LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère des Finances

# 18th UPDATE OF STABILITY AND GROWTH PROGRAMME OF THE GRAND-DUCHY OF LUXEMBOURG FOR 2017-2021

Luxembourg, 28 April 2017

*English courtesy translation of the official French version.*

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# I. Overall policy framework and objectives

The 18th update of the Stability and Growth Programme ("SGP"), covering the period 2017- 2021, provides an update of the multiannual budgetary orientations adopted last autumn in the framework of the Law of 23 December 2016 on financial programming for the period 2016-2020[1].

The SGP forms an integral part of annual economic and budgetary coordination cycle in the EU, the European Semester, and its elaboration follows exchanges between the Government and social as part of the national social dialogue, under the umbrella of the *Conseil économique et social*.

The SGP goes hand in hand with the National Reform Programme ("NPR") of Luxembourg also prepared within the framework of the Semester for smart, sustainable and inclusive growth, implementing structural reforms and addressing the medium- and long-term challenges faced by Luxembourg, such as the long-term sustainability of public finances, economic diversification and climate change.

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The 18th update of the SGP is prepared against a largely improved macroeconomic backdrop in comparison to the crisis years. The European economy, taken as a whole, is now firmly on track for a well-anchored recovery and is showing good resilience, despite the many uncertainties at the international level.

The economic and budgetary strategy described in this update of the SGP also confirms the main orientations presented during the budgetary debates in the autumn of 2016. It is based on an economic activity benefiting from a renewed confidence of households and investors, both within the euro area and in Luxembourg, as well as positive developments in international financial markets.

In accordance with EU provisions, this update of the SGP builds on macroeconomic forecasts produced independently by STATEC[2]. These are based on a growth assumption for the euro area, accelerating to 1.8% in 2018, before moving gradually towards its potential of 1.1% at the end of the projection period[3].

For Luxembourg, the economic outlook described in the previous update of the SGP as well as during the budgetary debates in the *Chambre des Deputés* last autumn are broadly confirmed.

In the short term, the growth of the Luxembourg economy continues to accelerate and is close to its historical average before the crisis, notably thanks to a tax reform that reinforces the purchasing power of households and encourages investment by companies.

In line with this positive growth profile, the pace of job creation is also rising, with an annual growth rate of more than 3% over the next few years. Thanks to this favourable backdrop, the unemployment rate falls below 6% and continues its decline, which began in 2014. Unemployment remains however above pre-crisis levels.

The economic outlook outlined in this update of the SGP therefore confirms that the Government's courageous economic and fiscal policy measures are now bearing fruit. Not only will they continue to

[1] http://legilux.public.lu/eli/etat/leg/loi/2016/12/23/n13/jo

[2] Fiscal projections have been produced under the responsibility of the Ministry of Finance.

[3] Technical assumption underlining the medium-term macroeconomic framework.

support the country's economic activity, but they provide the necessary basis for sustainable public finances.

In this respect, it should be recalled that, following the limited consolidation efforts of 2011 and 2013, the Government has, since taking office at the end of 2013, carried out a first set of targeted measures to consolidate public finances in the 2014 Budget, followed by the implementation of a comprehensive restructuring and modernization plan called "Zukunftspak" (*Package for the Future*) covering a period of 4 years from 2015 onwards.

Halfway through the implementation of this ambitious multiannual programme, whose primary objective has been to reduce the rate of increase in expenditure and to increase certain fiscal revenues in a targeted manner, the result of the Government's choices is as follows:

- Faced with the prospect of a growing fiscal slippage, coupled with the challenge of losing € 1 billion of VAT revenues related to e-commerce from 2015 onwards, the Government managed to reach a fiscal surplus for the entire period of 2014-2016, while significantly reducing the central government deficit.
- Contrary to forecasts drawn up at the end of 2013, the public debt “spiral” could be reversed and no traditional bonds were issued over the last three years to finance public investments that are at a record level.
- The Luxembourg economy has firmly regained the path of growth by continuously achieving real GDP growth rates in excess of 4% over 2014-2016, prompted by the Government's action in favour of Investment and job creation, and the ongoing efforts of the authorities to promote the competitiveness of the country.
- From 2014 to 2016, the labour market has developed favourably: 32,300 jobs have been created over the past three years, an increase of 8.4%. At the same time, the unemployment rate has been on a downward path since 2014 and in February this year ADEM recorded an unemployment rate of 6.1%, the lowest level since August 2012.

The Government has thus succeeded both in achieving substantial fiscal consolidation and in restoring growth and job creation. The significantly improved budgetary situation now enables it to include citizens and businesses in these positive dynamics, notably through a tax reform that took effect from 1 January 2017.

The aim of tax reform is to make the tax system evolve towards more justice, efficiency, simplicity and competitiveness. The measures adopted cover both natural and legal persons, with most of the tax relief for households, while ensuring that the government's budgetary targets are met, i.e. the medium-term budgetary objective ("MTO") and a stabilization of public debt below 30% of GDP, the latter being an ambitious target which corresponds to half the threshold set by the Maastricht Treaty.

This update of the SGP thus presents a multi-annual trajectory which continues to ensure full compliance with the rules of the preventive arm of the Stability and Growth Pact over the entire programming period. Public debt is stabilized at a level below 23% of GDP over the period under review.

In order to respond to the structural challenges facing the country, the Government's fiscal policy over the next few years will also be guided by the following objectives:

- Continued implementation of a rebalancing of public spending that began in 2014, with the full implementation of the measures of the "Zukunftspak", to counter-finance the losses of income related to electronic commerce and to increase the efficiency of public spending.

- Implementation of a tax reform, significantly increasing the purchasing power of households and ensuring the competitiveness of companies.
- Continued strengthening and modernization of the social protection system and public services for citizens and businesses, with substantial public investment in education, social protection and especially housing, as well as a recruitment policy in the state authorities in line with the growing needs of the population.
- Preserving a high level of public investment in infrastructure, at around 4.0% of GDP over the projection period, in order to prepare the country for the challenges of the future and also justified by the increase in the resident population as well as in the number of workers employed on the territory of the Grand Duchy.

Finally, the Government has set up an intergenerational sovereign fund in 2015, which is financed by an annual budgetary allocation of € 50 million (adjusted for inflation). The assets, which will be built up over time, amount to € 135 million as at 31 December 2016 and are invested prudently in the interest of future generations. When the reserve reaches a threshold of € 1 billion euros, half of the revenues generated annually can be used within the annual budget.

As regards the long-term sustainability of public finances, the reform of the pension system which entered into force on 1 January 2013 continues to contribute to the sustainability of public finances by slowing the evolution of public expenditure linked to demographic aging and thus reducing the implicit liabilities.

While the previous update of the SGP contained an update of the long-term projections of aging-related expenditure, taking into account revised demographic projections up to the year 2060 this update does not include any new elements. Following the submission of an interim stocktaking report by the IGSS in November 2016 with regard to the 2013 pension reform, a working group is now tasked to study the sustainability of the pension system and to come up in due course with proposals to ensure the long-term sustainability and the adequacy of the system.

As regards the new rules on European economic governance, two additional preliminary remarks should be made:

i. The 18th update of the SGP does not contain any request by the Government for the use of the flexibility clauses.
ii. As regards the treatment of exceptional expenditures related to the arrival of refugees, this update does not contain any specific information on this matter and, thus, does not include a request for a special treatment of these expenses in the context of EU budgetary surveillance.

