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LUXEMBOURG: MACRO FISCAL ASSESSMENT

AN ANALYSIS OF THE OCTOBER 2007 UPDATE OF THE STABILITY PROGRAMME

The Stability and Growth Pact requires each EU Member State to present an annual update of its medium-term fiscal programme, called "stability programme" for countries that have adopted the euro as their currency and "convergence programme" for those that have not. The most recent update of Luxembourg's stability programme was submitted on October 29, 2007.

The attached technical analysis of the programme, prepared by the staff of, and under the responsibility of, the Directorate-General for Economic and Financial Affairs (DG ECFIN) of the European Commission, was finalised on 6 February 2008. Comments should be sent to J-L Annaert (jean-luc.annaert@ec.europa.eu). The main aim of the analysis is to assess the realism of the budgetary strategy presented in the programme as well as its compliance with the requirements of the Stability and Growth Pact. However, the analysis also looks at the overall macro-economic performance of the country and highlights relevant policy challenges.

The analysis takes into account (i) the Commission services' autumn 2007 forecast, (ii) the code of conduct ("Specifications on the implementation of the Stability and Growth Pact and guidelines on the format and content of stability and convergence programmes", endorsed by the ECOFIN Council of 11 October 2005) and (iii) the commonly agreed methodology for the estimation of potential output and cyclically-adjusted balances. Technical issues are explained in an accompanying "methodological paper" prepared by DG ECFIN.

Based on this technical analysis, the European Commission adopted a recommendation for a Council opinion on the programme on 23 January 2007. The ECOFIN Council is expected to adopt its opinion on the programme on 12 February 2008.

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All these documents, as well as the provisions of the Stability and Growth Pact, can be found on the following website:

http://ec.europa.eu/economy_finance/about/activities/sgp/main_en.htm

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SUMMARY AND CONCLUSIONS

As part of the preventive arm of the Stability and Growth Pact, each Member State that uses the single currency, such as Luxembourg, has to submit a stability programme and annual updates thereof. The most recent programme, covering the period 2007-2010 was submitted on 27 October 2007.

Since the end of the 2001-2003 slowdown, Luxembourg is experiencing a new period of strong growth. On average, real GDP grew by 5¼% and domestic employment by over 3% a year in 2004-2007. In this context, Luxembourg has been able to bring its public finances back to surplus. Growth should remain strong during the period covered, even if it is forecast to slow down slightly in the coming years. However, despite the currently good condition of the economy and especially of public finances, the problem of population ageing will be particularly severe in Luxembourg and long-term sustainability is therefore a serious challenge.

The programme contains two different scenarios for the macroeconomic and budgetary projections: a “central” scenario and a “variant”. The “central” scenario is presented by the programme as the reference scenario, on which its budgetary projections are based. Assessed against currently available information[1], it appears to be based on plausible growth assumptions. It envisages that real GDP growth will decrease from 6% in 2007 to 4.5% on average over the period 2008-2010. The programme’s projections for inflation in 2008 appear to be on the low side, in view of the acceleration in consumer prices at the end of 2007 and of the recent hike in energy prices. The rise in labour costs in Luxembourg has significantly exceeded the EU average since the early 2000's and the programme projects it to remain rather strong over the period covered, which might progressively weaken the country's competitiveness.

For 2007, the general government surplus is estimated at 1.2% of GDP in the Commission services’ autumn 2007 forecast and at 1.0% of GDP in the 2007 update of the stability programme, against a deficit of 0.9% of GDP targeted in the previous update. The main reason for this large divergence with the target is a strong revision of public finance data in recent years, which resulted in a large upward shift of the series of government balances since 2005. This shift implies that Luxembourg has in recent years constantly been at its medium-term objective (MTO) for the budgetary position, which is an estimated structural deficit (i.e. a cyclically-adjusted deficit net of one-off and other temporary measures) of ¾% of GDP. This is a much better outcome than the plan in the 2006 update to achieve the MTO from 2007 onwards. Although the improvement in the general government balance in 2007 was half of what was planned in the 2006 update and the better-than-expected outcome is almost entirely due to the large revision in public finance data, the budgetary implementation in 2007 has thus achieved the objectives endorsed by the Council opinion of 27 February 2007 on the 2006 update (OJ C 70, 27.3.2007). It has also been in line with the April 2007 Eurogroup orientations for budgetary policies.

[1] The assessment takes notably into account the Commission services' autumn forecast and the Commission assessment of the October 2007 implementation report of the national reform programme.

In view of the revised data, the current programme no longer envisages a budgetary consolidation like the previous one. The main goal of its medium-term budgetary strategy is now to maintain a nominal surplus of about 1% of GDP on average and to continue to respect the MTO with a comfortable margin throughout the programme period. The headline surplus is projected to decrease from 1.0% of GDP in 2007 to 0.8% in 2008 as a result of cuts in personal income tax before gradually increasing thereafter. The primary surplus would follow a similar path. The increase in the surplus from 2007 to 2010 is planned to be achieved through a decrease by 0.9 p.p. of GDP in the expenditure ratio, more than compensating a decline by 0.7 p.p. of GDP in the revenue ratio. With the exception of 2008 for which they reflect the measures contained in the budget, these figures represent no-policy change projections rather than targets reflecting the implementation of policy measures.

The risks to the budgetary projections in the programme appear broadly balanced. They are based on a plausible macroeconomic scenario and seem attainable. In fact, outcomes could even be slightly better than projected in the programme due in particular to the prudence of revenue projections and the country's good track record in budgetary performance.

In view of this risk assessment, the budgetary stance in the programme seems sufficient to maintain the MTO by a large margin throughout the period covered, as envisaged in the programme. It is in line with the Stability and Growth Pact throughout the period and with the April 2007 Eurogroup orientations.

Luxembourg appears to be at medium risk with regard to the sustainability of its public finances. The long-term budgetary impact of ageing is among the highest in the EU, influenced notably by a very considerable projected increase in pension expenditure. The budgetary position in 2007 as estimated in the programme, which is better than the starting position of the previous programme, the low debt ratio, the significant assets accumulated in social security, and a structural primary surplus contribute to offsetting the projected long-term budgetary impact of ageing populations. However, this is not sufficient to cover the sizeable increase in age-related expenditure. Achieving high primary surpluses over the medium term and, as recognized by the authorities, implementing measures aimed at curbing the substantial increase in age-related expenditures would contribute to reducing risks to the sustainability of public finances.

Luxembourg’s national reform programme identified as key challenges a stable macro-economic framework, an economy integrated into the European and international context, an attractive economic environment, adherence to the principles of sustainable development, greater prominence given to older workers and a high-quality education and training system. The Commission’s assessment was that Luxembourg had made very good progress in implementing its national reform programme over the 2005-2007 period. It recommended that Luxembourg should be invited to focus on the areas of employment of older workers, the reform of its pension systems, the improvement of its education system, youth unemployment and the attractiveness of the economic environment. The stability programme seems to be consistent to some extent with the October 2007 implementation report of the national reform programme. For instance, both include the projected increase in R&D expenditure and the new investment projects in rail and road infrastructures. Similarly, the budgetary implications of those NRP reforms that have a direct budgetary impact are reflected in the stability programme's budgetary projections. The budgetary strategy in the programme is partly consistent with the country-specific broad economic policy guidelines included in the integrated guidelines and with the guidelines for euro area Member States in the area of budgetary policies issued in the context of the Lisbon strategy. In particular, no reform of the pension system has been initiated to date in order to enhance the sustainability of public finances.

The overall conclusion is that public finances have gone back to surplus in a context of strong GDP and employment growth. Recently released revised data indicate that the deterioration in public finances has been significantly more limited than previously estimated. Consequently, Luxembourg has constantly achieved its MTO and the path for the general government balance in the programme is at least 1% of GDP better in each year than in the previous update. While tax cuts will result in a small decrease in the surplus in 2008, the programme aims at maintaining a surplus of 1% of GDP on average throughout the period. The macroeconomic scenario and budgetary targets of the programme seem plausible and budgetary outcomes might even be slightly better than planned. However, Luxembourg will have to support in the coming decades a particularly heavy burden resulting from population ageing and no corrective measures have been taken to date. This explains that the country is considered to be at medium risk as regards the long-term sustainability of its public finances, in spite of its currently sound budgetary position.

Comparison of key macroeconomic and budgetary projections

		2006	2007	2008	2009	2010
Real GDP (% change)	**SP Nov 2007**	**6.1**	**6.0**	**4.5**	**5.0**	**4.0**
	COM Nov 2007	6.1	5.2	4.7	4.5	n.a.
	SP Nov 2006	*5.5*	*4.0*	*5.0*	*4.0*	*n.a.*
HICP inflation (%)	**SP Nov 2007**	**3.0**	**2.3**	**2.0**	**2.1**	**2.1**
	COM Nov 2007	3.0	2.5	2.8	2.3	n.a.
	SP Nov 2006	*2.9*	*1.4*	*2.0*	*2.0*	*n.a.*
Output gap[1] (% of potential GDP)	**SP Nov 2007**	**-0.4**	**0.5**	**0.1**	**0.2**	**-0.8**
	COM Nov 2007[2]	-0.2	0.0	-0.2	-0.6	n.a.
	SP Nov 2006	*-0.3*	*-0.8*	*-0.5*	*-1.6*	*n.a.*
Net lending/borrowing vis-à-vis the rest of the world (% of GDP)	**SP Nov 2007**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
	COM Nov 2007	n.a.	n.a.	n.a.	n.a.	n.a.
	SP Nov 2006	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*
General government balance (% of GDP)	**SP Nov 2007**	**0.7**	**1.0**	**0.8**	**1.0**	**1.2**
	COM Nov 2007	0.7	1.2	1.0	1.4	n.a.
	SP Nov 2006	*-1.5*	*-0.9*	*-0.4*	*0.1*	*n.a.*
Primary balance (% of GDP)	**SP Nov 2007**	**0.9**	**1.2**	**1.1**	**1.2**	**1.5**
	COM Nov 2007	0.9	1.3	1.2	1.5	n.a.
	SP Nov 2006	*-1.3*	*-0.8*	*-0.2*	*0.3*	*n.a.*
Cyclically-adjusted balance[1] (% of GDP)	**SP Nov 2007**	**0.9**	**0.7**	**0.8**	**0.9**	**1.6**
	COM Nov 2007	0.8	1.2	1.2	1.7	n.a.
	SP Nov 2006	*-1.3*	*-0.5*	*-0.1*	*0.9*	*n.a.*
Structural balance[3] (% of GDP)	**SP Nov 2007**	**0.6**	**0.7**	**0.8**	**0.9**	**1.6**
	COM Nov 2007	0.8	1.2	1.2	1.7	n.a.
	SP Nov 2006	*-1.3*	*-0.5*	*-0.1*	*0.9*	*n.a.*
Government gross debt (% of GDP)	**SP Nov 2007**	**6.6**	**6.9**	**7.1**	**7.2**	**7.0**
	COM Nov 2007	6.6	6.6	6.0	5.4	n.a.
	SP Nov 2006	*7.5*	*8.2*	*8.5*	*8.5*	*n.a.*

Notes:

[1]Output gaps and cyclically-adjusted balances according to the programmes as recalculated by Commission services on the basis of the information in the programmes.

[2]Based on estimated potential growth of 4.8%, 5.0%, 5.0% and 4.9% respectively in the period 2006-2009.

[3]Cyclically-adjusted balance excluding one-off and other temporary measures. One-offs or other temporary meausures are 0.3% of GDP in 2006, deficit reducing, in the most recent programme; there are no one-offs or other temporary measures for the period 2006-2010 in the Commission services' autumn forecast.

Source :

Stability programme (SP); Commission services' autumn 2007 economic forecasts (COM); Commission services' calculations

1. INTRODUCTION

The 2007 update of the stability programme of Luxembourg was submitted to the Commission and the Council on 27 October 2007[2]. It covers the period 2007-2010. Before its submission to the Commission it was approved by the Luxembourgish government and transmitted to the Parliament. It was drafted at the same moment as the 2008 budget, rests on the same macroeconomic scenario and presents the same public finance projections.

This assessment is further structured as follows. Section 2 discusses key challenges for public finances in Luxembourg, with a particular focus on population ageing. Section 3 assesses the plausibility of the macroeconomic scenario underpinning the public finance projections of the stability programme against the background of the Commission services' economic forecasts. Section 4 analyses budgetary implementation in the year 2007 and the medium-term budgetary strategy outlined in the new programme. Taking into account risks attached to the budgetary targets, it also assesses the appropriateness of the fiscal stance and the country's position in relation to the budgetary objectives of the Stability and Growth Pact. Section 5 reviews recent debt developments and medium-term prospects, as well as the long-term sustainability of public finances. Section 6 discusses the quality of public finances and structural reforms, while Section 7 analyses the consistency of the budgetary strategy outlined in the programme with the National Reform Programme and its implementation reports and with the broad economic policy guidelines. The annexes provide a detailed assessment of compliance with the code of conduct, including an overview of the summary tables from the programme (Annex 1) and selected key indicators of past economic performance (Annex 2).

2. KEY CHALLENGES FOR PUBLIC FINANCES WITH A PARTICULAR FOCUS ON SUSTAINABILITY AND POPULATION AGEING

2.1. Introduction

Growth was exceptionally strong in Luxembourg since the early 1980s: from 1982 to 2006, real GDP grew by 4.5% a year, more than twice the EU-15 average. At the same time, employment nearly exactly doubled, rising by an annual 2.6%, almost four times the EU-15 average. This outstanding macroeconomic performance is the main reason for the good shape of public finances: revenues rose by 6.6% a year over the period 1990-2006[3] and generated recurrent surpluses despite a rise in expenditure by an annual 7.2%.

However, this idyllic vision is in part misleading: while Luxembourg's public finances are unquestionably very healthy at this moment the problem of population ageing is a crisis in waiting. Clearly, ageing constitutes a daunting challenge for all Member States but Luxembourg, despite the exemplary condition of its public finances, will not be left immune. On the contrary, the rise in government expenditure due to ageing could even be one of the strongest in the whole EU. This point has often been stressed in recent years by the Commission services and the Ageing Working Group of the Economic and

[2] The English translation of the update was submitted on 19 November 2007.

[3] There are no general government statistics in ESA 95 before 1990

Financial Committee[4]. It has also been emphasized by the ILO, the Economist Club Luxembourg, two studies by M. Bouchet from the Central Bank of Luxembourg, the IMF and, finally, a report on the impact of ageing on public finance in the EU prepared by the Ageing Working Group (hereafter AWG) of the Economic and Financial Committee and the services of the European Commission[5]. The fact that this "implicit debt" of future pensions involves considerable risks as regards the long-term sustainability of the country's public finances despite their very sound condition at the moment has also been emphasized in the assessment by the Commission services of the previous stability programmes of Luxembourg, especially the 2006 update[6].

The basic assumptions and methodology of all these studies may differ but they generally come to relatively similar conclusions: the rise in government expenditure due to population ageing will be considerable and constitutes a challenge that needs to be addressed. For instance, the AWG Report finds that the increase in public (especially pension) expenditure due to population ageing will be one of the strongest in the EU so that the pension system's reserves would be exhausted in 2035 and the debt of the social security would reach 100% of GDP in 2050. This dramatic rise in government spending is for a large part linked to the fact that pension benefits are not projected to decrease relative to wages over the period notably since no reforms have been initiated to date in order to slow down the increase in pension spending. The strong projected employment growth will help alleviate the problem but will not be sufficient to solve it. There is thus a clear need for action.

The next section presents the main features of the country's pension system and its current situation given the critical role pensions will play in the rise in age-related expenditure. Section 3 describes the specific challenge of ageing in the case of Luxembourg, using chiefly the projections of the AWG Report. Finally, Section 4 presents the policy conclusions that can be drawn from these projections.

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4 See in particular Economic Policy Committee, "Budgetary challenges posed by ageing population", 2001, EPC/ECFIN/655/01-EN. This study was updated in 2006 : "Report by the Economic Policy Committee and the European Commission on the impact of ageing populations on public spending", February 2006, European Economy, 2006, n°1. The 2006 report was endorsed by the ECOFIN Council of 14 February 2006.

5 Evaluation actuarielle et financière du régime général d'assurance-pension du Grand-Duché de Luxembourg", ILO, 2000. This study was made at the request of the government of the Grand-Duchy.

Economist Club Luxembourg, "L'avenir de nos pensions. Une contribution au débat public", 2000. Several authors of this report are high-ranking officials from the Luxembourgish government and Central Bank.

M. Bouchet, "The sustainability of the private sector pension system from a long-term perspective", BCL working paper n°6, 2003 and "The transition from payg to funding: Application to the Luxembourg privat sector pension system", BCL working paper n°23, 2006.

IMF, 2004 and 2006 Article IV consultations, Staff Reports and Selected Issues.

"Report by the Economic Policy Committee and the European Commission on the impact of ageing populations on public spending", February 2006, European Economy, 2006, n°1. This report was endorsed by the ECOFIN Council of 14 February 2006.

6 Economic Assessment of the Stability Programme of Luxembourg (Update of November 2006), especially pp. 18-19 and 44-48.

2.2. The Luxembourgish pension system: main features and current position

The Luxembourgish public pension system[7] operates on a pay-as-you-go basis. The normal retirement age is 65 but a person may retire at 60 with an insurance period of at least 480 months, of which 120 months under the compulsory insurance scheme, or at 57 with at least 480 months of insurance under the compulsory scheme. Therefore, many workers retire before 65: the effective average retirement age was 59.4 in 2005 and the employment rate of workers aged 55 or more (33.2% in 2006) is one of the lowest in the EU, where it amounts to 43.6% on average**.**

Pension benefits in the private sector are the sum of two elements:

- A flat element, which is currently equal to €489.98 (at the wage and price levels of the base year 1984) per month for a total insurance period of 480 months. This amount is reduced proportionally if the pensioner has been insured for a shorter period.

