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**Assessment of the 2012 national reform programme and stability programme for
LUXEMBOURG**

Accompanying the document

Recommendation for a

COUNCIL RECOMMENDATION

**on Luxembourg's 2012 national reform programme and delivering a Council Opinion
on Luxembourg's updated stability programme for 2012-2015**

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EXECUTIVE SUMMARY

Luxembourg's growth expectations are modest, with an average GDP growth slightly above 1% in 2012, followed by an acceleration to around 2% in 2013. Job creation is slowing down since the end of 2011. As a result, the unemployment rate started rising again, and is expected to reach a historic high of around 6% in 2013.

Luxembourg has announced a fiscal consolidation package of around 1.2% of GDP for 2013. The government also proposed a pension reform which is currently debated in the parliament. The application of the automatic indexation of wages has been limited between 2012 and 2014 and steps were taken to tackle the relatively high youth unemployment.

The commonly agreed indicator for long-term fiscal sustainability (S2) is among the highest in the EU, posing a pressing challenge which is largely due to the expected increase in pension expenditure. In order to remain competitive, unit labour costs will need to evolve more in line with developments in productivity and competitiveness. The heavy dependence of the economy and public finances on the financial sector is a structural risk for the country. The youth unemployment rate is relatively high in Luxembourg, when comparing to the low overall unemployment rate. Luxembourg's education system faces specific challenges due to the multilingualism demands of the system, the high proportion of immigrants in the population, and the high demand for skilled workers on the labour market, which need to be tackled. Finally, Luxembourg does not appear to be on track to reach its Europe 2020 target for non-ETS greenhouse gas emission reduction.

1. INTRODUCTION

Procedural aspects

In June 2011 the Commission proposed four country specific recommendations (CSRs) for economic and structural reform policies for Luxembourg. In July 2011 the Council adopted these recommendations which concerned public finances, the pension system, wage setting and the labour market.

In November 2011 the Commission published its Annual Growth Survey for 2012 (AGS 2012) in which it set out its proposals for building the necessary common understanding of the priorities for action at national and EU level in 2012. It focused on five priorities — growth-friendly fiscal consolidation, restoring normal lending to the economy, promoting growth and competitiveness, tackling unemployment and social consequences of the crisis, and modernising public administration — and encouraged Member States to implement them in the 2012 European Semester.

Against this background, Luxembourg presented updates of its national reform programme and stability programme in April 2012. These programmes give details of progress made since July 2011 and plans going forward. This Staff Working Document assesses the state of implementation of the 2011 CSRs and Euro Plus Pact commitments, as well as the AGS 2012 in Luxembourg, identifies current policy challenges and, in this light, examines the country's latest policy plans.

Overall assessment

Overall, Luxembourg has implemented the Council recommendations partially and stuck to its commitments under the Euro Plus Pact. Luxembourg is performing quite well in terms of AGS 2012 priorities.

The main challenges identified in July 2011 remain broadly valid. While the 2011 public deficit was fairly small, public finances are expected to worsen during the coming years and Luxembourg is expected to move away from its medium-term objective (MTO). Moreover, the commonly agreed indicator for long-term fiscal sustainability (S2) is among the highest in the EU, posing a pressing challenge which is largely due to the expected increase in pension expenditure.. The reform proposal from the government is rather limited in scope and therefore does not yet seem to guarantee the long-term sustainability of the system. Luxembourg has a very good economic track record, but in order to remain competitive, it needs to ensure that unit labour costs evolve in line with productivity developments. The temporary limit to the application of the automatic wage indexation decided by the government could moderate wage growth, but does not guarantee an evolution in line with productivity and wage developments in neighbouring countries. Progress has been made in combating youth unemployment, but there is still the need for a coherent strategy, stronger collaboration with municipalities, more efficient use of employment services and more investment in training and education. Unemployment seems to have an increasingly structural character requiring active labour market policies. Regarding Europe 2020 objectives on energy and climate, Luxembourg does not appear to be on track to reach its targets for greenhouse gas emission reduction. Low fuel taxes induce 'fuel tourism' and negative externalities in terms of pollution and congestion.

The policy plans submitted by Luxembourg respond to last year's recommendations, but in some areas they lack the ambition to address the challenges in a comprehensive and permanent way.

2. ECONOMIC DEVELOPMENTS AND CHALLENGES

2.1. Recent economic developments and outlook

Recent economic developments

In contrast to its neighbours, the Luxembourg economy is not yet at its pre-crisis level. GDP growth for the years 2008-2010 has been revised substantially downwards due to lower exports of (financial) services, demonstrating that the crisis has hit Luxembourg more severely than previously thought. In 2011 the Luxembourg economy grew by 1.6% according to the first estimate. The turbulence on financial markets affected the performance of the important financial sector, which faced a decline in added value by more than 5% in 2011 while net profits fell by almost 25% due to value adjustments following the sovereign debt crisis. Manufacturing recovered quickly in 2010 after the 2009 global crisis, but has again been facing declining output since the second quarter of 2011. The relapse was particularly marked towards the end of the year, when a number of important iron and steel plants closed partially. Other sectors on the other hand showed resilience during a turbulent year end.

Private and public consumption increased moderately in 2011, while investment has been the most dynamic component of GDP. **Net exports contribute negatively to growth since 2008.** This was again the case in 2011, not surprisingly given the poor performance of financial services and manufacturing, two important export sectors.

Job creation was dynamic over the first half of 2011, but slowed down afterwards.

The unemployment rate declined to 5.5% at the beginning of 2011, after peaking at around 5.9% at the end of 2010 (up from less than 4% at the beginning of 2008). Since summer 2011 it has been rising again, resulting in a historic high of 6%. The revisions of the national accounts data also show that unit labour costs have increased even faster than previously thought, which can be explained by labour hoarding during the crisis. Nominal unit labour costs increased by almost 15% between 2008 and 2011, which is more than two and a half times faster than in the neighbouring countries.

Economic outlook

Growth expectations for 2012 are modest, given the weak economic performance of the euro area, Luxembourg's principal export market. Increasing confidence should support a gradual return of growth from the second quarter on, resulting in average growth of around 1% in 2012. Again, growth is exclusively supported by domestic demand while net exports are still expected to contribute negatively, although their drag on growth is expected to diminish. Financial services should start to benefit from the progress made in tackling the sovereign debt crisis, but the sector has yet to regain its pre-crisis dynamism. In 2013 GDP is expected to grow by around 2%, well below the average rates recorded before the economic and financial crisis. The main contribution in 2013 will again come from domestic demand. The modest contribution of manufacturing and financial services to recent growth and job creation might provide food for thought about possible new sources of growth. Given its high labour costs, Luxembourg would benefit from increased intensity of applied research and innovation in pushing the productive sector towards high added value products.

Procedural and governance issues

The national reform programme (NRP) and the stability programme have been prepared in a coherent way. They have been debated jointly in the national parliament prior to adoption and have been adopted together by the government. The NRP was prepared through in-depth consultations with the social partners, local actors and civil

society in order to increase ownership of the Europe 2020 strategy and the Luxembourg 2020 strategy at national level. In order to improve the involvement of local actors and in the framework of the European cooperation project '*EU 2020 going local*', an exchange of best practice took place in 2011 with 12 European regions in the partnership for sustainable energy and transport. In order to optimise the coordination of the NRP, the inter-ministerial network Europe 2020 is consulted on a regular basis regarding the implementation of reforms. The Observatory of Competitiveness is in charge of the coordination. In addition, Luxembourg communicates on the Europe 2020 strategy to the wider public through the organisation of public events.

2.2. Challenges

The main policy challenges for Luxembourg have remained broadly unchanged. Public finances improved only slightly in 2011, with a general government deficit of 0.6%. However, this **relatively small overall deficit hides a deficit of 2.4% at the level of the central government**, mitigated by an accumulation of pension reserves in the social security subsector. The medium-term fiscal sustainability challenge in Luxembourg is relatively low, due to the low government debt and a surplus on the structural primary balance. However, prudence is warranted because of a high level of non-reducible, structural expenditure. Moreover, a number of sources of revenue might erode in the future, such as excise duties on cross-border sales of fuel ('fuel tourism'), VAT revenues from e-commerce¹ and corporate income taxes paid by financial institutions. In contrast to the low medium-term risk, **the commonly agreed indicator for long-term fiscal sustainability (S2) is among the highest in the EU**, posing a pressing challenge which is largely due to the expected increase in pension expenditure.² Despite the accumulation of reserves, a substantial reform of the pension scheme is needed to ensure its long-term sustainability.

It is all the more necessary to have a good starting position with respect to this long-term fiscal challenge as the Luxembourg economy is unlikely to be able to grow at the same average pace as it did in the past. The financial sector has been Luxembourg's main growth engine since the early 1980s but to what extent it will be able to keep playing this role in the future is uncertain. Even if financial activities around the world were to remain as buoyant after the crisis as they were before, the question arises whether Luxembourg will be able to preserve and continue to develop the competitive advantages, e.g. in terms of fiscal, legislative and regulatory environment, that have made it an attractive place for this type of activity. **Thus, although the Luxembourg financial sector is relatively healthy, the heavy dependence of the economy and public finances on this industry is a structural risk.** Investment in research and innovation is essential to stimulate future growth and job creation in Luxembourg. The country's competitiveness will depend on prioritising expenditure on education, research and innovation. However, it should also be recognised that the possibilities for diversifying by tapping into other sources of growth are limited in such a small country.

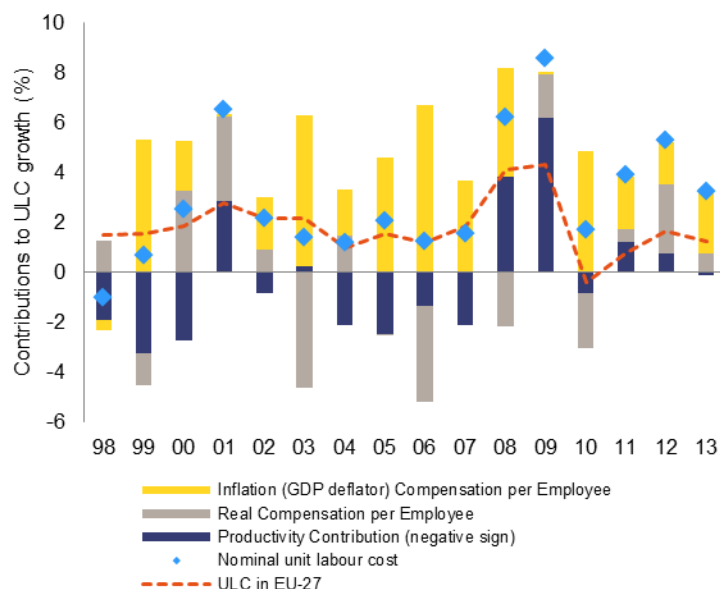
A longstanding challenge for the Luxembourg economy is the loss of cost competitiveness as a result of high wage increases and very low productivity growth (the productivity level is however very high). As mentioned in section 2.1, nominal unit labour costs continue to increase faster in Luxembourg than in neighbouring countries.

¹ Currently around EUR 500 m of annual revenue (1.2% of GDP). The European VAT package foresees that from 2015 on, VAT revenues on e-commerce will be due in the country of residence of the consumer and not in the country of residence of the company. A transitional period is envisaged from 2015 to 2018.

² The current value of the S2 indicator, pointing towards a medium risk regarding long-term fiscal sustainability, does not take into account the proposed pension reform because it has not yet been adopted by the Parliament.

Unit labour costs are increasing in particular in the manufacturing industry. Overall inflation as well as core inflation is systematically higher in Luxembourg than in neighbouring countries or in the euro area. High inflation coupled with rapid growth in real unit labour costs tends to point to an upward cost-price spiral.

