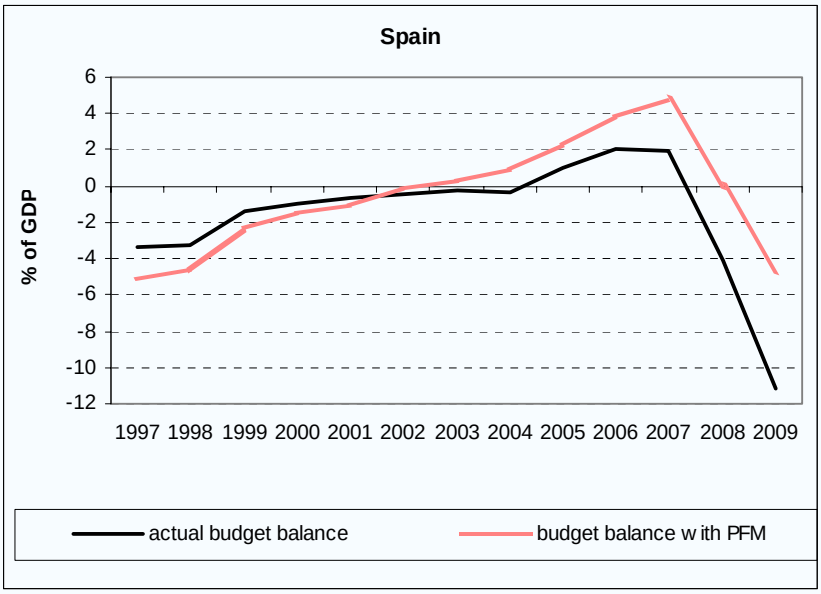
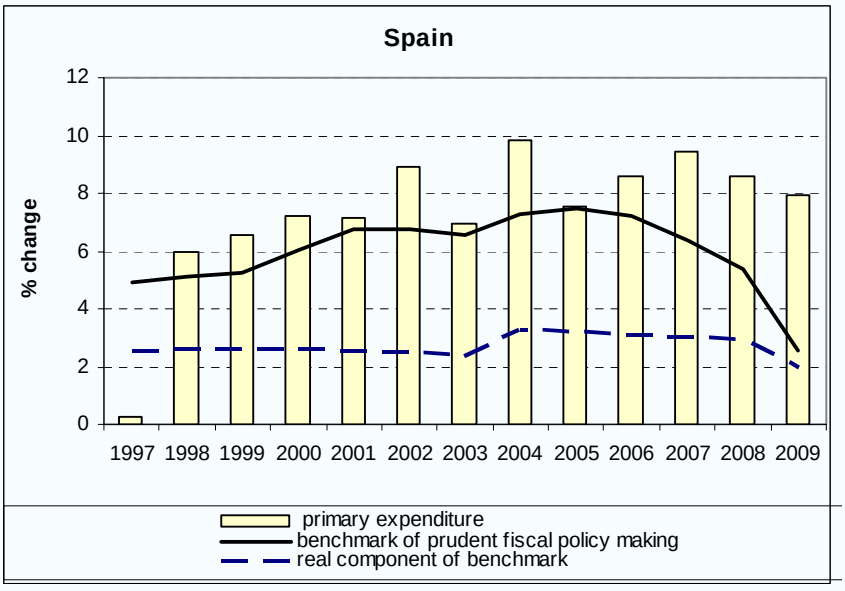
Second group of countries: Spain, Ireland and the Netherlands





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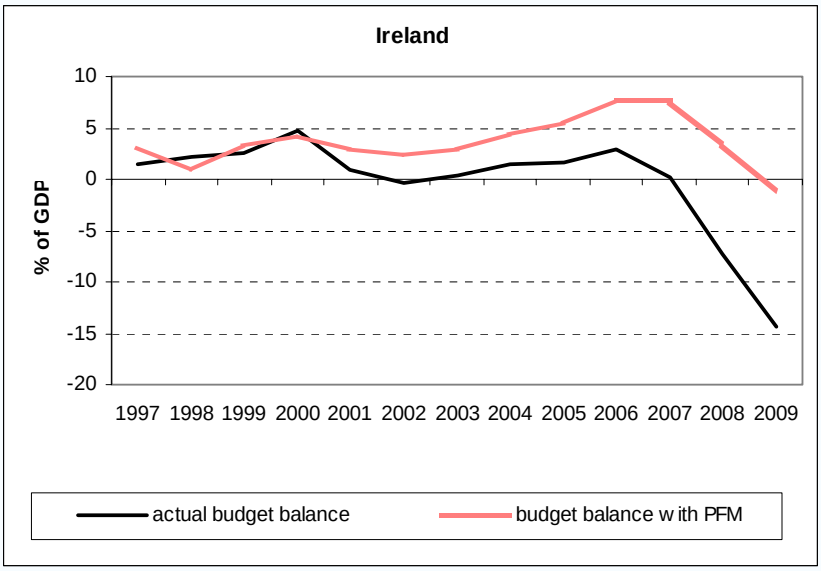

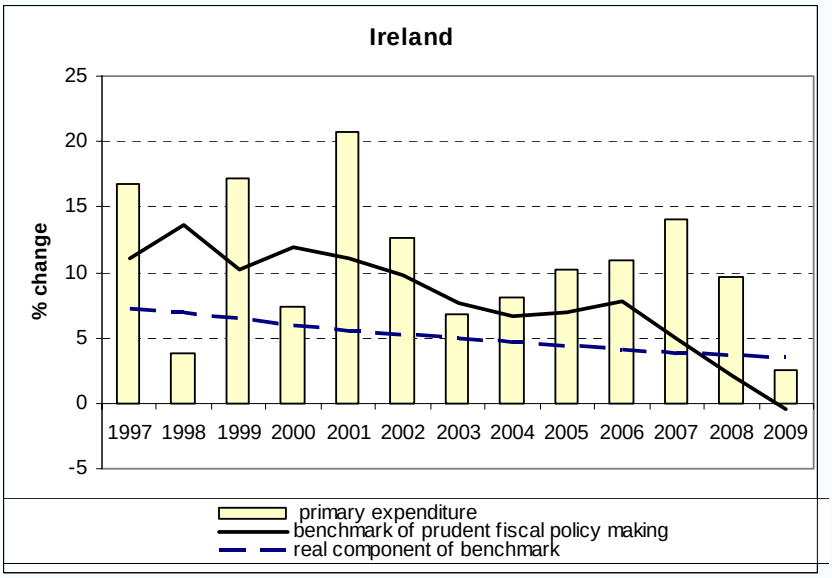

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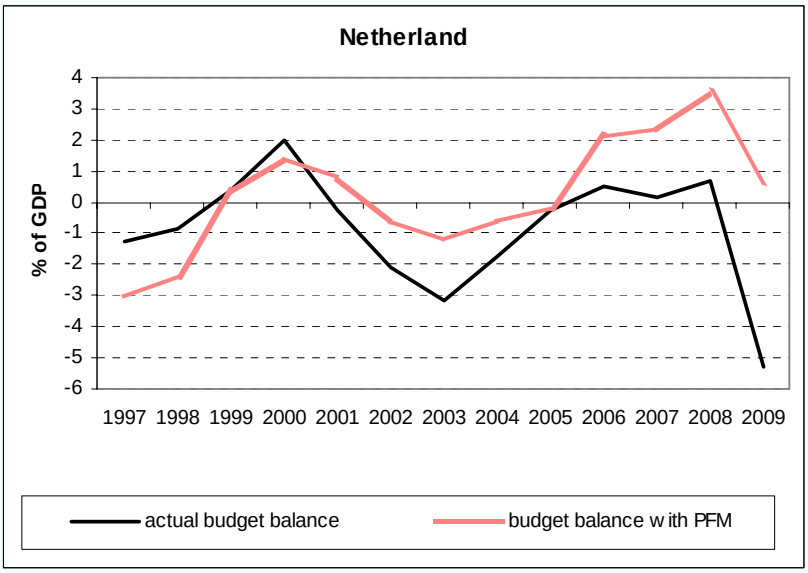

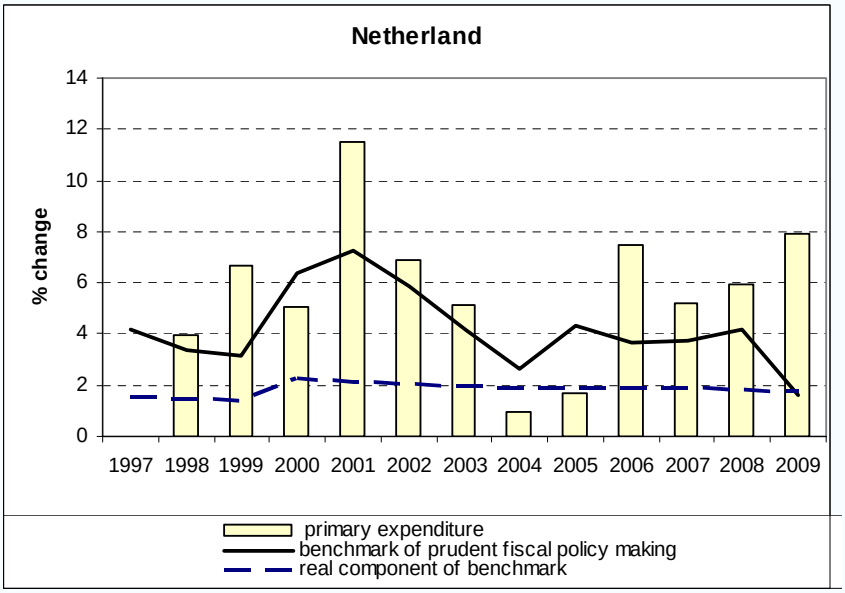

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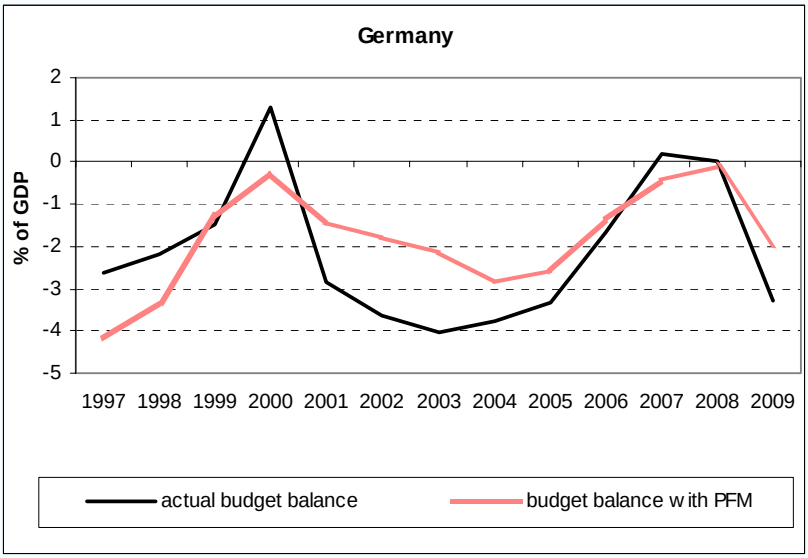
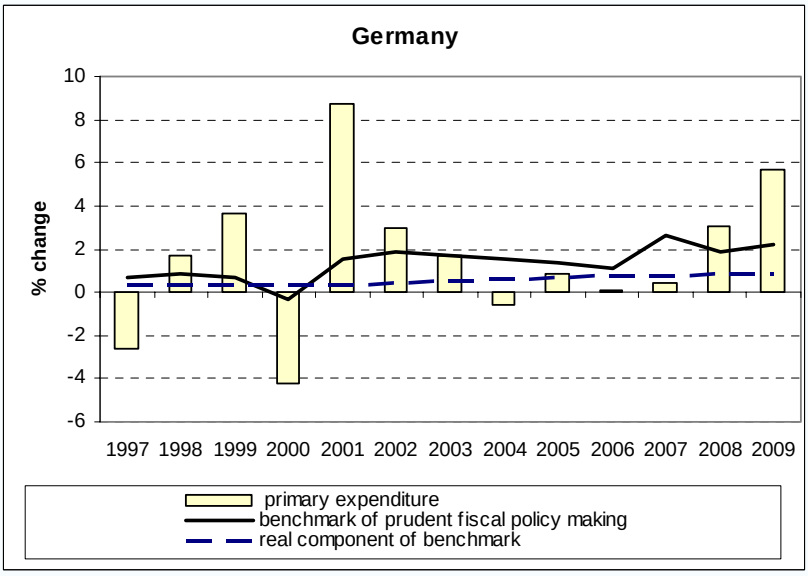
Third group of countries: Germany, Finland





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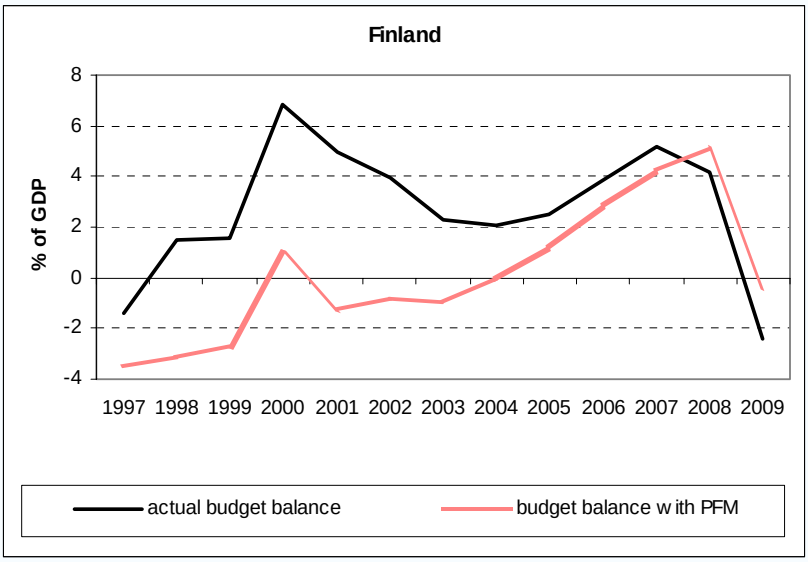
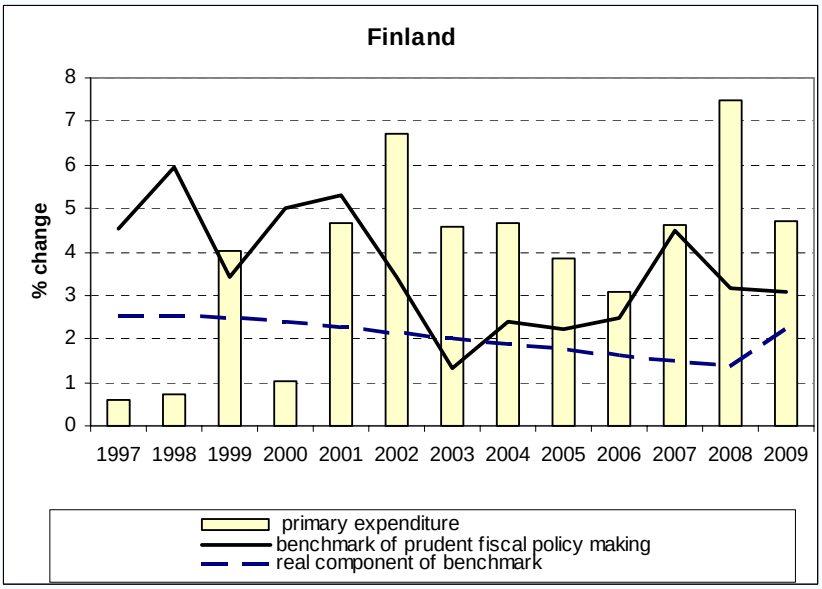




3. REFORM OF THE CORRECTIVE ARM OF THE SGP

3.1. THE CORRECTIVE ARM OF THE PACT

The corrective arm of the Stability and Growth Pact (SGP) is concerned with the procedure to be followed if a country's public finances fall outside the requirements of the Treaty. It is based on Article 126 of the Treaty and implemented through Council Regulation (EC) No 1467/97 of 7 July 1997([33]) on speeding up and clarifying the implementation of the excessive deficit procedure.

Article 126 specifies that Member States shall avoid excessive government deficits and defines the criteria according to which compliance with budgetary discipline should be examined in terms of whether the ratio of the planned or actual deficit to gross domestic product or the ratio of government debt to gross domestic product exceed respective reference values. Both these conditions are subject to further specification. In the case of the deficit, a ratio that has declined substantially and continuously and reached a level close to the reference value, or one where the excess over the reference value is only exceptional and temporary and results in a ratio still close to the reference value, need not be classified as a breach. In the case of the debt, a sufficiently diminishing debt ratio which approaches the reference value at a satisfactory pace, could also be in line with the requirements of the Treaty. The references values are given in Protocol 12 on the Excessive Deficit Procedure (EDP) as 3% of GDP for the deficit and 60% of GDP of the debt.

According to the Treaty, the Commission prepares a report if a Member State does not fulfil the requirements specified under either the deficit or debt criteria. The Commission report should take into account the other relevant factors. Following an opinion by the Economic and Financial Committee, the Commission can address an opinion to the country in question if it considers that an excessive deficit exists. On the Commission's proposal, the Council decides whether an excessive deficit exists and where it finds that one does, it adopts recommendations under Article 126(7) addressed to the Member State in question to take action and put an end to the excessive deficit in a given time period, on the basis of a Commission recommendation.

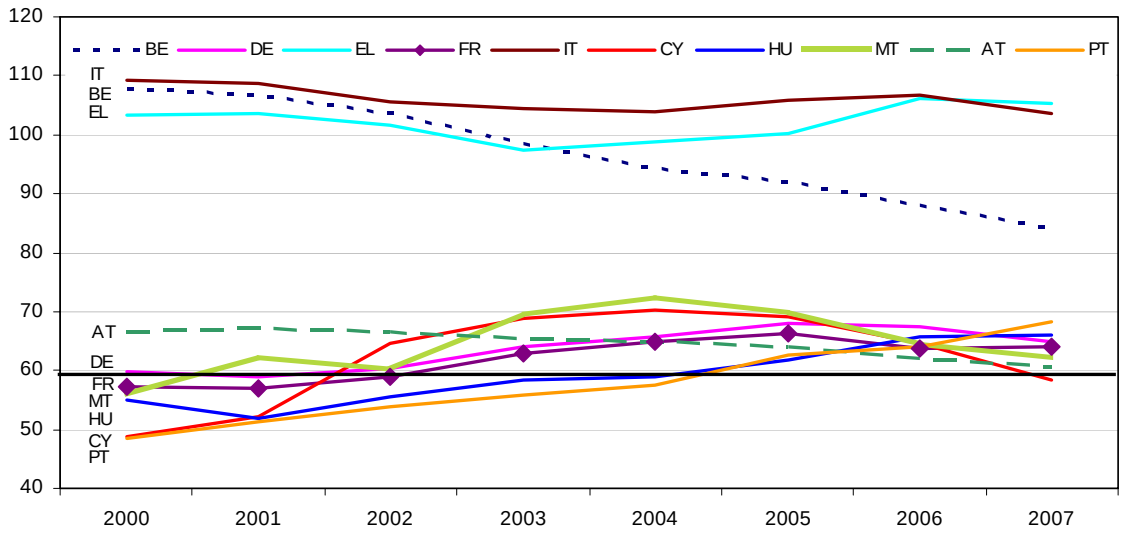
In case of failure to put the recommendations into practice, the following steps of the procedure differ between euro area and non euro area Member States. Specifically, a new recommendation under Article 126(7) can be issued to non euro area Member States, whereas euro area Member States are, based on a Commission recommendation, given notice by the Council to take measures for the deficit reduction, in accordance with Article 126(9). Only if the Member State does not comply even with this notice does the Council impose sanctions, again on the basis of a Commission recommendation. ([34]) To date, sanctions have never been applied, as this step has never been reached, i.e., the Council has not adopted any decision establishing that inadequate action has been taken to comply with an notice under Article 126(9).

Regulation (EC) No 1467/97 specifies the implementing provisions for the excessive deficit procedure. In particular, it specifies the factors to be taken into account and the mechanism for doing so in the various stages of the EDP, the timetable to be followed in the different steps, the minimum correction to be required of countries where an excessive deficit has been found, the conditions for abeyance and abrogation and the specifications for how the sanctions are to be applied. However, only the deficit criterion is specifically referred to and no explicit provisions are made for the application of the debt criterion. In this way, while the caveats on the deficit criterion are clarified, there is no definition in the legislation of how a "sufficiently diminishing and approaching reference value at satisfactory pace" debt level is to be judged. In the same way, while the level of sanctions to be imposed in the case of deficit overrun are set out in

([33]) In 2005, Council Regulation 1467/97 (OJ L 209, 2.8.1997) was amended by Council Regulation (EC) No 1055/2005 of 27 June 2005.

([34]) In particular, the Council should immediately take a decision to require a non-interest-bearing deposit, but can decide to supplement the deposit by other sanctions envisaged in Article 126(11) of the Treaty. If the Member State continues to fail to take effective action the deposit is increased. The deposit is transformed into a fine if two years after its imposition the situation of excessive deficit is not yet corrected. Specifically, the Council can require the Member State concerned to publish additional information before issuing bonds and securities and invite the European Investment Bank to reconsider its lending policy towards it.

Graph II.3.1: **General government debt as % of GDP, 2000-2007, countries over the 60% threshold**



Source: Commission services

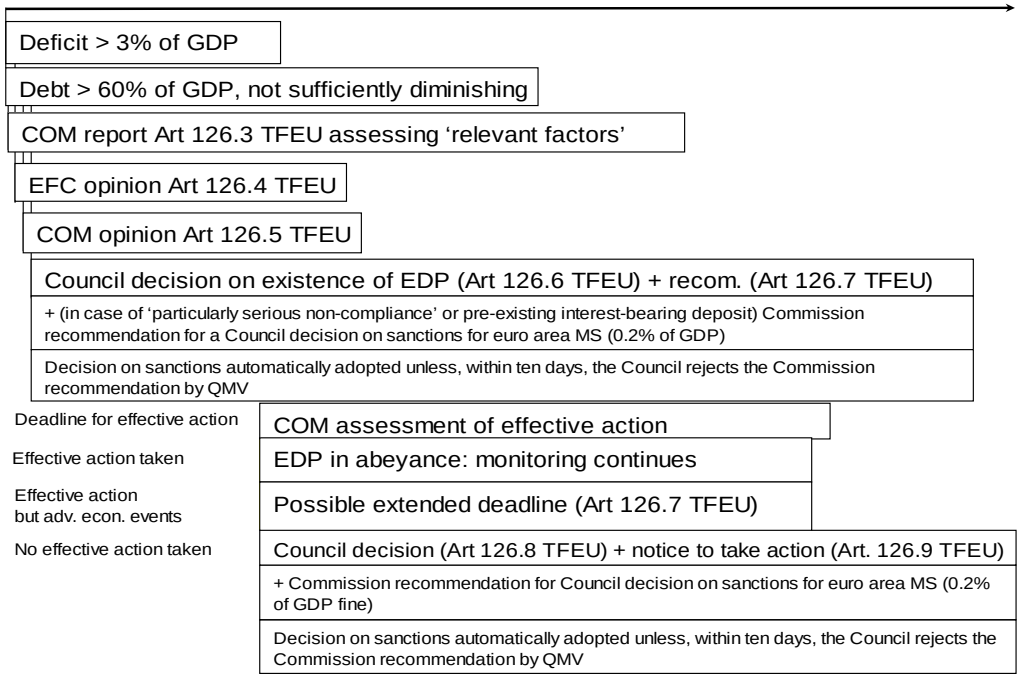
detail in the secondary legislation, no analogous clarification is made in the cases of debt overruns.

Although the lack of specification about the interpretation of the debt criterion is not a legal barrier to its application, it has nonetheless been the case that in absence of an agreed interpretation no EDPs have been opened on the basis of the debt criterion since the introduction of the SGP. As illustrated in Chapter I.1, average government debt in EU has hovered around the 60% of GDP threshold since the introduction of the euro. Graph II.3.1 shows the evolution of government debt ratios from 2000 to 2007 for all EU countries which had debt above 60% at some point during that period. As can be seen ten Member States were in this position, of which seven were members of the euro area at the time. ([35]) Despite the fact that a number of countries had instances of either increasing and/or very slowly declining high debt, no EDPs were opened either exclusively on the debt criterion.

At the time of the Maastricht Treaty, when it was thought the deficit and debt thresholds were established, in principle, adherence to the deficit criterion should have been sufficient to ensure that the debt-to-GDP ratio was on a declining path for countries with a ratio above 60%. A nominal GDP growth rate of 5% means that a 3% of GDP deficit is consistent with debt converging to 60% of GDP, in the absence of other operations that affect the debt but not the deficit – so called "below-the-line" operations. As the 3% threshold is a limit and not an average, even a lower nominal growth rate should be consistent with debt falling if the deficit criterion in the Treaty is adhered to. Overall, until 2008, the EDP has functioned relatively well in keeping headline deficits below 3% of GDP and fostering, in most cases, a rapid correction when breaches of the 3% level have occurred. Nevertheless, it is clear that this has not been sufficient to push debt ratios on a steadily declining path. Besides an unsatisfactory reduction of deficits in goods times, in turn increasing the frequency of breaches of the 3% threshold in bad times, two factors help explain the lack of progress in reducing debt ratios: below-the-line operations, instead of averaging zero over time as one could have a priori expected, have had a consistently debt-increasing effect; the growth rate of the EU economies has been trending down, making the assumption of a nominal GDP growth rate of 5% look increasingly optimistic.

([35]) Malta and Cyprus joined the single currency in 2008 and Hungary is not a member.

Graph II.3.2: **Fiscal surveillance – corrective arm: stylised course of events (i)**



Source: Commission services

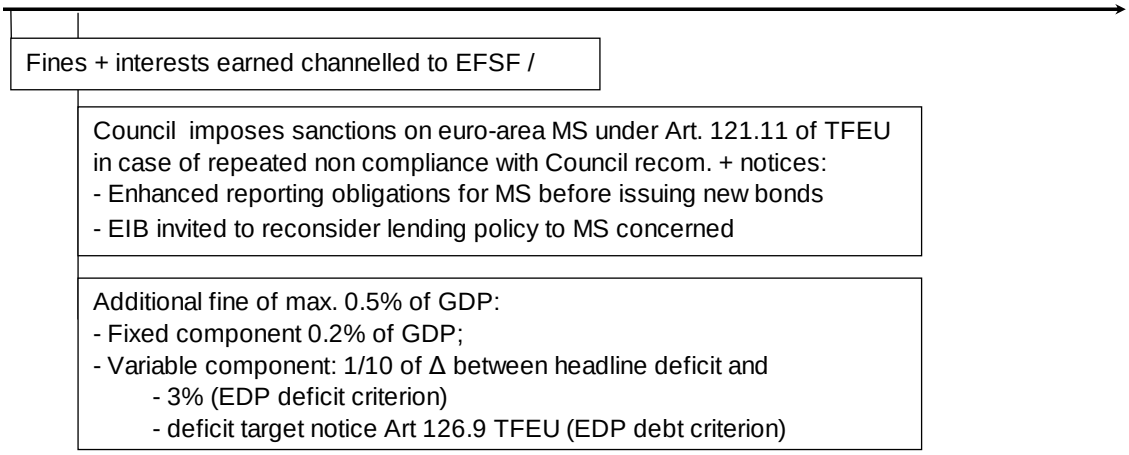
3.2. THE REFORM OF THE CORRECTIVE ARM

The reform of the corrective arm of the SGP consists of an amendment to Regulation 1467/97 and is complemented by new Regulation on the effective enforcement of budgetary surveillance in the euro area, which supplements the sanctions provisions in 1467/97. The idea behind these changes is to strengthen the link between sustainability and the EDP and attach heavier consequences to gross errors in fiscal policy.

The most significant of the changes to the corrective arm of the SGP is the operationalisation of the debt criterion. The amended Regulation 1467/97 places the debt criterion on an equal footing to the deficit criterion and contains the operating provisions required to ensure its implementation. In this way, it defines the concept of debt being judged as "sufficiently diminishing and approaching reference value at a satisfactory pace" through the introduction of a numerical benchmark and sets out the factors to be taken into account when the Commission and Council consider whether a country is to be placed in excessive deficit as a result of the level and dynamics of its debt. These factors are of particular importance when assessing a debt benchmark, because the evolution of government debt-to-GDP ratio is not as readily in the direct control of government policy as the deficit. Above all, the dynamic of the debt-to-GDP ratio is strongly affected by the cyclical conditions (see Box II.3.2.) For this reason, the influence of the cycle on the pace of debt reduction is treated differently from the other relevant factors to be taken into account. Namely, while all the other relevant factors are examined in the report that the Commission will have to prepare in case the debt benchmark is not complied with, the impact of the cycle on the debt ratio is considered part of the assessment of compliance with the debt benchmark and can thus make the preparation of the report unnecessary.

The new Regulation on the effective enforcement of budgetary surveillance in the euro area introduces a new set of financial sanctions for the euro area countries, which apply much earlier in the process as compared to those envisaged by Article 126(11) of the Treaty and specified in the

Graph II.3.3: **Fiscal surveillance – corrective arm: stylised course of events (ii)**



Source: Commission services

regulation specific to the EDP. If a Member State was already called to lodge an interest-bearing deposit due to lack of effective action to correct a significant deviation from the adjustment path towards the MTO, this deposit is transformed in a non-interest bearing deposit upon the decision to place a country in excessive deficit. Even in absence of an interest-bearing deposit, a 0.2% of GDP non-interest bearing deposit can be invoked at the time of the launch of the EDP, always only for euro area Member States, if the Commission identifies particularly serious non compliance with the SGP. In case of lack of compliance with a Council recommendation to correct the excessive deficit issued under Article 126(7), following the Council decision establishing such non-compliance (Art. 126(9),) a 0.2% of GDP fine is imposed on the euro area Member State concerned (if the Member State had already lodged a deposit, the deposit is converted into a fine.)

As for the lodging of the interest bearing deposit in the preventive arm, the new sanctions for the corrective arm described above are also applied through a system of reverse voting. They are recommended by the Commission and euro area Member States will therefore have to vote to against rather than for the imposition of sanctions.

The provisions on sanctions already envisaged by the regulation on the EDP have been adjusted to take account that the new financial penalties introduced already envisage a fine in case of lack of compliance with a recommendation under Article 126(7). Accordingly, a fine, instead of the currently envisaged non-interest-bearing deposit, will be applied as a rule in case of inadequate action in response to a notice under Article 126(9). The sanctions in the EDP regulation also take explicitly account of the imposition of sanctions on the basis of a breach of the debt criterion, by determining the level of the fine to be paid in this eventuality. Unlike the new fine at step 126(8) mentioned in the previous paragraph, this fine will contain both the fixed 0.2% of GDP component, and a variable component. The amount of the variable component has not been changed for the cases where the government deficit has caused an EDP to be launched; it will equal one tenth of the difference between the deficit and the 3% limit of the EDP. In the event of an EDP launched on the basis of a breach of the debt criterion, a new provision has been added, setting the variable component of the fine at one tenth of the difference between the deficit and the level of the deficit that was required under the notice given in step 126(9) of the EDP.

By requiring a deposit and fine earlier in the process, financial penalties should begin to apply at time when they seem more relevant and should be used more widely. This should move away from a situation where financial penalties come late in the process and are therefore only levied on countries that are in a very difficult fiscal situation. Moreover, the introduction of reverse voting should not only make it more likely that financial penalties are applied, but also increase the political cost of choosing not to apply them, increasing the

chances that this will only happen in duly justified circumstances.

3.3. THE OPERATIONALISATION OF THE DEBT CRITERION

Debt as a share of GDP is considered to be sufficiently diminishing and approaching the reference value at a satisfactory pace if the differential with respect to the reference value has reduced over the previous three years at an average rate of the order of one-twentieth per year as a benchmark, based on the changes over the last three years for which the data are available. The requirement is also considered fulfilled if the budgetary forecasts as provided by the Commission indicate that the required reduction in the differential will occur over the three-year period encompassing the two years following the final year for which the data is available.

The formulation of the debt criterion implies asymptotic convergence towards the 60% of GDP threshold: for very high levels of debt a significant debt reduction, as a percentage of GDP is required, while for levels of debt close to the 60% reference value the required reduction is small. As debt approaches 60% of GDP from above, the fiscal effort required diminishes. The 1/20th yearly rate of reduction is the one that ensures consistency between the 3% of GDP and the 60% of GDP deficit and debt limits. Specifically, if growth were 5% in nominal terms every year, sticking with the 3% deficit limit would lead to the debt falling at a rate of 5% of the difference between its level and 60% of GDP in the absence of other operations. However, as growth over the medium term is likely to be below 5% in many cases and as it is clear that the "absence of other operations" has not held in the past, introducing an independent rule, even if equivalent to the deficit rule in equilibrium, brings debt into the heart of the fiscal surveillance process in a way that is consistent with the spirit of the Treaty.

The regulation also specifies the other necessary provisions for the operationalisation of the debt criterion. In preparing its report for the Council as the first step of launching an EDP, the Commission will include an analysis of the developments in the medium-term debt position, which will include risk factors such as the maturity structure and currency denomination of debt, stock-flow operations, accumulated reserves and other financial assets, guarantees, notably linked to the financial sector, implicit and explicit liabilities related to ageing and the existence of private debt to the extent that it may represent a contingent liability for the government.

The operationalisation of the debt criterion should increase the demands made on countries with high levels of debt. On the other hand, the amended regulation makes new provisions that allow lower debt countries to have looser conditions when assessing a breach of the 3% deficit target. In recognition of the fact that such countries present less of a sustainability risk and that deficits in excess of 3% are therefore less problematic, the regulation specifies that other relevant factors may be taken into account in determining whether there has been compliance with the deficit criterion even where the excess over the 3% threshold is not necessarily small and temporary, for countries with debt below 60%. For countries with debt above 60%, there has been no change to the condition that such factors may only be used to assess compliance, when the excess of the deficit over 3% is first judged to small and temporary.

3.3.1. The numerical benchmark

In line with the requirements of Article 126(2) of the Treaty and the EDP Protocol, the new Regulation defines a "sufficiently diminishing" debt in numerical terms as follows:

"a debt-to-GDP ratio above 60% of GDP is considered to be sufficiently diminishing if its distance with respect to the 60% of GDP reference value has reduced over the previous 3 years at a rate of the order of 1/20th per year".

This definition does not itself provide an unambiguous rule that can be used in all cases to judge whether a debt trajectory is or is not in compliance with the debt requirement. In particular, it is clear that a debt that decreases every year for three years by more than 1/20th of the distance is in compliance, while a debt that increases is in breach. However a number of interpretations are possible for situations where some of the decreases are greater and some are smaller than the 1/20th requirement.

An interpretation consistent with the formulation of the reform, which results in a benchmark debt level for each year t, based on the outcome of the previous three years, is presented in Box II.3.1.

Box II.3.1: **A formula for the debt reduction benchmark**

A debt in year t that is below benchmark is judged as being in compliance with the SGP, while a debt above it is judged as breaching the SGP requirement. The proposed benchmark debt level is given as:

$$bb_t = 60\% + \frac{0.95}{3}(b_{t-1} - 60\%) +$$
$$\frac{0.95^2}{3}(b_{t-2} - 60\%) + \frac{0.95^3}{3}(b_{t-3} - 60\%)$$

It is a weighted average that considers the outcomes in the debt-to-GDP ratio in each of the three years preceding the year t under consideration, and requires a 5% decrease per annum from each of these three outcomes.

In year t, the one-year decrease by 5% of the distance between the debt in year t-1 and the Treaty threshold 60% is:

$$b_t - b_{t-1} = -(b_{t-1} - 60\%) \cdot 0.05$$

By rearranging the previous formula, the one-year benchmark bb_t^{1y}, i.e. the debt ratio at t that respects the one-year 5% decrease for a given debt ratio at t-1, is:

$$bb_t^{1y} = -(b_{t-1} - 60\%) \cdot 0.05 + b_{t-1} = b_{t-1} \cdot (1 - 0.05) +$$
$$0.05 \cdot 60\% = b_{t-1} \cdot 0.95 + (1 - 0.95) \cdot 60\%$$
$$bb_t^{1y} = 60\% + (b_{t-1} - 60\%) \cdot 0.95$$

The two-year benchmark bb_t^{2y} for an annual reduction of 0.05 of the distance between the debt ratio and 60% for two years would be:([1])

$$bb_t^{2y} = 60\% + (b_{t-2} - 60\%) \cdot 0.95^2$$

By further iteration, the three-year period benchmark bb_t^{3y} for an annual reduction of 0.05 of the distance between the debt ratio and 60% for three years would be:

$$bb_t^{3y} = 60\% + (b_{t-3} - 60\%) \cdot 0.95^3$$

The Commission has chosen the average of the three benchmarks:

$$bb_t = \left[bb_t^{1y} + bb_t^{2y} + bb_t^{3y}\right]/3 = 60\% + \frac{0.95}{3}(b_{t-1} - 60\%) +$$
$$\frac{0.95^2}{3}(b_{t-2} - 60\%) + \frac{0.95^3}{3}(b_{t-3} - 60\%)$$

Graph 1 shows an illustrative path for debt implied by the debt benchmark that is proposed. The thick line represents the illustrative actual debt level, with the thin lines showing the debt benchmark. Compared with the simple 1 or 3 year rules, this rule contains an element of smoothing, which means that the benchmark debt is not so volatile as when only a single benchmark year enters the calculation. It allows increases in debt without an automatic breach provided this comes after falls in debt. This is shown in Graph 1 below,

([1]) It is obtained by iteration from the previous formula. Assuming that the one-year benchmark was met in the first year t-1 relative to the debt in t-2, then by definition $b_{t-1} = bb_{t-1}^{1y} = 60\% + (b_{t-2} - 60\%) \cdot 0.95$ and this can be substituted into $bb_t^{2y} = 60\% + (b_{t-1} - 60\%) \cdot 0.95$ to obtain the formula in the text.

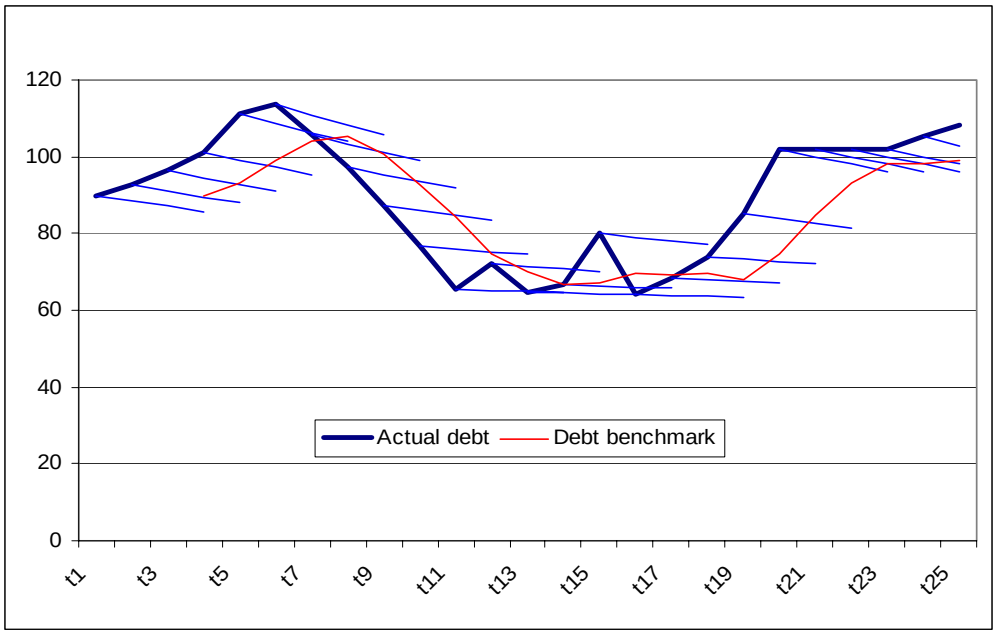
(Continued on the next page)

Box (continued)

where the debt benchmark is not breached even with the debt spike observed in time 12 of the simulation (t=12).

The choice of a three-year horizon is meant to avoid the pitfalls of a simple one-year rule, specifically the volatility of the benchmark and its vulnerability to manipulation. An average of a one-year, a two-year and three-year uniform benchmarks has advantages with respect to choosing the straight reduction over three years. The main difference between the two choices is that the average of the benchmarks puts slightly more weight on more recent outcomes and that there is a smoothing of what previous years' outcomes imply for the present. This is an attractive feature especially in those cases where the decline in debt ratio is due to exceptionally high inflation or a large positive output gap. Moreover, by including an element of smoothing in the rule, there is less year-on-year volatility in the debt target due to the events of the previous years. Although the benchmark is more complicated, it displays better dynamics than the simpler alternatives already discussed.

Graph 1: **Illustration of the proposed three-year average debt reduction benchmark**



Source: Commission services

3.3.2. How the benchmark will be used to judge compliance with the SGP

The decision to place a country in excessive deficit on the basis of the debt criterion will not be an automatic one, based on a crude application of the rule using four years of data. Instead, the procedure leading to such a decision will contain two stages: (i) the assessment of whether the debt benchmark is breached; and, if this is the case (ii) a report under Article 126(3) of the Treaty, taking into account all the relevant factors.

The first stage will be to implement the debt benchmark. In turn, this requires checking both whether (i) the benchmark has been breached based on notified data and (ii) to consider whether current policy should lead to debt diminishing sufficiently over the following two years. This recognises the fact that it takes a number of years

for actual debt to meet the requirements of the benchmark, once policy responses have been introduced. In this way, a backward and then a forward-looking approach will be applied. Finally, the influence of the cycle on the pace of debt reduction should be considered.

Specifically, a breach of the benchmark level of debt in any year t, i.e. an unsatisfactory pace of development of the debt-to-GDP ratios based on the data notified in year t+1 for the previous four years (t-3, t-2, t-1 and t) . The next step will be to see what the current budgetary situation implies in terms of whether the benchmark is likely to be breached in the near future on unchanged policy. This will be done by looking, in year t+1, at whether the benchmark in year t+2 is forecast to be met or breached on unchanged policy. The Commission Services' forecast, which is based on unchanged policies, will be used as a reference. If it appears that fiscal policy is consistent with the debt ratio diminishing sufficiently by t+2 so that the benchmark is forecast to be fulfilled in that year, the debt criterion does not need to be considered breached. This might be the case, for example, if a country has already taken the measures necessary to adjust its fiscal stance.

If it appears that also the debt-to-GDP ratio forecast for t+2 is above the t+2 benchmark, the breach observed for year t on the basis of historical data, it will also be necessary to take into account the impact of the cycle.

Taking into account the effect of the cycle on the debt presents challenges that are additional to those of adjusting the deficit. Box II.3.2 describes a possible approach for estimating the effects of the cycle. The results of this estimation will be complemented by a broader analysis of factors that might have compounded or offset these effects, e.g. revenue elasticity. Only if the assessment concludes that the non-respect of the benchmark was not due to cyclical factors, the Commission will prepare a report under Article 126(3).

The analysis of the economic and budgetary situation in the Commission's report will take account of all factors considered relevant to assessing past developments in the debt ratio and prospects for future developments. This will allow the Commission and the Council to make a balanced overall assessment of all the relevant factors specifically, the extent to which they affect the assessment of compliance with the deficit and/or the debt criteria as aggravating or mitigating factors. In particular increases in gross debt due to the accumulation of financial assets, which can easily be disposed of on the markets and therefore do not add to the risks associated with debt, should be taken into account in assessing whether non-respect of the benchmark amounts to a "gross error" in fiscal policy. The proposed criteria for assessing the risks associated with the stock flow adjustment are described in Box II.3.3.

The budget balance is the variable which is typically at the centre of the budgetary process. When the Council decides that an excessive deficit exists, the recommendations for correction will thus still require the achievement of annual budgetary targets, irrespective of whether the procedure was opened due to a breach of the deficit or the debt criterion or both. The general government balance should be required to be gradually improved, in line with a minimal annual improvement in the structural balance of at least 0.5 pp of GDP per year. ([36])

([36]) The annual structural adjustment needs to be higher in countries with particularly high government debt and low potential growth, too avoid the path of debt-to-GDP reduction remaining insufficiently diminishing over a too long period.

Box II.3.2: **Accounting for the effects of the cycle**

The respect of the debt reduction benchmark will be checked effectively over six years (from t-3 to t+2) although in two steps. Such a relatively long horizon will tend to mitigate the impact of the cycle; if, for example, debt increased in the past due to cyclical weakness, the expected developments would in general include a cyclical rebound. The inclusion of this rebound will facilitate meeting the benchmark at the end of the period considered. ([1]) As Commission forecasts are made on the basis of unchanged policy, if the underlying budgetary position of the Member State in question is prudent enough, the effect of the higher expected growth should be sufficient to keep the country out of the EDP.

In practice however, the length and depth of economic cycles are asymmetric and unknown and cannot, of course, be guaranteed to fit into a six year time period. This means that meeting the debt reference benchmark on either the backward or forward looking measures might at time require large fiscal efforts in bad times. As this is undesirable in itself, it is the pro-cyclical nature of the debt benchmark will be addressed as part of the assessment that will be undertaken when a breach of the benchmark is identified.