The 18th update of the SGP also represents the national medium-term fiscal plan under Regulation 473/2013.

| PUBLIC FINANCES | 2016 | | | 2017 | | | 2018 | | | 2019 | | | 2020 | | | 2021 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | level in billions of euros | % of GDP | rate of change | level in billions of euros | % of GDP | rate of change | level in billions of euros | % of GDP | rate of change | level in billions of euros | % of GDP | rate of change | level in billions of euros | % of GDP | rate of change | level in billions of euros | % of GDP | rate of change |
| **TOTAL REVENUES** | **23.147** | **42.7** | **+3.6** | **23.853** | **41.3** | **+3.1** | **25.047** | **40.5** | **+5.0** | **26.335** | **40.3** | **+5.1** | **27.602** | **40.8** | **+4.8** | **28.926** | **41.3** | **+4.8** |
| of which: | | | | | | | | | | | | | | | | | | |
| *Taxes on production and imports ("indirect" taxes)* | 6.244 | 11.5 | +1.0 | 6.367 | 11.0 | +2.0 | 6.703 | 10.8 | +5.3 | 6.960 | 10.7 | +3.8 | 7.158 | 10.6 | +2.8 | 7.412 | 10.6 | +3.6 |
| *Current taxes on income, wealth, etc ("direct" taxes)* | 8.021 | 14.8 | +7.6 | 8.270 | 14.3 | +3.1 | 8.624 | 13.9 | +4.3 | 9.182 | 14.1 | +6.5 | 9.762 | 14.4 | +6.3 | 10.353 | 14.8 | +6.1 |
| *Social contributions* | 6.455 | 11.9 | +3.2 | 6.830 | 11.8 | +5.8 | 7.188 | 11.6 | +5.2 | 7.604 | 11.6 | +5.8 | 7.986 | 11.8 | +5.0 | 8.388 | 12.0 | +5.0 |
| **TOTAL EXPENSES** | **22.302** | **41.2** | **+3.3** | **23.733** | **41.1** | **+6.4** | **24.876** | **40.2** | **+4.8** | **25.992** | **39.8** | **+4.5** | **27.027** | **39.9** | **+4.0** | **28.091** | **40.1** | **+3.9** |
| of which: | | | | | | | | | | | | | | | | | | |
| *Public investment* | 2.051 | 3.8 | +5.1 | 2.325 | 4.0 | +13.3 | 2.430 | 3.9 | +4.5 | 2.513 | 3.8 | +3.4 | 2.535 | 3.7 | +0.8 | 2.570 | 3.7 | +1.4 |
| *Social transfers* | 10.563 | 19.5 | +2.6 | 11.137 | 19.3 | +5.4 | 11.543 | 18.7 | +3.6 | 12.108 | 18.5 | +4.9 | 12.675 | 18.7 | +4.7 | 13.325 | 19.0 | +5.1 |
| *Intermediate consumption* | 1.924 | 3.6 | -0.1 | 2.024 | 3.5 | +5.2 | 2.132 | 3.4 | +5.3 | 2.190 | 3.4 | +2.7 | 2.238 | 3.3 | +2.2 | 2.306 | 3.3 | +3.0 |
| *Compensation of employess* | 4.650 | 8.6 | +2.5 | 4.957 | 8.6 | +6.6 | 5.212 | 8.4 | +5.1 | 5.438 | 8.3 | +4.3 | 5.696 | 8.4 | +4.7 | 5.946 | 8.5 | +4.4 |
| **GENERAL GOVERNMENT BALANCE** | **0.845** | **1.6** | | **0.120** | **0.2** | | **0.171** | **0.3** | | **0.343** | **0.5** | | **0.575** | **0.9** | | **0.835** | **1.2** | |
| *Central government balance* | -0.215 | -0.4 | | -1.042 | -1.8 | | -1.062 | -1.7 | | -0.887 | -1.4 | | -0.667 | -1.0 | | -0.416 | -0.6 | |
| *Local government balance* | 0.170 | 0.3 | | 0.203 | 0.4 | | 0.206 | 0.3 | | 0.171 | 0.3 | | 0.183 | 0.3 | | 0.212 | 0.3 | |
| *Social government balance* | 0.889 | 1.6 | | 0.959 | 1.7 | | 1.027 | 1.7 | | 1.059 | 1.6 | | 1.060 | 1.6 | | 1.039 | 1.5 | |
| **STRUCTURAL BALANCE** | | **2.1** | | | **0.4** | | | **-0.1** | | | **-0.1** | | | **0.6** | | | **1.6** | |
| **GROSS DEBT** | **10.853** | **20.0** | | **12.811** | **22.2** | | **13.873** | **22.4** | | **14.761** | **22.6** | | **15.428** | **22.8** | | **15.844** | **22.6** | |

| MAIN MACROECONOMIC INDICATORS | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|
| **GROWTH** | | | | | | |
| Real GDP (in %) | 4.2 | 4.4 | 5.2 | 4.4 | 2.8 | 1.9 |
| Nominal GDP (in %) | 3.5 | 6.6 | 7.1 | 5.6 | 3.7 | 3.5 |
| Nominal GDP (level, in bln euros) | 54.195 | 57.744 | 61.830 | 65.297 | 67.697 | 70.064 |
| **PRICE DEVELOPMENTS** | | | | | | |
| Inflation NICP (in %) | 0.3 | 1.8 | 1.6 | 2.0 | 2.0 | 1.9 |
| **LABOUR MARKET DEVELOPMENTS** | | | | | | |
| Employment (growth, in %) | 3.0 | 3.2 | 3.4 | 3.1 | 2.5 | 1.5 |
| Unemployment rate (ADEM definition, in %) | 6.4 | 6.0 | 5.7 | 5.8 | 6.3 | 6.9 |

# II. Economic Outlook[4]

## II.1 EU Macroeconomic Environment

Forecasts for the European economy give rise to cautious optimism in spring 2017. GDP in the euro zone is assumed to grow by 1.6%, at a rate close to that observed last year, before accelerating 1.8% in 2018. At the end of the projection period, the underlying assumption used in the preparation of economic forecasts for Luxembourg is a gradual return of growth in the euro area to its potential, estimated at 1.1%.

The cyclical recovery in the euro area is mainly driven by domestic demand, with the labor market in Europe continuing to evolve in a favorable manner and purchasing power being strengthened. Investment in Europe remains weak but benefits from the contribution of the Juncker Plan and structural reforms promoting investment in many Member States.

In the very short term, recently published leading indicators confirm that business confidence is gradually improving and that the business climate is doing well at the beginning of the year.

In addition, stock markets have climbed significantly since last autumn, in anticipation of the cyclical improvement and implementation of reforms promoting growth and investment by the new US administration.

The European macroeconomic context, on which the economic forecasts for Luxembourg are based, admits a gradual exit by the ECB from its accommodative monetary policy stance, with interest rates rising again from 2018 onwards.

As for the assumption about the future increase of stock markets, the economic outlook described in this SGP update is based on an average increase in the EuroStoxx50 index of roughly 10% per annum over the years 2017-2019, before experiencing a slight decline at the end of the period.

However, the European and international economic context is subject to risks and uncertainties, the materialization of which could influence economic activity in Luxembourg, both negatively and positively.

Before the new US administration defines its economic priorities more precisely (in particular as regards international trade or taxation), uncertainties continue to weigh on the exact modalities of the United Kingdom's exit from the European Union. In addition to geopolitical risks in the Middle East, political risks also persist on the European continent.

Finally, a sudden rise in interest rates or the materialization of one or more of the above risks could lead to more pronounced volatility in financial markets, with (positive or negative) spill-overs also for the financial sector in Luxembourg.

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[4] The macroeconomic forecasts underlying this update of the SGP are produced by STATEC based on data available as the cut-off date of 15 February 2017. According to its work programme, a partial update of the economic projections will be presented by STATEC in its "*Note de Conjoncture 1-2017*" to be published during the month of May or June 2017.

