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**COMMISSION STAFF WORKING PAPER**

**Assessment of the 2011 national reform programme and stability programme for  
LUXEMBOURG**

*Accompanying the document*

**Recommendation for a**

**COUNCIL RECOMMENDATION**

**on the National Reform Programme 2011 of Luxembourg  
and delivering a Council Opinion on the updated stability programme of Luxembourg,  
2011-2014**

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## **1. INTRODUCTION**

Luxembourg has withstood the financial and economic crisis better than could have been initially expected, considering the financial turmoil which was at the origin of the crisis and the exceptional weight of the financial sector in the economy. After real GDP had dropped by 3.6% in 2009, the economy recovered quickly in 2010. The state of public finances is comparatively sound, although the crisis has taken its toll. The government agreed last year on a package of consolidation measures. The Stability Programme (SP), submitted to the Commission on 29 April 2011, projects the evolution of public finances under a no-policy-change scenario. The National Reform Programme (NRP), submitted to the Commission on the same day, sets out measures to improve the long-term sustainability of public finances and to tackle long-standing structural policy challenges.

## **2. ECONOMIC OUTLOOK**

### **2.1. RECENT ECONOMIC DEVELOPMENTS**

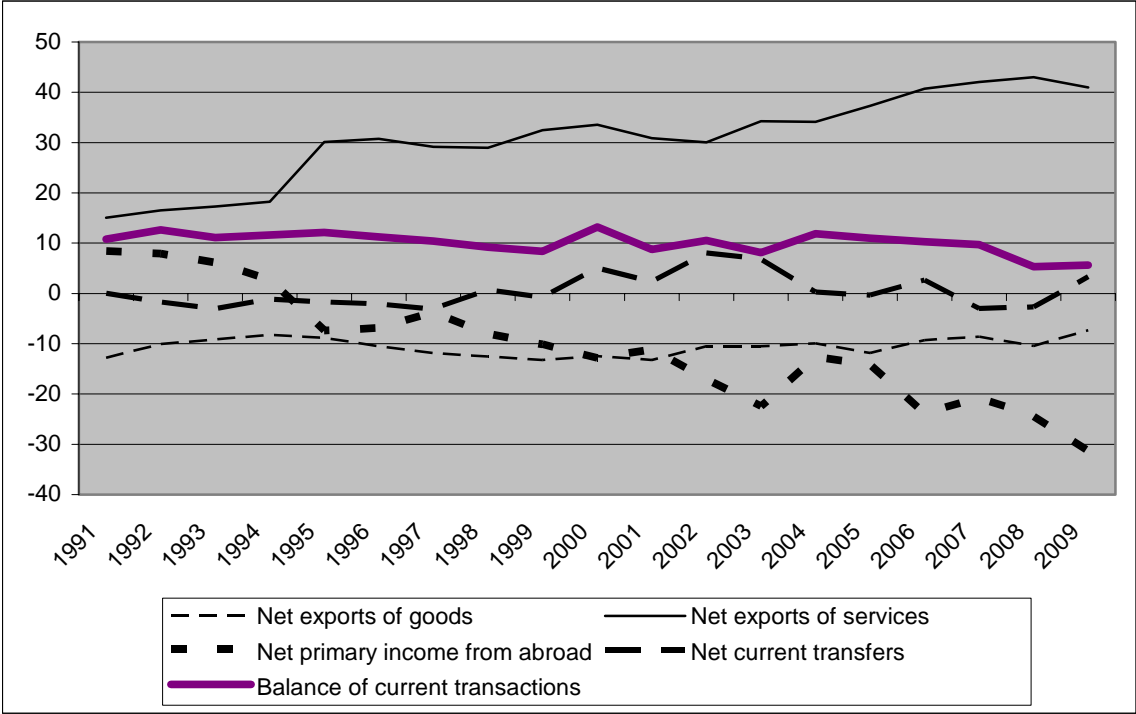
In 2010, GDP expanded by about 3.5%, boosted by an increase in public spending decided by the government as part of the European Economic Recovery Programme (EERP), and by a strong increase in net exports. During the crisis, employment remained surprisingly resilient despite the strong deceleration in output, partly due to a massive recourse to short-time working, encouraged by the authorities. Unemployment began to rise from the beginning of 2008 on and broadly stabilised at about 6%, a level which is historically high in Luxembourg. Inflation fell rapidly to below zero during the recession, but has risen again in 2010, reaching 2.3% for the national CPI and 2.8% for the HICP.<sup>1</sup> In recent months, the annual increase in both indexes has exceeded 3.5% due to the surge in oil prices.

The country's growing specialisation in services over the years has been reflected in a rapidly rising surplus of trade in services (figure 1). Overall current account balances have continuously exhibited large surpluses, although to a large extent offset by the increasingly negative net income from abroad due to the rising share of cross-border workers in total employment (box 1).

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<sup>1</sup> As usual, changes in the Eurostat HICP have been larger than those in the national CPI, which excludes consumption by non-residents, in particular, their large purchases of car fuel, alcohol and tobacco products.

**Figure 1: Luxembourg : foreign trade and current account as a percentage of GDP**



Source : Commission services

**2.2. OUTLOOK**

The rather strong growth momentum observed in 2010 is expected to continue in 2011 and 2012 as domestic demand will strengthen and external trade will remain rather supportive. Real GDP growth is expected to remain almost stable this year and to accelerate to 3.8% in 2012. Although such growth rates are substantially higher than those currently expected for most other Member States, they are still below the average rates recorded in Luxembourg before the crisis (4.7% on average between 2000 and 2007). Inflation is projected to accelerate in 2011 due to increasing energy prices and to decelerate slightly in 2012. The economic revival will spur employment in the coming years although it is expected to grow little in the important banking sector where restructuring is still ongoing. The overall job creation is not likely to result in a significant decline in unemployment, as mostly non-resident workers, not included in the Luxembourg unemployment figures, seem to benefit from this job creation (something also observed before the crisis - see box 1).

**Box 1. Particularities of the labour market in Luxembourg**

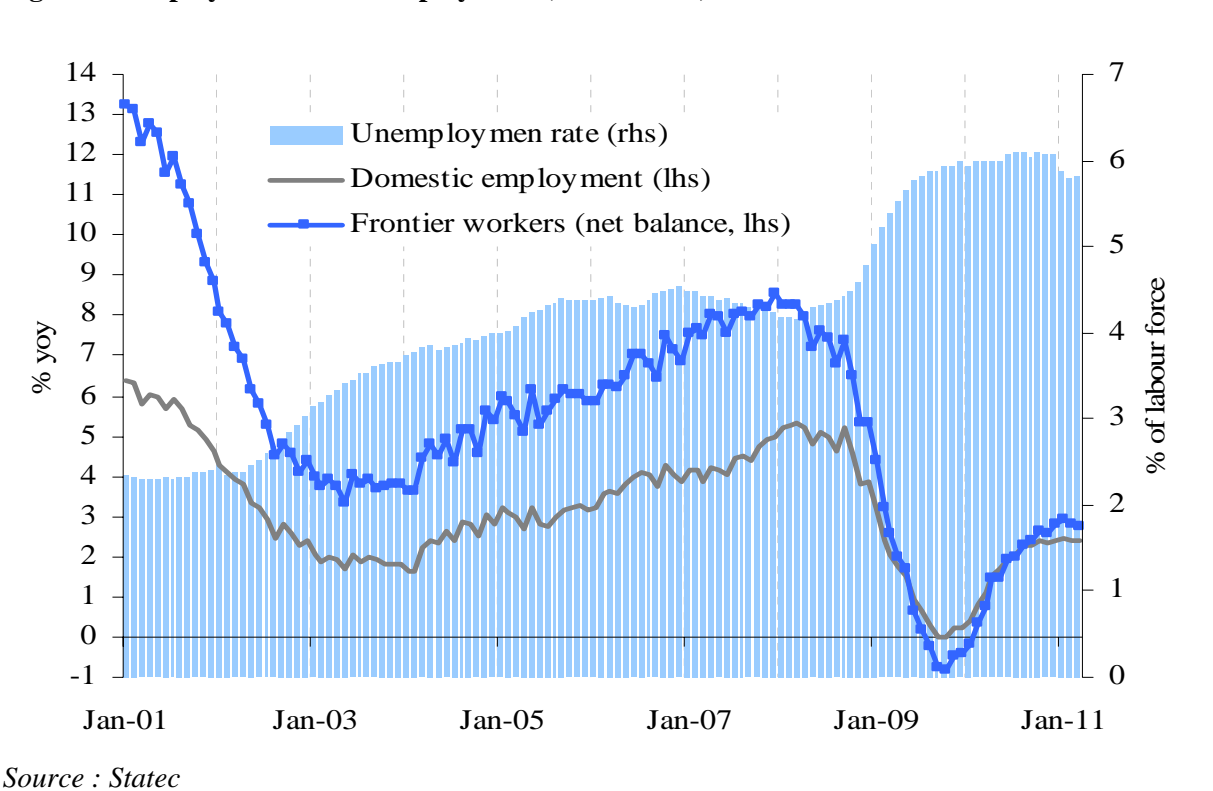
Employment in Luxembourg has been extremely dynamic since the early 1980s. One of the main features of substantial job creation, besides a growth in resident population three times the EU average (it rose by 36% between 1982 and 2009), was the increasing recourse to non-resident workers. Their share in total employment has risen from about 7% in the early 1980s to more than 40% in recent years (and to around half of private sector employment). Half of them are French residents, with German and Belgian residents each accounting for about 25% of non-residents. Over the period 2000-2010, non-resident workers have accounted for about two thirds of the total increase in employment.