It should be noted that the pro-cyclicality inherent in the debt reduction benchmark is more pronounced than the pro-cyclicality of budget balance rules. In order to keep the debt in line with the pace of reduction prescribed by the benchmark in a year of slow growth, an additional fiscal effort is needed not only to offset the cyclical deterioration in the budget outcome, but also to compensate for the denominator effect on the debt ratio. ([2]) Taking account of the effect of the cycle on the ability of a country to meet the debt requirement is therefore necessary.

To undertake such an exercise, both the denominator and the numerator of the debt ratio need adjusting. Specifically the numerator can be adjusted by subtracting from the debt the cyclical component of the balance. The denominator can be adjusted by using an estimate of real GDP obtained by using potential GDP growth in the place of actual over the time period under consideration. The adjusted denominator is therefore the product of potential growth times inflation. The adjustment of the debt-to-GDP ratio thus depends on both the output gap and the difference between actual and potential growth.

To this end, the following estimate of the debt ratio can be used:

$$\left(\frac{B_t}{Y_t}\right)^{adjusted} = \left(\frac{B_t + \sum_{j=0}^{2}\left(C_{t-j}\right)}{Y_{t-3}\prod_{h=0}^{2}(1+y_{t-h}^{pot})(1+p_{t-h})}\right)$$

where B_t stands for debt, Y_t for GDP, y_t^{pot} for potential growth at constant prices, p_t for inflation, C_t for the cyclical part of the budget balance. ([3]) All the variables are already used in the fiscal surveillance process and are publicly available.

([1]) It should be noted that an increase in debt in t-1 would usually lead to the debt benchmark not being respected in year t.

([2]) Consider the basic approximated formula $b_t - b_{t-1} = -(b_{t-1})y_t - d_t$, where b_t is debt-to-GDP ratio, y_t GDP growth and d_t ratio of government balance to GDP. A back-of-the envelope calculation shows that for a country with a debt-to-GDP ratio at 90% and a cyclical semi-elasticity of government balance to GDP of 0.5, a difference of 1 percentage point in growth implies a 1.4 GDP points shortfall in debt reduction due to i) a difference of 0.5 GDP points in the cyclical deficit; and ii) a difference of 0.9 GDP points in the debt dynamics.

([3]) C_t is actually computed in terms of publicly available series. The series of cyclical components is multiplied by GDP as it is expressed as a percentage of GDP in the publicly available series.

(Continued on the next page)

Box (continued)

The purpose of the adjustment is to assess whether cyclical developments over the period t-3 to t were responsible for the breach of the debt reduction benchmark. The formula takes the debt ratio in year t-3 as given. It then adjusts both the numerator and the denominator for cyclical developments. The numerator is adjusted by adding the cyclical components of the deficit in years t-2, t-1 and t. Those are the first order cyclical components embedded in the debt levels of years t-2, t-1 and t, for a given debt level in t-3. With a positive output gap the adjusted debt will be larger than the observed debt and vice versa. The denominator is computed as the product of the actual GDP in year t-3 and the rate of potential growth in the following three years. The rate of inflation is used to convert real growth into nominal growth. ([1]) This gives the level that that GDP would have reached if it had evolved according to its potential. Note that it is not actually possible to directly use the series of potential output for this exercise, as the adjusted debt series and the benchmark would not be directly comparable if this were done.

The estimated series for the adjusted debt ratio is best be understood as a counterfactual figure, describing the path the debt ratio would have taken, had GDP been growing at potential. It should not be understood as a measure of "structural debt" in the sense that it is normally attached to this concept, such as when considering the structural balance. As debt is a stock variable, current debt is not affected by future cyclical developments, in contrast to the government balance.

([1]) Even if it is true that inflation is positively correlated with output it was decided to use actual inflation for two reasons: i) there is no well defined alternative benchmark for "potential" inflation; ii) there was no major difference in the results using as potential inflation the ECB benchmark, 2% or a rolling 6-years average of the actual inflation.

Whenever an EDP is opened for a country with a debt-to-GDP ratio above 60% of GDP, the recommended targets should be such as to allow, on the basis of the forecasts underpinning the recommendations, the debt ratio to be gradually brought on a sufficiently diminishing path, i.e. to respect the debt reduction benchmark, or the deficit to be brought below 3% of GDP in a credible manner, whatever condition is more stringent.([37])

The recognition that the process from making the right policy adjustments to meeting the debt benchmark is a long one also affects the abrogation of the EDP. To avoid extending the time countries are kept in EDP to collect enough backward looking data to measure compliance with the benchmark once they have adhered to the recommendations, abrogation will be possible on the basis of the debt benchmark being expected to be met at t+2 based on unchanged policy. In other words, the recommendations should require the general government balance to be gradually improved until it reaches a level that, if kept in structural terms, would allow the numerical benchmark to be respected from the second year after the deadline for correction. In this way, when Member States have taken the measures to ensure their debt is on the right trajectory for the future, they can be released from the EDP.

If the deficit data notified in t+1 for the year t recommended for the correction are in line with those foreseen in the recommendation and yet the debt-to-GDP ratio forecast for t+2 does not respect the benchmark, an extension of the deadline might be granted, via a new Council recommendation. Whether or not it is granted will depend on the reason of the foreseen breach of the benchmark; a possible reason for revising the recommendations without stepping up the procedures would be a macroeconomic scenario significantly worse than that envisaged at the time of the initial recommendation. Overall, at the time of assessment of effective action and throughout the excessive deficit procedure, events beyond the

([37]) Although not likely, as a deficit above 3% of GDP would normally entail lack of compliance with the debt benchmark, a high debt country could in principle be subject to an EDP opened on the basis of deficit criterion only, due to a sizeable reduction of the debt-to-GDP ratio in the previous years or to below-the-line operations that offset the negative impact on the debt-ratio effect. In any event, to ensure that the debt criterion is complied with, the EDP recommendations for high debt countries will always have to entail targets for the general government balance consistent with the numerical benchmark for the debt to be respected going forward. Only in case of unlikely high nominal growth, a correction of the deficit below 3% of GDP would be sufficient to ensure compliance with the debt benchmark.

government control with a substantial impact on public finances may allow an extension of the deadline for correction without the Council deciding that the country has not taken effective action. In view of the experience gained with the crisis, it is now also envisaged that the recommendation can be revised in case of a severe economic downturn affecting the euro area or the EU of the whole, on condition that this does not endanger fiscal sustainability in the medium term.

3.3.3. The transition arrangements

The introduction of the debt rule requires some account to be taken of how it will operate when it is first made operational. As the debt rule takes into account the outcomes of the previous three years, it is possible to have a breach of the benchmark with the introduction of the rule due to the conduct of fiscal policy in the past. Three years of consistent policy are required to ensure compliance with the debt requirement and this needs to be taken into account for the introduction of the debt rule.

The new Regulation specifies that "For a Member State that it is subject to an excessive deficit procedure at [date of entering into force of this Regulation …] and for a period of 3 years from the correction of the excessive deficit, the requirement under the debt criterion shall be considered fulfilled if the Member State concerned makes sufficient progress towards compliance as assessed in the Opinion adopted by the Council on its Stability or Convergence Programme." This is particularly delicate due to the current crisis situation, as care needs to be taken to ensure that the transition to the application of the debt benchmark considers the ongoing surge in debt levels due to the crisis and the fact that the existing excessive deficit procedures require a correction of deficit to below 3% of GDP, not the higher effort that would be needed to comply with the debt benchmark.

All countries with a debt ratio above 60% of GDP are currently in excessive deficit. Until the related deadline for correction, countries are required to implement the adjustment envisaged in the existing recommendations. The obligation to carry out the further adjustment needed to reach compliance with the numerical debt benchmark, will arise when the EDP is abrogated or in the event of a revision of the current EDP recommendations.

In the wake of the debt developments associated with the crisis, it can be expected that countries with a debt ratio above 60% of GDP will not meet the debt benchmark as soon as they are out of the current EDPs. Accordingly, it is foreseen that, in the Stability and Convergence Programmes following the notification of the deficit figure for the previous year below 3% of GDP triggering the abrogation of the exiting EDP, countries with a debt-to-GDP ratio above 60% put forward a plan that shows how they will manage their public finances to ensure that they are in a position to fully meet the debt benchmark at the end of a transition period of 3 years.

The Commission and the Council will assess whether the plans are adequate, require the possibly necessary adjustment and monitor that they are respected. Unless it is assessed to be due to unexpected economic event with major unfavourable consequences for the Member State's government finances, lack of compliance with the budgetary targets can be expected to entail the opening of an EDP.

Box II.3.3: Accounting for the stock-flow adjustments

As a general rule, the debt ratio equals the deficit ratio plus the growth effect. While this relationship is a very useful shorthand for discussing the properties of the benchmark, it omits variables which can be rather important in practice. These omitted elements are commonly called the *stock-flow adjustment (SFA)*.

Contrary to what the name might suggest, the SFA does not only include technical adjustments and statistical discrepancies but it also contains the changes in financial assets, which can be rather large in certain cases. The need to include financial assets in the assessment of the debt criterion stems from the fact that the Treaty defines government debt as *gross* debt, i.e. the stock of financial liabilities. Any financial liabilities incurred, however, always have a counterpart in accounting: either a change in financial assets (in case of pure financial transactions) or a non-financial transaction. Since only the latter is reflected in the deficit, changes in financial assets must be included in the SFA.

One of the reason why the change in government debt (and hence the SFA) has gained in importance as an indicator of fiscal policy is that the deficit has shown itself to be vulnerable to certain classification issues: governments may be tempted to record non-financial (above-the-line) transactions as financial (below-the-line) ones, since this treatment would have no impact on the deficit but only on the SFA. ([1]) By the same token, positive and persistent SFA is often seen as an indication of underestimated deficits. Of course, the SFA may be persistently different from zero for completely legitimate reasons, such as privatisation receipts (selling off of fixed assets) or the redemption of government debt. Therefore, a detailed analysis of the stock-flow adjustment could be needed when using the change in debt as a fiscal policy indicator.

A useful way to analyse SFA items is from a fiscal sustainability perspective. The sustainability of the public finances remains unchanged when the change in assets (financial or non-financial) matches the change in government liabilities. This is due to the fact that – ignoring holding gains or losses – the given asset could later be sold and the proceeds could be used to decrease liabilities. ([2]) While this holds in theory, it is rather implausible to assume that all the assets can be liquidated at any given point in time to redeem government debt. Therefore, to follow a prudent approach, only sufficiently liquid (and therefore only financial) assets should be considered and possibly netted out, when an analysis of the SFA is undertaken as part of the consideration of the debt benchmark.

The most liquid financial asset of the government is its cash reserve and therefore it therefore makes sense to disregard exceptional increases in cash when analysing the causes of the changes in debt. Consideration could also be given to marketable securities, at least if the market is sufficiently liquid, to determine whether a breach of the benchmark provides ground for placing a country in EDP. By contrast, the case for adjusting liabilities for changes in loans, where calculating the probability of a default makes establishing a value difficult, is weak. Moreover, the change in loans is one of the SFA items where suspicious below the line transactions typically appear. Since liabilities falling under the rest of the categories are not included in EDP debt, their counterparts on the asset side do not qualify for an adjustment either.

([1]) For instance, a loan granted by the government to a public corporation (outside general government) would normally be recorded as a financial transaction without an impact on the deficit while increasing the SFA (assuming that the government raised the money necessary through issuing bonds). However, if this loan was unlikely to be recovered then this would have to be recorded as a non-financial transaction increasing the government deficit instead of the SFA.

([2]) In fact, this argument forms the basis of the *net* debt concept, which looks at financial liabilities in excess of financial assets.

4. NATIONAL FISCAL FRAMEWORKS

4.1. INTRODUCTION

As part of the proposals on economic governance reform adopted on 29 September 2010, the Commission put forward a proposal for a Directive setting out minimum requirements for Member States' fiscal frameworks with a view to ensuring consistency between national fiscal governance and Treaty provisions on budgetary discipline. The Directive defines budgetary frameworks as '*the set of arrangements, procedures, rules and institutions that underpin the conduct of fiscal policy*'. The requirements of the Directive cover five areas of budgetary policy-making, namely accounting and statistical issues, forecasting practices, numerical fiscal rules, medium-term budgetary frameworks for fiscal planning, and transparency and the comprehensive scope of frameworks.

The choice of a directive as the appropriate vehicle for policy action responded to the need to achieve balance in Member States' requirements. Unlike voluntary standards the directive is binding, setting out rules to be enforced, but, unlike a Regulation, allows Member States to choose the means by which they will comply with its requirements. Member States must approve national rules within a given transposition deadline and once this deadline is passed, the Commission may trigger infringement proceedings before the European Court of Justice if the provisions contained in the directive have not been properly set into Member States' respective legal order.

The use of a directive as legal instrument has been chosen precisely because the legislation does not aim to achieve maximum harmonisation across countries. While it would in theory be possible to gather best practices and embed them into the EU's legal order, the current approach focuses on the minimum requirements necessary to ensure that national fiscal policy making can rise up to the budgetary requirements in the Treaties. Going beyond minimum requirements and aiming at desirable features instead would not have been compatible with the considerable differences between across Member States' administrative and institutional structures. These differences mean that a single blueprint would not have been optimal as it would not, by definition, take into account the political and administrative environment in which fiscal policy making is set. The choice of minimum requirements seeks to apply the lessons learnt from features that are conducive to good policy making, and allowing Member States the discretion of applying them in an appropriate way. When exercising its monitoring powers, the Commission will assess the effective nature of the adopted or existing provisions against the Directive's goals, irrespective of the status of the legal instruments that will have to be used to reach the directive's goals.

The choice of a directive fits well with the final conclusions of the Task Force on economic governance chaired by Herman van Rompuy. It recommended a two-tier approach combining the release of a legally-binding text covering essential features, while a set of non-binding requirements should be adopted through a voluntary approach in the form of a peer review process conducted at the Economic Policy Committee. The peer review process, which has begun in earnest in May 2011, is essentially country-based and encompasses additional issues not covered in the directive while keeping in mind idiosyncratic domestic features as regards national legal systems and institutions. Since the directive and the peer review process are essentially complementary instruments, the stage is set for rapid progress in the field of fiscal frameworks, especially in Member States where institutional features have been lagging behind. Since some Member States are more advanced than others, the directive should lead to differentiated efforts, with some Member States being required to undertake significant reforms to comply with the Directive's provisions. However, no Member State has reached such a stage where it could dispense with any extra steps to implement the directive. The adoption of the Directive should therefore foster progress in every EU Member State. It constitutes a powerful yet smooth instrument to produce incremental change in the fiscal frameworks of Member States.

4.2. NATIONAL SYSTEMS OF PUBLIC ACCOUNTING AND STATISTICS

No effective public policy can be undertaken without accurate and comprehensive data. Sound data are necessary to effectively support the

Table II.4.1: **Instruments for the improvement of budgetary frameworks in the EU**

	EU Directive on budgetary frameworks	EPC Peer Review
Objective	Bring national frameworks up to minimum requirements	Enhance national frameworks up to desirable requirements
Instrument	Directive provisions	Policy advice adopted by the EU Economic Policy Committee
Focus	Uniform approach for all Member States	Country-based
Legal Strength	Binding	Voluntary
Scope	Limited to the directive provisions	Unrestricted
Enforcement	Possible infringement procedure after transposition deadline expires	Peer pressure in regular reviews of national frameworks
Strength	Legal certainty and equality of treatment	Flexibility
Risks	Least common denominator approach	Unevenness

Source: Commission services

budgetary process at all stages, from budget preparation to execution.

The European Union benefits from a solid methodological framework for the production of public finance statistics in the form of the European System of Accounts 1995. Capitalising on this sound methodological basis is a prerequisite to ensure the production of high quality and comparable statistics across Member States. Sound fiscal statistics in turn are crucial for a proper functioning of the EU fiscal surveillance framework. Issues that have emerged in the monitoring of fiscal policy since the onset of the crisis, have underscored the importance of the availability of timely and reliable fiscal data. In particular, it is critical for the general government perimeter to be properly ascertained and data quality to be carefully checked.

The directive tackles accounting and statistics in its first section, to ensure that sound methodology presides over the production of statistics. In particular Article 3 of the Directive requires that Member States' public accounting system should be subject to audits. Audit refers both to internal and external audit. Internal audit refers to the operation of specific units or departments inside each ministry or major body (i.e. this allows for small institutional bodies to share the same internal audit department) aiming at checking the efficiency of operations, the reliability of financial reporting and the compliance with laws and regulations. In the specific case greater focus is on conducting regular reviews of internal procedures and integrity of data production systems. External audit is carried out by external bodies, whether by public institutions such as the Court of Auditors or private auditing bodies. Audit should also foster the adoption of best international practices wherever possible. In the past it was found that entities belonging to the general government sector were only occasionally or rarely audited. The directive makes sure that all government layers are subject to regular checks.

In addition, the Commission will keep up the momentum by preparing an assessment by 2012 of the suitability of the International Public Accounts Standards (IPSAS) for EU Member States. IPSAS are based on International Financial Reporting Standards (IFRS) and are prepared by the International Public Sector Accounting Standards Board, a Board established under IFAC, the global organisation for the accountancy profession. The assessment will review the state of play on IPSAS implementation within EU countries and the suitability of IPSAS for adoption across the EU.

Article 3 of the Directive also requires Member States to publish cash-based fiscal data. It was agreed that reporting would be conducted at a monthly frequency for the central government, state government (regions) and social security with each subsector thereof separately identified, before the end of the following month. Local government would be required to report on a quarterly basis only, as the sector may comprise hundreds, if not thousands, of smaller reporting entities. The timely publication of data might entail the recourse to suitable estimation techniques based on sampling, with a subsequent revision using complete data. While the informational content of monthly data taken in isolation may be affected by considerable volatility and noise, the time series can reveal patterns warranting closer surveillance, which the more refined corresponding ESA95 figures would confirm only at a later stage.

Recent studies undertaken by the ECB show that the so-called mixed frequency models, which are based on the use of monthly, quarterly and annual budgetary data, can provide forecasts of fiscal variables that are in some respects superior to methods relying exclusively on annual or quarterly data. Specifically, the three-frequency structure of these models allows to now cast quarterly figures by using monthly fiscal statistics and in turn to use quarterly and monthly figures to now cast annual data. Therefore, provided data are not taken at face value, a set of intra-annual fiscal data may provide useful information for those in charge of the monitoring of budget execution. ([38])

While this is already the case for central government in many Member States, readily-available cash data are not often available for other sub-sectors of general government. Member States might have to undertake IT-related work, especially if government payments are managed over several bank accounts or procedures. Such investment would provide dividends over the medium-term as public finance management would become more reactive.

The timely delivery of cash data will enable a better assessment of the latest fiscal trends by external bodies competent in the field of public finance, fuelling an informed policy debate on fiscal policy choices and providing an important element of accountability for Parliament, economic research institutes and investors. For accountability purposes elements explaining how ESA95 data is derived from primary sources should also be made publicly available.

Macroeconomic and budgetary forecasts

Macroeconomic and budgetary forecasts represent an essential component of the budget process. Biased or unrealistic macroeconomic and budgetary forecasts may considerably hamper the effectiveness of fiscal planning and consequently impair a government's commitment to budgetary discipline. In some cases this might lead to a looser fiscal stance than expected in the documents presented to national Parliaments, compromising the truthful presentation of national budgets. While the necessarily contingent nature of forecasting in a rapidly-changing environment has to be recognised, the directive sets out the principle of realistic forecasts on the basis that transparency and analysis of forecasting methodologies can significantly increase the quality of national macroeconomic and budgetary forecasts for fiscal planning.

Transparency is a key element in ensuring the realism of the forecasts used in the budgetary process. It should encompass the public availability of the official macroeconomic and budgetary forecast prepared for fiscal planning, and also of the methodologies, assumptions and relevant parameters on which these forecasts are based. The consideration of alternative scenarios is important to analyse how fiscal variables would evolve under different economic assumptions. While the production of such alternative scenarios should not become cumbersome, they can prove very useful if the scenarios they are based on or the risks they consider, materialise over the course of the fiscal year. Alternative scenarios add to the credibility of the process by implicitly recognising the possibility of deviations from the central scenario and provide some estimates of the fiscal consequences involved. For example, such alternatives can provide a guide to fiscal consequences of lower-than-expected growth and can guide policy makers to adjust fiscal variables appropriately during the year.

Furthermore the reliability of the forecasts used for budgetary planning can be improved through comparisons with forecasts of other bodies or institutions. Against this background, the Commission forecasts can serve as a natural benchmark. Significant differences between the chosen macro-fiscal scenario and the Commission forecasts should be explained, particularly if the level or growth of variables in the national assumptions departs significantly from the values given in the Commission's forecasts. Of course, comparison should not be understood as alignment: as national budgetary calendars are not synchronised with the Commission's forecast cycle, different national forecasts remain fully legitimate for obvious timing and subsidiarity reasons. It is, however, important to foster an informed dialogue between the Commission, independent economic institutes and more generally all relevant stakeholders to strengthen the robustness of forecasts and accountability to the wider public.

([38]) See also Silvestrini et al. (2008)

Finally, sound operating procedures call for independent institutions to undertake *ex post* assessments of forecasting performance. While forecasting error remains consubstantial to any macroeconomic exercise, significant errors during four years in a row would constitute strong evidence of systematic bias. The concerned Member State would then have to take action and report it publicly, according to the terms of the Directive.

Numerical fiscal rules

Recent economic literature and country-specific policy experiences provide ample evidence that well-designed numerical fiscal rules significantly enhance budgetary discipline. From an empirical perspective, lessons learnt from the first decade of the euro highlighted the need to complement the EU-wide fiscal rules enshrined in the EU Treaty with national fiscal rules. With the benefit of hindsight, in some Member States national stakeholders struggled to meet the level of discipline induced by the Stability and Growth Pact, leading to weak ownership of the common rules when it came to implementing them. As a response to this, it was felt that national fiscal rules can provide effective domestic leverage for a better functioning of the Stability and Growth Pact through three different channels. First, national fiscal rules should facilitate the implementation of EU rules by transposing, in operational terms, the EU fiscal targets and anchoring them in national policy-making at all government levels. Second, national fiscal rules should foster an environment conducive to sound fiscal policy through increased domestic ownership of fiscal goals. Finally, national fiscal rules should provide benchmarks to gauge the performance of country-specific fiscal policy for transparency and accountability purposes both quantitatively and qualitatively. The inclusion of numerical fiscal rules in the draft Directive is consistent with the Final Report of the Task Force on economic governance, which includes them among the minimum requirements to be fulfilled, and with the spirit of the Stability and Growth Pact, given that the EU fiscal framework is a rule-based system relying on numerical fiscal targets.

In its Article 5 the directive specifies that Member States shall have in place numerical fiscal rules that effectively promote compliance with their respective obligations deriving from the Treaty in the area of budgetary policy. Consistent with subsidiarity principles, the directive does not earmark one specific type of fiscal rule to be adopted by Member States. Given the variety of national situations and institutions, a one-size-fits-all policy would not have been warranted. It is left for softer mechanisms such as the peer review mechanism conducted at the Economic Policy Committee to recommend specific design features taking into account each country's legal and institutional environment. However, for fiscal rules to have a significant effect on the conduct of fiscal policy a number of features are key. These features are set out in the directive. Their targets and scope of numerical fiscal rules must be defined. Effective and timely monitoring of the rules must be ensured, based on reliable analysis discharged by independent bodies or bodies endowed with functional autonomy vis-à-vis the fiscal authorities of the Member States. Such authorities could include the Court of Auditors, in its capacity as a public institution with longstanding authority. For the effectiveness of any fiscal rule to be ensured, it is important that monitoring of the implementation be also carried out by a third party, in addition to the concerned institution or sub-sector of general government. This watchdog position may include the possibility for the third party to issue suggestions on the design of the underlying fiscal rule itself, at the Member State's discretion.

The directive also calls for 'consequences in case of non-compliance' to be set out. Such consequences should be understood in the broad sense and may not necessarily involve the imposition of pecuniary sanctions, but should be at least of a reputational nature, e.g. the obligation for the Finance Minister to publicly explain why the rules were not respected.

Member States should also specify escape clauses from the numerical fiscal rules in force, with a limited number of triggering circumstances and stringent procedures attached to them. Paradoxically, clear and detailed escape clauses may reinforce credibility by limiting the list of events allowing non-compliance. On the contrary, vague escape rules might be perceived as a licence to tamper with the rules. Non-existent escape clauses represent either a very strong form of commitment, or alternatively, may be seen as unrealistic, given the wide range of possible

exceptional events beyond the government's control.

Considering that by virtue of Protocol 15 of the Treaty, the reference values mentioned in Protocol No12 are not directly binding on the United Kingdom, the obligation to have numerical fiscal rules in place will not apply to the United Kingdom, although the rest of the directive will.

Medium term budgetary frameworks

Although the approval of the annual budget law remains the key instrument for adopting fiscal policy decisions, most fiscal measures have budgetary implications that go well beyond the yearly budgetary cycle. While the annual nature of budgets has been a standard feature in all Member States enabling democratic oversight by elected representatives, the adoption of a multiannual perspective can improve of quality of fiscal-policy making. This multiannual perspective is also referred to in the SGP, which requires Member States to achieve country-specific medium-term budgetary objectives (MTOs) over the economic cycle. Reaching such MTOs might take some time, especially in adverse economic conditions, so multi-annual frameworks are especially useful in fiscal consolidation episodes. As back-loading is a recurrent feature of fiscal consolidation plans, a multi-annual perspective should allow stakeholders better to understand the inter-temporal trade-offs of national fiscal strategies. Additionally, going beyond the annual horizon provides budget planners with a better timeframe to manage revenue and expenditure. While Stability and Convergence Programmes (SCPs) are already presented from a multi-annual perspective, these policy documents have remained of limited policy relevance in the domestic debate surrounding the discussion of budgetary strategies, despite the fact that Member States are supposed to draft their budget in accordance with their SCP commitments.

This is why the directive requires that Member States establish a credible and effective medium-term budgetary framework providing for the adoption of a fiscal planning horizon of at least three years. The precise time period is left to countries' discretion. Some might align the duration of their MTBF to the parliamentary term in order to ensure consistency and accountability.

The directive also requires Member States to link effectively the multi-annual perspective embedded into the EU fiscal framework (including the achievement of the MTOs) with domestic fiscal policy-making. An appropriate breakdown of both revenue and expenditure projections is necessary to show how fiscal variables should adjust to reach the fiscal targets.

Similarly to the fiscal rules, the directive sets out minimum requirements concerning domestic MTBFs. Its Article 8 requires Member States to establish an effective medium-term budgetary framework providing for the adoption of a fiscal planning horizon of at least three years to ensure that national fiscal planning follows a multiannual budgetary perspective. To this end, detailed projections of every major expenditure and revenue item by general government sub-sectors for the relevant period considered in the MTBFs should be drawn up. These projections should be prepared under the assumption of unchanged policies, for practical reasons.

The MTBFs should provide a comprehensive picture for the general government, including social security, regional and local government, so as to obtain a general view of each sub-sector's contribution to the attainment of the shared national fiscal objectives. Obviously, the medium-term structure of the MTBF shall not prevent a new government from updating it to reflect new circumstances or policy objectives.

Transparency of general government finances and comprehensive scope of budgetary frameworks

The transparency of general government finances and the need for a comprehensive coverage of national fiscal frameworks are crucial to ensuring that the budgetary data used for fiscal planning and monitoring provide an accurate picture of the current and expected state of public finances.

Firstly, the growing fiscal decentralisation in a significant number of Member States calls for a comprehensive scope of the rules governing domestic fiscal policy-making if consistency between national and EU fiscal governance is to be ensured. Specifically, the increasing role of territorial governments means that national fiscal frameworks must comprehensively cover all

general government tiers, if they are to aid compliance with the SGP provisions. This implies a need for appropriate coordination mechanisms across government sub-sectors ('national stability pacts'), including the establishment of numerical fiscal rules for all layers. In doing so, the draft directive may help tackle the potential asymmetry regarding the budgetary stability objective between the central government, which according to Protocol No.12 of the Treaty is the only one responsible for fiscal consolidation commitments vis-à-vis EU authorities, and regional and local governments which manage an increasing share of public expenditure.

Secondly, Article 12 also promotes the transparency and reliability of public finances by requiring information on specific elements of domestic fiscal policy-making that are frequently outside the standard budgetary process. Recourse to extra-budgetary funds, tax expenditures and creation of contingent liabilities (guarantees) may obfuscate the true situation and development of public finances, thereby hampering the planning and the conduct of fiscal policy.

Rather than demanding a detailed list of all operations and transactions carried out by extra-budgetary funds in the standard budgetary information, the provision is meant to make sure that all extra-budgetary funds are clearly identified and their aggregate impact on the budget balance is properly taken into account.

Likewise, the directive requires Member States to publish detailed information on the impact of tax expenditures on government revenues. In a significant number of Member States, including those at the forefront of institutional budgetary reforms, the growing recourse to tax expenditures has sometimes undermined effective fiscal planning and might have been used to circumvent some of the fiscal rules currently in place. Comprehensive and transparent information on existing tax expenditures and reliable estimates of their impact on the general government balance may help reduce their extensive use by raising awareness of their full budgetary cost.

Finally, the existence of contingent liabilities deserves due attention for transparency purposes. Contingent liabilities encompass possible obligations depending on whether some uncertain future event occurs, or present obligations where payment is not certain or the amount cannot be measured reliably. They comprise for instance government guarantees, non-performing loans, and liabilities stemming from the operation of public corporations, including, where appropriate, the likelihood and potential due date of expenditure contingent liabilities.

Overall Member States must transpose the directive into their national legal order before the end of 2013. The deadline should give them sufficient time to prepare and implement the requested reforms. In 2012, the Commission will provide an interim progress report on the implementation of the main provisions of the directive on the basis of relevant information from Member States. The directive itself shall be reviewed in 2018 to determine whether all of its provisions are still suitable to the evolving environment. Along with the peer review mechanism among Member States, the directive will give a significant impetus to the strengthening of fiscal governance in the EU and open new avenues for discussion and action in related areas related to budgeting and budgetary processes, with possible further developments to be expected in the coming years.

Box II.4.1: **Fiscal Frameworks on the move.**

Increased scrutiny and recent theoretical and empirical findings in the literature have reinforced the case for reforms of fiscal frameworks. Due to the deeply-rooted nature of some national features, reforms have usually been carried out gradually. This box describes current reforms undertaken in several Member States.

In **Italy**, a reform adopted in 2009 which entered into force in January 2010 overhauled accounting rules in the general government and the budgetary process. This coincided with the introduction of a new institutional set-up between central and sub-national governments as part of a move towards fiscal federalism. Budgetary targets in the already-longstanding medium-term framework are now specified by central government sub-sector (central government, regional/local administrations and social security bodies). To improve transparency of the budgetary process, accounting methods are to be harmonised across all government entities, while a single database shall collect relevant information from all administrations for the purposes of budgetary planning and monitoring.

In the **United Kingdom**, the three key pillars of a new framework introduced in May 2010, foresee the setting of a new "fiscal mandate" targeting the cyclically-adjusted current balance, the setting of a target date for net debt to be falling as a percentage of GDP and the establishment of the Office of Budgetary Responsibility (OBR). The new government's fiscal mandate requires that the cyclically adjusted current budget (public borrowing excluding investment expenditure) should be in balance by the end of a rolling 5-year forecast period, currently ending in 2015–16. This is supplemented by a debt sustainability target which currently requires that public sector net debt as a percentage of GDP is falling by the fixed date of 2015–16. Finally, the new Office for Budget Responsibility is tasked with producing the official macroeconomic forecast underlying annual budgets. Although this is not required in law, the government took the political commitment to follow OBR forecasts in the preparation of the budget.

In **France**, the government has announced a Constitutional revision that would embed the principle of balanced budgets into the Constitution and enable multi-annual budget framework laws. For each year of the multiannual planning, a minimum level of tax receipts, together with a maximum growth rate in volume terms of public expenditure will be set. Each year, the annual central government and social security budgets will set targets on both the revenue and the expenditure side in line with those presented in the multiannual budget planning.

Countries under adjustment programmes are facing a specific challenge. While the priority has been given to implement fiscal consolidation in the short term, national authorities have also launched a number of reforms with a view to strengthening their fiscal framework at the invitation of the Commission and the IMF. These reforms are implemented following adjustment programme conditionalities defined jointly by the Commission, the ECB and the IMF.

In **Greece** the Memorandum of Understanding foresees a number of 'fiscal-structural' measures: (i) the establishment of a medium-term fiscal framework based on rolling three-year expenditure ceilings for central government, social security and local government; (ii) the strengthening of the position of the Ministry of Finance vis-à-vis line Ministries in both budget preparation and execution phases granting it veto power decisions and execution and control over a budget contingency general reserve; and (iii) the creation of a budget office attached to Parliament providing independent advice and expert scrutiny on fiscal issues.

In **Portugal** efforts to improve the budgetary procedure have materialised through a comprehensive Budgetary Framework Law adopted by the government in December 2010. The law is deemed to be inspired by the letter and spirit of the Commission directive on budgetary framework and aims at establishing: (i) a multi-annual framework with expenditure and budget balance rules; (ii) a more comprehensive control of public government beyond central government to encompass all sub-sectors of general government as per ESA-95 rules; (iii) programme budgeting; and (iv) an independent fiscal council. In addition, the government has announced its intention to better monitor State-Owned Enterprises and Public-Private

(Continued on the next page)

Box (continued)

Partnerships. These two elements had been previously identified as a potential source of substantial liabilities for public accounts.

In **Ireland** a comprehensive reform is under preparation, with the introduction of a new Fiscal Responsibility Law and the establishment of a Budgetary Advisory Council. The main innovations are centred on several complementary fiscal rules. The Public Finances Correction Rule links the fiscal efforts to the distance from the Treaty reference values. The Prudent Budget Rule secures a minimum annual improvement of the primary budget of 0.5% of GDP until the Medium-Term Objective has been reached. The Sustainable Expenditure Growth Rule should prevent a faster growth of gross current government expenditure than the underlying medium-term nominal rate of growth in the economy unless funded by other sources of revenue.

In addition, Latvia and Romania have been receiving policy invitations in the context of the EC-IMF Balance-of-Payments assistance programme. In **Latvia**, elements that could contribute to a stable and sound fiscal policy are present, but remained underdeveloped. This is why a new Fiscal Responsibility Law and related amendments to the Constitution are being prepared. The envisaged constitutional amendments envisage the strengthening of the medium-term budgetary framework. **Romania** is somehow more advanced as it adopted a far-reaching fiscal responsibility law introducing eight new fiscal rules applicable to the general government sector, including in particular local government. The multi-annual character of these rules has been strengthened by embedding them in the Medium-Term Budgetary Framework.

Part III

Fiscal governance and sovereign spreads

1. FISCAL GOVERNANCE AND SOVEREIGN SPREADS

1.1. INTRODUCTION

Fiscal governance has been shown to be instrumental to sound public finances, not least by enhancing the likelihood of successful adjustment (Larch and Turrini (2008).) There are different channels through which fiscal governance might impact on public finance outcomes. A direct and so far unexplored channel is the effect that fiscal governance might have on risk premia paid on public debt.

After times of compressed yield spreads in the early years of EMU, the economic and financial crisis has witnessed mounting differences in the cost of government debt across euro area participants. Indeed, at the onset of the new millennium, differences in euro area members' government bond yields amounted to no more than 40 basis points, but they have widened to up to 200 basis points already in 2009 to reach record levels of over 1000 basis points Greece by 2011; sovereign spreads of the EU members that have not introduced the euro were higher throughout the decade but similarly mounted in the wake of the crisis, reaching double-digit percentage points in Latvia and Lithuania.

Sovereign spreads are the differential between a country's sovereign bond yield and the yield of a risk-free bond. Together with the yield of that bond and the amount of debt, these spreads establish the cost that governments have to pay for new and rolled-over debt. The cost of debt has obtained increased significance for EU Members recently: as their public debt grew from around 60 to 80 per cent of GDP on average, interest on debt represented 2.7 per cent of total EU GDP in 2010 and in some countries, interest payments on debt accounted for 70 to 80 per cent of the general government deficit. Thus, bringing down the cost of debt is of paramount importance. Intuitively, sovereign spreads have two determinants: the probability of the debtor's default and the pricing of the risk implied by this probability. At the end of the day, to economise on the expenses to be paid for public debt, sovereigns have to improve on their long-term solvency, as (except for the level of debt) the other determinants of the cost of debt are outside governments' control.

Frameworks of fiscal governance comprise rules, regulations and procedures that shape the planning, implementation and monitoring of budgetary policies. A growing body of empirical research has elaborated on the contribution of fiscal governance to fiscal prudence. Well-designed elements of fiscal governance can diminish the threat of large deficit and unsustainable debt developments and should, to the extent that they are credible, condition expectations on fiscal policy outcomes. Therefore, beyond their indirect effect exerted via lower levels of deficit and debt on average, sound fiscal governance frameworks should have a more direct effect on the expected probability of default that should materialise in lower risk premia also once deficit and debt levels are controlled for. We thus argue that well-designed fiscal governance frameworks provide a means to diminish the cost of government debt in particular by decreasing the risk of default and the premium required on it. As shall be set out in Section III.1.4 in detail, the determinants of the risk of default – naturally, first and foremost, deficits and debt but also the quality of fiscal governance, as well as further determinants of the sovereign spreads such as the level of risk aversion and the risk-free bond yield – shape the sovereign spreads multiplicatively. Thus, according to our model, the impact of enhancing fiscal governance is higher for countries with higher levels of deficit and debt, and in times of higher risk aversion.

This Part provides evidence on the impact of fiscal governance on sovereign spreads that constitute an important component of the cost of public debt. As expectations of sovereign default are an important determinant of these spreads, we complement our analysis by looking at more direct indicators of sovereign default probabilities as well: sovereign credit default swap (CDS) spreads and sovereign credit ratings provided by rating agencies. We proceed as follows. We first provide an overview of the recent empirical literature on the determinants of government bond yield spreads, sovereign CDS spreads and sovereign credit ratings respectively on the one hand and on fiscal governance institutions on the other (Section III.1.2.) Next we provide a descriptive analysis of the link between sovereign risk premia and fiscal governance institutions, in particular numerical fiscal rules and fiscal councils; the picture is completed by information on CDS spreads and the

rating of the European sovereigns by credit rating agencies (Section III.1.3.) We then provide econometric results on the impact of numerical fiscal rules on sovereign spreads in the euro area, building on a structural model of such spreads in the presence of risk aversion, and present predictions implied in our analysis on the impact of improving rules-based fiscal governance on the sovereign spreads in specific euro area countries that would benefit from such improvement most (Section III.1.4.)([39])

1.2. FISCAL GOVERNANCE AND SOVEREIGN RISK: REVIEW OF EMPIRICAL EVIDENCE

Empirical research of the past two decades has shed light into the role fiscal governance plays in determining public finance outcomes. The bulk of the contributions is focused on numerical fiscal rules. While earlier research concentrated on the experience of the US states, sometimes in view of obtaining insights for the nascent EMU (von Hagen (1991); Bayoumi and Eichengreen (1994); Alesina and Bayoumi, (1996); Bohn and Inman (1996)) the focus of the analysis then shifted to Europe. The effectiveness of national fiscal rules with respect to fiscal performance has been shown to depend on the mechanisms established to enforce compliance with the rule (Inman (1996); Ayuso-i-Casals, Gonzalez Hernandez, Moulin and Turrini (2009)) and on the type of the rule; budget balance and debt rules appear to outperform expenditure rules (Debrun, Moulin, Turrini, Ayuso-i-Casals and Kumar (2008).) Fiscal rules are found to be instrumental in initiating lasting fiscal consolidations (Larch and Turrini (2008)) and in fulfilling medium-term fiscal plans presented in the Stability and Convergence Programmes of EU members, which is a central plank of EU budgetary surveillance (von Hagen (2010).) The role of fiscal rules in the budgetary process has been scrutinised as well: empirical evidence is not fully conclusive whether fiscal rules serve as commitment devices to effectively tie the hands of governments not to pursue short-sighted and pro-cyclical budgetary policies (Debrun and Kumar (2007a) and Debrun et al. (2008),) or whether they merely have a signalling role and remove information asymmetries between governments and the electorate, without changing the behaviour of governments (Debrun and Kumar (2007b) and Debrun (2007).) On the EU level, fiscal rules have been shown to be effective, but to lead to significant creative accounting aimed at their circumvention (von Hagen and Wolff (2006) and Buti, Nogueira Martins and Turrini (2006).) Theoretically, it has been elaborated that supra-national rules are welfare improving relative to merely national regimes, but that they cannot fully eliminate the deficit bias, which calls for strong national rules as well (Krogstrup and Wyplosz (2010).)

A number of empirical contributions also take a look at other institutional features of fiscal governance. The degree of centralisation of the budget process as a remedy to the risk of deficit bias resulting from the common pool problem inherent to public finance has been well documented to result in better fiscal outcomes both in the European Union (von Hagen (1992); von Hagen and Harden (1994); de Haan and Sturm (1994); Hallerberg and von Hagen (1998); Hallerberg et al. (2007),) central and eastern European countries (Gleich (2002); Yläoutinen (2004a) and (2004b); Latin American countries (Alesina et al. (1999); Stein et al. (1999)) Asia (Lao-Araya (1997) as well as the US States (Strauch (1998).) Furthermore, independent fiscal institutions have been found to contribute to the emergence of fiscal rules or their effective enforcement (Debrun (2007).) Most recent research has found that the quality of medium-term budgetary planning frameworks, and the degree of budgetary transparency as well as the tightness of numerical fiscal rules help reduce over-optimism inherent to first-release macroeconomic data that are used for budgetary planning and fiscal surveillance (Beetsma et al. (2011).)

The past several years have also witnessed a surge of research on the impact of fiscal variables on spreads in government bond yields as well. In an international context, a positive relationship between public debt and interest rates has been consistently confirmed (Edwards (1986); Alexander and Anker (1997); Lemmen and Goodhart (1999); Lonning (2000); Copeland and Jones (2001); Codogno, Favero and Missale

([39]) Section III.4 is based on Iara and Wolff (2011), that is a further development of recent research carried out by the Commission services on the impact of numerical fiscal rules on sovereign spreads (ibid., 2010).

(2003).) In the euro area, sovereign spreads are documented to be determined by debt, deficits, and debt-service ratios (Bernoth, von Hagen, and Schuknecht (2004).) On the sub-national level, the price of public debt is confirmed to reflect fiscal fundamentals (Schuknecht, von Hagen and Wolswijk (2009); Heppke-Falk and Wolff (2008); Schulz and Wolff (2009).) The global financial crisis increased the attention paid to the impact of risk perceptions and the increasing relevance of domestic fiscal variables on the price of public debt (Barrios, Iversen, Lewandowska, and Setzer (2009),) as well as on variations in time in the weight of various determinants (Bernoth and Erdogan (2010).)

Empirical research has also studied the impact of fiscal restraints on the cost of public borrowing, looking at US states in particular. Bayoumi, Goldstein and Woglom (1995) show that the impact of constitutional controls on the cost of debt depends on the level of debt: at average levels, the presence of such controls is found to be associated with a reduction of the interest cost by 50 basis points. Eichengreen and Bayoumi (1994) confirm the negative impact of fiscal rules on the cost of government borrowing. Poterba and Rueben (1999) uncover that expenditure, deficit, and debt rules (negatively) as well as tax limitations (positively) impact on state bond yield differentials; debt rules appear to be the least effective. Differentiating this result, Johnson and Kriz (2005) show that revenue limits have a direct impact on state borrowing, while the effect of numerical fiscal rules is indirect via improved credit ratings. For the euro area, Hallerberg and Wolff (2008) reveal that government bond yields are determined by institutional characteristics of the fiscal process; controlling for institutional quality also differentiates the impact of EMU on the pricing of sovereign bonds. Bernoth and Wolff (2008) highlight the impact of hidden policy activity, creative accounting practices, and transparency of government budgeting on sovereign spreads in the euro area.

Sovereign CDS spreads are in theory considered to measure the premium required on top of a riskless bond (Hull et al., 2004). Other than on corporate bonds, little research has been done on sovereign CDS markets so far; none of this work is directly related to fiscal governance. From a pre-crisis sample of both developed and emerging-market economies, Longstaff et al. (2007) find that sovereign CDS spreads are highly correlated, implying that the risk premium almost entirely compensates for global risk, while local economic conditions play a modest role. In the same vein, Remolona et al. (2007) analytically separate information contained in CDS spreads on sovereign default risk and its price to show that the risk premium is even larger than for corporate CDS spreads, maybe reflecting limited possibilities of diversification. Calice et al. (2011) studying liquidity spillovers between sovereign bond and CDS markets in the euro area show how the crisis has changed the mechanism of price formation in CDS markets, notably in the euro area: they find bond yield spreads determine CDS spreads prior to the crisis and the other way around later, and confirm an important role of CDS markets for price formation of sovereign debt in some euro area members but not in those most affected by the sovereign debt crisis.

A third (and more direct) measure of sovereign risk is provided by sovereign credit ratings, which are supposed to directly translate into probability rankings and are independent of valuations of risk. Documenting an effect of ratings on sovereign spreads on top of publicly available information, Cantor and Packer (1996) confirm that such ratings are consistent with economic fundamentals, a finding confirmed by Afonso et al. (2007). Reisen and von Maltzan (1999) apply Granger causality tests to find mutual interdependence between changes in sovereign ratings and in bond yields during the Asian financial crisis. Reinhart (2002) argues that sovereign ratings predict defaults but fail to do so with currency crises, perhaps due to the fact that currency crises significantly increase the likelihood of a default. Block and Vaaler (2004) finally show by means of studying sovereign risk ratings in developing countries that the cost of capital increases prior to elections. Again, fiscal governance has not yet been addressed in this empirical analysis.