- An element proportional to income, which amounts annually to 1.85% of the pensioner's total professional income during his insurance period, calculated at the wage and price levels of 1984 and multiplied by the rise in consumer prices and in real wages since then.

Thus, for instance, a 60 years-old pensioner who has been insured for 480 months and has earned on average a gross wage of EUR 46,253 a year[8] or EUR 3854.42 a month (at 2006 prices), will receive every month EUR 354 (the flat element), plus EUR 48 (one twelfth of the end-of year allocation), plus one twelfth of 1.92% of the sum over the 40 years of the gross wage (converted to the index 100 base 1984 and multiplied by the adjustment factor) which amounts to a total of EUR 3274 a month. This pension is subject to healthcare and long term care contributions as well as personal income tax.

Like wages and salaries, pensions are indexed to the CPI and are automatically increased by 2.5% every time it has risen by the same amount[9]. They are also adjusted every two years to the real increase in wages and salaries. This adjustment is in principle not automatic and must be decided by a law but, in practice, it has always taken place. Finally, pensions are subject to a minimum and a maximum (currently €1,387.12 and €56,421.85 per month, respectively).

Luxembourg is renowned for having the most generous welfare system in Europe and maybe in the world: even when correcting for the large number of cross-border workers, social spending per capita is still about 40% above the EU-15 average. Replacement rates

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[7] Meaning by this all the compulsory pension schemes organised by the social security system and not only the pension schemes of the public sector (the so-called "special regimes").

[8] EUR 46,253 a year was the average gross wage (excluding employer's contributions to the Social security) in 2006 in Luxembourg. Many thanks to Thierry Mazoyer from the *Inspection générale de la sécurité sociale* for the information and computations.

[9] In order to slow down inflation and the rise in public expenditure this indexation system was temporarily replaced in April 2006 (with effect from 2007 onwards) by an indexation at predetermined dates (and, in the case of family allowances, the indexation was merely suspended). These measures are supposed to last until 2009.

are extremely high: for pensions they are close to 100% in many cases[10], in particular for lower-than-average incomes. This generosity is also illustrated by the fact that Luxembourg had in 2004 the third highest benefit ratio in the EU-25 (measured as the average pension relative to the output per worker, which is used as a proxy for the average wage): pensions are thus higher relative to wages in Luxembourg than in most other EU countries.

Thanks to the strong job creation in the last 25 years, the dependency ratio (defined as the number of pensioners per 100 contributors to the public pension schemes) is rather low: at 42 in 2004, it was the fifth lowest in the EU-25, where it ranged from 23 to 92. However, in spite of this, total public pension spending (10.0% of GDP in 2004) is slightly higher than the EU average. See Table 1).

The pension system has always been in surplus over the last decade. It holds reserves estimated at about 24% of GDP, well above the legal requirement that they amount to at least 1.5 times total annual pension expenditure[11].

The main event in the recent history of the Grand-Duchy's pension system is the so-called "Rentendësch" ("roundtable on pensions"), a series of generous measures enacted by a law of 28 June 2002, the most important of which are summarised in the following box.

Box 1: Main measures introduced by the "Rentendësch" [12]

- The "*majoration forfaitaire*", which is the fixed element of the pension, proportional to the length of the career, was increased by 11.9%.
- The "*majoration proportionnelle*", which is the coefficient determining the variable element related to past salaries, was raised from 1.78% to 1.85%.
- In order to encourage older workers to continue to work, the 1.85% "*majoration proportionnelle*" was raised in a gradual way for future pensions by 0.01 percentage point for every year in excess of the age 55 and an affiliation to the pension system in excess of 38 years. The total adjustment was capped at 2.05%.
- All pensioners benefited from an additional allowance, equal to €14.81 (at today's prices) per year of affiliation.
- The level of the minimum pension was raised by 7.0% from €1,108 to €1,185.57 per month in order to make it equal to the minimum wage.
- The "survival pensions" paid to widows and orphans were also adjusted upwards in order to make them at least equal to the minimum pension.

Thus, Luxembourg deliberately went against the stream in 2002, maybe exhilarated by the extremely strong growth (real GDP grew by 8.4% both in 1999 and 2000) and large

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10 For a comparison with other countries, see, for instance, OECD, Pensions at a glance, 2006 and previous issues, and IMF, op. cit., 2006, Selected Issues, "The welfare system in international comparison".

11 Contribution rates are reviewed every 7 years and adapted, if needed, to ensure that the system's reserves will respect that requirement at the end of the next 7-year period.

12 For a complete description of the "Rentendësch", see for instance M. Bouchet (2003), pp. 25 – 26.

budgetary surpluses (more than 6% of GDP in 2000 and 2001) recorded at the turn of the century: the "Rentendësch" resulted in a rise in pension spending which is generally estimated at about 10% (0.6% of GDP[13]) but which will be much more sizable in a long-term perspective: taking into account all the additional spending involved, including higher interest expenditure due to larger borrowing requirements, Bouchet (2003) estimates the cumulative rise in expenditure due to these measures at about 26% of GDP in 2050 and 48% in 2085. Should the measures of the "Rentendësch" not have taken place (or should they be rescinded), the debt of the general pension system would reach 61% of GDP at that later date instead of 109% in his reference projection[14].

2.3. Long-term challenges

This generous pension system, which translates into a strong increase of pension expenditure in the future as residents and non-residents benefiting from the strong employment increase of the past 25 years retire, constitutes a serious challenge for Luxembourg. This challenge can be best described by following the AWG Report, which has the advantage of applying the same methodology and providing projections for all EU Member States, which allows international comparisons. The main assumptions underlying its projections for Luxembourg are the following:

- Net immigration would amount to an annual 0.6%, progressively declining to 0.4%, of resident population (453,000 in 2004), to which it would add a cumulative 30% over the period (not counting changes due to developments in birth and mortality rates).

- Total employment would rise by nearly 80% over the period: resident employment is projected to grow by more than one third, in line with the increase in working age population (30%) and the rise in the participation rate (3.4%), while the number of cross-border workers would be multiplied by about 2.6, surging from 109,400 in 2004 to 280,300 in 2050, which means that their share in total labour force would climb to 52.1%.

- Potential GDP growth is assumed to decrease from 4.0% in the years 2004-2010 to 3.0% on average over the period 2011-2050. However, it would still be much stronger than for the EU as a whole[15], where it would decline from 2.4% to 1.2%.

The main findings of the AWG Report for Luxembourg may be summarised as follows:

- From 2004 to 2050, total age-related public spending is projected to rise by 8.2 p.p. of GDP. This would be one of the strongest increases in the EU, much larger than those projected, for instance, for neighbouring countries (see Table 1).

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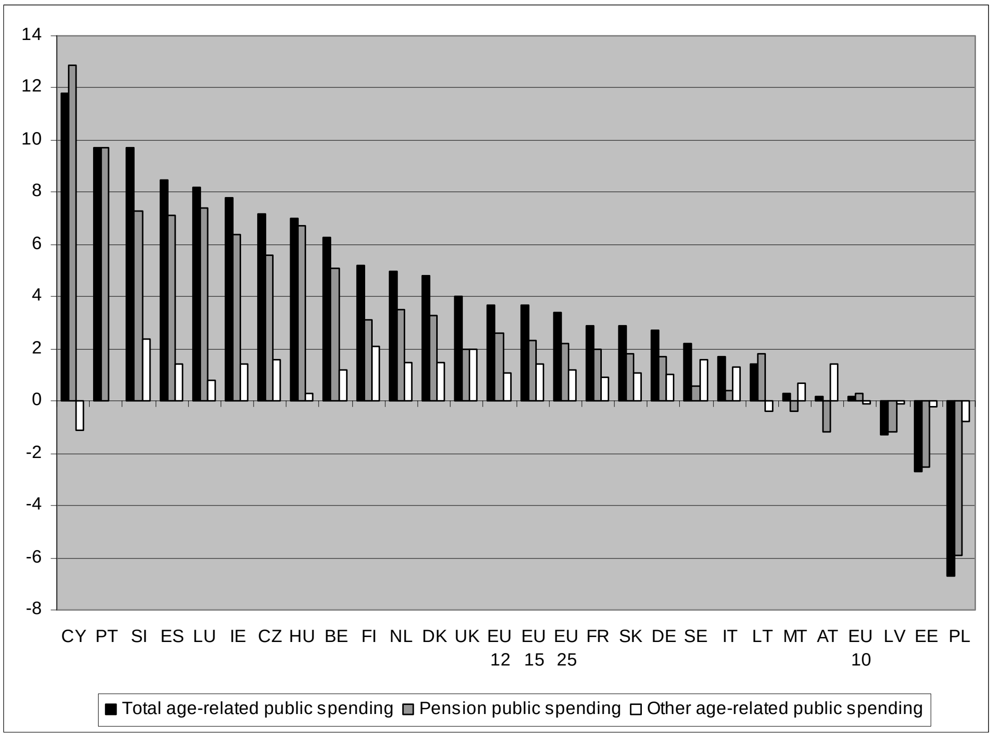
[13] Old-age pensions only represent about 60% of total pensions in Luxembourg (or 6 out of 10 p.p. of GDP), while disability, survivor's and other pensions amount to 40%, which is exceptionally high: on average in the EU, old-age pensions amount to about 90% of total pension spending.

[14] See M. Bouchet (2003), pp. 45 – 46. It should be noted that his projections only cover the general private sector pension scheme, while the AWG Report also encompasses the special regimes (general government sub-sectors, railways company, etc…).

[15] From now, "EU" or "EU as a whole" will generally refer to EU-25 (since the projections were performed before the accession of Bulgaria and Romania) but sometimes to a smaller group of countries (however, never less than 20) when the projections could not be performed for some Member States due to missing data.

- Of this 8.2 p.p. of GDP increase in government expenditure due to ageing, 7.4 points would be accounted for by pension spending. This would be the third largest increase in pension expenditure in the EU. Of course, pensions will constitute the main factor of the surge in age-related spending in most EU countries[16] but in Luxembourg, they are projected to amount to 90% of the total rise in age-related spending, compared to two thirds on average in the EU[17]. Conversely, healthcare, long-term care, education and unemployment-related expenditure will contribute for 0.8 p.p. of GDP to the rise in public age-related spending in Luxembourg, which is significantly less than in most Member States (see Figure 1 and Table 1).

Figure 1: Change in total age-related public expenditure and in pension public expenditure as a percentage of GDP (2004 – 2050)



Source: Ageing Working Group of the Economic and financial Committee and Commission services

- As a result of this boom in pension expenditure, the – though sizable - reserves of the pension system would be exhausted by 2035 under current contributions rates and assets accumulation policies. From then, the system would have to build up a debt which would reach 100% of GDP in 2050.

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16 There are some exceptions: UK, Italy and Sweden, where the projected rise in pension spending would represent only half of the total increase in public age-related expenditure (or even one quarter in the case of UK) as well as Latvia, Malta, Austria and Poland, where pension expenditure is projected to decline in percentage of GDP over the period (see AWG Report, pp. 65 - 68).

17 Only in Hungary and Estonia is the increase in pension expenditure projected to represent a larger share of the rise in total age-related spending than in Luxembourg.

Table 1: Total age-related public spending (% of GDP) 2004 – 2050

	Pensions		Healthcare (*) (**)		Long-term care (*)(**)		Education		Unemployment		Change in age-related spending		
	2004	2050	2004	2050	2004	2050	2004	2050	2004	2050	due to pensions	due to other spending	total change
LU	10.0	17.4	5.1	6.3	0.9	1.5	3.3	2.4	0.3	0.2	+7.4	+0.8	+8.2
BE	10.4	15.5	6.2	7.6	0.9	1.8	5.6	5.0	2.3	1.8	+5.1	+1.2	+6.3
DE	11.4	13.1	6.0	7.2	1.0	2.0	4.0	3.2	1.3	0.9	+1.9	+1.0	+2.7
FR	12.8	14.8	7.7	9.5	-	-	5.0	4.5	1.2	0.9	+2.0	+1.0	+2.9
NL	7.7	11.2	6.1	7.4	0.5	1.1	4.8	4.6	1.8	1.5	+3.5	+1.4	+4.9
EU15	10.6	12.9	6.4	8.1	0.9	1.5	4.6	4.0	0.9	0.7	+2.3	+1.5	+3.7
EU10	10.9	11.1	4.9	6.2	0.2	0.5	4.7	3.3	0.4	0.2	+0.3	0.0	+0.2
EU25	10.6	12.8	6.4	7.9	0.9	1.5	n.a	n.a	0.9	0.6	+2.2	+1.2	+3.4

Note:
(*) For France, healthcare and long-term care together.
(**) The AWG Report presents different scenarios for healthcare and long-term care projections. The figures given here refer to the so-called "AWG reference scenario" (see AWG Report, pp. 120 – 127).

Source: Ageing Working Group of the Economic and Financial Committee and Commission services

The rise in public pension spending due to ageing may be decomposed in a way that allows measuring how it is affected by different demographic and economic factors[18]. This methodology is explained in the following box.

Box 2: a decomposition of the rise in public pension spending

As shown by the equation

$$\frac{PensExp}{GDP} = \frac{Pop > 65}{Pop(15-64)} \times \frac{Pop(15-64)}{EmplNo} \times \frac{PensNo}{Pop > 65} \times \frac{PensExp / PensNo}{GDP / EmplNo}$$

where *PensExp* is total pension spending, *Pop* > 65 and *Pop* (15-64) are respectively the populations aged 65 or more and aged from 15 to 64, *PensNo* is the number of pensioners and *EmplNo* is total employment, the change in pension spending, expressed in percentage of GDP, may be decomposed into four main explanatory factors, namely:

- *a dependency* (or *"population ageing"*) *effect*, measuring changes in the dependency ratio defined as the ratio of persons aged 65 or more to the population aged 15 to 64;
- *an employment effect*, which measures changes in the population aged 15 to 64 relative to the number of persons employed ; it is an inverse employment rate.
- *a take-up effect* (or *"eligibility effect"*), measuring changes in the number of pensioners relative to the population aged 65 and over;
- and *a benefit effect*, which captures changes in the average pension relative to output per employed person, approximating the average wage. The benefit ratio is not equivalent to a replacement rate since it does not measure the level of pension for any individual respective to his own wage but both concepts are clearly linked.

Source: Ageing Working Group Report

[18] For more details, see AWG Report, pp. 74 – 77.

As Table 2 shows, in nearly all EU countries, the rise in the dependency ratio would push up pension spending by far more than its actual projected increase, while other factors will tend to offset that pressure, chiefly as a result of reforms initiated in recent years in most Member States in order to slow down the rise in pension spending: on average, the decrease in the benefit and in the eligibility ratios as well as the increase in the employment rate are projected to offset 70% of the pressure stemming from the rise in the dependency ratio in the EU-15 while they would compensate it almost totally in the EU-10.

Table 2: Main factors driving the change in all public pensions relative to GDP (2004 – 2050)

	Gross public pensions (% of GDP)		Change in gross public pensions due to (% of GDP)					
	Start level 2005	change 2004 – 2050	Dependency ratio	Employment rate	Take-up ratio	Benefit ratio	Interaction effect (residual)	Total minus dependency ratio
LU	10.0	+7.4	+7.2	-4.4	+2.5	+2.1	0.0	+0.2
BE	10.4	+5.1	+7.7	-1.5	-0.4	-0.6	-0.1	-2.6
DE	11.1	+1.9	+7.5	-1.1	-0.6	-3.5	-0.4	-5.6
FR	12.8	+2.0	+8.7	-0.9	-1.8	-3.5	-0.5	-6.7
NL	7.4	+3.8	+6.3	-0.2	-1.6	-0.4	-0.3	-2.5
EU15	10.5	+2.3	+8.3	-1.0	-1.7	-2.9	-0.3	-5.9
EU25	10.6	+2.2	+8.7	-1.2	-2.3	-2.7	-0.4	-6.6

Source: Ageing Working Group of the Economic and Financial Committee and Commission services

However, for Luxembourg, the results of this decomposition exercise are in sharp contrast with those of the majority of the Member States. Far from offsetting the impact of the adverse demographic developments expressed by the deterioration in the dependency ratio, two of the three other factors will tend to reinforce it: the employment effect will have the largest offsetting impact in the whole EU but changes in the take-up and the benefit ratios will together boost pension spending by 4.6 p.p. of GDP, while in the EU as a whole they would reduce it by no less than 5 p.p. of GDP (see Table 2).

Dependency effect: this effect (widely positive in the whole EU) is smaller in Luxembourg than in most Member States despite a rise by more than 160% in the number of pensioners because the increase in the number of contributors (+76.2% [19]) is projected to be the largest in the EU. Therefore, the dependency ratio would rise rather moderately (from 42 in 2004 to 62 in 2050), while in the EU as a whole, the increase would range from 10 to 86. (see Figure 2).