Despite the remarkable job creation, unemployment began to rise from about 2½% of the active population in 2001 to around 4½ % in 2006, after which it declined only marginally at a time when

employment growth was exceeding 4% a year (figure 2). With stagnating job creation resulting from the crisis, unemployment began to rise again (and much faster than during the previous slowdown). It has broadly stabilised at about 6% since early 2010, a level which, although lower than in most other Member States, is historically high in Luxembourg. Non-residents' employment suffered more from the recession, essentially due to the fact that there are proportionally more non-residents in the private sector, where job losses were concentrated. Since the recovery in output and job creation, non-residents' employment has been rising again and it is now increasing slightly faster than total domestic employment.

Even though the rise in unemployment since 2008 is related to the recession, unemployment clearly has an increasingly structural character in Luxembourg, as illustrated by the fact that, during the previous strong growth episode, it needed an employment growth rate of about 4% a year in order to decline (and only marginally). Job creation in recent years has increasingly benefitted non-residents, who are often at least as skilled as residents, and due to the lower level of wages and unemployment benefits in their country of residence, are generally willing to work for lower wages. Another aspect of unemployment in Luxembourg which tends to illustrate its structural nature is the fact that, although total unemployment remains substantially lower than the EU average, youth unemployment is slightly higher.

**Figure 2: Employment and unemployment (2001 – 2010)**



The financial sector, which has been the country's main growth engine in recent decades, now represents almost 30% of total value added. The success story of the financial sector in Luxembourg has partly been built on the liberalisation of financial activities world-wide, accompanied by tax incentives. It seems to have withstood the crisis rather well, but a return to the pre-crisis growth rates of the sector is unlikely given new international regulation on financial sector activities and the erosion of fiscal and regulatory advantages.

### 3. MONITORING, PROCEDURAL ISSUES AND GOVERNANCE

The NRP was prepared through in-depth consultation with the national parliament, 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. Luxembourg ensured close coherence between its NRP and its Stability Programme. The SP and NRP have been drawn up on the basis of a detailed macro-economic scenario prepared by different services. The date of the declaration on the State of the Union by the Prime Minister of Luxembourg has been advanced by one month in order to integrate its content into the programmes, and in order to involve the national parliament in the drawing up of the programmes.

The NRP identifies the problems faced by the Luxembourg economy. It also contains the measures that are planned to be taken in the context of the Euro Plus Pact commitments. However, an estimation of the effects is lacking for most of the measures and therefore the adequacy of the NRP is difficult to assess.

Luxembourg has set national targets in the field of employment, R&D and education for 2020. However, a final target has not yet been set concerning energy efficiency and poverty reduction. Several structural indicators in the context of the Europe 2020 Strategy do not sufficiently take into account the national specifics of Luxembourg, especially because of the high number of cross-border workers. With this in mind, the Observatory of Competitiveness established a national "*Tableau de Bord Compétitivité*" in 2004 and its latest edition dates of the end of October 2010. The overall indicator calculated on the basis of this scoreboard ranks Luxembourg in ninth place within the EU.

In order to optimize 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 is aiming at improving communication on the Europe 2020 strategy to the wider public in Luxembourg through the organisation of public events.

**Table 1: Luxembourg Europe 2020 targets**

Europe 2020 targets	Current situation <sup>2</sup>	Luxembourg Europe 2020 target in the NRP
R&D investment (% of GDP)	1.68%	2.3-2.6%
Employment rate (%)	70.4%	73%
Early school leaving (%)	9% ( LU figure) 7.7%	<10%
Tertiary education attainment (%)	30% (LU figure according to resident population) (46.6% Eurostat)	40%
Reduction of number of people in or at risk of poverty or exclusion	85,000	No target
Energy efficiency – reduction of energy consumption in Mtoe <sup>3</sup>	Primary Energy Consumption in 2007: 4.6 t	Reduction in primary energy consumption: 0.2 Mtoe
Reduction in greenhouse gas	-4% <sup>4</sup>	-20% <sup>5</sup>

<sup>2</sup> Eurostat figures 2009 unless stated

<sup>3</sup> As estimated by the Commission. Mtoe = Million tonnes of oil equivalent.

emissions (from sources not covered by the Emission Trading System)		
Renewable energy (% of total energy use)	2.2% (2008)	11%

#### 4. POLICY CHALLENGES, AGENDA AND ASSESSMENT

##### 4.1. CHALLENGES

Public finance conditions of Luxembourg are comparatively sound at the moment. The recurrent budgetary surpluses of the past have for a large part been permitted by the buoyant revenues generated by the strong economic growth. However, even if Luxembourg were to record in the coming years the same high growth rates, this would not prevent a progressive but sizeable deterioration in public finances resulting from population ageing (box 4). The increase in age-related public expenditure in Luxembourg up to 2060 is projected to be the strongest in the EU, essentially reflecting the generosity of the pension system. The short-term financing of the pension system is currently supported by a low old-age dependency ratio and depends in part on the contributions paid by the relatively young population of cross-border workers. In the future, both factors will reverse and pension costs are anticipated to increase substantially.

The price and cost competitiveness of Luxembourg has deteriorated substantially since the beginning of the last decade: unit labour costs have risen about one and a half times faster in Luxembourg than on average in the EU-15 since 2000 and more than five times faster than Germany. The financial sector has been Luxembourg's main growth engine since the early 1980s but the financial crisis clearly has raised the question as to whether the sector will be able to keep playing this role in the future. The strong dependency of the Luxembourg economy on these activities constitutes a source of vulnerability for the country.

Despite the very strong employment growth recorded over the latest three decades, the employment rate of the resident population is lower than the EU average, especially at both ends of the age spectrum. The employment rate of older workers (age 55-64) at 38.2% (2009) is one of the lowest in the EU. While the statutory retirement age is in principle 65 years, the Luxembourg pension system often allows people retiring earlier with virtually no reduction in the pension level, which is, moreover, comparatively high (box 4). As a result, the average age of withdrawal from the labour market is 59.4 years, which weighs on the costs of the pension system.

Job creation in recent years has mainly benefited non-residents whose wage expectations are generally lower than those of residents (box 1). While total unemployment, despite its recent increase, remains substantially lower than the EU average, youth unemployment is relatively high at 16.1% in 2010 compared to 6% of the total active population. The unemployment rate depends heavily on the educational level. Young residents face intense competition for jobs from non-residents, who are often at least as skilled. This raises the question of the performance of the educational system, which both PISA and OECD tests indicate is around

<sup>4</sup> This quantity corresponds to the evolution of the emissions not covered by the EU Emissions Trading System. As the scope of the Emissions Trading System evolved between 2005 and 2008, these emissions are estimated on the basis of the main relevant UNFCCC source categories (as opposed to the difference between total emissions and EU ETS verified emissions).

<sup>5</sup> The national emissions limitation target defined in Decision 2009/406/EC (or "Effort Sharing Decision") concerns the emissions not covered by the EU Emissions Trading System. It is expressed as the minimum relative decrease (if negative) or the maximum relative increase (if positive) compared to 2005 levels.

or below the EU average. Luxembourg's education system faces a number of specific challenge including the multilingualism demands of the system, the high proportion of immigrants in the population (40%), and the specific skills required by a strongly specialised labour market with a big financial sector.

R&D expenditure in Luxembourg is below the EU average, due to a combination of low public spending on R&D and a strong orientation of the economy towards services. The business environment is characterised by a legal and regulatory framework and administrative burden above the EU average. Luxembourg faces shortages in specialized professions, mainly in the industrial and construction sectors, high-cost of land and difficulties for enterprises to find suitable industrial zones. Energy consumption and greenhouse gas emissions per capita are the highest of Europe. Energy efficiency potential remains vastly untapped while low energy taxes attract significant cross-border purchasing of fuel.

#### **Box 2 – Actions and commitments under the Euro Plus Pact**

On 12 April 2011, Prime Minister Jean-Claude Juncker announced a series of commitments to the President of the European Council. Additionally, the NRP mentions which concrete measures will be taken in the context of the Euro Plus Pact commitments.

First, in order to foster competitiveness, the government agreed with the trade unions to postpone the application of the automatic wage indexation mechanism to October 2011 and intends to negotiate another agreement for 2012. Moreover, the government concluded an agreement with social partners to keep social contributions stable during the rest of the government's term. An agreement with the social partners has been concluded to compensate employers during the next five years for the cost of higher minimum wages through the payment of an equivalent amount to the '*Mutualité des Employeurs*'.

Second, the government commits to reinforcing structural competitiveness by improving the business environment through administrative simplification and better infrastructure. Measures to reduce formalities for companies to obtain permits and to reduce the delays for their treatment will be taken during 2011.

Third, the employment administration will be reformed in order to increase efficiency of active employment policies and of intermediation between supply and demand. Fourth, life long learning in the private sector will be encouraged by a higher co-financing rate by the state. This measure tackles the country's structural unemployment, especially of younger low-skilled workers, and the low employment rate of older people. Fifth, the government approved the elements of a pension reform to ensure long-term sustainability. The plans still have to be discussed with social partners and the draft bill has not yet been tabled, but the government is committed to finalising the reform by the end of 2011.

Finally, the government is determined to increase the resistance of the financial sector through regulation and supervision at the European and international level. It will also strive to diversify the structure of the Luxembourg economy.

Overall, these commitments try to address the main challenges the Luxembourg economy faces, namely the long-term sustainability of the pension system, the loss in competitiveness, the low employment rate of young and older people, and the dependence on the financial sector. However, the measures aimed at addressing the loss in cost competitiveness have only a temporary effect and do not tackle the deterioration in a structural way. The reform of the employment administration and employment policies are detailed in the NRP but its impact is not quantified. An increase of the employment rate for older workers will also depend on the outcome of the announced pension reform, the details of which are still to be further elaborated. International cooperation on regulation and supervision should help increase the resistance of the financial sector its dominant foreign ownership and the international character of its activities limit the extent to which the country can achieve this on its own. No new measures have been announced to diversify the economic structure.