1.3. FISCAL GOVERNANCE AND SOVEREIGN RISK: DESCRIPTIVE ANALYSIS

1.3.1. Measures of the quality of fiscal governance in EU Member States

Fiscal governance frameworks have many dimensions. Two aspects of specific relevance are national numerical fiscal rules and fiscal councils. These elements were the focus of the analytical work of the Commission services in the past couple of years. Following a 2006 mandate of the Ecofin Council to conduct a comprehensive analysis of fiscal governance in the Member States, this analytical work made use of a specific dataset compiled on national fiscal governance in the EU Member States. To explore the impact of the strength of fiscal governance on sovereign spreads, we will use two measures of the quality of fiscal institutions constructed from these data, specifically an index on fiscal rules, and another on fiscal councils. Below we explain the construction of these indices and describe the situation in EU Members according to these measures.

The fiscal rule index is obtained as follows.([40]) Characteristics of fiscal rules are first graded along five dimensions; the scores obtained for each fiscal rule in force are then aggregated to a single index per country and year. The five dimensions cover (1) the statutory base of the rule, (2) room for revising objectives, (3) mechanisms of monitoring compliance with and enforcement of the rule, (4) the existence of pre-defined enforcement mechanisms, and (5) media visibility of the rule. The scores for each dimension of the fiscal rule are aggregated to a single measure of the strength of the rule using weights obtained as averages of 10,000 randomly drawn numbers from a uniform distribution.([41]) Finally, the measures for each rule are added up to a single comprehensive score per country and year, where the aggregated scores per rule are adjusted by their coverage of general government finances.([42]) An improvement of the index is achieved by strengthening one or several existing numerical fiscal rules along either of the above dimensions, by introducing new numerical fiscal rules, or by extending the coverage of general government by existing or new rules.

Graph III.1.1 portrays the strength of rules-based fiscal governance according to this fiscal rule index in EU Members in 2000, 2005, and 2009.([43]) The average quality of fiscal governance in the EU-27 has improved in the past decade, although 2009 saw a decline in the quality of fiscal governance in several countries: part of the fiscal rules were temporarily suspended or overhauled in the wake of the economic and financial crisis. Countries with above-average standards of rules-based fiscal governance throughout the decade include the Netherlands, Estonia, Denmark, Sweden, Luxembourg, Poland, Germany, and Belgium; Bulgaria, Spain and France have joined this group by strengthening their rules-based framework in the time period under review. Slovenia, Hungary, Slovakia, Italy, Latvia, Romania, Austria, Ireland, and Portugal have maintained rules-based fiscal governance frameworks with lower than average quality. The Czech Republic, Finland and the United Kingdom fell into this group in 2009 due to discarding part of their rules in the wake of their crises, while having a tradition of sound rules-based fiscal governance. Finally, Cyprus, Greece and Malta have been continuously characterised by the absence of numerical fiscal rules.

In Section III.1.4 we provide results of an econometric analysis of the impact of rules-based fiscal governance on sovereign spreads in the euro area. Therefore in the following we provide a more detailed description of the fiscal rule index in those euro area members specifically that are included in the analysis.([44]) Graph III.1.2 shows the

([40]) The design of the fiscal rule index is inspired by Deroose, Moulin and Wierts (2006). This index, as well as other information on fiscal governance partly since 1990 up to nowadays, can be found at http://ec.europa.eu/economy_finance/db_indicators/fiscal_governance/index_en.htm.

([41]) This technique proposed by Sutherland, Price and Joumard (2005) is applied because of the absence of theoretical guidance on the importance of each criterion in the composite index of the strength of fiscal rules.

([42]) In the presence of more than one rule covering the same government sub-sector, the second and third rules obtain weights ½ and 1/3 to reflect decreasing marginal benefit of multiple rules applying to the same sub-sector of general government.

([43]) A more detailed look at the fiscal rule index and its evolution in the 1990s in euro area countries is provided in Subsection III.4.1.

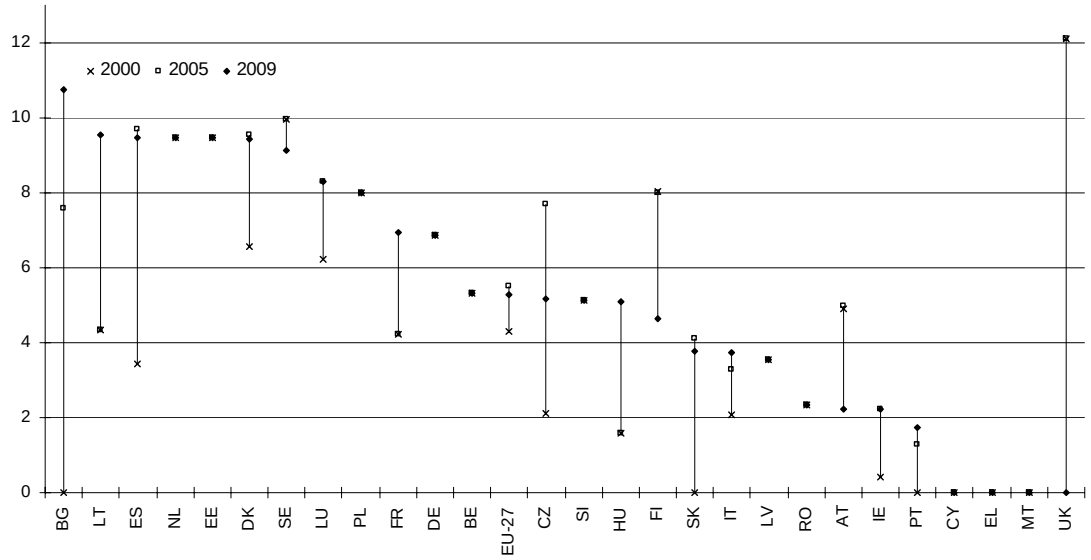
([44]) From the euro area members of 1999, the analysis does not include Luxembourg because of the small size of its sovereign bond market. German sovereign bonds are considered to be free of default risk: data

development of the strength of numerical fiscal rules in these countries. In the benchmark country, Germany, the measure of the strength of numical fiscal rules has been above average and constant at around 7 throughout the decade. Specifically, Germany has operated "golden" budget balance rules and rules limiting nominal expenditure growth for both the central and federal government; budgets of local governments have been constrained by debt ceilings and a balance budget rule (note that the entry in force of the so called "debt brake" for the federal government and the Länder, 2001, falls outside the sample period.) The strength of the numerical fiscal rules in force in the other euro area countries ranged between zero – for Greece, that has had no such rule in force – and almost ten. Highest values were attributed to the Netherlands (index score: 9.5) where a real expenditure ceiling and a revenue rule were in place for all general government, and Spain since 2003 (index score: 9.5 since 2006; 9.7 in 2003 to 2005 respectively,) that introduced a budget balance rule covering all general government and tightened restrictions to regional debt which applied as from the 2003 budget; the budget balance rule was further modified in 2006. Countries with below-average fiscal rule index scores were Ireland, Portugal, and Italy, while the scores of France, Austria, Belgium, and Finland qualified these countries as having stronger fiscal rules than on average.

Remarkable changes for the better occurred in the case of France in 2006 and subsequent years: in 2006 France introduced a rule to pre-commit unexpected revenues of central government as well as a rule that parliament had to establish a ceiling to the growth of health expenditure. In 2008 the increase of social security debt was made conditional upon an increase in revenues. Finally, since 2009, unexpected revenues were automatically assigned to deficit reduction. Although from a very low level, Ireland also improved its rules-based fiscal governance framework in 2004, specifically by introducing multi-year expenditure ceilings to the central budget as well as constraints to local deficits, while the strength of the fiscal rules deteriorated in Finland after 2007 and in Austria in 2009, in particular due to the suspension of rules in force in the course of the economic and financial crisis: in Finland, a debt rule and budget balance rule applied to the central government were no longer in force after 2007 and 2008, respectively, while in Austria, the budget balance rule laid down in the National Stability Pact – that applied to all general government – was replaced in 2009 by a nominal expenditure ceiling for part of the general government budget.

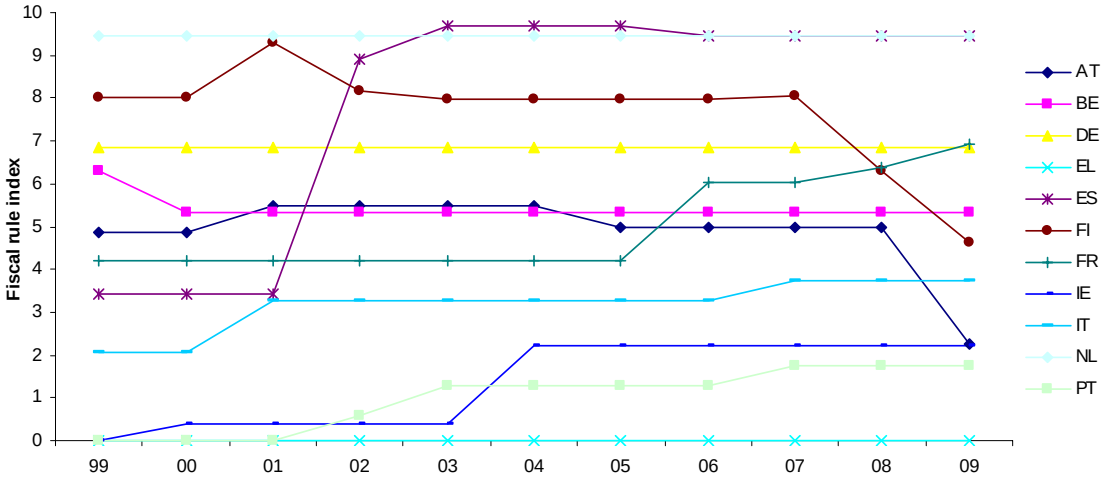
on Germany are only used among the regressors but no additional observations relate to Germany.

Graph III.1.1: **The fiscal rule index in the EU Member States, 2000, 2005, and 2009**



Note: Points indicate the value of the FRI in 2000, 2005 and 2009. A higher value denotes a higher quality of rules-based fiscal governance. By comparing the score for different years, an indication of the evolution of the quality of fiscal governance can be obtained. Thus countries with long lines have introduced big changes in their fiscal rules. If the 2000 point is higher than the 2009 point, fiscal rule index has decreased indicating a weakening of the fiscal rules (and viceversa.)
Source: Commission services.

Graph III.1.2: **The fiscal rule index in 11 euro area members, 1999 to 2009**



Source: Commission services.

Further to numerical fiscal rules, fiscal councils are another important element of a sound fiscal governance framework. Specifically, fiscal councils may assume different tasks that improve budgetary outcomes, including inter alia the provision of unbiased macroeconomic forecasts for budget preparation, the impartial monitoring of budget implementation and the respect of budgetary objectives, awareness raising about short and long-term costs and benefits of budgetary measures, and assessments whether

fiscal measures are appropriate in terms of respect of rules, stability, and sustainability.

The fiscal governance database maintained by the Commission services includes detailed information on independent fiscal institutions that are primarily financed by public funds but are functionally independent from fiscal authorities.([45]) Our descriptive analysis in Section III.1.3 contains the consideration of the relationship between fiscal councils and sovereign spreads. To this end, from the information on fiscal councils available in the dataset, we construct an index following the methodology applied for numerical fiscal rules. We specifically consider the areas of activity of the fiscal councils, distinguishing (1) the independent analysis of fiscal policy developments, (2) the provision of macroeconomic and/or budgetary forecasts for budget preparation, (3) the issuing of normative statements on fiscal policy, and (4) the issuing of recommendations on the conduct of fiscal policy. For each of these areas we attribute a score with value one for mandated tasks and zero for no activity in the given area. We then add up the scores using random weights similar to the construction of the fiscal rule index. The obtained scores for each fiscal council are then summarised by country, where scores for the second, third and fourth fiscal council are down-weighted by ½, 1/3 etc.

As concerns the presence and activity of fiscal councils, in 2009 (the last year of our database) the situation in the EU was as follows. There were 29 fiscal councils located in 17 Member States, with Bulgaria, Cyprus, the Czech Republic, Finland, Ireland, Latvia, Malta, Poland, Romania, and Slovakia having no such institution.([46]) Typically, these institutions were far more common in the pre-2004 EU Members, often having a long history, in part due to the human resource requirements of such institutions which may create difficulties for smaller countries.

Table III.1.1 provides an overview of the main tasks of these institutions. As shown, seven of ten fiscal councils are entrusted with the independent analysis of fiscal policy, while around one half are assigned the task of providing independent macroeconomic and budgetary forecasts respectively – that are not binding for the preparation of the budget in most of the cases though. One third of the fiscal councils are expected to provide normative statements on the conduct of fiscal policy, while two thirds are mandated to deliver recommendations. Nine of the countries maintaining fiscal councils have two or more fiscal councils that may complement each other in terms of tasks. Still, in only six countries – Austria, Belgium, Germany, France, Hungary, and Sweden – are all the four areas of activity discussed above part of the mandate of one or several fiscal councils.

Graph III.1.3 shows the index obtained as described above from aggregating information on the areas of activity of fiscal councils. According to this index, in 2009, Sweden had the strongest set of fiscal institutions, with an index value of 2. Next come Germany, Hungary, Austria, Slovenia, France, and Belgium, with index values between 1 and 2. Luxembourg, Denmark, the United Kingdom, Portugal, the Netherlands, Lithuania, Ireland, Spain, Greece and Estonia are countries with less strong bodies of independent fiscal analysis and advice as of 2009, while as said, Bulgaria, Cyprus, the Czech Republic, Finland, Ireland, Latvia, Malta, Poland, Romania and Slovakia had no independent fiscal council.([47])

([45]) Independent fiscal institutions are non-partisan public bodies other than the central bank, government or parliament that prepare macroeconomic forecasts for the budget, monitor fiscal performance and/or advise the government on fiscal policy matters. The fiscal governance dataset of the Commission services includes Courts of Auditors if their activities go beyond the accounting control and cover any of the tasks mentioned above. Central banks and directorates of ministries of finance are not considered, nor are private think tanks.

([46]) The United Kingdom established a new independent fiscal institution – the Office for Budget Responsibility (OBR) – in May 2010, outside the reporting period of the most recent update of the fiscal governance dataset. It is mandated to provide binding economic and fiscal forecasts, and to assess whether the government is likely to meet the established deficit reduction objectives.

([47]) In the context of the EU/IMF balance-of-payments assistance programmes, Romania established a fiscal council in 2010, while Ireland is presently designing such a body.

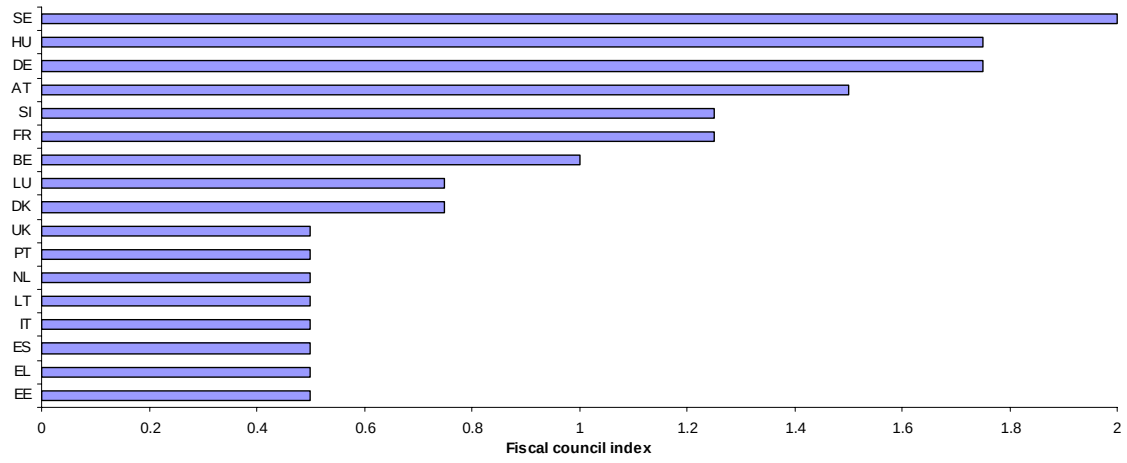
Table III.1.1: **Tasks of independent fiscal institutions in EU Member States**

Country	Institution	Created	Tasks			
			(1)	(2)	(3)	(4)
AT	Austrian Institute of Economic Research	1927	no	yes	no	no
AT	Institute for Advanced Studies	1963	no	yes	no	no
AT	Government Debt Committee	1970	yes	yes	yes	yes
BE	High Council of Finance - Section "Public sector borrowing	1989	yes	no	yes	yes
BE	National Accounts Institute	1994	no	yes	no	no
DE	Advisory Board to the Federal Ministry of Finance	1950	yes	no	yes	yes
DE	Joint Economic Forecast project group	1950	no	yes	no	yes
DE	Working Party on Tax Revenue Forecasting	1955	no	yes	no	no
DE	German Council of Economic Experts	1963	yes	no	no	no
DK	Danish Economic Council	1962	yes	yes	no	yes
EE	National Audit Office of Estonia	1990	no	no	yes	yes
EL	Centre for Planning and Economic Research	1959	yes	yes	no	no
ES	Court of Auditors	1978	no	no	no	yes
ES	National Committee of Local Administration	1985	no	no	no	yes
FR	Court of Accounts	1807	yes	no	yes	yes
FR	Economic Committee of the Nation	1952	yes	yes	no	no
HU	State Audit Office	1989	yes	no	yes	yes
HU	Fiscal Council	2008	yes	yes	yes	yes
IT	Institute for Studies and Economic Analyses	1999	yes	yes	no	no
LT	National Audit Office of Lithuania	1990	yes	no	no	yes
LU	Court of Auditors	1999	yes	yes	no	yes
NL	Netherlands Bureau for Economic Policy Analysis	1945	yes	yes	no	no
PT	Court of Auditors	1990	yes	no	no	no
PT	Budget Technical Support Unit	2006	yes	no	no	no
SE	National Institute of Economic Research	1937	yes	yes	yes	yes
SE	Swedish Fiscal Policy Council	2007	yes	yes	yes	yes
SI	Institute of Macroeconomic Analysis and Development	1991	yes	yes	no	yes
SI	Fiscal Council	2009	yes	no	no	yes
UK	National Audit Office	1983	no	no	yes	yes

Tasks: (1) independent analysis of fiscal policy; (2) independent macroeconomic and/or budgetary forecasts; (3) normative statements on the conduct of fiscal policy; (4) recommendations on fiscal policy

Source: Commission services.

Graph III.1.3: **Fiscal council index in the EU, 2010**



Source: Commission services

In the above description of fiscal governance in EU members, we have considered two dimensions, rules-based fiscal governance and fiscal councils, although the characterisation of the latter does not account for details in the design of the councils and their mandate. While the picture obtained may

appear partial, we claim that it is representative of fiscal governance in EU Members as a whole. Indeed, policy experience has shown that the quality of elements of fiscal governance along the different dimensions tends to correlate: thus strengths and weaknesses along different dimensions of fiscal governance reinforce each other, and the above measures can be used as proxies for the quality of domestic fiscal governance frameworks of the EU Member States altogether.

1.3.2. Sovereign spreads and fiscal governance

Sovereign bond yields constitute the price of new debt including maturing debt that is rolled over. Graphs III.1.4 and III.1.5 show the evolution of the spreads of 10-year sovereign bonds against the benchmark country, Germany, of the pre-2004 and more recent EU Members from 2000–2011. In the old EU Members, until 2008 bond yields were relatively stable, barely exceeding 50 basis points (and sometimes even negative) in countries other than the UK. In the wake of the economic and financial crisis, the years from 2008 witnessed higher variation in sovereign spreads and an increase in levels to almost 1100 basis points specifically for Greece, Ireland, and Portugal, but to a lesser extent – to up to 250 basis points – for Spain, Italy and Belgium as well.

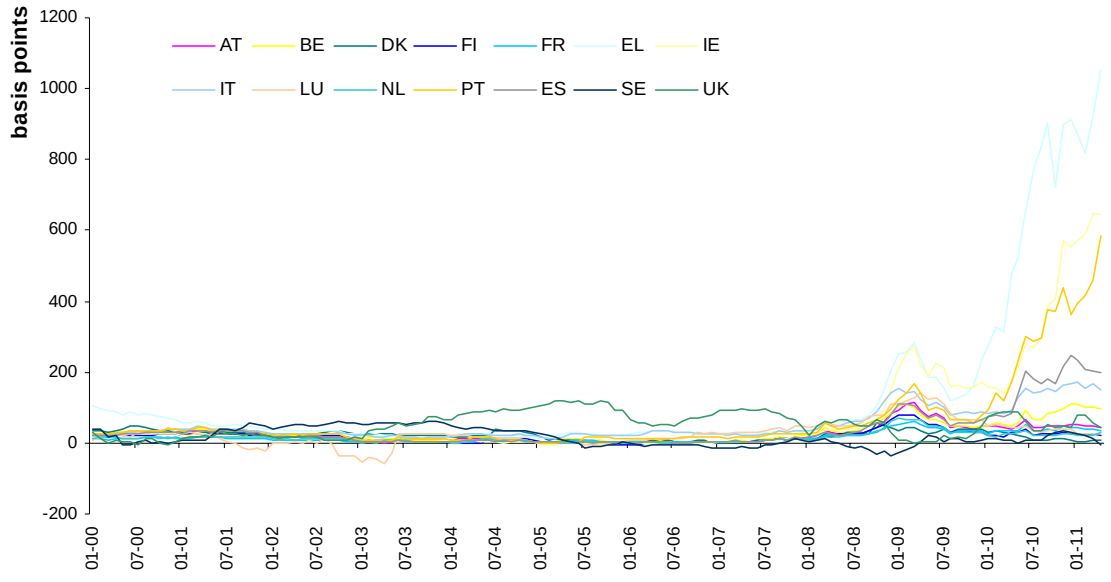
Sovereign spreads in the new EU Members (including the countries that eventually entered the euro area)([48]) were considerably higher than those in the euro area before the onset of the crisis already, reflecting multiple factors such as differences in market liquidity, institutional settings (e.g. concerning the pension system), and perceived exchange rate risk. The sharp increase in spreads to up to 1100 basis points concerned Latvia and Lithuania specifically, but in the second semester of 2008 spreads shot up to almost 800 basis points for Hungary and Romania as well.

Graph III.1.6 gives an indication of the relationship between the strength of rules-based fiscal governance and sovereign spreads against Germany in two groups of EU Members: those forming the euro area as of 2009, and the new EU Members that have not acceded to the euro area so far, from 2000 to 2009, the year with most recent information on fiscal governance. Averages of sovereign spreads are shown for those members of these groups of countries with standards of rules-based fiscal governance above and below average respectively. It should be recalled that a high value of the fiscal rule index is achieved by multiple rules, rules covering a high percentage of general government finance, and/or strong rules in terms of the legal base, room for setting or revising the constraining objective, the nature of the body in charge of monitoring respect and enforcement, enforcement mechanisms, and media visibility. Both among the euro area members and the new EU Members that have not introduced the euro, sovereign spreads have been clearly lower on average for countries with above average standards of rules-based fiscal governance than for those with poor or lacking fiscal rules.

Graph III.1.7 repeats the above exercise grouping the countries by the coverage of activities performed by their fiscal councils. Again, the negative relationship between fiscal governance and sovereign spreads is confirmed: both those euro area members and new EU countries not having introduced the common currency who were ranked to be above average in terms of coverage of tasks performed by their fiscal councils were experiencing lower sovereign spreads than their peers with below-average coverage of fiscal councils' activities.

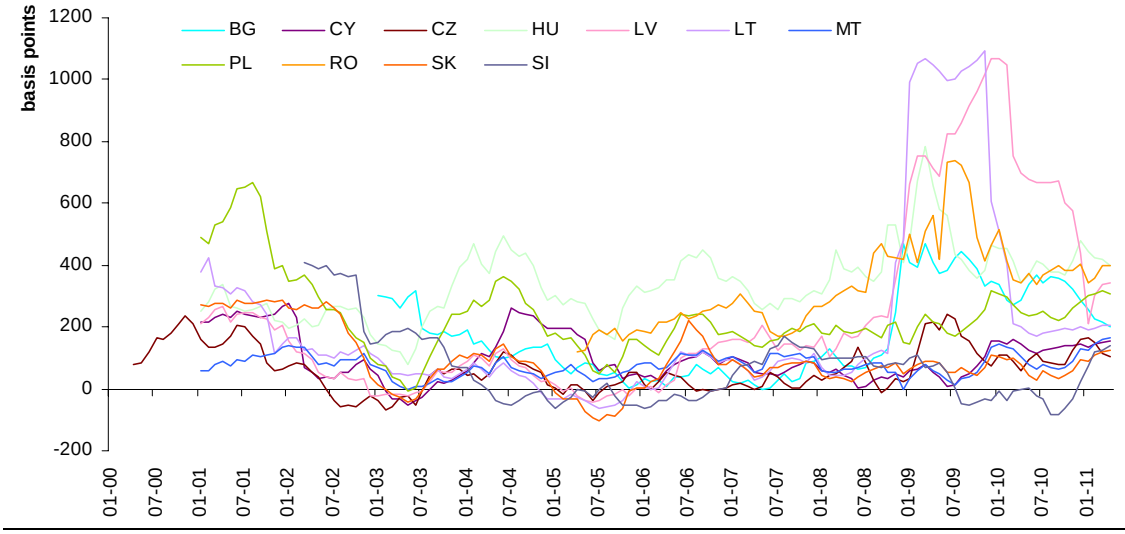
([48]) No data are available for Estonia.

Graph III.1.4: **Sovereign spreads in the EU15, 2000-2011**



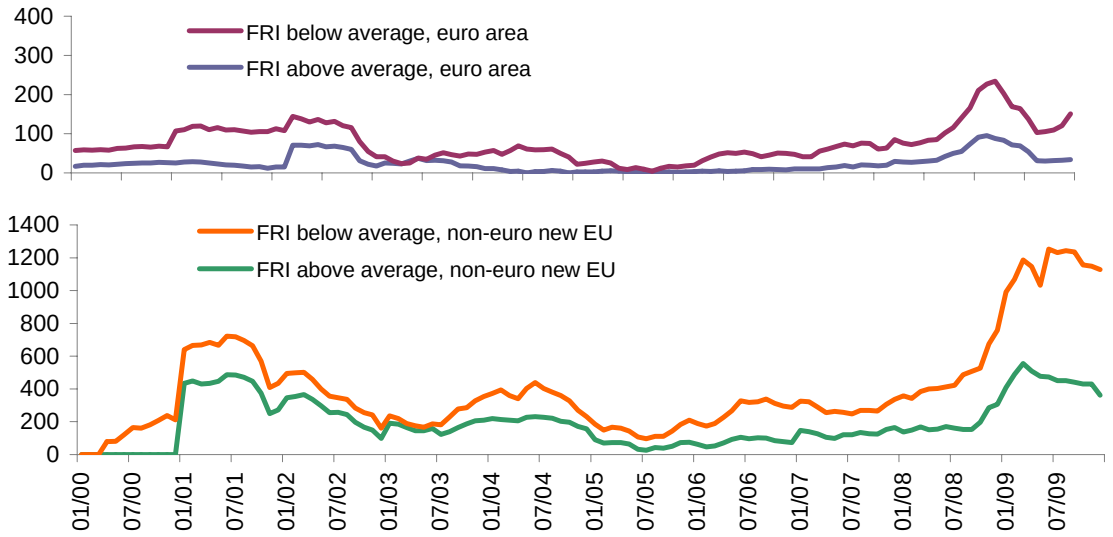
Source: Bloomberg

Graph III.1.5: **Sovereign spreads in the New EU Member States, 2000-2011**



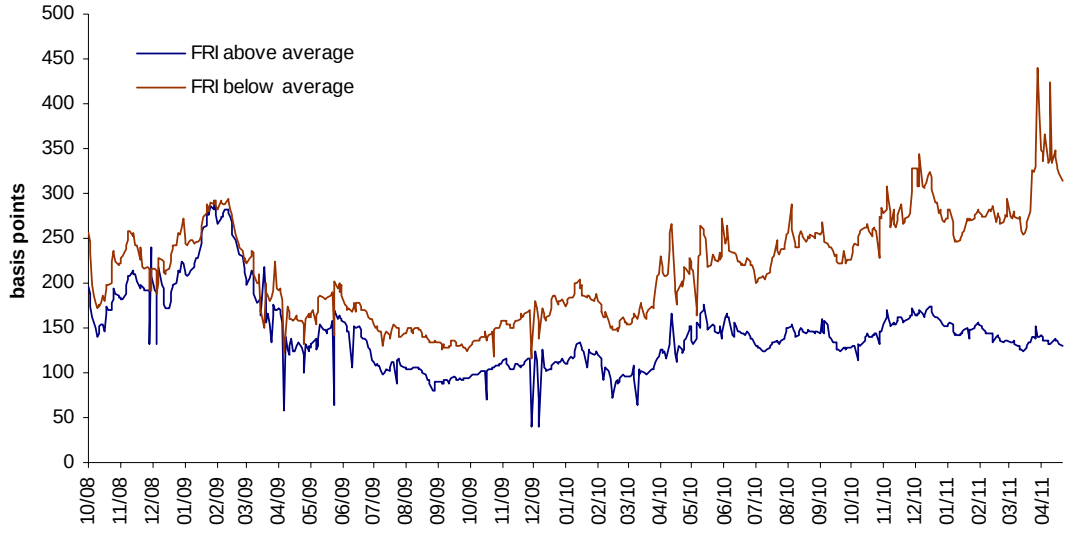
Source: Bloomberg.

Graph III.1.6: **Average sovereign spreads in euro area Members and non-euro new EU Members by strength of rules-based governance, 2000 to 2009**



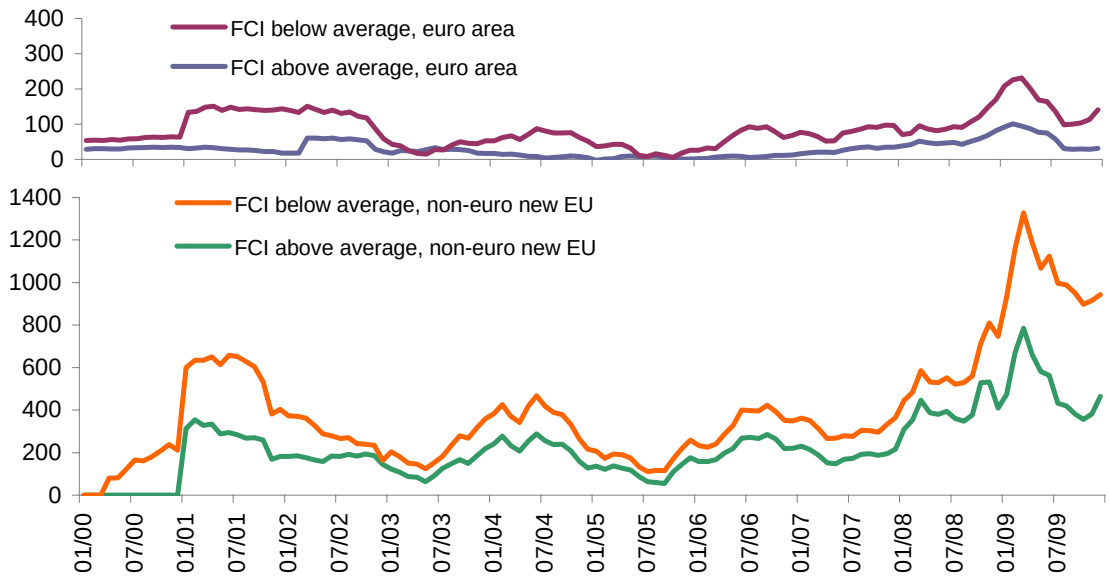
Source: Commission services.

Graph III.1.7: **Average CDS quotes on 10-year sovereign bonds of the EU Member States by strength of rules-based fiscal governance, 2008-2011**



Source: Commission services.

Graph III.1.8: **Average sovereign spreads in euro area Members and non-euro new EU Members by coverage of activities of fiscal councils, 2000 to 2009**



Source: Commission services.

1.3.3. Other measures of the probability of default and fiscal governance

Table III.1.2: **Credit ratings of Moody's of EU Member States grouped by their strength of rules-based fiscal governance, mid-2009**

Rating	Fiscal rule index			
	below average		above average	
Aaa	AT	(2.2)	DE	(6.9)
	FI	(4.6)	DK	(9.4)
	IE	(2.2)	ES	(9.5)
	IT	(3.7)	FR	(6.9)
	UK	(0.0)	LU	(8.3)
			NL	(9.4)
			SE	(9.1)
			BE	(5.3)
Aa2	PT	(1.7)		
Aa2	SI	(5.1)		
Aa3	CY	(0.0)		
A1	CZ	(5.2)		
	EL	(0.0)		
	MT	(0.0)		
	SK	(3.8)		
A2				
A3			LT	(9.5)
Baa1	HU	(5.1)		
Baa2				
Baa3	LV	(3.6)	BG	(10.7)
	RO	(2.3)		

Source: Moody's (credit ratings), Commission services (fiscal rule index)

As explained in Section III.1.1, one important determinant of the price of debt is the risk that the debtor defaults: country differences in this respect are reflected in the sovereign spreads. We can obtain a more direct indication of a systematic relationship between the quality of fiscal governance and the price of debt – that is determined by the risk of default – by looking at the risk of default in groups of countries distinguished by their fiscal governance directly. In the following, we consider this relationship in order to corroborate our findings that were set out above, using two standard indicators of the risk of default: credit ratings of rating agencies, and CDS spreads.

Turning to the first of these indicators, Table III.1.2 lists the sovereign credit ratings of the EU Members in mid-2009 produced by Moody's, distinguished by the strength of the country's rules-based fiscal governance as measured by the fiscal rule index. Eight of those ten countries with above-average rules-based fiscal governance were placed in the prime category, while this is only the case for one third of the fifteen EU members with below average standards of rules-based fiscal governance. In contrast, just under half of Member States (seven, to be precise) were considered only medium grade, with ratings between A1 and Baa3. Even if the result is partly driven by the most recent developments in Greece and Ireland, this provides some evidence that fiscal governance contributes to diminishing the risk of sovereign default and thereby bringing down the cost of public debt.

Turning now to the second indicator to corroborate our findings, Graph III.1.8 shows averages of CDS quotes on 10-year sovereign bonds in EU Member States again grouped by their the quality of their rules-based fiscal governance.([49]) While average CDS spreads rose to around 300 basis points in early 2009 for both groups of countries to drop to around 150 basis points thereafter, they only slightly increased in the group with strong rules-based fiscal governance, while the increase was substantial in the other group, peaking at almost 450 basis points most recently. Even if based on simple correlations, this picture provides some support for the relation between sound fiscal governance and the cost of public debt.

1.4. EFFECTS OF RULES-BASED FISCAL GOVERNANCE ON SOVEREIGN SPREADS: ECONOMETRIC ANALYSIS

1.4.1. Econometric analysis

The above descriptive analysis has provided support for the intuition that appropriate structures of fiscal governance have the potential to contain the price to be paid for public debt. Still, as it relies on comparing conditional means for groups of countries with different characteristics in terms of fiscal governance, it cannot shed light on the precise way in which fiscal governance might contribute to keeping the cost of public debt low. Well-designed fiscal governance has been shown to effectively contribute to budgetary discipline (see Section III.1.2:) the lower price of public debt for countries with higher fiscal governance standards may thus well result from simply lower deficits and debt in these countries. We argue however that fiscal governance also has a genuine direct effect on the risk of sovereign default, precisely because it may, if effective, constrain future realisations of deficit and debt and thus maintain a sustainable path of debt evolution. Hence, the impact of fiscal governance on sovereign spread needs to be studied once deficit and debt outcomes are controlled for.

To show the impact of fiscal governance on sovereign spreads, in the following we report an econometric analysis of this matter in euro area members in 1999 to 2009 developed in Iara and Wolff (2011) that proposes a structural model of sovereign spreads in the presence of different levels of risk aversion. The model is described in detail in Box III.3.1. The estimating equation is

$$ln\_spread_{i,t} = \beta 1\, yield_t + \beta 2\, balance_{i,t} + \beta 3\, debt_{i,t} + \beta 4\, fri_{i,t} + \beta 5\, ln\_riskav_t + C_i + u_{i,t} .$$

Specifically, the empirical analysis regresses the logarithm of the euro area countries' 10-year sovereign bond spreads against Germany *ln_spread* on the levels of the German bunds' interest (*yield*), the general government budget balance (*balance*) and general governmment debt (*debt*) as % of GDP respectively, a measure of the quality of rules-based fiscal governance (*fri*), and a composite logarithmic term *ln_riskav* derived from the spread between US low grade corporate and government bonds as a proxy for global risk aversion (specifically, *riskav* corresponds to the term $1+ 0.5\rho\ (1+ v^*)$ laid out in Box III.3.1.) Data are annual averages; *i* and *t* are country and year indices respectively. While the German bond yields, debt and the composite indicator of risk aversion are expected to increase the sovereign spreads, the general government balance and the strength of rules-based fiscal governance should decrease them. Note that, because of the log-linear nature of the model, determinants exercise their impact on sovereign spreads in a multiplicative manner. Thus, the potential of an improvement in fiscal governance to decrease the price of sovereign debt is higher at higher levels of deficit and debt according to this approach.

The analysis from Iara and Wolff (2011) reported here covers observations of 10 founding euro area countries (with spreads measured against Germany)([50]) over 1999-2009. The data are used as annual averages; the financial data stem from Bloomberg, and the fiscal data are from Eurostat. The strength of rules-based fiscal governance is measured with the fiscal rules index calculated by the Commission services as described in Subsection III.1.3.1. As outlined above, sovereign spreads were below 30 basis points for most euro area members, with a slight increase until 2001 and decreasing in the period between 2001 and 2006, but they increased and fanned out

([49]) No data are available for Cyprus, Estonia, Luxembourg, Malta, the Netherlands, and Slovenia.

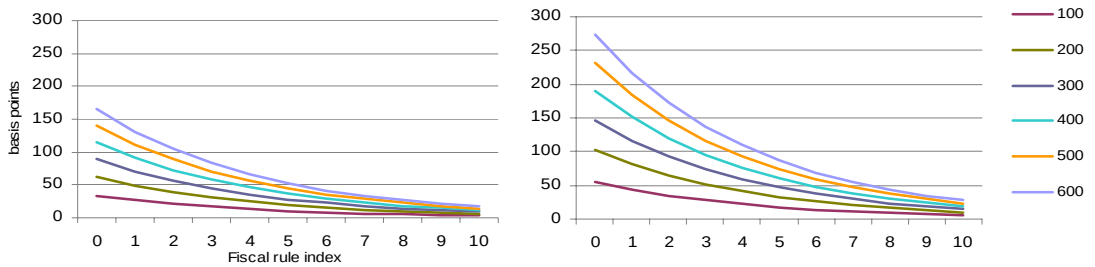
([50]) Luxembourg is excluded because of the small size of its bond market.

considerably in the wake of the economic and financial crisis, with particularly high values of 190 basis points reached on average by Greece and Ireland and values between 40 and 100 basis points for the other euro area members during 2009 (see Graph III.1.4.) The ranking of the euro area members by the size of the difference of their bond yields against Germany was broadly constant in the period considered, with France, the Netherlands, and Finland being closer to the benchmark and Greece, Italy, Portugal and Spain being at the higher end of the distribution.

Another important variable in the analysis is the level of risk aversion (more precisely, its nonlinear transformation, see Box III.1.1.) The level of risk aversion is proxied by the spread between low grade US corporate and government bonds. In the decade under scrutiny, this measure has moved in parallel to the euro area bond spreads: while it moved between 130 and 155 basis points in 1999, it declined and did not surpass 100 basis points in 2004, when euro area sovereign spreads were also historically low. The US corporate bond spread increased during the economic and financial crisis and peaked at 755 basis points in 2008.

In Table III.1.3 we present the results of the above model both from static panel regressions controlling for unobserved country effects (where standard errors are adjusted to clustering at country level) and from a dynamic specification using the Arellano-Bond GMM estimator, which accounts for endogeneity in the level of general government debt, the budget balance, and the level of risk aversion. As deficits and debt are endogenous with respect to sovereign spreads by construction and global risk aversion is very likely to be so, the results from the dynamic GMM estimator that accounts for such endogeneity (column 3) can be considered most appropriate. The description of the results below is therefore based on this specification. Columns 2 of the above Table – that presents a static model – and 4 – that repeats the estimation of the dynamic model where observations from the last year (2009) are omitted – show that the results are stable in qualitative terms.

Graph III.1.9: Marginal effect of fiscal rule index on spreads.



Source: **Commission services.**

Table III.1.3: **Econometric estimation of the impact of rules-based fiscal governance on euro area sovereign spreads**

Estimation method	FE-OLS	GMM	GMM
Dependent variable: log yield spread, t			
log yield spread, t-1		0.2100	0.1744
		(0.1632)	(0.1748)
log yield spread, t-2		-0.3838***	-0.4238***
		(0.0746)	(0.0980)
yield (DE)	0.8399**	0.9794***	0.9831***
	(0.2091)	(0.2610)	(0.2784)
budget balance	-0.1173***	-0.1769***	-0.1664**
	(0.0237)	(0.0513)	(0.0691)
debt	0.0299	0.0186	0.0285
	(0.0134)	(0.0138)	(0.0200)
FRI	-0.1209*	-0.2166*	-0.2575*
	(0.0484)	(0.0914)	(0.1514)
log risk aversion	1.2191***	0.9161***	0.9609***
	(0.1433)	(0.1297)	(0.1098)
constant	-13.1685***	-11.2593***	-12.0968***
	(1.8498)	(2.2938)	(2.8720)
no. of observations	105	66	56
R^2	0.80		
time period	1999-2009	1999-2009	1999-2008

Standard errors in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%.
Source: Commission services.

The econometric estimations support the existence of an independent negative effect of the strength of rules-based fiscal governance on sovereign spreads, as well as the effects of the other control variables as expected. Moreover, the restrictions contained in the structural model that *ln_riskav* and *yield* have coefficients of 1 cannot be rejected. Sovereign spreads in euro area countries of the 2000–2009 decade are above all found to have been determined by the risk-free interest and the level of global risk aversion. Holding other characteristics constant, the increase of the benchmark interest rate by one percentage point more than doubled the spread, as it had an impact via the composite risk aversion term as well. A unit increase of the composite risk aversion term also resulted in the doubling of the spread. The rise in the general government budget balance by one percentage point resulted in a decrease of the spread by around one fifth, while each percentage point of additional general government debt increased the spread by around 2 per cent. The effect of rules-based fiscal governance estimated from the dynamic specification is comparable to the improvement of the budget balance: a unit improvement of the rules-based framework resulted in the decline of the risk premium by around 22 per cent.

1.4.2. Predicted effects of a strengthening of rules-based fiscal governance on sovereign spreads

In the previous Section we have reported estimation results of a structural model of the impact of rules-based fiscal governance on sovereign spreads in the presence of risk aversion. In the following we study the impact of enhancing rules-based fiscal governance frameworks on sovereign spreads under specific conditions in more detail. First we show the dependence of this impact on other characteristics of the country under scrutiny; thereafter we take a look at those countries specifically that would profit most from an upgrade of their fiscal governance frameworks: Greece, Ireland, Italy, and Portugal. Indeed although sovereign spreads have reached higher levels in Spain as well, its rules-based fiscal governance framework is comparatively strong: other measures are likely to bear more fruit in order to achieve fiscal consolidation.

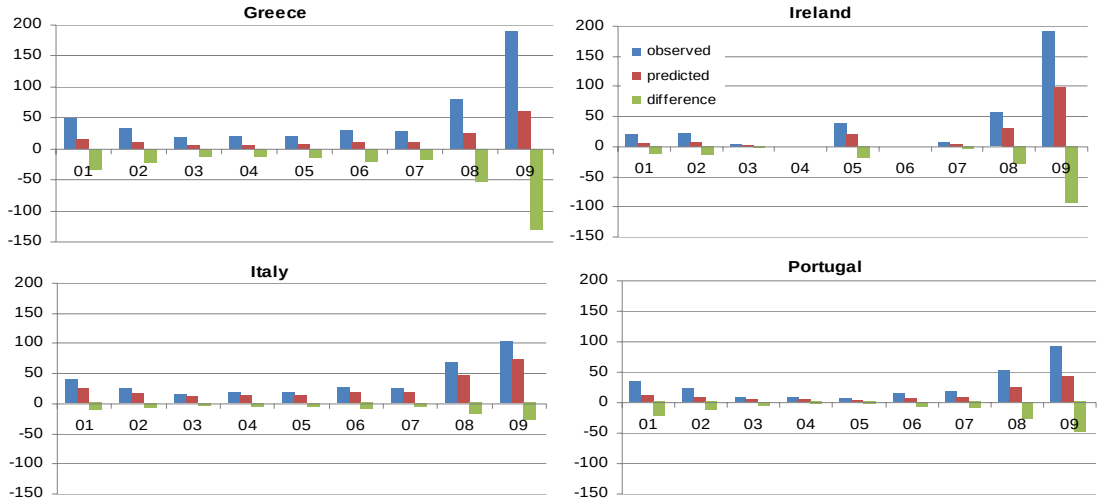
Due to the log-linearity of the model, in absolute terms, the effect of a change in one of the above determinants depends on the level of the other variables. Therefore, a unit increase in the quality of fiscal governance induces a larger drop of the sovereign spread in a country with higher deficits and public debt. This dependency on the other characteristics of sovereign default is shown in Graph III.1.9.