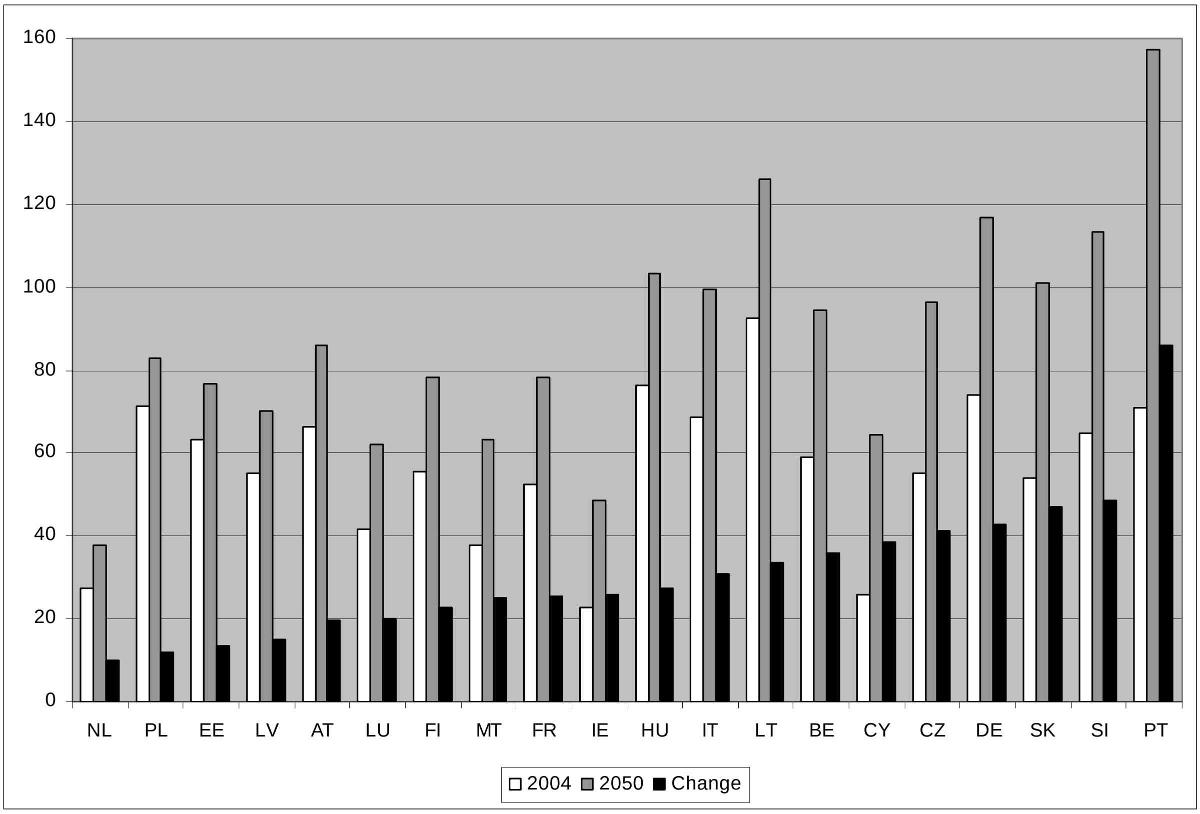
Employment effect: the employment rate being assumed to rise in all Member States, this effect is always negative, but in Luxembourg it is by far the largest (in absolute

[19] This 76.2% increase in 46 years implies a 1¼% average annual rise, which does not seem overly optimistic judging by the experience of the last 25 years: as already stated, total employment rose by a cumulative 100.2% or 2.6% a year from 1982 to 2006.

value) in the whole EU[20] because the country should have the strongest increase in employment over the period.

[20] *Ex aequo* with Poland when considering only old-age and early pensions.

Figure 2: dependency ratio (number of pensioners per 100 contributors in public pensions schemes) (2004 – 2050)



Source: Ageing Working Group of the Economic and financial Committee and Commission services

Take-up effect: in most EU countries, this effect is negative, implying that the number of pensioners is projected to decrease with respect to the population aged 65 or more. This decline is in general due to reforms introduced in recent years in order to raise the effective retirement age by increasing the statutory retirement age and/or tightening access to early and disability pension schemes. By contrast, in Luxembourg, the take-up effect is positive (and the largest one in the EU). However, this will not be due to an increasing share of pensioners among aged residents but to the fact that the number of non-resident pensioners, will rise faster than the number of resident pensioners and than the number of aged residents. As this effect expresses the changes in the proportion of pensioners (both residents and non-residents) among the total (resident) population aged 65 or more, in the case of Luxembourg, it is artificially boosted by the rising share of non-resident pensioners. Due to the very specific features of the Luxembourgish labour market, the dependency, employment and take-up effects should thus be considered together to properly assess the impact of demographic factors on pension expenditure.

Benefit effect: in Luxembourg, this effect is positive and the second highest in the EU, while it is negative in all Member States but four[21], generally reflecting reforms initiated in recent years in order to slow down the rise in pension benefits. In these four countries, the projected rise in pensions relative to wages is due to two factors:

- first, the maturation of the countries' pension systems: in the case of Luxembourg, it implies in particular that non-resident pensioners will increasingly be entitled to a complete pension from the Grand-Duchy's social security, thanks to a full career in

[21] Cyprus, Ireland and Hungary beside Luxembourg.

the country. Consequently, the average pension paid will increase with time. This is to a large extent an endogenous evolution, which can hardly be affected by policy measures.

- Moreover, in the case of Luxembourg, no reforms have been launched to date in order to slow down the rise in pension spending: quite the opposite, the Rentendësch increased the pension bill by about 10%. As a result, the replacement rate is not projected to decrease over the period, contrarily to what should happen in most other countries. This factor, by contrast with the previous one, could be significantly influenced by reforms in the pension system.

Table 3: replacement rates and benefit ratios 2004 – 2050

	Gross replacement rate				Net replacement rate all pensions		Benefit ratio (average total pension relative to output per worker)			Change in pension spending (% of GDP)	
	public pensions		all pensions								
	2005	**2050**	**2005**	**2050**	**2005**	**2050**	**2004**	**2050**	**change**	**total change**	**due to benefit ratio**
LU	91	91	91	91	98	99	23.5	28.0	+4.5	+7.4	+2.1
BE	39	37	43	47	67	74	17.7	16.4	-1.3	+5.1	-0.6
DE	43	34	43	48	63	67	18.5	13.3	-5.2	+1.9	-3.5
FR	66	49	66	49	80	63	24.4	18.9	-5.5	+2.0	-3.5
NL	30	30	71	69	92	90	29.2	30.4	+1.2	+3.8	-0.4
EU15	-	-	-	-	-	-	20.1	15.2	-4.9	+2.3	-2.9
EU25	-	-	-	-	-	-	18.9	15.6	-4.3	+2.2	-2.7

Source: Ageing Working Group of the Economic and financial Committee and Commission services

Thus, to sum up, two out of the four factors would play a more favourable role in Luxembourg than in most EU countries: the rise in the dependency ratio will push pension spending up but less than in most other Member States, while the increase in the employment rate will have the strongest offsetting effect in the whole EU.

By contrast, the take-up effect will boost pension expenditure more than in all other Member States but this is for a large part the inevitable consequence of the very strong (both past and projected) job creation (today’s employees are tomorrow’s pensioners). Moreover, as already said, this effect is artificially inflated by the rising share of non-residents in the labour force and, hence, in the number of pensioners. And, last but not least, the widely positive benefit effect will play a paramount role in the rise in pension spending, the importance of which could hardly be overstated: would this effect only be reduced from 2.1% of GDP to zero (in many other Member States it is widely negative), the rise in pension spending would be reduced from 7.4 to 5.3 p.p. of GDP.

2.4. Prospects and policy challenges

In conclusion, despite a currently comfortable public finance situation, the increase in age related expenditure will be one of the strongest in the EU if no corrective measures are taken and this will be due for a large part to the generosity of the pension system.

In addition, the strong job creation in the last 25 years has gone together with an increasing recourse to non-resident workers, who now represent nearly 40% of total domestic employment and more than 70% of its rise in recent years. Since these non-resident workers are very unlikely to settle in Luxembourg after retiring, this will inevitably translate, as already underlined, into a rising share of non-residents among pensioners, which is projected to reach about 44% of the total in 2050. Consequently, a large and rising part of the pensions paid by the Luxembourgish social security system will be spent abroad without any effect on activity and employment in the country.

Moreover, the growth assumptions on which these projections rest are far from pessimistic since it is assumed that GDP growth will remain about twice stronger than the EU average over the period covered. While growth is indeed much faster than in most other EU countries since the early eighties, it was not the case before (in the sixties and the seventies real GDP growth in Luxembourg was significantly less strong than the EU-15 average) and a continuation of the current dynamics is plausible but far from certain. In particular, a small, extremely open and highly specialised economy like the Grand-Duchy (total exports amounted to 177.2% of GDP in 2006 and the financial sector accounted for 24.2% of total value added) is especially vulnerable to external and sectoral shocks. Should growth turn out significantly weaker than assumed, long-term perspectives would be even less favourable than the projections based on these assumptions.

3. MACROECONOMIC OUTLOOK

This section assesses the plausibility of the macroeconomic scenario (economic activity, labour market, costs and prices) underpinning the public finance projections of the programme. It also examines whether good or bad economic times in the sense of the Stability and Growth Pact prevail.

The programme presents two macroeconomic scenarios: a fully-fledged central scenario, which is presented as the "reference scenario" and will be considered as such for the purpose of this assessment, and, more briefly, a variant where a deeper and longer crisis on the financial markets results in a 10% fall in the EU stock exchanges index[22].

3.1. Economic activity

The external outlook behind the programme's macroeconomic scenario is somewhat different from that in the Commission services' autumn 2007 forecast. Most of the differences, however, do not seem sufficiently important to imply large divergences between the two macroeconomic scenarios, except for external trade and perhaps for inflation[23].

The programme assumes the growth in markets for EU exports to reach 5.8% a year on average over the years 2008-2009 compared with 7.3% in the Commission services' forecast. In both cases, however, there is a deceleration in 2008 (more marked in the programme) and a re-acceleration in 2009 (also more pronounced in the programme). In

[22] This variant is examined in section 3.3

[23] Table 8 of Annex 2 gives the programme's main external assumptions.

2010, the programme forecasts exports markets to slow down again. It also assumes different developments in oil prices[24].

For the rest, the programme projects a small decrease in the short-term interest rate of the euro area over the period 2007-2010, while the forecast assumes it to rise somewhat in 2008 before decreasing slightly in 2009. On the other hand, the long term interest rate is assumed to rise somewhat in both projections. The programme also projects the effective nominal exchange rate of the euro to depreciate slightly in 2007 and in 2008 and to remain constant after that, while the Commission services forecast it to appreciate somewhat in 2007 and in 2008 and to remain stable in 2009.

Table 4: Comparison of macroeconomic developments and forecasts

	2007		2008		2009		2010
	COM	**SP**	**COM**	**SP**	**COM**	**SP**	**SP**
Real GDP (% change)	5.2	6.0	4.7	4.5	4.5	5.0	4.0
Private consumption (% change)	2.1	1.8	3.2	2.4	3.0	3.0	2.1
Gross fixed capital formation (% change)	10.6	9.6	6.6	6.6	5.7	4.5	2.9
Exports of goods and services (% change)	7.5	10.3	7.2	6.9	7.0	8.2	7.8
Imports of goods and services (% change)	7.7	9.3	7.4	7.2	7.1	8.0	7.7
Contributions to real GDP growth:							
- Final domestic demand	3.4	3.1	3.1	2.9	2.8	2.4	1.8
- Change in inventories	0.0	-1.0	0.0	0.3	0.0	0.1	0.1
- Net exports	1.7	4.0	1.6	1.3	1.8	2.5	2.1
Output gap[1]	0.0	0.5	-0.2	0.1	-0.6	0.2	-0.8
Employment (% change)	4.0	4.1	3.6	3.9	3.2	3.7	3.6
Unemployment rate (%)	4.7	4.9	4.5	4.7	4.2	4.6	4.6
Labour productivity (% change)	1.2	1.8	1.1	0.5	1.3	1.2	0.4
HICP inflation (%)	2.5	2.3	2.8	2.0	2.3	2.1	2.1
GDP deflator (% change)	3.5	4.3	3.7	3.0	3.3	2.2	2.6
Comp. of employees (per head, % change)	4.5	4.1	3.2	3.5	3.0	3.9	3.4
Net lending/borrowing vis-à-vis the rest of the world (% of GDP)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Note:

[1]In percent of potential GDP, with potential GDP growth according to the programme as recalculated by Commission services.

Source:

Commission services' autumn 2007 economic forecasts (COM); Stability programme (SP)

The programme projects GDP to slow down in 2008, to re-accelerate in 2009 and then to decelerate again in 2010, following a similar pattern in export growth. The contribution of domestic demand to GDP growth would gradually decrease over the period, reflecting essentially a projected deceleration in investment (and also in private consumption in 2009). In their 2007 autumn forecast, the Commission services project a different and smoother growth path, where GDP would gradually slow down from 2007 to 2009, also chiefly due to a deceleration in domestic demand. By contrast, the contribution of external trade to GDP growth would remain broadly constant over the period.

[24] The programme projects oil price to rise from 69.5 USD per barrel in 2007 to 76.7 USD in 2008-2010, while the forecasts project it to increase from 70.6 USD in 2007 to 78.8 in 2008 before decreasing to 76.0 in 2009

Paradoxically, the largest difference between the programme's GDP projections and the Commission services' autumn forecast concerns 2007: this is due to the fact that, for reasons of coherence, the programme is based on a forecast finalised in the summer, which was also used for the budget (submitted on 10 October). Since then, the quarterly GDP growth rates were revised downwards from the third quarter of 2006 and the "sub-prime crisis" broke out. These factors were taken into account in the autumn forecast of the Commission services and also in a most recent forecast of the STATEC, where GDP growth was revised from 6.0% to 5.1% for 2007 (while remaining at 4.5% in 2008)[25]. The programme's GDP projection for 2007 is thus outdated. This does not really reduce the plausibility of the programme's macroeconomic scenario but, as a result of the higher growth rate in 2007, the deceleration it projects in 2008 is significantly stronger than in the Commission services' autumn forecast.

However, the differences between the programme's projections and the forecasts should not be overstated: for the period 2007-2009, the Commission services forecast GDP to grow by 4.8% a year on average and the programme by 5.1%. For 2010, for which there are no Commission services forecasts yet, the programme projects GDP to grow by 4.0%, which is perfectly plausible in view of the Commission services' estimate of potential growth in the preceding years (4.9% on average from 2007 to 2009). Moreover, growth is much more volatile in Luxembourg than in most other Member States: over the period 1992-2006, the standard deviation of real GDP growth reached 2.5, the third highest figure in the EU-15, where it was 1.1 on average. Consequently, in the case of Luxembourg, differences of ½% or less in projections of GDP growth rates may legitimately be regarded as small and, despite the divergences with the Commission services' forecast, the macroeconomic assumptions of the programme should be regarded as broadly plausible.

The programme projects private consumption (which is the tax base for indirect taxes) to rise in value by 4.6% a year on average from 2007 to 2010 while the Commission services forecast it to grow by 5.0% over the years 2007-2009. As far as total wages and salaries (which constitute the largest part of the tax base for personal income tax and social contributions) are concerned, the programme projects them to rise by 7.7% on average over the period 2007-2009 to be compared to 7.2% a year in the autumn forecast. These are rather minor differences, which do not prevent projections for indirect taxes, direct taxes and social contributions in the programme and in the forecast to be close (see below Section 4.3).

In 2006, the output gap (recalculated by the Commission services on the basis of the data provided in the programme using the commonly agreed method) was still negative though closing. It has become clearly positive in 2007, would nearly close in 2008 and 2009 before turning negative again in 2010. In view of the estimates of potential growth made by the Commission services[26], such a pattern seems quite plausible.

In comparison, the output gap derived from the Commission services' autumn 2007 forecast was somewhat negative in 2006, is expected to have closed in 2007, and then to

[25] STATEC, Note de conjoncture n°2, 2007, pp. 67-72. The STATEC ("*Service central de la statistique et des études économiques*") is the service of the Luxembourgish Ministry of Economic Affairs in charge of statistics and economic analysis.

[26] 4.8% in 2006, 5.0% in 2007 and 2008 and 4.9% in 2009.

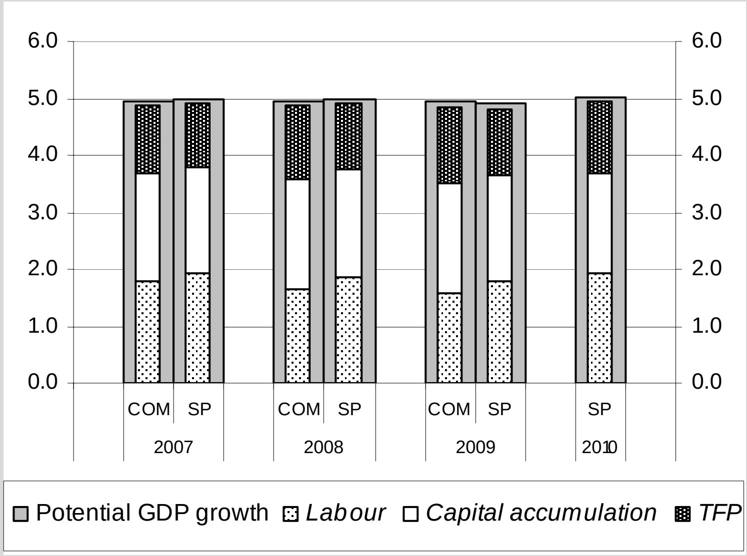
turn negative again slightly in 2008 and more markedly in 2009[27]. However, there are large similarities between the two scenarios: in both cases, the output gap is negative in 2006, closes or even becomes positive in 2007, then closes or turns negative again over the period 2008-2010 (or 2008-2009 for the forecast).

Box 2: Potential growth and its determinants

The graph below presents the estimate of potential output consistent with the programme's macroeconomic scenario, according to the Commission services' recalculations using the commonly agreed methodology based on the information provided in the programme and compares it with that deriving from the Commission services' autumn forecast.

As the graph shows, the two estimates are very close and the decomposition of potential growth leads in both cases to similar results. Moreover, these potential growth estimates are close to the average of the past ten years (4.9% from 1998 to 2007).

Figure 3: Potential growth and its determinants



3.2. Labour market and cost and price developments

The programme projects employment to grow by 3.8% a year on average over the period 2007-2010, slightly decelerating from 4.1% in 2007 to 3.6% in 2010. Employment is thus assumed to follow the declining trend in GDP growth but not to reflect its fluctuations, which would be essentially translated into similar movements in the apparent productivity of labour. As a result of this rather strong job creation, the unemployment rate would gradually decline from 4.9% of the active population in 2007 to 4.6% in 2009 and 2010.