## **4.2. ASSESSMENT OF THE POLICY AGENDA**

### **4.2.1. Macro-economic policies**

#### **4.2.1.1. Public finances**

The macro-economic scenario presented in the programme projects a modest deceleration of real GDP growth in 2011 to 3.2%, followed by a slight acceleration to 3.5% in 2012. This programme scenario is slightly more pessimistic than that of the Commission services' spring 2011 forecast, which projects growth to accelerate from 3.4% in 2011 to 3.8% in 2012. The programme foresees growth rates of 3.7% and 4.0% in 2013 and 2014, compared to respectively 3.8% and 3.6% in the projections of the Ageing Working Group.

Concerning the growth composition, the programme's projection relies almost exclusively on domestic demand in 2011. The subsequent acceleration of economic expansion is largely explained by an increasing contribution of net exports. In the Commission services' 2011 spring forecast the contribution of net exports is substantially higher in 2011 and 2012.

Compensation of employees, the tax base for personal income tax and social contributions, are expected to increase slightly less in the programme than in the Commission services' forecast, due to less pronounced growth in (domestic) employment. Wage growth per employee is similar in both scenarios with a modest increase in 2011 and a strong acceleration in 2012. As far as the cyclical conditions implied by this macro-economic scenario are concerned, the output gap<sup>6</sup>, which is substantially negative at the moment, would progressively narrow over the period and eventually close in 2014. In conclusion, the macro-economic projections used in the programme seem to be realistic and even somewhat cautious.

According to the programme, the general government balance deteriorated from a deficit of 0.9% in 2009 to 1.7% in 2010. This is significantly better than the 3.9% deficit announced in the January 2010 update of the stability programme and the 2.1% deficit that was notified in October 2010. This improvement is due to the higher than expected GDP growth in 2010 (3.5% versus 2.5%) with more dynamic employment growth (+1.5% versus -0.5%). When excluding the denominator effect, the difference in the government balance stems almost entirely from the revenue side.

The previous programme presented a budgetary projection for 2011 where the deficit would increase to 5.0% of GDP, compared to a deficit of 1.0% in the Commission services' spring forecast. This big difference is in the first place explained by the base effect associated with the above-mentioned better 2010 outcome. In addition, a package of consolidation measures with an overall effect of 1.5% of GDP for 2011 has been adopted since the previous programme (box 3). In the new programme, the target for 2011 is a deficit of 1.0%, which is in line with the Commission services' spring forecast.

According to the programme, the general government deficit is expected to rise to 1.5% in 2012. Thereafter, it is expected to decrease again to reach 0.8% of GDP by the end of the projection period. This is, not surprisingly, significantly better than the targets in the previous programme. The deterioration in 2012 did not figure in last year's programme and is limited to 1.1% according to the Commission's Services' forecast. While last year's programme and the Commission's Services' forecast projected a decrease of the expenditure ratio, the current

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<sup>6</sup> This is the output gap as recalculated by Commission services based on the information in the programme, following the commonly agreed methodology.



programme foresees an increase, which is only partially compensated at the revenue side. After 2012, the expenditure ratio is seen as decreasing more rapidly than the revenue ratio. The evolution of the different revenue and expenditure components seem to be in line with the prudent macro-economic outlook. Risks to these projections mainly refer to the macroeconomic outlook and, in particular, its growth composition, tilted towards an optimistic projection of domestic demand. This could impact on revenues through lower consumption and even lower employment creation.

The general government deficit stems from the negative central government balance (2.5% in 2011). As far as the social security is concerned, surpluses are projected as has been the case in the past.

The country's medium-term objective (hereafter MTO) is a structural surplus (cyclically-adjusted and excluding one-off and other temporary measures) of 0.5% of GDP. The previous programme stated that this MTO should be achieved from 2015 onwards, but this is not confirmed in the current programme. The programme projections, under an unchanged policy scenario, do not foresee the achievement of the MTO within the 2011-2014 programming period. On the contrary, without new measures, the structural balance (recalculated by Commission services based on the information in the programme, following the commonly agreed methodology) is expected to deteriorate gradually from a 0.3% surplus in 2011 to a 0.8% deficit in 2014.

For 2011, the increase in primary expenditure net of discretionary measures follows the reference rate of medium-term potential GDP growth. From 2012 onwards, with no new discretionary revenue measures taken, the average annual increase in primary expenditure of 5.5% exceeds the prudent fiscal policy cap of 1 pp. below the reference rate of medium-term potential growth. Hence, when assessed against the projected rate of medium-term potential output growth, expenditure projections do not seem to ensure an appropriate adjustment path towards the MTO.

All projections are made under a no-policy-change assumption. The main policy objective stated in the programme is to preserve sustainable public finances by re-establishing a balanced budget by 2014 at the latest. For this reason, in its 2010 consolidation package the government envisages a mid-term review in 2012. If necessary, additional consolidation measures will be taken in order to return to a balanced budget by 2014. As the fiscal policy effort, measured by the change in the (recalculated) structural balance, is negative from 2012 on, such additional measures appear necessary in order to respect the required yearly 0.5pp progress towards the MTO.

### Box 3. Main measures

#### Main budgetary measures

Revenue	Expenditure
<b>2011</b>	
<ul style="list-style-type: none"> <li>• Increase in upper marginal rate of income tax (0.1% of GDP)</li> <li>• Increase in solidarity tax (0.2% of GDP)</li> <li>• Introduction of crisis levy (0.2% of GDP)</li> </ul>	<ul style="list-style-type: none"> <li>• Operating costs of central government (-0.1% of GDP)</li> <li>• Adjustment of modalities for state intervention in favour of students (-0.1% of GDP)</li> <li>• Adjustment of pensions to the evolution of standard of living (-0.1% of GDP)</li> <li>• Investment expenditure (-0.8% of GDP)</li> </ul>
<b>2012</b>	
<ul style="list-style-type: none"> <li>• Increase in upper marginal rate of income tax (0.1% of GDP)</li> <li>• Increase in solidarity tax (0.1% of GDP)</li> <li>• Introduction of crisis levy (0.2% of GDP)</li> </ul>	<ul style="list-style-type: none"> <li>• Operating costs of central government (-0.1% of GDP)</li> <li>• Adjustment of modalities for state intervention in favour of students (-0.1% of GDP)</li> <li>• Investment expenditure (-0.8% of GDP)</li> </ul>
<b>2013</b>	
<ul style="list-style-type: none"> <li>• n.a.</li> </ul>	<ul style="list-style-type: none"> <li>• n.a.</li> </ul>
<b>2014</b>	
<ul style="list-style-type: none"> <li>• n.a.</li> </ul>	<ul style="list-style-type: none"> <li>• n.a.</li> </ul>

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.

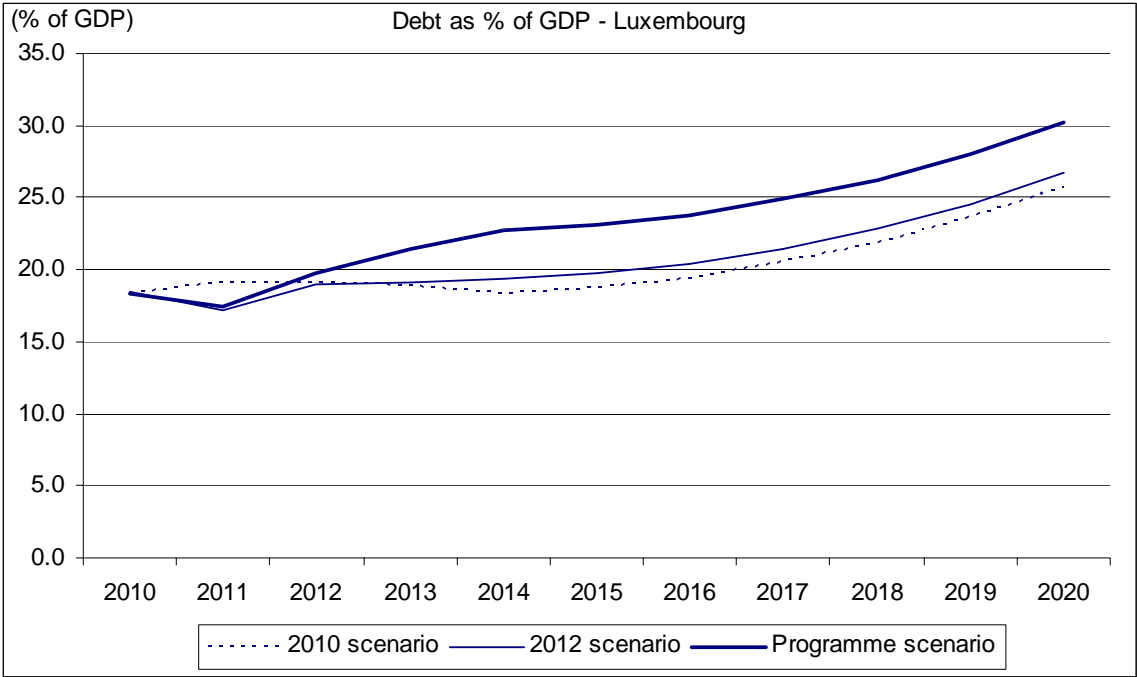
The general government gross debt, which has traditionally been, and still is one of the lowest in the EU, had doubled in 2008 as a result of the financing of the support to the financial sector, reaching 13.6% of GDP. It amounted to 18.4% of GDP in 2010. The programme projects the debt-to-GDP ratio to decrease to 17.5% in 2011 essentially due to the fact that the financing needs for 2011 will be covered by the non-spent revenue of loans issued in previous years and no additional borrowing will be required this year. From 2012 on, the debt ratio will start rising again and eventually reach 22.7% in 2014 according to the programme. The Commission services also forecast a decline in the debt ratio in 2011, followed by an increase in 2012, both the increase in 2011 and the decrease in 2012 being of a slightly smaller magnitude than in the programme given the lower deficit forecast and to a lesser extent a stronger projected real and nominal GDP growth.