The left-hand side panel illustrates how the sovereign spread declines at different levels of risk aversion (as measured by the spread between US low grade corporate and government bonds) as the fiscal rule index improves from 0 to 10 for sample average values of the variables (specifically, a budget deficit of 2.6 per cent and a debt level of 71 per cent of GDP.) The right-hand side panel shows the decline in the spreads at different levels of risk aversion under conditions of a four per cent general government budget deficit and general government debt of 100 per cent of GDP. At the average sample values (left-hand side panel), the spread declines by up to around 150 basis points, whereas for the high-deficit, high-debt case the reduction of the spread could be up to 250 basis points under circumstances of extreme risk aversion.

The average score of the fiscal rule index in the euro area countries from the sample in the past decade was around 5: this corresponds to the quality of rules-based fiscal governance in Belgium. The countries where the strength of rules-based fiscal governance was below average in 2009 were Greece, Italy, Portugal, Ireland, and Finland; of these, the first four are facing particularly high consolidation pressures. Graph III.1.10 shows how the differential of sovereign yields against the risk-free rate in four countries, Greece, Ireland, Italy, and Portugal, would have changed, had these countries had rules-based fiscal governance structures of average quality.

Unsurprisingly, predicted reductions in sovereign risk premia are highest for the year 2009, when global risk aversion was particularly high. In the case of Greece – with a budget deficit of 13.5 per cent and a public debt burden of 115 per cent of GDP in 2009 – the establishment of a rules-based fiscal governance framework of average quality would have implied the reduction of the spread by 130 basis points in such a year. Ireland also had a budget deficit of 14 per cent in 2009 but public debt only amounted to 63 per cent of GDP; while its rules based fiscal governance framework was rather weak, with a fiscal rule index value of around 2. According to the above model, the strengthening of its fiscal governance framework to the average level would have allowed a decline in the spread against the risk-free rate by almost 100 basis points. Italy in turn had a rules-based fiscal governance framework in place that was assigned the fiscal rule index value of 3.7, comparatively close to the average level (with a fiscal rule index value of 5.) At the same time, it had a deficit of 5.3 per cent in 2009 and a public debt level of 115 per cent of GDP. The enhancement of its rules-based fiscal governance framework to average would still have implied a reduction of its sovereign risk premium by about 30 basis points in 2009. Finally, the gain for Portugal from such institutional improvement – with a deficit of 9.4 per cent and a debt level of 77 per cent in 2009 – would have amounted to 50 basis points.

Graph III.1.10: **Predicted impact of a strengthening of rules-based fiscal governance on sovereign risk premia in selected euro area members**



Source: Commission services.

1.5. CONCLUSION

Sovereign spreads shape the price of new and rolled over debt. After relative stability in the first half of the last decade, sovereign spreads in the euro area and the EU have increased in the wake of the economic and financial crisis, in some countries with particularly high fiscal challenges to extraordinary extents. Therefore, for these countries specifically but also for others, any means to reduce these spreads is of particular budgetary importance.

Strong frameworks of fiscal governance might provide a powerful way to contain sovereign spreads and the corresponding cost of public debt. Indeed, as shown in Section III.1.3, sovereign spreads have been consistently lower in countries with better fiscal governance; this is also true for more direct measures of sovereign default such as CDS spreads or credit ratings.

Although suggestive, conditional means do not substitute for a more thorough multivariate analysis. As shown in Section III.1.4, the results of such analysis based on a structural model of sovereign spreads at different levels of risk aversion developed by Iara and Wolff (2011) confirm that stronger fiscal governance decreases the risk of default and sovereign spreads by its own, not only indirectly considering the fact that countries with strong fiscal governance are better performers in terms of deficits and debt. The members of the euro area currently in difficulty would have benefitted from lower sovereign spreads by up to 130 basis points, had their rules-based fiscal governance been comparable to the average of the euro zone (represented by Belgium) in the past decade.

Box III.1.1: The impact of rules-based fiscal governance on sovereign spreads in the presence of risk aversion: a structural model.

To investigate the impact of rules-based fiscal governance on risk premia in euro area government bond markets in the presence of different attitudes towards risk, consider an investor who might use an amount of wealth of 1 to acquire a risk-free bond paying interest v^*, or alternatively hold a bond of country i that delivers repayment with interest amounting to $1 + v^* + v_i$, but that might default on its debt with probability $\theta_i \in]0; 1[$. Against the alternative of holding the asset with zero risk, the sovereign bond of country i will deliver expected additional wealth of $E(I_i) = -(1+ v^*)\ \theta_i + (1- \theta_i)\ v_i$. Assuming $E(I_i) = 0$ (i.e. actuarial neutrality,) the compensation for the possible event of default is

$$v_i = (1+ v^*)\ \theta_i\ (1- \theta_i)^{-1} = (1+ v^*)\ \tau_i ,$$

where $\tau_i = \theta_i\ (1- \theta_i)^{-1}$ is the odds of default. It is further assumed that investors' utility functions are twice differentiable and strictly increasing: $U'(X) > 0$. Risk-averse investors specifically have concave utility functions: $U''(X) < 0$. From the condition of indifference between purchasing bonds of country i and the certainty equivalent to such activity, the Arrow-Pratt measure of the risk premium π_i can be established as $\pi_i = 0.5\ \sigma^2_i\ \rho$, where ρ is the coefficient of absolute risk aversion, and σ^2_i is the variance of outcomes from holding country i's sovereign bonds (Copeland, Weston and Shastri (2005).) The risk premium switches signs with the coefficient of risk aversion and is zero in the presence of risk neutrality. The variance can be shown to be $\sigma^2_i = (1+ v^*)^2 \tau_i$.

To offer an alternative to the risk-free bond to risk-averse investors, the sovereign bond of country i has to offer an overall excess return s_i over v^* of v_i (this part is to compensate for the possibility of default) topped up by the risk premium π_i (which is to compensate for accepting the risk.) Using the above expressions, the spread s_i is

$$s_i = v_i + \pi_i = (1+ v^*)\tau_i\ [1+ 0.5\rho\ (1+ v^*)] .$$

This equation shows how the spread of country i's sovereign bonds over the risk-free return v^* is depending on the odds of default τ_i - that is a nonlinear function of the probability of default, θ_i : it has an immediate effect via the compensation for the probability of default, v_i , as well as an effect via the Arrow-Pratt risk premium. The latter is amplified by the level of risk aversion ρ as well as by the level of risk-free return v^*.

To derive the estimating equation, the standard assumption is employed that the default probability θ_i is a logistic function of a measure Y_i that in turn linearly depends on a set of exogenous regressors X_i, parameters β, and a stochastic error term $\varepsilon \sim$ i.i.d.:

$$\theta_i = P\ (I = -1 \mid Y_i) = e^{Yi}\ (1+ e^{Yi})^{-1} \text{ with } Y_i = X_i'\beta + \varepsilon_i .$$

Inserting this expression for θ_i into the above spread equation, taking logs and rearranging terms results in

$$\ln s_i = v^* + X_i'\beta + \ln\ (1+ 0.5\rho\ (1+ v^*)) + \varepsilon'_i .$$

The determinants of country i's default risk – the elements of X_i – include the standard determinants of the sovereign debtor's solvency: the actual levels of debt (debt) and the budget balance (balance,) institutional characteristics of the country that are constant over time (C,) and time-varying characteristics. The quality of rules-based fiscal governance is part of these time-varying institutional characteristics. It has in the above model, just as all determinants of the default probability, a non-linear impact on the sovereign spreads, which is amplified by the level of risk aversion.

Part IV

Debt sustainability in the EU

SUMMARY

The financial and economic crisis that hit all advanced economies between 2008 and 2010 severely affected the public finances of most EU Member States. As Part I showed, there has been a sharp deterioration of government budget balances and a parallel increase in debt to GDP ratios. In some Member States, the situation of the public finances became so critical as to put their fiscal sustainability at risk. The spreads on sovereign interest rates increased and large financial assistance packages from the European Union and the IMF were negotiated for the most severely affected euro area countries. In parallel, a permanent mechanism, the European Stability Mechanism (ESM) was agreed upon to provide assistance to euro area Member States in the future.

The ESM will only provide funding to countries under strict conditionality and only after a fiscal sustainability assessment shows the country to be solvent. Such an assessment will typically require two types of analysis: first, an assessment of the short-term liquidity needs of the country, and, second, a medium to long term assessment of debt sustainability which analyses the public sector's ability to pay back its debt. The two aspects of the analysis are both necessary and interconnected. The present Part presents the methodologies that are being examined as possible means to conduct such future analysis. Both short-term liquidity and medium to long-term sustainability are addressed in the various methodologies under development.

The assessment of the long-term sustainability of the public finances is a well-established part of EU multilateral surveillance since the 2005 reform of the Stability and Growth Pact (SGP). Its main application is in contributing to the assessment of fiscal policy in the plans contained in the Stability and Convergence Programmes (SCPs) submitted yearly by Member States.

Most of the existing analysis used by the Commission – and the International Monetary Fund and, in part, by rating agencies –is based on the concept of government's intertemporal budget constraint (IBC) which defines fiscal solvency. The IBC is satisfied as long as the outstanding stock of debt is fully offset by the present value of the flow of future primary surpluses. The analysis is therefore based on indicators capturing whether past or foreseen developments in fiscal variables are consistent with the fulfilment of the IBC and, in case they are not, quantifying the magnitude of the required fiscal adjustment to ensure fiscal solvency. The constraints of economic and political feasibility are taken into account as far as possible.

The sustainability analysis undertaken by the Commission looks at the risks to fiscal sustainability under the assumption of no-policy change in the government budget on the basis of: i) the current structural budgetary position; ii) the budgetary challenge posed by population ageing over the longer term. Where the IBC is not satisfied, the need to introduce structural reforms, including of pension systems, and/or to consolidate the public finances is highlighted. By stressing the need for appropriate time-consistent policies to be adopted soon after the challenges are identified, the analysis should help avoid a situation where abrupt policy changes are introduced at the last moment. In the circumstances where no structural reforms are needed, attaining fiscal sustainability typically entails reaching and maintaining a sound fiscal position which should broadly be in line with the medium-term objective for the government budgetary position (MTO.)

The EU approach also considers i) medium-term debt projections under alternative consolidation scenarios; ii) a medium-term indicator of the sustainability of the government finances measuring the adjustment in the structural primary balance required between the end year of the current SCP years and 2020, which allows reaching the level of structural balance such that, if kept constant, brings debt to a given debt target by 2030; and iii) two sustainability gap indicators. These are the S1 indicator which measures the upfront adjustment to the structural primary balance required to reach the debt-to-GDP target of 60 percent in 2060 and the S2 indicator which shows the upfront permanent adjustment to the structural primary balance required to fulfil the infinite horizon intertemporal budget constraint.

The experience during the latest recession highlighted that the current EU sustainability analysis, although valid, could be complemented by other analytical tools to help anticipate episodes of severe public finance distress such as those which have occurred in some EU Member States. Such tools could take a larger spectrum of aspects

of the economy into account when assessing the solidity of government balances and plans.

Starting from these considerations, possible methodologies for expanding the sustainability analysis in four directions are being analysed. First, given the key role that the banking sector had on the government finances in a number of EU countries as a result of the crisis, the EU analysis could been enriched with a methodology based on a value-at-risk analysis. This aims at calculating the probability distributions of aggregate banking losses and their direct impact on government finances, by country. The methodology and tentative results for a subset of four EU Member States to illustrate it are presented in Chapter IV.2. It is shown that, for the three euro area countries in this subset, the probability that, due to a banking crisis hitting public finances, Member states become high risk in terms of the sustainability indicator S2 due to the a banking crisis affecting the public finances are not negligible, in the sense of lying above 0.1%.

However, the difficulties which currently affect the public finances in Europe are not exclusively linked to a banking sector under strain. Therefore, a broader spectrum of variables, both fiscal and non-fiscal, would also require to be regularly monitored in order to detect risks of upcoming fiscal crises in line with the reform of the European economic governance. Thus a possible approach of setting up an early warning system could rely on monitoring additional fiscal variables such as the maturity structure (in terms of length) of the government debt, as well as trends in competitiveness, credit growth and private sector indebtedness. Chapter IV.3 presents an early warning signal methodology aimed at the early identification of risks of public finance distress, in line with the methodologies being developed in the academic literature. The approach calculates thresholds for a large set of fiscal and non-fiscal variables based on their behaviour in the periods predating past episodes of fiscal distress, so that an alarm signal can be identified whenever these thresholds are exceeded. The main finding from this methodology is that financial and competitiveness variables appear to have a stronger predictive power than the pure fiscal variables/ indexes. Even if the result is likely to be driven in part by data on the current crisis, this observation is an argument for having an integrated fiscal-macro surveillance process, as the one which is carried out in the EU in the context of the European Semester.

The current EU methodology could also be reinforced by the estimation of country-level fiscal reaction functions. The EU methodology compares sustainability indicators to the primary balances observed in a peer group of countries in order to assess the feasibility of fiscal consolidation programmes. The fiscal reaction function allows the comparison of government programmes with past public finance behaviour of the group of peer countries, while controlling for a number of macroeconomic and institutional determinants. This allows for a sounder comparison. Chapter IV.4 presents an econometric estimation of a fiscal reaction function for the EU27 based on the longest available series for fiscal variables. The estimates are combined with the EU intertemporal budget constraint to calculate sustainable debt levels under different assumptions for the interest rate-growth rate differential. Current debt levels can then be compared with these thresholds to draw a first assessment of whether a Member State is fiscally sustainable. Estimates, even though relatively imprecise, indicate that current deficit forecasts point to a more restrictive stance than predicted by the model, albeit lying within the predicted range. Estimates for sustainability are in general in line with a priori expectations, with weaker member states being flagged as unsustainable.

Finally, Chapter IV.5 introduces a model-based analysis. A general equilibrium approach is used, so the inter-linkages between fiscal variables and macro-economic developments are taken into account. Based on the Commission's QUEST model, the chapter presents tentative estimates of revenue-maximising tax rates based on the Laffer curve – which relates taxation revenues with taxation levels – for three different categories of tax and for the EU as a whole. This figure can be compared with current tax rates to provide a measure of the available margin for discretionary tax increases in the context of a fiscal consolidation programme. The chapter presents an illustrative simulation of the general equilibrium effects of a tax-based fiscal consolidation, and compares gradual versus abrupt consolidations, showing the greater feasibility of the first one. The main policy conclusions are that purely revenue-

based consolidations, when feasible, are very costly in terms of output. Fiscal consolidations should be implemented in a timely manner, as this contains the accumulated debt stock and allows the consolidation to be smoother.

The forthcoming Commission report on "Tax reforms in EU Member States 2011" will complement this report by identifying various challenges faced by euro area Member Sates in the area of tax policy in the wake of the crisis.

The report analyses the potential for making use of taxation – as a complement to expenditure control – to ensure fiscal sustainability. The report also addresses the issues of the quality of taxation, in particular the need to make the tax structure more growth friendly and to improve the design of individual taxes.

1. INTRODUCTION

The financial and economic crisis that hit all advanced economies from 2008 severely affected the public finances of most EU Member States. As part I showed, there has been a sharp deterioration of government budget balances and a parallel increase in debt to GDP ratios. In some Member States, the situation of the public finances became so critical as to put their fiscal sustainability at risk. The spreads on sovereign interest rates increased ([51]) and large financial assistance packages from the European Union and the IMF were negotiated for Greece, Ireland and Portugal. In parallel, a permanent mechanism, the European Stability Mechanism (ESM)([52]) was agreed upon to provide assistance to euro area Member States in the future.

The ESM will only provide funding to countries under strict conditionality and only after a fiscal sustainability assessment shows the country to be solvent. Such an assessment will typically require two types of analysis: first, an assessment of the short-term liquidity needs of the country, and, second, a medium to long term assessment of debt sustainability which analyses the public sector's ability to pay back its debt. The assessment of the short term liquidity needs should be the outcome of a comparison between the cash situation of the government, its incoming revenues and payments and its capacity to raise the necessary liquidity on the markets. The medium to long-term sustainability analysis is a measure of the public sector's ability to pay back all its outstanding and future debt, or to implement the policies that set the debt to GDP ration on a downward path.([53])

The two aspects of the analysis are both necessary and interconnected. ([54]) After all, analysing solvency over longer time horizons is of limited interest if the government does not have enough cash or market access over the short term; solvency does not necessarily guarantee access to the financial markets in the short run. Even if a government enters into a process of fiscal adjustment that would lead to a lasting reduction in the debt ratio, markets may take a long time before acknowledging the credibility of the process. A solvent government may therefore not be able to borrow on the financial markets at acceptable rates. On the other hand market expectations are at least partly driven by an analysis of medium-term sustainability.([55])

Traditionally, the long-term analysis of sustainability has been based on the concept of inter-temporal government budget constraint (IBC). The IBC can be shown to be equal to $b_t = -\lim_{n\to\infty} \sum_{i=1}^{n} \frac{d_{t+i}}{(1+r-\gamma)^i}$ where b is the ratio of outstanding public debt over GDP at the end of period t, d is the primary government deficit (i.e. the difference between non-interest expenditures and revenues) over GDP, r is the real interest rate on government debt and γ is the real growth rate of GDP, with both assumed to be constant.([56])

The IBC is satisfied as long as the outstanding stock of debt is fully offset by the present value of the flow of future primary surpluses. The traditional analysis is therefore based on indicators capturing whether past or foreseen developments in fiscal variables are consistent with the fulfilment of the IBC and, in case they are not, quantifying the magnitude of the required fiscal adjustment to ensure fiscal solvency. The constraints of economic and political feasibility are taken into account as far as possible.

There is a large body of literature which derives and applies a number of methodologies to assess government debt sustainability by taking the IBC as the starting point. It can be divided into four strands:

i) the "econometric approach" tests empirically whether the time series process generating fiscal

([51]) This situation is unprecedented within the Euro-area. So far, markets had considered government bonds of all EMU Member States to be equivalent in terms of risk, leading to zero or minor interest rates spreads vis-à-vis the German Bund.

([52]) For more details see Box II.2.1 in Part II.

([53]) See Blanchard et al. (1990) Trehan and Walsh (1991) and Chalk and Hemming (2000).

([54]) Other potentially relevant aspects are not treated here, like for example the potentially impact of self-fulfilling expectations in the financial markets.

([55]) See for example Barclays (2011) or Moody's (2009).

([56]) It is standard to derive the equation in the text starting from the one-period government budget constraint written in terms of ratios over GDP, linearising it, solving it forward and combining it with the no-Ponzi condition (or transversality condition) ruling out the possibility that the discounted value of the debt ratio at the end of time horizon is strictly positive.

data is consistent with the fulfilment of the present value budget constraint (among many Hamilton and Flavin (1986), Threhan and Walsh (1988) and (1991), Hakkio and Rush (1991), Wilcox (1989), Kremers (1989), Bohn (2005) and (2007) and Mendoza and Ostry (2008);)

ii) the "gap approach" chooses indicators of fiscal sustainability in terms of the required adjustment of primary balance (mainly.) The indicators include the over-borrowing index, which is equal to the current debt ratio divided by the present discounted value of future primary surpluses (IMF (2003);) the primary gap indicator (Blanchard (1990),) which takes the difference between the actual primary balance and the debt-stabilising primary balance; the tax gap indicator (Blanchard et al. (1990),) defined as the difference between the constant tax rate which would be required to fulfil the inter-temporal budget constraint for a given path of government expenditure and the current tax rate. A variation on this theme is found in the practical applications with finite horizons, in which the focus is to assess whether the current policy stance is consistent with reaching a desired debt level at the end of the horizon (Blanchard et al. (1990); Polito and Wickens (2005) and Uctum and Wickens (2000);)

iii) the "threshold approach" focuses on country-specific policy surveillance (see IMF (2002), (2004) and (2010); and Abiad and Ostry (2006)) and is aimed at the early detection of debt-related vulnerabilities via the identification of threshold levels beyond which a country would be at serious risk of debt distress; and

iv) the "stochastic approach" is based on the idea that a probabilistic methodology is more adequate than a deterministic one in order to assess debt sustainability (Barnhill and Kopits (2003), Garcia and Rigobon (2004) and Celasun et al. (2006) apply a value-at-risk approach; Mendoza and Oviedo (2004) derive debt limits in a general equilibrium setting under uncertainty.)

1.1. THE TRADITIONAL COMMISSION APPROACH

The assessment of the long-term sustainability of the public finances is a well-established part of EU multilateral surveillance since the 2005 reform of the Stability and Growth Pact (SGP.) Its main application is in contributing to the assessment of fiscal policy in the plans contained in the Stability and Convergence Programmes (SCPs) submitted yearly by Member States.

The sustainability analysis undertaken by the Commission can be categorised as part of the 'gap approach'. It looks at the risks to fiscal sustainability under the assumption of no-policy change in the government budget on the basis of: i) the current structural budgetary position; ii) the budgetary challenge posed by population ageing over the longer term. Where the IBC is not satisfied, the need to introduce structural reforms, including of pension systems, and/or to consolidate the public finances is highlighted. By stressing the need for appropriate time-consistent policies to be adopted soon after the challenges are identified, the analysis should help avoid a situation where abrupt policy changes are introduced at the last moment. Under most circumstances attaining fiscal sustainability entails reaching and maintaining a sound fiscal position which should broadly be in line with the medium-term objective for the government budgetary position (MTO.) In this way, the Commission analysis both highlights the contribution of sound fiscal policies in the medium term and emphasises long-term to fiscal sustainability.

In the EU approach the following aspects are analysed.

Medium term debt projections and alternative consolidation scenarios

Every year, an assessment of the medium-term debt dynamics is made, based on the data contained in the most recent SCPs submitted by Member States, reflecting planned changes in fiscal policy.([57])

This assessment produces illustrative projections for the gross government debt to GDP ratio up to 2020, built around a "programme scenario" which assumes that structural primary balances are adjusted according to the plans in the programmes and are kept constant thereafter – except that changes in the cost of ageing are accounted for.

([57]) In the present Section the 2011 SCPs presented in 2011 are used. See Part I for the details.

([58]) This allows disentangling the various drivers of the projected evolution of the debt-to-GDP ratio.

The evolution of debt is then considered under different assumptions on government behaviour, namely under an assumption of no consolidation at all and under an assumption that consolidation is made on a no-policy change basis where legislated measures are measured (this is the "2012 COM scenario", based on the Commission services' Spring 20111 forecast.) ([59])

The EU analysis is based on a graph similar to Graph I.3.15 in Part I, which depicts the projected evolution for the government gross debt ratio for the EU as a whole.([60]) The graph compares the "programme scenario" – which in the example depicted would lead to a decreasing debt to GDP ratio from 2013 but without achieving the Treaty reference value of 60% of GDP by 2020 – to the "2012 COM scenario" – which in the example presented shows that based on the estimated structural primary balances in 2012, debt would continue increasing to about 90% of GDP by 2020, though with large differences across countries – and to the "2010 scenario" – which shows that fiscal positions reported in the programmes would result in debt increasing rapidly to reach 120 % of GDP in 2020.([61])

The comparison of the scenarios based on the Commission forecast with the program scenario provides a first indication of the consolidation effort that a Member State still has to make in terms of the measures it has to legislate for. Moreover, the use of COM forecast should reduce the impact of the over optimistic macroeconomic assumptions which have been shown to be a feature of the SCPs.

Finally, in order to assess the robustness of the results, projections based on risk scenarios that depart from the programme baseline to take account of possible slippages in consolidation, lower GDP growth and higher real interest rates are also presented.

Medium term sustainability indicators

A medium term indicator of the sustainability of government finances is also computed. The indicator measures the adjustment in the structural primary balance required between the end year of the programmes and 2020, to reach the level of structural balance which, if kept constant, brings debt to a given debt target by 2030.([62])

This indicator provides an assessment of the adjustment which is required for a Member State to reach a predefined debt level and can be compared to past episodes to benchmark its feasibility.

As an example, the 2011 data for the EU as a whole show that in order to reach a debt level of 60 percent of GDP by 2030, the adherence to the fiscal plans in the SCP throughout the programme period would not suffice. The further necessary cumulative consolidation effort required by 2020 is computed (in this case it equals 1.0 percentage point of GDP, i.e. 0.15 percentage points of GDP per annum.) However, assuming that SCP plans are respected, implies a lower effort than the one in the "2010 scenario" or the one in the "2012 COM scenario" (as computed in Chapter I.3.5, in the "2010 scenario" a further cumulative effort of 5.3

([58]) In the "programme scenario", the macroeconomic assumptions up to 2014 (or the last year of programme) are those reported in the SCPs. As a general rule output gaps are assumed to close in 2015 (2017 for certain countries), after which the potential growth rates converge to the long-term trend as agreed by the Commission and AWG/EPC and published in the 2009 Ageing Report (European Economy 2/2009)

([59]) Growth projections in the SCPs are, on average, broadly in line with the 2011 Spring Commission forecast but with a significant gap for some individual countries. More details are found in Chapters I.31 and I.3.5.

([60]) The evolution of the debt ratio can be decomposed as follows:

$$\frac{D_t}{Y_t} = \frac{D_{t-1}}{Y_{t-1}} - \frac{PB_t}{Y_t} + \frac{D_{t-1}}{Y_{t-1}} \frac{i_t - y_t}{1 + y_t} + \frac{SF_t}{Y_t}$$

where t is a time subscript; D, PD, Y and SF are the stock of government debt, the primary balance (which includes age-related expenditure), nominal GDP and the stock-flow adjustment respectively, and i and y represent the average cost of debt and nominal GDP growth (Cfr. European Commission (2010) page 150).

([61]) The macro-economic scenarios in the SCPs may be on the optimistic side (a phenomenon observed in the past). By using the latest independent COM forecast, this potential effect would be reduced.

([62]) The structural primary balance is assumed to be linearly improving through 2020; thereafter, while it tends to deteriorate due to the cost of ageing, its level still guarantees that the debt target is reached by 2030.

percentage points of GDP is required, while in the "2012 COM scenario" a further cumulative effort of 3.3 percentage points of GDP is required.)

The next step would be to compare the required adjustments to the historical experience. In this example the required adjustment implied by the "2012 COM scenario" would not be unprecedented. The general government balance has improved considerably in Denmark between 1982 and 1986 (by a total of broadly 14 percentage points of GDP,) in Greece between 1990 and 1994 (9.3 percentage points,) in Finland from 1996 to 2000 (9 percentage points,) in Sweden between 1982 and 1987 and from 1993 to 2000 (by around 10 percentage points and 12.5 percentage points, respectively), in the United Kingdom from 1993 to 2000 (by 11.2 percentage points) and in Cyprus from 2003 to 2007 (by 9.5 percentage points.) Figures in cyclically adjusted term have a similar order of magnitude.

The consolidation requirements shown here are useful in a post-crisis environment to show the necessary adjustments to bring debt down to manageable levels in the coming two decades. However, the demographic developments after 2030 will further slow output growth and increase ageing-related costs. Thus, to take into account all the challenges ahead, an even longer term view would be warranted.

Long-term indicators

The long-term sustainability of the public finances is usually assessed by checking the fulfilment of the IBC, which tests the capacity of a country to meet its net debt obligations through the stream of future primary surpluses. With reference to a finite and an infinite horizon for the budget constraint, two sustainability gap indicators are derived: ([63])

- *the S1 indicator* shows the upfront adjustment to the structural primary balance required to reach the debt to GDP threshold of 60 percent in 2060. The timescale has been chosen to be long enough to allow the impact of ageing to be analysed in a meaningful way while still remaining within sight.

([63]) For more details on the two indicators, including their derivation, see European Commission (2009).

- *the S2 indicator* shows the upfront permanent adjustment to the structural primary balance required to fulfil the infinite horizon intertemporal budget constraint.

The sustainability indicators quantify the gap that must be closed immediately and permanently to ensure the sustainability of the public finances taking into account the implicit costs from ageing population: the larger the value of these indicators, the greater the required adjustment to the structural primary balance to ensure intertemporal solvency.([64])

Graph I.3.16 and Graph I.3.17 in Section I.3.5 show the S2 sustainability indicator in the "2010" scenario and in the "programme" scenario respectively. These graphs are used to i) compare sustainability gap after and before the programme (for example LU and FI have higher sustainability gaps in the programme scenario); and ii) to classify countries into risk categories in terms of long-term sustainability of public finances.([65])

1.2. SOME NEW POSSIBLE INDICATORS FOR SUSTAINABILITY ANALYSIS

The experience during the latest recession highlighted that the current EU sustainability analysis, although valid, could be complemented by other analytical tools to help anticipate episodes of severe public finance distress such as those which have occurred in some EU Member States. Such tools could take a larger spectrum of aspects of the economy into account when assessing the solidity of government balances and plans.

Starting from these considerations, the Commission services therefore have started an ongoing effort to expand sustainability analysis. F our possible approaches to extend sustainability analysis are being analysed in this report. First, given the key role that the banking sector had on the government finances in a number of EU

([64]) A negative value indicates that the intertemporal budget constraint is met under current policies and future expected implicit liabilities so slightly looser fiscal policy is affordable.

([65]) The Commission defined three categories of countries. Gaps in excess of 2 percent are judged to display medium risk, while gaps over 6 percent display high risk. Gaps below 2 percent are consistent with low risk.

countries as a result of the crisis, the EU analysis has been enriched with a methodology based on a value-at-risk analysis. This aims to calculate the probability distributions of aggregate banking losses and their direct impact on government finances, by country. The methodology and tentative results for a sub-set of EU Member States are presented in Chapter IV.2. The distribution probability on banking losses is directly related to the gap approaches in that it provides an estimate of the resources that would be necessary in case the government had to intervene to save the banking sector in the case of a banking crisis. Unless the required resources had been accumulated in dedicated funds, the result would be an increase in debt. Therefore the approach presented in Chapter IV.2 enlarges the set of risk which can be taken into account in the current EU sustainability assessment and allows the computation of the improvement in government balances necessary to secure debt sustainability in the case of a banking crisis and to attach to it a certain probability distribution.

Given that the current EU methodology – in line with all methodologies based on the gap approach – compares primary balance-based indicators of sustainability to the observed primary balances in order to assess the feasibility of fiscal consolidation programmes, the benchmark primary balances provide a useful indication for sustainability assessments. The easiest benchmark is provided by the observed primary balances observed in a peer group of countries. The fiscal reaction function approach presented in Chapter IV.4 allows a sounder comparison of government programmes with past public finance outcomes of a group of peer countries, as econometric techniques allow for a number of macroeconomic and institutional determinants to be controlled for. In Chapter IV.4 a fiscal reaction function is estimated. The estimates are combined with the EU intertemporal budget constraint to calculate sustainable debt levels under different assumptions for the interest rate-growth rate differential. Current debt levels can then be compared with these thresholds to draw a first assessment of whether a Member State is fiscally sustainable.

However, it has clearly emerged from the crisis that difficulties which can affect the government budget are not exclusively linked to the situation of the government finances or to a banking sector under strain. Therefore, in line with the reform of the European economic governance, a broader spectrum of variables, both fiscal and non-fiscal, has to be monitored in order to detect risks of upcoming fiscal crises. An early warning system is therefore presented in Chapter IV.3, which relies on monitoring additional fiscal variables – such as the maturity structure of the government debt – as well as trends in macro-financial economic variables – competitiveness indicators, credit growth and private sector indebtedness – to produce an indicator of a country's fiscal crisis vulnerability based on the values of selected relevant variables. Such an indicator of fiscal vulnerability is used as a signal allowing the early identification of risks of public finance distress. The value it assumes in a given country in a given year can be compared against the critical value of the indicator: indicator values beyond the relevant threshold provide warnings of fiscal crisis risks for the following year. This methodology is useful in the overall assessment framework because of its complementarities with existing methodologies. Indeed, the analysis of the results obtained for the vulnerability indicator necessitates the consideration of which variables drive the outcome of the exercise on a country by country basis. This in turn is an exercise in judgement, making the signals approach an instrument that is best used at the beginning of the assessment procedure with the aim of understanding the possible sources of risk for government finances.

The instruments presented up to now are useful tools to assess debt sustainability but require the assumption that the feedback effects between fiscal and economic variables are small. However, especially when large consolidations are implemented by governments, this assumption proves weak and it becomes necessary to assess the feasibility of the consolidation policies given their effects on the economy. Indeed, the ability to run primary surpluses is constrained by fiscal limits, i.e. the constraints that the behaviour of the economy puts to the capacity of governments to conduct the desired fiscal policy. To evaluate such limits, Chapter IV.5 introduces a model-based general equilibrium approach which allows taking into account the inter-linkages between fiscal variables and macro-economic developments. The Chapter is based on the Commission's QUEST model, and presents tentative estimates of revenue-maximising tax rates based on the Laffer curve –

which relates taxation revenues with taxation levels – for three different categories of tax and for the EU as a whole. The analysis shows i) that the maximum revenue collectable by the government depends on the tax instrument used, with labour income taxation facing the tightest limit; ii) that highly elastic tax bases amplify the output costs of higher taxation; and iii) that the timing of consolidation is a relevant variable when assessing sustainability. Keeping these points in mind, model simulations can add relevant information to the sustainability analysis in two ways. First, they provide a rough benchmark against which it is possible to compare existing effective tax rates. Second, different consolidation composition and timing scenarios can be compared via a measure of their output costs.

To conclude, the present part provides possible new instruments that can be used in sustainability analysis and in the related analysis of consolidation packages.

As it will be seen later, these new instruments provide different indications on sustainability and should therefore used together and provide a substantive part of the analytical support for an informed decision on the sustainability of debt in a given country.

2. POTENTIAL IMPACT OF BALANCE SITUATION OF THE BANKS ON PUBLIC FINANCE

2.1. INTRODUCTION

The crisis has shown that the traditional analysis described in the previous Chapter has various limitations, such as not recognising that the balance sheets of governments and of banks are interconnected and can affect each other in both directions.

A change in the value of sovereign bonds can, for example, affect banks, as high graded government bonds are used by the Eurosystem banks as collateral to obtain liquidity from the ECB, with the amount of the liquidity being dependent on the grading of the assets.([66]) Given the high integration of capital markets, a downgrading of any sovereign in the euro area can have broad spillover effects on Eurosystem banks.

In the other direction, the government budget can be directly affected by banks' balance sheets if the governments decide to support part of the banking system in case of financial troubles, and indirectly affected in the event of a banking crisis due to the its fiscal consequences.

The main weakness exposed by the events of recent years is that no account was taken of the potential consequences of the condition of the financial sector on government finances. The present Chapter focuses therefore on the direct impact that weak balance sheets of banks have had or could still have in the future on governments' balance sheets.

Since the outbreak of the crisis, governments and central banks have been involved in the rescue of failing banks via state aid, albeit to a different extent in different countries. As Graph IV.2.1 shows, government assistance to the banking sector has, overall, been sizable and in more than half of Member States has exceeded 5% of GDP. Currently, sizable rescue measures to the banking sector weigh heavily on the public finances, most particularly in Ireland, the UK, Denmark, Belgium, the Netherlands, Austria and Germany.

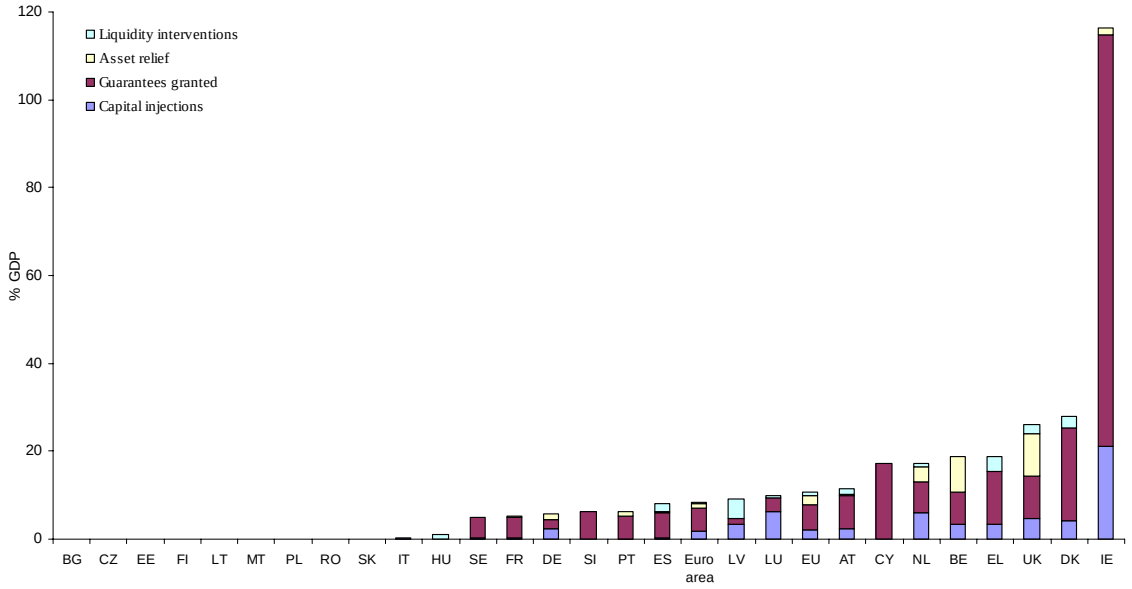
Government assistance to the banking sector includes various measures such as capital injections, liquidity interventions, asset relief and guarantees. The strongest form of intervention form is recapitalisation, when a bank receives capital injections, either via a national scheme or via an ad hoc individual rescue operation. This can involve the government acquiring stakes in the banking sector, or supporting such acquisitions by third parties. Some countries issued guarantees on banks' liabilities (bond issuance) although the coverage of the guarantees varied by country. Asset relief interventions include the ring-fencing of toxic and impaired assets and the setting up of "bad banks", while liquidity support interventions are interventions aiming at supporting liquidity and providing extra financing to the bank via to a state guarantee. This includes a broad range of interventions, such as liquidity facilities at central banks when there is an explicit guarantee by the state, loans by the Treasury or high quality assets swaps. Liquidity support interventions were sizable in the many non-euro area EU countries, as these countries did not have access to the ECB's liquidity. Within the euro area, some banks were also able to avail themselves of their national central banks' emergency liquidity assistance (ELA).

As compared to the overall amounts of EU domestic public interventions, financial assistance and rescue package measures have been significantly smaller in most of the new Member States. This is due to a dominating presence of the foreign owned banks. The parent banks of these subsidiaries and branches maintained the exposures and provide additional capital as required.

Currently, exit strategies from public support to banks have been initiated. However, the situation differs across Member States as, in some countries such as the Netherlands, France and Austria, banks have started to return the state aid, while in other

([66]) In order to protect the Eurosystem against losses arising from a counterparty default and the subsequent need to realise these underlying assets, the ECB applies risk control measures that are uniform across the euro area, such as, inter alia, assets of a certain quality and haircuts. Similar procedures are used by other monetary authorities.

Graph IV.2.1: **EU public interventions in the banking sector as of 31/10/2010 (in % of GDP)**



Source: the EFC questionnaire (based on data from 31/12/2009), and updates up to 31/10/2010.

countries government assistance to the financial sector has been provided recently.([67])

However, in the majority of countries where the banks received state aid, the financial system remains fragile. This means that the exit from crisis support measures will need to be carefully managed between the need to safeguard macro-financial stability and the need to preserve fiscal credibility. In some countries banks' profitability outlook is uncertain given a sluggish recovery, heavy exposures to the real estate sector and tensions in the sovereign debt market. This could signal that directly or indirectly – via reduced growth – the costs for the government finances are unlikely to be reduced in near term.

On the basis of the above considerations, the importance of quantifying the effect that a banking system faced with financial difficulties could have on the stability of government finances is clear. The remainder of this Chapter will present the results of the Commission's estimation of the direct potential impact of bank losses on government finances, which has been developed to address these issues. The Commission's analysis is based on the results of the SYMBOL (**SY**stemic **M**odel of **B**anking **O**riginated **L**osses) model([68]) for the evaluation of the probability distribution of the systemic losses in the banking sector which may potentially affect government finances.

This model starts by estimating the probabilities of a default of bank obligors as assessed by the country's banking system regulator. It then uses these estimates to evaluate the default risk of individual banks, and aggregate individual bank losses to estimate the distribution of losses for the banking system as a whole. This aggregated distribution by country can be obtained under different conditions. By considering different regulatory regimes and the risks they entail, an estimate of the possible cost to the public finances is then computed in the various considered conditions.

([67]) It is noted that the banks, which receive the state aid have to undergo a restructuring process. An intensive banking sector restructuring process is currently underway in Germany, Ireland, Greece, Denmark and Spain. In other countries, including Austria and Belgium, the restructuring is closer to the finalisation. This is a prerequisite for banks to reimburse governments.

([68]) SYMBOL has been initially developed by a joint team of Commission services together with academic experts on banking regulation. The methodology used is explained in De Lisa, Zedda, Vallascas, Campolongo and Marchesi (2010) .

An important strength of the model is to use publicly available information to estimate each bank's portfolio riskiness and to use such information to compute a probability distribution of aggregate bank losses. The methodology does however also have some weaknesses. First, publicly available data on the banking system do not have sufficient coverage in all EU countries. Second, the model's calculations rely on how regulators model banks' losses when computing capital requirements. Third, the model does not directly include a link to the general economic situation. Finally, banks' capital requirements are not only composed of their credit risk component (although credit risk is normally a very preponderant part of capital requirements,) while SYMBOL currently assumes that all banks assets consist entirely of loans, so that all capital requirements are considered as for credit risk.

The rest of this Chapter will briefly present the model methodology, discuss its weaknesses and its possible future developments, and present some results for four EU Member States (DE, IE, PT, SE) which are chosen for illustrative purposes.

2.2. METHODOLOGY AND DATA ISSUES

SYMBOL estimates the systemic losses and liquidity shortfalls deriving from banks' defaults, explicitly linking Basel capital requirements to the other key tools of the banking safety net. These are Deposit Guarantee Schemes (DGS), aimed at protecting depositors, and bank Resolution Funds (RF), aimed at allowing the orderly resolution of failing banks blocking spill-over/contagion effects.([69])

SYMBOL operates on the basis of two steps: i) the estimation of a default probability for the assets of any individual bank exploiting the features of the Basel FIRB loss distribution function; ii) the estimation of a distribution of aggregate losses by country on the basis of the individual banks' asset default probability.

The estimates of aggregate country-level distributions of bank losses are performed according to different regulatory and institutional scenarios. It is thus possible to provide an assessment of the relevance of potential bank losses on the public finances under different circumstances.

Estimation of default probabilities of assets of individual banks

This subsection describes the first step of the SYMBOL model which is to obtain the default probabilities of the assets of individual banks from the publicly available information on their accounts and on the regulatory framework. As the estimation possibilities are very much determined by the available data, the subsection also describes the data used to undertake this analysis and the simplifying assumptions that are necessary in order to use it which are key to gaining an understanding of both the scope and the limitations of the SYMBOL estimates.

SYMBOL estimates the probability distribution of individual bank losses based mainly on two main sources of information: i) publicly available financial statements; and ii) publicly available regulatory capital requirements imposed by the national regulators from which it is possible to estimate the implied average probability of default of the bank's asset/loan portfolio. Some explanatory preliminary comments are necessary concerning both of them.

The main data source is *Bankscope*, a proprietary database of banks' financial statements produced by the private company Bureau van Dijk. The dataset covers a representative sample of banks in most EU countries. When needed and when possible, data are integrated with public information on bank's financial statements released by supervisory authorities and/or central banks.([70]) In addition, ECB data have been used to complete or correct the dataset.([71]) Table IV.2.1. presents

([69]) Resolution Funds are privately financed funds whose function is to support crisis management authorities in their effort to avoid contagion between banks and limiting systemic risk. These funds have already been created and financed in some EU Member States.

([70]) The European Commission asked the Member States' supervisory authorities and/or central banks for data. Among the Member States used in the analysis presented in this Chapter, only Ireland provided the requested information. The *Bankscope* sample is sufficiently representative of the entire bank population in the remaining countries.

([71]) Data from the ECB have been used for the following purposes: i) in some cases missing values for certain key

Table IV.2.1: **Description of the samples used for the SYMBOL simulations, data as of end 2009**

	Sample % Population	Total Assets (m€)	Total Liabilities (m€)	Total Interbank Debt (m€)	Total Interbank Credit (m€)	Total Covered Deposits (m€)	Total Capital (m€)
DE	64.19%	4 648 331	4 415 620	1 086 016	790 975	1 093 841	232 711
IE (1)	101.91%	1 221 181	1 155 789	276 738	148 729	147 145	65 392
PT	66.49%	323 762	297 421	43 561	34 505	82 952	26 342
SE	52.37%	455 355	422 301	97 604	122 872	75 383	33 054

(1) Data for IE are from the Supervisory Authority
Source: Bankscope, Eurostat

aggregated information on a selection of key variables for the samples of banks used in the simulations. The year of reference is 2009. The first column of the Table shows the coverage of the samples, expressed as the percentage of total assets of the banks in the samples and an estimate of the total assets for the entire population of banks in each Member State. The latter is obtained from the 2010 ECB EU banking structures publication, and it is computed as the amount of total assets for all banks minus total assets of branches from branches abroad.([72])

While the data coverage for the four the countries presented here is satisfactory, good levels of data coverage will have to be achieved for all EU countries for the exercise to be a helpful addition to the regular sustainability assessment within the EU.