Figure 1: Decomposition of changes in Nominal Unit Labour Costs³



While total unemployment is low in Luxembourg, the country is faced with steadily increasing long-term unemployment. **The youth unemployment rate is more than three times the overall unemployment rate**, while in other countries with a similar unemployment rate it is less than twice the overall rate. On the other hand, the youth unemployment ratio (calculated as the share of unemployed in the total population aged between 15 and 24) is very low, pointing to a low proportion of the active population in this age group. The structural component of unemployment has been steadily increasing over the last decade, including in times of significant economic growth with booming employment, which suggests that part of the workforce does not match the needs of the economy. The employment rate for older workers (54-64) is increasing but remains far below the European average (39.3% in 2011 against 47.4% for the EU as a whole). Luxembourg's education system faces specific challenges due to the multilingualism demands of the system,⁴ the high proportion of immigrants in the population (43%), and the high demand for skilled workers on the labour market.

Greenhouse gas emissions, amounting to 19.8 tons per capita in 2010, are still the highest in the EU.⁵ Luxembourg has undertaken to reduce emissions in non-ETS (Emissions Trading System) sectors by 20% by 2020 (compared to 2005) as part of the energy and climate headline targets. According to the latest 2020 projections based on existing measures, however, Luxembourg is expected to increase emissions by 9%

³ The Nominal Unit Labour Cost Index is computed as nominal compensation per employee (Ameco: HWCDW) divided by real gross domestic product per person employed (Ameco: RVGDE). The growth rate of this index may be further split into the contribution of inflation (in this case, the GDP deflator).

⁴ The working language of nursery education (for children aged between 3 and 5) is generally Luxembourgish. Primary education (6-11) is in German, except the French language courses. During the first years of secondary education, most subjects continue to be taught in German. In classical higher secondary education, the lingua franca for all subjects other than language courses becomes French, while German prevails in the vocationally orientated higher secondary education.

⁵ This is partly explained by the fact that fuel sold to non-residents enters into the calculation of emissions in Luxembourg.

compared to 2005, thereby falling short by 29 % (of base-year emissions) relative to the target.⁶

3. ASSESSMENT OF POLICY AGENDA

3.1. Fiscal policy and taxation

Budgetary developments and debt dynamics

The medium-term budgetary strategy outlined in the stability programme consists of a package of consolidation measures of around 1.2% of GDP in order to bring the deficit on a downward path and provide a wider room for manoeuvre in case of negative shocks. This package would lead to an improvement in the structural balance in 2013. However, the programme does not envisage achievement of the medium-term budgetary objective (MTO), a surplus of 0.5% of GDP on the structural balance, within the programme period. Moreover, this MTO cannot be regarded as appropriate under the provisions of the Stability and Growth Pact because, based on current policies and projections, this MTO does not appear to take sufficiently into account the implicit liabilities related to ageing, despite the debt being below the Treaty reference value.

In 2011, the headline deficit stood at 0.6% of GDP, compared to 1.0% envisaged in the 2011 stability programme. This outcome was mainly due to a better-than-expected starting position and some positive revenue surprises. By using these unexpected revenues to reduce the deficit, the government implemented part of last year's recommendation.

For 2012, the programme projects a deficit of 1.5% of GDP, the same as in last year's programme (see Annex III). The negative budgetary impact of the deterioration of macro-economic circumstances compared to last year's projections (0.4% of GDP) is expected to be offset by the positive base effect from 2011. The Commission services' spring forecast expects a slightly larger deficit of 1.8%, due to a faster rise in most expenditure categories. A temporary crisis tax of around 0.2% of GDP introduced in 2011 was abolished in 2012.

According to the programme, the deficit is expected to decrease in 2013 to 1.2% of GDP, supported by measures of around EUR 535 mn (1.2% of GDP). Roughly 2/3 of the impact will be on the expenditure side, mainly on investment expenditure and social transfers (see box 1). The main measure on the revenue side is an increase in the solidarity tax on household income and corporate income. The Commission services' spring forecast could not take into account the available information on this package and therefore expected a deterioration of the deficit to 2.2%.

The figures for 2014 and 2015 in the programme are solely projections under a no-policy-change scenario rather than targets. Under improving macroeconomic conditions, **the deficit is projected to improve to 0.9% in 2014** (against 0.8% in the 2011 stability programme), **before deteriorating substantially in 2015** (to -1.8%). However, this deficit increase is entirely explained by changes in the European legislation on VAT on e-commerce, which from 2015 on will be levied in the country of residence of the consumer instead of the country of residence of the service provider. This would lead to an estimated revenue loss for Luxembourg of 1.2% of GDP. The programme states that if Luxembourg should not have achieved its MTO in 2015, which is indeed the case

⁶ Under a scenario including additional measures (planned, but not yet in place) Luxembourg is projected to increase emissions by 1.8% compared to 2005, thereby still leading to a shortfall by 21.8% relative to the target.

under the programme scenario, the government would take additional measures to put the country on track towards its MTO.

Box 1. Main budgetary measures

Revenue	Expenditure
2013	
Increase in excise duties on tobacco and petrol (0.1% of GDP)	Reduction in operating costs of the administration (-0.1% of GDP)
Increase of solidarity tax on households and companies by 2% (0.2% of GDP)	Reduction of expenditure on investment (-0.3% of GDP)
Introduction of a minimum corporate tax (0.1% of GDP)	Measures to limit growth of public administration wages (-0.1% of GDP)
	Reductions in subsidies (0.0% of GDP)
	Reduction in social benefits in kind (-0.2% of GDP)

Note: The budgetary impact in the table is the impact reported in the programme, i.e. by the national authorities. A positive sign implies that revenue / expenditure increases as a consequence of this measure. The degree of detail reflects the type of information made available in the stability or convergence programme and, where available, of a multiannual budget.

The programme scenario for 2012 and 2013 is very close to the Commission services' spring forecast. The medium-term deficit projections are made under a slightly optimistic growth scenario, with growth rates of 3.3% in 2014 and 4.1% in 2015. This is above the potential growth rate of 1.4% but below average pre-crisis growth rates (4.8% between 2000 and 2007). The main **downside risk** for this growth scenario lies in the export performance of financial services, which would be heavily affected, should further unrest in the euro area hit financial markets. An additional negative shock for the financial sector, which accounts for around a quarter of tax revenues, would heavily impact on the budgetary situation of the state.

With a **structural balance** of around 0.4% of GDP in 2011, Luxembourg broadly reached its **medium-term objective**. However, the **(recalculated) structural balance**⁷ is expected to deteriorate again to -0.2% in 2012, which is not in line with last year's recommendation. After an improvement by 0.3 pp in 2013, the **structural balance** will further deteriorate in 2014 and 2015.

The **growth rate of government expenditure, net of discretionary revenue measures** in 2012 (4.85% according to the programme), will substantially exceed the reference medium-term rate of potential GDP growth (1.76%). In 2013, the growth rate of government expenditure (1.76% according to the programme) will exceed the lower

⁷ Cyclically adjusted balance net of one-off and temporary measures, recalculated by the Commission services on the basis of the information provided in the programme, using the commonly agreed methodology.

reference rate⁸ which ensures an annual structural adjustment towards the MTO by 0.5% of GDP (0.63%). According to the programme, net expenditure growth will remain dynamic in 2014-2015, with growth rates exceeding the 2012-2013 reference rate.

Following an overall assessment of the Member State's budgetary plans, with the structural balance as a reference, including an analysis of expenditure net of discretionary revenue measures, a **significant deviation from the adjustment path towards the MTO is to be expected from 2012 onwards.**

A low primary deficit coupled with a negative 'snowball' effect resulted in a **decrease in the public debt level** in 2011 to around 18% of GDP. However, the debt is expected to rise steadily in the coming years (see Annex IV), because the growth and inflation effect will not be able to offset the financing needs of the central government. The subsector of the social security shows over the whole programme period a structural surplus, which can not be used to finance the central government deficit but which is transferred to the pension reserve fund. At the end of 2011, this reserve fund had accumulated assets equivalent to 27% of GDP, a higher amount than the gross public debt. Since the debt-to-GDP ratio is below the reference rate, the debt reduction benchmark is not applicable. Besides a higher-than-projected deficit, the **main risks for the evolution of public debt** in Luxembourg stem from guarantees granted to the banking sector, which amount to 4.2% of GDP.

Long-term sustainability

The long-term change in age-related expenditure is clearly above the EU average. The initial budgetary position adds to the long-term costs. Under a no-policy-change assumption, debt would increase to 27.1% of GDP by 2020. The country has some time to adjust policies that affect age-related spending. Moreover, the accumulated public assets would reduce sustainability risks. In view of the deterioration of the fiscal position according to the programme update, full implementation of the programme would not be enough to put debt on a downward path by 2020. Given the very high projected increase in age-related expenditure, emphasis should be put on containing long-term public spending trends. Ensuring sufficient primary surpluses over the medium term and reforming the Luxembourg social security system, in particular the pension system so as to curb the projected substantial increase in age-related expenditure, would improve the sustainability of public finances. This challenge, already identified in last year's recommendation, has been acknowledged by the government. **On 20 January 2012, the Luxembourg government adopted a draft law to reform the pension system for both the private and the public sector.**

Box 2: Pension reform in Luxembourg

The basic principles of the current system such as the retirement age of 65 and a possibility for early retirement at 57 or 60 will be maintained. Job holders will be encouraged to work longer on a voluntary basis, with additional pension rights for years worked after the age of 60 or a career of more than 40 years, instead of 55 and 38 years respectively today. The new calculation method will be implemented only gradually over the next 40 years. The automatic adaptation of pension benefits to real wage evolution will be limited should pension expenditure exceed revenues (expected to occur as from 2020). This corrective mechanism would contribute significantly to long-term sustainability and has a bigger impact than the changes in the calculation method for

⁸ Luxembourg reached its MTO in 2011 and as a consequence the standard reference rate is used for 2012. However, in 2012 Luxembourg will deviate from its MTO. Hence, a lower reference rate which ensures an annual structural adjustment towards the MTO is used for 2013.

pension benefits. Currently the contribution rate amounts to 24% of the wage mass (up to a certain ceiling), with employers, employees and the state each contributing one third. The government recognises that under the assumptions used,⁹ even after the implementation of the reform this contribution rate will not be sufficient, and has alluded to the need for a gradual increase to 31% in the long run in order to guarantee a balanced regime. This increase is not mentioned in the reform proposal, given that it is fixed separately for every coverage period, currently a period of seven years (after the reform, the contribution rate will be revised every 10 instead of every seven years in order to have a somewhat longer-term view), in such a way that the system is balanced. Finally, the reform makes it financially more attractive to combine an early retirement pension with a professional activity.

After the gradual introduction of a new calculation method by 2052 (see box), job holders would have to work on average three years longer to receive the same pension benefits. This is only a modest extension of working life, compared to the very long transitional phase. Moreover, **the possibilities for early retirement are left broadly unchanged while replacement rates remain very high, making it not very attractive to work longer than the minimum required.** Hence, a significant increase in the effective retirement age on top of the ‘natural’ increase due to the changing economic structure is not expected.

In order to guarantee the financial viability of the pension system after this reform, a substantial increase in the contribution rate after 2020 would be necessary, in addition to the inbuilt moderation of the adaptation of pensions to the standard of living.¹⁰ This would entail a significant increase in the burden on labour supported by the future active population and consequently a loss of cost competitiveness. Given that replacement rates are currently very high (87% compared to between 42% and 49% in neighbouring countries), even for high wage earners, which has only been possible thanks to the boom in employment over the last 30 years, **some of the above-mentioned interventions (see box) on the level of pension benefits, such as a limitation of pension adjustments to real wage increases, could have been introduced already in the context of the current reform** in order to increase pension reserves and ease the burden for future generations.