Public debt developments in Luxembourg are more closely determined by the financing needs of the central government (and, to a much lesser extent, those of the local authorities) than by the balance of the general government. Indeed, in recent years, the central government has recorded recurrent deficits (albeit of a more moderate size than in many other Member States), while the social security system has, like in the past, continued to run recurrent surpluses, which have been used to build up reserves, that now amount to about 30% of GDP.

**Long-term sustainability of public finances**

Luxembourg is at medium risk with regard to the long-term sustainability of public finances. The long-term cost of ageing is clearly above the EU average. Although the government has accumulated sizeable assets and pension reserves are still growing, these will not be sufficient to ensure the sustainability of the system. The current budgetary position is nearly neutral in terms of its impact. Based on the current fiscal position, debt would increase to 25.7% of GDP by 2020. However given the expected deterioration in the initial budgetary position of the programme, its implementation will not be enough to put debt on a downward path by 2020. The significant assets accumulated in the social security system, together with the low level of government debt, will help finance the projected increase in pension expenditure when it materialises but the reserves are expected to be exhausted between 2030 and 2040. The rise in ageing costs is projected to occur relatively far into the future, thereby lowering the sustainability risks given the relatively long period available for adjusting the pension system, but this does not reduce the need to reform the pension system in order to improve the sustainability of public finances. Measures aimed at curbing the substantial increase in age-related expenditures would contribute to reducing the medium risk to the sustainability of public finances.

**Figure 3: Medium-term debt projections for Luxembourg**



#### **Box 4: The Luxembourg pension system**

The Luxembourg public pension system operates on a pay-as-you-go basis. The statutory retirement age is 65 for both men and women. However, workers can retire at the age of 57 without losing any pension rights when they have worked at least 40 years under the compulsory system.<sup>7</sup> Therefore, the average exit age is substantially lower than the statutory retirement age. Pension benefits are indexed to the CPI and are also adjusted to real increases in wages and salaries. Pension benefits consist of a flat element and an element proportional to income. Replacement rates are close to 100% in many cases, which makes the Luxembourg pension system one of the most generous in the EU. Thanks to the strong job creation in past decades, the dependency ratio is fairly low with 43 pensioners per 100 contributors in 2007. This has resulted in recurrent surpluses of the social security system, which have led to an accumulation of reserves currently estimated at about 29% of GDP. However, this favourable situation is for a large part due to the fact that, thanks to the very strong employment growth recorded since the early 1980s, the number of contributors to the pension system has been for a few decades rising faster than the number of beneficiaries. Since developments in the number of pensioners by definition reflect changes in employment in the previous periods, the number of pension recipients will progressively rise more and more rapidly and the dependency ratio will inevitably deteriorate.

According to projections by the Ageing Working Group<sup>8</sup> (hereinafter AWG), the number of pensioners relative to the number of contributors in public pension schemes will rise to more than one pensioner for every contributor. Similar trends can be observed in many Member States, but in the case of Luxembourg, this demographic evolution is combined with a particularly generous system. Outlays are expected to rise steadily from about 8.7% of GDP in 2007 to 23.9% in 2060. Thus, in the absence of any action and according to the AWG reference scenario, the accumulated deficit is estimated to represent 258% of GDP in 2060. Moreover, ageing will also result in higher public spending for health care and long-term care, which is projected to rise respectively by 1.2 and 2.0 percentage points of GDP by 2060.

In addition, as mentioned above, the very strong employment growth recorded in the latest three decades has gone hand-in-hand with an increasing recourse to non-resident workers. Consequently, a large and rising part of the pensions paid by the Luxembourg social security system will be spent abroad with very little effect on activity and employment inside the country.

The NRP presents the main principles and key elements of a pension reform which is currently being prepared. While the retirement age would remain unmodified (at the age of 65) with an also unaltered insurance period of 40 years, the jobholder can decide to stay at work for 43 years to increase the pension income. Alternatively, the job holder may voluntarily opt for only a 40-year career, which decreases the pension income by 15%. As in the past, pension benefits will be adapted to inflation and evolution of real wages. However, a mechanism to limit future pension adjustments to a certain level will be introduced. There will be no changes in contributions.

The new model is likely to keep jobholders longer in work on a voluntary basis, which would improve the dependency ratio of the pension system. However, the new mechanism would only concern new pensioners and would only apply to the part of the career situated after the entry into force of the reform, so it would only produce its full effect in 40 years. A detailed assessment of the entire reform is difficult at this early stage. The plans still have to be discussed with social partners and the draft bill has not yet been tabled. No time horizon is

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<sup>7</sup> Age 60 for people that have worked between 10 and 40 years under the compulsory scheme, for example because only part of their career has been in Luxembourg.

<sup>8</sup> European Commission, "The 2009 Ageing Report: economic and budgetary projections for the EU-27 Member States (2008-2060)", Joint report prepared by the European Commission (DG Ecfm) and the Economic Policy Committee (Ageing Working Group).

foreseen in the NRP, but under the Euro Plus Pact the government committed to finalize the reform by the end of 2011. Measures that increase participation rates of residents, which are currently below the EU average, would provide an important contribution to sustainability.

#### **4.2.1.2. Ensuring good functioning and stability of the financial sector**

The financial sector has been Luxembourg's main growth engine since the early 1980s, and the financial crisis clearly raised the question as to whether the sector will be able to keep playing this role in the future. Moreover, even if financial activities around the world 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.

Taking into account the exceptionally internationalised character of the financial sector in Luxembourg, the NRP stresses the need to reinforce regulation and supervision at the European and international levels. The authorities support all European initiatives in this field, in particular the strengthening of liquidity monitoring, the reinforcement of the capital base, the improvement of the protection of depositors and investors, and the creation of a European framework for crisis management and resolution. The NRP does not mention additional national reforms in this field.

The NRP recognises the vulnerability of Luxembourg due to its high dependency on financial activities. Even though economies of scale and the very small size of the internal market clearly limit the possibilities of diversification for a country of 500,000 inhabitants, the efforts made by the authorities in order to diversify the economy are worth pursuing and intensifying. However, no new measures are proposed in the NRP.

#### **4.2.1.3. Macro-economic imbalances: improving cost-competitiveness**

Over the period 2000-2010, wages rose about 1.3 times faster in Luxembourg than on average in the EU-15. Over the same period employment increased more than output, essentially due to a massive labour hoarding both during the slowdown at the beginning of the decade and the recent recession. As a result real GDP per person employed decreased while it generally increased in other EU countries, leading to a rise in unit labour costs about one and a half times faster in Luxembourg than in the EU-15, and more than five times faster than in Germany.

The NRP stresses that the government has agreed with the trade unions to postpone to October 2011 the application of the automatic wage indexation mechanism (regardless of when it should have normally have taken place under the current legislation). With current high inflation rates, this indexation would normally have taken place in spring this year, meaning that the postponement results in a substantial moderation of real wage growth in 2011. No decision has been taken on the following threshold. Without such a decision, and given the current inflation outlook, the next automatic indexation could arrive in spring 2012, which would wipe out the earlier gains in cost competitiveness.

Following an increase in minimum wages, the government decided to neutralise the cost effects for employers during the next five years through the payment of an equivalent amount to the 'Mutualité des Employeurs'. The government also committed not to increase social contributions during its term (ending in 2014).

## 4.2.2. Labour market reform and job opportunities

### Increasing incentives to work

Luxemburg has set a target to increase the employment rate of its residents to 73% by 2020. The NRP lists a series of measures contributing to this objective that will be taken after consultation with the social partners.

In order to increase the efficiency of active employment policies, the NRP proposes to reform the employment administration (ADEM) and to create an Employment Observatory, which will serve the government as a research and consulting body in the field.

An increase in participation of adults in lifelong learning programmes (LLL) would help increase the level of qualifications of the adult workforce. This aspect may also play a role in the country's structural unemployment problem since it can constitute a handicap for residents, especially the younger ones, who are facing competition from a large pool of often highly skilled potential workers from neighbouring countries. State co-financing for training will be increased from 14.5% to 25%. A lot of efforts have been made over the past few years to adapt and modernise legislation related to the education system, but a global LLL strategy still does not exist. An efficient guidance structure is essential for an efficient LLL system. Several institutions are responsible for guidance in Luxembourg and there is insufficient coordination between these inter-independent organisations.

The announced reform of the pension system will discourage early retirement and thereby increase the employment rate of older workers. However, the job opportunities for older workers may need to be supported, especially given the difficulties they face integrating into a labour market if they have outdated skills and limited access to training. The government is currently in negotiations with social partners on a plan to activate older people, containing recommendations about good practices, measures to maintain employment and insertion, and incentives for employers to implement policies that meet the needs of older workers (working time and working conditions, training, competences). Some sector-based tailor made initiatives (e.g. the Spring-board to a job or Fit4Job 45+) bringing skilled aged jobseekers in contact are vital but limited in scope. The recent law on the vocational training may also have a positive impact on the employment rate of older workers. All in all, the measures taken to support active ageing remain limited, with little progress made in changing attitudes towards an extension of active life, and to discourage early retirement. An increase in the employment rate in this category is also closely related to the modernisation of the social security system.

The female employment rate is below the EU average (61.5% in 2009 compared to 62.5% in the EU). In order to facilitate women's employability the government is putting emphasis on promoting the reconciliation between professional and family responsibilities, for example by providing childcare services, day nurseries, and full-time schooling. The government is currently reviewing the possibility of more flexibility in working time for men and women who wish to care for their children, with the objective of making parental leave more attractive to men. Another measure to increase women's labour market participation is encouraging them to set up their own business. Although the family is the tax unit in Luxembourg, there is a tax allowance for second earners to reduce their marginal effective tax rates.