## II.2 Short- and Medium-Term Economic Outlook in Luxembourg

Growth projections for Luxembourg are traditionally strongly influenced by the assumptions for euro area growth as well as for the evolution of the stock markets.

After growing by 4.2% in 2016, real GDP in Luxembourg is likely to increase to 4.4% in 2017 and then to accelerate to 5.2% by 2018. In the medium term, growth rates point however to a deceleration to 4.4% in 2019, to 2.8% in 2020 and to 1.9% in 2021. Real GDP growth in Luxembourg continues nevertheless to outperform the euro area (see Chart 1).

The economic outlook for Luxembourg can be explained by the following factors:

- the growth rates assumed for the euro area, which accelerate in 2018 and then return to its potential thereafter;
- a strong projected increase for stock markets, with an average increase of 10% per year over the years 2017-2019 and a continued expansion of the financial sector which remains an important driver of growth and employment;
- the impact of tax reform on the Luxembourg economy, strengthening the purchasing power of households (and thus supporting private consumption) and stimulating investment by companies.

The outlook for growth in Luxembourg is also accompanied by a favorable development in labour markets:

- After growing by 3.0% in 2016, employment continues to accelerate, with growth of 3.2% in 2017 and 3.4% in 2018.
- Over the medium term, employment is expected to grow at an average of 2.4% per year, which remains however below the historical average (2.9% over 1990-2015).
- The financial sector remains an important driver of employment growth, with annual average growth of 4.4% over the period 2018-2021.
- Unemployment[5] continues its downward trend to reach 5.7% in 2018 (after dropping from 6.4% in 2016 to 6.0% in 2017), before rising slightly at the end of the period.

These positive developments take place in an inflation environment that is expected to recover in 2017, reflecting the base effect of oil prices and the impact of the ECB's quantitative easing programme. Inflation, as measured by the national consumer price index (NICP), was 0.3% in 2016 and is estimated at an annual rate of around 2.0% for the years 2017 to 2021.

Regarding the automatic indexation of wages, the estimated timetable for the triggering of the next wage adjustments during the period 2018-2021 is as follows: 3rd quarter 2018, 3rd quarter 2019 and 1st quarter 2021. Given the high volatility of relevant exogenous parameters[6], the forecast for wage indexation adjustments is however to be interpreted with caution.

[5] According to the ADEM definition.
[6] Such as petrol prices or the Euro/dollar exchange rate.

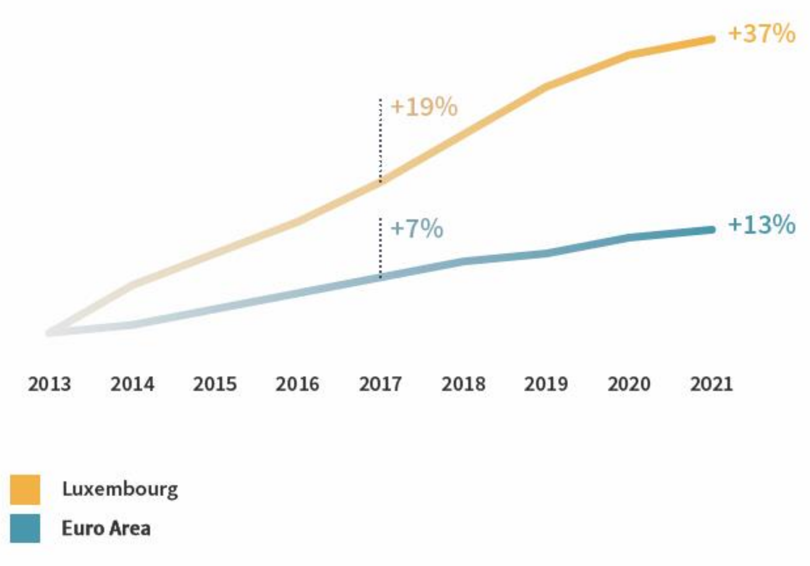
The potential growth of the Luxembourg economy is now estimated at an average of 3.7% over the period 2017-2021 (see methodological box) and the SGP is based on a macroeconomic scenario where real growth oscillates around potential growth, with the output gap turning positive by 2018[7].

The macroeconomic forecasts, underpinning the budgetary programming presented in this update of the SGP, do not incorporate any negative shocks or positive shocks. The Luxembourg economy is not only exposed to developments at the international level but also faces a number of domestic challenges at the national level in a changing economic context, characterized by a general overhaul of the taxation of multinational companies (BEPS, CCCTB, ATAD,…), a continuously evolving financial regulation or a trend towards increased digitalization in many sectors.

Given that the impact of these various developments is difficult to quantify precisely on an ex ante basis and given that they represent both a challenge and an opportunity for Luxembourg, the SGP is based on a central baseline scenario building on the exogenous assumptions described in the previous section.

A sensitivity analysis, including a simulation of a positive and negative shock on euro area growth as well as a simulation assuming a larger-than-expected increase in interest rates, is presented in Chapter III.6. This analysis provides an indication of the sensitivity of the main variables to the assumptions used in preparing the forecasts and allows for a better appreciation of the potential challenges for the public finances of Luxembourg

Chart 1 :
Real GDP in Luxembourg and the Euro Area (2013=base 100)




Source : Eurostat, SGP 2017.

[7] Potential GDP and the output gap are estimated using the LUX-COM methodology, i.e. the European Commission methodology applied to recent STATEC data and STATEC's own growth projections for 2017-2021.

# III. Fiscal outlook and public debt

## III.1 Fiscal policy objectives

The global financial crisis between 2008 and 2012 resulted in a marked deterioration in Luxembourg's public finances, despite the recovery efforts enacted previous governments.

However, Luxembourg managed to keep the public finances below the 3% of GDP deficit threshold, thus remaining in the so-called "preventive" arm of the Stability and Growth Pact. Moreover, the structural balance continued to meet the medium-term budgetary objective ("MTO") of + 0.5% of GDP throughout the crisis.

Public debt did increase significantly nonetheless, both in absolute terms and as a percentage of GDP, while remaining well below the 60% of GDP threshold under the Stability and Growth Pact.

Despite the fact that EU fiscal rules had been fully complied with, the global financial crisis severely weakened the public finances by confronting Luxembourg with a series of structural challenges, such as:

- a reduction of potential growth in the wake of the crisis, with the risk of a structural reduction in the growth rate of public revenues;
- the exposure of the financial sector, the traditional engine of growth, to a number of structural and regulatory adjustments, implying risks to growth and employment in the Grand Duchy;
- the discussions revolving around the overhaul of the taxation framework for multinational companies, presenting new challenges for the stability and predictability of the tax environment in Luxembourg;
- the degree of openness of the Luxembourg economy, implying that the future growth of public revenues relies to a large extent on external economic developments;
- sticky public expenditures, with a large share of public spending growingly "autonomously" growth and independently of the economic cycle.

In addition to these structural elements, the prospect of a change in the VAT regime for e-commerce presented a major challenge, in light of the € 1 billion annual loss in revenues from 2015 onwards.

Despite the aforementioned structural risks and the sizeable loss in eVAT revenues in 2015, public finances have developed more favorably over the last three years compared to projections presented in 2013. Indeed, the previous Government projected a major fiscal slippage in its 14th update of the SGP back in 2013 as well as the potential exit of Luxembourg from the preventive arm.

The current Government's courageous and determined action, notably through its comprehensive spending review ("*Budget Nouvelle Génération*") carried out in 2014, has significantly reversed the negative trend. Thanks to these sizeable efforts, the necessary fiscal space has been created to better serve the needs of citizens and businesses and to prepare the country for the challenges of the future.