Furthermore, the reform fails to seize the opportunity to give a more prominent role to the highly underdeveloped second and third pension tiers. It would have been a good idea, for instance, to widen the well-accepted but unfortunately only inconsistently implemented second tier to all employment sectors, including public services and the self-employed. Such systemic change could have gradually supplemented the public pension benefits at their outer edge with a newly defined second pension pillar.

⁹ The assumptions of average GDP growth of 3% and employment growth of 1.5% underlying the government's projections may prove to be overly optimistic. In the past, the Luxembourg economy recorded very high growth rates (GDP expanded yearly by 3.7% between 1992 and 2010, while employment increased by 3.2% annually), driven by the expansion of the financial sector. However, as mentioned above, it is unlikely that the financial sector will be able to play the same driving role in the future and thus new sources of growth will have to be found to achieve a 3% average growth rate. Moreover the authorities assume that a further increase in the share of non-residents in the active population will support part of the burden of the ageing population. Although this is plausible in the near future, it looks optimistic over a longer-term horizon.

¹⁰ This limitation of the adaptation of pensions to the standard of living will not affect the calculation of the initial pension level at the time of retirement, but only the subsequent adaptation to wage evolution during the pension period.

So while the increase in pension expenditure is expected to be the strongest in the EU by 2050, Luxembourg has opted for a limited and very gradual reform. This reform buys time for the Luxembourg pension system, but does not seem to constitute a sufficient guarantee of long-term sustainability.

Fiscal framework

Government revenues in Luxembourg are particularly volatile, notably because of the country's small size and high openness and because of the economy's strong specialisation in the financial sector. In such a context, a fully-fledged medium-term budgetary framework with multi-annual expenditure ceilings would provide guidelines for smooth revenue and expenditure evolution and ensure budgetary discipline in the medium and long term. The Minister of Finance is currently preparing a reform of the budgetary procedure in Luxembourg.

Tax systems

Luxembourg's tax-to-GDP ratio is broadly in line with the EU average and lower than that of its neighbouring countries. **The structure of the Luxembourg tax system, in terms of the share of total revenue raised by the different taxes, is relatively favourable to growth.** Almost one third of tax revenue is raised from consumption taxes. Both capital and labour taxation are among the lowest in the EU.

There is room for improvement in greening the taxation system. In 2010 the share of environmental taxation stood at 6.4% of total tax revenues compared to an EU average of 7.4%.¹¹ Most revenue comes from energy taxation, while the transport (excl. fuels) and pollution/resources components play a minor role. Luxembourg has made some efforts in recent years to green the taxation system. The annual vehicle tax is now calculated as a function of CO2 emissions. A special levy on transport fuel (the Kyoto cent) was introduced in 2007 to contribute to emissions reductions, which slightly reduces the price gap with regard to the neighbouring countries. There is still considerable scope for raising fuel and energy taxes. While the short-term effect would be to switch fuel purchases back across the borders, there would be a net gain as this would raise the effective price in the region as a whole. This might prove to be less costly for Luxembourg than reducing its domestic emissions in other ways.

The strong inherent bias towards corporate debt financing and generous support measures for debt-financing of housing may entail a risk in terms of leverage for the relatively small Luxembourg economy. In addition, property taxation revenue has not kept up with the rental value of housing. A shift from a tax on real estate transactions to a recurrent tax on real estate could improve the functioning of the housing market.

3.2. Financial sector

Financial stability

The size of the Luxembourg financial sector is very large compared to the size of the economy. Total banks' assets as a percentage of GDP declined from their most recent peak in September 2008 (3370% of GDP) to a low of 2536% of GDP in April 2011, remaining nevertheless very high. Fund administration constitutes the bulk of Luxembourg's financial industry. Private banking is its second pillar. During the 2008 crisis these sectors did not produce any significant losses that would have forced the state to rescue banks as by their very nature these areas can be considered quite stable.

¹¹ European Commission, 2012, 'Taxation Trends in the European Union' (forthcoming).

Nonetheless, the state participated in recapitalising foreign-owned banks,¹² given their systemic importance for Luxembourg's economy, even though the bulk of losses occurred outside the country. The government also contracted guarantees for an amount of EUR 2.7 billion to the remaining Dexia group.

Luxembourg's banks' capitalisation and profitability remain high in the context of good and stable loan book quality. Operational results have stood up well to the difficult international environment. However, net profit fell by 24% in 2011, because of provisions constituted for value adjustments of Greek bonds. The **loan-to-deposit ratio** stays well below 100% in the context of a very moderate credit expansion. **Sovereign risk** remains very low in the Luxembourg banking sector and has even abated since 2009 in the context of very high and stable private and external debts. No Luxembourgish institution was below the required 5% core Tier 1 capital following the July 2011 EBA stress test nor required to comply with the higher minimum core Tier 1 capital ratio of 9% of risk-weighted assets following the temporary recapitalisation plan decided by the European Council in October 2011. Under the Euro Plus Pact, the government is committed to increasing the **resilience of the financial sector**. Since 2011, the government, the Central Bank of Luxembourg, the *Commission de Surveillance du Secteur Financier* and the *Commissariat aux Assurances* meet regularly in order to assess the risks to which the financial sector could be exposed and in order to exert macro-prudential supervision.

Funding of the economy

Lending conditions remain restrictive after the continuous tightening over the period 2007-2009, which has been followed by a more stable period. Nevertheless **credit tightening has been less pronounced in Luxembourg than elsewhere in the euro area and small and medium enterprises continue to enjoy good conditions for access to finance**. On the demand side credit to households has proved quite resilient and robust growth rates (around 8% annually) were still being posted at the start of 2012. Lending for house purchase does not seem to be affected by the financial crisis. Credit for consumption stabilised over 2011. After a long period of contraction, credit to non-financial corporates has shown positive growth rates since mid-2011 but remains at a very low level, especially for big loans.

Diversification of the economy

In 2010, the activity of the financial sector as a whole (including insurance and fund industries) was estimated to account for 33% of GDP, 11% of employment and 25% of fiscal revenues. In the 2011 Euro Plus Pact commitments, the Luxembourg government committed to pursue efforts to diversify the structure of the economy. It founded a **Luxembourg Future Fund** to support the diversification and sustainable development of the economy. The Fund will invest directly or via other funds in innovative small and medium enterprises in a start-up or development phase in technology sectors (ICT, Clean technologies ...). The Luxembourg state will invest EUR 120 million in the Fund via the *Société Nationale de Crédit et d'Investissement*, and the European Investment Fund will contribute another EUR 30 million. In addition, the government will invest in health sciences and technology via an existing private fund.

¹² Following the restructuring of the Dexia Group, its Luxembourg subsidiary Dexia-BIL will be sold to a Qatari state investment fund. The Luxembourg state will acquire a minority share of 10% because of the systemic role of Dexia-BIL in the Luxembourg economy. The country also participated in Fortis' recapitalisation in 2008.

3.3. Labour market, education and social policy

Luxembourg is characterised by strict employment protection legislation, especially as regards collective dismissals and temporary employment.¹³ Labour taxes are relatively low. The overall employment rate in Luxembourg fell slightly from 70.7% in 2010 to 69.8 % in 2011, which is just above the EU average (68.6 % in 2011). The female employment rate is, at 61.9%, rather low. 36% of women aged 20-64 who have a job work only part-time (against 4.8% of men). **A particularity of the Luxembourg labour market is the increasing share of non-resident workers**, currently accounting for around 42 % of total employment. Productivity levels are the highest in the EU. On the other hand, adjustment of employment in times of economic downturn is slow, resulting in a fall in apparent productivity. This is due to strict employment protection legislation as well as to labour hoarding by firms that are reluctant to lay off high-skilled workers because of their scarcity on the labour market.

Responding to last year's CSR on youth unemployment and commitments under the Euro Plus Pact, Luxembourg took a number of relevant measures to tackle youth unemployment but so far these have been only partially implemented. The **National Employment Agency ADEM** is undergoing a thorough reform designed to increase the effectiveness and quality of services for both job seekers and employers. Accordingly, the ADEM would simultaneously provide personalised follow-up to jobseekers according to their degree of employability and develop close relationships with companies. Three quarters of the total budget for active labour market policies is spent on job incentives (against 24% on average in the EU). On the other hand, Luxembourg is spending relatively little on vocational training (only 9 % compared to 43 % in the EU as a whole). **The Initial Employment Contract and the new Initial Employment Contract-Practice enable young jobseekers to get their first experience** of the labour market and compensate¹⁴ the employer for the jobseeker's lack of experience. According to a first assessment, jobseekers with such contracts are more successful in their subsequent job search.

Youth unemployment in Luxembourg is often linked to a lack of skills or qualifications. The vocational education system is currently undergoing a reform in order to bring jobseeker's qualifications more in line with labour market demands. The ADEM ensures closer follow-up of early school leavers, in order to guide them to a new '**second chance school**', launched in March 2011, or to an apprenticeship. The government has increased temporarily the compensation for employers who supervise an apprentice studying for a Professional Competence Certificate from 27 % to 40 % of the remuneration.¹⁵ In order to promote measures to improve the transition of young people from school to working life, an **information platform** was set up in 2011

¹³ Temporary contracts are restricted to specific tasks and usually cannot be extended beyond 24 months. Trial periods are short (a maximum of six months) and notice must be given at least 24 days before dismissal. Compensation is available to employees in cases of unfair dismissal, though employees are rarely reinstated. For procedural irregularities in dismissal, at least one month's compensation is usually granted, while for more serious irregularities compensation depends on the material impact on the employee. Collective dismissals by firms are limited to seven people within a 30-day period and to 15 people within a 90-day period. In addition, collective dismissals require firms to negotiate a social plan with the relevant trade union or employee association within two weeks of the collective notice being given. Only once the social plan is concluded can individual notification of dismissal occur and only then after 75 days.

¹⁴ EUR 16 million has been foreseen in the 2012 budget.

¹⁵ Data on the impact of these contracts on job creation is not yet available. The modest increase in the number of these contracts could also be due to a substitution effect.

(www.anelu.lu).¹⁶ A new cooperation platform providing guidance services and orientation (**‘Maison de l’Orientation’**) will be operational in 2012. The government has not yet conducted a thorough study on the difficulties faced by young people making the transition from school to working life which had been announced in the 2011 national reform programme. Solutions in this area as well as an in-depth study to highlight potential bottlenecks are essential to move the policy process on in the long run.

Although Luxembourg has clearly taken some relevant and credible steps to tackle its relatively high youth unemployment, young people still lack support to facilitate their integration into the labour market. There is still **a need for a coherent strategy, stronger collaboration with municipalities and more efficient use of employment services. Young jobseekers would also benefit from more investment in training and education.**

In 2011, Luxembourg did not make progress towards the achievement of the 2020 employment target of 73%. **The employment rate is particularly low for older workers.** In 2009 the effective retirement age was only 59 years on average, a consequence of generous early retirement schemes. Hence, the financial incentives to extend working lives as envisaged in the pension reform are particularly welcomed. However, the employability of older workers, including their skills, needs to be improved simultaneously. A job retention policy that has been set up aims to find alternative solutions to redundancy (training, part-time work, change of job, loaning of manpower, etc.), and in line with commitments under the Euro Plus Pact the co-financing rate for lifelong learning has recently been increased, especially for older workers. The Commission welcomes the fact that barriers to continuing working beyond the retirement age or to combining a pension with some form of employment will be lowered.