In terms of the timing of the assessments, as financial statements relative to a given year are usually prepared at the end of the fiscal year, the relevant data only become available in *Bankscope* around September of the following year. For this reason, the SYMBOL analysis in the current Chapter uses 2009 data, as the full set of 2010 data would only be available from end of September 2011.

Banks operate within a regulatory framework known as the Basel framework which imposes minimum capital requirements for credit risk that allow banks to absorb all unexpected losses with an ex ante 0.1% probability or more. Unexpected losses are computed by regulators by category of loans according to a standard statistical model of credit risk and an assessment made by each bank of the default probability of each loan class which is not made public. The model adopted by the regulators is public,([73]) as are all relevant parameters used for its computation, with the exception of the default probabilities of the banks' obligors assessed by the banks themselves and validated by the regulators. SYMBOL estimates the implied average default probability of the obligors which reflects the assessment of the banks – based on the assumption that banks' assets consist entirely of loans – using publicly available data on capital requirements and based on the values for the other parameters of the credit risk model set by the regulator.([74])

The average probability of default of the credit portfolio of each bank is thus estimated consistently with capital requirements, while other variables (LGD, maturity, etc.) are set at their default values.

This estimate can then be used to enter the second stage of the assessment which looks at the overall losses of all banks in an economy and is described in the next subsection.

variables from the *Bankscope* sample have been filled in using estimations obtained from the ECB aggregated data; ii) ECB data were used to assess the coverage of the *Bankscope* sample and to rescale SYMBOL results to the entire population of a country's banks; iii) to check on the reliability of data on interbank positions in *Bankscope*.

([72]) European Central Bank (2010).

([73]) For the purposes of the SYMBOL model, unexpected losses are computed according to the Basel Foundation Internal Ratings Based (FIRB) formula, which is an industry model of credit risk. It is a calibrated version of the Vasicek model for portfolio losses, which is explained in more detail in Vasicek (1991). The recent revision of the Basel framework, known as Basel III, has modified some of the parameters of the FIRB formula and raised the standards banks' capital must satisfy in order to meet minimum capital requirements. The Basel Committee on Banking Supervision (2005) discusses the Basel FIRB approach in more detail, while the Basel Committee on Banking Supervision (2010) provides details on the Basel III accord.

([74]) The other parameters set at their default values are the Loss Given Default (LGD) parameter, the correlation between banks' assets, maturity and other correction parameters.

Computation of aggregate bank losses and the different scenarios

At this point, the average probability of default of the credit portfolio of each bank is estimated. A distribution of individual bank losses can be computed on the basis of the estimated average probability of default of each individual bank's obligors.([75]) This subsection describes how the estimated average probabilities of obligors' default are used in the second step to compute the individual distribution probabilities of banks' losses and the probability distribution of aggregated bank losses.

It has to be noted that both the individual default probabilities of the banks and the aggregate loss probability cannot be computed independently from the default probabilities of other individual banks: the probability of default of each bank depends – via the interbank market – on the probability that other banks fail. The only case where this does not hold is the case of no contagion effect between the banks. The individual default probabilities of the banks (and the probability distribution of aggregate losses which result as the sum of them) can thus only be computed interactively with the probabilities of default of individual banks. The process is thus the following: probability distributions of defaults of individual banks are computed interactively and, at the end of the process, the probability distribution of aggregate losses is computed.

More precisely, starting from the estimates of the average probability of default, SYMBOL generates individual bank credit losses via a Monte Carlo simulation according to the Basel II FIRB function loss distribution.

Banks' simulated losses are then compared with banks' capital: whenever losses exceed capital, banks are considered to default. Individual banks' excess losses (i.e. losses exceeding banks' total capital) are combined to gain an estimation of the overall aggregate bank excess losses for a given country.

The probability distribution of aggregate losses is computed under two possible conditions. The first is named "no-contagion": banks are considered to default in an orderly fashion with no contagion effects to other banks via the interbank market. The second is named "contagion": defaulting banks are considered to create contagion effects to other banks via the interbank market. This captures systemic linkages between banks which go beyond the correlations of their assets. ([76])

Whenever a bank defaults, it is assumed that 40% of the amount of its interbank debits are passed as losses to creditor banks and distributed among them.([77]) Losses are distributed according to a criterion of proportionality: the portion of loss absorbed by each surviving bank is proportional to the share of its creditor exposure in the interbank market. A contagion effect is possible whenever with this additional loss causes other bank defaults, with several rounds being possible.

Aggregated losses are finally obtained with and without contagion and are calculated as the sum of the losses in excess of banks' capital over the entire bank sample. Losses are then divided by the sample size in percentage of the population to obtain the aggregated loss distribution for the entire population.

The following points should be noted:

i) the SYMBOL model's simulations rely on the Vasicek model as calibrated by regulators in the FIRB loss distribution function. Potential issues linked to the characteristics of this formula and

([75]) The probability of individual bank default is obviously different – even though related - from the probability of default of its obligors, because the former also depends inter alia, on i) the possibility that other banks fail and transmit their losses to the bank via the interbank market and ii) the functioning and the capacity of intervention of the regulatory system at large.

([76]) Only contagion via the domestic market is modelled in the current version of SYMBOL. The correlation between the assets of obligors appears in the Monte Carlo simulations: This simulation takes into account the correlation between the assets of different banks due to the presence of common shocks in the economy via the utilization of correlated distributions in the simulations.

([77]) Two assumptions made: the 40% percentage of interbank debits that are passed as losses to creditor banks in case of failure, and the criterion of proportionality used to distribute these losses across banks, which is dependent on the fact that a bank-to-bank interbank lending matrix is not available to the Commission. A loss of 40% on the interbank exposure is coherent with the upper bound of economic research on this issue. See e.g.: James (1991), Mistrulli (2007) and Upper and Worms (2004). Concerning the fact that the model distributes extra losses according to a criterion of proportionality, a sensitivity test has been developed which demonstrated that results of SYMBOL are not relevantly affected by this assumption.

whether its calibration is appropriate in representing credit risk can obviously have a strong influence the results of the simulations.

ii) banks' capital requirements are not only composed of their credit risk component. There are capital requirements that derive from market risk and operational risk. The main assumption currently behind SYMBOL is that banks assets consist entirely of loans, so that all capital requirements are considered as for credit risk. Except for very large banks with extensive and complex trading activities, this assumption is not excessively distortive as the credit risk component of capital requirements usually accounts for a very large share of total capital requirements.([78])

iii) the estimated average obligors' default probability by bank is based on the assessment made by banks and validated by the regulators. If banks and regulators wrongly assess the quality of a certain category of loans for a given bank this is reflected in the estimates of the model.

iv) a split of assets/loans into classes for which different obligors' specific probabilities of default are computed, would be desirable in order to refine the results of the simulations. However, the currently available public information contained in the *Bankscope* database does not allow this as the information on the split of capital requirements per asset class is needed.

The impact of aggregate bank losses on government finances

Once the aggregate bank loss estimates are obtained, it is possible to extrapolate and estimate the potential risk for public finances deriving from default in the banking sector. This subsection explains how such estimation is made.

The underlying assumption used is that losses generated in the banking system are first covered by banks' capital and, when this is insufficient, by the various tools present in the regulatory financial safety net. It is then assumed that the losses that cannot be absorbed by these instruments are covered by the government balances, where possible, as has occurred in the current financial crisis. The subsection presents estimates of the magnitude of the burden on the public finances for the four countries under consideration, namely Germany, Ireland, Portugal and Sweden.

The sequence assumed in the analysis is that when losses from obligors materialise, they are first covered with bank's capital (given by the sum of minimum capital required by regulation plus excess capital, if any.) If this capital is not sufficient, the bank defaults and the DGS/RF are called upon to intervene respectively to ensure that covered depositors are unaffected and the orderly resolution of the defaulting bank in order to prevent contagion effects. In the event that the DGS/RF funds are not sufficient to absorb the losses, it is assumed that these pass through to the government finances, as has occurred in the current financial crisis.([79])

The model estimates the probability that public finances are hit by bank losses. It also estimates the amount of funds that should be injected into the banking system by public interventions when the protection given by all existing tools of the financial safety net have been exhausted.

The assumption is made that the total amount of funds available for DGS and RF is the higher of 1.5% of covered deposits and 0.3% of total non-equity liabilities of the banking system in any EU Member State.([80]) Therefore the total amount of DGS+RF in the four considered MS is 31.308 million euro for Germany, 3.423 million euro for Ireland, 1.686 million for Portugal and 2.510 million for Sweden.

The model is run under different regulatory and effectiveness settings, obtained by modifying some

([78]) The *Bankscope* database reports the split of the minimum capital requirements among credit risk, market risk, and operational risk. The average shares (over the entire *Bankscope* sample) of minimum capital requirements for each of these classes are 89.16%, 7.67% and 3.18% respectively.

([79]) DGS and RF are assumed to cover part of the excess losses deriving from bank defaults in order to protect depositors and block spill-over/contagion effects respectively. Liquidity effects deriving from bank defaults are assumed to be neutralised by the intervention of a third party liquidity provider such as a central bank.

([80]) Rules on the determination of the total amounts of funds available to DGS and RF in each MS are still under negotiation in the Council and Parliament. The rule used here for simulation purposes does not necessarily reflect the final form of the rule as it will eventually be adopted. Results could be subject to change depending on the final form of the rule.

Table IV.2.2: **Scenarios definition**

	Capital Setting			DGS/RF Setting		*Bail in*		Contagion	
Scenario	*Basel 2*	*Basel 3 8%*	*Basel 3 10.50%*	*No*	*Yes*	*Yes*	*No*	*Yes*	*No*
1	X			X			X	X	
2		X			X		X	X	
3		X			X		X		X
4		X			X	X			X
4a			X		X	X			X

Source: Commission services.

of the assumptions that underlie it, so that various scenarios are possible. We present five scenarios, resulting from the combination of four factors: capital requirements, DGS/RF, the bail-in arrangements, contagion effects between banks. In more details, the factors considered are:

i) banks can be considered as needing to meet Basel II requirements, which are satisfied by their 2009 capital without the need for recapitalization,([81]) or they can be required to recapitalize in order to meet minimum capital requirements based on new and stricter definitions of Risk Weighted Assets (RWA) and capital provided under Basel III. Within the Basel III definition, minimum capital requirements can be set at their current 8% level of RWA or banks can be assumed to be asked to hold a capital conservation buffer so that their minimum capital ratio reaches 10.5%.([82])

ii) DGS/RF can be set up or not , i.e. part of the losses can or cannot be absorbed by these two entities.([83])

iii) settings are presented that differ with respect to the existence of a legal framework able to ensure that part of the losses of defaulted banks can be effectively *bailed in*. In particular, in the *bail in* setting, bondholders and non-covered depositors ([84]) are assumed to absorb bank losses out of the scope of intervention of DGS/RF.([85]) In the *no bail in* setting, it is assumed that DGS + RF are unable to intervene in a selective way, so that they end up also covering the exposure of bondholders and non-covered depositors of the defaulting banks.([86])

iv) the presence or absence of contagion effects is also considered.

Five scenarios are presented in Table IV.2.2, with scenario 1 representing the highest public finance risk and scenario 4a the lowest.

The scenarios provide an illustration of the effects that the various regulatory measures aimed at strengthening the financial safety net might have on the public finances. In the riskiest scenario banks are assumed to satisfy capital requirements with capital considered according to the less stringent definition of Basel II. DGS/RF are not considered to be in place, there is no *bail in* and contagion effects are assumed to exist. In the least risky scenario, banks are assumed to satisfy a minimum capital requirement of 10.5% (representing the fact that a capital conservation

([81]) Effective capital for SYMBOL simulation purposes is in this case calculated based on the 2009 publicly reported capital and an estimate of the effects of applying the new Basel III definitions of capital and RWA, without recapitalizing. Estimates of the impacts of the new definitions on 2009 capital levels are based on results of the comprehensive quantitative impact study by the European Banking Authority.

([82]) SYMBOL can currently take account of the consequences of the introduction with Basel III of changes in the definition of capital and of RWA in the trading book, securitisation and counterparty risk, as well as the introduction of the capital conservation buffer. The leverage ratio and the new measures on liquidity could possibly be factored into the methodology on the basis of how they modify contagion between banks via the interbank market.

([83]) Given the purpose of the RF, which is to allow the orderly resolution of banks, the absorption of losses can also be seen as associated to the move from a situation where contagion between banks takes place to another where contagion does not take place.

([84]) Depositors covered by DGS are only eligible depositors up to 100,000 EUR. Non-eligible depositors are for example credit institutions, other financial institutions, insurances and pension funds.

([85]) The share of losses belonging to bondholders and non-covered depositors is estimated on as the ratio between the amount of bonds plus non-covered deposits and total non-equity liabilities.

([86]) Note that in the *No Bail-In* scenario potential dynamic moral hazard problems arising from the coverage of the losses of all bank creditors by DGS and RF are currently not considered. Note also that in the *bail in* setting, once the DGS + RF funds are exhausted, the State intervenes to absorb with the same modalities of the DGS + RF, i.e. not absorbing losses hitting bondholders and non-covered depositors.

buffer is introduced on top of the 8% capital requirement,) with capital considered according to the more stringent definition of Basel III. DGS/RF are also considered to be in place, part of the losses is absorbed by bondholders/non-eligible depositors (*bail in*) and the legal framework is able to block contagion effects between banks. In between the most and least risky scenarios, there are three scenarios where banks start recapitalizing according to the new Basel III rules but without holding the capital conservation buffer, and DGS and RF are in place (contagion and no contagion are both considered, as well *bail in* and *no bail in.*)

Scenario 1 represents the situation at the beginning of the crisis, scenario 2 represents the situation as it is now, with some elements of Basel III introduced but without a functioning RF to stop contagion. Scenario 3 represents the situation in which a RF is introduced, thus eliminating contagion. Scenario 4 is like scenario 3, but with the successful implementation of *bail in*. Scenario 4a is like scenario 4, but with all banks increasing their capital to comply with the countercyclical buffer.([87])

2.3. RESULTS AND SUSTAINABILITY ASSESSMENT

Aggregate loss distributions computed using SYMBOL are used to assess sustainability of government finances with respect to defaults in the banking system generated by credit risk by looking at three indicators.

The main basis for an assessment is the distribution of costs for public finances which is presented in Table IV.2.3. The table presents selected percentiles of the probability distribution of the costs for government finances, starting from the last decile. To facilitate the reading of the results, costs have been expressed as percentage of GDP. Given that the bank data refer to 2009, 2009 GDP has been chosen. In the estimation of costs, the distribution of banking system losses is rescaled on the basis of the size of the sample employed (see Table IV.2.1) in order to make data comparable and to evaluate the costs to the public finances with respect to GDP.

The table can be read in the following way: in the case of Germany under scenario 1, with probability 99% the costs for the German government from an aggregate failure of banks is below 0.1% of GDP (clearly with a probability of 1% losses would be larger.)

A comparison across countries requires attention: for example, the expected loss cannot be read as an indication of the riskiness of the country because countries with better regulatory system will tend to have higher average losses. Indeed a good regulatory system will cover small losses (which happen with much higher probability) and will only leave big losses, thus increasing the average loss. The comparisons of values at the same percentile or of averages conditional at a given percentile are correct.

Some indicators of sustainability

The first indication of the risk run by government finances is the probability that the public finances are hit by losses deriving from bank defaults, with the caveat expressed above (for a precise definition see Box IV.2.1.) These probabilities are presented in Graph IV.2.2. They are derived from the information presented in Table IV.2.3 by looking at the probability of having any loss occurring in any of the five scenarios.

This indicator shows that, both in the previous regulatory situation (as modelled by scenario 1) and in the current one (as modelled by scenario 2,) Ireland and Portugal have a relatively high probability of being in the situation where government finances have to cover losses generated in the bank system.([88]) This indicator, however, does not yield much information on the size of the losses that might hit the public finances

([87]) The possible regular utilization of SYMBOL in the sustainability assessment will require a detailed by country analysis of the regulatory framework, in order to represent at best the reality of the countries. For example, the Commission is currently preparing a legislative proposal aiming at reinforcing bank supervision and at introducing resolution mechanisms. The implementation of such a provision would change the situation within the EU towards scenario V, the least costly for government finances. This proposal, if enacted, would certainly have an effect on the results of the model.

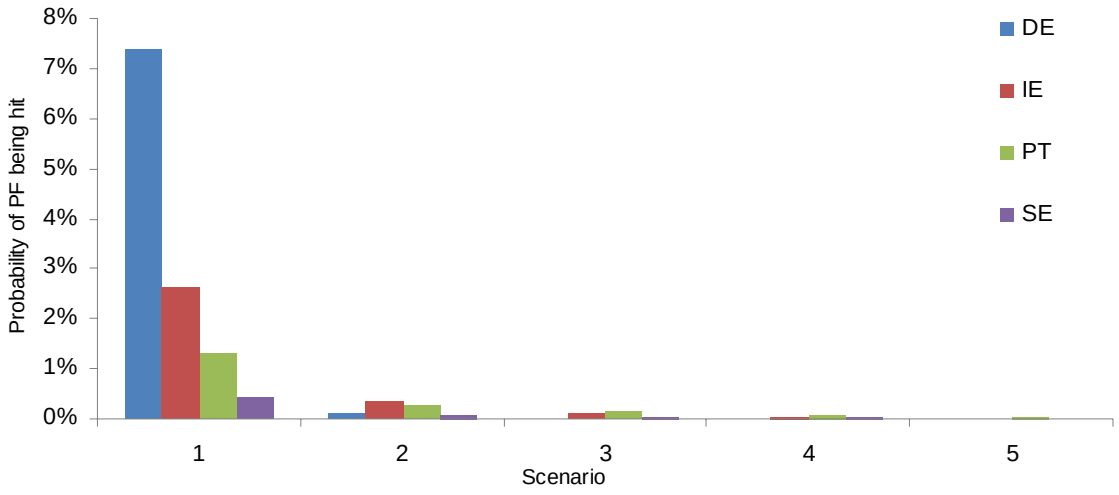
([88]) It should be borne in mind that in the current analysis it is assumed that liquidity is not provided by the government finances, as it is stated above.

Table IV.2.3: **Selected percentiles of the distribution of costs for public finances (% 2009 GDP)**

	DE					IE				
Scenario	**1**	**2**	**3**	**4**	**4a**	**1**	**2**	**3**	**4**	**4a**
90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
95	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
97	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
99	0.02%	0.00%	0.00%	0.00%	0.00%	42.77%	0.00%	0.00%	0.00%	0.00%
99.25	0.03%	0.00%	0.00%	0.00%	0.00%	45.09%	0.00%	0.00%	0.00%	0.00%
99.5	0.06%	0.00%	0.00%	0.00%	0.00%	47.73%	0.00%	0.00%	0.00%	0.00%
99.75	0.13%	0.00%	0.00%	0.00%	0.00%	52.20%	3.38%	0.00%	0.00%	0.00%
99.9	13.55%	12.09%	0.00%	0.00%	0.00%	56.53%	40.98%	0.54%	0.00%	0.00%
99.925	14.97%	13.49%	0.00%	0.00%	0.00%	57.94%	43.25%	1.15%	0.00%	0.00%
99.95	16.36%	14.92%	0.00%	0.00%	0.00%	59.92%	46.30%	2.09%	0.00%	0.00%
99.975	17.90%	16.46%	0.00%	0.00%	0.00%	63.25%	50.60%	3.91%	0.05%	0.00%
99.99	19.50%	18.08%	0.12%	0.00%	0.00%	67.97%	55.45%	6.59%	1.02%	0.29%
99.995	20.76%	19.34%	0.74%	0.00%	0.00%	71.66%	59.22%	9.09%	1.93%	1.14%
99.999	24.05%	22.71%	2.81%	0.71%	0.76%	81.95%	69.24%	15.65%	4.31%	3.38%
	PT					**SE**				
Scenario	**1**	**2**	**3**	**4**	**4a**	**1**	**2**	**3**	**4**	**4a**
90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
95	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
97	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
99	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
99.25	0.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
99.5	0.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
99.75	3.24%	0.59%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
99.9	8.55%	3.12%	0.59%	0.00%	0.00%	0.02%	0.00%	0.00%	0.00%	0.00%
99.925	9.95%	4.39%	1.06%	0.00%	0.00%	2.27%	1.41%	0.00%	0.00%	0.00%
99.95	11.56%	6.72%	1.76%	0.14%	0.00%	3.34%	2.48%	0.00%	0.00%	0.00%
99.975	13.83%	9.81%	3.03%	0.66%	0.03%	5.49%	4.64%	0.91%	0.00%	0.00%
99.99	16.66%	12.94%	4.86%	1.42%	0.72%	19.94%	19.08%	2.55%	0.52%	0.35%
99.995	19.06%	15.52%	6.44%	2.07%	1.32%	22.23%	21.37%	3.96%	1.08%	0.88%
99.999	24.95%	21.60%	10.51%	3.75%	2.93%	27.22%	26.36%	7.74%	2.61%	2.37%

Source: Commission services

Graph IV.2.2: **Probability of public finances being hit by losses deriving from banks' default**



Source: Commission services

and reflects the cases of relatively small losses from minor defaults in the banking sector.

A second more informative indicator is to see the loss which the countries might face in the current regulatory situation (as modelled by scenario 2)

Table IV.2.4: **Probability of becoming high-risk due to a banking crisis**

Country	Probability S2>6%					6-S2 (% of GDP)
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 4a	
DE	0.11%	0.11%	0.00%	0.00%	0.00%	1.80%
IE (1)	n.a.	n.a.	n.a.	n.a.	n.a.	-9.00%
PT	0.49%	0.25%	0.09%	0.02%	0.01%	0.50%
SE	0.02%	0.02%	0.00%	0.00%	0.00%	4.20%

Source: Commission services

with a given probability, such as 0.1%.([89]) As Table IV.2.3 shows, in this very unlikely situation Ireland would be exposed to a very burden on its public finances, equal to 40.98% of GDP, which is mostly related to the possibility of contagion between banks. This latter point can be seen by the fact that the value of the burden decreases by two orders of magnitudes in Scenario 3.

A third sustainability indicator is the probability that, due to a banking crisis hitting public finances, a MS becomes high risk in terms of the sustainability indicator S2. This corresponds to the probability that S2 exceeds 6%.([90]) As a first approximation we assume that all costs due to losses in the banking system are paid by Member State in the current year thus increasing the primary deficit by a corresponding amount.([91])

Table IV.2.4 presents the results for the four Member States under consideration.

This indicator, under scenario 2, gives a relatively high probability that Ireland and Portugal become high risk. Once again Sweden emerges as a relatively safe country as far as the risks to the public finances coming from the banking sector are concerned.

2.4. CONCLUSIONS

SYMBOL allows the estimate of aggregate bank losses which have potentially to be borne by government finances, as occurred in recent years.

As the analysis of Chapter IV.3 will show, the assessment of the riskiness of a country's government debt is also influenced by variables additional to traditional government fiscal variables. SYMBOL allows this by using only publicly available information and is therefore a strong tool to be used in such an assessment.

While the model has weak points, certain weaknesses can be addressed. In particular work can be undertaken along two lines: first, co-operation with national regulators will be important in addressing data issue. Second, the relationship between average default probabilities and macro-economic scenarios has to be explored, in order to extend the areas in which SYMBOL can be used.

Given the value of the S2 indicator as of 2009, the threshold to become high risk is computed as (max(6% - S2(2009),0)) * GDP(2009).

In each scenario the probability that losses hitting the public finances are higher than a defined threshold gives the probability that a MS would be classed as high risk in terms of S2, or if it is already high risk, that its sustainability worsens.

([89]) A default rate of 0.1% corresponds a rating class in between A- and BBB+ in the Standard & Poor classification - see Standard and Poor's (2009).
([90]) See European Commission (2009).
([91]) Potential impacts on interest on the government debt might also be included.

Box IV.2.1: **Definition of the probability that government finances are hit by losses deriving from banks defaults.**

This probability *PPF* is taken from distribution of banking system losses and is obtained as follows

Scenario 1: Denoting by $L^{(c)}$ the distribution of banking system losses with contagion under the considered setting (Basel 2 definition of capital, capital at least equal to 8% of their RWA, No RF/DGS and *No Bail-In*) we have that:

$PPF = P[L^{(c)}(Basel\ 2)>0]$.

Scenario 2: banks comply with stricter Basel 3 rules for capital with a capital at least equal to 8% of their RWA. RF/DGS are in place and absorb losses up to their available funds, *FDGS/RF*. However they are not effective in blocking contagion effects. Thus we have:

$PPF = P[L^{(c)}(Basel\ 3, no\ countercyclical\ buffer) – FDGS/RF>0]$.

Scenario 3: the presence of DGS/RF becomes effective in blocking contagion, thus we use the distribution of losses without contagion ($L^{(nc)}$) to estimate the probability that public finances need to cover losses:

$PPF = P[L^{(nc)}(Basel\ 3, no\ countercyclical\ buffer) – FDGS/RF>0]$.

Scenario 4: part of the losses is absorbed by bondholders and non-eligible depositors, or in other words DGS/RF only absorb losses there are in theory responsible for:

$PPF = P[L^{(nc)}(Basel\ 3, no\ buffer)\ \alpha – FDGS/RF>0]$,

$$\alpha = (Covered\ Deposits + Interbank\ Debts)/(Total\ liabilities)$$

Scenario 5: banks hold the capital conservation buffer:

$PPF = P[L^{(nc)}(Basel\ 3, buffer)\ \alpha – FDGS/RF>0]$,

$$\alpha = (Covered\ Deposits + Interbank\ Debts)/(Total\ liabilities)$$

3. FISCAL STRESS ANALYSIS

3.1. FISCAL CRISIS RISK MODELS IN SUSTAINABILITY ASSESSMENT FRAMEWORKS AND EARLY WARNING SYSTEMS

Fiscal crisis risk models aim at a timely detection of risks of debt distress.

Such models are currently used within two different institutional frameworks. First, they are taken into consideration by the IMF as providing complementary information to the framework used for assessing external and fiscal sustainability (DSA) in the context of Fund-supported programmes and Article IV surveillance.([92]) As the DSA is designed to support informed judgements on sustainability, fiscal crisis risk models can contribute relevant additional information by determining critical thresholds for a set of variables and for composite indicators combining them. This type of analysis can aid the understanding of fiscal crisis risks, although country-specific expertise also plays an important role.

Second, fiscal crisis risk models have recently become a building block of the so called joint IMF-FSB Early Warning Exercise (EWE:)([93]) this was created upon the request of the G-20 in 2008 as the crisis showed the need to improve policy-makers' ability to spot risks and vulnerabilities quickly, in order to be able to coordinate early policy responses.

This Chapter presents a fiscal crisis risk model based on the non-parametric "signals approach" used in the IMF-FSB EWE. The model provides thresholds, based on past behaviour, beyond which fiscal crisis signals are detected for: 1) each individual variable included in the analysis, 2) a composite indicator incorporating all variables, 3) thematic composite indicators referring to different subsets of variables (fiscal, financial and competitiveness variables.)

([92]) The DSA is very similar to regular DG ECFIN's own debt sustainability framework as it is based on baseline medium-term debt projections and a standard set of calibrated sensitivity tests. A detailed description of the DSA is provided in IMF (2008), IMF (2003b) and IMF (2002).

([93]) See IMF (2010).

The signals approach produces an indicator of a country's fiscal crisis vulnerability based on the values of selected relevant variables. The methodology allows the consideration (and aggregation into an overall index) of a large set of variables, thus permitting a rather comprehensive analysis of underlying vulnerabilities. Using the results obtained for the overall vulnerability indicator and the thematic indicators to give concrete guidance in a SAF requires careful consideration of which variables drive the outcome of the exercise on a country by country basis. This in turn is an exercise in judgement, making the signals approach an instrument that is best used at the beginning of the assessment procedure.

Guidance as to how the results obtained with this methodology could be used in a regular fiscal crisis early warning exercise is provided in this Chapter. The overall indicator of fiscal crisis vulnerability is computed for a selected sample of countries in each year and is compared against the critical threshold identified. Indicator values beyond the threshold for a country in a given year provide warnings of fiscal crisis risks for the following year. The values of thematic indicators (grouping different subsets of variables – fiscal, financial, competitiveness) and of the individual variables themselves relative to their respective thresholds are also used to complete the picture of the sources of vulnerabilities and to highlight areas where early policy intervention might be required. Finally, alongside the analysis of values taken against critical thresholds at a certain point in time, the monitoring at country level should also pay attention to the evolution of the fiscal crisis vulnerability indicator over time, with increases in the value of the indicator highlighting increased vulnerability. This is of course also relevant in cases where countries remain below the critical threshold of fiscal crisis risk.

3.2. THE "SIGNALS APPROACH": DESCRIPTION OF THE METHODOLOGY

The fiscal crisis risk model we have developed is based on the non-parametric "signals approach" pioneered by Kaminsky, Lizondo and Reinhart (1998) and Kaminsky and Reinhart (1999) and used in a number of early warning systems for different types of crises, including currency,

banking, fiscal crises.([94]) Interesting work using this approach for the identification of fiscal crises has recently been conducted at the IMF (Baldacci, Petrova, Belhocine, Dobrescu and Mazraani (2011).)

The signals approach is based on the observation that economies behave in a systematically different way in periods preceding crisis events. The methodology allows the identification of indicators, among a set of selected relevant variables, whose anomalous behaviour could hint at a developing crisis. By including a large set of variables in the analysis the model can usefully provide a relatively objective and systematic starting point for crisis prediction. ([95]) The methodology is based on three steps: first, a set of variables is chosen, which are thought to be relevant for prompting fiscal crises; second, the triggering thresholds are determined in order to maximize the signalling power of the model; third, variables are aggregated into a composite indicator of fiscal crisis vulnerability. The monitoring of fiscal developments aimed at an early detection of possible fiscal stress can then be implemented.

The methodology rests on prior decisions to be made about four elements of the analysis: i) the exact definition of a crisis; ii) a list of the main variables correlated with crisis events that are to be analysed; iii) a criterion to calculate the threshold for each variable so that for values of the variable above (below) the threshold a crisis signal is sent; iv) the determination of the "signalling window", i.e. the horizon ahead of the observation of the variables over which the crisis prediction is to be extended.

3.2.1. The definition of fiscal crisis

Among the possible definitions of fiscal crisis proposed in the literature,([96]) the analysis used in this Chapter is based on the definition used in Baldacci et al. (2011). Accordingly, a crisis episode is identified if any of the four following criteria is satisfied:

- the yearly inflation rate is above 35%, capturing a moderate implicit default event ([97]) (as the analysis presented here looks at EU countries plus a small number of other advanced economies, this threshold is applied to all countries, including Eastern European countries. This is different from Baldacci et al., where the 35% threshold is used only for advanced economies with a 500% threshold being used for emerging economies, including most Eastern European countries;)

- sovereign bond yield spreads are two standard deviations above the country-specific mean (or exceed 1,000 basis points for emerging economies), highlighting significant market financing pressure;([98])

- public debt default is reported based on Standard &Poor's definition (including failure to service debt as payments come due and distressed debt exchanges), or a restructuring/rescheduling is reported (defined as any operation altering the terms of the debt-creditor contract;)

- a large-scale IMF-supported programme is in place, defined as one with access to more than 100% of the country quota (typically non-concessional loans as part of an adjustment

([94]) Kaminsky, Lizondo and Reinhart (1998) and Kaminsky and Reinhart (1999) focussed respectively on currency crises and on banking and currency crises; currency, banking and debt crises are the object of analysis in Hemming, R., Kell, M., and A. Schhimmelpfennig (2003); sovereign debt crises are analysed in Manasse, P., Roubini, N., and A. Schimmelpfennig (2003); financial crises are the focus of the analysis in Brüggermann, A. and T. Linne (2002).

([95]) Hemming, R., Kell, M., and A. Schhimmelpfennig (2003).

([96]) Hemming et al. (2003) define debt crises as events that take place when one or both of the following conditions apply: 1. there are arrears of principal or interest on external private and public debt to commercial creditors of more than 5% of total outstanding public and private external debt; 2. there is a rescheduling or debt restructuring agreement with commercial creditors from the World Bank Global Development Finance database. Manasse et al. (2003) define sovereign debt crises as cases where: 1. countries are classified as being in default based on S&P; 2. countries receive large non-concessional IMF loans with access to more than 100% of quota.

([97]) Baldacci et al. (2011) justify this threshold based on the average haircut on debt in case of external debt restructuring as from Sturzenegger, F., and J. Zettelmeyer (2006).

([98]) More precisely this is computed by taking both annual and monthly data on yields spreads and considering that a given year is a crisis event if the annual data exceeded either two standard deviations (in terms of annual data) or 10 percent, or the monthly data exceeded the thresholds (with standard deviation calculated using the monthly data) for at least 6 months of the year.

programme.) Such a case is thought of as an implicit default that was only avoided through the adjustment programme and a large financial package from the IMF.

The consideration of sovereign bond yield spreads is the main novelty of the fiscal crisis definition introduced by Baldacci et al. This allows to capture severe fiscal distress events that do not result into defaults, implicit defaults or restructuring and would therefore be missed by the definition of fiscal crisis traditionally used in the literature.

3.2.2. The set of variables used to predict fiscal crises

Two groups of variables are used in the analysis presented here: purely fiscal variables (complemented by a variable, the projected old-age dependency ratio, capturing demographic trends relevant for age-related public expenditure) and macro-financial variables. This acknowledges the role played by general macroeconomic, financial and competitiveness variables in the run up to fiscal crises. The precise set of indicators currently used has been selected based on theoretical considerations, the analysis of the behaviour of the variables on the eve of fiscal crises and performance in terms of fiscal crisis prediction in the context of the applied methodology. A summary of the data is given in Table IV.3.1. Other variables could of course be considered and tested in the future in the perspective of obtaining the best performing composite indicator of fiscal crisis vulnerability.

General government gross debt (and its change), short-term debt, balance and primary balance, cyclically adjusted balance, change in expenditure and in final consumption expenditure of general government, change in projected age-related public expenditure are among the fiscal variables we selected (see Table IV.3.1 for the full list of variables.)([99]) By applying the methodology to these variables, the objective is to assess by how much they deteriorated on the eve of past fiscal crises and translate this into a threshold for each variable beyond which a fiscal crisis signal would be sent in the context of an early warning exercise.

Among the macro-financial variables that we analyse are net financial assets of the total economy, net savings of households and non-financial corporations, private sector debt, net acquisition of financial assets for the private sector, leverage of financial corporations, short-term debt of non-financial corporations, and competitiveness variables like the change in the real effective exchange rate, the change in nominal unit labour costs and the current account.

3.2.3. The method used to calculate the thresholds

The signals approach is designed to find an optimal threshold (for each variable included in the analysis) that maximises the ability to predict a crisis based on the value taken by the variable. This requires the following steps. First, it is understood that a variable will be sending a "crisis signal" when it takes a value above (below) such optimal threshold (depending on the variable,)([100]) while a signal of no crisis will be sent with a value below (above) the same threshold. Second, using historical data signals sent by the variable for the different countries and years are compared to the crisis definition. A signal is correct when for the country in question the variable indicated a crisis (non-crisis) year and indeed the year following that in which the signal is recorded turns out to be a crisis (non-crisis) year. On the contrary, a signal is wrong when the variable signalled no crisis ahead of a crisis year (type II error) and when it signalled a crisis ahead of a non-crisis year (type I error.) ([101]) The optimal threshold is chosen in a

([99]) To predict fiscal crises, the following set of fiscal variables is used in Baldacci et al. (2011): general government gross debt, cyclically adjusted primary balance, interest rate-growth rate differential, gross financing needs, share of short-term debt, share of debt held by non-residents, weighted average maturity of general government debt, long-term projected change in public health expenditure and public pension expenditure, together with fertility rate and old-age dependency ratio. As predictors of debt crises, Hemming et al. (2003) use among others the following fiscal variables: overall balance, primary balance, debt, short-term debt, foreign debt, total expenditure, interest expenditure, defence expenditure, social expenditure, total revenue, non-tax revenue.

([100]) For the change in public debt over GDP, for instance, a value above the optimal threshold would signal a fiscal crisis, while for the general government balance over GDP a value below the optimal threshold is taken as a crisis signal.

([101]) Thus type I errors are the false positive signals that the variable sends and type II errors are the false negative signals sent by the variable

way to minimise the share of not signalled crises plus the share of non-crises signalled as crises (see Box IV.3.1 for more details.)([102])

3.3. A COMPOSITE INDICATOR OF FISCAL CRISIS VULNERABILITY

Results obtained through the application of the methodology described above can be used to construct a composite indicator of vulnerability to a fiscal crisis by incorporating all the variables listed in Table IV.3.1.([103]) When a variable signals a crisis, the variable indicator is set to 1. Then this indicator is weighted by the predictive power of the variable, computed as one minus the sum of type I and type II errors. Finally, the composite indicator is obtained by summing all these weighted indicators, and normalising the sum of the weights to 1. This last step is done by dividing each predictive power by the sum of the predictive powers of all the variables that are available for this country and year (see Box IV.3.2 for more details.) As the value of the fiscal crisis vulnerability indicator for a certain country and year is obtained by summing weighted signals sent by the variables available for this particular country and year, the value of the indicator will be higher the greater the number of variables that are "flashing" in correspondence to that country/year, signalling a crisis for the following year, and the higher the predictive power of the flashing variables (i.e. the variables' estimated ability to send the right signals.)

The methodology to determine the thresholds can be in turn applied also to the composite indicator. A value of the fiscal crisis vulnerability indicator beyond the optimal threshold for a certain country/year would then provide a signal of incoming fiscal crisis in the country in question for the following year.

Given that we use different subsets of variables (fiscal, financial-competitiveness) as possible predictors of fiscal crises, thematic composite indicators are also constructed (exactly in the same way as the overall indicator) with regard to each of these subgroups, on top of the overall composite indicator.([104]) By analysing values taken by these thematic indicators for each country/year, information can be derived on the type of vulnerabilities (fiscal, financial, competitiveness) that are behind fiscal crisis risks signalled by the overall indicator.

3.4. DATA AND PRELIMINARY RESULTS

3.4.1. The data

The analysis is based on a panel of 33 countries (all EU countries except CY, LU and MT, and other nine advanced economies.)([105]) Data come from AMECO, the IMF's World Economic Outlook (WEO) and the Bank for International Settlements. Table IV.3.1 report the source and descriptive statistics of each series used.

Whenever possible we used time series covering the period 1970-2010 but for a number of variables data are only available starting from 1995. Data for 2010 or 2009-10 were extrapolated for some variables for which observations were missing.([106])

([102]) As data for the variables at time *t* are used to predict outcomes (crisis/no crisis) one year ahead, at *t*+1 a technical issue arises in that it has to be decided if only first years of crisis episodes are used for the calculation of the thresholds or all crisis years. The first option was retained. Thresholds calculated by using only the first years of crisis are preferable in that they are consistent with an exercise of fiscal crisis prediction starting from "normal times". The calculation of thresholds based on all crisis years has the advantage of relying on a larger information set (thus producing results that tend to be more sTable) but is spurious in terms of possible interpretation of results obtained (the approach reflects the idea of crisis prediction starting from a year that could be of crisis or non-crisis without distinguishing between the two, while a difference in terms of variables' behaviour between the two cases is to be expected).

([103]) This is standard practice. See Baldacci et al. (2011), IMF (2010) and Reinhart et al.(2000).

([104]) For the time being we have constructed a single composite indicator for financial-competitiveness variables given the limited number of competitiveness variables we currently have. Distinguishing between the two would anyway be preferable, depending on a sufficient number of variables becoming available.

([105]) CY, LU and MT are excluded from the sample as we currently miss the necessary information on recorded fiscal crisis events over the past four decades. The other 9 advanced economies included in the analysis are: Australia, Canada, Iceland, Israel, Japan, New Zealand, Norway, Switzerland, US.

([106]) If both 2009 and 2010 values were missing, and if the variable represented a net stock or flow of financial assets or a net saving rate, then these two missing values were set equal to the 2008 value. If 2010 only was missing, it was set equal to the average of the previous 3 years (except for the stock or flow of financial assets for which the 2009

Table IV.3.1: **Descriptive statistics and sources**

variable	mean	sd	min	p10	median	p90	max	no. obs	source
Balance, % GDP	-2.4	4.3	-30.9	-7.5	-2.6	2.5	19.1	1021	AMECO, WEO
Primary balance, % GDP	1.1	3.8	-28.2	-3.2	0.7	5.6	20.6	998	AMECO, WEO
Cyclically adjusted balance, % GDP	-2.9	3.5	-15.2	-7.4	-2.9	1.5	8.7	830	AMECO, WEO
Stabilizing primary balance, % GDP	0	2.7	-19.1	-3	0	3.1	16.4	854	AMECO, WEO
Gross debt, % GDP	51.5	30.1	3.7	16.4	48.4	93.5	217.6	945	AMECO, WEO
Change in gross debt, % GDP	1	4.8	-25.5	-3.9	0.4	6.2	41.7	912	AMECO, WEO
Short-term debt, gov't, % GDP	10.1	8.7	0	2.3	7.7	22.4	54	548	BIS
Net debt, % GDP	28.4	49.4	-208.4	-13.9	35.7	82.9	119.3	586	WEO
Interest rate-growth rate differential	-1.8	7.9	-74.7	-11	0	5.1	25.2	833	AMECO, WEO
Change in expenditure of gen. gov't, % GDP	0.3	2.4	-20.8	-1.9	0.2	2.9	15.5	960	AMECO, WEO
Change in final consumption expenditure of gen. gov't, % GDP	0.2	1	-7.9	-0.7	0.1	1.2	7.2	906	AMECO
Net financial assets, total economy, % GDP	-24.1	38.5	-174.8	-77.4	-17.7	18.4	74.5	342	AMECO
Net savings of households, % GDP	4	4.8	-16.3	-1.6	4.1	8.6	22.2	591	AMECO
Net savings of non-financial corporations, % GDP	3.7	3.7	-7.6	-0.4	3.5	7.8	35.4	551	AMECO
Private sector debt, % GDP	113.6	63.1	2.3	35.6	117.6	202.3	331.6	335	EUROSTAT
Net acquisition of financial assets, private sector, % GDP	14.8	8.4	-4.1	5.5	13.5	23.9	58.8	334	AMECO, WEO
Leverage, financial corporations	6.2	3.5	1.6	3.1	5	10.8	21.3	344	AMECO
Short-term debt, non-financial corp., % GDP	1.6	1.8	0	0.1	1.2	3.3	13.2	327	BIS
Real short-term interest rate	2.1	3.9	-23.3	-2	2.2	6.3	20.1	833	AMECO
Construction, % value added	6.6	1.6	2.7	4.8	6.5	8.8	13.5	1010	AMECO
Current account, % GDP	-1.5	5.5	-26.9	-7.8	-1.4	4.5	17.9	912	WEO
Avg growth rate of real effective exchange rate, based on exports deflator, ref 35 countries	1.3	3	-5.9	-1.9	0.9	5	13.1	372	AMECO
Average growth rate of nominal unit labour costs over last 3 years	7.6	14.9	-3.4	0.4	4	16.1	204	892	AMECO
Real GDP growth	2.6	3.6	-32.1	-0.8	3	6.2	13.1	1041	AMECO
GDP per capita in PPP, % of US level	69.4	22	16.2	33.2	74.9	91.5	129.3	1073	AMECO
Old-age dependency ratio 20 years ahead	25.7	5.8	15.4	18.2	24.8	33.9	44.7	1041	EUROSTAT, AWG project.
Avg yearly change in projected age-related public expenditure as % of GDP over next 30 years	0.1	0.1	-0.1	0	0.1	0.2	0.3	373	OECD, WHO ESSPROS, AWG project.

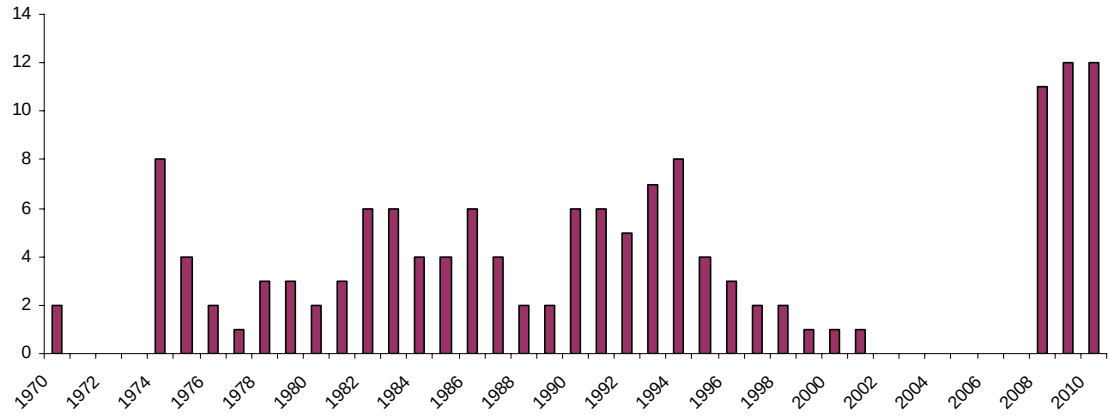
Note: 2010 values are excluded from the descriptive statistics as they are not used to compute the thresholds.
Source: Commission Services

The identification of fiscal crisis events over the time interval 1970-2010 is borrowed from Baldacci et al. (as already said, slightly revised to account for the different application of the inflation rate criterion.)([107]) The sample contains 143 fiscal crisis years regrouped in 54 episodes, leading to an average duration of about 3 years for each crisis episode. There are however 21 one-year episodes. The number of countries (per year)

value was taken.) These assumptions practically do not affect the optimal thresholds when using a one-year signalling window as the 2010 values of the variables do not enter into the computation.