[27] The precise output gaps figures are given in Table 8 in Section 4.2. The difference between the output gaps of the programme and those of the forecast is around ¼ p.p. of GDP in 2006 and 2008 but larger in 2007 and 2009 (about ½ p.p. of GDP) and 2009 (around ¾ p.p. of GDP). In 2007, this results from the fact that the Commission services, contrarily to the programme, forecast a slowdown in GDP growth by about 1 p.p. ; in 2009 the difference comes from the fact that the programme projects a re-acceleration in growth by ½ p.p. and the Commission services a further, albeit limited, slowdown.

The Commission services' autumn forecast projects employment to grow by 3.6% a year on average over the period 2007-2009, slowing down from 4.0% in 2007 to 3.2% in 2009. The small difference with the programme (0.3 p.p. a year on average) reflects a similar divergence in GDP growth rates. Thus, the rise in labour productivity is broadly the same in both scenarios, about 1.2% a year, which is exactly the average of the period 1993-2006.

The programme projects consumer price inflation (as measured by Eurostat's HICP) to decelerate from 2.3% in 2007 to around 2% in the rest of the period covered. By contrast, the Commission services forecast it to accelerate from 2.5% in 2007 to 2.8% in 2008 before slowing down to 2.3% in 2009. The HICP rose on average by 2.7% in 2007, with a strong acceleration in October (+3.6%), November (+4.0%) and December (4.3%) following the hike in oil prices and the rise in food prices. Because of that acceleration and of the fact that it is based on a forecast finalised in the summer, the programme's inflation projection for 2007 is thus on the low side. For 2008, the divergence between the programme's projection and the Commission services' forecast is for a part due to that base effect and also probably to different assumptions about oil prices[28] (see also footnote 21).

The programme projects compensation per head to rise by 3.6% on average over the period 2008-2010. Wage increases would broadly follow fluctuations in GDP, with a slowdown in 2008, an acceleration in 2009 and a new slowdown in 2010. The Commission services forecast wages to gradually decelerate throughout the period covered from 4.5% in 2007 to 3.0% in 2009.

The rise in unit labour costs projected by the programme would amount to 2.8% a year (to be compared with 2.4% in the Commission services' forecasts). This would be relatively high compared to neighbouring countries and to the EU as a whole. However, the effect of this faster rise in unit labour cost on exports could perhaps be more limited than would be the case in most other countries: more than three quarters of Luxembourg's total exports consist of services, for which the link between export performance and cost competitiveness is probably looser than for merchandises. For the manufacturing industry, the Commission services forecast a much more moderate evolution in unit labour costs (+0.3% a year over the period 2007-2009) than for the rest of the economy.

The programme thus projects on average a faster rise in wages than the forecast despite a lower inflation. However, this contradiction might well be only apparent: inflation in Luxembourg is for a large part determined by import prices. Moreover, wages are not indexed on the HICP but on the national CPI, which excludes consumption by non-residents and especially their large purchases of car fuel, and fluctuations in both indexes are not necessarily identical, especially in periods of strongly rising oil prices. The link between wage increases and developments in the HICP is thus probably weaker than in many other EU countries.

[28] Starting from an average price of USD 72.48/bl in 2007, the programme foresees oil price to rise by 5.8% in 2008 and the Commission services by 8.7%. Due to the large purchases of car fuel by non-residents, the weight of oil products in the HICP is especially high in Luxembourg.

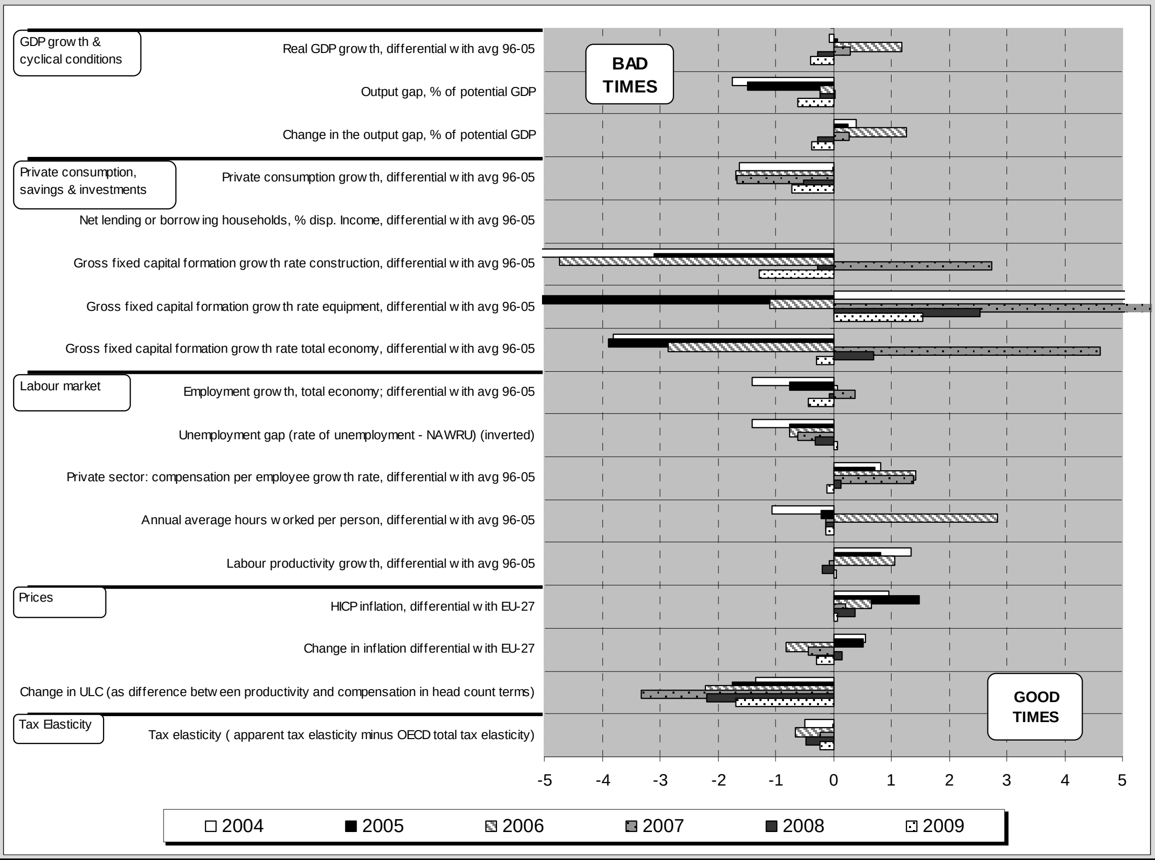
Box 3: Good or bad economic times?

According to the code of conduct, the assessment of whether the economy is experiencing good or bad economic times starts from the output gap, but draws on an overall economic assessment, which should also take into account tax elasticities.

The figure below presents a set of macroeconomic indicators drawn from the Commission services' autumn 2007 forecast: the growth in real GDP and employment is forecast to decelerate and to be, on average, slightly slower in 2007-2009 than the average of the years 1996-2005. The output gaps (based on the Commission services autumn forecasts) are slightly negative and widening at the end of the period. On the other hand, GDP and employment, though decelerating and rising slower than in recent years, are still projected to grow rather strongly in a historical perspective (GDP grew on average by 4.0% a year from 1991 to 2006). Overall, economic conditions in the period 2007-2009, as judged by the Commission services' autumn forecasts and the programme's projections, can probably be characterised as broadly neutral, i.e. neither exceptionally good (since growth is projected to be significantly lower than the record rates registered for instance in the late 1990s) nor really bad (a period when the average growth rate reaches 4% to 5% a year can hardly be characterised as "bad times").

Moreover, it should be kept in mind that, due to the very specific features of the Luxembourgish economy and especially to the existence of a virtually infinite labour supply (the number of unemployed in the regions surrounding the Grand-Duchy is more than twice as high as the Luxembourgish labour force), calculations of potential growth and output gaps should be interpreted with special caution.

Figure 4: Good versus bad times



3.3. The alternative scenario

In addition to its central scenario, the programme briefly presents a variant where a deeper and longer crisis on the financial markets results in a 10% fall in the EU stock exchanges index, the growth of the world demand for goods and services is reduced by 1 percentage point, and the GDP growth rate of the euro area is lowered by ½ percentage point in 2008. The main features of this alternative scenario are the following:

- With respect to the central scenario, GDP growth is reduced by 1½ percentage point in 2008 but comes back to the path of the central scenario from 2009 onwards.

- Employment is affected over the entire period by the slower GDP growth in 2008: its annual increase is reduced by 0.2 to 0.5 percentage point (depending on the year considered) compared to the central scenario. As a result, the unemployment rate increases in 2008 and stabilises in 2009 and 2010 instead of declining over the period.

- The general government balance deteriorates by 0.2 percentage point of GDP in 2008 compared to the central scenario and by 0.3 percentage point both in 2009 and 2010.

Table 5: Alternative scenario: main features

annual % change unless otherwise mentioned	**2008**		**2009**		**2010**	
	central scenario	**variant**	**central scenario**	**variant**	**central scenario**	**Variant**
GDP	4.5	3.0	5.0	4.9	4.0	4.0
Employment	3.9	3.6	3.7	3.2	3.6	3.4
Unemployment rate (% of labour force)	4.7	4.8	4.6	4.9	4.6	4.9
General government balance (% of GDP)	+0.8	+0.6	+1.0	+0.7	+1.2	+0.9
Source: 2007 Stability programme						

Although there is no indication so far that the recent turmoil on financial markets has had a major effect on growth in Luxembourg., it has considerably increased the uncertainty surrounding growth forecasts for 2008 as financial services represent almost 30% of the total value added of the economy and accounted for nearly two thirds of its real growth in 2006.

4. GENERAL GOVERNMENT BALANCE

This section consists of four parts. The first part discusses budgetary implementation in the year 2007 and the second presents the medium-term budgetary strategy in the new update. The third analyses the risks attached to the budgetary targets in the programme. The final part assesses the appropriateness of the fiscal stance and the country's position in relation to the budgetary objectives of the Stability and Growth Pact.

4.1. Budgetary implementation in 2007

Table 6 compares the 2007 revenue and expenditure targets (as a percentage of GDP) from the previous update of the stability programme with the results of the Commission services' autumn 2007 forecast. The difference between the revenue and expenditure targets for 2007 and the projected outcome is decomposed into a base effect, a GDP growth effect on the denominator and a revenue / expenditure growth effect[29]:

- The base effect captures the part of the difference that is due to the actual outcome for 2006 being different from what was projected in the previous update in the programme (either because the actual revenue / expenditure level in 2006 was different from the estimated outturn in the previous programme or because GDP turned out to be different from the scenario in the previous update of the programme). The base effect therefore also captures the effect of GDP revisions.

- The GDP growth effect on the denominator captures the part of the difference that is related to current GDP growth projections turning out higher or lower than anticipated in the previous update of the programme.

- The revenue / expenditure growth effect captures the part of the difference related to the revenue / expenditure growth rate in 2007 turning out to be higher or lower than targeted in the previous update of the programme.

Table 6: Budgetary implementation in 2007

		2006		2007	
		Planned **SP Nov 2006**	**Outcome** **SP Nov 2007**	**Planned** **SP Nov 2006**	**Outcome** **SP Nov 2007**
Revenue (% of GDP)		40.5	39.7	39.2	38.5
Expenditure (% of GDP)		42.0	39.0	40.1	37.5
Government balance (% of GDP)		-1.5	0.7	-0.9	1.0
Nominal GDP growth (%)				7.7	10.6
Nominal revenue growth (%)				4.2	7.3
Nominal expenditure growth (%)				2.8	6.3
Revenue surprise compared to target (% of GDP)				**-0.7**	
Of which [1] :	1. Base effect			-0.8	
	2. GDP growth effect			-1.0	
	3. Revenue growth effect			1.0	
	Of which: due to a marginal elasticity of total revenue w.r.t. GDP larger than1 [2]			*0.0*	
Expenditure surprise compared to target (% of GDP)				**-2.6**	
Of which [1] :	1. Base effect			-2.9	
	2. GDP growth effect			-0.9	
	3. Expenditure growth effect			1.2	
Government balance surprise compared to target (% of GDP)				**1.9**	
Of which:	1. Base effect			2.1	
	2. GDP growth effect			0.0	
	3. Revenue / expenditure growth effect			-0.1	

Notes:
[1]A positive base effect means that the outcome of the revenue / expenditure ratio in 2006 was higher than anticipated in the previous programme. A positive GDP growth effect means that GDP growth in 2007 reported in the current update of the programme is lower than anticipated in the previous programme (therefore leading to a higher revenue/expenditure-to-GDP ratio). A positive revenue / expenditure growth effect implies that revenue / expenditure growth in 2007 reported in the current update of the programme is higher than targeted in the previous programme. The three components may not add up to the total because of a residual component, which is generally small.
[2] Equal to (2)+(3). A positive sign means that the marginal elasticity of revenue with respect to GDP exceeds one.

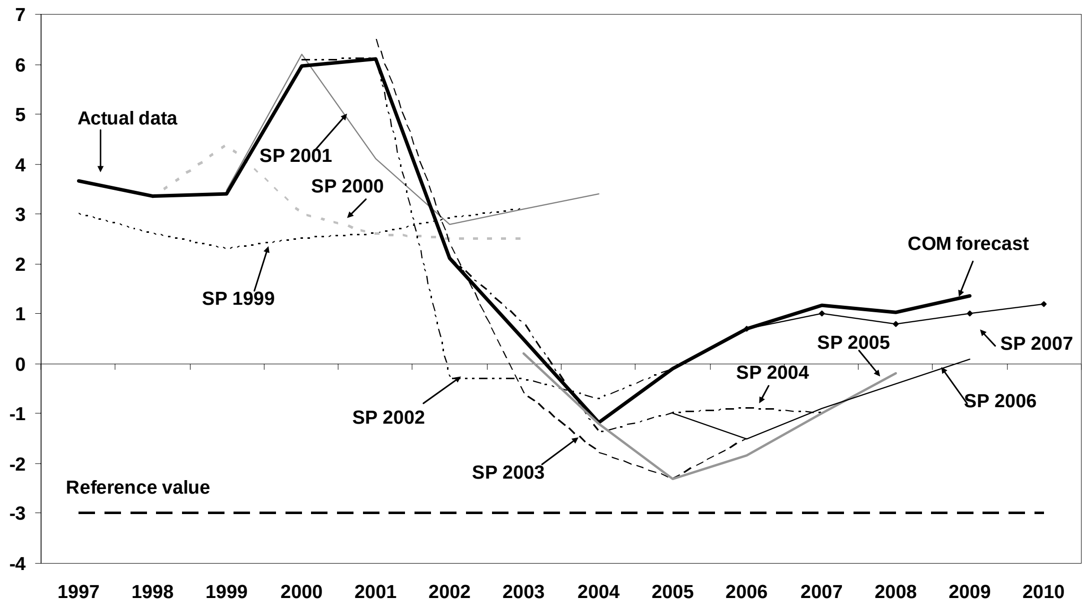
Source :
Commission services

29 A fourth, residual component is usually small, except if there are very large differences between the autumn forecast and the target

As Table 6 shows, the budgetary implementation in 2007 was very different from the plans set by the 2006 update. The main reason for this deviation is a substantial revision, performed in 2007, of government finance data in recent years, which resulted in a large upward shift of the whole series of government balances since 2005. According to these revised data, general government expenditure in 2005 was actually 2.6% lower and revenues 2.1% higher than estimated in the 2005 update [30]. Consequently, the 2005 deficit was revised by 2.2 percentage points of GDP in two steps : from an initial estimate of 2.3% of GDP to 1.0% in the 2006 update and to 0.1% of GDP in the current update. Thus, it now appears that the deficit peaked at 1.2% of GDP in 2004 (instead of 2.3% in 2005 as the previous updates indicated) and that the balanced budget that the 2006 update planned for the period 2007-2009 was already nearly achieved in 2005.[31]

For 2006, the revision is of the same magnitude as for 2005: the current update now reports a surplus of 0.7% of GDP instead of a deficit of 1.5% in the 2006 update. Starting from this much better-than-expected outcome, the current programme projects the general government balance in 2007 at a surplus of 1.0% of GDP instead of a deficit of 0.9% as foreseen by the previous update. According to the Commission services' autumn forecast, this surplus might even reach 1.2% of GDP.

Figure 5: Government balance projections in successive programmes (% of GDP)



<u>Source</u>: *Commission services' autumn 2007 forecast and successive stability programmes*

The better-than-expected outcome in 2007 only marginally results from developments in revenues and expenditure in that year. Indeed, revenues rose more than expected, in line with the stronger than forecast GDP growth : they increased by 7.3% according to the 2007 update and by 8.0% in the Commission services forecast instead of 4.2% as

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30 Moreover, the level of GDP in 2005 has been revised upwards by 9.6% with respect to the initial estimate provided by the 2005 update.

31 The balance recorded that year was a deficit of 0.1% of GDP, while the previous update projected to reach a surplus of 0.1% of GDP in 2009.

projected by the 2006 update. But so did expenditure, which rose by 6.3% according to the update and by 6.7% in the forecast instead of a planned 2.8%. As the increase in nominal GDP was even stronger than that in revenues and in spending, the expenditure ratio declined by 1.5 p.p. of GDP, the revenue ratio by 1.2 (by 0.8 and by 0.4, respectively, according to the Commission services forecast) and the general government balance improved by 0.3 p.p. of GDP (by 0.5 according to the forecast). Such a pattern (robust rise in spending but even stronger increase in revenues) had already been observed in previous episodes of buoyant economic growth, e.g. at the turn of the century. Incidentally, this suggests that expenditure growth should remain under careful monitoring in the future.