In this context, it may be useful to compare the most recent fiscal outcomes with the unchanged policies forecasts presented in the "*Note au Formateur*[8]" during the coalition negotiations of November 2013:

– in 2014, a surplus of + 1.4% of GDP (€ 690 million) was achieved instead of the forecasted -0.4% of GDP (€ -179 million);
– in 2015, a surplus of +1.4% of GDP (€741 million) instead of -2.1% of GDP (€ -1'049 million), and
– in 2016, a surplus of + 1.6% of GDP (€ 845 million) instead of -1.9% of GDP (€ -1'002 million).

Overall, the outcomes presented here above amount to a cumulative improvement of € 4.5 billion or 8.8 percentage points of GDP in merely three years, compared to the November 2013 forecasts.

Public debt was estimated to rise from € 11.046 billion (or 24.3% of GDP) in 2013 to € 15.075 billion in 2016 (29.4% of GDP). At the end of 2016, however, public debt amounted to € 10.853 billion (20.0% of GDP), thus € 4.2 billion less than foreseen at the beginning of the mandate of this Government.

In light of the significantly improved backdrop, the Government will nonetheless continue to pursue the fiscal strategy adopted in its December 2013 governmental programme, by focussing on the following two objectives:

1. full compliance with the MTO throughout the projection period;
2. a durable stabilization of the public debt below 30% of GDP.

In order to respond to the structural challenges facing the country, the government's fiscal policy over the next few years will also be guided by the following policy objectives:

– Continued implementation of a rebalancing of public spending that began in 2014, with the full implementation of the measures of the "Zukunftspak", to counter-finance the losses of income related to electronic commerce and to increase the efficiency of public spending.
– Implementation of a tax reform, significantly increasing the purchasing power of households and ensuring the competitiveness of companies.
– Continued strengthening and modernization of the social protection system and public services for citizens and businesses, with substantial public investment in education, social protection and especially housing, as well as a recruitment policy in the state authorities in line with the growing needs of the population.
– Preserving a high level of public investment in infrastructure, at around 4.0% of GDP over the projection period, in order to prepare the country for the challenges of the future and also justified by the increase in the resident population as well as in the number of workers employed on the territory of the Grand Duchy.

At the same time, public debt is stabilized at a low level in international comparison, below 23% of GDP throughout 2017 to 2021. It would thus remain at all times below the level of 23.4% of GDP recorded at the end of 2013. From a balance sheet perspective, the general government also holds significant financial assets in excess of the level of indebtedness.

Regarding the long-term sustainability of public finances, population ageing will ultimately put upward pressure on public expenditures despite the positive effects of the pension reform that came into force on 1 January 2013,. The implicit liabilities remain high, both in absolute terms and in international comparison. A working group was therefore set up by the Government at the end of 2016, whose task it

[8] https://www.gouvernement.lu/2817242/Note_au_formateur.pdf

is to discuss the financial sustainability of the pension system and to propose, by the end of 2017, potential adaptations to the current system, while fully ensuring its adequacy over the medium- and long-term.

Finally, the Government does not submit a request to use any of the flexibility clauses given that the fiscal outlook described in the present update ensures full compliance with the rules of the preventive arm of the Stability and Growth Pact over the entire projection period. Moreover, the present SGP update does not contain any specific data on the expenses related to the reception of applicants for international protection.

## III.2 Medium-term objective (MTO)

The Stability and Growth Pact is a set of rules designed to guide the fiscal policies of EU Member States. The Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (TSCG), also called the "Fiscal Compact", signed on 2 March 2012 aims at preserving the economic and financial stability of the euro area.

The fiscal governance framework is an important instrument for achieving the objectives set out in the European Treaties. In particular, the main objective of fiscal rules is to ensure the implementation of a responsible fiscal policy in all Member States in order to avoid excessive deficits and to contribute to the economic, monetary and social stability of Europe.

The rules of the preventive arm of the Stability and Growth Pact are based primarily on compliance (or adjustment towards) a budgetary objective known as the "medium-term objective” (MTO).

The MTO to be reached by each Member State is differentiated according to the particular situation of the Member States, taking into account of the diversity of economic and budgetary positions as well as the divergent levels of risk with regard to fiscal sustainability.

It should also be noted that MTOs are expressed in "structural" terms to be able to take account of fluctuations in the economic cycle as well as one-offs.

As regards the procedure for setting the level of the MTO, each Member State is called upon to adopt its MTO every three years, in the context of the update of its stability programme. The last revision took place in 2016 and covered the period 2017-2019.

In accordance with a harmonized methodology, the European Commission presents, every three years, a minimum MTO for each Member State to which they must comply in fixing their respective MTO[9]. This calculation takes into account the evolution of expenditures linked to population ageing, which are in turn heavily reliant on the underlying demographic projections.

For Luxembourg, the minimum MTO calculated by the European Commission in 2016 was -1% of GDP, in view of the less pronounced increase of ageing costs as published in the "2015 Ageing Report[10]".

[9] The European Commission indeed compute a minimum value which doesn’t imply that a Member State cannot set its MTO at a more ambitious level.
[10] http://ec.europa.eu/economy_finance/publications/european_economy/2015/pdf/ee3_en.pdf .

As a contracting party to the TSCG, however, Luxembourg is obliged to set its MTO at a level of at least -0.5% of GDP[11]. For this reason, the Government chose to set its MTO at -0.5% of GDP for the 2017-2019 period in the previous SGP update in April 2016.

The next fixing of the MTO should in principle take place in 2019, taking into account the updated projections for ageing-related costs, which will be published in 2018 ("2018 Ageing Report ") and which are to be based on updated demographic projections by Eurostat.

## III.3 Fiscal outcomes in 2016 and 2017

For the years 2016 and 2017, this update of the SGP is based on the most recently available figures[12].

### 2016

The fiscal outcomes in 2016 show a slight improvement compared to the situation in 2015: the general government balance rose from a surplus of € 741 million or 1.4% of GDP in 2015 to a surplus of € 845 million or 1.6% of GDP in 2016.

The evolution between 2015 and 2016 at the level of the sub-sectors is as follows: at central government level, the deficit is reduced from € 236 million or 0.4% of GDP to € 215 million or 0.4% of GDP; for local government, there is a slight reduction in the surplus from € 216 million or 0.4% of GDP in 2015 to € 170 million or 0.3% of GDP in 2016 and, for social security, a marked improvement in the surplus from € 761 million (1.5% of GDP) in 2015 to € 889 million (1.6% of GDP) in 2016.

The fiscal developments in 2016 were mainly affected by the following 5 factors:

1. Implementation of the fiscal consolidation package, with the "Zukunftspak" and the increase of certain VAT rates, from 1 January 2015. The improving of the general government balance in 2016 is estimated at € 630 million[13].
2. The change in the VAT regime linked to e-commerce[14] from 2015 onwards: after the drop of € 522 million in 2015, the related tax revenues were lower by another € 171 million in 2016.
3. A record investment level, with spending on capital formation exceeding for the first time the 2 billion euro mark in 2016 and amounting to 3.8% of GDP.
4. A low inflation environment, with an annual rate of 0.3%, resulting notably in the delayed triggering of the automatic wage adjustment from early 2016 to early 2017 and thus lower than anticipated remuneration costs.
5. Favourable macroeconomic conditions, with real GDP growth reaching 4.2% in 2016 and total employment rising by 3.0%.

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[11] Art 3.1.b & Art. 3.1.d TSCG : http://ec.europa.eu/economy_finance/economic_governance/sgp/legal_texts/index_en.htm .