([107]) As specified in Baldacci et al. (2011), data on debt default and restructuring were obtained from S&P; information on exceptional IMF-supported programmes comes from the IMF's Finance Department database; data on sovereign bond yields at annual and monthly frequencies were obtained from IMF's International Financial Statistics (IFS), Bloomberg and Datastream.

Graph IV.3.1: **Number of countries in the sample experiencing a fiscal crisis, 1970-2010**



Source: Data on fiscal crises from Baldacci et al. (2011)

experiencing a fiscal crisis is reported in Graph IV.3.1. Graph IV.3.2 below provides the same information separately for the four components of the fiscal crisis definition.

3.4.2. Preliminary results

Preliminary results are reported in Table IV.3.2 for 1) the individual variables; 2) the two composite indicators constructed using respectively only fiscal and financial-competitiveness variables; and 3) the overall composite indicator. The Table reports the threshold obtained by applying the methodology, together with the indication of the interval (above/below the threshold) where values of the variable would indicate no fiscal crisis risks; the type I and type II errors (i.e. respectively the number of crisis signals sent ahead of no crisis over the total number of non-crises and the number of no-crisis signals sent ahead of crises over the total number of crises, based on past behaviour;) the signalling power of the variable,([108]) which provides a measure of the variable's reliability as a fiscal crisis predictor; the number of crisis and non-crisis events entering the computation of the threshold.([109])

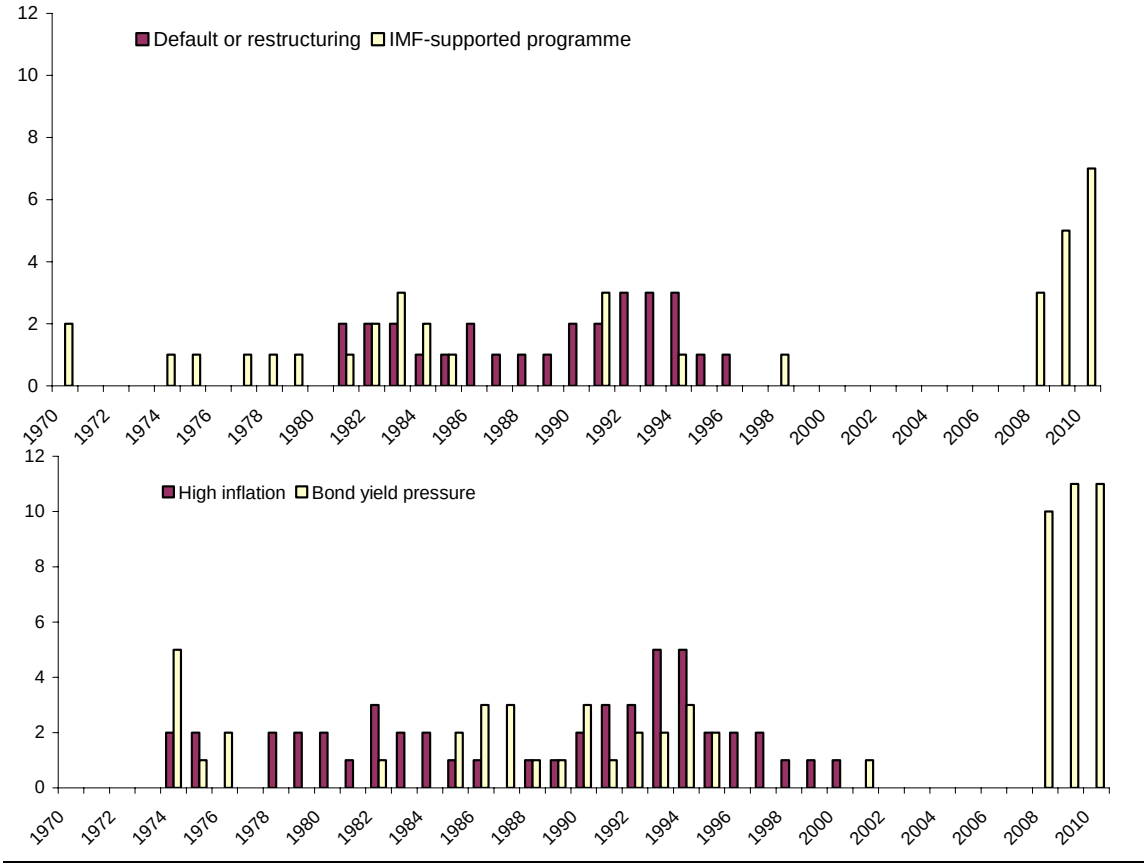
For the overall composite indicator, a threshold of 0.45 is obtained, meaning that for values at *t* greater than 0.45 a fiscal crisis would be signalled for *t*+1. Corresponding to this threshold, the indicator would have signalled a crisis when instead no crisis was looming ahead (type I error) for 17% of past non-crisis events, while it would have signalled no crisis ahead of a crisis (type II error) for 27% of past crisis events. Equivalently, the indicator would have properly identified 73% of past crisis events and 83% of past non-crisis events, highlighting quite a good overall performance for this type of methodology ([110]) (reflected in the relatively high signalling power of 0.56.) Positive is also the fact that the indicator displays a relatively good performance at not missing crises (the predictive error entailing more serious consequences between the two.)

([108]) The signalling power is given by 1-(type I error + type 2 error). See Box IV.3.2 for details.

([109]) The number of crisis and non-crisis events in Table IV.3.2 differs by variable depending on data availability (for variables for which longer time series are available the calculation of the threshold can be based on a larger number of past crisis and non-crisis events).

([110]) As indicated in the relevant literature, non-negligible predictive errors are typically recorded with early warning system methodologies. The size of the errors reported in Table IV.3.2 are in line with findings in other studies. See Baldacci et al. (2011) and Hemming et al. (2003).

Graph IV.3.2: **Number of countries in the sample in default or restructuring, under IMF-supported programmes, experiencing high inflation rates or bond yield pressure, 1970-2010**



Source:

Results in Table IV.3.2 show that the financial-competitiveness index has a better performance at predicting fiscal crises than the fiscal index (a signalling power of 0.52 against 0.22.) Overall, financial-competitiveness variables seem to be better "leading indicators" for fiscal crises than fiscal variables are, when relying on 1-year ahead crisis signals.

With regard to individual variables, all thresholds reported in Table IV.3.2 are "meaningful" in the sense of lying in the crisis-prone tail of the respective variables' distributions. For instance, the variable gross debt over GDP would send crisis signals for values greater than 103% and the change in gross debt over GDP for values greater than 6.6%.

Among the fiscal variables, the primary balance and the cyclically adjusted balance over GDP turn out to be the best predictors of fiscal crises, displaying some of the highest signalling powers (0.12 to 0.25) and the lowest rates of missed crises (32 to 43%.) Net debt, the change in gross debt over GDP, the change in general government final consumption expenditure over GDP, the projected old-age dependency ratio and the change in projected age-related public expenditure over GDP also display higher signalling powers in relative terms, though accompanied by higher rates of missed crises (all above 60%.)

Table IV.3.2: **Thresholds and signalling power of variables and composite indicators**

Variables	Safety interval	Threshold	Signalling power	Type I error	Type II error	Crisis no.	No-crisis no.
Balance, % GDP	>	-10.12	0.07	0.04	0.89	38	929
Primary balance, % GDP	>	0.44	0.12	0.45	0.43	37	910
Cyclically adjusted balance, % GDP	>	-3.31	0.25	0.43	0.32	31	765
Stabilizing primary balance, % GDP	<	2.55	0.05	0.12	0.83	29	791
Gross debt, % GDP	<	103.62	0.03	0.06	0.91	33	871
Change in gross debt, % GDP	<	6.59	0.11	0.08	0.81	32	843
Short-term debt, gov't, % GDP	<	14.55	0.05	0.19	0.76	21	506
Net debt, % GDP	<	58.11	0.13	0.19	0.68	22	539
Interest rate-growth rate differential	<	5.94	0.07	0.07	0.86	28	771
Change in expenditure of gen. gov't, % GDP	<	2.26	0.08	0.13	0.79	34	886
Change in final consumption expenditure of gen. gov't, % GDP	<	0.52	0.15	0.25	0.61	33	830
Old-age dependency ratio 20 years ahead	<	32.69	0.1	0.14	0.76	41	928
Average yearly change in projected age-related public expend. as % of GDP over next 30 years	<	0.18	0.11	0.12	0.77	13	347
Fiscal index	<	0.35	0.22	0.24	0.54	50	1145
Net financial assets, total economy, % GDP	>	-47.81	0.65	0.19	0.15	13	316
Net savings of households, % GDP	>	3.1	0.28	0.42	0.3	20	555
Net savings of non-financial corp., % GDP	>	1.39	0.16	0.24	0.6	20	514
Private sector debt, % GDP	<	73.44	0.27	0.65	0.08	13	307
Net acquisition of financial assets, private sector, % GDP	>	9.95	0.16	0.22	0.62	13	308
Leverage, financial corp.	<	3.81	0.2	0.73	0.08	13	318
Short-term debt, non-financial corp., % GDP	<	3.06	0.38	0.12	0.5	12	310
Real short-term interest rate	<	5.56	0.12	0.14	0.74	31	770
Construction, % value added	<	6.5	0.27	0.48	0.25	40	915
Current account, % GDP	>	-4.95	0.41	0.18	0.41	41	797
Average growth rate of real effective exchange rate, based on exports deflator, ref. 35 countries	<	1.97	0.22	0.31	0.47	17	337
Average growth rate of nominal unit labour costs over last 3 years	<	2.96	0.28	0.58	0.14	37	813
Real GDP growth	>	-0.89	0.1	0.07	0.83	41	937
GDP per capita in PPP, % of US level	>	73.21	0.26	0.43	0.32	44	963
Financial-competitiveness index	<	0.6	0.52	0.19	0.29	52	1009
Overall index	<	0.45	0.56	0.17	0.27	52	1174

Note: thresholds are calculated using only first year of crisis episodes.
Source: Commission services.

Among the financial variables, best predictors of fiscal crises are the net financial assets of the total economy over GDP, the net savings of households over GDP, the private sector debt over GDP and the leverage of financial corporations (signalling powers between 0.2 and 0.65 and rates of missed crises between 8 and 30%.) Among the competitiveness variables, the current account over GDP, the average growth rate of the real effective exchange rate and of nominal unit labour costs perform all well (signalling powers between 0.22 and 0.41 and rate of missed crises between 14 and 47%.) Construction as a share of value added and the level of GDP per capita in PPP (as % of US level) also have a good performance in terms of signalling power (0.26-0.27) as well as in terms of rate of missed crises (25 and 32% respectively.)([111])

In general terms, and as one would expect, results in Table IV.3.2 show that the joint consideration of all these variables combined into a composite indicator tends to provide better results in terms of

([111]) The good performance of most of these financial and competitiveness variables could be expected based on the event study analysis that shows a statistically significant difference in behaviour for a number of them on the eve of a fiscal crisis. The analysis is not presented here because it would be partly redundant. Based on it, fiscal variables do not seem to be significantly different in the pre-crisis entry year relative to non-crisis times. This holds also for variables, like the change in gross debt over GDP, the primary balance and the cyclically adjusted primary balance over GDP, the change in general government expenditure and final consumption expenditure, for which a statistically significant difference is indeed observed in the crisis entry year. On the contrary, some financial and competitiveness variables display a significantly different behaviour in the run up to fiscal crises. This is the case, for instance, for the net financial assets of the total economy over GDP, the current account over GDP, the short-term debt of non-financial corporations, construction as a share of value added, as well as the GDP per capita in PPP (as % of the US level), all of which have indeed a nice performance in our fiscal crisis risk model.

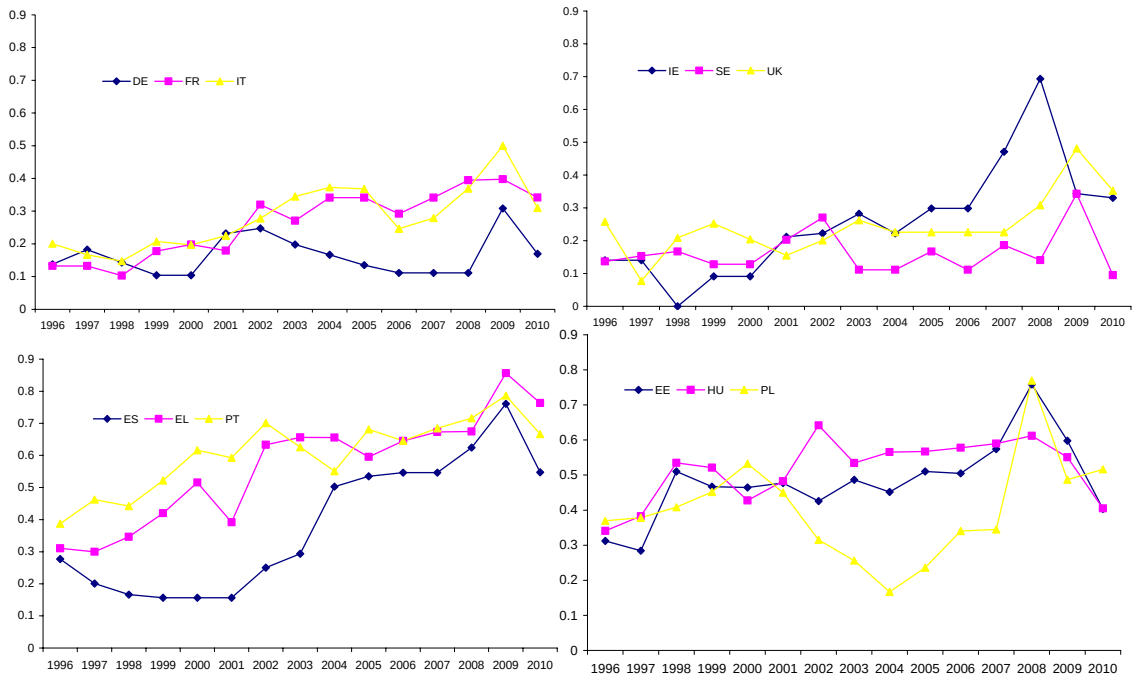
early warnings of fiscal crises than the separate observation of the individual variables (though the latter is of course always needed to understand the specific sources of vulnerability.) The overall index of fiscal crisis vulnerability could therefore be a very useful building block of an early warning system. A regular monitoring of the index should consider both its level (above or below the critical threshold of 0.45) as well as changes in the index over time reflecting improvements/deteriorations in terms of fiscal crisis vulnerability for the country concerned.

This type of analysis is presented jointly for a number of EU countries in Graphs IV.3.3 and IV.3.4. In Graph IV.3.3 values taken by the overall index in 2008-10 are considered relative to the 0.45 threshold. Over this time interval the index would consistently signal a few countries (SE, NL, BE, DE, DK, AT, FI and FR) as remaining broadly on the safe side for the following year. Countries that exceeded to the greatest extent the threshold for fiscal crisis vulnerability are EL, RO, PT, LV, PL, LT, EE and IE in 2008; EL, RO, PT, LV, ES, LT and BG in 2009; EL, RO and PT in 2010.([112]) Graph IV.3.4 provides information on the evolution of the fiscal crisis vulnerability index between 1996 and 2010 for selected EU countries. Spikes in the time series are particularly evident for IE, ES, EL, PT, EE and PL in 2008-09.

The analysis of the overall index should be complemented by the analysis of the thematic composite indicators (the fiscal index and the financial-competitiveness index in Table IV.3.2 – though it would be preferable to distinguish between financial and competitiveness indicators as soon as a sufficient number of variables become available.) These two indicators provide information on respective contributions of different groups of variables to fiscal crisis vulnerability. The analysis should then be further deepened at individual variable level (by comparing the value taken by each variable to its threshold) to have the full picture of where vulnerabilities stem from. Table IV.3.3 presents

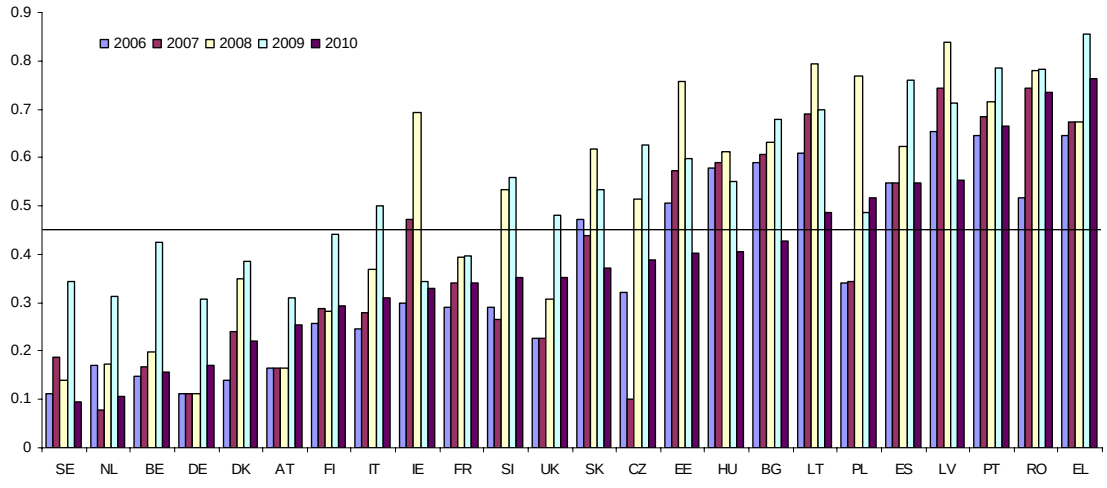
([112]) The low value of IE is explained by the fact that IE does not provide series for the financial variables which are consolidated by national account subsector. Non-consolidated data will be used in the regular assessment.

Graph IV.3.3: **Evolution of the fiscal crisis vulnerability index for selected economies, 1996-2010**



Source: Commission services.

Graph IV.3.4: **The fiscal crisis vulnerability index in EU countries, 2008-10**



Source: Commission services.

results of this type of analysis for Greece (values of variables beyond the respective thresholds for fiscal crisis risk are in bold.)

Results show that for Greece many fiscal variables have consistently signalled crisis risks starting already from 2002 (see in Table IV.3.3 for years following 2006, the primary balance, cyclically adjusted balance, gross and net debt, and change in projected age-related public expenditure, almost all fiscal variables with relatively high signalling power,) while the change in gross debt over GDP has started flashing in 2009. Fiscal crisis signals have been sent by macro-financial variables with some of the highest signalling powers, like net financial assets of the total economy, net savings of households and private sector debt, since 2007, and the leverage of financial corporations also started flashing in 2008. On the competitiveness side, the current account over GDP and the growth rate of nominal unit labour costs have been flashing over all four years. Thus not only the overall indicator correctly pointed at weaknesses in Greece, but also the analysis of the sub-indices and of the single variables showed that both the government (the fiscal side) and the private sector (the macro-financial side) had put in place a dangerous excess of consumption accompanied with a process of debt accumulation.

3.5. CONCLUSIONS

The present Chapter has provided indications on the usefulness of the utilization of the fiscal stress analysis in regular early warning and sustainability frameworks with the computation of crisis thresholds and vulnerability indicators and their evolution.

The most interesting conclusion of the Chapter in the current context is that financial and competitiveness variables appear typically to have a stronger predictive power than the pure fiscal variables/ indexes. Even if the result is likely to be driven in part by data on the current crisis, this observation is an argument for having an integrated fiscal-macro surveillance process, as the one which is carried out in the EU in the context of the European Semester

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Table IV.3.3: **The fiscal crisis vulnerability analysis for Greece 2007-10**

Variable	Threshold	2007	2008	2009	2010
Balance, % GDP	-10.12	-6.69	-9.78	-15.59	-10.41
Primary balance, % GDP	0.44	-1.99	-4.82	-10.35	-4.94
Cyclically adjusted balance, % GDP	-3.31	-7.49	-10.42	-14.95	-8.23
Stabilizing primary balance, % GDP	2.55	-2.67	0.58	6.14	8.15
Gross debt, % GDP	103.62	105.41	110.72	127.10	142.75
Change in gross debt, % GDP	6.59	-0.69	5.31	16.38	15.66
Short-term debt, government, % GDP	14.55	5.93	8.50	8.27	8.83
Net debt, % GDP	58.11	80.35	83.40	96.83	109.51
Interest rate-growth rate differential	5.94	-2.70	0.57	5.50	6.28
Change in expenditure of general government, % GDP	2.26	1.49	3.01	3.20	-3.37
Change in final consumption expenditure of general government, % GDP	0.52	0.26	0.22	2.45	-2.38
Old-age dependency ratio 20 years ahead	32.69	36.69	37.25	37.81	38.47
Avg yearly change in projected age-related public expenditure as % of GDP over next 30 years	0.18	0.31	0.32	0.34	0.35
Fiscal index	0.35	0.56	0.62	0.91	0.79
Net financial assets, total economy, % GDP	-47.81	-112.73	-99.42	-110.42	-110.42
Net savings of households, % GDP	3.1	-2.10	-5.64	-2.25	-3.33
Net savings of non-financial corporations, % GDP	1.39	3.15	6.15	4.58	4.63
Private sector debt, % GDP	73.44	107.23	119.13	123.46	
Net acquisition of financial assets, private sector, % GDP	9.95	15.36	14.63	2.62	2.62
Leverage, financial corporations	3.81	3.19	13.16	9.34	8.56
Short-term debt, non-financial corporations, % GDP	3.06				
Real short-term interest rate	5.56	1.19	1.31	-0.05	-1.67
Construction, % value added	6.5	6.50	5.06	4.46	4.06
Current account, % GDP	-4.95	-14.40	-14.55	-11.21	-10.84
Avg growth rate of real effective exchange rate, based on exports deflator, ref 35 countries	1.97	0.16	0.53	2.00	1.47
Average growth rate of nominal unit labour costs over last 3 years	2.96	3.01	3.82	4.90	3.30
Real GDP growth	-0.89	4.28	1.02	-2.04	-4.47
GDP per capita in PPP, % of US level	73.21	60.94	64.10	64.15	59.97
Financial-competitiveness index	0.6	0.72	0.69	0.84	0.75
Overall index	0.45	0.67	0.67	0.86	0.76

Source: Commission services.

The analysis conducted here follows the one proposed in European Commission (2010) on macro-financial risk indicators and still needs to be developed in the following directions. First, the set of relevant variables has to become as comprehensive as possible, because the quality of the analysis which is made starting from the index depends on the variables that compose it. While in the case of Greece the crisis originated from many indicators – maybe a sign that the crisis was going to be very severe - this type of analysis repeated for all EU Member States allows the identification of country-specific sources of vulnerabilities that are behind early warning signals. The narrative that can be drawn from the indicator obviously depends on the variables that compose it. Finally, caution is needed when interpreting the results obtained with this methodology and users should also be aware of some limitations the signals approach has. First, the method does not take into account the correlation between variables. Second, it does not allow testing for statistical significance of individual variables. Thus, the integration of this methodology into an overall sustainability assessment framework that integrates different approaches would allow gaining the advantages of this method, while compensating for its limitations through the use of complementary models and tools.([113]) Finally, it has to be considered that all the analysis made here is "in sample", in that it has been made with data available after the crisis events. Applying it to future events may be less compelling, especially as these could originate from a branch of the economy not covered by the variables considered in the index.

([113]) As it is clear from the methodological Section, the approach we have adopted with this fiscal crisis risk model differs from a multivariate econometric approach (logit or probit modelling) that is also used in the empirical crisis literature. In setting up an early warning system for fiscal crises, the idea would be to integrate both approaches (parametric and non-parametric) given that the two tend to be complementary under various respects. While the non-parametric signals approach allows for a transparent link between individual variables and composite indicators and can meaningfully incorporate a large number of variables in the analysis, the parametric logit/probit modelling approach allows taking into account the correlation between variables and testing for statistical significance of individual variables. A logit/probit modelling for fiscal crises will be object of further work in the near future.

Box IV.3.1: The methodology for the calculation of the thresholds

As explained in the main text, the optimal threshold for each variable is chosen in a way to minimise, based on historical data, the number of crisis signals sent despite no crisis materialising (as recorded in the data based on the definition of fiscal crisis in Section III.2.1) plus the number of no-crisis signals sent ahead of crises, with different weights attached to the two components. Table A.1 represents the four possible combinations of events, between crisis or no-crisis signals sent by the variables and crisis or no-crisis episodes following the signals as recorded in the data.

Table A.1 – Possible cases based on type of signal sent by the variable at *t*-1 and state of the world at *t*

	Crisis episode	**Non-crisis episode**
Crisis signal	True Positive signal	False Positive signal (Type I error)
No-crisis signal	False Negative signal (Type II error)	True Negative signal

Formally, for each variable *i* the optimal threshold (t_i^*) is such as to minimise the sum of type I and type II errors for variable *i* as from the following total misclassified error function defined for indicator *i* (TME_i) ([1]):

$$t_i^* = \arg\min_{t_i \in T_i}\left(TME_i(t_i)\right) = \frac{FN_i(t_i)}{C} + \frac{FP_i(t_i)}{NC} \qquad i = 1,\ldots, n \qquad (1)$$

where T_i = set of all values taken by variable *i* over all countries and years in the panel; $FN_i(t_i)$ = total number of false negative signals sent by variable *i* (over all countries and years) based on threshold t_i; $FP_i(t_i)$ = total number of false positive signals sent by variable *i* (over all countries and years) based on threshold t_i; *C* = total number of fiscal crisis events recorded in the data; *NC* = total number of no-fiscal crisis events recorded in the data ([2]); *n* = total number of indicator variables used. It is straightforward to see from (1) that in the minimisation problem False Negative signals are weighted more than False Positive signals as:

([1]) Following this methodological approach, the optimal threshold will be such as to balance type I and type II errors. For variables for which values above the threshold would signal fiscal crises, a relatively low threshold would produce relatively more false positive signals and fewer false negative signals, meaning higher type I error and lower type II error; the opposite would be true if a relatively high threshold was chosen.

([2]) Here we simplify on the total number of crisis and non-crisis events as in fact these numbers vary across variables. This is due to the fact that data availability constraints do not allow us to use the whole series of crisis and non-crisis events for all variables.

(Continued on the next page)

Box (continued)

$$\frac{1}{C} > \frac{1}{NC}$$

This is due to the fact that the total number of fiscal crises recorded over a (large enough) panel of countries will be typically much smaller than the total number of non-crisis events. This is a positive feature of the model as we might reasonably want to weight the type II error more than the type I errors given the more serious consequences deriving from failing to correctly predict a fiscal crisis relative to predicting a fiscal crisis when there will be none.

The threshold for indicator *i* (with *i* = 1,…, n) obtained from (1) is common to all countries in the panel. In the model presented here this is defined as a common *absolute* threshold (a critical value for the level of public debt to GDP, or general government balance over GDP, for instance) but it could also be defined as a common *relative* threshold (a common percentage tail of the country-specific distributions). (Reinhart, Goldstein and Kaminsky (2000) and Hemming, Kell and Schimmelpfennig (2003)) In the latter case, while the optimal percentage tail obtained from (1) is the same for all countries, the associated absolute threshold will differ across countries reflecting differences in distributions (country *j*'s absolute threshold for indicator *i* will reflect the country-specific history with regard to that indicator). Both the aforementioned methods were applied and a decision was made to focus exclusively on the first for the time being, given that the second one tends to produce sensible country-specific absolute thresholds for indicator *i* only for those countries having a history of medium to high values for the indicator concerned (or medium to low, depending on what the crisis-prone side of the distribution is), while country-specific thresholds would not be meaningful for the rest of the sample.

The TME function in equation (1) is the criterion that was used to calculate the thresholds but it is not the only possible criterion used in the literature. The minimisation of the noise-to-signal ratio (*NSR*) is another possible option. In this case the optimal threshold for indicator *i* (t_i^*) is obtained as:

$$t_i^* = \arg\min_{t_i \in T_i} \left(NSR_i(t_i) \right) = \frac{FP_i(t_i)/NC}{TP_i(t_i)/C} \qquad i = 1,\ldots, n \qquad (2)$$

where $TP_i(t_i)$ = total number of true positive signals sent by variable *i* (over all countries and years) based on threshold t_i. Thresholds for the fiscal crisis risk model were also derived using this second criterion, but the TME minimisation was preferred based on the size of the total errors produced (same choice and justification offered by Baldacci et al. (2011))

Box IV.3.2: The calculation of the index of fiscal crisis vulnerability

The fiscal crisis vulnerability index is constructed in the context of the IMF-FSB Early Warning Exercise and in a similar way to Baldacci et al. (2011) and Reinhart et al. (2000).[1] A value of 1 is assigned for every variable *i* for a country *j* and year *t*, that signals a fiscal crisis for the following year (a dummy d^i is created for each variable *i* such that $d^i_{jt} = 1$ if a crisis signal is sent by the variable and $d^i_{jt} = 0$ otherwise, i.e. if a no-crisis signal is sent or the variable is missing). The value of the composite indicator for country *j* and year *t* (I_{jt}) is then calculated as the weighted number of variables having reached their optimal thresholds with the weights given by the "signalling power" of the individual variables:

$$I_{jt} = \sum_{i=1}^{n} w_i d^i_{jt} = \sum_{i=1}^{n} \frac{z_i}{\sum_{k=1}^{n} h^k_{jt} \cdot z_k} d^i_{jt} \qquad (3)$$

where *n* = total number of variables; z_i = 1 – (type I error + type II error) = signalling power of variable *i*; and $h^k_{jt} \in \{0,1\}$ is an indicator variable taking value 1 if variable *k* is observed for country *j* at time *t* and 0 otherwise.[2] The variables are therefore assigned higher weight in the composite indicator, the higher their forecasting accuracy.[3]

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1 The difference with Baldacci et al. (2011) is that the analysis presented here does not a system of "double weighting" of each variable incorporated in the composite indicator based on the weight of the subgroup of variables it belongs to (i.e. fiscal and financial-competitiveness variables in this case) and the weight of the individual variable within the group. The difference with Reinhart et al. (2000) is in the way the individual variables' weights are computed (they use as weights the inverse of the noise-to-signal ratios of the individual variables as they apply the NSR criterion, rather than the TME used here – see Box IV.3.1).

2 This ensures that the sum of the weights is equal to 1 regardless of data availability (which is of course necessary to be able to analyse the evolution of the index.)

3 Moreover, as evident from (3), the weight attached to each variable is decreasing in the signalling power attached to the other variables, as well as in the number of variables available for a given country and year.

4. FISCAL REACTION FUNCTIONS AND DEBT THRESHOLDS FOR THE EU

4.1. INTRODUCTION

The results of estimations of a set of Fiscal Reaction Functions (FRF) for the EU are presented in this Chapter. The model evaluates the empirical response of the primary balance to the outstanding level of public debt, after controlling for a number of economic and institutional variables.

The main idea of this approach is to define fiscal solvency as being fulfilled when the response of the primary surplus to debt is positive. A positive response of the primary surplus to debt intuitively indicates that the government counteracts a rising debt ratio by increasing its primary balance or, conversely, runs a lower surplus whenever debt is at a relatively lower level.

This methodology can enrich sustainability analysis in two ways. First, predictions for the primary balance in 2011 and 2012 are computed on the basis of the estimated FRF model and are used as a benchmark for existing primary balance forecasts by the Commission. A statistically significant difference would indicate that forecasts are upward or downward biased, compared to what could be expected from historical fiscal behaviour in the EU in situations with similar debt ratios, cyclical developments and other relevant factors.

Second, the estimates of the primary balance obtained from the FRF are used as a basis for calculating thresholds for sustainable debt for each EU Member State, following the standard inter-temporal condition for government solvency. Current debt ratios are assessed against those thresholds in order to evaluate the sustainability of Member States' fiscal positions.

4.2. ESTIMATING A FISCAL REACTION FUNCTION FOR THE EU: SOME TECHNICAL ASPECTS

The approach presented in this Chapter is inspired by a strand of the literature on public debt sustainability which adopts the FRF as the main empirical tool to test whether governments fulfil intertemporal solvency requirements. Key papers are Bohn (1998) and (2005); IMF (2003); Mendoza and Ostry (2008); Celasun et al., (2006), Ghosh et al., (2010), with the main reference being the seminal paper by Bohn (1998) which argues that governments are solvent under very general conditions as long as the primary balance increases with the outstanding stock of debt. A practical advantage of such a criterion is that it is independent of information regarding the discount rates, interest rates on government bonds and inter-temporal preferences.

The equations estimated in these papers normally include further (non-debt) determinants of the primary surplus on the right-hand-side. Examples of frequently used determinants are the output gap, to account for business cycle effects, and the temporary component of public expenditure (e.g. military outlays during wars). Depending on the specific features of countries considered, other variables such as inflation, trade openness, commodity (or oil) prices and the quality of the budgetary framework may also be included.

A further refinement is to test for the possibility of a non-linear relationship between debt and the primary surplus, i.e. to see whether the magnitude of the fiscal response changes with the level of debt. This could occur if the surplus rises with debt only when the debt ratio exceeds a certain threshold. A number of papers find evidence of such a non-linear response although with partly conflicting results between advanced and emerging economies. A stronger response of the primary surplus with greater debt levels is found among industrialised countries in Bohn (1998), for the US case, and IMF (2003), for a broader sample of countries, whereas Abiad and Ostry (2005), IMF (2003), Celasun et al. (2006) and Mendoza and Ostry (2008) find that such response tends to weaken among emerging economies when debt exceeds 50% of GDP. However, Mendoza and Ostry (2008) find no evidence of a positive response of the primary surplus to debt within a sub-sample of advanced economies with high debt. Similar evidence is found in Ostry et al. (2010).

The specification chosen

As the focus of this exercise is on debt sustainability and one of the aims is to have a benchmark for standard sustainability indicators expressed in terms of primary balance, the overall primary balance (as a % of GDP) is chosen as dependent variable.([114])

In line with the existing literature explanatory variables include:

- The variables used in the Barro model (see Barro (1979),) which constitutes the theoretical basis for the econometric specification, i.e. the lagged debt to GDP ratio, the output gap to account for business cycle effects on fiscal policy, the cyclical component of government final consumption expenditures to account for tax-smoothing considerations in setting fiscal policy; ([115])

- a number of political and institutional control variables like the occurrence of elections, the size of the government's parliamentary majority, political stability, ideology and fragmentation of government, the strength and coverage of fiscal rules,([116]) and dummy variables for the years in run-up to EMU, and those of the latest economic downturn (2009–10) and for whether the country belongs to the euro area or is a recently acceded Member State.

- the current account balance (as a share of GDP).([117])

The main model is estimated for the EU using a Fixed Effect (FE) estimator and includes the lagged dependent variable among the regressors. As data for fiscal rules (FRI) are only available for the period 1990–2008, Table IV.4.1 presents results for two different time periods, i.e. 1990–2008 and 1975/80–2010, with the longer time period excluding FRI and including the dummy for the recent economic downturn. Instrumental variables are used for the output gap and for the current account.([118]) The regression presented in column (1) of the table only includes the lagged debt and economic controls, whereas the one in column (4) also includes FRI and the whole set of political variables and dummies mentioned above. Column (2) retains FRI and the most significant political variables. Column (5) presents the same regression as in column (2) with the exclusion of FRI which allows a larger number of observations to be used.

Finally, column (3) presents the same regression as column (5) while replacing the ESA95 primary surplus data with linked (i.e. ESA95 and non-ESA) data allowing a further rise in the number of observations. ([119])

The coefficient of the lagged debt to GDP ratio is positive and significant in all the above regressions, and is robust to the introduction of political and institutional variables and dummies.([120]) The primary balance appears to have

([114]) Robustness checks have been carried out by also considering CAPB, but the results remain essentially unchanged. The latter is commonly used in papers focusing on the discretionary response of fiscal policy to the business cycle (see Gali and Perotti (2003), European Commission (2006), Ayuso et al. (2010) and Turrini (2008),) thereby capturing the existence of an output stabilisation motive in setting fiscal policy.

([115]) See Bohn (1998) and Mendoza and Ostry (2008). The chosen specification controls for the effect of temporary fluctuations of GDP and government expenditures. Whereas the former is measured by the output gap, the latter is captured by de-trending the series for final government consumption expenditures (as a share of GDP) using the Hodrick-Prescott filter, with the smoothing parameter set at 100.

([116]) This information is summarised by a Fiscal Rules Index (FRI) assigning greater scores to more stringent rules and/or rules with a broader coverage. The index is compiled by Commission services.

([117]) This controls for possibilities of 'twin deficits', i.e. external deficit being associated to fiscal deficit (Mendoza and Ostry (2008)).

([118]) For both variables, causality can run in both directions, i.e. from the variable in question to the primary balance and vice versa. In other words the two variables may be endogenous. Therefore, to avoid risk of biased estimations, they are instrumented by the lagged output gap and the contemporaneous US output gap and by the lagged current account, respectively. See Ayuso et al. (2008) and Gali and Perotti (2004).

([119]) In this regression the output gap as a percentage of trend output (i.e. ogtrend), instead of potential output, is used given its longer time coverage which allows to match the longer time coverage of linked primary balance series.

([120]) The debt coefficient retains its sign and significance also in the model excluding the lagged dependent variable, with a larger coefficient in absolute value. As the literature does not provide clear cut indications as to whether the lagged dependent should be excluded or not, it was included given its strong statistical significance suggesting a certain degree of time persistence in primary balance.

Table IV.4.1: **FRF for EU27, dependent variable: primary balance (% of GDP) - fixed effect estimator**

VARIABLES	-1 pbal_gdp_esa	-2 pbal_gdp_esa	-3 pbal_gdp_lnkd	-4 pbal_gdp_esa	-5 pbal_gdp_esa
ogpot	0.0114	**-0.0328**		0.0825	-0.134**
ca_gdp	0.121***	**0.131*** **	**0.0893*** **	0.142***	0.140***
L.pbal_gdp_esa	0.654***	**0.466*** **		0.483***	0.614***
L.debt_gdp	0.0314***	**0.0327*** **	**0.0271*** **	0.0377***	0.0314***
cyc_govcons_gdp	-1.193***	**-0.861*** **	**-1.016*** **	-0.831***	-1.056***
fri		**0.335** **		0.144	
maj		**4.097*** **	**2.198** **	4.580***	2.509**
checks				-0.0649	
stabs				0.226	
legelec		**-0.373** **	**-0.406** **	-0.336*	-0.407**
govfrac				-0.745	
polariz				0.0662	
gov1rlc				-0.00296	
dummy_runup_EMU				-0.0976	
dummy_ea		**-0.195**	**0.0477**	-0.31	-0.0112
dummy_enlarg		**0.348**	**0.677** **	0.477	0.820**
dummy_crisis			**-3.129*** **		-3.444***
ogtrend_fa10			**-0.103** **		
L.pbal_gdp_lnk			**0.614*** **		
Constant	-1.345***	**-3.194*** **	**-2.038*** **	-3.347***	-2.370***
R-squared	0.6063	**0.5143**	**0.6594**	0.5665	0.6509
Observations	564	**414**	**693**	378	563
Number of cn_num	27	**27**	**27**	27	27

Notes: *** p<0.01, ** p<0.05, * p<0.1: variable statistically significant at the 1%, 5% and 10% level, respectively. Definition of variables: Ogpot=output gap (% of potential GDP); ca_gdp= current account balance (% of GDP); L_pbal_gdp_esa=Lagged Primary balance (% of GDP) – ESA series only; L.debt_gdp = lagged government debt-to-GDP ratio: cyc_govcons_gdp = temporary fluctuations of government final consumption expenditures (as a % of GDP); FRI = fiscal rules index; Maj= size of government parliamentary majority (in %); checks = Checks and balances (number of decision-makers with veto power on government decisions); legelec = dummy taking the value of 1 if the country has legislative elections in that year, 0 otherwise; govfrac = government fragmentation (number of parties in government coalition); polariz = government polarization (ideological range between the two government parties ideologically more distant); gov1rlc = ideology of main government party; ogtrend = output gap as % of trend GDP; L.pbal_gdp_lnk = lagged primary balance (% GDP) – linked (ESA and non-ESA) series.
Source: Commission services calculations from AMECO and the World Bank Database of Political Institutions (WBDPI).

a strong degree of time persistence as the lagged dependent variable is always positive and highly significant.

Among the other explanatory variables, the cyclical component of government consumption expenditures has a negative and very robust effect on the primary balance, as expected. The output gap only has a significant coefficient in the regressions covering a longer time span (columns (3) and (5)) with a negative sign, suggesting some degree of pro-cyclicality of fiscal policy. The current account balance has a positive and significant coefficient. Among political and institutional variables, the strength and coverage of fiscal rules and the size of government majority have a positive effect on primary balance, whereas during election years the balance is *ceteris paribus* lower. Finally, the dummy for crisis years has a strong negative impact on primary balance (columns (3) and (5)) whereas the enlargement dummy has a positive sign, albeit significant only in regressions covering a longer time span (columns (3) and (5).) The specifications in columns (2) and (3) have been chosen as benchmark regressions (highlighted in bold) to be used later on in the analysis for the calculation of debt thresholds. The former regression includes FRI and the more robust political variables, i.e. the size of government majority and the occurrence of elections, and covers the 1990–2008 period. The latter retains the majority and election dummies while excluding FRI and using linked ESA and non-ESA series for the primary balance allowing a much larger number of observations to be used in the estimation.([121])

The robustness of the results has been tested by repeating the FRF estimates using different estimation methodologies. For simplicity only the specification of the first benchmark regression has

([121]) Covering a longer time span allows to significantly reduce the inconsistency of FE estimators in dynamic panel data models. The regression in column (3) covers an average of 25.7 observations per country, thereby fulfilling comfortably the rule of thumb that T should be larger than 20 to overcome the inconsistency of FE estimators in dynamic panels (Bond (2002)). Hence, the robustness of estimates of regression in column 2 (i.e. the one with a shorter time coverage) can be checked by comparison with the regression in column (3). As the results of the two regressions are qualitatively similar (except for the output gap) estimates of the regression in column 2 can be considered as reliable.

been considered.([122]) Estimations are run alternatively with pooled OLS, a Random Effect estimator and a GMM estimator, to account for the possible inconsistency of FE estimators in dynamic panel data. Overall, coefficient estimates remain qualitatively similar to those in Table IV.4.1, ([123]) with the exception of government majority becoming insignificant in the GMM estimates.

Further robustness checks have been conducted. First, the model has been tested separately for the EU15 and the EU12, with the latter including the new Member States. Only the two benchmark regressions have been considered for simplicity. The coefficient of the debt term remains positive and significant for both subsamples even if it is larger for the EU12 (around 0.06) sample. The size of the government majority and fiscal rules only have a large positive impact on the primary balance among the EU12 while being positive but insignificant among the EU15. Similarly the election variable, albeit negative in all regressions, is significant only among EU15 countries.

Second, the literature has found evidence that the response of the primary balance to debt may be non-linear (see Section IV.4.1;) its size may vary with the level of outstanding debt with primary balance reacting more strongly when the debt ratio exceeds a given threshold, at least in advanced economies. Tests have been made on a spline for the debt ratio at 60% of GDP– in order to test whether a change in the response of primary balance occurs when debt exceeds this level – and on a quadratic and cubic term for debt. The test points to insufficient robustness of the evidence for a non-linear response to debt, so the linear specification is retained for the benchmark regressions.([124])

([122]) As explained above, the risk of inconsistent estimates is substantially reduced in the second benchmark regression given the longer time coverage.

([123]) This is true in particular for GMM. Pooled OLS and RE estimates are likely to be biased given that they do not control for unobserved (country) heterogeneity (pooled OLS) or assume country effects to be uncorrelated with the regressors, which is highly unlikely (RE).

([124]) Detailed results of FRF with different estimation techniques, of EU15 vs. EU12 and with non-linear response to debt are available upon request.

4.3. PREDICTIONS OF PRIMARY BALANCE IN 2011 AND 2012 BASED ON THE FRF

The estimated primary balance ratios can be used to formulate out of sample predictions for the primary balance for the years 2011 and 2012. These can be compared with the most recent primary balance forecasts available in AMECO.([125])

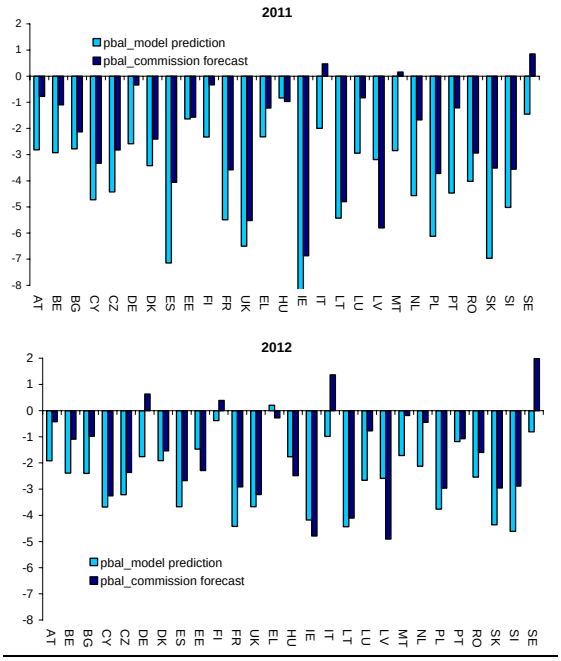
Predictions are calculated as fitted primary balance values based on estimated FRF coefficients in the longer benchmark regression and on existing Commission forecasts for 2011 and 2012 for all explanatory variables.([126]) Graph IV.4.1 displays the model's predictions for the primary balance 2011 on the upper chart and for 2012 on the lower chart, against corresponding Commission forecasts.