The general government balance thus improved in 2007 but less than the 2006 update had projected (0.6 p.p. of GDP). Moreover, this improvement with respect to 2006 was far from being of the size of the deviation from target (2.2 p.p. of GDP) : actually, as Table 6 shows, the better-than-expected outcome in 2007 almost exclusively results from the base effect, i.e. from a similar deviation in 2006 (which, in turn, originates in a comparable deviation in 2005). The improvement in 2007 was smaller than planned but it proceeded from a much better than expected starting point (a surplus of 0.7% of GDP instead of a deficit of 1.5% as projected in the 2006 update).

4.2. The programme's medium-term budgetary strategy

This section describes the medium-term budgetary strategy outlined in the programme - and how it compares with the one in the previous update - as well as the composition of the budgetary adjustment, including the broad measures envisaged.

4.2.1. The main goal of the programme's budgetary strategy

The programme's strategy is expressed in nominal terms: it aims at maintaining on average a nominal surplus of about 1% of GDP with a slight increase of 0.2 p.p. of GDP from 2007 to 2010. The surplus is projected to decline from an estimated 1.0% of GDP in 2007 to 0.8% in 2008 as a result of tax cuts foreseen by the 2008 budget. In 2009 and 2010, it would resume rising and reach 1.0% of GDP in 2009 and 1.2% in 2010.

By contrast, the previous update projected a gradual improvement of 0.5% of GDP a year over the period 2006-2009 but from a much less favourable starting point (a deficit of 1.5% of GDP instead of a surplus of 0.7% in 2006). The current update represents thus a clear break with the previous one but this break does not reflect a change in the budgetary strategy. It is exclusively the result of the major upward revision of public finance developments in the previous years.

The medium-term objective is a deficit of 0.8% of GDP in structural terms, which the programme plans to respect throughout the period covered. This MTO is unchanged from the previous update, which aimed to achieve it from 2007 onwards. However, the revised public finance data provided by the new update show that this objective has actually always been respected in recent years: the structural deficit reached a maximum of about ¼% of GDP in 2004, the same year when the nominal deficit culminated at 1.2% of GDP.

The structural balance, as recalculated by the Commission services on the basis of the information in the programme and according to the commonly agreed methodology, would increase slightly in 2008 and 2009 and more markedly in 2010, rising from about ¾% of GDP at the beginning of the period covered to around 1½% at the end. The fiscal stance implied by the programme may thus be characterised as broadly neutral in the first two years and rather restrictive in the third.

Table 7: Evolution of budgetary targets in successive programmes

		2006	2007	2008	2009	2010
General government balance (% of GDP)	**SP Nov 2007**	**0.7**	**1.0**	**0.8**	**1.0**	**1.2**
	SP Nov 2006	*-1.5*	*-0.9*	*-0.4*	*0.1*	*n.a.*
	COM Nov 2007	0.7	1.2	1.0	1.4	n.a.
General government expenditure (% of GDP)	**SP Nov 2007**	**39.0**	**37.5**	**36.9**	**36.9**	**36.6**
	SP Nov 2006	*42.0*	*40.1*	*39.4*	*38.2*	*n.a.*
	COM Nov 2007	39.0	38.2	37.2	36.6	n.a.
General government revenue (% of GDP)	**SP Nov 2007**	**39.7**	**38.5**	**37.8**	**37.9**	**37.8**
	SP Nov 2006	*40.5*	*39.2*	*39.0*	*38.4*	*n.a.*
	COM Nov 2007	39.7	39.3	38.3	38.0	n.a.
Structural balance[1] (% of GDP)	**SP Nov 2007**	**0.6**	**0.7**	**0.8**	**0.9**	**1.6**
	SP Nov 2006	*-1.3*	*-0.5*	*-0.1*	*0.9*	*n.a.*
	COM Nov 2007	0.8	1.2	1.2	1.7	n.a.
Real GDP (% change)	**SP Nov 2007**	**6.1**	**6.0**	**4.5**	**5.0**	**4.0**
	SP Nov 2006	*5.5*	*4.0*	*5.0*	*4.0*	*n.a.*
	COM Nov 2007	6.1	5.2	4.7	4.5	n.a.

Note:

[1]Cyclically-adjusted balance excluding one-off and other temporary measures. Cyclically-adjusted balances according to the programmes as recalculated by the Commission services on the basis of the information in the programmes. One-offs or other temporary meausures are 0.3% of GDP in 2006, deficit reducing, in the most recent programme; there are no one-offs or other temporary measures for the period 2006-2010 in the Commission services' autumn forecast.

Source:
Stability programmes (SP); Commission services' autumn 2007 economic forecasts (COM)

4.2.2. The composition of the budgetary adjustment

The programme projects general government revenues to decline by 0.7 % of GDP between 2007 and 2010. This decrease would nearly exclusively take place in 2008, reflecting the tax cuts foreseen by the budget, after which revenues would remain broadly constant in percentage of GDP. The decline in the revenues ratio relates to all categories of revenues (direct and indirect taxes as well as social contributions) with the exception of the residual item “other current revenues”, which include revenues from property.

Simultaneously, general government expenditure would decrease by 0.9 % of GDP. This decline would happen chiefly in 2008 (0.6 % of GDP) and to a lesser extent in 2010 (0.3 % of GDP). It would relate exclusively to primary expenditure, as interest payments would rise by 0.1 % of GDP. All categories of primary expenditure would decline in percentage of GDP with the exception of investment, which is high by EU standards (4.5% of GDP on average over the period 2001-2005) but declined by 0.5 % of GDP in 2006. Social payments, which represent nearly half of total spending, would account for 0.4 out of the 1% of GDP decline in primary expenditure. These expenditure targets do not seem to require additional specified or unspecified measures in order to be achieved and may thus be considered as projections under a no-policy change assumption (with the exception, of course, of 2008).

Table 8: Composition of the budgetary adjustment

(% of GDP)	2006	2007	2008	2009	2010	Change: 2010-2007
Revenue	**39.7**	**38.5**	**37.8**	**37.9**	**37.8**	**-0.7**
of which:						
- Taxes on production and imports	12.3	11.7	11.2	11.2	11.2	**-0.5**
- Current taxes on income, wealth, etc.	13.0	12.7	12.4	12.4	12.3	**-0.4**
- Social contributions	10.8	10.7	10.6	10.6	10.6	**-0.1**
- Other (residual)	3.6	3.4	3.6	3.7	3.7	**0.3**
Expenditure	**39.0**	**37.5**	**36.9**	**36.9**	**36.6**	**-0.9**
of which:						
- Primary expenditure	38.8	37.3	36.7	36.6	36.3	**-1.0**
of which:						
Compensation of employees	7.4	7.1	7.1	7.0	6.9	**-0.2**
Intermediate consumption	3.1	3.0	2.9	2.8	2.9	**-0.1**
Social payments	18.3	17.3	17.1	17.1	16.9	**-0.4**
Subsidies	1.5	1.5	1.4	1.4	1.4	**-0.1**
Gross fixed capital formation	4.0	4.0	3.9	4.3	4.3	**0.3**
Other (residual)	4.5	4.4	4.3	4.1	4.0	**-0.4**
- Interest expenditure	0.2	0.2	0.2	0.3	0.3	**0.1**
General government balance (GGB)	**0.7**	**1.0**	**0.8**	**1.0**	**1.2**	**0.2**
Primary balance	**0.9**	**1.2**	**1.1**	**1.2**	**1.5**	**0.3**
One-off and other temporary measures	0.3	0.0	0.0	0.0	0.0	**0.0**
GGB excl. one-offs	**0.4**	**1.0**	**0.8**	**1.0**	**1.2**	**0.2**
Output gap[1]	-0.4	0.5	0.1	0.2	-0.8	**-1.3**
Cyclically-adjusted balance[1]	0.9	0.7	0.8	0.9	1.6	**0.9**
Structural balance[2]	**0.6**	**0.7**	**0.8**	**0.9**	**1.6**	**0.9**
Change in structural balance		*0.1*	*0.0*	*0.2*	*0.7*	
Structural primary balance[2]	0.8	0.9	1.0	1.2	1.9	**1.0**
Change in structural primary balance		*0.1*	*0.0*	*0.3*	*0.7*	

Notes:

[1]Output gap (in % of potential GDP) and cyclically-adjusted balance as recalculated by Commission services on the basis of the information in the programme.

[2]Structural (primary) balance = cyclically-adjusted (primary) balance excluding one-off and other temporary measures.

Source :

Stability programme; Commission services' calculations

Box 4: The budget for 2008

* The draft budget for 2008 was presented to Parliament on 10 October 2007. It has been adopted on 21 December 2007.
* The target for the general government balance in 2008 is a surplus of 0.8% of GDP, down from an estimated 1.0% in 2007.
* The budget plans the expenditure by the State[32] to rise by 5.3% in 2008. The revenues would increase by 7.6%, the same rate as the projected growth in nominal GDP.
* The main measures in the budget are the tax cuts explained in the following table.

[32] The State is only a part of the central government, which also comprises a series of special Funds. The major part of public investment spending is done by these funds.

Main measures in the budget for 2008	
Revenue measures*	**Expenditure measures****
o increase by 6% in personal income tax brackets in order to compensate for their non-indexation since 2001-2002.	o Wage agreement in the government sector: effect quantified by STATEC at slightly less than 0.05% of GDP in 2008 and 0.1% in 2009.
o replacement of the current system of tax reduction for households with children by a tax bonus. Motivation: households with an income below the taxable minimum can not benefit from the current tax reduction system.	o gradual increase of public R&D expenditure from 0.25% of GDP in 2006 to 0.4% in 2009. Effect in 2008 not quantified by the programme
The *ex ante* cost of the two measures together is estimated by the budget and by the programme at 0.8% or 0.9% of GDP.	

* Estimated impact on general government revenues.
** Estimated impact on general government expenditure.
Sources: Commission services, 2007 SP, 2008 Budget

4.3. Risk assessment

This section discusses the plausibility of the programme's budgetary projections by analysing various risk factors. For the period until 2009,

Table 9 compares the detailed revenue and expenditure projections in the Commission services' autumn 2007 forecast, (which are derived under a no-policy-change scenario for 2009), with those in the updated programme.

As already stated, the programme's macroeconomic outlook seems broadly plausible. Should growth be significantly slower than projected (for instance as the result of a longer and deeper crisis on financial markets as envisaged in the programme's alternative scenario) budgetary outcomes would not be as good as under programme's central scenario or in the Commission services forecast but probably still remain relatively sound. To achieve the programme's objectives of nominal balance under these conditions, some degree of expenditure restraint would then be necessary. Commission services' simulations of the cyclically-adjusted balance under the assumptions of (i) a sustained 0.5 percentage point deviation from the real GDP growth projections in the programme over the 2007-2010 period; (ii) trend output based on the HP-filter and (iii) no policy response (notably, the expenditure level is as in the central scenario), reveal that, by 2010, the cyclically-adjusted balance would be 0.6 percentage point of GDP below the central scenario.

With the exception of 2008, the programme's budgetary targets represent projections under a no-policy-change assumption and do not seem to require additional measures in order to achieve them.

The programme does not mention one-off or other temporary measures that would play a significant role over the period.

The achievement of the programme's budgetary objectives does not require a high degree of expenditure restraint: with the growth in nominal GDP projected in the programme (7.2% a year over the period 2008-2010), it is possible for government expenditure to still rise by an annual 6.3% on average (which implies about 2½% to 3% a year in real terms) while the expenditure ratio falls, as planned, by 0.9% of GDP from 2007 to 2010. Spending might thus increase over the period 2008-2010 at about the same pace as it did in 2007 (6.3% according to the programme and 6.7% in the Commission services' forecast). Since the increase in nominal GDP projected in the forecast is even higher than that in the programme (8.3% a year on average from 2007 to 2009), the rise in nominal spending that would be compatible with the programme's projections could be about 1 percentage point higher.

Table 9: Comparison of budgetary developments and projections

(% of GDP)	2006	2007		2008		2009		2010
	COM	COM	SP	COM	SP	COM[1]	SP	SP
Revenue	**39.7**	**39.3**	**38.5**	**38.3**	**37.8**	**38.0**	**37.9**	**37.8**
of which:								
- Taxes on production and imports	12.3	11.9	11.7	11.6	11.2	11.4	11.2	11.2
- Current taxes on income, wealth, etc.	13.0	13.0	12.7	12.4	12.4	12.4	12.4	12.3
- Social contributions	10.8	10.9	10.7	10.9	10.6	10.9	10.6	10.6
- Other (residual)	3.6	3.5	3.4	3.4	3.6	3.3	3.7	3.7
Expenditure	**39.0**	**38.2**	**37.5**	**37.2**	**36.9**	**36.6**	**36.9**	**36.6**
of which:								
- Primary expenditure	38.8	38.0	37.3	37.1	36.7	36.5	36.6	36.3
of which:								
Compensation of employees	7.4	7.3	7.1	7.2	7.1	7.2	7.0	6.9
Intermediate consumption	3.1	3.0	3.0	3.0	2.9	2.9	2.8	2.9
Social payments	18.3	17.7	17.3	17.3	17.1	16.9	17.1	16.9
Subsidies	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4
Gross fixed capital formation	4.0	4.0	4.0	3.9	3.9	3.8	4.3	4.3
Other (residual)	4.5	4.4	4.4	4.3	4.3	4.2	4.1	4.0
- Interest expenditure	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
General government balance (GGB)	**0.7**	**1.2**	**1.0**	**1.0**	**0.8**	**1.4**	**1.0**	**1.2**
Primary balance	**0.9**	**1.3**	**1.2**	**1.2**	**1.1**	**1.5**	**1.2**	**1.5**
One-off and other temporary measures	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GGB excl. one-offs	**0.7**	**1.2**	**1.0**	**1.0**	**0.8**	**1.4**	**1.0**	**1.2**
Output gap[2]	-0.2	0.0	0.5	-0.2	0.1	-0.6	0.2	-0.8
Cyclically-adjusted balance[2]	0.8	1.2	0.7	1.2	0.8	1.7	0.9	1.6
Structural balance[3]	**0.8**	**1.2**	**0.7**	**1.2**	**0.8**	**1.7**	**0.9**	**1.6**
Change in structural balance		*0.3*	*0.1*	*0.0*	*0.0*	*0.5*	*0.2*	*0.7*
Structural primary balance[3]	1.0	1.3	0.9	1.3	1.0	1.8	1.2	1.9
Change in structural primary balance		*0.4*	*0.1*	*0.0*	*0.0*	*0.5*	*0.3*	*0.7*

Notes:

[1]On a no-policy-change basis.

[2]Output gap (in % of potential GDP) and cyclically-adjusted balance according to the programme as recalculated by Commission services on the basis of the information in the programme.

[3]Structural (primary) balance = cyclically-adjusted (primary) balance excluding one-off and other temporary measures.

Source :

Stability programme (SP); Commission services' autumn 2007 economic forecasts (COM); Commission services' calculations

Judging from Table 10 below, the tax revenue projections of the programme seem to embody plausible assumptions about the tax intensity of economic activity, including the effects of the 2008 tax cuts. Even if these projections are more optimistic than those of the Commission services for 2009, they are more cautious than what would be warranted by the OECD's ex ante elasticity. Moreover, differences with the tax projections in the forecast of the Commission services are limited: over the period 2007-2009, indirect taxes are projected to decline by 0.5 % of GDP in both the programme and in the forecast, direct taxes to decrease by 0.3 % of GDP in the programme and by 0.6% in the forecast, and social contributions to diminish by 0.1 %. of GDP in the programme and to remain constant in percentage of GDP in the forecast.

Table 10: Assessment of tax projections

	2008			2009			2010
	SP	**COM**	**OECD**[3]	**SP**	**COM**[1]	**OECD**[3]	**SP**
Change in tax-to-GDP ratio (total taxes)	-1.0	-1.0	0.4	0.0	-0.3	0.3	-0.1
Difference (SP – COM)	0.1		/	0.3		/	/
of which[2]*:*							
- discretionary and elasticity component	*-0.2*		/	*-0.2*		/	/
- composition component	*0.2*		/	*0.6*		/	/
Difference (COM - OECD)	/	-1.4		/	-0.6		/
of which[2]*:*							
- discretionary and elasticity component	/	*-1.4*		/	*-0.6*		/
- composition component	/	*0.3*		/	*0.2*		/
p.m.: Elasticity to GDP	0.6	0.7	1.1	1.0	0.9	1.1	1.0

Notes:

[1]On a no-policy change basis.

[2]The composition component captures the effect of differences in the composition of aggregate demand (more tax rich or more tax poor components). The discretionary and elasticity component captures the effect of discretionary fiscal policy measures as well as variations of the yield of the tax system that may result from factors such as time lags and variations of taxable income that do not necessarily move in line with GDP, e.g. capital gains. The two components may not add up to the total difference because of a residual component, which is generally small.

[3]OECD ex-ante elasticity relative to GDP.

Source:
Commission services' autumn 2007 economic forecasts (COM); Stability programme (SP); Commission services' calculations; OECD (N. Girouard and C. André (2005), "Measuring Cyclically-Adjusted Budget Balances for the OECD Countries", OECD Working Paper No. 434).

In the past, budgetary outcomes have often been significantly better than targets and initial estimates: the recent major revision in public finance data is a prominent example in this respect. Expenditure often rose more than planned but so did generally revenues and frequently by a wider margin (revenue projections in Luxembourg are renowned to be cautious). Even if public finance data were often subject to non-negligible revisions, these revisions generally led to better results than had been planned and / or initially estimated.

Taking all these factors into account, the overall assessment of the balance of risks is that the programme's budgetary projections are plausible and that outcomes could even be slightly better than targeted both in 2008 and 2009.