[12] This implies that there may be slight differences between the figures notified to Eurostat on 1 April 2017 in the context of the EDP notification and the figures presented in this update. These differences are due to the inclusion of information that was not yet available when the notification was finalized at the end of March.

[13] According to the latest estimate made in August 2016 in response to Parliamentary Question no. 2243.

[14] For more details, see the 16$^{th}$ update of the SGP: http://www.mf.public.lu/publications/programme/16e_progr_stabilite_groissance.pdf .

### 2017

The 2017 year continues to enjoy a favourable macroeconomic environment, with real GDP growth estimated to increase to 4.4% and a labour market up by 3.2%.

Budgetary developments are mainly affected by the effects of the tax reform that came into effect on 1 January. As it is early too at this stage to update the estimated impact of the various elements of the tax reform, the general government balance for 2017 continues to take account of the impact announced in the context of the previous update of the SGP, i.e. a total of € 373 million for 2017. As for the specific measures, further details can be found under the following link: http://www.reforme-fiscale.public.lu/en/index.html. It should be noted that, in the field of corporate taxation, the tax reform and relevant revenue estimates from 2017 onwards are based on the assumption that there is no negative or positive impact from BEPS-related reforms.

Moreover, from 2017 onwards, Luxembourg's share of revenues from e VAT is reduced to 15% (from 30% in 2015 and 2016), leading to a further loss in revenues.

Investments are expected to increase by +13.3% in 2017, in line with the Government's commitment not only to catch up on delays but to prepare the country's infrastructure for the challenges of the future.

Compensation of employees also increase more vigorously as a result of the automatic wage adjustment triggered at the beginning of 2017, a one-off lump sum payment to civil servants in April 2017 following the wage agreement found at the end of 2016 and in light of the policy of the Government to increase investments in public services, notably through a significant increase in the number of staff in the fields of education and internal security.

A reform of local government finances has also entered into force on 1 January 2017. From a budgetary point of view, it is not expected to have an immediate impact on the general government balance while it induces increased transfers from the central government to the local government sector.

The general government fiscal balance remains positive at +0.2% of GDP or € 120 million. The deterioration compared to 2016 is primarily attributable to developments at central government level, where the deficit rises from € 215 million or 0.4% in 2016 to € 1,042 million or 1.8% of GDP in 2017. At the same, the other sub-sectors are expected to slightly improve: the local government balance increases from a surplus of € 170 million or 0.3% of GDP in 2016 to € 203 million or 0.4% of GDP and social security from € 889 million or 1.6% of GDP in 2016 to € 959 million or 1.7% of GDP.

### Compliance with the rules of the preventive arm of the Stability and Growth Pact

As regards compliance with the budgetary rules of the preventive part of the Stability and Growth Pact, the following points should be noted:

- in 2016, the structural balance is +2.1% of GDP and is above the MTO of +0.5% of GDP;
- in 2017, the structural balance is +0.4% of GDP and remains above the MTO of -0.5% of GDP;

– as regards the expenditure benchmark, it should be noted that it does not apply to those Member States over-achieving their MTO[15].

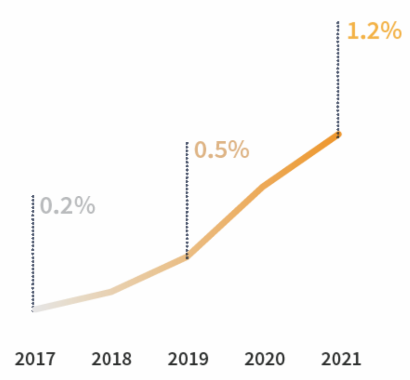
## III.4 Fiscal outlook for 2018-2021

The medium-term outlook for public finances, from 2018 onwards, continues to be characterized by the following main factors:

- macroeconomic conditions (growth and employment) that are very dynamic at the beginning of the projection period and subsequently more subdued;
- the full implementation of the measures to rebalance public expenditures through the "*Zukunftspak*" whose positive effects increase over the projection period;
- the implementation of a tax reform, whose effects are panning out gradually over the medium term and which should have a beneficial impact on economic activity;
- an ambitious public investment policy to support the growing infrastructure needs of an increasing population and higher employment.

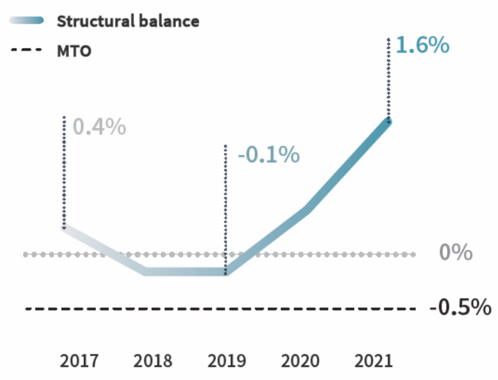
In 2018, the fiscal situation is affected by the deferred effects of the tax reform, whose effects, on an ex ante basis and without taking into account "second round" effects, is € 502 million (compared with € 373 million in 2017). As a result, the government balance remains relatively stable compared with 2017 and only slightly increases to € 171 million or 0.3% of GDP. At the central government level, the deficit increases from € 1.042 million euros or 1.8% of GDP in 2017 to € 1.062 million or 1.7% in 2018, partly due to increased transfers to social security[16]. At the same time, the local government balance remains virtually identical to 2017 and amounts to € 206 million or 0.3% of GDP in 2018, while the Social Security surplus is further improved, to € 1.027 million euros in 2018 or 1.7% of GDP thanks to strong employment growth and therefore higher social contributions.

Chart 2 :
Nominal General Government Balance (in % of GDP)




*Source : SGP 2017.*

Chart 3 :
Structural balance (in % of GDP)




*Source : SGP 2017.*

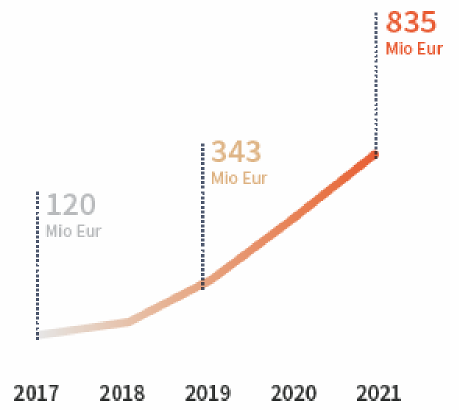
[15] Page 47, "*Vade Mecum on the Stability and Growth Pact - 2017 Edition*" (European Commission, Mars 2017): "Countries that have exceeded their MTO do not need to be assessed for compliance with the expenditure benchmark".

[16] Increased transfers from central government to social security are largely due to the strong increase in employment, which implies a greater contribution of the State in the financing of social security.

From 2019 onwards, the general government balance gradually increases from a surplus of € 343 million or 0.5% of GDP in 2019 to a surplus of € 835 million or 1.2% of GDP in 2021. The improvement in is mainly the result of a gradual reduction of the central government deficit and is mainly due to the following factors:

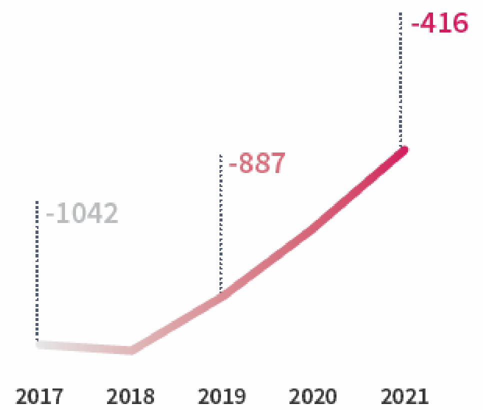
i. gross capital formation expenditures growing by an average of 1.9% over the 2019-2021, i.e. a stabilization at a high level of 3.8% of GDP on average ;
ii. the gradual restoration of a "normal" dynamic of fiscal revenues, with an average growth rate of 4.9% over the 2019-2021 and with current income and wealth taxes experiencing an average growth rate of 6.3% over the same period;
iii. a sustained control of public spending, the growth of which remains below revenue growth for each fiscal year over the 2019-2021 and whose average growth rate is 4.1% per year.