The results indicate that the existing European Commission forecasts may be biased upward for 2011 and, to a lesser extent, 2012 compared to Member States' historical surplus-generating capacity. FRF predictions for the primary balances of twenty-five and twenty-two Member States are worse than the Commission forecasts in 2011 and 2012, respectively, although the magnitude of the gap varies by country. Exceptions to this pattern are HU and LV in 2011 and EE, EL, HU, IE and LV in 2012. This is to some extent unsurprising, as in the current (quite exceptional) circumstances many countries have introduced sizeable consolidation measures in order to counteract the effect of the economic downturn on fiscal balances and such measures may have lasting implications on their public finances over next years.

([125]) The Commission's Autumn 2010 forecasts are used here.

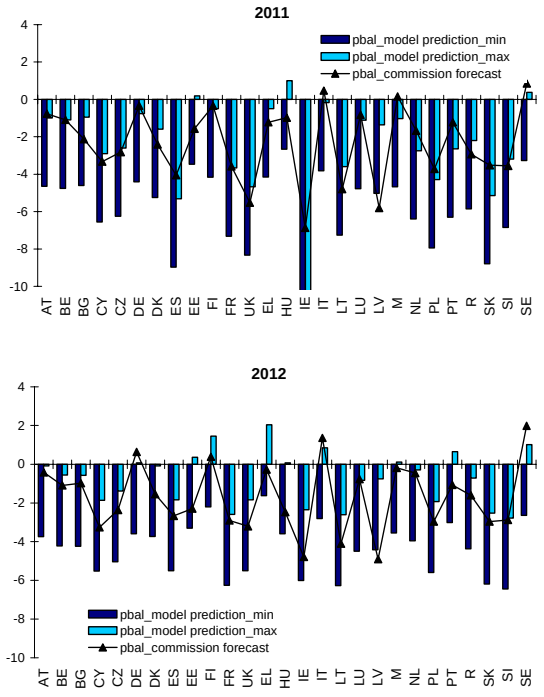
([126]) 2011 and 2012 updates of the electoral dummy (i.e. legelec) are based on information available in the European Election Database constructed as part of the European Sixth Framework Research Programme "Citizens and Governance in a Knowledge-based Society" (CivicActive), **http://www.nsd.uib.no/european_election_database/**. As for the variable on government majority in parliament (maj), values for 2011 or for both 2011 and 2012 have been set equal to the one in 2010 whenever no elections occurred/are scheduled in these years. If an election took place/is scheduled in 2010/2011 then maj for the following year(s) is set at a value equal to the country average of maj over the sample period (in the absence of better information).

Graph IV.4.1: **Primary balance forecast vs. (point) prediction from FRF model**



Notes: One figure for Ireland in 2011 is below the minimum number shown in the axis.
Source: Commission services calculations based on AMECO and World Bank Database of Political Institutions.

Graph IV.4.2: **Primary balance forecast vs. min and max prediction from FRF**



Notes: The figures for Ireland in 2011 are below the minimum number shown in the axis.
Source: Commission services calculations based on AMECO and World Bank Database of Political Institutions.

To compare the two figures more appropriately, one standard deviation of the FRF estimated regression is added and subtracted to the (point) estimates of primary balance in 2011 and 2012.([127])

Graph IV.4.2 plots existing forecasts against those ranges represented by a minimum and maximum predicted primary balance per country.

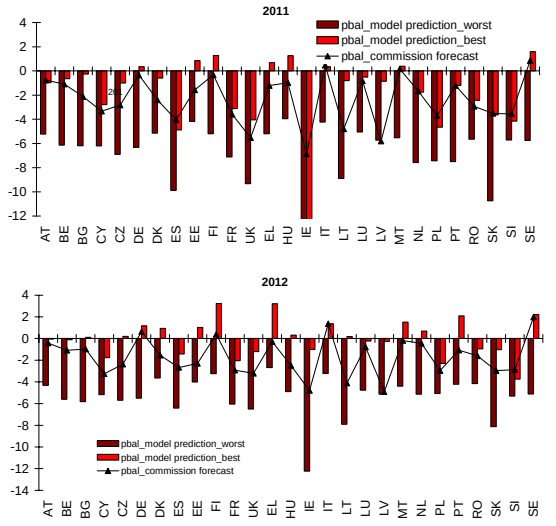
In 2011, existing forecasts lie outside the range predicted by the fiscal reaction function for a majority of EU Member States, i.e. sixteen out of twenty-seven, with fifteen of them posting a forecast which exceeds the maximum predicted value; whereas only LV forecasts a primary balance which is worse than the minimum prediction. On the other hand, forecasts lie within the predicted ranges for most Member States in 2012. There are only five exceptions to this pattern; DE, IT, LU and SE post forecasts exceeding the maximum predicted primary balance while LV has a forecast balance worse than the minimum prediction. It should be noticed that the predicted ranges of primary balance values are quite large, with a difference of about 3.6 pp of GDP between the lower and upper end, indicating a rather imprecise estimate.

An alternative approach which allows for the predictions' ranges to vary by country is to add to (subtract from) point estimates for 2011 and 2012 the average of the three best (worst) shocks to the primary balance over the sample period, as

([127]) This implicitly assumes that the width of the range is the same for all Member States, i.e. the predicted value for primary balance +/- 1.83, which is the value of the regression's standard deviation.

measured by the three highest (lowest) residuals of the FRF regression. This would provide a measure of the uncertainty of predictions reflecting the country specificities more closely. Graph IV.4.3 plots those ranges against existing primary balance forecasts.

Graph IV.4.3: **Primary balance forecast vs. predictions from FRF +/- average of three best/worst primary balance shocks**



Notes: The figures for Ireland in 2011 are below the minimum number shown in the axis.
Source: Commission services calculations based on AMECO and World Bank Database of Political Institutions.

As with Graph IV.4.2, the ranges of the predicted primary balance values tend to be quite sizeable, albeit with large variation by country. Contrary to the upper chart of Graph IV.4.2 the primary balance forecasts now tend to also lie within predicted ranges in 2011, although eight Member States still exceed the best prediction. As the upper chart of Graph IV.4.3 shows, Latvia still posts a forecast lower than the worst prediction. In 2012 the primary balance forecasts lie outside predicted ranges only in the cases of IT and SI where they exceed the best prediction.

4.4. THRESHOLDS FOR SUSTAINABLE DEBT

The estimates for the primary surpluses derived from the FRF model can be seen as capturing the structural surplus-generating capacity of countries included in the sample and can then be used to calculate sustainable debt thresholds via the standard IBC.([128]) In steady state, a given stock of government debt is sustainable if it does not exceed the ratio of the steady state primary surplus relative to the steady-state interest rate-GDP growth rate differential. Therefore, by plugging the average estimated primary balance into the solvency condition and solving the equation for the debt-to-GDP ratio, an estimate of the maximum debt ratio which meets sustainability requirements given a country's surplus generating capacity can be obtained. This value can be called the *debt sustainability threshold*, or, more simply, the *debt threshold* (DT).

$$DT_i = \frac{p_i^{FRF}}{r_i - g_i} \qquad (1)$$

where p_i^{FRF} is the average estimated primary balance (as a share of GDP) based on the Fiscal Reaction Function over the period covered by the model for country i and r_i and g_i are, respectively, the average real interest rate and real GDP growth rate for country i over the same period.([129])

Primary balance estimates were derived from the two regressions of columns (2) and (3) in Table IV.4.1.([130]) The interest-growth rate differentials have been calculated as the average difference between the implicit interest rate on gross public debt and the growth rate of GDP at current market prices over three different periods, (1990–2010, 1975–2010 and 2008–2014)([131]) to test the sensitivity of debt thresholds to different interest-growth assumptions.

There is one important caveat which needs to be underlined at this point of the analysis. The

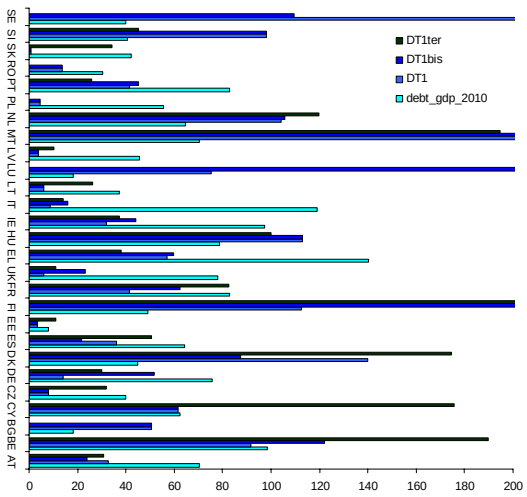
([128]) See Abiad and Ostry (1996).
([129]) Debt thresholds can in principle be calculated using alternative estimates of the primary balance, such as historical averages or existing forecasts. However, estimates based on the FRF have the advantage of being based on a model of fiscal behaviour. In any case FRF-based thresholds can be compared to those based on different primary balance figures in order, for instance, to assess the degree of realism of fiscal plans relative to past surplus-generating capacity.
([130]) It is recalled that they cover the 1990–2008 period and the 1975–2010 period, respectively.
([131]) This uses Commission (AMECO) forecasts for 2011 and 2012 and internal Commission forecasts for 2013 and 2014.

calculation of the debt threshold makes economic sense only when both the mean primary balance and the interest rate-growth differential are positive. In cases when real GDP growth systematically exceeds the real interest rate any debt-to-GDP ratio can be sustained.([132]) On the other hand a negative steady-state primary balance (with a positive interest-growth differential) would imply a negative debt threshold, which is also a trivial outcome for our purposes.

The sample used in this exercise includes cases where either the mean primary balance or the average interest-growth differential is negative. Hence, a correction has been made in order to minimise the exclusion of individual countries from the threshold calculation. For countries where the overall average of the estimated primary balance is negative, it is replaced with the average based exclusively on positive primary balance values. This implies that the surplus-generating capacity is over-estimated for this group of countries. The same methodology has been applied to the interest-growth differential, implying, for those countries where the overall average interest-growth differential was negative, an over-estimation of the historical burden of servicing a given amount of debt. In this way, debt thresholds could be calculated for all 27 Member States, based on the longer set of primary balance estimates (i.e. covering the 1975–2010 period), and for 25 Member States based on the shorter set of estimates (covering the 1990–2008 period). This latter group excludes PL and SK, for which the estimated primary balance was never positive over that period.

Member States' debt thresholds derived from the 1975–2010 benchmark FRF regression (excluding FRI) and the 1990–2008 benchmark regression (including FRI) are shown in Graphs IV.4.4 and IV.4.5, respectively, against current (i.e. 2010) debt to GDP ratios. In these graphs, the lower bar for each country represents the debt to GDP ratio in 2010, and the three remaining bars represent debt thresholds corresponding to the average interest rate-growth rate differentials over three different periods, i.e. 1990–2010, 1975–2010 and 2008–2014.([133]) This allowed the assessment of the robustness of the sustainability ranking relative to the historical and forecast growth-adjusted interest rate.

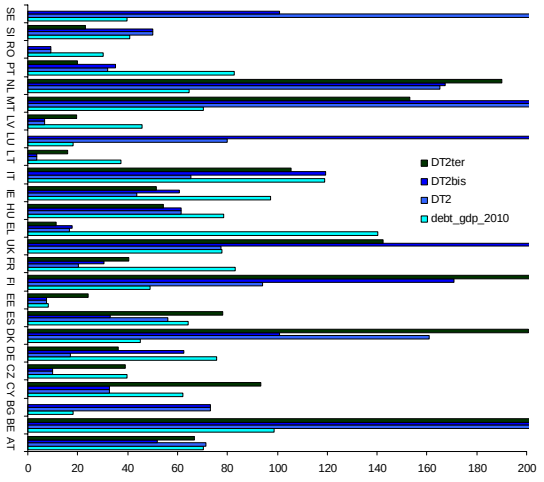
Graph IV.4.4: **Debt sustainability thresholds - mean estimated primary balance 1975-2010, mean interest-growth differentials over 3 different periods - vs. current debt (% of GDP)**



Notes: DT1, DT1bis, DT1ter = Debt Threshold 1, 1bis and 1ter derived from primary balance estimates from a Fiscal Reaction Function covering the 1975-2010 time period (subject to data availability for individual countries) and from the average interest rate-GDP growth rate differential over the 1990-2010, 1975-2010 and 2008-2014 period, respectively, using Commission forecasts for years 2011 to 2014. Figures for thresholds in a few countries exceed the maximum value of the axis (200%).
Source: Commission services calculations based on AMECO and World Bank Database of Political Institutions.

([132]) See Blanchard (1990).
([133]) For the 2008–2014 period negative averages of the growth-adjusted interest rate where not corrected by restricting them to positive values, as the time length of the period is too short. Hence DT1ter and DT2ter could not be calculated for 5 countries: BG, LU, PL, RO and SE.

Graph IV.4.5: **Debt sustainability thresholds - mean estimated primary balance 1990-2008, mean interest-growth differentials over 3 different periods - vs. current debt (% of GDP)**



Notes: DT2, DT2bis, DT2ter = Debt Threshold 2, 2bis and 2ter derived from primary balance estimates from a Fiscal Reaction Function covering the 1990-2008 time period (subject to data availability for individual countries) and from the average interest rate-GDP growth rate differential over the 1990-2010, 1975-2010 and 2008-2014 period using Commission forecasts for years 2011 to 2014. Figures for thresholds in a few countries exceed the maximum value of the axis (200%).
Source: Commission services calculations based on AMECO and World Bank Database of Political Institutions.

The interpretation is straightforward. Whenever a country's current debt ratio exceeds the debt threshold, the implication is that its current debt position is not sustainable given its surplus-generating capacity as identified from the FRF model.

To a large extent, different models give (reassuringly) the same result in terms of sustainability. Countries where the current debt ratio exceeds debt thresholds based on both FRF models regardless of the reference period for the interest-growth differentials are CZ, DE, EL, IE, LT, LV, PT and RO. FR, IT and ES come next, by exceeding the threshold in five cases out of six. On the opposite end of the ranking are BG, DK, FI, LU, MT, NL and SE, which never exceed the threshold, and BE and SI which exceed it only in one out of six cases. AT and UK are fiscally unsustainable under the first model and sustainable under the latter one whereas the reverse occurs for HU, which is likely to reflect divergent surplus generating capacities between the shorter (1990–2008) and longer (1975–2010) periods considered.([134])

The position of each Member State relative to the rest of the EU can be more easily seen in Graph IV.4.6, where countries are ranked from the most to the least fiscally sustainable based on the difference between their debt threshold and their current debt ratio. The graph compares the country ranking across the two FRF models for all three sets of interest-growth differentials considered. It also includes a graph comparing the ranking based on the mean vs. median estimated primary balance (corresponding to the 1990–2008 FRF model)([135]) and interest-growth differential (over the 1990–2010 period.) Overall, the ranking is fairly robust across FRF models and different sets of interest-growth differentials, particularly for countries at the top and bottom ends of the scale. FI, DK, BE, NL, LU, SE and BG systematically cluster as the most fiscally sustainable countries and EL, IE, PT, LV, LT as the least sustainable ones.

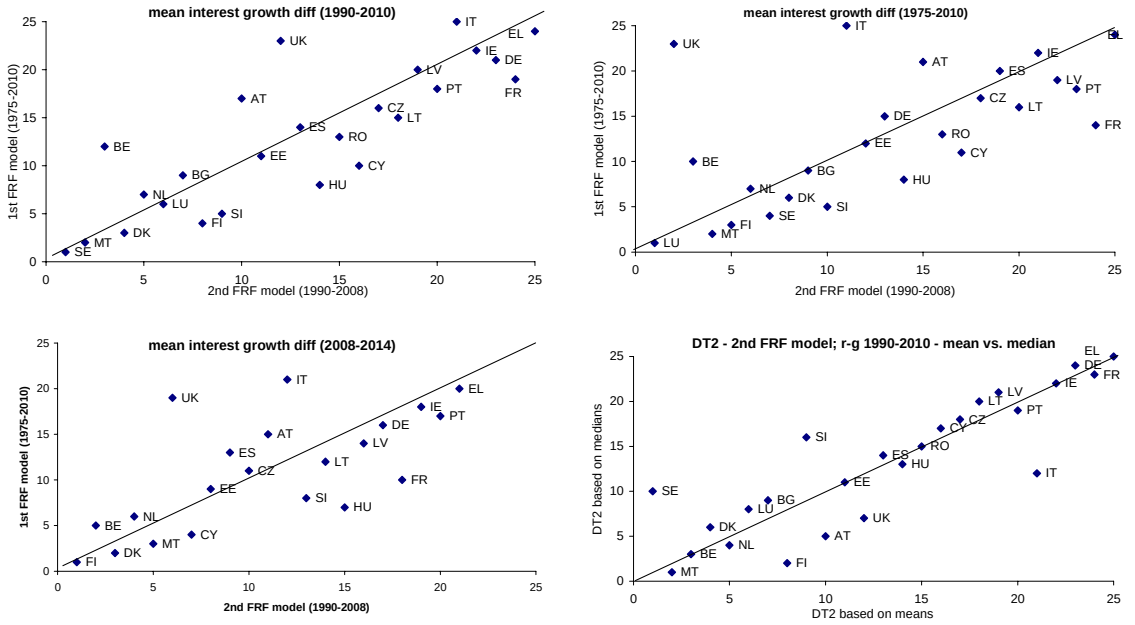
In order to provide a simple test on the extent to which surplus-generating capacity needs to be improved in order to turn a fiscally unsustainable country into a sustainable one, debt thresholds have been recalculated based on the average of the best 3-year estimated primary balance. This tests whether the current debt ratio would become sustainable if the future surplus-generating capacity of the country would equal the best primary balance performance achieved in the past according to the FRF model.([136])

([134]) A robustness check has been undertaken by calculating debt thresholds based on *median* (instead of average) figures, for both the estimated primary balance and the interest-growth differential. Although the country ranking in terms of sustainability does not change (see Graph IV.4.6, last Graph, below) the assessment of debt sustainability becomes generally more benign.

([135]) See footnote 22. The country ranking becomes even more robust across the two FRF models and different sets of interest-growth differentials when median figures are used instead of averages (not shown in the Graph).

([136]) The exercise is done only with the average growth-adjusted interest rate for 1990-2010.

Graph IV.4.6: **Debt sustainability ranking**

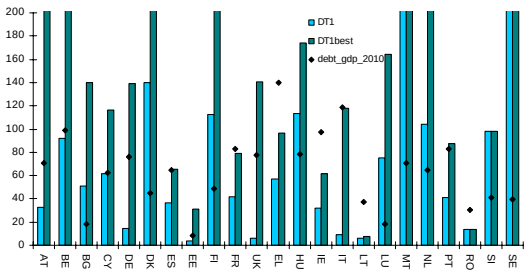


Source: Commission services calculations based on AMECO and World Bank Database of Political Institutions.

Graph IV.4.7 and IV.4.8 show the debt thresholds based on the best estimated primary balance (DT1best and DT2best) together with the general thresholds (DT1 and DT2,) both derived from the first and second FRF model, respectively, against the current debt ratio.([137])

Obviously the level of sustainable debt increases significantly for many Member States according to DTbest, shifting the sustainability assessment from negative to positive for AT, DE, ES, FR, UK, IT, PT according to the first FRF model, and for CY, DE, ES and IT according to the second FRF model. However a few Member States remain fiscally unsustainable even under this more "optimistic" scenario. These are EL and IE according to the first model and FR, EL, HU, IE and PT according to the second FRF model.

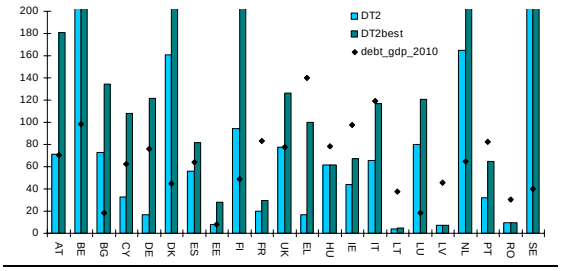
Graph IV.4.7: **Debt sustainability thresholds - 1. historical norm 1975-2010 2. best 3 years estimated primary balance - vs. current debt (% of GDP)**



Note: Figures for thresholds in a few countries exceed the maximum value of the axis (200%).
Source: Commission services calculations based on AMECO and WBDPI.

([137]) As explained above whenever the overall average of estimated primary balances was negative, it has been restricted to positive primary balance values in order to increase the number of countries included in threshold calculation. This implies that for those countries with only one or two positive values for the estimated PB the main debt threshold already implies a significant over-estimation of surplus-generating capacity and would *decrease* if based on the best 3 year PB values. These countries were then excluded from calculation of DTbest, i.e. CZ, LV, PL and SK in Graph IV.4.7 and CZ, MT and SI (besides PL and SK for which not even the general DT2 could be calculated) in Graph IV.4.8. For a number of countries, which are shown in the graphs, DTbest is equal to the main DT which is explained by the fact that their best 3 primary balances in the model were the only positive ones so that the main threshold was already restricted to those values: RO and SI in Graph IV.4.7 and RO and LV in Graph IV.4.8.

Graph IV.4.8: **Debt sustainability thresholds - 1. historical norm 1990-2008 2. best 3 years estimated primary balance - vs. current debt (% of GDP)**



Note: Figures for thresholds in a few countries exceed the maximum value of the axis (200%).
Source: Commission services calculations based on AMECO and WBDPI.

4.5. CONCLUSIONS

It is important to underline that calculations such as those presented here have to be considered with caution. Thresholds are very sensitive to i) choices made in FRF estimation process including the estimation period and ii) choices on the interest rate-growth rate differentials. Despite several tests and robustness analyses, such choices still contain elements of arbitrariness. Moreover it has already been stressed that the estimates are not very precise, in that the standard errors are relatively large.

With all these caveats in mind, the methodology presented here is useful in that the FRF provides a sound historical benchmark against which to compare future plans. The usefulness of the methodology is also confirmed by the fact that results are reasonable and conform to *ex-ante* expectations for most Member States, with Germany being the main exception. This can easily be explained from the fact that the results are mostly driven by the relatively low surplus-generating capacity over the periods considered.([138]) As with any benchmarking exercise, this constitutes the first step towards an understanding of the country's situation which makes this methodology a very useful tool for sustainability analysis.

([138]) One should take into account the specific circumstances of this country during the 1990s linked to the reunification process followed by the exceptionally low growth of the early 2000s. Moreover, Germany becomes fiscally sustainable if thresholds are based on the best fiscal performances achieved over the model period (see results for DT best).

5. A MODEL-BASED APPROACH TO FISCAL SUSTAINABILITY

The instruments presented in Part IV to assess fiscal sustainability provide a good indication of the ability of governments to service the outstanding liabilities without triggering explosive debt dynamics, under the assumption that the feedback effects between fiscal and economic variables, mainly interest rates and output growth, are small. However, especially when large consolidations are implemented by governments, this assumption is not necessarily realistic and it is important to have an instrument that allows an assessment of fiscal sustainability taking into account all feedback effects.

In particular, it is important to assess, whether the policies required to consolidate public finances are feasible given their likely effects on the economy. The ability to run primary surpluses that are sufficiently large so as to ensure debt sustainability is constrained by their effects on the economy. A negative effect on the economy can require larger surpluses, leading to feedback effects which limit the capacity of governments to conduct the desired fiscal policy. These constraints are defined here as *fiscal limits*.

The concept of fiscal limits can be applied to both the revenue and the expenditure side as it may refer either to the ability to generate additional revenue, or to the ability to reduce non-interest expenditure to ensure sustainable budgets. Even "traditional" indicators of fiscal sustainability, which abstract from any feedback effects of fiscal measures on the economy, do not exclusively focus on the primary balance, but also on tax rates, such as the debt-stabilising tax rate proposed alongside the more common debt-stabilising primary surplus.([139])

This Chapter offers a general equilibrium analysis of fiscal limits on the *revenue side*, which refers to the government's capacity to raise sufficient revenue to finance expenditures and ensure the long-run sustainability of public debt. The fiscal limit denotes the maximum (tax) revenue the government can collect.

Fiscal limits may in principle depend on economic and political factors alike, as reflected in the two main strands of the literature on the determinants of fiscal limits:([140])

The *economic* approach focuses on the economic limits to tax collection and builds on the concept of Laffer curves. These curves relate the tax rate to the revenue collected and have an inverted U-shape, because distortionary taxation reduces the tax base on which tax revenue is collected. The fiscal limit is the point at which the decline of the tax base offsets the impact of an increase in the tax rate on revenue collection. Beyond that limit, further tax rate increases will actually reduce total tax revenue. For example, increasing labour taxation widens the wedge between net wages and labour costs and reduces taxable official employment; capital income taxation introduces a wedge between investment costs and the net returns to capital, which tends to reduce the equilibrium stock of productive capital; consumption taxes decrease the purchasing power of market income and makes non-taxed shadow activity or home production more attractive.

The *political* approach relates fiscal limits to the political economy of taxation and government spending. It is based on the observation that electorates usually show limited support for tax increases (and expenditure cuts) whereas tax cuts are popular well below the Laffer peaks. Recent experiences in some euro area countries illustrate that even countries in severe fiscal stress might be unwilling to raise taxes to increase government revenue.([141])

The model-based sustainability analysis in this chapter follows the first approach and focuses on the economic feasibility to generate the tax revenues needed to stabilise the public finances in the long-run. Political determinants are certainly important, but difficult to model. However, any

([139]) Blanchard, O.J. (1990), Blanchard, O.J., J.C. Chouraqui, R.P. Hagemann and N. Sartor, (1990) propose the "tax gap" indicator as being analogous to the "primary balance gap" indicator. The "tax gap" is the difference between the debt-stabilising (or "sustainable") tax rate and the current tax rate, measuring the required tax adjustment to stabilise the debt-to-GDP ratio under the assumption that taxation can be more readily adjusted than public expenditure.

([140]) For this taxonomy see Leeper, E. and T. Walker (2011).

([141]) The political limits to fiscal sustainability may be inferred from past policy responses, as it was argued in Chapter IV.3 on fiscal reaction functions. Legislated deficit or debt rules could be seen as another type of political limit or additional category of political self-restraint.

assessment of the economic dimension of fiscal limits should acknowledge that political constraints are likely to be tighter than economic ones.

This approach contributes to the general sustainability analysis in that it provides i) an order of magnitude for the space that member states still have to increase distortionary taxes before reaching the Laffer curve maximum; and ii) the general equilibrium effects of a tax-based fiscal consolidation path.

The advantage of integrating the model-based approach into a sustainability analysis is that it allows the general-equilibrium effects of different types of consolidation – gradual versus sudden consolidations and consolidations based on different tax instruments – to be distinguished. This advantage comes at a potential cost stemming from the fact that the results are potentially strongly model-specific. The precise transmission channels must be modelled and may all relevant mechanisms (especially the political ones) may not be captured to the full extent. Policy analysis should therefore build on empirically validated models and provide robustness checks to assess the sensitivity of results with respect to (uncertain or case-dependent) key parameters of the model.

In terms of the use of different tax instruments, the forthcoming 2011 issue of the Commission report on "Tax reforms in EU Member States" identifies various challenges faced by euro area Member Sates in the area of tax policy in the wake of the crisis. In particular, the report considers the potential need to introduce fiscal consolidation measures on the revenue side – as a complement to expenditure control – to ensure fiscal sustainability. The report also addresses the possibilities for making the tax structure more growth friendly and improving the design of individual taxes.

5.1. ANALYSING FISCAL LIMITS WITH THE QUEST MODEL

This Chapter uses Commission's QUEST model (see Box IV.5.1) to derive fiscal limits for distortionary taxes. Fiscal limits are understood as the peaks of the Laffer curve for labour, capital and consumption taxes. Beyond these peaks, further tax increases lead to reductions in tax revenues because the contraction of tax bases outweighs the effect of higher tax rates on government revenue. There are direct and indirect crowding-out effect on tax bases. For example, income taxation that dampens private-sector income and activity reduces the tax base of both income and indirect taxes. The analysis of fiscal limits should include such indirect effects and focus on the impact of tax policies on *total* tax revenue.

Tax avoidance and tax competition are crucial in shaping the Laffer curve. The version of the QUEST model used for this chapter includes home production and an open-economy setting to address domestic tax avoidance and some aspects of cross-border tax competition.

First, home production is a way of modelling a shadow sector of the economy. The work and output of the informal sector are untaxed. Home production captures the responsiveness of official and informal activity to changes in labour and consumption taxes. In the model, households decide about the allocation of work effort to official and shadow activities based on the real net wage from official employment and the alternative return from home production. Income and sales taxes affect this trade-off and the households' decisions. Growing substitutability between the two sectors amplifies the negative impact of tax increases on tax bases and tightens the fiscal limit.([142])

Second, the open-economy structure partly captures the effect of international tax competition. Rising rates of capital income taxation in one country affect the relative prices of domestic and internationally traded assets and trigger capital outflows from the respective economy.([143])

([142]) Labour tax is assumed to be liner, so that progressivity is not accounted for.

([143]) The model assumes that income taxation follows the residence principle and allows for cross-border arbitraging as the optimal portfolio allocation requires net returns to capital to be equalised across assets and countries. It does not address the viability of residence-based taxation when households or integrated firms can shift tax bases across jurisdictions. The model also excludes other elements of tax competition, such as cross-border sales tax arbitrage in the internal market. This is in line with Mendoza, E. and L. Tesar (1998) and Mendoza, E. and L. Tesar (2005).

Box IV.5.1: **The QUEST model**

QUEST III is a global macroeconomic model developed by the European Commission for macroeconomic policy analysis and research. A member of the class of New-Keynesian Dynamic Stochastic General Equilibrium (DSGE) models, QUEST has rigorous microeconomic foundations derived from utility and profit optimisation and includes frictions in goods, labour and financial markets. Estimation and calibration allows the model to display the main features of the macroeconomic time series. The QUEST III model has been estimated on euro area and US data using Bayesian estimation methods. ([1])

The analysis of fiscal limits uses a small open-economy version of QUEST. Parameters such as country size, openness, government sector size and effective tax rates are calibrated to average values for EU member states. As the analysis focuses on the long-run effect of changes in tax rates on tax revenues, short-term dynamics and their determinants (e.g., price and wage stickiness, labour and capital adjustment costs, monetary policy) are of secondary importance.

QUEST distinguishes firm, household and government sectors. Output is produced by profit maximising, monopolistically competitive firms, using a Cobb Douglas technology, with capital and labour. Domestic goods are imperfect substitutes for goods produced in the rest of the world. Households make savings, consumption and labour supply decisions. There is a trade union which sets wages taking into account the households' preferences.

The government is subject to an intertemporal budget constraint. On the expenditure side QUEST distinguishes between government consumption, government investment and transfers (further disaggregated into unemployment benefits and other transfers). On the revenue side, the model distinguishes between taxes from consumption, labour and capital. Tax revenues are linked to their corresponding tax bases via linear tax rates. The analysis of fiscal limits keeps government consumption and investment constant in real terms. Benefit replacement rates are constant, but benefits payments vary endogenously with official unemployment. To isolate the revenue effect of distortionary tax adjustment, it is assumed that additional revenues are paid back to households as lump-sum transfers.

The firms, the households and the government make decisions in line with their intertemporal budget constraints. This also ensures that all stock-flow relationships are modelled consistently.

The analysis of fiscal limits in this section adds an informal sector of home production to the standard QUEST model. Households face a choice of working in either the official or informal sector. Neither work in home production nor its output is taxed. Households choose between work and leisure and between working in the official or the informal sector. ([2])

The choice between market and home work depends on the real net wage in the official market sector relative to the productivity of home work, where the former is affected by income and sales taxes. Two characteristics of home production restrict the substitutability between market and home work in response to changes in taxation: (1) home production is subject to decreasing returns to scale in the benchmark calibration; (2) market and home goods are imperfect substitutes in the consumption aggregator.

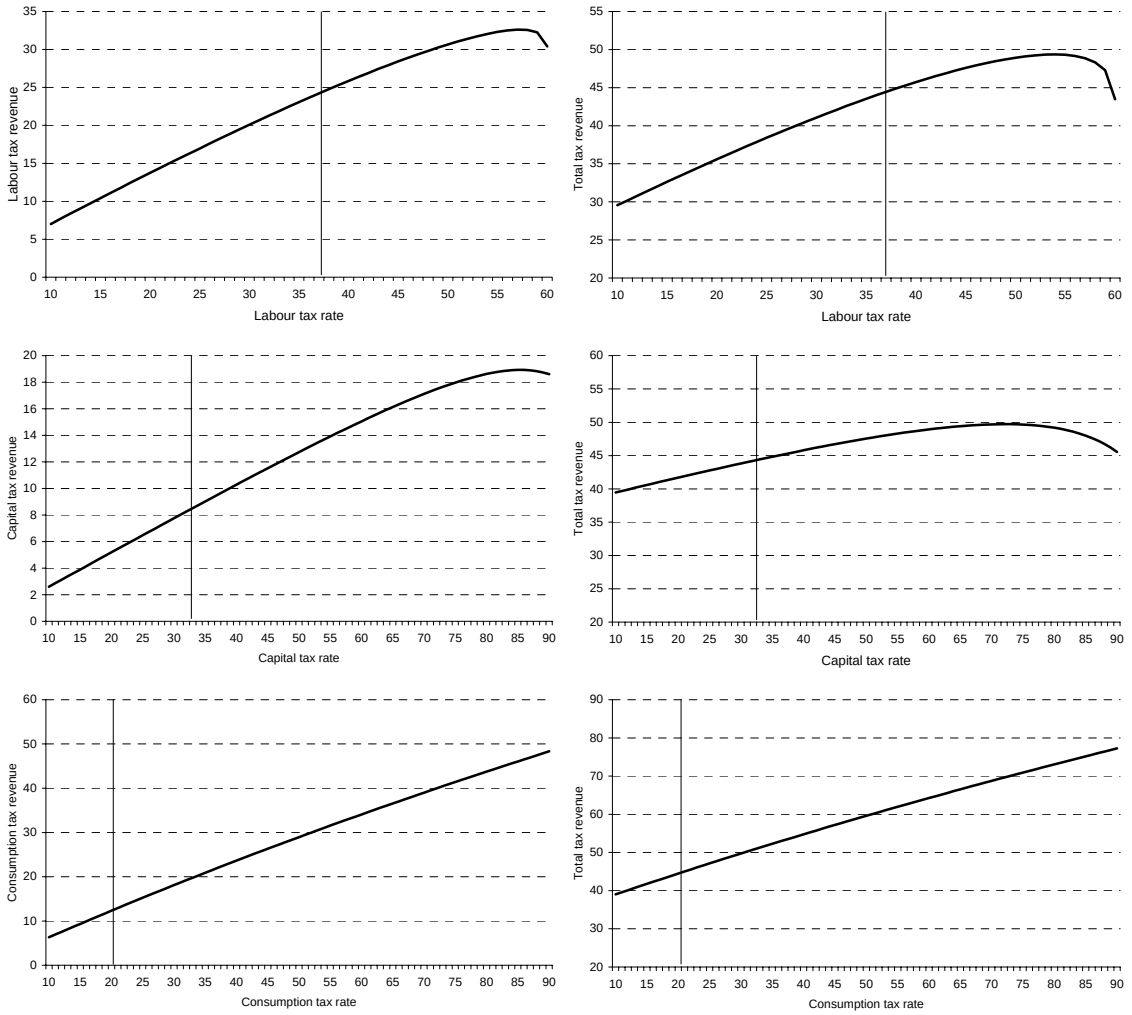
The parameters of the home-production model extension are calibrated to match estimates of the size of the shadow economy and the elasticity of market employment with respect to tax wedges in Europe. ([3])

([1]) See Ratto, M., W. Roeger and J. in't Veld (2009), and In't Veld, J., R. Raciborski, M. Ratto and W. Roeger (2011). For additional information and publications using QUEST see: http://ec.europa.eu/economy_finance/research/macroeconomic_models_en.htm.

([2]) The modelling of home production follows established practice. Examples include Benhabib, J., R. Rogerson and R. Wright (1991), Campbell, J. and S. Ludvigson (2001), Gomme, P., F. Kydland and P. Rupert (2001), Greenwood, J. and Z. Hercowitz (1991) and McGrattan, E., R. Rogerson and R. Wright (1997).

([3]) Causa, O. (2009) and Tafenau, E., H. Herwartz and F. Schneider (2010).

Graph IV.5.1: **Laffer curves for the benchmark calibration**



Note: Tax revenues are expressed as percent of baseline GDP, i.e. the GDP given actual average income and consumption tax rates. The model is calibrated at the average effective EU tax rates (see European Commission (2010d).) The average effective EU tax rates are represented by the vertical lines

Source: Commission services.

Estimates of fiscal limits

Graph IV.5.1 displays the Laffer curves for labour, capital and consumption taxes in the baseline model in which parameters are calibrated to EU average values. The panels on the right-hand side show the tax revenues from the specific tax instrument, the ones on the left-hand side indicate the total tax revenue for the given tax rate.([144])

The benchmark calibration points to substantial differences in the fiscal limit across the alternative tax instruments: total revenue from labour taxation reaches its maximum at the tax rate of 54%; total revenue from capital taxes peaks at a 72% tax rate; the consumption tax generates additional revenue for tax rates well beyond 90%.([145]) The revenue-

([144]) In each scenario only the respective tax rate is changed, whereas other tax rates remain at benchmark levels. The benchmark corresponds to EU average effective tax rates: 36.5% for labour tax; 32% for capital tax; 19.5% for consumption tax. Data are from European Commission (2010d). In the simulations underlying Graphs IV.5.1-IV.5.4, additional tax revenue from tax increases is returned to households as lump-sum transfer.

([145]) Laffer curves for labour and capital income taxation must peak at tax rates between 0% and 100%. No tax revenue is collected at tax rates of 0%; the tax base is also zero at tax

maximising labour tax rate is at the lower end of the estimates in related model-based analyses that – depending on the exact specification used – find revenue maxima for labour tax rates ranging from 51 to 71%. Meanwhile, the revenue-maximising capital tax rate lies above range (48 to 65%) reported in other studies.([146]) ([147])

The simulations in Graph IV.5.1 use values for the elasticity of substitution between market and home production that reproduce empirical estimates for EU countries. According to these estimates, increasing the labour tax wedge by one percentage point raises the share of the shadow economy by ¼ percentage points of total (i.e. official and unofficial) GDP and reduces official employment by around ½ percent.([148]) Intuitively, the higher the substitutability, the tighter the fiscal limits.

Some sensitivity analysis is reported here, given the large impact of the degree of substitutability between market and home production on the shape of the Laffer curve. Moreover, substitutability is likely to vary across countries and time as it depends on the production structure in the official sector and on administrative and legal conditions that affect how easily activities can be shifted between market and home production.

Graph IV.5.2 illustrates the sensitivity of fiscal limits to supply-side behaviour. The charts show the potential tax revenues for the standard calibration (Graph IV.5.1) and a higher elasticity value that doubles the increase in the relative size of the informal sector in response to a one percentage-point increase in the labour tax wedge from ¼ to ½ percentage points.

Higher substitutability reduces the revenue-maximising tax rates and the corresponding maximum tax revenue. The curve for labour income taxation peaks at 45% (instead of 54%) and the maximum revenue falls by 7%; the capital tax curve peaks at 67% (instead of 72%) and the maximum tax revenue falls by 2%; the revenue curve for the consumption tax remains upward sloping, but flattens visibly.

The effects become even stronger when the benchmark assumption of decreasing returns to scale in home production is relaxed. Going from the standard setting of decreasing returns to scale to an alternative calibration with constant returns to scale in home production Graph removes a supply-side constraint to the sectoral reallocation of activity and increases the willingness of households to substitute official employment for home work.([149])

rates of 100% as every incentive to work and invest in the official sector disappears. This does not hold for sales taxes that can generate (additional) tax revenue for rates beyond 100%.

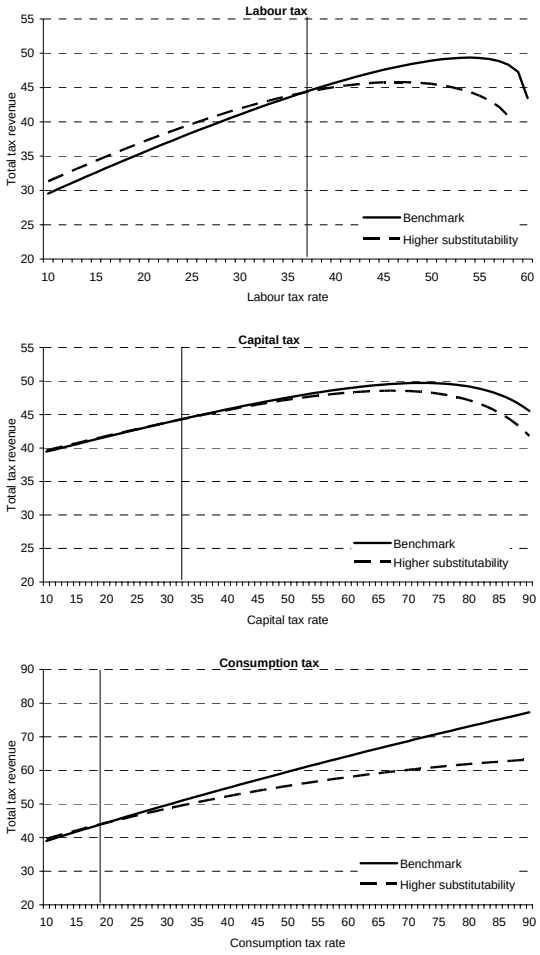
([146]) See Trabandt, M. and H. Uhlig (2010) and Busato, F. and B. Chiarini (2009). Trabandt and Uhlig (2010) use a closed-economy setup and do not include an informal sector, but provide robustness checks for alternative values of the elasticity of labour supply. Contrary to the QUEST specification, perfect competition in goods and labour markets is assumed. Country-specific estimates in Trabandt and Uhlig (2010) suggest fairly uniform Laffer curves for labour taxation in Western European countries, but larger diversity for capital taxation. Busato and Chiarini (2009) use a model with informal sector and calibrated to the Italian economy, which assumes very high substitutability between official and informal production.

([147]) The relatively high peak level of the Laffer curve of taxation on capital income in QUEST derives from the calibration of the model parameters, namely from the elasticity of labour supply and the weight of leisure in utility. The QUEST model is calibrated at a relatively high value. The parameter values suggested by the data underlying the model structure imply a rather limited response of labour supply to changes in the real wage. Consequently, taxation that reduces the equilibrium capital stock, marginal labour productivity and the real wage has limited impact on labour supply, employment and labour tax revenue. Trabandt, M. and H. Uhlig (2010) illustrate that the peak of the Laffer curve for capital taxation at relatively low tax rates results precisely from the fact, that the impact of lower investment and capital on wages has strong repercussions for labour supply and the labour tax base in their model. Higher values for the elasticity of labour supply and the utility weight of leisure do also shift the Laffer curve of labour taxation to the left. Furthermore, the fact that QUEST does not include the possibility to invest or shift profits abroad in order to avoid taxation at higher domestic rates diminishes the impact of capital taxation on the tax basis.

([148]) See Causa (2009) and Tafenau, Herwartz and Schneider (2010).

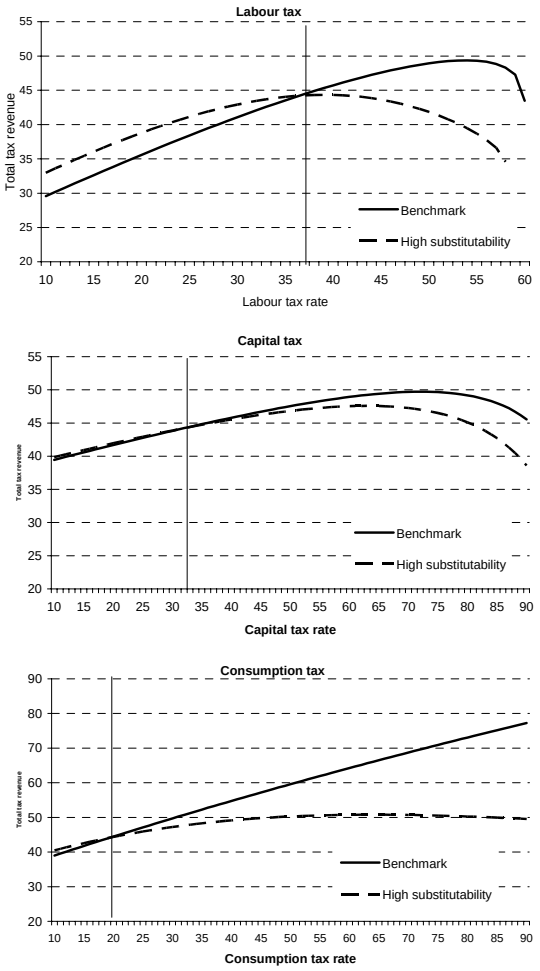
([149]) The production technology in the official sector is modelled by a Cobb-Douglass production function with capital and labour. The Cobb-Douglas function implies constant returns to scale, e.g. doubling all inputs doubles production output, but decreasing marginal returns to labour and capital when the other factor is held constant. The Cobb-Douglass specification is in line with standard modelling practice and the QUEST model estimation.