Luxembourg makes extensive use of labour migration and cross-border workers to fill gaps in the national labour market. No particular problems have been reported on the recognition of qualifications in Luxembourg. However, the requirement for lawyers to have a knowledge of all three official languages (French, German and Luxembourgish) raises concern in so far as it appears to be a disproportionate barrier to establishment by lawyers from other Member States.¹⁷

The performance of Luxembourg’s education system is relatively weak when measured by PISA scores, but the multilingual system obscures Luxembourg’s true skill level in the test result. Nevertheless some students could benefit from focusing on fewer languages in order to complete their studies and concentrate more on sciences or vocational studies. Recent reforms of the school system give more responsibility to the schools, increase transparency for parents and introduce feedback instruments for stakeholders.¹⁸ These reforms are currently being implemented so it is too early to assess their impact. In addition, new guidance procedures will be implemented as from 2013, covering Cycle 4 of primary education to the lower secondary school classes.¹⁹ Various

¹⁶ A request for co-financing of a larger web development project has been submitted to the ESF. The necessary budget for the national co-financing share has been earmarked in the 2012 budget.

¹⁷ This barrier seems unnecessary to safeguard multilingualism in Luxembourg or the fundamental right of its citizens to use the three languages, which is guaranteed by the availability of multilingual lawyers and not by the exclusion of lawyers who only speak the language of law (French) and limit their activities accordingly. The question is under legal examination by the Commission.

¹⁸ For example the ‘Plan de Réussite Scolaire’ (PRS) describes the challenges the school wants to address, the measurable objectives defined, and the means to achieve these.

¹⁹ The lower classes of secondary education and trade school serve as a transitional phase between primary school, the point of departure for formal apprenticeships, and upper classes of secondary school. The priority for the lower classes is to consolidate and prolong basic skills learned in primary school, while the upper classes aim to prepare students for professional life and higher education.

initiatives aim to facilitate the schooling of children with a migrant background in the multilingual system. It is too early to assess the impact of these measures but they seem to point in the right direction in implementing the 2011 recommendation.

With an early school leaving rate of 7.1%, Luxembourg has reached its target and is considering a more ambitious objective. However, early school leaving remains a problem among the migrant population. For children where none or only one of the official languages is spoken at home, gaining proficiency in all three official languages is difficult. A list of names of early school leavers drawn up on a monthly basis is sent to regional centres of the Local Youth Action group to determine why they dropped out and to help them to find a training programme or integrate them into the labour market. Upper secondary attainment, standing at 73.4% in 2010, is below the EU average of 79%. This can be partly explained by the strong net migration, with many young adults that have been educated outside the national education system. **The tertiary attainment rate according to the Eurostat methodology is, at 46.1% in 2010, above the EU target of 40%. However, the tertiary attainment of the resident population is lower, currently about 30%,²⁰ despite the strong demand for workers with tertiary qualifications.** In its 2012 NRP, Luxembourg adopts the European methodology – thus including non-resident workers – but proposes to put the target at 66% instead of 40%. Luxembourg has taken several measures to increase the number of students embarking on higher education studies: allowing validation of prior learning and experience giving access to university studies; offering more varied higher education studies; establishing a link between higher education programmes and companies' needs in order to promote employability; offering financial support to all students whether they are studying in Luxembourg or outside the country; tutoring of students at the University of Luxembourg. The reform of the vocational education and training system will provide more opportunities to bridge the gap between vocational education and training and higher education.

Adult participation in lifelong learning has increased over the last few years and reached 13.4% in 2010. **Greater adult participation in lifelong learning is needed to tackle the country's structural unemployment since residents are facing competition from a large pool of often highly skilled potential workers from neighbouring countries.** A particular focus on the population aged 55-64 with a low education level is needed. In November 2011, the National Agency for the European Education and Lifelong Learning programme (ANEFORÉ) launched the **project S3L** to investigate how lifelong learning is perceived in Luxembourg. The results will feed into a White Paper on future strategies. From 2012 on, lifelong learning in the private sector will be co-financed by the state at a rate of 20% instead of 14.5% (35% for young unskilled workers and older workers), in line with Euro Plus Pact commitments.

The rate of people at risk of poverty or social exclusion before social transfers increased from 44% in 2009 to 45% in 2010, confirming a trend since 2007. On the other hand, the rate after social transfers decreased from 4.9% in 2009 to 4.5% in 2010, after a strong increase in 2009. The in-work poverty rate has increased steadily since 2007 and is, at 10.6% in 2010, higher than the EU average of 8.5%. Particularly worrying is the in-work poverty rate for single parents (40%), ranking second highest in the EU. Similarly, the in-work poverty rate for temporary workers (20%) is also among the highest in the EU.

²⁰ The Eurostat figure is blurred by the high share of (high-skilled) non-residents on the labour market and thus no indication of the quality of the national education system. Therefore the country previously determined the tertiary education attainment rate based on resident population and not on the working population as Eurostat does.

In the 2012 national reform programme, Luxembourg has finally set a national poverty target which aims to reduce the number of people at risk of poverty or social exclusion by 6000 in 2020 (about 1.2% of the population), which would bring the risk of poverty or social exclusion back to its 2007 level. Several social inclusion measures have been introduced, such as awareness actions concerning childcare possibilities and childcare vouchers, and more activation of minimum income claimants (although there is no clear tendency yet in the activation rates). As most of the measures were implemented recently, it is difficult to assess their impact for the time being. The Luxembourg government decided in February 2011 to set up working groups to devise additional measures in order to fight poverty and social exclusion: these include ways to further increase childcare places availability, and measures to improve educational performance and ensure a better transition from school to work. The situation of specific groups at risk, such as immigrants and single-parent families, needs to be addressed. The very high housing costs in Luxembourg pose a particular social problem. House prices have increased as higher demand, boosted by tax distortions, has pushed against supply constraints. The government will draw up a national integrated strategy in collaboration with non-governmental organisations and the communes to reduce homelessness.

3.4. Growth and competitiveness structural measures

The Luxembourg economy is characterised by high growth rates and a high productivity level. Luxembourg thus occupies a favourable position with respect to overall competitiveness. However, **Luxembourg has lost its price competitiveness over the last decade (with unit labour costs rising faster than in the neighbouring countries) due to high wage increases coupled with low productivity growth.** Wages and benefits are adapted to inflation through a mechanism of automatic indexation each time a reference index rises by 2.5%.

Cost competitiveness

The Luxembourg authorities took steps to implement the recommendation on competitiveness by adjusting the system of wage indexation. **The national Parliament adopted a law to modify temporarily the automatic indexation of wages** in order to increase the competitiveness of the Luxembourg economy. The next automatic indexation of wages, which would have occurred in March 2012, has been postponed to October 2012. Moreover, until 2014, at least 12 months should elapse between each indexation step of 2.5%. With the introduction of this minimum interval, wages and benefits will no longer be fully adapted to the cost of living in the event that inflation exceeds 2.5%. This so-called modulation of the wage indexation system prevents an upward spiral of cost and price increases and will have a temporary effect on cost competitiveness, especially in times of high inflation.

From 2015 on, the automatic indexation will again be applied in the normal way. However, the counter for the next automatic wage indexation will be set at zero before returning to the normal system²¹. As a consequence, some of the gains in cost competitiveness could be permanent. In addition, alcohol and tobacco would be taken out of the index, and increases in fuel prices (except for heating) will only be taken into account up to a certain cap. The cap on the effect of oil price increases on indexation could temper the second-round effects of imported inflation and therefore avoid negative upward inflation spirals. **The government has no intention of touching upon the principle of wage indexation in itself.**

²¹ Because of this, inflation occurring during the period 2012-2014, which will not have been compensated by the maximum of three indexation steps, will not count for the next automatic wage indexation after 2014.

The Commission notes that this modulation is only temporary and that the objective of the recommendation has only partially been fulfilled. **In order to adequately respond to the 2011 recommendation, Luxembourg should also take steps to reform the system in a more permanent way.** Certainly, Luxembourg's productivity is very high, but the room for manoeuvre in terms of productivity gains is getting smaller. Therefore, it is essential to ensure the competitiveness of Luxembourg by limiting the growth of unit labour costs.

Internal market and competition

For **directives relating to the internal market, Luxembourg posted an increase in its current transposition backlog:** 1.4% in November 2011 as opposed to 1.1% in May 2011.²² Half of the total number of its outstanding directives (10 out of 20) are in the areas of environment and transport. Regarding **competition in network industries**, Luxembourg belongs to the group of Member States that has been granted an additional two years to liberalise its postal market, i.e. by 31 December 2012. A draft law provides in particular for the possibility to finance universal service via profits made in the telecom sector.²³ In 2011 a price observatory was created in order to guarantee more transparency on consumer price developments. In October 2011, the two existing competition bodies were merged into one single body, named 'the Council', with increased powers. The Council has to be consulted on any draft law or regulation which may affect competition.

Professional services were highly regulated in Luxembourg but recent legislation implementing the Services Directive adopted in September 2011 has considerably reduced the regulatory burden. One of the most important changes is the new law regulating access to the professions of craftsmen, traders, retailers, industrialists and other liberal professions. By removing obstacles consisting of numerous formalities, Luxembourg has opened up the market and made access easier for service providers from other Member States. However, some restrictions in the services sector seem to remain. Some measures have been identified regarding requirements where the Directive leaves a margin of appreciation to Member States to streamline the regulatory environment for the establishment of providers (e.g. quantitative restriction on places selling alcoholic beverages, ban on having more than one establishment, and shareholding requirements for lawyers). In addition, it is not always clear whether authorisations applied to incoming service providers can be justified for one of the four reasons recognised by the Directive (public policy, public security, public health or protection of the environment) and whether they are proportionate.²⁴

In line with **commitments related to the Euro Plus Pact to foster competitiveness**, the Luxembourg government has kept social contributions stable, neutralised the effect of an increase in minimum wages on labour costs and kept public investment at a high level.

²² According, respectively, to the official results presented in 'Making the Single Market deliver — Annual governance check-up 2011' (cut-off date: 10 November 2011) and to the 'Internal Market Scoreboard' No 23 (cut-off date: 10 May 2011).

²³ The postal incumbent, EPT, is one of the few remaining operators in the EU still combining telecom and postal services under the same company.

²⁴ For instance the requirement to obtain an authorisation in the education sector, e.g. for summer courses, as well as the need for an authorisation for providers carrying out technical studies and verifications in the field of the environment.

Research and innovation

Luxembourg's R&D intensity is, at 1.6 % of GDP in 2010, below the intermediate target of 2.0% of GDP to be reached by 2015 and the target of 2.6% of GDP by 2020. In contrast to private R&D spending, public spending has increased steadily, even if it remains relatively low, rising from 0.12% in 2000 to 0.48% in 2010. In the 2012 budget, EUR 280 million or 0.66% of GDP have been foreseen. Luxembourg is ranked in the category of innovation followers with innovation performance above the EU-27 average²⁵. **Luxembourg has made substantial efforts to develop research and innovation policies and has made good progress on several fronts in its transition towards a more knowledge-intensive economy**, for example by strengthening links between higher education and businesses.

Given the high unit labour costs in Luxembourg, increasing the added value of goods and services would be the only way to safeguard the competitiveness of the productive sector. However, while the scale and scope of the reforms since 2003 are considerable and the elements for a strategic R&I framework are in place, a number of challenges remain. The domestic absorption capacity of R&I results is limited. Collaboration between research bodies and companies, notably SMEs, could be strengthened. Also the entrepreneurial culture could be further improved. Furthermore, the list of strategic priorities in the Luxembourg 2020 Strategy seems not to be selective enough to allow critical mass to be gained in all the domains identified. The national strategy should therefore focus on a more limited number of priorities while efforts are stepped up to create the framework conditions favourable to the development and growth of innovative firms. Eco-innovation is one of the declared priority policies of the government but the share of companies reporting positive effects of innovation on their material and energy efficiency is still below the EU average. Taking into account the stage of development of R&D policies, close attention should be given to the evaluation process and to the implementation of evaluation results.