In order to increase the employment of young people, the government intends to create a "*Maison de l'orientation*", which gathers different actors and should better orient young people. At the end of 2009 the government introduced temporary measures aiming to facilitate the integration of young people in the labour market, the CAE (*Contrat d'Appui*

*Emploi*), the CIE (*Contrat d'Initiation à l'Emploi*) and the CIE-EP (*Contrat d'Initiation à l'Emploi-Expérience Pratique*). Their effectiveness will be evaluated at the end of 2011. The core element is focused on the extension of the training periods, which are supposed to adjust the competences and skills of young people to the needs of the economy and to promote social and professional integration. Through a range of projects the ADEM will reinforce the follow-up of young jobseekers.

The ADEM organises careers interviews with early school leavers aiming to restart schooling or to start a traineeship. A second chance school ("*école de la deuxième chance*") for those with no access to jobs opened in March 2011 with 40 students. Although the number of early school leavers decreased considerably over the last ten years, there is a need for continued attention on transition problems between education, employment, and unemployment and on the validation of non formal and informal learning system for all diplomas offered. In the context of the "fit4job" initiative, some sector-based pilot projects have been launched to increase employability of job seekers, like "fit4financial markets" and "fit4GénieCivil". Empirical data and assessments are required to measure the impact of these initiatives.

## **Education**

Over the last ten years the education budget in Luxembourg has constantly increased in absolute terms, but as a share of GDP has slightly dropped, and is below the EU average (this does not include spending on higher education). The country's performance is rather mixed in comparison to other EU countries, with problems in early school leaving and the higher education attainment. The NRP stresses the reforms already introduced in the fields of primary, secondary and professional education as well as professional training.

With an early school leaving (ESL) rate of 9% (2008-2009)<sup>9</sup>, Luxembourg has reached its target and is considering a more ambitious objective. However, the migrant population in particular is still hit heavily by early school leaving. For children from immigrant families where none or only one of the official languages is spoken at home, gaining proficiency in all three official languages is difficult. For students without fluency in the three languages, a number of career paths will be closed.

Upper secondary attainment at 76.8% in 2009 is below the EU average of 78.6%. This can be partly explained by strong net migration, with many young adults that have been educated outside the national education system. In addition, tertiary attainment rates (30% in 2009)<sup>10</sup> are below the EU average (32.3%), despite the strong demand for workers with tertiary qualifications. This low rate is however linked to the fact that Luxembourg does not define this indicator on the basis of the Eurostat Labour Force Survey (LFS) (according to which Luxembourg has a 46.6% rate), defining it instead on the basis of only the resident population. The NRP recalls the objective of ensuring that 40% of the resident population hold a university (or equivalent) degree and presents a series of measures aiming to achieve this objective. Several measures focus on increasing the number of students embarking on higher education. These include allowing the validation of prior learning and experience to give access to university studies, increasing short higher education studies, establishing a link between higher education programs and companies needs in order to promote employability of higher education studies, and offering financial support to all students whether they are studying in Luxembourg or outside the country. Policy measures to promote entry to higher education and to ensure successful completion of studies within a reasonable timeframe are

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<sup>9</sup> National figure. The Eurostat figure stands at 7.7%.

<sup>10</sup> National figure. The Eurostat figure stands at 46.8%.

not clearly described in the NRP. A close monitoring of the impact of these measures will be important. .

Adult participation in life long learning (13.4% in 2009) has improved. This would be further improved through a coherent and closely monitored life long learning strategy, particularly for the population aged 55-64 with low education level. The reform of vocational education and training (VET) will provide more possibilities to bridge the gap between vocational training and higher education. A key challenge will be to increase the quality and attractiveness of VET studies and to raise them to the “excellence” level in order to provide a qualified workforce to the labour market and to offer professional perspectives to the learners.

### **Combating poverty and promoting social inclusion**

In Luxembourg, 17.8% of the population was at risk of poverty or social exclusion, well below the EU average (23/1%) but a slight increase since 2006. The government did not set a national target regarding poverty and social exclusion reduction. This decision was based on a disagreement on the current EU-indicator of risk of poverty rate, in spite of the possibility to use a more appropriate indicator (if needed, nationally defined).

In order to improve social inclusion the government proposes in the NRP several measures mainly focusing on the (re)integration into the labour market, as well as measures targeted at the homeless. A multidimensional approach to poverty reduction will be ensured through enhanced coordination of social inclusion policies across government services, and through the involvement of civil society and social partners in the context of the open method of coordination (OMC). While the problems of one parent families as well as the issue of housing and social exclusion of young people are addressed, the poverty situation of immigrants does not get specific attention, in spite of their high risk of poverty or exclusion (37% in 2009).

Being aware that child poverty is a major problem in Luxembourg, the government has recently put emphasis on fighting it. In order to provide for the well-being of children an integrated approach which intends to improve the income situation of households with children and their access to structures and services matching their needs is applied. The access of vulnerable groups to the labour market is promoted by helping young people and older workers to (re)join the labour market and in order to facilitate the access to services of quality a single desk for social matters ("guichet unique social") was created. A campaign started to make landlords aware of the needs of low income people, linked to the setting up of a socially oriented real estate agency (Agence immobilière sociale –AIS).

### **4.2.3. Growth enhancing structural measures**

#### **Research and innovation**

R&D intensity in Luxembourg has increased only marginally over the last decade, growing from 1.65% in 2000 to 1.68% in 2009, with a predominant financing by the private sector. Whereas the private spending fluctuated over the last decade, public R&D spending has increased steadily, but remains relatively low, at 0.44% in 2009 (after 0.12% in 2000). Luxembourg has made considerable efforts in order to provide support for R&D and innovation. All the elements for a strategic R&D framework are in place. However, the main question is how all these elements will work together and will be implemented, given the specificities of the country: the young national research system, a small and service-oriented economy, a deficit of entrepreneurial culture, large companies undertaking research abroad, limited absorption capacity of R&D results.



At this stage, the country has difficulties in attracting and keeping the necessary human resources for developing local competitive centres of excellence. In parallel with the measures aiming to reinforce excellence of the public research system, there is also a need to ensure an enhanced collaboration between public research organisations and private companies and to foster the development of small innovative firms. Despite measures in place, the global framework is still not very conducive to entrepreneurship, with an extremely low rate of entrepreneurial activity. The NRP sets the national objective for R&D expenditure in 2020 to the range of 2.3 to 2.6% of GDP, of which 1.5 to 1.9% for the private sector and 0.7 to 0.8% for public spending. Given current figures, these targets seem to be ambitious, but achievable. The efficiency and effectiveness of both public and private R&D spending are not yet sufficient in order to meet the target.

Recent reforms have increased the mobility of researchers mainly through a new law on free movement of people and immigration and the grant scheme "Aid for Research Training" providing funding for PhDs and post-docs of all nationalities. The reforms have encouraged public-private partnership and increased the financial support for R&D for companies. In addition, recent laws with special consideration of SMEs have been adopted and a "one-stop shop" for both new and established companies seeking to engage in R&D in Luxembourg has been set up.

An independent evaluation of the overall research and innovation policy would help ensure efficient spending of an increased R&D budget and avoid crowding out private investment, in particular to steer the development of R&D infrastructure. In addition, it is important to continue the recent efforts to increase the attractiveness of research positions for foreign specialists by removing remaining obstacles to the free movement of people. Finally, the development of an entrepreneurial culture could be fostered, for example by improving the university curricula.

### **Business environment and SME policy**

Luxembourg is considerably behind schedule in implementing the Services Directive. There are delays in adopting the required changes to sector-specific legislation, in particular as regards the reform of the law on the "establishment/setting-up of businesses", which regulates in a horizontal manner the access to almost all economic activities. Luxembourg has performed well as regards the setting-up of the Points of Single Contact. The e-government portal "guichet.lu" is operational and a number of important administrative procedures, such as company registration, can already be performed online.

Different measures have been undertaken to reduce administrative burden such as the simplification of the social security regime. Continued efforts would be beneficial in order to bring effective and concrete results, especially as regards the full implementation of a one stop shop system; streamlining long and complex permitting procedures; implementing across the board the principle of silent approval (i.e. automatic approval when the relevant public administration authority has not reacted within a determined timeframe). A Further simplification of the access to professional services may need carefully assessment.

### **Energy and environment**

Energy consumption per capita in Luxembourg is the highest of Europe, due to its high per-capita income and low energy taxes and prices. In 2008 Luxembourg's gross inland energy consumption was of 9.43 toe (tonnes of oil equivalent) per capita, compared to an EU average of 3.62 toe. As a consequence, Luxembourg has the highest per capita greenhouse gas emissions (GHG). Transport is by far the most energy-consuming sector. In 2008, it accounted for 60% of final energy consumption against 33% on average in the EU, and road

transportation related emissions alone account for 52% of total GHG emissions. The national reduction target agreed under EU legislation is -20% by 2020 (compared to 2005 levels). In spite of the economic crisis, the recent evolution of emissions does not appear in line with the national 2020 target and additional measures may be required to reach this target.

Without any major domestic resources, Luxembourg relies almost exclusively on imports for all its energy needs. Diversification of energy sources is limited, with the share of renewable energy sources in energy consumption only 2.2% in 2008. Luxembourg's legally binding target by 2020 for renewable energy sources in final energy consumption is 11% and the share of renewable energy in the transport sector is 10%, but Luxembourg will not be able to achieve these targets internally so particular attention on the timely realisation of cooperation mechanisms with other Member States would be helpful. With regard to the internal energy market, the legal unbundling became effective in July 2009 with the creation of CREOS, the joint network operator for gas and power.