Chart 4 :
General government balance (in € millions)



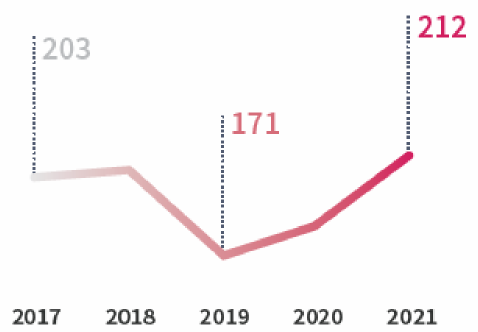

*Source : SGP 2017.*

Chart 5 :
Central governement balance (in € millions)



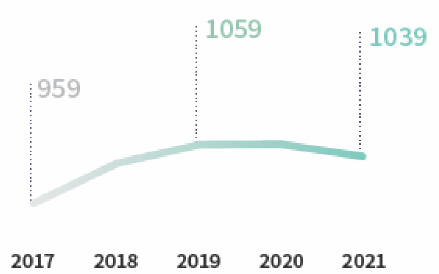

*Source : SGP 2017.*

Chart 6 :
Local governement (in € millions)




*Source : SGP 2017.*

Chart 7:
Social security balance (in € millions)




*Source : SGP 2017.*

As for the rules of the preventive arm of the Stability and Growth Pact, the fiscal outlook described here above gives rise to the following preliminary conclusions:

- During 2018-2021, Luxembourg fully respects the principal rule of the preventive arm of the Stability and Growth Pact. The structural balance is estimated to be above the MTO of -0.5% of GDP over the entire period under review: -0.1% in 2018 and 2019, +0.6% in 2020 and + 1.6% in 2021.
- In 2018, the deterioration of the structural balance to -0.1% of GDP is primarily linked to the "closing" of the output gap. The latter is becoming positive because of the sharp rise in real GDP. In 2019, the structural balance remains stable at -0.1% of GDP, despite the improvement in the nominal balance, due to the negative impact of an increasing output gap.
- From 2019 to 2021, the structural balance is gradually improving again to well above the MTO of -0.5% of GDP, due to the increase in the general government surplus and the output gap turning negative again because of the assumed growth profile.
- As for the expenditure benchmark, it does not apply to Member States for which the MTO is over-achieved.

*Methodological Box : Structural balance and estimation of the output gap*

The rules of the preventive arm of the Stability and Growth Pact are based mainly on compliance (or gradual adjustment towards) a budgetary objective known as the "medium-term budgetary objective (MTO)".

The MTO is defined in "structural" terms, i.e. adjusted for fluctuations in the economic cycle and the effects of exceptional measures and other temporary measures.

The purpose of the so-called "structural" balance is to determine the underlying budgetary balance of the general government without taking into account budgetary fluctuations linked to the economic cycle as well as one-off and temporary budgetary measures.

In order to calculate the structural balance, it is therefore important to assess the impact of cyclical changes on public balances. The output gap is the economic indicator for estimating the difference between real GDP and potential GDP.

As described in the "Vade Mecum" on the Stability and Growth Pact, the equation for calculating the the structural balance is as follows:

*Structural balance = Nominal Balance – 0.445 x Output Gap +/- One-Off Factors*

The output gap measures the difference between the "real" state of the economy and a "theoretical" state in which an economy makes the best use of its production factors (without creating inflationary pressures on prices and wages).

The formula to compute the output gap is as follows:

*Output Gap*

*=*

*(Real GDP – Potential GDP) / Potential GDP*

In this formula of the output gap, the level of potential GDP represents the level of output of an economy when it is in a "normal" state, i.e. using the production factors (labor and capital) as well as possible.

One of the major difficulties for calculating the output gap is that potential GDP and the output gap are that they two variables that are not observable and must therefore be estimated using statistical econometric and methods.

Due to the volatility of growth in a small open economy such as Luxembourg, the estimate of potential growth and output gap has traditionally been characterized by a very high degree of uncertainty.

In addition, there are a variety of different methodologies for estimating potential GDP and output gaps, which can sometimes lead to divergent, if not contradictory results.

Since the European Commission's assessment of the structural balance is based on a harmonized European methodology for all EU Member States, the Government has used since 2015 the same method in its calculation of the structural balance.

In doing so, however, it uses data of STATEC ("LUX-COM method"), in view of the complexity of the calculations to be carried out and since the European Commission's forecast figures are not available at the time of the finalization of the SGP update.

Despite the "imperfect" nature of this methodology, and especially because of the unavailability of the Commission's forecasts, the approach used in this update of the SGP is also identical to that used in the budgetary programming law of last autumn and the previous update of the SGP. Moreover, this methodology should in principle make it possible to get closer to the figures of the European Commission. Finally, it should be noted that research at STATEC is ongoing to further study and refine the estimation of the output gap.

In the context of this SGP update, the update of the national accounts published at the end of March 2017 and the latest macroeconomic forecasts for 2017 to 2021,on which fiscal projections are based, have been taken account of.

The calculation of the structural balance for the purposes of the present SGP is based on the following elements:

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|
| Nominal Balance | +1,6% | +0,2% | +0,3% | +0,5% | +0,9% | +1,2% |
| Real GDP Growth | +4.2% | +4.4% | +5,2% | +4,4% | +2,8% | +1,9% |
| Potential GDP Growth | +3,7% | +3,6% | +3,8% | +3,8% | +3,6% | +3,5% |
| **Output Gap** | **-1,2%** | **-0,4%** | **+0,9%** | **+1,5%** | **+0,7%** | **-0,9%** |
| **Structural Balance** | **+2,1%** | **+0,4%** | **-0,1%** | **-0,1%** | **+0,6%** | **+1,6%** |

## III.5 Public debt developments

At the end of 2016, Luxembourg's public debt stood at € 10.853 billion or 20.0% of GDP. It is well below the level assumed in the previous update of the SGP (€ 12.1 billion or 22.4% of GDP) and is also lower than the level observed at the end of 2013 of € 10.889 billion or 23.4% of GDP.

Luxembourg therefore continues to be among the Member States with the lowest debt ratios in the euro area (only Estonia has a lower level ratio) and it remains well below the reference value of 60% of GDP.

Following the issuance of a new bond in February 2017, the following table summarizes the outstanding debt instruments:

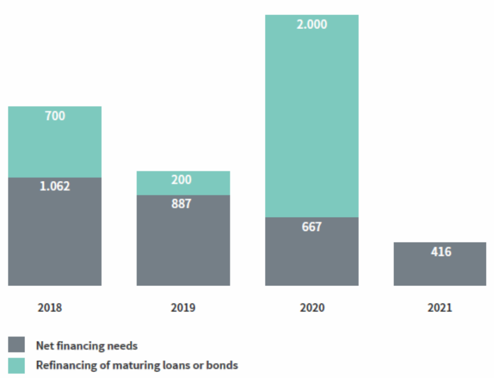
| Name of the Instrument | Type of Instrument | Issuance Date | Maturity | Amount (€ million) |
|---|---|---|---|---|
| GRAND-DUCHE 3,375% | Benchmark bond | May 2010 | May 2020 | 2.000 |
| GRAND-DUCHE 2,25% | Benchmark bond | March 2012 | March 2022 | 1.000 |
| GRAND-DUCHE 2,25% | Benchmark bond | Mars 2013 | March 2028 | 750 |
| GRAND-DUCHE 2,125% | Benchmark bond | July 2013 | July 2023 | 2.000 |
| GRAND-DUCHE 2,75% | Private placement | August 2013 | August 2043 | 300 |
| LGB SUKUK 0,436% | Institutional loan | October 2014 | October 2019 | 200 |
| GRAND-DUCHE 0,625% | Benchmark bond | February 2017 | February 2027 | 2.000 |

The debt outlook assumes that central government deficits are financed by the issuance of new bonds or bank loans over the projection period 2018 to 2021. In addition, maturing loans and bonds will have to be refinanced with new borrowings.