Energy and environment

In order to reach its climate and energy target, Luxembourg is likely to need to either design additional policies reducing greenhouse gas emissions, or to make use of costly flexibility mechanisms. The road sector, which accounts for 60% of all CO₂ emissions from fuel combustion, represents the most important source of emissions and possesses a large emission reduction potential. The share of cars in the modal split of passenger transport is, at 84%, rather high (2009), requiring actions to promote public transport. The fiscal losses due to tax subsidies of company cars are above the EU average and amounted to 0.6% of GDP in 2008. In January 2012, the excise tax on diesel increased from EUR 320 per 1000 litres to EUR 330.²⁶ The price of petrol remains one of the lowest in the EU, inducing 'fuel tourism'²⁷ and negative externalities in terms of pollution and congestion. Measures to encourage more people to use public transport and to better manage traffic flows e.g. through accelerated deployment of intelligent transport systems²⁸ could contribute to a reduction of congestion and hence to an increase in economic productivity. Subsidies for the purchase of electric cars have increased, while on the other hand the CO₂ thresholds for subsidies for the purchase of low-emission vehicles are being lowered. **The government adopted a 'climate package' in May 2011 and announced a sustainable transport strategy in April 2012.** Both plans contain a large number of measures that aim to reduce transport-related emissions, but

²⁵ According to the Innovation Union Competitiveness Report 2011

²⁶ Which corresponds to the minimum level under Council Directive 2003/96/EC.

²⁷ Cross-border purchases of diesel and petrol accounted for 75% of sales in 2010.

²⁸ The timely transposition of Directive 2010/40/EU may in this respect be helpful.

fail to address the root problem of low fuel prices. Luxembourg has set an **energy savings target** in end-use consumption of 9% by the end of 2016 compared to the annual average consumption between 2001 and 2005. According to the second National Energy Efficiency Action Plan (September 2011), the intermediate target of 3% for 2010 has been achieved. The 2016 target could be reached, assuming timely implementation of all the measures that are so far proposed and planned. Luxembourg will continue to support the upgrading of old buildings and construction of energy-efficient new buildings. In addition, proposed measures include financial instruments aimed at better energy efficiency of dwellings and financial support to households, municipalities and companies that resort to energy from renewable sources and foster energy efficiency. On the other hand, energy products benefit from a reduced VAT rate, which constitutes a negative fiscal incentive.

Starting from 0.9% in 2005, the share of renewable energy in final energy consumption had increased to 2.7% by 2009 but there is a long way still to go to reach the legally binding target of 11% by 2020. Luxembourg does not appear to be able to meet its renewable energy target through domestic measures. Therefore, the timely implementation of cooperation mechanisms (for an amount estimated by Luxembourg to be between 0.5 and 3.5 TWh) with other Member States will most likely be necessary. Luxembourg imports the bulk of its electricity and is totally dependent on imports for gas. Further interconnections with neighbouring countries could foster the import of electricity from renewable sources and enhance security of supply for gas. Also the use of renewable energy in the transport sector is lagging behind: in 2010, the share of renewable energy (mainly biofuels) in all energy consumed in the transport sector was merely 1.6%, the same as in 2007, and still far away from the 2020 target of 10%.

Regarding resource efficiency, Luxembourg continues to have the world's highest ecological footprint per inhabitant.²⁹ Although there was a slight reduction in municipal waste generation between 2008 and 2010, it remains considerably higher than the EU average (678 kg/y/inhabitant compared to around 487 kg on average). The NRP does not mention any new measures to improve resource efficiency in Luxembourg. Full implementation of the existing European waste legislation could create more than 200 additional jobs and increase the annual turnover of the sector by over EUR 24 million. Moving forward towards eliminating landfill and limiting energy recovery to non-recyclable waste could even create in total over 400 additional jobs and increase the annual turnover of the waste sector by EUR 45 million. Public spending on R&D in energy and environment as a percentage of GDP is below the EU average.

3.5. Modernisation of public administration

Public administration reform is in preparation, particularly with a view to increasing the efficiency of public services. Luxembourg generally ranks well in surveys of the administrative burdens of the tax system. Despite below-average availability (70% for citizens and 75% for businesses), the use of **e-government services** by citizens and enterprises is one of the highest in Europe (67% and 90% respectively). Public procurement directives have been implemented in national legislation. Contracts below the thresholds are subject to specific procedures with lighter requirements. Information available on the actual application of the public procurement rules or of the national system of remedies is scarce and does not allow definite conclusions to be drawn. A national procurement portal where publication of tenders is mandatory provides for wide dissemination of procurement opportunities to potential

²⁹ One major reason for this extremely high footprint is the above-mentioned 'fuel tourism' and associated greenhouse gas emissions.

tenderers and also for the electronic download of tender documents. It does not provide any e-submission functionality.

Poor performance of Luxembourg as regards time required to start a business (19 days in 2011) is balanced by a high enterprise survival rate after two years, which places Luxembourg in third position among the EU Member States. Under the Euro Plus Pact, the government is committed to reinforcing structural competitiveness by **improving the business environment** through administrative simplification and better infrastructure. New legislation adopted on 13 September 2011 simplified **administrative procedures** for the development and operating conditions of classified establishments, mainly by introducing tacit authorisation and obliging administrations to respect specific deadlines. The legislation transposing the Services Directive also simplifies in a horizontal manner the processes and documents required from service providers. A Single Contact Point is operational in French, German and English. Its functionality is growing, while the availability of more online procedures could still be improved.

4. OVERVIEW TABLE

2011 commitments	Summary assessment
Country-specific recommendations (CSRs)	
CRS 1: Take advantage of the improving cyclical conditions, strengthen the fiscal effort and use unexpected additional revenue in order to further reduce the headline deficit and reach the medium-term objective in 2012.	In 2011, the headline deficit stood at 0.6% of GDP, compared to 1.0% envisaged in the 2011 stability programme. This better outcome was mainly due to a better-than-expected starting position and some positive revenue surprises. By using these unexpected revenues to reduce the deficit, the government implemented part of last year's recommendation. For 2012, the programme projects a deficit of 1.5% of GDP. The Commission services' spring forecast expects a slightly larger deficit of 1.8%, due to a faster rise in most expenditure categories. Measures have been proposed to curb the deterioration of public finances in 2013. With a structural balance of around 0.4% of GDP in 2011, Luxembourg broadly reached its medium-term objective. However, following an overall assessment of the Member State's budgetary plans, with the structural balance as a reference, including an analysis of expenditure net of discretionary revenue measures, a significant deviation from the adjustment path towards the MTO is to be expected from 2012 onwards.
CSR 2: Propose and implement a broad pension reform to ensure the long-term sustainability of the pension system, starting with measures that will increase the participation rate of older workers, in particular by discouraging early retirement. With a view to raising the effective retirement age, measures such as a link between the statutory retirement age and life expectancy could be considered.	On 20 January 2012, the government proposed a law to reform the pension system. The reform should be adopted in 2012. The reform builds in some corrective mechanisms in case the financial situation of the system evolves adversely and contains adaptations to the very generous calculation method for benefits. No measures have been proposed to link the statutory retirement age to life expectancy and the possibilities for early retirement remain broadly unchanged. Moreover, the reform will be phased in over a very long time. Overall, Luxembourg is taking steps in the right direction, but the reform does not seem to constitute a sufficient guarantee for the long-term sustainability of the system.

CSR 3: Take steps to reform, in consultation with social partners and in accordance with national practices, the system of wage bargaining and wage indexation, to ensure that wage growth better reflects developments in labour productivity and competitiveness.	In January 2011, a law was adopted to limit temporarily the application of the automatic wage indexation system between 2012 and 2015 in order to increase the competitiveness of the Luxembourg economy. However, besides a possible modification of the reference index, the government has not announced any plans for a permanent revision of the wage-setting system to ensure that wage growth reflects developments in labour productivity and competitiveness. While Luxembourg's productivity is currently very high, the room for manoeuvre in terms of productivity gains is getting smaller. A permanent revision of the wage-setting system, in consultation with social partners and in accordance with national practices, is necessary to preserve the competitiveness of the Luxembourg economy in the longer term.
CSR 4: Take steps to reduce youth unemployment by reinforcing training and education measures aimed at better matching young people's qualifications to labour demand.	A series of measures in the area of education and training have been adopted in order to ensure better matching between the skills of young people and the needs of the labour market. Luxembourg has clearly taken some steps to tackle its relatively high youth unemployment, but there is still a need for a coherent strategy, stronger collaboration with municipalities, more efficient use of employment services, and more investment in training and education.
Euro Plus Pact (national commitments and progress)	
Competitiveness 1. Keep social contributions stable during current government term. 2. Neutralise effect of increase in minimum wage (01.01.2011) on labour costs. 3. Keep public investment at its current high level. 4. Improve the business environment through administrative simplification and better infrastructure. The government is committed to reducing formalities required for companies to obtain permits and to dealing with them more speedily.	Luxembourg has fully implemented its EPP commitments related to competitiveness. No increase in social contributions is currently planned. The impact of an increased minimum wage in January 2011 has been offset by allocating an amount equivalent to its overall cost (EUR 25million) to the Employers insurance fund. The same transfer is foreseen in the 2012 budget and the government intends to do the same until 2015, after which the measure will be assessed. The 2012 draft budget keeps public investment at its current high level. New legislation adopted on 13 September 2011 simplified administrative procedures for the development and operating conditions of classified establishments, in particular introducing tacit authorisation and obliging administrations to respect specific deadlines.
Employment 1. Reform thoroughly the employment administration. 2. Increase co-financing rate for lifelong	Luxembourg has partially implemented its EPP commitments related to employment. On 15 December 2011, the Luxembourg Parliament adopted a law on the reform of the employment administration ADEM in order to

learning in the private sector. 3. Keep social contributions stable during current government term. 4. Neutralise effect of increase in minimum wage (01.01.2011) on labour costs.	improve the follow-up of jobseekers. From 2012 on, lifelong learning in the private sector will be co-financed by the State at a rate of 20% instead of 14.5% (35% for young unskilled workers and older workers). Social contributions have not been increased and the increase in the minimum wage has been compensated.
Financial stability Increase the resilience of the financial sector and pursue efforts to diversify the structure of the Luxembourg economy.	The financial stability commitments are being fully implemented. The Luxembourg government has founded a Luxembourg Future Fund to support the diversification and sustainable development of the Luxembourg economy. The Luxembourg State will invest EUR 120 million in the Fund, and EIF will contribute another EUR 30 million. In addition, the government will invest in health sciences and technology via an existing private fund.
Europe 2020 (national targets and progress)	
Employment target rate: 73%	The employment rate increased from 70.4% in 2009 to 70.7% in 2010, but decreased again to 69.8% in 2011. Hence, no progress has been made towards achievement of this objective.
R&D target: 2.3%-2.6% of GDP (of which 1.5% to 1.9% for the private sector and 0.7% to 0.8% for public spending)	Gross domestic expenditure on R&D has been broadly stable over the last decade and amounted to 1.63% of GDP in 2010. Public spending has increased steadily, even if it remains relatively low, rising from 0.12 % in 2000 to 0.48 % in 2010. In the 2012 budget, EUR 280 million or 0.66% of GDP has been earmarked. Recent reforms have encouraged public-private partnership and increased the financial support for R&D for companies. Some progress has been made towards achieving this objective.
Energy efficiency target — reduction in primary energy consumption by 2020 (in Mega tonnes oil equivalent): 0.20 Mtoe	The energy efficiency objectives are set according to national circumstances and national formulations. As the methodology to express the 2020 energy consumption impact of these objectives in the same format was agreed only recently, the Commission is not yet able to present this overview.
Greenhouse gas emissions target:- 20% compared to 2005 emissions (from sources not covered by the Emissions Trading System)	Greenhouse gas emissions not covered by the ETS were reduced by 5% between 2005 and 2010. Therefore progress has been made towards the achievement of the target. However, according to latest 2020-projections based on existing measures, emissions will rise by 9% compared to 2005. Luxembourg is therefore expected to fall short of its emissions target by 29 percentage points. Thus, more efforts will be necessary in order to achieve the target.