There is scope for removal of environmentally harmful subsidies, especially in the field of energy and transport. There is a 9 percentage point difference between the standard VAT rate and the one applied to electricity and natural gas. Notwithstanding an increase in fuel taxation in the past years, the price of gasoline remains one of the lowest in the EU due to differences in taxation, inducing 'fuel tourism' and the negative externalities, in terms of pollution and congestion, associated with it. Moreover, the difference between excise duty on gasoline and diesel does not necessarily reflect the difference in carbon and energy content of the two fuel sources. Fiscal losses due to subsidies of company cars are also above EU average. Finally, a system of congestion charging around Luxembourg City and congested road bottlenecks would encourage the shift towards public transport and to improve the efficiency of the use of the existing infrastructure.

Luxembourg has not yet clearly set a national energy efficiency target but suggests in the NRP that a possible extension of the energy service Directive's (Directive 2006/32/EC) target value to 13% end energy savings could be analyzed. The description of measures to reach possible targets remains very generic and generally limits itself to the provisions foreseen in Directive 2006/32/EC. The National Energy Efficiency Plan to be submitted by Luxembourg to the Commission by the end of June 2011 will have to address energy saving potential in end-use consumption (notably in transport and housing), and assign responsibilities for relevant ministries/services and identifying related budgets for the implementation of different measures.

## **5. SUMMARY**

Despite the recession, public finances are relatively sound (deficit of 1.7% and gross debt of 18.4% in 2010), mainly thanks to a very favourable starting position. However, according to the Stability Programme's projections under an unchanged policy scenario, the headline deficit will deteriorate in 2012, and the Medium-Term Objective (MTO), defined as a structural surplus of 0.5% of GDP, will not be achieved. On the contrary, the recalculated structural balance is expected to deteriorate gradually from a 0.3% surplus in 2011 to a 0.8% deficit in 2014. Achieving the MTO in 2012 would therefore represent a structural effort of 0.2% of GDP next year. Sustainability of public finances is threatened in the long term by population ageing, which will cause an above-EU-average rise in public expenditure on pensions, healthcare and long-term care. The outline of a pension reform is sketched in the NRP, but no concrete measures to guarantee long-term sustainability of public finances have been adopted yet.

Due to the development in both wages and productivity, the cost competitiveness of Luxembourg has deteriorated substantially since the beginning of the last decade compared to neighbouring countries. The Luxembourg government agreed with the trade unions to postpone to October 2011 the application of the automatic wage indexation mechanism, and intends to conclude a similar agreement for 2012. However, these measures have only a temporary effect and do not tackle the deterioration of cost competitiveness in a structural way. No new measures have been announced in the NRP to diversify the economy. The dominant foreign ownership of financial institutions and the international character of their activities limit the country's ability to influence the financial sector.

The Luxembourg labour market is characterized by a high level of non-resident workers and a lower employment rate for the resident population, particularly for young people. Different small-scale measures have been announced or implemented to increase the employment of specific groups like young people, women and older people. A lack of incentives to remain at work built into the pension system has helped contribute to early retirement. A number of measures announced in the pension reform plan aim at addressing this issue. Through the proposed reform of the employment administration and through the investment in skills and education, Luxembourg will take steps to tackle the high youth unemployment. Nevertheless, there remains a lack of assistance for young people to ease their integration in the labour market. Over the last decade, Luxembourg has made good progress in reducing the number of early school leavers but it remains an important priority for the government. Lifelong learning strategies have been identified as one of the keys to bringing jobseekers back into employment and enhancing their employability. Luxembourg aims at breaking the chain of intergenerational transmission of poverty and social exclusion and on fighting child poverty, but the government has not set a national target.

## Statistical annex

### Table I. Macro economic indicators

	1995-1999	2000-2004	2005-2008	2009	2010	2011	2012
<b>Core indicators</b>							
GDP growth rate	4.8	4.2	4.6	-3.6	3.5	3.4	3.8
Output gap <sup>1</sup>	-0.8	2.5	1.8	-4.9	-3.7	-2.6	-1.4
HICP (annual % change)	1.1	2.8	3.4	0.0	2.8	3.5	2.3
Domestic demand (annual % change) <sup>2</sup>	5.1	3.1	4.0	-5.9	3.0	4.2	3.6
Unemployment rate (% of labour force) <sup>3</sup>	2.7	3.1	4.6	5.1	4.5	4.4	4.2
Gross fixed capital formation (% of GDP)	21.4	21.9	20.2	17.3	16.4	17.6	17.8
Gross national saving (% of GDP)	32.1	33.2	30.3	23.2	24.1	25.2	25.3
<b>General Government (% of GDP)</b>							
<b>Net lending (+) or net borrowing (-)</b>	<b>2.8</b>	<b>2.7</b>	<b>2.0</b>	<b>-0.9</b>	<b>-1.7</b>	<b>-1.0</b>	<b>-1.1</b>
<b>Gross debt</b>	<b>7.2</b>	<b>6.3</b>	<b>8.3</b>	<b>14.6</b>	<b>18.4</b>	<b>17.2</b>	<b>19.0</b>
<b>Net financial assets</b>	<b>43.0</b>	<b>54.7</b>	<b>48.6</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>
Total revenue	43.1	43.0	40.3	41.3	39.5	39.3	39.0
Total expenditure	40.3	40.3	38.3	42.2	41.2	40.3	40.1
<i>of which: Interest</i>	0.4	0.3	0.2	0.4	0.4	0.5	0.5
<b>Corporations (% of GDP)</b>							
<b>Net lending (+) or net borrowing (-)</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>
<b>Net financial assets; non-financial corporations</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>
<b>Net financial assets; financial corporations</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>
Gross capital formation	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Gross operating surplus	27.8	27.4	33.6	31.8	n.a	n.a	n.a
<b>Households and NPISH (% of GDP)</b>							
<b>Net lending (+) or net borrowing (-)</b>	<b>3.2</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>
<b>Net financial assets</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>
Gross wages and salaries	32.4	29.9	27.0	n.a	n.a	n.a	n.a
Net property income	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Current transfers received	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Gross saving	n.a	n.a	n.a	n.a	n.a	n.a	n.a
<b>Rest of the world (% of GDP)</b>							
<b>Net lending (+) or net borrowing (-)</b>	<b>n.a</b>	<b>9.1</b>	<b>9.6</b>	<b>6.2</b>	<b>7.3</b>	<b>n.a</b>	<b>n.a</b>
<b>Net financial assets</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>
Net exports of goods and services	18.9	21.2	30.3	32.9	35.2	35.1	35.4
Net primary income from the rest of the world	-7.2	-15.2	-20.6	-29.6	-28.8	-28.7	-29.2
Net capital transactions	n.a	-1.0	0.3	-0.7	-0.5	n.a	n.a
Tradable sector	33.7	31.0	27.7	26.8	27.8	n.a	n.a
Non tradable sector	56.4	58.6	62.4	63.7	63.2	n.a	n.a
<i>of which: Building and construction sector</i>	5.6	5.6	5.1	4.8	4.5	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
Terms of trade goods and services (index, 2000=100)	102.5	101.4	105.7	107.3	108.0	108.0	108.0
Market performance of exports (index, 2000=100)	n.a	n.a	n.a	n.a	n.a	n.a	n.a
<b>Notes:</b>							
<sup>1</sup> The output gap constitutes the gap between the actual and potential gross domestic product at 2000 market prices.							
<sup>2</sup> The indicator on domestic demand includes stocks.							
<sup>3</sup> 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.							
<b>Source:</b>							
<i>Commission services' spring 2011 forecast</i>							

**Table II. Macro economic scenario for the budgetary projections**

	2010		2011		2012		2013	2014
	COM	SP	COM	SP	COM	SP	SP	SP
Real GDP (% change)	3.5	3.5	3.4	3.2	3.8	3.5	3.7	4.0
Private consumption (% change)	2.0	2.0	1.8	1.6	2.3	3.5	3.2	3.2
Gross fixed capital formation (% change)	2.6	2.6	12.0	13.7	6.0	5.9	5.5	2.9
Exports of goods and services (% change)	6.3	6.3	6.8	6.2	6.5	6.0	6.9	7.6
Imports of goods and services (% change)	6.7	6.8	8.0	7.1	7.0	6.6	7.3	7.7
<i>Contributions to real GDP growth:</i>								
- Final domestic demand	1.6	1.8	2.7	3.4	2.3	3.1	2.7	2.2
- Change in inventories	0.4	0.9	0.0	-0.4	0.0	0.0	0.0	0.0
- Net exports	1.5	0.8	0.7	0.2	1.5	0.4	1.0	1.8
Output gap <sup>1</sup>	-3.7	-3.6	-2.6	-2.6	-1.4	-1.7	-0.9	0.1
Employment (% change)	1.6	1.5	2.1	1.9	2.3	1.9	2.4	2.5
Unemployment rate (%)	4.5	4.4	4.4	5.2	4.2	5.3	4.9	4.7
Labour productivity (% change)	1.9	1.9	1.3	1.2	1.5	1.6	1.3	1.5
HICP inflation (%)	2.8	2.8	3.5	3.6	2.3	2.1	1.7	1.8
GDP deflator (% change)	5.5	5.5	3.3	1.8	2.6	2.0	2.6	2.4
Comp. of employees (per head, % change)	1.6	1.6	2.0	2.2	4.6	4.6	2.9	2.4
Net lending/borrowing vis-à-vis the rest of the world (% of GDP)	7.3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
<p><u>Note:</u>  <sup>1</sup>In percent of potential GDP, with potential GDP growth according to the programme as recalculated by Commission services.</p> <p><u>Source:</u>  <i>Commission services' spring 2011 forecasts (COM); Stability programme (SP).</i></p>								