4.4. Assessment of the fiscal stance and budgetary strategy

The table below offers a summary assessment of the country's position relative to the budgetary requirements laid down in the Stability and Growth Pact. In order to highlight the role of the preceding analysis of the risks that are attached to the budgetary targets presented in the programme, this assessment is done in two stages: first, a preliminary assessment on the basis of the targets taken at face value and, second, the final assessment also taking into account risks.

Table 11: Overview of compliance with the Stability and Growth Pact

	Based on programme [3] (with the targets taken at face value)	**Assessment** (taking into account risks to the targets)
a. Safety margin against breaching 3% of GDP deficit limit[1]	throughout programme period	throughout programme period
b. Achievement of the MTO	throughout programme period	throughout programme period.
c. Fiscal stance in line with Pact [2]?	in line	in line

Notes:
[1]The risk of breaching the 3% of GDP deficit threshold with normal cyclical fluctuations, i.e. the existence of a safety margin, is assessed by comparing the cyclically-adjusted balance with the minimum benchmark (estimated as a deficit of around 1% of GDP for Luxembourg). These benchmarks represent estimates and as such need to be interpreted with caution.
[2]According to the Stability and Growth Pact, countries which have already achieved their MTO should avoid pro-cyclical fiscal policies in "good times".
[3]Targets in cyclically-adjusted terms for the safety margin (line a) and in structural terms for the MTO (line b) and the fiscal stance (line c) as recalculated by Commission services on the basis of the information in the programme.

Source:
Commission services

The MTO (a structural deficit of 0.8% of GDP) is already achieved. In view of the assessment of the risks to the targets of the programme, this MTO is very likely to be maintained as planned throughout the programme period, considering the still rather robust growth and the non-negligible surpluses projected both by the programme and by the Commission services' forecast.

For similar reasons, the cyclically-adjusted balance will most probably remain throughout the programme period well above the minimum benchmark (which is a deficit of about 1% of GDP in the case of Luxembourg) aiming at providing a safety margin against risks of breaching the 3% of GDP deficit limit.

As regard the appropriateness of the fiscal stance and in particular the Pact's requirement that countries which have achieved their MTO avoid pro-cyclical fiscal policies in good times, the fiscal stance implied by the programme's strategy may be considered as adequate taking into account the above risk assessment: it is not pro-cyclical since the cyclically-adjusted surplus does not decrease in any year of the period covered. Moreover, as already mentioned, the period covered by the programme may be characterised as neutral rather than good times.

In view of this assessment, the budgetary strategy described by the update satisfies the Pact's requirements as summarised in **Table 11**.

5. GOVERNMENT DEBT AND LONG-TERM SUSTAINABILITY

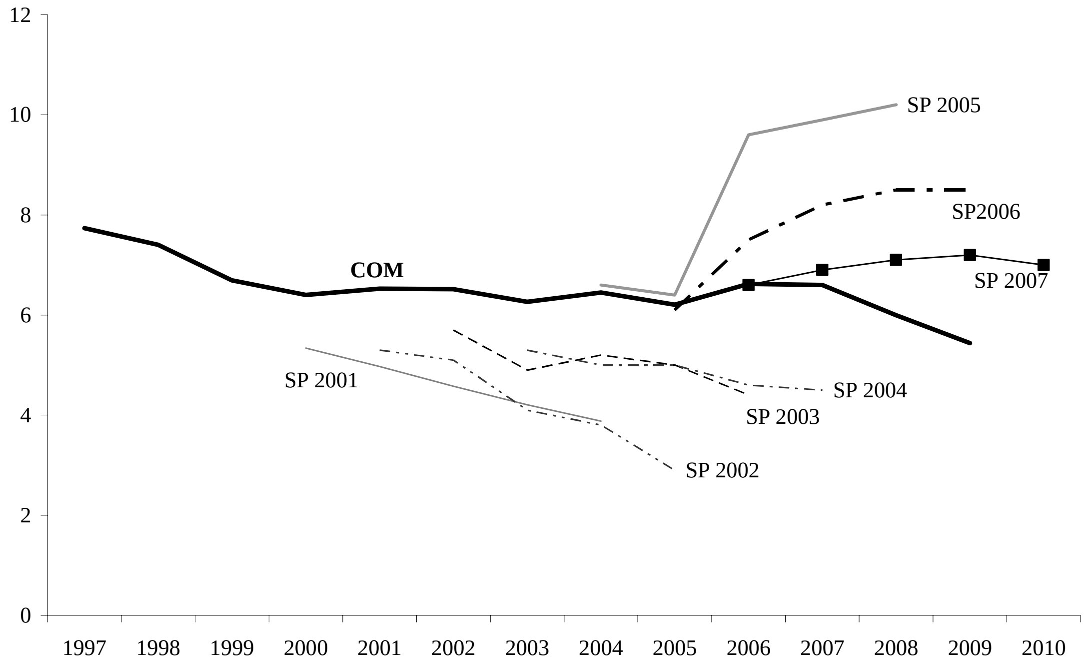
This section is in two parts. A first part describes recent debt developments and medium-term prospects, including risks to the outlook presented in the programme. A second part takes a longer-term perspective with the aim of assessing the long-term sustainability of public finances.

5.1. Recent debt developments and medium-term prospects

5.1.1. Debt projections in the programme

The 2007 update plans the general government debt to rise from 6.6% of GDP in 2006 to 7.2% of GDP in 2009 before decreasing slightly to 7.0% in 2010, while the previous update projected it to increase from 7.5% of GDP in 2006 to 8.5% in 2009.

Figure 6: Debt projections in successive programmes (% of GDP)



<u>Source</u>*: Commission services' autumn 2007 forecast (COM) and successive stability programmes*

The autumn forecasts of the Commission services, which were based on less recent information on debt than the programme, project the general government debt to decrease from 6.6% of GDP in 2007 to 5.4% in 2009. Two-thirds of the total public debt have been issued by the central government and the rest by local authorities.

5.1.2. Assessment

As Figure 7 shows, since 1990, government debt dynamics in Luxembourg were widely disconnected from developments in the general government balance: from 1990 to 2007, the government debt fluctuated between 4% and 8% of GDP, while the recurrent surpluses recorded during the whole period (with the exception of the years 1992, 2004 and 2005) would have allowed to reimburse it totally several times [33]. However, a reduction in the debt was not necessary as its very low level did not raise any concern.

Table 12: Debt dynamics

(% of GDP)	average 2002-05	2006	2007 COM	2007 SP	2008 COM	2008 SP	2009 COM	2009 SP	2010 SP
Gross debt ratio[1]	**6.4**	**6.6**	**6.6**	**6.9**	**6.0**	**7.1**	**5.4**	**7.2**	**7.0**
Change in the ratio	-0.1	0.4	0.0	0.3	-0.6	0.2	-0.6	0.1	-0.2
Contributions[2]:									
Primary balance	**-0.5**	**-0.9**	**-1.3**	**-1.2**	**-1.2**	**-1.1**	**-1.5**	**-1.2**	**-1.5**
"Snow-ball" effect	**-0.2**	**-0.5**	**-0.3**	**-0.4**	**-0.3**	**-0.3**	**-0.3**	**-0.3**	**-0.1**
Of which:									
Interest expenditure	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
Growth effect	-0.2	-0.3	-0.3	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3
Inflation effect	-0.2	-0.3	-0.2	-0.3	-0.2	-0.2	-0.2	-0.1	-0.2
Stock-flow adjustment	**0.7**	**1.8**	**1.7**	**1.9**	**0.9**	**1.6**	**1.2**	**1.6**	**1.5**
Of which:									
Cash/accruals diff.	0.2	0.2		n.a.		n.a.		n.a.	n.a.
Acc. financial assets	0.5	1.6		n.a.		n.a.		n.a.	n.a.
Privatisation	*0.0*	*0.0*		*n.a.*		*n.a.*		*n.a.*	*n.a.*
Val. effect & residual	0.0	0.0		n.a.		n.a.		n.a.	n.a.

Notes:

[1]End of period.

[2]The change in the gross debt ratio can be decomposed as follows:

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

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 i and y represent the average cost of debt and nominal GDP growth (in the table, the latter is decomposed into the growth effect, capturing real GDP growth, and the inflation effect, measured by the GDP deflator). The term in parentheses represents the "snow-ball" effect. The stock-flow adjustment includes differences in cash and accrual accounting, accumulation of financial assets and valuation and other residual effects.

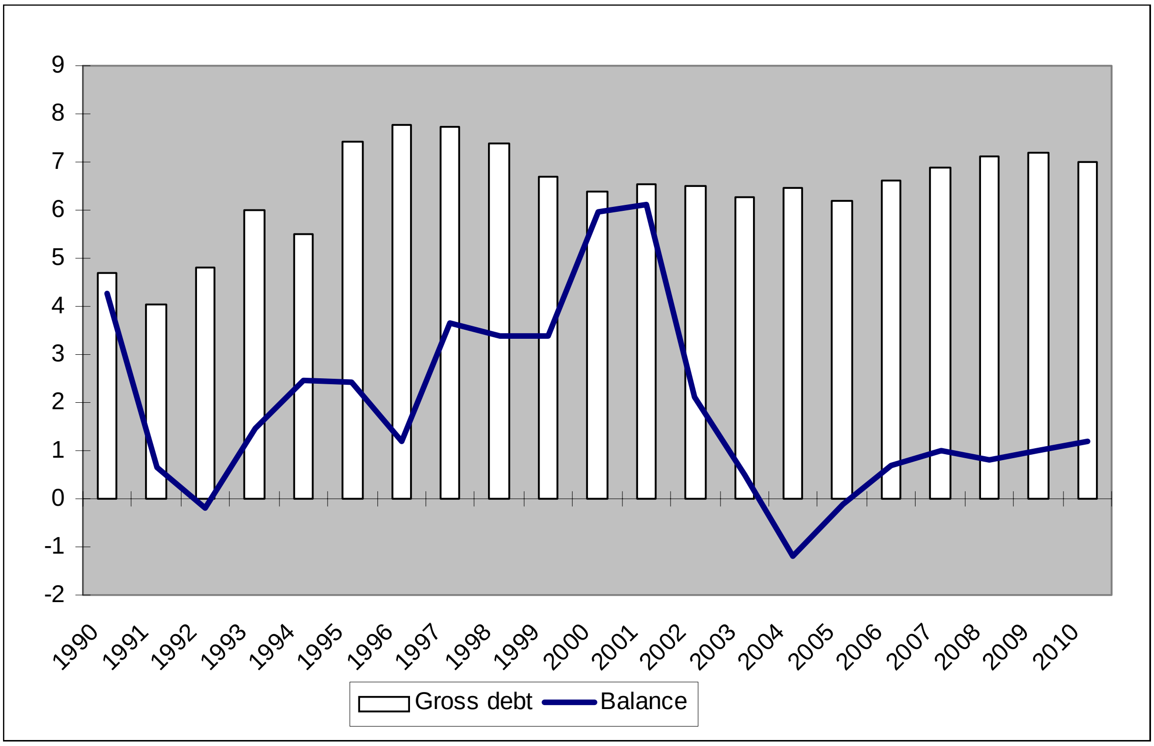
Source:
Stability programme (SP); Commission services' autumn 2007 economic forecasts (COM); Commission services' calculations

The debt was thus not reduced as the surpluses could have allowed and new debt was even issued when needed, e.g. in order to finance specific investment projects. Simultaneously, the social security system could use the totality of its surpluses to build up sizeable reserves [34] (see Section 6 below). Such a strategy perfectly makes sense as long as the debt level is low and if the interest paid on it is lower than the return yielded by the accumulated assets.

Figure 7: General government balance and debt 1990 – 2010 (% of GDP)

[33] For instance, the general government debt amounted to 1,331 billion euros at the end of 1999 (6.7% of GDP). Each of the record surpluses of the years 2000 (1,313 billion euros or 6.0% of GDP) and 2001 (1,379 billion euros or 6.1% of GDP) would have been broadly sufficient to reimburse it.

[34] It should be reminded that one third of the resources of the Social Security is made of transfers from the State. A part of the deficit of the central government is thus "attributable" to the Social Security.



Source: Commission services; for the period 2007-2010, 2007 stability programme.

5.2. Long-term debt projections and the sustainability of public finances

This section analyses the long-term sustainability of public finances. It uses long-term projections of age-related expenditures to calculate sustainability gap indicators and make long-term government debt projections so as to assess the sustainability challenge the country concerned is facing.

5.2.1. Sustainability indicators and long-term debt projections

Table 13 shows the evolution of government spending on pensions, healthcare, long-term care for the elderly, education and unemployment benefits according to the EPC's projections and property income received by general government according to an agreed methodology. [35] Non age-related primary expenditure and primary revenue is assumed to remain constant as a share of GDP.

Table 13: Long-term age-related expenditure: main projections

(% of GDP)	2004	2010	2020	2030	2040	2050	Change 2010-50
Total age-related spending	19.5	19.4	21.6	25.0	27.4	27.8	8.2
- Pensions	10.0	9.8	11.9	15.0	17.0	17.4	7.4
- Healthcare	5.1	5.3	5.6	5.9	6.2	6.3	1.2
- Long-term care	0.9	1.0	1.0	1.1	1.3	1.5	0.6
- Education	3.3	3.1	2.8	2.7	2.6	2.4	-0.9
- Unemployment benefits	0.3	0.3	0.3	0.3	0.2	0.2	-0.1
Property income received	1.2	1.2	1.1	0.8	0.6	0.5	-0.7

Source: Economic Policy Committee and Commission services.

[35] See the accompanying "methodological paper" for a description of the property income projections.

As already mentioned in Section 2, the projected increase in age-related spending in Luxembourg is among the highest in the EU. This is particularly due to a rise in pension expenditure by 7.4 percentage points of GDP, considerably more than on average in the EU (2.2 percentage points. of GDP). The increase in health-care expenditure is projected to be 1.2 percentage points of GDP lower than on average in the EU. For long-term care, the projected rise of 0.6 percentage points up to 2050 is slightly below the average in the EU.

Table 14: Sustainability indicators and the required primary balance

	2007 scenario			Programme scenario		
	S1	**S2**	**RPB**	**S1**	**S2**	**RPB**
Value	3.1	8.1	8.5	2.0	7.1	8.5
of which:						
Initial budgetary position (IBP)	-0.5	-0.2	-	-1.5	-1.2	-
Debt requirement in 2050 (DR)	-1.6	-	-	-1.7	-	-
Long-term change in the primary balance (LTC)	5.2	8.3	-	5.2	8.3	-

Source: Commission services.

Based on the long-term budgetary projections, sustainability indicators can be calculated. Table 14 shows the sustainability indicators for the two scenarios; the 2007 scenario assumes that the structural primary balance in 2007 is unchanged for the rest of the programme period and the programme scenario assumes that the programme's budgetary plans are fully attained.

In the "2007 scenario", the sustainability gap (S2) which satisfies the intertemporal budget constraint would be 8.1% of GDP.[36] This is significantly lower than in last year's assessment, following the improvement of the structural primary balance in 2007 (0.9 percentage point of GDP) compared to the structural primary balance in 2006 as measured in the assessment of last year's stability programme (-1.1 %. of GDP).

The initial budgetary position with a structural primary surplus of around 1.0 % of GDP contributes to the reduction of gross debt and the accumulation of financial assets but is not sufficient to compensate for the long-term budgetary impact of ageing, which, according to both sustainability gaps, is among the highest in the EU.

The programme plans a structural primary budgetary consolidation of 1 % of GDP between 2007 and 2010. If achieved, such a consolidation would reduce risks to long-term sustainability of public finances by reducing the S2 sustainability gap to 7.1% of GDP ("programme scenario"). The difference between the initial budgetary position in the '2007 scenario' and the 'programme scenario' illustrates how the full respect of the stability programme targets would contribute to tackling the budgetary challenges raised by the demographic developments.

The required primary balance (RPB) is very large, at almost 7.5% of GDP, significantly larger than the structural primary balance of about 2% of GDP in the last year of the programme period. The large level of the required primary balance also shows that while further budgetary consolidation will help reduce sustainability risks, changes to the pension systems will be necessary at some point to ensure the long-term sustainability of public finances.

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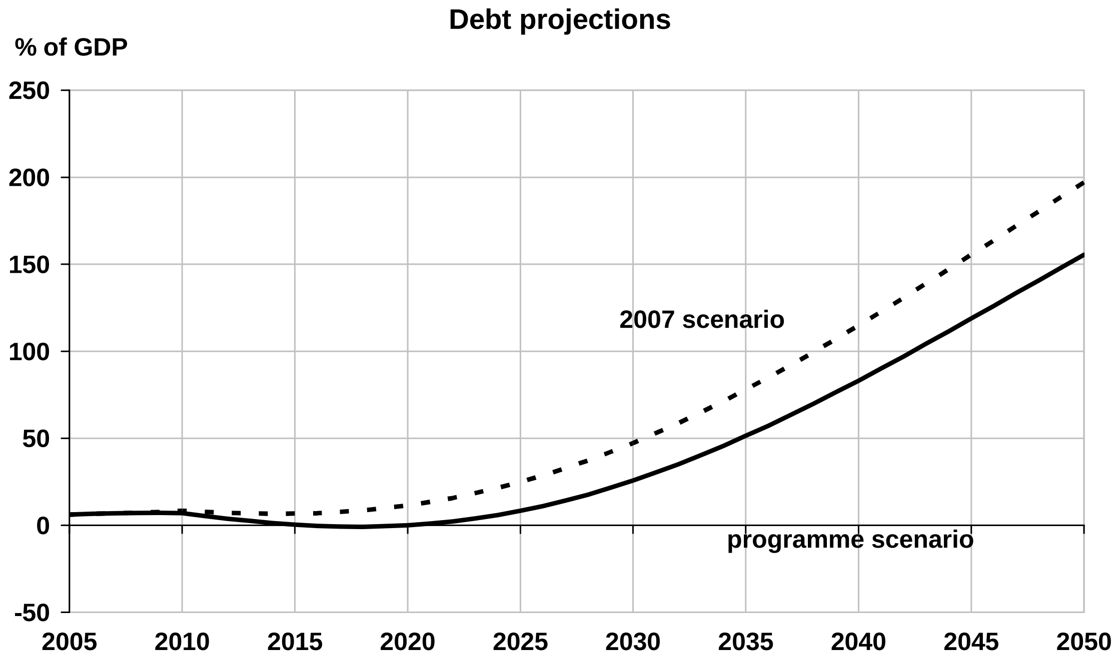
[36] The sustainability gap (S1) that implies reaching the debt ratio of 60% of GDP by 2050 would be 3.1 p.p. of GDP.