Renewable energy target: 11 %	The share of renewable energy sources in final energy consumption in Luxembourg was only 2.7 % in 2009, and Luxembourg has not met its 2011/2012 interim renewable energy target. Luxembourg does not appear to be able to meet its renewable energy target by 2020 through domestic measures.
Poverty and social exclusion: reduction of the number of people threatened by poverty or social exclusion by 6000 in 2020	Luxembourg set a national poverty target in 2012. The rate of people at risk of poverty or social exclusion before social transfers increased from 44 % in 2009 to 45 % in 2010 (STATEC), confirming a trend since 2007. On the other hand, the rate after social transfers decreased from 4.9 % in 2009 to 4.5 % in 2010, after a strong increase in 2009. The situation of specific groups at risk, such as immigrants and single-parent families, needs to be addressed.
Education and training Early school leavers in %: < 10 %	Luxembourg has reached its target with an early school leaving rate below 10 %. Early leavers from education and training (percentage of the population aged 18-24 with at most lower secondary education and not in further education or training) stood at 7.7 % in 2009 and 7.1 % in 2010. However, early school leaving remains high among the migrant population.
Tertiary education in %: >40 %	Tertiary educational attainment stood at 46.6 % in 2009 and 46.1 % in 2010 according to the Eurostat methodology, well above the EU benchmark. However, the figure is blurred by the high share of (high-skilled) non-residents on the labour market and thus no indication of the quality of the national education system. Tertiary attainment of the resident population is currently about 30 %, below the EU target of 40 %, despite the strong demand for workers with tertiary qualifications. According to the 2012 NRP, Luxembourg is to increase the national target to 66 % (in conformity with the European benchmark).

5. ANNEX

Table I. Macroeconomic indicators

	1995-1999	2000-2004	2005-2008	2009	2010	2011	2012	2013
Core indicators								
GDP growth rate	4.8	4.2	4.4	-5.3	2.7	1.6	1.1	2.1
Output gap ¹	-0.8	2.2	2.4	-4.2	-2.7	-2.2	-2.4	-1.7
HICP (annual % change)	1.1	2.8	3.4	0.0	2.8	3.7	3.0	2.0
Domestic demand (annual % change) ²	5.1	3.1	3.9	-5.1	5.9	4.4	2.6	2.3
Unemployment rate (% of labour force) ³	2.7	3.1	4.6	5.1	4.6	4.8	5.2	5.9
Gross fixed capital formation (% of GDP)	21.4	21.9	20.3	19.1	18.4	19.0	20.0	20.1
Gross national saving (% of GDP)	32.1	33.2	30.4	23.6	26.3	27.8	26.1	26.4
General government (% of GDP)								
Net lending (+) or net borrowing (-)	2.8	2.7	2.0	-0.8	-0.9	-0.6	-1.8	-2.2
Gross debt	7.2	6.3	8.3	14.8	19.1	18.2	20.3	21.6
Net financial assets	43.0	54.7	51.4	55.5	50.0	n.a	n.a	n.a
Total revenue	43.1	43.0	40.4	42.2	41.6	41.4	41.9	41.8
Total expenditure	40.3	40.3	38.4	43.0	42.4	42.0	43.6	44.0
of which: Interest	0.4	0.3	0.2	0.4	0.4	0.5	0.5	0.6
Corporations (% of GDP)								
Net lending (+) or net borrowing (-)	n.a	n.a	0.8	-1.0	n.a	n.a	n.a	n.a
Net financial assets, non-financial corporations	n.a	n.a	-160.0	-258.7	-252.7	n.a	n.a	n.a
Net financial assets, financial corporations	n.a	n.a	26.2	82.0	336.9	n.a	n.a	n.a
Gross capital formation	n.a	n.a	13.0	9.0	n.a	n.a	n.a	n.a
Gross operating surplus	27.8	27.4	33.7	32.4	n.a	n.a	n.a	n.a
Households and NPISH (% of GDP)								
Net lending (+) or net borrowing (-)	3.2	n.a	0.6	1.9	n.a	n.a	n.a	n.a
Net financial assets	n.a	n.a	73.9	94.4	82.4	n.a	n.a	n.a
Gross wages and salaries	32.4	29.9	25.6	26.7	n.a	n.a	n.a	n.a
Net property income	n.a	n.a	1.5	1.4	n.a	n.a	n.a	n.a
Current transfers received	n.a	n.a	12.6	14.6	n.a	n.a	n.a	n.a
Gross saving	n.a	n.a	4.0	5.4	n.a	n.a	n.a	n.a
Rest of the world (% of GDP)								
Net lending (+) or net borrowing (-)	n.a	9.1	9.6	5.8	7.1	6.8	n.a	n.a
Net financial assets	n.a	n.a	7.9	27.8	-215.4	n.a	n.a	n.a
Net exports of goods and services	18.9	21.2	30.2	31.1	31.2	29.5	27.7	28.0
Net primary income from the rest of the world	-7.2	-15.2	-20.6	-32.8	-28.9	-28.4	-29.1	-28.7
Net capital transactions	n.a	-1.0	0.3	-0.7	-0.6	-0.3	n.a	n.a
Tradable sector	33.7	31.0	27.4	24.1	24.3	25.2	n.a	n.a
Non-tradable sector	56.4	58.6	62.7	66.3	66.5	65.3	n.a	n.a
of which: Building and construction sector	5.6	5.6	5.1	5.2	5.0	5.0	n.a	n.a
Real effective exchange rate (index, 2000=100)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Terms of trade in goods and services (index, 2000=100)	102.5	101.4	105.7	107.6	108.8	109.1	108.5	108.9
Market performance of exports (index, 2000=100)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Notes:								
¹ The output gap constitutes the gap between actual and potential gross domestic product at 2000 market prices.								
² The indicator for domestic demand includes stocks.								
³ Unemployed persons are all persons who were not employed, had actively sought work and were ready to begin working immediately or within two weeks. The labour force is the total number of people employed and unemployed. The unemployment rate covers the age group 15-74.								
Source :								
Commission spring 2012 forecast								

Table II. Comparison of macroeconomic developments and forecasts

	2011		2012		2013		2014	2015
	COM	SP	COM	SP	COM	SP	SP	SP
Real GDP (% change)	1.6	1.6	1.1	1.0	2.1	2.1	3.3	4.1
Private consumption (% change)	1.8	1.8	0.7	2.0	2.0	1.4	2.1	3.1
Gross fixed capital formation (% change)	7.7	7.7	6.2	16.2	3.9	6.6	-1.3	1.6
Exports of goods and services (% change)	1.7	1.8	0.1	1.9	4.2	4.4	6.7	7.4
Imports of goods and services (% change)	3.2	3.4	0.7	4.1	4.8	5.0	5.8	7.0
<i>Contributions to real GDP growth:</i>								
- Final domestic demand	2.7	2.9	1.8	5.2	1.9	2.6	0.8	2.1
- Change in inventories	0.3	0.8	0.0	-1.2	-0.2	n.a.	n.a.	n.a.
- Net exports	-1.5	-2.1	-0.8	-3.1	0.4	-0.4	2.5	2.0
Output gap ¹	-2.2	-2.0	-2.4	-2.7	-1.7	-2.7	-1.3	0.6
Employment (% change)	2.7	2.8	2.0	2.1	1.1	1.4	1.6	2.1
Unemployment rate (%)	4.8	4.5	5.2	5.0	5.9	5.4	5.6	5.5
Labour productivity (% change)	-1.1	-1.7	-0.9	-0.7	1.0	0.8	1.8	2.2
HICP inflation (%)	3.7	2.8	3.0	3.3	2.0	2.5	2.6	2.7
GDP deflator (% change)	4.7	4.7	1.4	2.2	3.0	1.5	2.2	2.3
Comp. of employees (per head, % change)	2.0	2.2	3.2	3.4	3.5	3.5	3.1	2.7
Net lending/borrowing vis-à-vis the rest of the world (% of GDP)	6.8	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Note: ¹In percent of potential GDP, with potential GDP growth according to the programme as recalculated by the Commission. Source: Commission' spring 2012 forecasts (COM); Stability programme (SP).								

Table III. Composition of the budgetary adjustment

(% of GDP)	2011	2012		2013		2014	2015	Change: 2011-2015
	COM	COM	SP	COM	SP	SP	SP	SP
Revenue	41.4	41.9	41.8	41.8	42.1	42.1	40.5	-0.9
<i>of which:</i>								
- Taxes on production and imports	11.9	12.0	12.2	12.2	12.3	12.4	11.2	-0.7
- Current taxes on income, wealth, etc.	14.0	14.1	14.1	13.8	14.3	14.3	14.3	0.3
- Social contributions	11.9	12.4	12.0	12.5	12.1	12.0	11.8	-0.1
- Other (residual)	3.7	3.3	3.5	3.3	3.4	3.4	3.2	-0.5
Expenditure	42.0	43.6	43.3	44.0	43.3	42.9	42.3	0.3
<i>of which:</i>								
- Primary expenditure	41.5	43.1	42.8	43.4	42.7	42.3	41.7	0.2
<i>of which:</i>								
Compensation of employees	7.9	8.2	8.1	8.3	8.2	8.2	8.0	0.1
Intermediate consumption	3.6	3.8	3.7	3.8	3.6	3.5	3.5	-0.1
Social payments	19.8	20.4	20.4	20.7	20.5	20.5	20.3	0.5
Subsidies	1.7	1.8	1.8	1.7	1.8	1.8	1.7	0.0
Gross fixed capital formation	4.0	3.9	3.9	3.9	3.7	3.6	3.4	-0.6
Other (residual)	4.5	5.0	4.9	5.0	4.8	4.7	4.7	0.2
- Interest expenditure	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.1
General government balance (GGB)	-0.6	-1.8	-1.5	-2.2	-1.2	-0.9	-1.8	-1.2
Primary balance	-0.1	-1.2	-1.0	-1.6	-0.7	-0.3	-1.2	-1.1
One-off and other temporary measures	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
GGB excl. one-offs	-0.7	-1.8	-1.5	-2.2	-1.2	-0.9	-1.8	-1.1
Output gap ²	-2.2	-2.4	-2.7	-1.7	-2.7	-1.3	0.6	2.8
Cyclically-adjusted balance ²	0.5	-0.6	-0.2	-1.4	0.1	-0.2	-2.1	-2.6
Structural balance³	0.4	-0.6	-0.2	-1.4	0.1	-0.2	-2.1	-2.5
<i>Change in structural balance</i>		-1.0	-0.6	-0.8	0.3	-0.4	-1.8	
Structural primary balance ³	0.9	0.0	0.3	-0.8	0.7	0.4	-1.5	-2.4
<i>Change in structural primary balance</i>		-0.9	-0.6	-0.7	0.4	-0.4	-1.8	
Expenditure benchmark								
Public expenditure growth ⁴ (real)		5.30	4.85	2.45	2.01	2.19	2.63	-
Reference rate ^{5,6}		1.76	1.76	1.76	1.76	1.76	1.76	-
Lower reference rate ^{5,7}		0.63	0.63	0.63	0.63	0.63	0.63	-
Deviation in % GDP		1.45	1.25	0.76	0.57	0.65	0.81	-
against applicable reference rate								
Two-year average deviation in % GDP		n.a.	n.a.	1.10	0.91	0.61	0.73	-
against applicable reference rate								
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.								
⁴ Modified expenditure aggregate used for the expenditure benchmark, growth rates net of non-discretionary changes in unemployment benefit and of discretionary measures.								
⁵ The reference rates applicable to 2014 onwards will be available from mid-2012. For illustrative purposes, the current reference rates have also been applied to the years 2014 onwards.								
⁶ The (standard) reference rate applies starting in the year following which the country has reached its MTO.								
⁷ The lower reference rate applies as long as the country is adjusting towards its MTO, including the year in which it reaches the MTO.								
Source:								
Stability programme (SP); Commission services' spring 2012 forecasts (COM); Commission services' calculations.								