In total, public debt is thus assumed to increase by € 3 billion from 2018 to 2021. However, it remains below 23% of GDP at any given time, well below the threshold of 30% of GDP foreseen the government programme. When taking into account the refinancing needs over the forecast horizon, gross financing needs amount to approximately € 6 billion over the next three years.

Estimated gross financing needs are explained as follows: € 1,762 million in 2018 (including € 700 million to refinance maturing loans), € 1,087 million in 2019 (of which € 200 million to repay the Sukuk) , € 2,667 million in 2020 (including € 2,000 million to refinance a bond issue) and € 416 million euros in 2021[17].

Chart 8 :
Gross financing needs from 2018-2021




*Source : SGP 2017.*

[17] This debt profile is constructed by estimating net financing needs mechanically based on central government deficits, assuming constant debt at the level of local governments and assuming that there will be no financial transactions with a potential impact on public debt.

As a result, consolidated general government debt rises from € 12.8 billion or 22.2% of GDP at the end of 2017 to € 15.9 billion or 22.6% of GDP in 2021.

The AAA credit rating with a stable outlook from all major rating agencies allows Luxembourg to refinance itself at relatively low yields, implying that the cost of servicing the public debt remains relatively stable at around 0.3% of GDP or about € 200 million.

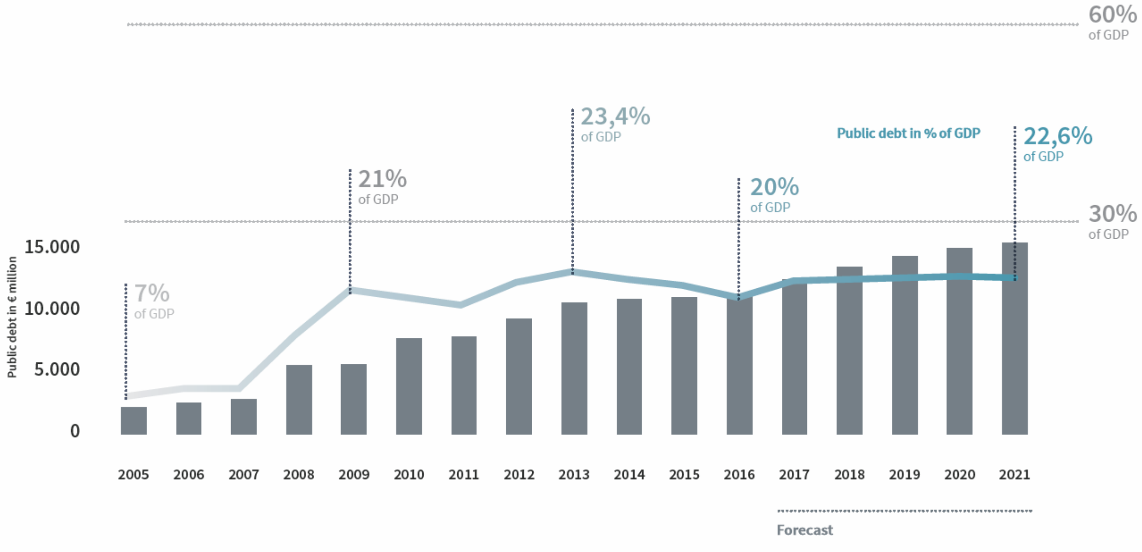
As for the composition of public debt, central government debt and, to a lesser extent, that of local governments are the main constituents of public debt. It also includes the debt of public institutions as well as guarantees granted by the State under PPP contracts and in connection with debts issued by the EFSF. According to a Eurostat decision, these guarantees indeed need to be recorded as debt.

As the Social Security sub-sector is structurally in surplus, the excess funds are set aside in a reserve fund, the "*Fonds de compensation*", to meet the financing of future pension benefits. The assets of this reserve fund reached € 17.8 billion at December 31, 2016, representing 32.9% of GDP.

Finally, it should be recalled that the Luxembourg State holds various stakes in commercial and non-commercial companies with an estimated value of around 10% of GDP and since 2015 an intergenerational sovereign wealth fund has been set up to build up savings for the future, whose assets stand at € 135 million at the end of 2016.

Taken together, Luxembourg thus holds financial assets for about 43% of GDP, almost double the level of gross public debt.

Chart 9 :
Public debt developments




*Source : STATEC, SGP 2017.*

## III.6 Sensitivity Analysis

A first sensitivity analysis is based on two symmetric shocks, i.e. a negative and a positive shock, of a magnitude of 0.5 percentage points in the growth profile in the euro area from 2018.

A second sensitivity analysis simulates a shock in interest rates in the euro area.

### Growth shock in the euro area

A reduction of the euro area growth rate affects the national growth rate mainly via three channels: a less favorable evolution of the stock index, a decrease in the growth rate of investment, and a reduction in foreign trade (see Table A).

*Negative shock*

The alternative scenario resulting from a negative external shock of 0.5 percentage points of the euro area growth rate would imply real growth in Luxembourg of around 2.7% over the period 2018-2021, compared with an average of 3.3% over the same period in the central scenario. Such a shock would therefore have a significant impact on Luxembourg's growth over the projection period.

Compared to the central scenario and under the effect of lower employment growth, the unemployment rate would be higher from 2018 onwards with a gradual increase compared to the central scenario, reaching 7.3% in 2021. The unemployment rate would reach 5.8% (+0.1 percentage points) compared to the central scenario) in 2018, by 6.0% (+0.2 points) 2019, by 6.6% (+0.3 points) for 2020 and 7.3% (+0.4 points) in 2021.

The negative shock would also have an impact on public finances, in particular on the level of government revenues relative to the central scenario until 2021. Regarding government revenues, the difference between the shock scenario and the central scenario would be approximately € 110 million in 2018 and would reach around € 790 million in 2021. As a result, the general government balance, in this alternative scenario, would be 0.1% of GDP for 2018, compared to 0.3% of GDP for the central scenario. The effects of the negative shock on public finances would increase over time. The simulation suggests that the difference between the central scenario and the alternative scenario would be 0.7 percentage points in 2021 (1.2% vs. 0.5%) at the level of general government. It is worth noting, that even with an adverse assumption of a negative exogenous shock on growth, the general government balance would remain positive for the entire period 2018-2021.

Public debt would only slightly increase under the impact of the negative shock, reaching 24.1% of GDP in 2021. This would contrast with the results of the central scenario which indicate that the level of debt stabilizes around 22.8 % In 2020 to reach 22.6% in 2021.