The sustainability gap indicators would increase by up to ½ % of GDP if the planned budgetary adjustment was to be postponed by 5 years, highlighting that budgetary savings can be made if action is taken sooner rather than later.

Another way to look at the prospects for long-term public finance sustainability is to project the debt/GDP ratio over the long-term using the same assumptions as for the calculations of the sustainability indicators. The long-term projections for government debt under the two scenarios are shown in Figure 8.

Figure 8: Long-term projections for the government debt ratio



Source: Commission services

In both the "2007 scenario" and the "programme scenario", the debt ratio is projected to increase significantly over the projection period and to breach the 60% threshold by the mid-2030s.[37]

5.2.2. Additional factors

To reach an overall assessment of the sustainability of public finances, other relevant factors are taken into account, which in addition allow to better appreciate where the main risks to sustainability are likely to stem from.

As already mentioned, these factors are essentially the currently very low level of the government debt and the accumulation of substantial assets in the social security schemes which will cover a part of the sizeable increase in age-related expenditure.

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[37] It should be recalled, however, that being a mechanical, partial-equilibrium analysis, the long-term debt projections are bound to show highly accentuated profiles. As a consequence, the projected evolution of debt levels should not be seen as a forecast similar to the Commission services' short-term forecasts, but as an indication of the risks faced by Member States.

5.2.3. Assessment

The long-term budgetary impact of ageing in Luxembourg is among the highest in the EU, influenced notably by a very considerable increase in pension expenditure.

The initial budgetary position, with a low debt ratio, significant assets accumulated in social security and a structural primary surplus, contributes to easing the projected long-term budgetary impact of ageing populations. However, this is not sufficient to cover the sizeable increase in age-related expenditure. Achieving high primary surpluses over the medium term and, as recognized by the authorities, implementing measures aimed at curbing the substantial increase in age-related expenditures would contribute to reducing risks to the sustainability of public finances.

Overall, Luxembourg appears to be at medium risk with regard to the sustainability of its public finances.

6. STRUCTURAL REFORMS, THE QUALITY OF PUBLIC FINANCES AND INSTITUTIONAL FEATURES

As far as the quality of public finance is concerned, the programme concentrates on long-term sustainability, highlighting the existence of large financial assets held by the general government, which amount to 33.9% of GDP in 2007: reserves of the pension system amount to about 27% of GDP and the central government holds assets (budgetary reserves and reserves of the special Funds) for about 5.7% of GDP. Consequently, the net financial position of the general government is widely positive (27.0% in 2007 according to the update). However, as emphasised in Section 2 above, population ageing will constitute in the decades to come an extremely serious challenge for Luxembourg's public finances and no reform of the pension system has been initiated to date in order to enhance their long-term sustainability. The creation of a study group with the social partners has been decided in April 2006 in order to make proposals for the reform of the pension system. The programme indicates that a first meeting of this group has taken place in November 2007.

The programme does not envisage major changes in the composition of government revenues or expenditure aiming at improving the quality of public finance. However, it should be stressed that, with respect to some important aspects, the structure of government revenues and public spending in Luxembourg is comparatively more favourable to growth and employment than in many other Member States. In particular, the taxation of labour income is lower than in the EU-15 on average and much lower than in neighbouring countries: for instance, the tax wedge (expressed as a percentage of total labour costs) for an average worker, single and without children, amounted in 2006 to 36.5% in Luxembourg to be compared with more than 50% in Belgium, Germany and France [38]. In the same vein, public investment is one of the highest in percentage of GDP in the EU (4.0% of GDP in 2006 compared to 2.5% both in the EU-27 and in the EU-15) and government consumption is one of the lowest (15.3% of GDP in 2006 compared to 20.6% in the EU-27 and 20.2% in the EU-15) .

As far as institutional features are concerned, the programme also recalls the reforms in the budgetary procedure introduced in recent years in order to increase the quality of public expenditure and the efficiency of budgetary surveillance. For the first time this

[38] OECD, *Taxing wages*, 2006 and Economic outlook 79, June 2006.

year, the pluri-annual programme of capital expenditure, which used to be presented later, was submitted to Parliament together with the budget. The 2008 budget also presents for the first time the detailed transition from the " working balances" of the different sub-sectors of the government to the general government accounts in ESA 95. Finally, it has been decided to anticipate the redaction of the stability programme in order to allow the Parliament to examine it together with the budget.

7. CONSISTENCY WITH THE NATIONAL REFORM PROGRAMME AND WITH THE BROAD ECONOMIC POLICY GUIDELINES

Box 5: The Commission assessment of the October 2007 implementation report of the national reform programme

On 11 December 2007, the Commission adopted its Strategic Report on the renewed Lisbon strategy for growth and jobs, which includes an assessment of the October 2007 implementation report of Luxembourg national reform programme[39] and is summarised as follows.

Luxembourg's national reform programme identifies as key challenges a stable macro-economic environment, an economy integrated into the European and international context, an attractive economic environment, adherence to the principles of sustainable development, greater prominence given to older workers and a high-quality education and training system.

The Commission's assessment is that Luxemburg has made very good progress in implementing its National Reform Programme over the 2005-2007 period.

Against the background of progress made, the Commission recommends that Luxembourg is encouraged to focus on the areas of employment of older workers, reform of its pension systems, improvement of its education system, youth unemployment and attractiveness of the economic environment.

The measures in the stability programme as described in preceding sections are in line with the 2005 NRP and its October 2007 implementation report. More specifically, the implementation report emphasises the public finance adjustment described by the stability programme as well as the need to increase the sustainability of public finance.

The stability programme does not contain a qualitative assessment of the overall impact of the National Reform Programme within the medium term fiscal strategy. It does not provide systematic information on the direct budgetary costs (or savings) associated with the main reforms envisaged in the NRP and the budgetary projections in the programme do not explicitly take into account the public finance implications of the reforms envisaged in the implementation report of the NRP, with the notable exceptions of the projected increase in R&D expenditure and of the new investment projects in rail and road infrastructures. It can not be ruled out, however, that the programme implicitly incorporates in its projections the cost of other projects it does not mention explicitly. Most of the other reforms mentioned in the NRP do not seem to involve important implications on public expenditure in the short run but some of them are likely to lead in a longer perspective to expenditure savings and/or to additional revenues: e.g., the measures taken to complete the internal market, to increase the employment rate of older

[39] Communication from the Commission to the European Council, "Strategic report on the renewed Lisbon strategy for growth and jobs: launching the new cycle (2008-2010)", 11.12.2007, COM(2007)803.

workers, to facilitate the insertion of young people on the labour market, to improve the economic environment or to favour entrepreneurship.

The stability programme and the implementation report of the NRP seem thus to be integrated to some extent.

The tables below provide an overview of whether the strategy and policy measures in the stability programme are consistent with the broad economic policy guidelines in the area of public finances issued in the context of the Lisbon strategy for growth and jobs. The first table makes the assessment against the integrated guidelines for the period 2005-2008, adopted by the Council in July 2005. The second table makes the assessment against the country-specific recommendations and points to watch and the recommendations for the euro area, adopted by the Council in March 2007. The budgetary strategy in the stability programme is partly consistent with the points to watch and the recommendations for the euro area: in particular, no reform of the pension system has been initiated to date in order to enhance the sustainability of public finance.

Table 15: Consistency with the broad economic policy guidelines (integrated guidelines)

Broad economic policy guidelines (integrated guidelines)	Yes	Steps in right direction	No	Not applicable
1. To secure economic stability				
– Member States should respect their medium-term budgetary objectives. As long as this objective has not yet been achieved, they should take all the necessary corrective measures to achieve it[1].	**X**			
– Member States should avoid pro-cyclical fiscal policies[2].	**X**			
– Member States in excessive deficit should take effective action in order to ensure a prompt correction of excessive deficits[3].				**X**
– Member States posting current account deficits that risk being unsustainable should work towards (…), where appropriate, contributing to their correction via fiscal policies.				**X**
2. To safeguard economic and fiscal sustainability In view of the projected costs of ageing populations,				
– Member States should undertake a satisfactory pace of government debt reduction to strengthen public finances.				**X**
– Member States should reform and re-enforce pension, social insurance and health care systems to ensure that they are financially viable, socially adequate and accessible (…)			**X**	
3. To promote a growth- and employment-orientated and efficient allocation of resources				
Member States should, without prejudice to guidelines on economic stability and sustainability, re-direct the composition of public expenditure towards growth-enhancing categories in line with the Lisbon strategy, adapt tax structures to strengthen growth potential, ensure that mechanisms are in place to assess the relationship between public spending and the achievement of policy objectives and ensure the overall coherence of reform packages.		X No measures taken but quality of public finance already comparatively high (e.g. low taxation of labour)		
Notes: [1]As further specified in the Stability and Growth Pact and the code of conduct, i.e. with an annual 0.5% of GDP minimum adjustment in structural terms for euro area and ERM II Member States. [2]As further specified in the Stability and Growth Pact and the code of conduct, i.e. Member States that have already achieved the medium-term objective should avoid pro-cyclical fiscal policies in "good times".				

Broad economic policy guidelines (integrated guidelines)	Yes	Steps in right direction	No	Not applicable
[3]As further specified in the country-specific Council recommendations and decisions under the excessive deficit procedure.				
Source: *Commission services*				

Table 16: Consistency with the broad economic policy guidelines (country-specific recommendations and points to watch)

Broad economic policy guidelines (country-specific recommendations and points to watch)	Yes	Steps in right direction	No	Not applicable
1. Country-specific recommendations				
– None				**X**
2. Points to watch				
– Elaborate a detailed strategy aimed in particular at further reforming the current early retirement and pension systems		**X**		
3. Recommendations for euro area Member States				
– Make use of the favourable cyclical conditions to aim at or pursue ambitious budgetary consolidation towards their medium-term objectives in line with the Stability and Growth Pact, hence striving to achieve an annual structural adjustment of at least 0.5% of GDP as a benchmark				**X** (already in MTO)
– Improve the quality of public finances by reviewing public expenditure and taxation, with the intention to enhance productivity and innovation, thereby contributing to economic growth and fiscal sustainability		X No measures taken but quality of public finance already comparatively high		
Source: *Commission services*				

* * *

Annex 1: Compliance with the code of conduct

This annex provides an assessment of whether the programme respects the requirements of Section II of the code of conduct (guidelines on the format and content), notably as far as (i) the model structure (Annex 1 of the code of conduct); (ii) the formal data provisions (Annex 2 of the code of conduct); and (iii) other information requirements is concerned. [*End of standard text*]

(i) Model structure

The update adheres to the code of conduct as far as its table of contents is concerned. In particular, it follows the model structure in Annex 1 of the code of conduct.

(ii) Data requirements

The update broadly adheres to the code of conduct as far as data requirements are concerned with, however, the exception of some gaps in the standard tables in Annex 2 of the code of conduct.

As far as compulsory data are concerned,

- In Table 1d. Sectoral balances, the net lending to the rest of the world is missing. Balance of payments statistics only cover current transactions in Luxembourg.

- In Table 8. Basic assumptions, the item “World import volumes, excluding EU” is missing for the whole period.

As far as optional data are concerned,

- In Table 1d. Sectoral balances, all data are missing with the exception of the balance of current transactions and the general government balance. There are no sectoral accounts yet in Luxembourg, except for the general government.

- In Table 3. General government expenditure by function, the year X+3 (2010) is missing with the exception of total expenditure (line 11).

- In Table 4. General government debt developments, lines 6 (liquid financial assets) and 7 (net financial debt) are given for 2006 and 2007 but not for 2008, 2009 and 2010.

- In Table 7. Long-term sustainability of public finances, the item “Other age-related expenditures” is missing ; the items “Total revenue” and components “property income” and “from pensions contributions (or social contributions if appropriate)” are given for 2004 and 2010 but not for 2015 to 2050.

None of this gaps (including in the compulsory data) really complicates the assessment of the programme

The tables on the following pages show the data presented in the October 2007 update of the stability programme, following the structure of the tables in Annex 2 of the code of conduct. Compulsory data are in bold, missing data are indicated with grey-shading.

(iii) Other information requirements

The table below provides a summary assessment of the adherence to the other information requirements in the code of conduct.

The SCP…	Yes	No	Comments
a. Involvement of parliament			
… mentions status vis-à-vis national parliament.	**X**		
… indicates whether Council opinion on previous programme has been presented to national parliament.	**X**		
b. Economic outlook			

The SCP…	Yes	No	Comments
… (for euro area and ERM II Member States) uses "common external assumptions" on main extra-EU variables.		**X**	Most divergences are minor
… explains significant divergences with Commission services' forecasts[1].		**X**	
… bear out possible upside/downside risks to economic outlook.			
… analyses outlook for sectoral balances and, especially for countries with high external deficit, external balance.		**X**	No sectoral balances in national account except government and current account. Large external current surplus.
c. Budgetary strategy			
… presents budgetary targets for general government balance in relation to MTO and projected path for debt ratio.	**X**		
… (in case new government has taken office) shows continuity with respect to budgetary targets endorsed by Council.			Not applicable (same government)
… (when applicable) explains reasons for deviations from previous targets and, in case of substantial deviations, whether measures are taken to rectify situation (+ provides information on them).	**X**		No measures envisaged (outcomes are much better than targets).
… backs budgetary targets by indication of broad measures necessary to achieve them and analyses their quantitative effects on balance.			Not applicable (no need of additional measures to achieve targets)
… specifies state of implementation of measures.			Not applicable (no additional measures)
d. "Major structural reforms"			
… (if MTO not yet reached or temporary deviation is planned from MTO) includes comprehensive information on economic and budgetary effects of possible 'major structural reforms' over time.			Not applicable (no deviation planned)
… includes quantitative cost-benefit analysis of short-term costs and long-term benefits of reforms.			Not applicable
e. Sensitivity analysis			
… includes comprehensive sensitivity analyses and/or develops alternative scenarios showing impact on balance and debt of: a) changes in main economic assumptions b) different interest rate assumptions c) if common external assumptions are not used, changes in assumptions for main extra-EU variables.	**X**		Only envisages one alternative scenario where financial crisis longer and deeper.
… (in case of "major structural reforms") analyses how changes in assumptions would affect budget and potential growth.			Not applicable
f. Broad economic policy guidelines			
… provides information on consistency with broad economic policy guidelines of budgetary objectives and measures to achieve them.		**X**	
g. Quality of public finances			
… describes measures to improve quality of public finances, both revenue and expenditure sides.		**X**	No measures described but quality of public finance is comparatively high (e.g. low taxation of labour)
h. Long-term sustainability			
… outlines strategies to ensure sustainability.		**X**	
… includes common budgetary projections by the AWG and all necessary additional information (esp. new relevant information).	**X**		
i. Other information (optional)			
… includes information on implementation of existing national budgetary rules and on other institutional features of public finances.	**X**		
Notes: SCP = stability/convergence programme; CP = convergence programme			

The SCP…	Yes	No	Comments
[1]To the extent possible, bearing in mind the typically short time period between the publication of the Commission services' autumn forecast and the submission of the programme. *Source:* *Commission services*			

Annex 1

Table 1a. Macroeconomic prospects

	ESA Code	Year 2006 Level	Year 2006 rate of change	Year 2007 rate of change	Year 2008 rate of change	Year 2009 rate of change	Year 2010 rate of change
1. Real GDP	B1*g	*28*	6.1	6.0	4.5	5.0	4.0
2. Nominal GDP	B1*g	*33.9*	12.7	10.6	7.6	7.3	6.7
Components of real GDP							
3. Private consumption expenditure	P.3	*10.7*	2.1	1.8	2.4	3.0	2.1
4. Government consumption expenditure	P.3	*4.2*	2.1	2.2	3.8	2.1	2.9
5. Gross fixed capital formation	P.51	*5.8*	3.1	9.6	6.6	4.5	2.9
6. Changes in inventories and net acquisition of valuables (% of GDP)	P.52 + P.53	*0.2*	0.6	-0.5	-0.2	-0.1	-0.1
7. Exports of goods and services	P.6	*47.2*	9.6	10.3	6.9	8.2	7.8
8. Imports of goods and services	P.7	*40.1*	7.2	9.3	7.2	8.0	7.7
Contributions to real GDP growth							
9. Final domestic demand		-	1.8	3.1	2.9	2.4	1.8
10. Changes in inventories and net acquisition of valuables	P.52 + P.53	-	-1.1	-1.0	0.3	0.1	0.1
11. External balance of goods and services	B.11	-	5.5	4.0	1.3	2.5	2.1

Table 1b. Price developments

	ESA Code	Year 2006 Level	Year 2006 rate of change	Year 2007 rate of change	Year 2008 rate of change	Year 2009 rate of change	Year 2010 rate of change
1. GDP deflator		*n.a.*	6.2	4.3	3.0	2.2	2.6
2. Private consumption deflator		*n.a.*	2.9	2.2	2.3	2.2	2.2
3. HICP[1]		*n.a.*	3.0	2.3	2.0	2.1	2.1
4. Public consumption deflator		*n.a.*	1.8	4.3	3.9	4.3	3.4
5. Investment deflator		*n.a.*	0.5	-0.3	1.7	1.7	1.7
6. Export price deflator (goods and services)		*n.a.*	9.4	6.2	4.1	4.9	4.8
7. Import price deflator (goods and services)		*n.a.*	7.9	7.0	3.9	5.7	5.1

[1] Optional for stability programmes.