**Table III. Composition of the budgetary adjustment**

(% of GDP)	2010	2011		2012		2013	2014	Change: 2010-2014
	COM	COM	SP	COM	SP	SP	SP	SP
<b>Revenue</b>	<b>39.5</b>	<b>39.3</b>	<b>39.7</b>	<b>39.0</b>	<b>39.5</b>	<b>39.3</b>	<b>39.2</b>	<b>-0.3</b>
<i>of which:</i>								
- Taxes on production and imports	11.4	11.3	11.4	11.3	11.4	11.2	11.1	-0.3
- Current taxes on income, wealth, etc.	13.3	13.5	13.6	13.3	13.4	13.4	13.4	0.1
- Social contributions	11.4	11.2	11.4	11.2	11.5	11.5	11.4	0.0
- Other (residual)	3.4	3.3	3.3	3.3	3.2	3.2	3.3	-0.1
<b>Expenditure</b>	<b>41.2</b>	<b>40.3</b>	<b>40.7</b>	<b>40.1</b>	<b>40.9</b>	<b>40.5</b>	<b>39.9</b>	<b>-1.3</b>
<i>of which:</i>								
- Primary expenditure	40.8	39.8	40.2	39.6	40.4	40.0	39.4	-1.4
<i>of which:</i>								
Compensation of employees	7.7	7.6	7.7	7.7	7.8	7.7	7.6	-0.1
Intermediate consumption	3.5	3.3	3.3	3.2	3.4	3.4	3.4	-0.1
Social payments	19.7	19.2	19.4	19.3	19.5	19.4	19.0	-0.7
Subsidies	1.6	1.5	1.6	1.5	1.6	1.6	1.6	0.0
Gross fixed capital formation	4.1	3.9	3.9	3.6	3.6	3.5	3.2	-0.9
Other (residual)	4.3	4.3	4.4	4.3	4.6	4.5	4.6	0.3
- Interest expenditure	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.1
<b>General government balance (GGB)</b>	<b>-1.7</b>	<b>-1.0</b>	<b>-1.0</b>	<b>-1.1</b>	<b>-1.5</b>	<b>-1.2</b>	<b>-0.8</b>	<b>0.9</b>
<b>Primary balance</b>	<b>-1.3</b>	<b>-0.5</b>	<b>-0.5</b>	<b>-0.6</b>	<b>-1.0</b>	<b>-0.7</b>	<b>-0.3</b>	<b>1.0</b>
One-off and other temporary measures	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>GGB excl. one-offs</b>	<b>-1.7</b>	<b>-1.0</b>	<b>-1.0</b>	<b>-1.1</b>	<b>-1.5</b>	<b>-1.2</b>	<b>-0.8</b>	<b>0.9</b>
Output gap <sup>2</sup>	-3.7	-2.6	-2.6	-1.4	-1.7	-0.9	0.1	3.8
Cyclically-adjusted balance <sup>2</sup>	0.1	0.3	0.3	-0.4	-0.7	-0.8	-0.8	-1.0
<b>Structural balance<sup>3</sup></b>	<b>0.1</b>	<b>0.3</b>	<b>0.3</b>	<b>-0.4</b>	<b>-0.7</b>	<b>-0.8</b>	<b>-0.8</b>	<b>-1.0</b>
<i>Change in structural balance</i>		<i>0.2</i>	<i>0.2</i>	<i>-0.7</i>	<i>-1.0</i>	<i>-0.1</i>	<i>-0.1</i>	
Structural primary balance <sup>3</sup>	0.5	0.8	0.8	0.1	-0.2	-0.3	-0.3	-0.9
<i>Change in structural primary balance</i>		<i>0.2</i>	<i>0.3</i>	<i>-0.7</i>	<i>-1.0</i>	<i>-0.1</i>	<i>-0.1</i>	
<b>Notes:</b>								
<sup>1</sup> On a no-policy-change basis.								
<sup>2</sup> 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.								
<sup>3</sup> Structural (primary) balance = cyclically-adjusted (primary) balance excluding one-off and other temporary measures.								
<b>Source:</b>								
<i>Stability programme (SP); Commission services' spring 2011 forecasts (COM); Commission services' calculations</i>								

**Table IV. Debt dynamics**

(% of GDP)	average 2005-09	2010	2011		2012		2013	2014
			COM	SP	COM	SP	SP	SP
<b>Gross debt ratio<sup>1</sup></b>	<b>9.5</b>	<b>18.4</b>	<b>17.2</b>	<b>17.5</b>	<b>19.0</b>	<b>19.8</b>	<b>21.4</b>	<b>22.7</b>
Change in the ratio	1.6	3.9	-1.2	-0.9	1.8	2.3	1.6	1.3
<i>Contributions<sup>2</sup>:</i>								
<b>1. Primary balance</b>	<b>-1.7</b>	<b>1.3</b>	<b>0.5</b>	<b>0.5</b>	<b>0.6</b>	<b>1.0</b>	<b>0.7</b>	<b>0.3</b>
<b>2. "Snow-ball" effect</b>	<b>-0.1</b>	<b>-0.8</b>	<b>-0.7</b>	<b>-0.4</b>	<b>-0.5</b>	<b>-0.4</b>	<b>-0.7</b>	<b>-0.8</b>
<i>Of which:</i>								
Interest expenditure	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5
Growth effect	-0.1	-0.5	-0.6	-0.6	-0.6	-0.6	-0.7	-0.8
Inflation effect	-0.2	-0.7	-0.6	-0.3	-0.4	-0.3	-0.5	-0.5
<b>3. Stock-flow adjustment</b>	<b>3.4</b>	<b>3.4</b>	<b>-1.0</b>	<b>-1.0</b>	<b>1.8</b>	<b>1.7</b>	<b>1.6</b>	<b>1.8</b>
<i>Of which:</i>								
Cash/accruals diff.	0.6	-0.4						
Acc. financial assets	2.8	3.8						
<i>Privatisation</i>	0.0	0.0						
Val. effect & residual	0.0	0.0						
<b>Notes:</b>								
<sup>1</sup> End of period.								
<sup>2</sup> The snow-ball 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, accumulation of financial assets and valuation and other residual effects.								
<i>Source:</i>								
<i>Stability programme (SP); Commission services' spring 2011 forecasts (COM); Commission services' calculations</i>								

**Table V. Long-term sustainability indicators**

Luxembourg	Baseline scenario (2010)			Programme scenario		
	S1	S2		S1	S2	
Value	7.7	13.7		8.6	14.5	
<i>of which:</i>						
Initial budgetary position (IBP)	0.1	0.1		0.9	1.0	
Debt requirement in 2060 (DR)	-0.7	-		-0.7	-	
Long-term change in the primary balance (LTC)	8.3	13.5		8.3	13.5	
	2010	2015	2020	2010	2015	2020
Debt as % of GDP	18.4	18.7	25.7	18.4	23.1	30.2

**Table VI. Financial sector indicators**

	2006	2007	2008	2009	2010
Total assets of the banking sector (% of GDP)	2998.6	2988.7	3196.4	3115.7	2711.6
Share of assets of the five largest banks (% of total assets)	29.1	27.9	27.3	27.8	...
Foreign ownership of banking system (% of total assets)	94.6	95.0	95.2	94.0	...
Financial soundness indicators:					
- non-performing loans (% of total loans) <sup>1)</sup>	0.1	0.4	0.6	0.7	0.4
- capital adequacy ratio (%) <sup>1) 2)</sup>	15.3	14.3	15.4	18.9	19.5
- profitability - return on equity (%) <sup>1) 3)</sup>	15.3	14.3	15.4	19.2	19.0
Private credit growth (annual % change)	19.8	12.5	26.8	0.9	-4.5
Residential property prices (y-o-y % change)	11.3	9.5	0.1	...	...
Exposure to countries receiving/repaying official financial assistance (% of GDP) <sup>4)</sup>	...	...	...	...	...
Private debt (% of GDP) <sup>5)</sup>	290.4	339.5	372.8	386.3	384.4
Gross external debt (% of GDP)					
- Public	0.1	0.1	2.5	2.7	6.1
- Private	2175.5	2211.0	2715.0	2690.2	2455.4
Long term interest rates spread versus Bund (basis points)*	15.5	34.4	62.3	100.7	42.6
Credit default swap spreads for sovereign securities (5-year)*	...	...	...	...	...
<b>Notes:</b>					
<sup>1)</sup> Latest available September 2010.					
<sup>2)</sup> Tier 1 capital.					
<sup>3)</sup> Net income to equity ratio.					
<sup>4)</sup> Covered countries are IE, EL, PT, RO, LV and HU.					
<sup>5)</sup> Due to data gaps on debt securities in 2006-2007, only the loans to GDP ratio is provided for these years.					
* Measured in basis points.					
<b>Source:</b>					
<i>Bank for International Settlements and Eurostat (exposure to macro-financially vulnerable countries), IMF (financial soundness indicators), Commission services (long-term interest rates), World Bank (gross external debt) and ECB (all other indicators).</i>					



**Table VII. Labour market and social indicators**

	2001-2005	2006	2007	2008	2009	2010
Employment rate (% of population aged 20-64)	68.0	69.1	69.6	68.8	70.4	70.7
Employment rate - women (% of female population aged 20-64)	55.9	59.3	61.0	60.2	61.5	62.0
Employment - share of part-time employment	14.0	17.1	17.8	17.9	17.6	17.4
Employment - share of permanent employment	95.6	93.9	93.2	93.8	92.8	92.9
Unemployment rate <sup>1</sup> (% of labour force)	3.6	4.6	4.2	4.9	5.1	4.5
Long term unemployment rate <sup>2</sup> (% of labour force)	0.9	1.4	1.2	1.6	1.2	1.3
Labour productivity per person employed (annual growth in %)	0.5	1.4	2.1	-3.2	-4.5	1.9
Hours worked per person employed (annual % change)	-0.9	-0.1	0.5	-0.3	-4.3	-0.1
Labour productivity per hour worked (annual % change; constant prices)	1.4	1.4	1.6	-2.9	-0.2	2.0
Employment protection legislation <sup>3</sup> (Index; 0 = least stringent; 6 = most restrictive)	:	:	:	2.8	:	:
Compensation per employee (annual % change; constant prices)	0.2	-3.9	0.1	-2.1	2.2	-3.8

**Notes:**

<sup>1</sup> 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.