Graph IV.5.2: **Laffer curves for higher substitutability between market and home production**



Note: Tax revenues are expressed as percent of baseline GDP, i.e. the GDP given actual average income and consumption tax rates. The model is calibrated at the average effective EU tax rates (see European Commission (2010d).) The average effective EU tax rates are represented by the vertical lines.
Source: Commission services.

Graph IV.5.3: **Laffer curves for higher substitutability and constant returns to scale in home production**



Note: Tax revenues are expressed as percent of baseline GDP, i.e. the GDP given actual average income and consumption tax rates. The vertical lines represent the average effective EU tax rates used as a benchmark
Source: Commission services.

The results are shown in Graph IV.5.3. The income from labour and capital taxes peaks at tax rates of 39% and 63%, respectively, and reaches a maximum of only ½% and 8% above current rates. Taxing consumption now also faces a revenue maximum at a 68% tax rate.

The maximum tax revenue from consumption taxation exceeds the current revenue by 26%, but the revenue curve already flattens at a tax rate of 40%.

Taken together, robust model-based evidence for fiscal limits estimates derived from Laffer curves exists for labour income and capital taxation. The fiscal limits are high in the setting in which the substitutability between production in the official sector versus home production is limited. These limits tighten in the case of increased tax avoidance through home or shadow production. The higher the degree of substitutability between official and informal production, the tighter the fiscal limits. High substitutability also introduces a meaningful revenue limit for consumption taxes. The fact that the limits of capital taxation in the open-economy setting of QUEST are not tighter

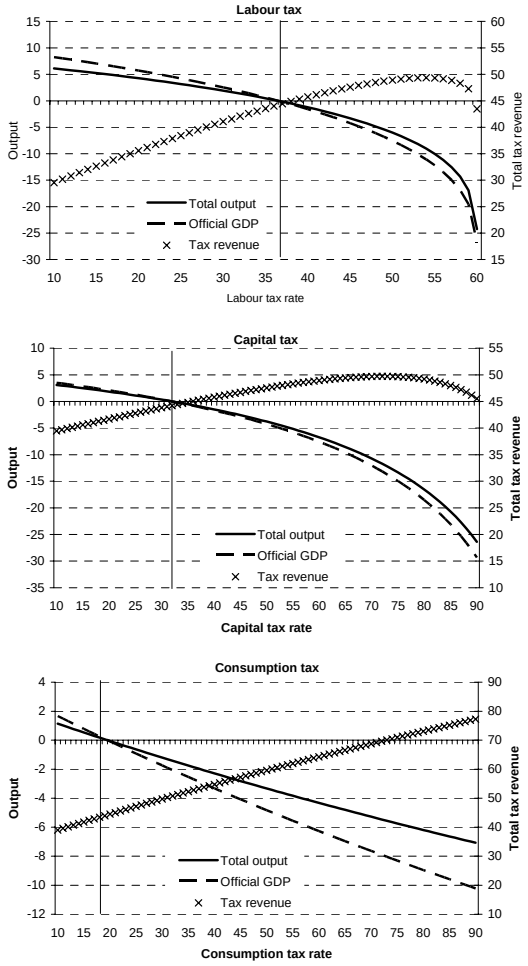
than those found in closed-economy models suggests that the elements of cross-border spillover from taxation captured in the model, namely after-tax return equalisation across countries that affects savings rates and demand for domestic and foreign assets, do not play a major role. However, the model excludes important aspects of potential tax competition, such as cross-border profit shifting by households and integrated corporations, which would increase cross-border tax base mobility in response to tax-rate differentials and reduce the potential of capital taxation to generate additional tax revenue.

The output costs of higher taxation

Higher taxation has economic costs even where it succeeds in raising additional revenue. The tax distortions reduce employment, investment and production.([150]) Raising additional revenue through higher taxes is therefore associated with significant output decline. This is illustrated in Graph IV.5.4.

Moving the labour tax from the current rate of 36.5% to the revenue peak (54%) shown in Graph IV.5.1 would reduce output by circa 10% compared to current tax rates in the benchmark calibration Graph. Given the limited degree of substitutability between official and shadow activities in the benchmark calibration of the model, growing home production mitigates the decline of official output only slightly and total output declines as well. Raising the capital tax from the current rate of 32% to the peak of the revenue curve (72%) reduces output by more than 10%.([151]) Output losses are smaller for the consumption tax, which illustrates that shifting revenue collection from income to consumption taxes is beneficial in employment and output terms. However, the higher the substitutability between market and home production, the stronger are the reductions in official output and tax bases for income, profit and consumption taxes and the growth of shadow activities in response to rising tax rates.

Graph IV.5.4: **The output costs of higher taxation**



Note: Real total output (market sector plus home production) and official GDP are expressed in percentage deviation from baseline. Tax revenues are expressed as percent of baseline GDP, i.e. the GDP given actual average income and consumption tax rates. The vertical lines represent the average effective EU tax rates used as a benchmark.
Source: Commission services.

5.2. FISCAL LIMITS IN SUSTAINABILITY ANALYSIS

The main results of the model-based analysis of the economic limits to distortionary taxation can be summarised in three points:

(1) The maximum revenue collectable by the government depends on the tax instrument used. The results of the model point towards higher

([150]) Certain taxes, of course, also correct market distortions and make agents pay for negative externalities and the consumption of public goods.

([151]) In view of the fact that it is normally considered that capital taxation is more distortionary, it may look surprising that the output costs of increasing capital taxation are lower than the output cost for raising the labour tax. Again, one has to recall that the model does not account for tax base mobility in the form of foreign investment or profit shifting between jurisdictions.

distortions from labour taxation than currently assumed, and indicate that labour income taxation face the tightest limit. It has to be stressed that the latter point is only valid under the relevant caveat that the model does not (fully) address international tax competition on capital in that the approach used does not adequately take into account the key issue of tax base mobility. Conversely, the potential of consumption taxes to generate revenue is relatively large as the adverse tax base effects are smaller.

(2) The fiscal limits depend on the structure of the economy, especially on the elasticity of tax bases with respect to tax rates. One particular aspect is tax avoidance through the migration of production towards the shadow economy or home production. The room for shadow activities depends on the structure of production and the enforcement of the tax code. Substitutability between market production and shadow activities might be higher in economies with a larger incidence of labour-intensive services, as it is plausible to assume that the latter can more easily migrate from market to home production than classical manufacturing.

(3) Highly elastic tax bases also amplify the output costs of higher taxation. The stronger the adverse tax base effect, the higher the output loss from rising tax rates.

Keeping these points in mind, model simulations can inform the sustainability analysis in two ways. First, they provide a rough benchmark against which it is possible to compare existing effective tax rates. In the case of the EU aggregate, the 2008 EU averages of the effective tax rates (36.5% for labour tax; 32% for capital tax; 19.5% for consumption tax) are well below the model's thresholds, which provides for some fiscal space, especially with reference to the consumption tax. It should be recalled, however, that raising distortionary taxes comes at a cost in terms of output losses.

Second, model simulations can illustrate the evolution of government budget balances and government debt dynamics under alternative policy settings and economic conditions. Simulations can help in assessing the feasibility of specific consolidation strategies, taking into account the impact of revenue and expenditure based measures on the tax bases and potential output. Graph IV.5.5 gives a hypothetical example for an average EU Member State, which considers a with a starting government debt of 80% and a primary deficit of 4% of GDP in 2011; potential output grows at 1.7% p.a. in the baseline and the annual real interest rate is 3%.([152])

The panels in Graph IV.5.5 display three different scenarios: (a) non-consolidation,([153]) which extrapolates the 4% primary deficit into the future and with no fiscal tightening; (b) "timely consolidation," which is a tax-based consolidation starting in 2012 and bringing government debt down from 80 to 60% of GDP by 2020; (c) "delayed consolidation", which is a tax-based consolidation starting only in 2016 and bringing government debt down to 60% of GDP by 2020. For simplicity, the revenue-based consolidations (b) and (c) are assumed to increase labour income, capital and consumption taxation by the same number of percentage points.

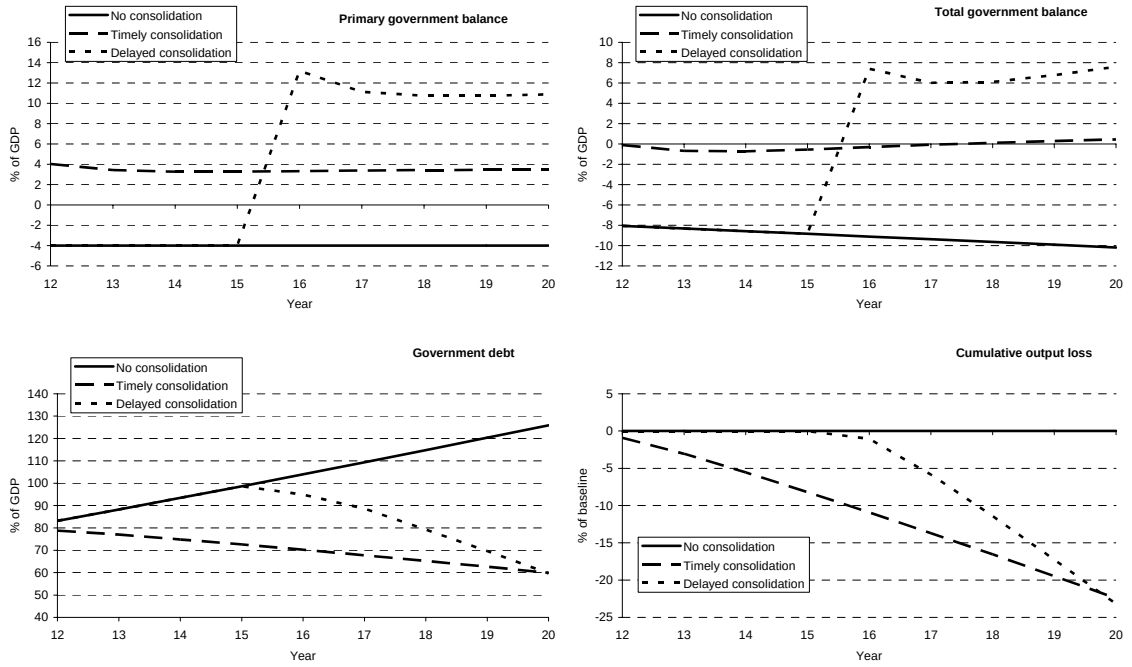
Comparing the no-consolidation and consolidation scenarios provides several interesting observations: First, a continuation of the current primary deficit together with underlying potential growth and interest rates leads to a debt explosion; government debt to GDP increases from 80 to 126% in under ten years.

Second, the tax increases that are required to bring government debt to 60% of GDP (in the absence of non-interest expenditure cuts) are large, especially if consolidation is delayed to the second half of the decade. Timely consolidation requires 5 percentage point labour, capital and consumption tax rate increases, so that consolidation appears

([152]) The model assumes debt to be held domestically, so that higher taxation to reduce debt does not imply a transfer of purchasing power from domestic to foreign households. Foreign-held debt makes consolidations more painful. Taxation reduces the disposable income of domestic households, without being offset by interest income and as debt payments flow abroad. While the general mechanics of consolidation remain unchanged, foreign indebtedness leads to a stronger contraction of domestic consumption, which also reduces the base of the consumption tax. The negative wealth effect from capital outflow does, on the other hand, also reduce the decline in labour supply that is associated with a given tax wedge.

([153]) Technically, the tax-based fiscal closure rule in QUEST is switched off until 2025 and the intertemporal government budget constraint respected via the emission of new debt during this period of time. In 2025 the standard closure rule, in which the labour tax rate reacts to deviations of government debt from target, is phased in again.

Graph IV.5.5: **Dynamic sustainability analysis**



Source: Commission services.

politically costly even if implemented in a timely fashion; a delayed consolidation, on the other hand, would require tax rate increases of more than 10 percentage points for all three tax instruments.

Third, a sudden consolidation in only one year, as opposed to the gradual strategies (b) and (c), requires severe tax hikes if the consolidation comes in the early 2010s. In the late 2010s, one-off consolidation might even become economically unfeasible. A large consolidation at the end of the decade to bring government debt down from 126 to 60% of GDP during one year in 2019 would require a primary surplus of 66% of GDP in 2019, which is far above the potential revenue from even extreme labour or profit tax increases and very likely beyond any politically viable VAT-based consolidation.

Fourth, a fiscal consolidation through distortionary taxation comes with sizable cumulative output losses due to the negative supply-side effects of increasing tax rates. The output costs provide a strong case for more balanced consolidation packages that also include measures on the expenditure side.

The cumulative output losses from timely (b) and delayed (c) consolidations in Graph IV.5.5 are similar, owing to the fact that the impact of tax rates on tax revenues is fairly linear for given tax levels. This linearity holds of increases of about 5 to 10 percentage points above the status quo. Non-linearity of the link between tax rates and revenues becomes important when tax rates approach the Laffer curve peaks and in economic environments in which tax bases react more strongly to tax rates, such as in Graphs IV.5.2 and IV.5.3, where the substitutability between market and home production is significantly higher than in the benchmark calibration of Graphs IV.5.1 and IV.5.5.

5.3. CONCLUSION

The main policy conclusion from the model-based comparison of alternative (non-)consolidation scenarios is that fiscal consolidation should be implemented in a timely manner, as this contains the accumulated debt stock and allows the consolidation to be smoothes over a longer period of time. Delaying a consolidation to the medium or

long term may lead to debt levels that cannot be serviced anymore through tax revenues, i.e. where tax collection hits the Laffer peaks imposed by the elasticity of tax bases. Furthermore, the cumulative output loss from distortionary taxation increases as economies approach the fiscal limit defined by the Laffer curves, which is more likely to happen the larger the required consolidation.

A final comment is warranted. Taken at face value, the capacity to create tax revenues would not appear to be the first binding constraint on using tax increases as a consolidation instrument because not many countries are likely to be on the downward path of the Laffer curve. This is particularly the case with regard to consumption taxes. On the other hand, the model may miss some important tax competition aspects, which explains why taking the results should be interpreted with caution. Furthermore the estimated impact of taxes on growth is a sufficient economic reason to avoid excessive tax increases.

Part V

Resources

1. ABBREVIATIONS AND SYMBOLS USED

Member States

BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
EI	Ireland
EL	Greece
ES	Spain
FR	France
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	The Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
FI	Finland

SE Sweden

UK United Kingdom

EA Euro area

EU European Union

EU-25 European Union, 25 Member States (excl. BG and RO)

EU-27 European Union, 27 Member States

EU-15 European Union, 15 Member States before 1 May 2004

EU-10 European Union, 10 Member States that joined the EU on 1 May 2004 (CZ, EE, CY, LV, LH, HU, MT, PL, SI, SK)

Non-EU countries

AU Australia

CA Canada

CH Switzerland

JP Japan

KO South Korea

NO Norway

NZ New Zeeland

US(A) United States

Currencies

EUR euro

ECU European currency unit

BGL Bulgarian lev

CZK Czech koruna

DKK Danish krone

EEK Estonian kroon

GBP Pound sterling

LTL Lithuanian litas

LVL Latvian lats

HUF Hungarian forint

RON New Rumanian leu

SEK Swedish krona

SKK Slovak koruna

CAD Canadian dollar

CHF Swiss franc

JPY Japanese yen

SUR Russian rouble

USD US dollar

Other

AMC Asset management company

AMECO Macro-economic database of the European Commission

CAPB Cyclically-adjusted primary balance

CMFB Committee on monetary, financial and balance-of-payment statistics

COFOG Classification of the functions of government

DEA Data envelope approach

DG ECFIN Directorate-General Economic and Financial Affairs

DGS Deposit Guarantee Scheme

DR Debt requirement

DSGE Dynamic stochastic general equilibrium

DWF Discount window facility

EAMS Euro Area Member States

ECB European Central Bank

ECOFIN Economic and Financial Council

EDP Excessive deficit procedure

EERP European Economic Recovery Plan

EFC Economic and Financial Committee

EFSF European Financial Stability Facility

ELA Emergency Liquidity Assistance

EMU Economic and Monetary Union

EPC Economic Policy Committee

ESA(95) European System of National and Regional Accounts

ESM European Stability mechanism

ESSPROS European System of Integrated Social Protection Statistics

EU KLEMS European database on capital, labour, energy, material and services

FDI Foreign direct investment

FIRB Foundation Internal Ratings Based

GDP Gross domestic product

GLS Generalised least squares

IBP Initial budgetary position

ICT Information and communication technologies

IMF International Monetary Fund

INSEE Institut National de la Statistique et des Études Économiques

ISCED International Standard Classification of Education

LGD Loss Given Default

LIME Working group on methodology to assess Lisbon-related Structural Reforms

LTC Long-term budgetary cost of ageing

MTBF Medium-term budgetary framework

MTO Medium-term budgetary objective

NAIRU Non accelerating inflation rate of unemployment

OECD Organisation of Economic Co-operation and Development

OLS Ordinary least squares

PBB Performance-based budgeting

PISA Programme for International Student Assessment

pp Percentage points

PPS Purchasing power standard

R&D Research and development

RAMS Recently acceded Member States

RF Resolution Funds

RoEA Rest of euro area

ROW Rest of the world

SCPs Stability and convergence programmes

SGP Stability and Growth Pact

SLS Special liquidity scheme

SSC Social security contributions

TFP Total factor productivity

VAT Value added tax

WGHQPF Working Group on the quality of public finance

WHO World Health Organization

2. GLOSSARY

Asset management company Public or private body aiming at restructuring, recovering or disposing of nonperforming assets.

Automatic stabilisers Features of the tax and spending regime which react automatically to the economic cycle and reduce its fluctuations. As a result, the budget balance in percent of GDP tends to improve in years of high growth, and deteriorate during economic slowdowns.

Basel Committee on Banking Supervision is a forum for regular cooperation on banking supervisory matters aiming at enhancing the understanding of key supervisory issues and improving the quality of banking supervision worldwide. It also develops guidelines and supervisory standards in areas where they are considered desirable. In this regard, the Committee is best known for its international standards on capital adequacy; the Core Principles for Effective Banking Supervision; and the Concordat on cross-border banking supervision.

Broad Economic Policy Guidelines (BEPGs) Annual guidelines for the economic and budgetary policies of the Member States. They are prepared by the Commission and adopted by the Council of Ministers responsible for Economic and Financial Affairs (ECOFIN).

Budget balance The balance between total public expenditure and revenue in a specific year, with a positive balance indicating a surplus and a negative balance indicating a deficit. For the monitoring of Member State budgetary positions, the EU uses *general government* aggregates. See also *structural budget balance*, *primary budget balance*, and *primary structural balance*.

Budgetary rules Rules and procedures through which policy-makers decide on the size and the allocation of public expenditure as well as on its financing through taxation and borrowing.

Budgetary sensitivity The variation in the budget balance in percentage of GDP brought about by a change in the output gap. In the EU, it is estimated to be 0.5 on average.

Candidate countries Countries that wish to accede to the EU. Besides the *accession countries*, they include Croatia and Turkey.

Close-to-balance requirement A requirement contained in the 'old' *Stability and Growth Pact*, according to which Member States should, over the medium term, achieve an overall *budget balance* close to balance or in surplus; was replaced by country-specific *medium-term budgetary objectives* in the reformed *Stability and Growth Pact*.

Code of Conduct Policy document endorsed by the ECOFIN Council of 11 October 2005 setting down the specifications on the implementation of the *Stability and Growth Pact* and the format and content of the *stability* and *convergence programmes*.

COFOG (Classification of the Functions of Government) A statistical nomenclature used to break down general government expenditure into its different functions including general public services, defence, public order and safety, economic affairs, environmental protection, housing and community amenities, health, recreation, culture and religion, education and social protection.

Composite indicator: a compilation of several indicators into a single index reflecting the different dimensions of a measured concept.

Convergence programmes Medium-term budgetary and monetary strategies presented by Member States that have not yet adopted the euro. They are updated annually, according to the provisions of the *Stability and Growth Pact*. Prior to the third phase of EMU, convergence programmes were issued on a voluntary basis and used by the Commission in its assessment of the progress made in preparing for the euro. See also *stability programmes*.

Crowding-out effects Offsetting effects on output due to changes in interest rates and exchange rates triggered by a loosening or tightening of fiscal policy.

Cyclical component of budget balance That part of the change in the *budget balance* that follows

automatically from the cyclical conditions of the economy, due to the reaction of public revenue and expenditure to changes in the *output gap*. See *automatic stabilisers*, *tax smoothing* and *structural budget balance*.

Cyclically-adjusted budget balance See *structural budget balance*.

Defined-benefit pension scheme A traditional pension scheme that defines a benefit, i.e. a pension, for an employee upon that employee's retirement is a defined benefit plan.

Defined-contribution pension scheme A scheme providing for an individual account for each participant, and for benefits based solely on the amount contributed to the account, plus or minus income, gains, expenses and losses allocated to the account.

Demand and supply shocks Disturbances that affect the economy on the demand side (*e.g.* changes in private consumption or exports) or on the supply side (*e.g.* changes in commodity prices or technological innovations). They can impact on the economy either on a temporary or permanent basis.

Deposit Guarantee Schemes reimburse a limited amount of deposits to depositors whose bank has failed. From the depositors' point of view, this protects a part of their wealth from bank failures. From a financial stability perspective, this promise prevents depositors from making panic withdrawals from their bank, thereby preventing severe economic consequences.

Dependency ratio A measure of the ratio of people who receive government transfers, especially pensions, relative to those who are available to provide the revenue to pay for those transfers.

Direct fiscal costs (gross, net) of a financial crisis The direct gross costs are the fiscal outlays in support of the financial sector that increase the level of public debt. They encompass, for example, recapitalisation, purchase of troubled bank assets, pay-out to depositors, liquidity support, payment when guarantees are called and subsidies. The direct net costs are the direct gross cost net of recovery payments, such as through the sale of acquired assets or returns on assets. Thus, the net direct fiscal costs reflect the permanent increase in public debt.

Direct taxes Taxes that are levied directly on personal or corporate incomes and property.

Discretionary fiscal policy Change in the *budget balance* and in its components under the control of government. It is usually measured as the residual of the change in the balance after the exclusion of the budgetary impact of *automatic stabilisers*. See also *fiscal stance*.

Early-warning mechanism Part of the preventive elements of the *Stability and Growth Pact*. It is activated when there is significant divergence from the budgetary targets set down in a stability or convergence programme.

Economic and Financial Committee (EFC) Formerly the Monetary Committee, the EFC is a Committee of the Council of the European Union set up by Article 114 of the. Its main task is to prepare and discuss (ECOFIN) Council decisions with regard to economic and financial matters.

Economic Policy Committee (EPC) Group of senior government officials whose main task is to prepare discussions of the (ECOFIN) Council on structural policies. It plays an important role in the preparation of the *Broad Economic Policy Guidelines*, and it is active on policies related to labour markets, methods to calculate cyclically-adjusted budget balances and ageing populations.

Effective tax rate The ratio of broad categories of tax revenue (labour income, capital income, consumption) to their respective tax bases.

Effectiveness The same concept as efficiency except that it links input to outcomes rather than outputs.

Efficiency Can be defined in several ways, either as the ratio of outputs to inputs or as the distance to a production possibility frontier (see also Free Disposable Hull analysis, Data Envelope analysis, stochastic frontier analysis). *Cost efficiency* measures the link between monetary inputs (funds) and outputs; *technical efficiency* measures the link between technical inputs and outputs. *Output efficiency* indicates by how much the output can be

increased for a given input; *input efficiency* indicates by how much the input can be reduced for a given input.

Emergency Liquidity Assistance (equivalent to lender-of-last- resort), the most traditional tool available to a central bank for dealing with financial instability. It includes both the provision of liquidity to the financial system as a whole through market operations, as well as emergency lending to individual banks. Not all liquidity injections aimed at preventing the spread of a liquidity problem relate to a crisis, as central banks routinely offer liquidity against specified collateral requirements in order to support the orderly functioning of markets.

ESA95 / ESA79 European accounting standards for the reporting of economic data by the Member States to the EU. As of 2000, ESA95 has replaced the earlier ESA79 standard with regard to the comparison and analysis of national public finance data.

European Financial Stability Facility is a company owned by Euro Area Member States created following the decisions taken in May 2010 by the Council. EFSF is able to issue bonds guaranteed by EAMS for up to € 440 billion for on-lending to EAMS in difficulty, subject to conditions negotiated with the European Commission in liaison with the European Central Bank and International Monetary Fund and to be approved by the Eurogroup. EFSF has been assigned the best possible credit rating; AAA by Standard & Poor's and Fitch Ratings, Aaa by Moody's.

European semester European semester New governance architecture approved by the Member States in September 2010. It means that the EU and the euro zone will coordinate ex ante their budgetary and economic policies, in line with both the Stability and Growth Pact and the Europe 2020 strategy. Based on previous discussions on Commission's Annual Growth Survey, each summer, the European Council and the Council of ministers will provide policy advice before Member States finalise their draft budgets.

Excessive Deficit Procedure (EDP) A procedure according to which the Commission and the Council monitor the development of national *budget balances* and *public debt* in order to assess and/or correct the risk of an excessive deficit in each Member State. Its application has been further clarified in the *Stability and Growth Pact*. See also s*tability programmes* and *Stability and Growth Pact*.

Expenditure rules A subset of *fiscal rules* that target (a subset of) public expenditure.

Foundation Internal Ratings Based framework used to set minimum regulatory capital for internationally active banks. The Basel II FIRB framework sets minimum regulatory capital requirements using a modified version of an industry model, the so-called Gaussian asymptotic single risk factor model of credit risk developed chiefly by Vasicek.

Fiscal consolidation An improvement in the *budget balance* through measures of *discretionary fiscal policy*, either specified by the amount of the improvement or the period over which the improvement continues.

Fiscal decentralisation The transfer of authority and responsibility for public functions from the central government to intermediate and local governments or to the market.

Fiscal federalism A subfield of public finance that investigates the fiscal relations across levels of government.

Fiscal governance Comprises all rules, regulations and procedures that impact on how the budget and its components are being prepared. The terms fiscal governance and fiscal frameworks are used interchangeably in the report.

Fiscal impulse The estimated effect of fiscal policy on GDP. It is not a model-free measure and it is usually calculated by simulating an econometric model. The estimates presented in the present report are obtained by using the Commission services' *QUEST* model.

Fiscal institutions Independent public bodies, other than the central bank, which prepare macroeconomic and budgetary forecasts, monitor the fiscal performance and/or advice the government on fiscal policy issues.

Fiscal rule 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. See also *budgetary rule, expenditure rules*.

Fiscal stance A measure of the effect of *discretionary fiscal policy*. In this report, it is defined as the change in the *primary structural budget balance* relative to the preceding period. When the change is positive (negative) the fiscal stance is said to be expansionary (restrictive).

General government As used by the EU in its process of budgetary surveillance under the *Stability and Growth Pact* and the *excessive deficit procedure*, the general government sector covers national government, regional and local government, as well as social security funds. Public enterprises are excluded, as are transfers to and from the EU Budget.

Government budget constraint A basic condition applying to the public finances, according to which total public expenditure in any one year must be financed by taxation, government borrowing, or changes in the monetary base. In the context of EMU, the ability of governments to finance spending through money issuance is prohibited. See also *stock-flow adjustment, sustainability*.

Government contingent liabilities Obligations for the government that are subject to the realization of specific uncertain and discrete future events. For instance, the guarantees granted by governments to the debt of private corporations bonds issued by enterprise are contingent liabilities, since the government obligation to pay depend on the non-ability of the original debtor to honour its own obligations.

Government implicit liabilities Government obligations that are very likely to arise in the future in spite of the absence of backing contracts or law. The government may have a potential future obligation as a result of legitimate expectations generated by past practice or as a result of the pressure by interest groups. Most implicit liabilities are contingent, i.e., depend upon the occurrence of uncertain future events.

Growth accounting A technique based on a production function approach where total GDP (or national income) growth is decomposed into the various production factors and a non-explained part which is the total factor productivity change, also often termed the Solow residual.

Indirect taxation Taxes that are levied during the production stage, and not on the income and property arising from economic production processes. Prominent examples of indirect taxation are the value added tax (VAT), excise duties, import levies, energy and other environmental taxes.

Integrated guidelines A general policy instrument for coordinating EU-wide and Member States economic structural reforms embedded in the Lisbon strategy and which main aim is to boost economic growth and job creation in the EU.

Interest burden *General government* interest payments on public debt as a share of GDP.

Lisbon Strategy for Growth and Jobs Partnership between the EU and Member States for growth and more and better jobs. Originally approved in 2000, the Lisbon Strategy was revamped in 2005. Based on the Integrated Guidelines (merger of the *broad economic policy guidelines* and the employment guidelines, dealing with macro-economic, micro-economic and employment issues) for the period 2005-2008, Member States drew up three-year national reform programmes at the end of 2005. They reported on the implementation of the national reform programmes for the first time in autumn 2006. The Commission analyses and summarises these reports in an EU Annual Progress Report each year, in time for the Spring European Council.

Loss Given Default The loss incurred if an obligor defaults.

Maastricht reference values for public debt and deficits Respectively, a 60 % *general government* debt-to-GDP ratio and a 3 % *general government* deficit-to-GDP ratio. These thresholds are defined in a protocol to the Maastricht Treaty on European Union. See also *Excessive Deficit Procedure*.

Maturity structure of public debt The profile of total debt in terms of when it is due to be paid

back. Interest rate changes affect the budget balance directly to the extent that the *general government* sector has debt with a relatively short maturity structure. Long maturities reduce the sensitivity of the *budget balance* to changes in the prevailing interest rate. See also *public debt*.

Medium-term budgetary framework An institutional fiscal device that lets policy-makers extend the horizon for fiscal policy making beyond the annual budgetary calendar (typically 3-5 years). Targets can be adjusted under medium-term budgetary frameworks (MTBF) either on an annul basis (flexible frameworks) or only at the end of the MTBF horizon (fixed frameworks).

Medium-term budgetary objective (MTO) According to the reformed *Stability and Growth Pact*, *stability programmes* and *convergence programmes* present a *medium-term objective* for the budgetary position. It is country-specific to take into account the diversity of economic and budgetary positions and developments as well as of fiscal risks to the sustainability of public finances, and is defined in structural terms (see *structural balance*).

Minimum benchmarks The lowest value of the structural budget balance that provides a safety margin against the risk of breaching the *Maastricht reference value for the deficit* during normal cyclical fluctuations. The minimum benchmarks are estimated by the European Commission. They do not cater for other risks such as unexpected budgetary developments and interest rate shocks. They are a lower bound for the *'medium-term budgetary objectives (MTO).*

Monetary Conditions Index (MCI) An indicator combining the change in real short-term interest rate and in the real effective exchange rate to gauge the degree of easing or tightening of monetary policy.

Mundell-Fleming model Macroeconomic model of an open economy which embodies the main Keynesian hypotheses (price rigidity, liquidity preference). In spite of its shortcomings, it remains useful in short-term economic policy analysis.

NAIRU Non-Accelerating Inflation Rate of Unemployment.

Non-Keynesian effects Supply-side and expectations effects which reverse the sign of traditional Keynesian multipliers. Hence, if non-Keynesian effects dominate, fiscal consolidation would be expansionary.

Old age dependency ratio Population aged over 65 as a percentage of working age population (usually defined as persons aged between 15 and 64).

One-off and temporary measures Government transactions having a transitory budgetary effect that does not lead to a sustained change in the budgetary position. See also *structural balance*.

Outcome indicator Measures the ultimate results (outcomes) of policy choices (e.g. education attainment, healthy life years, economic growth).

Output costs from a financial crisis This is the gap between the hypothetical output development without a crisis and the actual output realised against the back of the crisis. Various methods are available to calculate output losses, in particular either using the trend GDP growth or the level of GDP as a benchmark.

Output gap The difference between actual output and estimated potential output at any particular point in time. See also *cyclical component of budget balance*.

Output indicator Measures the technical results (outputs) of policy choices (e.g. number of university graduates, number of patents, life expectancy).

Pay-as-you-go pension system (PAYG) Pension system in which current pension expenditures are financed by the contributions of current employees.

Pension fund A legal entity set up to accumulate, manage and administer pension assets. See also *private pension scheme*.

Performance-based budgeting A budgeting technique that links budget appropriations to performance (outcomes, results) rather than focusing on input controls. In practice, performance-informed budgeting is more common which basis decisions on budgetary allocation on

performance information without establishing a formal link.

Policy-mix The overall stance of fiscal and monetary policy. The policy-mix may consist of various combinations of expansionary and restrictive policies, with a given *fiscal stance* being either supported or offset by monetary policy.

Potential GDP The level of real GDP in a given year that is consistent with a stable rate of inflation. If actual output rises above its potential level, then constraints on capacity begin to bind and inflationary pressures build; if output falls below potential, then resources are lying idle and inflationary pressures abate. See also *production function method* and *output gap*.

Pre-accession Economic Programmes (PEPs) Annual programmes submitted by candidate countries which set the framework for economic policies The PEPs consist of a review of recent economic developments, a detailed macroeconomic framework, a discussion of public finance issues and an outline of the structural reform agenda.

Pre-accession Fiscal Surveillance Framework (PFSF) Framework for budgetary surveillance of candidate countries in the run up to accession. It closely approximates the policy co-ordination and surveillance mechanisms at EU level.

Primary budget balance The *budget balance* net of interest payments on *general government* debt.

Primary structural budget balance The *structural budget balance* net of interest payments.

Principal components A statistical technique used to reduce multidimensional data sets to lower dimensions for analysis. This technique provides a compression of a set of high dimensional vectors (or variables) into a set of lower dimensional vectors (or variables) and then reconstructing the original set summarizing the information into a limited number of values.

Private pension schemes The insurance contract specifies a schedule of contribution in exchange of which benefits will be paid when the members reach a specific retirement age. The transactions are between the individual and the insurance provider and they are not recorded as government revenues or government expenditure and, therefore, do not have an impact on government surplus or deficit.

Pro-cyclical fiscal policy A *fiscal stance* which amplifies the economic cycle by increasing the *structural primary deficit* during an economic upturn, or by decreasing it in a downturn. A neutral fiscal policy keeps the *cyclically-adjusted budget balance* unchanged over the economic cycle but lets the *automatic stabilisers* work. See also *tax-smoothing*.

Production function approach A method to estimate the level of potential output of an economy based on available labour inputs, the capital stock and their level of efficiency. Potential output is used to estimate the *output gap*, a key input in the estimation of *cyclical component of the budget*.

Public debt Consolidated gross debt for the *general government* sector. It includes the total nominal value of all debt owed by public institutions in the Member State, except that part of the debt which is owed to other public institutions in the same Member State.

Public goods Goods and services that are consumed jointly by several economic agents and for which there is no effective pricing mechanism that would allow private provision through the market.

Public investment The component of total public expenditure through which governments increase and improve the stock of capital employed in the production of the goods and services they provide.

Public-private partnerships (PPP) Agreements that transfer investment projects to the private sector that traditionally have been executed or financed by the public sector. To qualify as a PPP, the project should concern a public function, involve the general government as the principal purchaser, be financed from non-public sources and engage a corporation outside the general government as the principal operator that provides significant inputs in the design and conception of the project and bears a relevant amount of the risk.

Quality of public finances Comprises all arrangements and operations of fiscal policy that support the macroeconomic goals of fiscal policy, in particular economic growth.

Quasi-fiscal activities Activities promoting public policy goals carried out by non-government units.

QUEST The macroeconomic model of the EU Member States plus the US and Japan developed by the Directorate-General for Economic and Financial Affairs of the European Commission.

Recently acceded Member States Countries that became members of the EU in May 2004 and include Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia. Two additional countries, Romania and Bulgaria joined in January 2007.

Resolution Funds Privately financed funds whose function is to support crisis management authorities in their effort to avoid contagion between banks and limiting systemic risk.

Ricardian equivalence Under fairly restrictive theoretical assumptions on the consumer's behaviour (*inter alia* infinite horizon for decision making), the impact of fiscal policy does not depend on whether it is financed by tax increases or by a widening deficit. The basic reasoning behind this statement dates back to Ricardo and was revisited by Robert Barro in the 1970s.

Securitisation Borrowing (issuing of bonds) with the intention of paying interest and capital out of the proceeds derived from assets (use or sale of) or from future revenue flows.

Sensitivity analysis An econometric or statistical simulation designed to test the robustness of an estimated economic relationship or projection, given various changes in the underlying assumptions.

Significant divergence A sizeable excess of the budget balance over the targets laid out in the *stability or convergence programmes*, that triggers the *Early warning* procedure of the *Stability and Growth Pact*.

Size of the public sector Typically measured as the ratio of public expenditure to nominal GDP.

'Snow-ball' effect The self-reinforcing effect of public debt accumulation or decumulation arising from a positive or negative differential between the interest rate paid on public debt and the growth rate of the national economy. See also *government budget constraint*.

Social security contributions (SSC) Mandatory contributions paid by employers and employees to a social insurance scheme to cover for pension, health care and other welfare provisions.

Sovereign bond spread The difference between risk premiums imposed by financial markets on sovereign bonds for different states. Higher risk premiums can largely stem from (i) the debt service ratio, also reflecting the countries' ability to raise their taxes for a given level of GDP, (ii) the fiscal track record, (iii) expected future deficits, and (iv) the degree of risk aversion.

Stability and Growth Pact (SGP) Approved in 1997 and reformed in 2005, the SGP clarifies the provisions of the Maastricht Treaty regarding the surveillance of Member State budgetary policies and the monitoring of budget deficits during the third phase of EMU. The SGP consists of two Council Regulations setting out legally binding provisions to be followed by the European Institutions and the Member States and two Resolutions of the European Council in Amsterdam (June 1997). See also *Excessive Deficit Procedure*.

Stability programmes Medium-term budgetary strategies presented by those Member States that have already adopted the euro. They are updated annually, according to the provisions of the *Stability and Growth Pact*. See also C*onvergence programmes*.

Stock-flow adjustment The stock-flow adjustment (also known as the debt-deficit adjustment) ensures consistency between the net borrowing (flow) and the variation in the stock of gross debt. It includes the accumulation of financial assets, changes in the value of debt denominated in foreign currency, and remaining statistical adjustments.

Structural budget balance The actual *budget balance* net of the *cyclical component and one-off and other temporary measures*. The structural balance gives a measure of the underlying trend in the budget balance. See also *primary structural budget balance*.

Sustainability A combination of budget deficits and debt that ensure that the latter does not grow without bound. While conceptually intuitive, an agreed operational definition of sustainability has proven difficult to achieve.

SYMBOL SYstemic Model of Banking Originated Losses developed by a joint team of Commission services (Joint Research Centre and the Directorate-General for Internal Market and services of the European Commission) together with academic experts on banking regulation aiming at estimating the losses originated in the banking system.

Tax elasticity A parameter measuring the relative change in tax revenues with respect to a relative change in GDP. The tax elasticity is an input to the *budgetary sensitivity*.

Tax gaps Measure used in the assessment of the *sustainability* of public finances. They measure the difference between the current tax ratio and the constant tax ratio over a given projection period to achieve a predetermined level of debt at the end of that projection period.

Tax smoothing The idea that tax rates should be kept stable in order to minimise the distortionary effects of taxation, while leaving it for the *automatic stabilisers* to smooth the economic cycle. It is also referred to as neutral *discretionary fiscal policy*. See also *cyclical component of fiscal policy*.

Tax wedge The deviation from equilibrium price/quantity as a result of a taxation, which results in consumers paying more, and suppliers receiving less. When referring to labour tax wedge more specifically, the tax wedge is usually regarded as the difference between the difference between the salary costs of an average worker to their employer and the amount of net income that the worker receives in return, the difference being represented by taxes including personal income taxes and compulsory social security contributions.

Total factor productivity Represents the share of total output not explained by the level of inputs (labour, capital or primary product). It is generally considered as a measure of overall productive efficiency.

UMTS Third generation of technical support for mobile phone communications. Sale of UMTS licences gave rise to sizeable one-off receipts in 2001.

Welfare state Range of policies designed to provide insurance against unemployment, sickness and risks associated with old age.

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4. USEFUL INTERNET LINKS

European Union

European Commission	ec.europa.eu
Directorate-General for Economic and Financial Affairs	ec.europa.eu/economy_finance/index_en.htm
Eurostat	epp.eurostat.ec.europa.eu
European Council	consilium.europa.eu
European Parliament	www.europarl.europa.eu

Economics and Finance Ministries

Belgium	www.treasury.fgov.be/interthes	Ministère des Finances - Ministerie van Financen
Bulgaria	www.minfin.bg	Ministry of Finance
Czech Republic	www.mfcr.cz	Ministry of Finance
Denmark	www.fm.dk	Ministry of Finance
Germany	www.bundesfinanzministerium.de	Bundesministerium der Finanzen
Estonia	www.fin.ee	Ministry of Finance
Ireland	www.irlgov.ie/finance	Department of Finance
Greece	www.mnec.gr/en/	Ministry of Economy and Finance
Spain	www.mineco.es/	Ministerio de Economía y Hacienda
France	www.finances.gouv.fr	Ministère Économie, Finances et l'Industrie
Italy	www.tesoro.it	Ministero dell'Economia e delle Finanze
Cyprus	www.mof.gov.cy	Ministry of Finance
Latvia	www.fm.gov.lv	Ministry of Finance
Lithuania	www.finmin.lt	Ministry of Finance
Luxembourg	www.etat.lu/FI	Ministère des Finances

Hungary	www.p-m.hu	Ministry of Finance
Malta	finance.gov.mt	Ministry of Finance and Economic Affairs
Netherlands	www.minfin.nl	Ministerie van Financien
Austria	www.bmf.gv.at	Bundesministerium für Finanzen
Poland	www.mofnet.gov.pl	Ministry of Finance
Portugal	www.min-financas.pt	Ministério das Finanças
Romania	www.mfinante.ro	Ministry of Finance
Slovenia	www.gov.si/mf	Ministry of Finance
Slovak Republic	www.finance.gov.sk	Ministry of Finance
Finland	www.vn.fi/vm	Ministry of Finance
Sweden	finans.regeringen.se	Finansdepartementet
United Kingdom	www.hm-treasury.gov.uk	Her Majesty's Treasury

Central Banks

European Union	www.ecb.int	European Central Bank
Belgium	www.nbb.be	Banque Nationale de Belgique / Nationale Bank van België
Bulgaria	www.bnb.bg	Bulgarian National Bank
Czech Republic	www.cnb.cz	Czech National Bank
Denmark	www.nationalbanken.dk	Danmarks Nationalbank
Germany	www.bundesbank.de	Deutsche Bundesbank
Estonia	www.eestipank.info	Eesti Pank
Ireland	www.centralbank.ie	Central Bank of Ireland
Greece	www.bankofgreece.gr	Bank of Greece
Spain	www.bde.es	Banco de España
France	www.banque-france.fr	Banque de France

Italy	www.bancaditalia.it	Banca d'Italia
Cyprus	www.centralbank.gov.cy	Central Bank of Cyprus
Latvia	www.bank.lv	Bank of Latvia
Lithuania	www.lb.lt	Lietuvos Bankas
Luxembourg	www.bcl.lu	Banque Centrale du Luxembourg
Hungary	www.mnb.hu	National Bank of Hungary
Malta	www.centralbankmalta.com	Central Bank of Malta
Netherlands	www.dnb.nl	De Nederlandsche Bank
Austria	www.oenb.at	Oestereichische Nationalbank
Poland	www.nbp.pl	Narodowy Bank Polski
Portugal	www.bportugal.pt	Banco de Portugal
Romania	www.bnro.ro	National Bank of Romania
Slovenia	www.bsi.si	Bank of Slovenia
Slovak Republic	www.nbs.sk	National Bank of Slovakia
Finland	www.bof.fi	Suomen Pankki
Sweden	www.riksbank.com	Sveriges Riksbank
United Kingdom	www.bankofengland.co.uk	Bank of England

EU fiscal surveillance framework

Stability and Growth Pact:

ec.europa.eu/economy_finance/sg_pact_fiscal_policy/index_en.htm?cs_mid=570

Excessive deficit procedure:

ec.europa.eu/economy_finance/sg_pact_fiscal_policy/fiscal_policy554_en.htm

Early warning mechanism:

http://ec.europa.eu/economy_finance/sg_pact_fiscal_policy/fiscal_policy1075_en.htm

Stability and convergence programmes:

ec.europa.eu/economy_finance/sg_pact_fiscal_policy/fiscal_policy528_en.htm

Sustainability of public finances:

http://ec.europa.eu/economy_finance/sg_pact_fiscal_policy/fiscal_policy546_en.htm

Quality of public finances

http://ec.europa.eu/economy_finance/publications/publication_summary12186_en.htm

http://ec.europa.eu/economy_finance/epc/epc_publications_en.htm#Quality%20of%20public%20finances

Lisbon Strategy for Growth and Jobs

http://ec.europa.eu/growthandjobs/index_en.htm