Table 1c. Labour market developments

	ESA Code	Year 2006	Year 2006	Year 2007	Year 2008	Year 2009	Year 2010
		Level	rate of change	rate of change	rate of change	rate of change	rate of change
1. Employment, persons[1]		*319.1*	3.7	4.1	3.9	3.7	3.6
2. Employment, hours worked[2]		*n.a.*	2.9	4.8	3.7	3.6	3.4
3. Unemployment rate (%)[3]		*n.a.*	4.9	4.9	4.7	4.6	4.6
4. Labour productivity, persons[4]		*n.a.*	2.3	1.8	0.5	1.2	0.4
5. Labour productivity, hours worked[5]		*n.a.*	3.2	1.2	0.7	1.4	0.6
6. Compensation of employees	D.1	*15.2*	7.9	8.7	7.7	8.0	7.3
7. Compensation per employee		*51.1*	4.5	4.1	3.5	3.9	3.4

[1]Occupied population, domestic concept national accounts definition.

[2]National accounts definition.

[3]Harmonised definition, Eurostat; levels.

[4]Real GDP per person employed.

[5]Real GDP per hour worked.

Table 1d. Sectoral balances

% of GDP	ESA Code	Year 2006	Year 2007	Year 2008	Year 2009	Year 2010
1. Net lending/borrowing vis-à-vis the rest of the world	B.9	n.a.	n.a.	n.a.	n.a.	n.a.
of which : - Balance on goods and services		29.7	29.7	30.7	31.7	33.1
- Balance of primary incomes and transfers		n.a.	n.a.	n.a.	n.a.	n.a.
- Capital account		n.a.	n.a.	n.a.	n.a.	n.a.
2. Net lending/borrowing of the private sector	B.9	n.a.	n.a.	n.a.	n.a.	n.a.
3. Net lending/borrowing of general government	EDP B.9	0.7	1.0	0.8	1.0	1.2
4. Statistical discrepancy		n.a.	optional	optional	optional	optional

Table 2. General government budgetary prospects

	ESA Code	Year 2006 Level	Year 2006 % of GDP	Year 2007 % of GDP	Year 2008 % of GDP	Year 2009 % of GDP	Year 2010 % of GDP
Net lending (EDP B.9) by sub-sector							
1. General government	S.13	*233.5*	0.7	1.0	0.8	1.0	1.2
2. Central government	S.1311	*-304.6*	-0.9	-0.9	-1.4	-1.4	-1.4
3. State government	S.1312	*n.a.*	n.a.	n.a.	n.a.	n.a.	n.a.
4. Local government	S.1313	*-66.4*	-0.2	-0.1	-0.1	-0.1	0.0
5. Social security funds	S.1314	*604.5*	1.8	2.0	2.4	2.5	2.6
General government (S13)							
6. Total revenue	TR	*13434.6*	39.7	38.5	37.8	37.9	37.8
7. Total expenditure	TE[1]	*13201.1*	39.0	37.5	36.9	36.9	36.6
8. Net lending/borrowing	EDP B.9	*233.6*	0.7	1.0	0.9	1.0	1.2
9. Interest expenditure	EDP D.41	*56.9*	0.2	0.2	0.2	0.3	0.3
10. Primary balance[2]		*290.4*	0.9	1.2	1.1	1.2	1.5
11. One-off and other temporary measures[3]		*115*	0.3	0.0	0.0	0.0	0.0
Selected components of revenue							
12. Total taxes (12=12a+12b+12c)		*8574*	25.3	24.4	23.6	23.6	23.5
12a. Taxes on production and imports	D.2	*4157.6*	*12.3*	*11.7*	*11.2*	11.2	11.2
12b. Current taxes on income, wealth, etc	D.5	*4416.3*	*13.0*	*12.7*	*12.4*	12.4	12.3
12c. Capital taxes	D.91	*n.a.*	*n.a.*	*n.a.*	*n.a.*	optional	optional
13. Social contributions	D.61	*3648.4*	10.8	10.7	10.6	10.6	10.6
14. Property income	D.4	*475.2*	1.4	1.4	1.5	1.6	1.6
15. Other[4]		*737*	2.2	2.1	2.0	2.1	2.1
16=6. Total revenue	TR	*13434.6*	39.7	38.5	37.8	37.9	37.8
p.m.: Tax burden (D.2+D.5+D.61+D.91-D.995)[5]		*n.a.*	36.1	35.0	34.2	34.2	34.1
Selected components of expenditure							
17. Compensation of employees + intermediate consumption	D.1+P.2	*3546.2*	10.5	10.2	10.0	9.8	9.8
17a. Compensation of employees	D.1	*2500.5*	7.4	7.1	7.1	7.0	6.9
17b. Intermediate consumption	P.2	*1045.7*	3.1	3.0	2.9	2.8	2.9
18. Social payments (18=18a+18b)		*6197.8*	*18.3*	*17.3*	*17.1*	*17.1*	*16.9*
18a. Social transfers in kind supplied via market producers	D.6311, D.63121, D.63131	*1593.2*	*4.7*	*4.5*	*4.8*	*4.8*	*4.9*
18b. Social transfers other than in kind	D.62	*4604.5*	*13.6*	*12.8*	*12.4*	*12.3*	*12.0*
19=9. Interest expenditure	EDP D.41	*56.9*	0.2	0.2	0.2	0.3	0.3
20. Subsidies	D.3	*518.1*	1.5	1.5	1.4	1.4	1.4
21. Gross fixed capital formation	P.51	*1348.4*	4.0	4.0	3.9	4.3	4.3
22. Other[6]		*1533.8*	4.5	4.4	4.3	4.1	4.0
23=7. Total expenditure	TE[1]	*13201.1*	39.0	37.5	36.9	36.9	36.6
p.m.: Government consumption (nominal)	P.3	*5193.9*	15.3	14.7	14.3	14.2	14.0

[1]Adjusted for the net flow of swap-related flows, so that TR-TE=EDP B.9.

[2]The primary balance is calculated as (EDP B.9, item 8) plus (EDP D.41, item 9).

[3]A plus sign means deficit-reducing one-off measures.

[4] P.11+P.12+P.131+D.39+D.7+D.9 (other than D.91).

[5]Including those collected by the EU and including an adjustment for uncollected taxes and social contributions (D.995), if appropriate.

[6] D.29+D4 (other than D.41)+ D.5+D.7+D.9+P.52+P.53+K.2+D.8.

Table 3. General government expenditure by function

% of GDP	COFOG Code	**Year 2005**	**Year 2010**
1. General public services	1	4.6	n.a.
2. Defence	2	0.2	n.a.
3. Public order and safety	3	1.0	n.a.
4. Economic affairs	4	4.3	n.a.
5. Environmental protection	5	1.1	n.a.
6. Housing and community amenities	6	0.8	n.a.
7. Health	7	5.3	n.a.
8. Recreation, culture and religion	8	2.2	n.a.
9. Education	9	4.9	n.a.
10. Social protection	10	17.4	n.a.
11. Total expenditure (=item 7=23 in Table 2)	TE[1]	41.8	36.6

[1]Adjusted for the net flow of swap-related flows, so that TR-TE=EDP B.9.

Table 4. General government debt developments

% of GDP	ESA Code	**Year 2006**	**Year 2007**	**Year 2008**	**Year 2009**	**Year 2010**
1. Gross debt[1]		6.6	6.9	7.1	7.2	7.0
2. Change in gross debt ratio		0.4	0.2	0.2	0.1	-0.2
Contributions to changes in gross debt						
3. Primary balance[2]		0.9	1.2	1.1	1.2	1.5
4. Interest expenditure[3]	EDP D.41	0.2	0.2	0.2	0.3	0.3
5. Stock-flow adjustment		1.8	1.9	1.6	1.5	1.4
of which:						
- Differences between cash and accruals[4]		n.a.	n.a.	n.a.	n.a.	n.a.
- Net accumulation of financial assets[5]		n.a.	n.a.	n.a.	n.a.	n.a.
of which:						
- privatisation proceeds		n.a.	n.a.	n.a.	n.a.	n.a.
- Valuation effects and other[6]		n.a.	n.a.	n.a.	n.a.	n.a.
p.m.: Implicit interest rate on debt[7]		3.0	3.5	3.4	3.9	4.3
Other relevant variables						
6. Liquid financial assets[8]		34.4	33.9	n.a.	n.a.	n.a.
7. Net financial debt (7=1-6)		-27.8	-27.0	n.a.	n.a.	n.a.

[1]As defined in Regulation 3605/93 (not an ESA concept).

[2]Cf. item 10 in Table 2.

[3]Cf. item 9 in Table 2.

[4]The differences concerning interest expenditure, other expenditure and revenue could be distinguished when relevant.

[5]Liquid assets, assets on third countries, government controlled enterprises and the difference between quoted and non-quoted assets could be distinguished when relevant.

[6]Changes due to exchange rate movements, and operation in secondary market could be distinguished when relevant.

[7]Proxied by interest expenditure divided by the debt level of the previous year.

[8]AF1, AF2, AF3 (consolidated at market value), AF5 (if quoted in stock exchange; including mutual fund shares).

Table 5. Cyclical developments

% of GDP	ESA Code	2006	2007	2008	2009	2010
1. Real GDP growth (%)		6.1	6.0	4.5	5.0	4.0
2. Net lending of general government	EDP B.9	0.7	1.0	0.8	1.0	1.2
3. Interest expenditure	EDP D.41	0.2	0.2	0.2	0.3	0.3
4. One-off and other temporary measures[1]		0.3	0.0	0.0	0.0	0.0
5. Potential GDP growth (%)		4.7	4.6	4.6	4.6	4.6
contributions:						
- labour		n.a.	n.a.	n.a.	n.a.	n.a.
- capital		n.a.	n.a.	n.a.	n.a.	n.a.
- total factor productivity		n.a.	n.a.	n.a.	n.a.	n.a.
6. Output gap		-0.9	0.4	0.3	0.7	0.2
7. Cyclical budgetary component		-0.4	0.2	0.1	0.3	0.1
8. Cyclically-adjusted balance (2 - 7)		1.1	0.8	0.7	0.6	1.1
9. Cyclically-adjusted primary balance (8 + 3)		1.3	1.0	0.9	0.9	1.4
10. Structural balance (8 - 4)		0.8	0.8	0.7	0.6	1.1

[1]A plus sign means deficit-reducing one-off measures.

Table 6. Divergence from previous update

	ESA Code	Year 2006	Year 2007	Year 2008	Year 2009	Year 2010
Real GDP growth (%)						
Previous update		5.5	4.0	5.0	4.0	n.a.
Current update		6.1	6.0	4.5	5.0	n.a.
Difference		0.6	2.0	-0.5	1.0	n.a.
General government net lending (% of GDP)	EDP B.9					
Previous update		-1.5	-0.9	-0.4	0.1	n.a.
Current update		0.7	1.0	0.8	1.0	n.a.
Difference		2.2	1.9	1.2	0.9	n.a.
General government gross debt (% of GDP)						
Previous update		7.5	8.2	8.5	8.5	n.a.
Current update		6.6	6.9	7.1	7.2	n.a.
Difference		-0.9	-1.3	-1.4	-1.3	n.a.

Table 7. Long-term sustainability of public finances

% of GDP	2000	2005	2010	2020	2030	2050
Total expenditure	n.a.	42.5	36.6	n.a.	n.a.	n.a.
Of which: age-related expenditures	n.a.	19.5	19.4	21.6	25.0	27.8
Pension expenditure	n.a.	10.0	9.8	11.9	15.0	17.4
Social security pension	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Old-age and early pensions	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Other pensions (disability, survivors)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Occupational pensions (if in general government)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Health care	n.a.	5.1	5.3	5.6	5.9	6.3
Long-term care *(this was earlier included in the health care)*	n.a.	0.9	1.0	1.0	1.1	1.5
Education expenditure	n.a.	3.3	3.1	2.8	2.7	2.4
Other age-related expenditures	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Interest expenditure	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total revenue	n.a.	41.7	37.8	n.a.	n.a.	n.a.
Of which: property income	n.a.	1.1	1.6	n.a.	n.a.	n.a.
Of which : from pensions contributions (or social contributions if appropriate)	n.a.	11.4	10.6	n.a.	n.a.	n.a.
Pension reserve fund assets	n.a.	23.6	31.7	39.2	17.9	0.0
Of which : consolidated public pension fund assets (assets other than government liabilities)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Assumptions						
Labour productivity growth	n.a.	1.1	2.3	2.0	1.7	1.7
Real GDP growth	n.a.	3.9	4.0	2.7	3.0	3.0
Participation rate males (aged 20-64)	n.a.	75.7	75.6	75.0	74.3	74.8
Participation rates females (aged 20-64)	n.a.	55.1	58.6	60.8	61.3	61.7
Total participation rates (aged 20-64)	n.a.	65.5	67.2	67.9	67.9	68.3
Unemployment rate	n.a.	3.8	4.2	4.2	4.2	4.2
Population aged 65+ over total population	n.a.	21.0	21.6	24.7	31.6	36.1

Table 8. Basic assumptions

	Year 2006	Year 2007	Year 2008	Year 2009	Year 2010
Short-term interest rate[1] (annual average)	3.1	4.3	4.2	4.1	4.0
Long-term interest rate (annual average)	3.9	4.2	4.2	4.3	4.4
USD/€ exchange rate (annual average) (euro area and ERM II countries)	1.25	1.35	1.38	1.38	1.38
Nominal effective exchange rate	-0.1	-0.5	-0.2	0.0	0.0
(for countries not in euro area or ERM II) exchange rate vis-à-vis the € (annual average)	n.a.	n.a.	n.a.	n.a.	n.a.
World excluding EU, GDP growth	n.a.	n.a.	n.a.	n.a.	n.a.
EU GDP growth	2.7	2.7	2.0	2.2	2.1
Growth of relevant foreign markets	7.6	7.0	5.4	6.2	5.0
World import volumes, excluding EU	n.a.	n.a.	n.a.	n.a.	n.a.
Oil prices (Brent, USD/barrel)	65.2	69.5	76.7	76.7	76.7

[1]If necessary, purely technical assumptions.

Annex 2: Key indicators of past economic performance

This annex displays key economic indicators that summarise the past economic performance of Luxembourg. To put the country's performance into perspective, right-hand side of the table displays the same set of indicators for the euro area

Table 17: Economic Indicators

	Luxembourg						Euro area					
	Averages			2005	2006	2007	Averages			2005	2006	2007
	'96 - '05	'96 - '00	'01 - '05				'96 - '05	'96 - '00	'01 - '05			
Economic activity												
Real GDP (% change)	4.9	6.2	3.7	5.0	6.1	5.2	2.1	2.7	1.4	1.5	2.8	2.6
Contributions to real GDP growth:												
Domestic demand	*3.8*	*4.8*	*2.9*	*3.4*	*0.6*	*3.5*	*2.0*	*2.7*	*1.3*	*1.7*	*2.6*	*2.4*
Net exports	*1.1*	*1.4*	*0.9*	*1.6*	*5.5*	*1.7*	*0.1*	*0.0*	*0.1*	*-0.1*	*0.2*	*0.2*
Real GDP per capita (PPS; EU27 = 100)	228	219	238	244	248	251	113	114	112	110	110	109
Real GDP per capita (% change)	3.6	4.7	2.5	3.4	4.4	4.2	1.6	2.5	0.8	0.9	2.3	2.2
Prices, costs and labour market												
HICP inflation (%)	2.2	1.7	2.8	3.8	3.0	2.5	1.9	1.5	2.2	2.2	2.2	2.0
Labour productivity (% change)	1.3	1.9	0.6	2.1	2.3	1.2	1.2	1.5	0.8	1.0	1.4	1.1
Real unit labour costs (% change)	-0.2	-0.6	0.2	-2.4	-3.8	-0.3	-0.5	-0.6	-0.5	-0.8	-0.9	-0.8
Employment (% change)	3.6	4.1	3.1	2.9	3.7	4.0	1.2	1.5	0.9	0.9	1.5	1.6
Unemployment rate (% of labour force)	3.1	2.6	3.6	4.5	4.7	4.7	9.1	9.8	8.5	8.9	8.3	7.3
Competitiveness and external position												
Real effective exchange rate (% change)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-1.3	-5.5	2.8	-2.6	-0.6	0.6
Export performance (% change)[1]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Net lending/borrowing vis-à-vis the rest of the world (% of GDP)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.8	0.9	0.7	0.3	0.0	0.1
Public finances												
General government balance (% of GDP)	2.5	3.5	1.5	-0.1	0.7	1.2	-2.3	-2.1	-2.5	-2.5	-1.5	-0.8
General government gross debt (% of GDP)	6.8	7.2	6.4	6.2	6.6	6.6	70.6	72.2	69.0	70.3	68.6	66.6
Structural balance (% of GDP)[2]	n.a.	n.a.	0.6	0.6	0.8	1.2	n.a.	n.a.	-2.6	-2.1	-1.1	-0.7
Financial indicators												
Short-term real interest rate (%)[3]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1.3	2.5	0.6	0.3	1.2	2.0
Long-term real interest rate (%)[3]	2.7	3.8	1.6	-0.8	-2.2	1.0	n.a.	n.a.	1.9	1.5	1.9	2.1

Notes:

[1]Market performance of exports of goods and services on export-weighted imports of goods and services of 35 industrial markets.

[2]Cyclically-adjusted balance net of one-off and other temporary measures; available since 2003.

[3]Using GDP deflator.

Source :
Commission services