<sup>2</sup> Share of persons in the labour force who are for at least 12 months unemployed (labour force survey).

<sup>3</sup> The employment protection indicators are compiled from 21 items covering three different aspects of employment protection: (i) individual dismissal of workers with regular contracts; (ii) additional costs for collective dismissals; (iii) regulation of temporary contracts. However, it is important to note that employment protection refers to only one dimension of the complex set of factors that influence labour market flexibility. The details of the methodology are explained at the website of the OECD. The latest available employment protection indicators are from 2008.

**Source:**

*Commission services and OECD.*

**Table VII. Labour market and social indicators (continued)**

<b>Expenditure on social protection benefits (% of GDP)</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
Sickness/Health care	5.54	5.46	5.07	4.94	4.98
Invalidity	2.95	2.78	2.64	2.34	2.28
Old age and survivors	7.96	7.79	7.34	7.06	7.13
Family/Children	3.78	3.59	3.39	3.15	3.92
Unemployment	1.02	1.07	0.98	0.93	0.90
Housing and Social exclusion n.e.c.	0.64	0.59	0.59	0.55	0.57
<b>Total</b>	<b>21.9</b>	<b>21.3</b>	<b>20.0</b>	<b>19.0</b>	<b>19.8</b>
of which: Means tested benefits	0.66	0.60	0.60	0.57	0.59
<b>Social inclusion indicators</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Risk-of-poverty or exclusion <sup>1</sup> (% of total population)	17.3	16.5	15.9	15.5	17.8
Risk-of-poverty or exclusion of children (% of people aged 0-17)	22.8	20.4	21.2	20.9	23.7
Risk-of-poverty or exclusion of elderly (% of people aged 65+)	8.0	8.3	7.2	5.4	6.2
At-Risk-of-Poverty rate <sup>2</sup> (% of total population)	13.7	14.1	13.5	13.4	14.9
Value of relative poverty threshold (single HH per year) - in PPS	16536	15852	16104	16164	16224
Severe Material Deprivation <sup>3</sup> (% of total population)	1.8	1.1	0.8	0.7	1.1
Share of people living in low work intensity households <sup>4</sup> (% of people aged 0-59 not student)	5.7	5.2	5.0	4.7	6.3
In-work at-risk-of poverty rate (% of persons employed)	9.8	10.3	9.3	9.4	10.1
<b>Notes:</b>					
<sup>1</sup> 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 household with zero or very low work intensity (LWI).					
<sup>2</sup> At-risk-of poverty rate: share of people with an equivalised disposable income below 60% of the national equivalised median income.					
<sup>3</sup> 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					
<sup>4</sup> 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.					
<b>Sources:</b>					
For expenditure for social protection benefits ESSPROS; for social inclusion EU-SILC.					

**Table VIII. Product market performance and policy indicators**

<b>Performance indicators</b>	<b>2001-2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Labour productivity <sup>1</sup> total economy (annual growth in %)	0.5	1.8	2.3	-3.1	-4.3	2.1
Labour productivity <sup>1</sup> in manufacturing (annual growth in %)	-0.4	-5.6	12.6	-11.9	-9.1	16.1
Labour productivity <sup>1</sup> in electricity, gas, water (annual growth in %)	7.1	22.1	5.4	-12.9	-1.8	n.a.
Labour productivity <sup>1</sup> in the construction sector (annual growth in %)	-0.3	-0.5	-1.4	-8.0	-4.5	2.2
Patent intensity in manufacturing <sup>2</sup> (patents of the EPO divided by gross value added of the sector)	3.4	3.6	1.4	n.a.	n.a.	n.a.
<b>Policy indicators</b>	<b>2001-2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Enforcing contracts <sup>3</sup> (days)	n.a.	321	321	321	321	321
Time to start a business <sup>3</sup> (days)	n.a.	26	26	26	24	19
R&D expenditure (% of GDP)	1.6	1.7	1.6	1.5	1.7	n.a.
Tertiary educational attainment (% of 30-34 years old population)	26.8	35.5	35.3	39.8	46.6	n.a.
Total public expenditure on education (% of GDP)	3.8	3.4	3.2	n.a.	n.a.	n.a.
	<b>2003</b>	<b>2005</b>	<b>2006</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Product market regulation <sup>4</sup> , Overall (Index; 0=not regulated; 6=most regulated)	1.5	n.a.	n.a.	1.6	n.a.	n.a.
Product market regulation <sup>4</sup> , Retail (Index; 0=not regulated; 6=most regulated)	n.a.	n.a.	n.a.	4.3	n.a.	n.a.
Product market regulation <sup>4</sup> , Network Industries <sup>6</sup> (Index; 0=not regulated; 6=most regulated)	2.9	2.5	2.5	2.4*	n.a.	n.a.
<b>Notes:</b>						
<sup>1</sup> Labour productivity is defined as gross value added (in constant prices) divided by the number of persons employed.						
<sup>2</sup> Patent data refer to applications designated 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.						
<sup>3</sup> The methodologies, including the assumptions, of this indicator is presented in detail at the website <a href="http://www.doingbusiness.org/methodology">http://www.doingbusiness.org/methodology</a> .						
<sup>4</sup> The methodologies of the Product market regulation indicators are presented in detail at the website <a href="http://www.oecd.org/document/1/0,3746,en_2649_34323_2367297_1_1_1_1,00.html">http://www.oecd.org/document/1/0,3746,en_2649_34323_2367297_1_1_1_1,00.html</a> . The latest available product market regulation indicators refer to 2003 and 2008, except for Network Industries.						
<sup>6</sup> Aggregate ETCR.						
*figure for 2007.						
<b>Source:</b>						
Commission services, World Bank Doing Business (for enforcing contracts and time to start a business) and OECD (for the product market regulation indicators).						

### **Box 5: The financial sector as Luxembourg's "growth engine"**

Financial services have played a paramount role in the economic performance recorded by Luxembourg since the early 1980s. The favourable fiscal, legislative and regulatory environment established by the authorities boosted the creation of a large world wide financial sector, leaving Luxembourg heavily dependent on one sector<sup>11</sup>. The sector has progressively become the economy's main growth engine, directly and through spill-overs to a range of parent or ancillary services (wealth managers, brokers, financial advisers, suppliers of computer services, consulting and auditing firms). In 2009, the financial sector accounted for 26% of total value added and 11.7% of total employment (of which 18.3% and 8.3% respectively for financial intermediation *stricto sensu*). By the end of 2009 total liabilities of Luxembourg-based banks amounted to 916.1% of GDP, by far the highest figure of all Member States and more than six times the EU average (118.7%). According to estimates by the STATEC<sup>12</sup>, a 1% drop in the value added of the financial sector leads to a 0.6% decrease in the economy's total value added in the first year and a 0.3% decline in the two following years.

Financial services are also very important for public finances. Since the early 1980s, taxes paid by financial institutions have fluctuated between 15% and 28% of the general government's total tax revenues. The taxable profits of the financial sector are very volatile (provisions may double from one year to another in case of turbulences on the financial markets), which leads to large fluctuations in the corporate tax paid by banks. The same holds for the "subscription tax", paid by mutual funds on their net assets, whose revenues are extremely dependent on fluctuations on the stock markets. As a result, tax revenues in Luxembourg are substantially more volatile than in many other Member States<sup>13</sup>.

The financial crisis had a strong impact on Luxembourg's financial sector, which, because of almost complete foreign ownership and its international activity, is heavily dependent on world financial markets. However, the impact, although sizeable, has been smaller than could have been initially feared considering the financial turmoil which was at the origin of the crisis and the exceptional weight of the financial sector in the economy. However, interbank liquidity operations, which are an important segment of the sector's activity, were severely affected by the crisis, which for a large part explains the drop in the balance sheets of Luxembourg banks (almost 18% from peak to trough on a consolidated basis).

Problems in some financial institutions required the intervention of the authorities, with capital injections amounting to 7.6% of GDP granted to two large foreign-owned banks (Fortis and Dexia) as a consequence of problems originating elsewhere in the groups. Moreover, the government, together with the Belgian and French authorities, temporarily guaranteed the liabilities of Dexia towards other financial institutions and institutional investors. The Luxembourg branches of three Icelandic-owned banks also had to be put into administration. However, with the activities of financial institutions being mainly internationally oriented, the financing of the local economy constitutes only a minor segment of their business. Consequently, the large drop in the balance sheets of Luxembourg banks was essentially the result of the contraction of cross-border interbank lending (for a large part inside the groups these banks belong to) and not a dramatic tightening in the financing of the economy.

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<sup>11</sup> OECD, "Can the financial sector continue to be the main growth engine in Luxembourg ?", Economic Department Working Paper n° 660, 2009.

<sup>12</sup> STATEC (*Service central de la statistique et des études économiques*), Note de conjoncture n°3-2007. Aging Working Group (AWG) of the Economic Policy Committee (EPC).

<sup>13</sup> From 1995 to 2010, the standard deviation of the general government tax revenues (expressed in percentage of GDP) was 1.22 in Luxembourg compared with e.g. 0.73 in Belgium and 0.77 in Germany.