Table IV. Debt dynamics

(% of GDP)	Average 2006-10	2011	2012		2013		2014	2015
			COM	SP	COM	SP	SP	SP
Gross debt ratio¹	12.2	18.2	20.3	20.9	21.6	23.6	24.4	25.9
Change in the ratio	2.6	-0.9	2.1	2.7	1.2	2.7	0.8	1.5
<i>Contributions²:</i>								
1. Primary balance	-1.6	0.1	1.2	1.0	1.6	0.7	0.3	1.2
2. Snow-ball effect	-0.1	-0.6	0.1	-0.1	-0.4	-0.2	-0.6	-0.9
<i>Of which:</i>								
Interest expenditure	0.3	0.5	0.5	0.5	0.6	0.5	0.6	0.6
Growth effect	-0.1	-0.3	-0.2	-0.2	-0.4	-0.4	-0.7	-0.9
Inflation effect	-0.3	-0.8	-0.2	-0.4	-0.6	-0.3	-0.5	-0.5
3. Stock-flow adjustment	4.3	-0.3	0.8	1.8	0.0	2.2	1.1	1.2
<i>Of which:</i>								
Cash/accruals diff.								
Accum. financial assets								
Privatisation								
Val. & residual effects								
		2011	2012		2013		2014	2015
			COM/SP ³	SP ⁴	COM/SP ³	SP ⁴	SP	SP
Gap to the debt benchmark^{5,6}								
Structural adjustment⁷								
<i>To be compared to:</i>								
Required adjustment ⁸								
Notes: ¹ End of period. ² The snowball effect captures the impact of interest expenditure on accumulated debt, as well as the impact of real GDP growth and inflation on the debt ratio (through the denominator). The stock-flow adjustment includes differences in cash and accrual accounting, the accumulation of financial assets and valuation and other residual effects. ³ Assessment of the consolidation path set in SP assuming growth follows the COM forecasts. ⁴ Assessment of the consolidation path set in the SP assuming growth follows the SP projections. ⁵ Not relevant during EDP that were ongoing in November 2011 and in the three years following the correction of the excessive deficit. ⁶ Shows the difference between the debt-to-GDP ratio and the debt benchmark. If positive, projected gross debt-to-GDP ratio does not comply with the debt reduction benchmark. ⁷ Applicable only during the transition period of three years from the correction of the excessive deficit for EDP that were ongoing in November 2011. ⁸ Defines the remaining annual structural adjustment over the transition period which ensures that - if followed – Member State will comply with the debt reduction benchmark at the end of the transition period, assuming that COM (SP) budgetary projections are achieved. Source: Stability programme (SP); Commission spring 2012 forecasts (COM); Commission calculations.								

Table V. Sustainability indicators

	LU		EU27	
	No-policy change scenario	Stability programme scenario	No-policy change scenario	SCPs scenario
S2	9.8	10.7	2.9	0.7
of which:				
Initial budgetary position (IBP)	1.2	2.0	0.7	-1.6
Long-term change in the primary balance (LTC)	8.7	8.7	2.3	2.4
of which:				
pensions	6.6	6.5	1.1	1.2
health care and long term care	2.2	2.1	1.5	1.5
others	-0.1	0.0	-0.3	-0.3
S1 (required adjustment)*	0.3	1.0	2.2	-0.1
Debt, % of GDP (2011)	18.2		82.8	
Age-related expenditure, % of GDP (2011)	18.0		25.8	

Source: Commission, 2012 stability programme.

Note: the 'no policy change' scenario depicts the sustainability gap under the assumption that the budgetary position evolves according to the spring 2012 forecast until 2013. The 'stability programme' scenario depicts the sustainability gap under the assumption that the budgetary plans in the programme are fully implemented.

* The required adjustment of the primary balance until 2020 to reach a public debt of 60% of GDP by 2030.

Figure. Medium-term debt projection

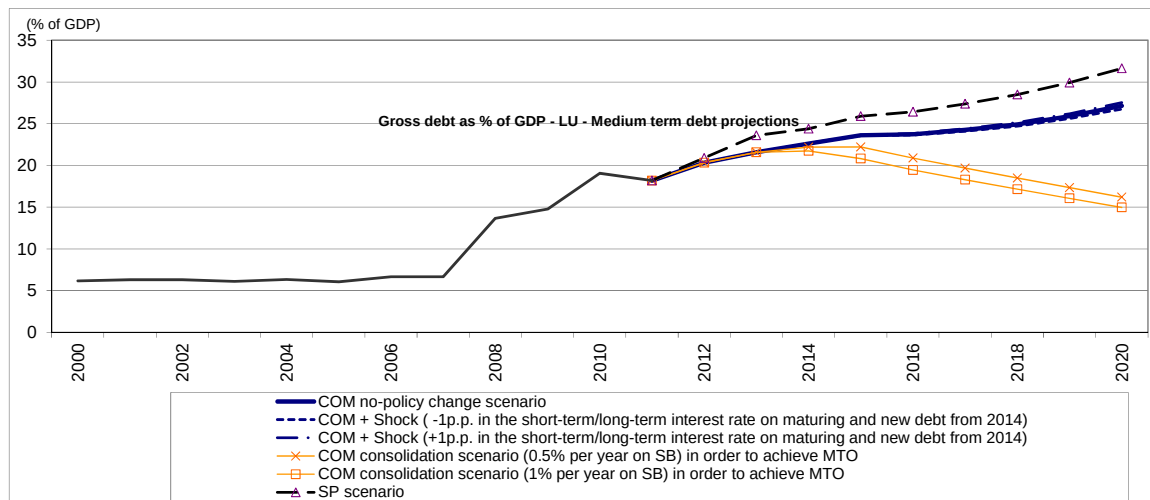


Table VI. Taxation

	2001	2005	2007	2008	2009	2010
Total tax revenues (incl. actual compulsory social contributions, % of GDP)	39.8	37.6	35.7	35.5	37.6	37.1
Breakdown by economic function (% of GDP) ¹						
Consumption	10.6	10.9	9.8	9.9	10.4	9.9
of which:						
- VAT	5.8	6.2	5.8	5.9	6.3	6.1
- excise duties on tobacco and alcohol	1.7	1.6	1.4	1.3	1.4	1.3
- energy	2.7	2.8	2.4	2.3	2.3	2.2
- other (residual)	0.4	0.3	0.3	0.3	0.3	0.3
Labour employed	14.6	13.8	13.4	13.9	15.1	14.7
Labour non-employed	1.2	1.3	1.3	1.3	1.4	1.3
Capital and business income	9.5	8.2	7.6	7.7	8.2	8.3
Stocks of capital/wealth	3.9	3.3	3.6	2.7	2.6	2.7
<i>p.m.</i> Environmental taxes ²	2.8	2.9	2.5	2.5	2.5	2.4
VAT efficiency ³						
Actual VAT revenues as % of theoretical revenues at standard rate	74.4	89.4	93.4	96.2	92.9	92.3
<u>Note:</u> 1 Tax revenues are broken down by economic function, i.e. according to whether taxes are raised on consumption, labour or capital. See European Commission (2012), Taxation trends in the European Union, for a more detailed explanation. 2 This category comprises taxes on energy, transport and pollution and resources included in taxes on consumption and capital. 3 The VAT efficiency is measured via the VAT revenue ratio. The VAT revenue ratio is defined as the ratio between the actual VAT revenue collected and the revenue that would theoretically be raised if VAT was applied at the standard rate to all final consumption. A low ratio can indicate a reduction of the tax base due to large exemptions or the application of reduced rates to a wide range of goods and services ('policy gap') or a failure to collect all tax due to e.g. fraud ('collection gap'). See European Commission (2011), Tax reforms in EU Member States, European Economy 5/2011, for a more detailed explanation. Source: Commission						

Table VII. Financial market indicators

	2007	2008	2009	2010	2011
Total assets of the banking sector (% of GDP)	3118.4	3224.9	2986.7	2617.0	2631.3
Share of assets of the five largest banks (% of total assets)	30.6	29.7	29.3	30.9	...
Foreign ownership of banking system (% of total assets)	94.8	95.5	90.6	...	...
Financial soundness indicators:					
- non-performing loans (% of total loans) ¹⁾	0.4	0.6	0.7	0.2	0.4
- capital adequacy ratio (%) ^{1) 2)}	14.3	15.4	19.2	17.4	18.2
- return on equity (%) ^{1), 3)}	20.4	5.5	11.5	13.0	10.2
Bank loans to the private sector (year-on-year % change)	31.0	10.8	-5.3	1.5	1.5
Lending for house purchase (year-on-year % change)	22.1	8.6	7.1	8.8	9.0
Loan to deposit ratio	56.8	68.6	66.1	69.0	65.8
CB liquidity as % of liabilities	3.1	4.2	1.5	0.3	0.8
Banks' exposure to countries receiving official financial assistance (% of GDP) ⁴⁾	...	...	...	...	...
Private debt (% of GDP)	...	377.1	394.9	386.5	379.5
Gross external debt (% of GDP) ⁴⁾					
- Public	0.1	2.5	2.7	6.1	5.9
- Private	2211.0	2729.0	2737.0	2335.8	2464.3
Long term interest rates spread versus Bund (basis points)*	24.4	62.3	100.7	42.6	31.5
Credit default swap spreads for sovereign securities (5-year)*	...	...	...	...	...
Notes:					
¹⁾ Latest available September 2011.					
²⁾ The capital adequacy ratio is defined as total capital divided by risk weighted assets.					
³⁾ Net income before provisions for income taxes.					
⁴⁾ Latest data 2011Q3.					
* Measured in basis points.					
Source :					
Bank for International Settlements and Eurostat (exposure to macro-financially vulnerable countries), IMF (financial soundness indicators), Commission (long-term interest rates), World Bank (gross external debt) and ECB (all other indicators).					

Table VIII. Labour market and social indicators

Labour market indicators	2006	2007	2008	2009	2010	2011
Employment rate (% of population aged 20-64)	69.1	69.6	68.8	70.4	70.7	70.1
Employment growth (% change from previous year)	0.9	3.9	-0.2	7.3	1.7	1.8
Employment rate of women (% of female population aged 20-64)	59.4	61.0	60.1	61.5	62.0	61.9
Employment rate of men (% of male population aged 20-64)	78.9	78.3	77.2	79.0	79.2	78.1
Employment rate of older workers (% of population aged 55-64)	33.2	32.0	34.1	38.2	39.6	39.3
Part-time employment (% of total employment)	17.1	17.8	18.0	18.4	18.0	18.5
Part-time employment of women (% of women employment)	36.2	37.1	38.3	35.2	36.1	36.2
Part-time employment of men (% of men employment)	2.6	2.6	2.7	5.7	4.1	4.9
Fixed term employment (% of employees with a fixed term contract)	6.1	6.8	6.2	7.2	7.1	7.1
Unemployment rate ¹ (% of labour force)	4.6	4.2	4.9	5.1	4.6	4.8
Long-term unemployment ² (% of labour force)	1.4	1.2	1.6	1.2	1.3	1.4
Youth unemployment rate (% of youth labour force aged 15-24)	15.5	15.6	17.3	16.5	15.8	15.6
Youth NEET ³ rate (% of population aged 15-24)	6.7	5.7	6.2	5.8	5.1	:
Early leavers from education and training (% of pop. 18-24 with at most lower sec. educ. and not in further education or training)	14.0	12.5	13.4	7.7	7.1	:
Tertiary educational attainment (% of population 30-34 having successfully completed tertiary education)	33.5	35.7	38.7	44.5	44.2	:
Labour productivity per person employed (annual % change)	1.4	2.1	-3.8	-6.2	0.8	-1.2
Hours worked per person employed (annual % change)	-0.1	0.5	0.0	-4.2	0.3	0.2
Labour productivity per hour worked (annual % change; constant prices)	1.4	1.6	-3.8	-2.1	0.6	-1.4
Compensation per employee (annual % change; constant prices)	-3.9	0.1	-2.1	1.7	-2.2	0.5
Nominal unit labour cost growth (annual % change)	1.2	1.6	6.2	8.6	1.7	3.2
Real unit labour cost growth (annual % change)	-5.1	-2.0	1.7	8.4	-3.0	-1.4
Notes: ¹ According to ILO definition, age group 15-74) ² Share of persons in the labour force who have been unemployed for at least 12 months. ³ NEET are persons that are neither in employment nor in any education or training. Sources: Commission (EU Labour Force Survey and European National Accounts)						

Table VIII. Labour market and social indicators (continued)

Expenditure on social protection benefits (% of GDP)	2005	2006	2007	2008	2009
Sickness/Health care	5.46	5.07	4.94	5.00	5.77
Invalidity	2.78	2.64	2.34	2.29	2.58
Old age and survivors	5.60	5.35	5.19	5.33	6.19
Family/Children	3.59	3.39	3.15	3.94	4.04
Unemployment	1.07	0.98	0.93	0.91	1.27
Housing and Social exclusion n.e.c.	0.15	0.17	0.15	0.18	0.33
Total	21.7	20.4	19.3	20.2	23.1
of which: Means tested benefits	0.60	0.60	0.57	0.59	0.83
Social inclusion indicators	2006	2007	2008	2009	2010
Risk-of-poverty or exclusion ¹ (% of total population)	16.5	15.9	15.5	17.8	17.1
Risk-of-poverty or exclusion of children (% of people aged 0-17)	20.4	21.2	20.9	23.7	22.3
Risk-of-poverty or exclusion of elderly (% of people aged 65+)	8.3	7.2	5.4	6.2	6.1
At-risk-of-poverty rate ² (% of total population)	14.1	13.5	13.4	14.9	14.5
Value of relative poverty threshold (single household per year) - in PPS	15851	16108	16166	16221	16048
Severe material deprivation ³ (% of total population)	1.1	0.8	0.7	1.1	0.5
Share of people living in low work intensity households ⁴ (% of people aged 0-59 not student)	5.2	5.0	4.7	6.3	5.5
In-work at-risk-of poverty rate (% of persons employed)	10.3	9.3	9.4	10.0	10.6
Notes: ¹ People at risk of poverty or social exclusion (AROPE): individuals who are at risk of poverty (AROP) and/or suffering from severe material deprivation (SMD) and/or living in households with zero or very low work intensity (LWI). ² At-risk-of poverty rate: share of people with an equivalised disposable income below 60% of the national equivalised median income. ³ Share of people who experience at least 4 out of 9 deprivations: people cannot afford to i) pay their rent or utility bills, ii) keep their home adequately warm, iii) face unexpected expenses, iv) eat meat, fish, or a protein equivalent every second day, v) enjoy a week of holiday away from home once a year, vi) have a car, vii) have a washing machine, viii) have a colour TV, or ix) have a telephone. ⁴ People living in households with very low work intensity: share of people aged 0-59 living in households where the adults work less than 20% of their total work-time potential during the previous 12 months. Sources: For expenditure on social protection benefits ESSPROS; for social inclusion EU-SILC.					

Table IX. Product market performance and policy indicators

Performance indicators	2002-2006	2007	2008	2009	2010	2011
Labour productivity ¹ total economy (annual growth in %)	1.3	1.3	-0.5	-2.5	2.4	1.4
Labour productivity ¹ in manufacturing (annual growth in %)	3.0	3.0	-2.4	-8.0	9.9	n.a.
Labour productivity ¹ in electricity, gas, water (annual growth in %)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Labour productivity ¹ in the construction sector (annual growth in %)	-0.2	-2.0	-1.3	-1.6	1.1	n.a.
Patent intensity in manufacturing ² (patents of the EPO divided by gross value added of the sector)	3.2	2.9	2.5	n.a.	n.a.	n.a.
Policy indicators	2002-2006	2007	2008	2009	2010	2011
Enforcing contracts ³ (days)	n.a.	535	542	548	549	556
Time to start a business ³ (days)	n.a.	20	17	15	15	14
R&D expenditure (% of GDP)	1.8	1.8	1.9	2.0	2.0	n.a.
Tertiary educational attainment (% of 30-34 years old population)	26.5	30.0	31.1	32.3	33.6	n.a.
Total public expenditure on education (% of GDP)	5.1	5.0	5.1	n.a.	n.a.	n.a.
	2005	2006	2008	2009	2010	2011
Product market regulation ⁴ , Overall (Index; 0=not regulated; 6=most regulated)	n.a.	n.a.	2	n.a.	n.a.	n.a.
Product market regulation ⁴ , Retail (Index; 0=not regulated; 6=most regulated)	n.a.	n.a.	4	n.a.	n.a.	n.a.
Product market regulation ⁴ , Network Industries ⁵ (Index; 0=not regulated; 6=most regulated)	3	3	3*	n.a.	n.a.	n.a.
Notes: ¹ Labour productivity is defined as gross value added (in constant prices) divided by the number of persons employed. ² Patent data refer to applications to the European Patent Office (EPO). They are counted according to the year in which they were filed at the EPO. They are broken down according to the inventor's place of residence, using fractional counting if multiple inventors or IPC classes are provided to avoid double counting. ³ The methodologies, including the assumptions, for this indicator are presented in detail on the website http://www.doingbusiness.org/methodology . ⁴ The methodologies for the product market regulation indicators are presented in detail on the website http://www.oecd.org/document/1/0,3746,en_2649_34323_2367297_1_1_1_1,00.html . The latest available product market regulation indicators refer to 2003 and 2008, except for Network Industries. ⁵ Aggregate ETCR. *figure for 2007. Source : Commission, World Bank - <i>Doing Business</i> (for enforcing contracts and time to start a business) and OECD (for the product market regulation indicators).						

Table X. Indicators on green growth

Luxembourg		2001-2005	2006	2007	2008	2009	2010
Green Growth performance							
Macroeconomic							
Energy intensity	kgoe / €	0.18	0.17	0.16	0.16	0.15	0.16
Carbon intensity	kg / €	0.49	0.47	0.42	0.41	0.42	n.a.
Resource intensity (reciprocal of resource productivity)	kg / €	0.44	0.44	0.40	0.35	0.34	n.a.
Waste intensity	kg / €	n.a.	0.35	0.33	0.32	n.a.	n.a.
Energy balance of trade	% GDP	-3.1%	-4.1%	-3.7%	-4.6%	-2.5%	-3.5%
Energy weight in HICP	%	11	12	11	12	11	11
Difference between change energy price and inflation	%	1.3	8.7	-0.8	11.7	-11.9	3.5
Environmental taxes over labour taxes	ratio	18.6%	17.8%	17.1%	16.3%	14.9%	n.a.
Environmental taxes over total taxes	ratio	7.5%	7.3%	7.1%	7.0%	6.6%	n.a.
Sectoral							
Industry energy intensity	kgoe / €	0.28	0.27	0.22	0.23	0.23	n.a.
Share of energy-intensive industries in the economy	% GDP	6.8	5.8	6.8	5.9	4.9	n.a.
Electricity prices for medium-sized industrial users	€ / kWh	0.07	0.08	0.10	0.09	0.11	0.10
Public R&D for energy	% GDP	n.a.	0.00%	0.00%	0.01%	0.01%	n.a.
Public R&D for the environment	% GDP	n.a.	0.01%	0.01%	0.02%	0.02%	n.a.
Recycling rate of municipal waste	ratio	57.3%	81.1%	82.0%	82.4%	82.8%	n.a.
Share of GHG emissions covered by ETS	%	n.a.	20.8%	20.7%	17.1%	18.7%	n.a.
Transport energy intensity	kgoe / €	1.03	1.00	0.92	0.88	0.83	n.a.
Transport carbon intensity	kg / €	2.51	2.46	2.23	2.15	2.03	n.a.
Change in the ratio of passenger transport and GDP	%	-1.2%	-2.8%	-3.1%	3.3%	n.a.	n.a.
Security of energy supply							
Energy import dependency	%	98.3%	98.7%	97.2%	97.9%	97.6%	n.a.
Diversification of oil import sources	HHI	n.a.	0.00	0.00	0.00	0.00	n.a.
Diversification of energy mix	HHI	0.47	0.47	0.46	0.46	0.46	n.a.
Share of renewable energy in energy mix	%	1.1%	1.6%	2.4%	2.6%	2.8%	n.a.
<u>Country-specific notes:</u> The year 2011 is not included in the table due to lack of data. <u>General explanation of the table items:</u> Source: Eurostat unless indicated otherwise; ECFIN explanations given below All macro intensity indicators are expressed as a ratio of a physical quantity to GDP (in 2000 prices) Energy intensity: gross inland energy consumption (in kgoe) divided by GDP (in EUR) Carbon intensity: Greenhouse gas emissions (in kg CO₂ equivalents) divided by GDP (in EUR) Resource intensity: Domestic Material Consumption (in kg) divided by GDP (in EUR) Waste intensity: waste (in kg) divided by GDP (in EUR) Energy balance of trade: the balance of energy exports and imports, expressed as % of GDP Energy weight in HICP: the share of the "energy" items in the consumption basket used in the construction of the HICP Difference between energy price change and inflation: energy component of HICP, and total HICP inflation (annual %-change) Environmental taxes over labour or total taxes: from DG TAXUD's database "Taxation trends in the European Union" Industry energy intensity: final energy consumption of industry (in kgoe) divided by gross value added of industry (in EUR) Share of energy-intensive industries in the economy: share of gross value added of the energy-intensive industries in GDP Recycling rate of municipal waste: ratio of municipal waste recycled over total municipal waste Public R&D for energy or for the environment: government spending on R&D (GBAORD) for these categories as % of GDP Share of GHG emissions covered by ETS: based on greenhouse gas emissions as reported by Member States to EEA (excl LULUCF) Transport energy intensity: final energy consumption of transport (in kgoe) divided by gross value added of industry (in EUR) Transport carbon intensity: greenhouse gas emissions in transport divided by gross value added of the transport sector Passenger transport growth : measured in %-change in passenger kilometres Energy import dependency: net energy imports divided by gross inland energy consumption incl. of international bunkers Diversification of oil import sources: Herfindahl index (HHI), calculated as the sum of the squared market shares of countries of origin Diversification of the energy mix: Herfindahl Index over natural gas, total petrol products, nuclear heat, renewable energies and solid fuels Share of renewable energy in energy mix: percentage-share in gross inland energy consumption, expressed in tonne oil equivalents							