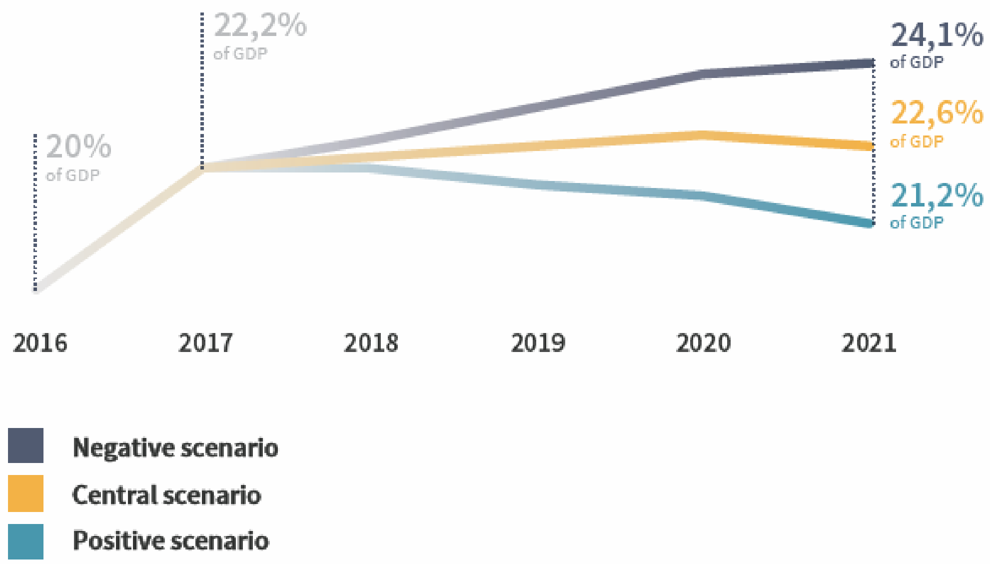
*Positive shock*

A positive impact of the same order of magnitude as that of the negative shock on the euro area growth rate, would result in higher growth in Luxembourg. This simulated positive effect would translate into an average growth rate of 3.9% over the period 2018-2021. Such positive growth developments compared to the central scenario would also have a positive impact on employment, with an average growth rate of 2.8%, compared to 2.5% in the central scenario. Conversely, the unemployment rate would be reduced by 0.4 percentage points compared to the central scenario in 2018, reaching 6.5% by 2021.

In a similar way to the negative shock described above, public expenditure and, in particular, revenues would be reactive to the simulated shock. At the end of the period, the balance at the general government level would reach 1.9% of GDP in the alternative scenario compared to 1.2% for the central scenario in 2021. The general government balance would increase from € 835 million to € 1,355 million in 2021. These positive developments would also have an impact on the central government balance. At the end of the period, the projected deficit of -0.6% would turn into a surplus of 0.1% under this positive shock scenario.

The trend in public debt would show a more favorable trend, with GDP debt gradually falling from 2018 (22.2% of GDP) to 21.2% of GDP in 2021.

Chart 10 :
Growth shock in the euro area (±0,5 point) - Public debt




*Source : SGP 2017.*

Table A : Effects of a positive and a negative shock on the growth of the Euro Area

| | 2018 | | | 2019 | | | 2020 | | | 2021 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **shock -** | **central** | **shock +** | **shock -** | **central** | **shock +** | **shock -** | **central** | **shock +** | **shock -** | **central** | **shock +** |
| **Main endogenous variables** | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Real GDP (rate of change) | 1.3 | 1.8 | 2.3 | 1.1 | 1.6 | 2.1 | 0.8 | 1.3 | 1.8 | 0.6 | 1.1 | 1.6 |
| Nominal GDP (rate of change) | 4.7 | 5.2 | 5.7 | 3.8 | 4.4 | 5.0 | 2.2 | 2.8 | 3.4 | 1.4 | 1.9 | 2.4 |
| Employment (rate of change) | 3.3 | 3.4 | 3.5 | 2.8 | 3.1 | 3.4 | 2.2 | 2.5 | 2.8 | 1.2 | 1.5 | 1.8 |
| Unemployment rate( in %) | 5.8 | 5.7 | 5.6 | 6.0 | 5.8 | 5.6 | 6.6 | 6.3 | 6.0 | 7.3 | 6.9 | 6.5 |
| | | | | | | | | | | | | |
| **Public finances** | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| ***General government*** | | | | | | | | | | | | |
| Total expenditures (level) | 24850 | 24876 | 24903 | 25910 | 25992 | 26075 | 26850 | 27027 | 27206 | 27798 | 28091 | 28390 |
| Total revenues (level) | 24934 | 25047 | 25161 | 26025 | 26335 | 26649 | 27059 | 27602 | 28158 | 28132 | 28926 | 29745 |
| General government balance (level) | 85 | 171 | 258 | 115 | 343 | 573 | 208 | 575 | 951 | 334 | 835 | 1355 |
| General government balance (in % of GDP) | 0.1 | 0.3 | 0.4 | 0.2 | 0.5 | 0.9 | 0.3 | 0.9 | 1.4 | 0.5 | 1.2 | 1.9 |
| | | | | | | | | | | | | |
| ***Central government*** | | | | | | | | | | | | |
| Central government balance (level) | -1149 | -1062 | -975 | -1115 | -887 | -657 | -1034 | -667 | -291 | -917 | -416 | 104 |
| Central government balance (in % of GDP) | -1.9 | -1.7 | -1.6 | -1.7 | -1.4 | -1.0 | -1.6 | -1.0 | -0.4 | -1.4 | -0.6 | 0.1 |
| | | | | | | | | | | | | |
| ***Gross public debt*** | | | | | | | | | | | | |
| Gross public debt (level) | 13960 | 13873 | 13786 | 14988 | 14761 | 14530 | 15795 | 15428 | 15052 | 16345 | 15844 | 15324 |
| Gross public debt (in % of GDP) | 22.7 | 22.4 | 22.2 | 23.3 | 22.6 | 21.9 | 23.9 | 22.8 | 21.7 | 24.1 | 22.6 | 21.2 |
| | | | | | | | | | | | | |

### Shock on interest rates

In addition to a sensitivity analysis on growth rate rates, the effects on growth resulting from a shock on interest rates are also simulated presently (see Table B). A 50 basis point shock in interest rates in the euro area would negatively impact economic growth in Luxembourg.

The effects would be more pronounced at the beginning of the period, even if theimpact remains rather limited. Growth would drop from 5.2% for the central scenario to 5.0% for the adverse scenario in 2018. The unemployment rate would increase by 0.1 percentage points. However, the values of the alternative and central scenarios would converge at the end of the period.

As regards the general government balance, the shock scenario would differ by 0.1 percentage points compared to the central scenario (1.1% vs. 1.2%) in 2021. Similarly, the debt ratio would be slightly higher in the shock scenario, i.e. 22.8% of GDP compared to 22.6% of GDP in 2021. The modest effect on public debt is mainly explained by the fact that refinancing needs in the assessed time horizon are limited and bonds coming to maturity are replaced by lower yielding loans.

Table B : Effects of a higher-than-anticipated rise in interest rates

| | 2018 | | 2019 | | 2020 | | 2021 | |
|---|---|---|---|---|---|---|---|---|
| | **shock -** | **central** | **shock -** | **central** | **shock -** | **central** | **shock -** | **central** |
| **Main endogenous variables** | | | | | | | | |
| | | | | | | | | |
| Short-term interest rate (%) | 0.2 | -0.3 | 0.7 | 0.2 | 1.5 | 1 | 2 | 1.5 |
| Long-term interest rate (%) | 1.5 | 1 | 1.8 | 1.3 | 2.4 | 1.9 | 3 | 2.5 |
| Real GDP (rate of change) | 5.0 | 5.2 | 4.3 | 4.4 | 2.7 | 2.8 | 1.9 | 1.9 |
| Employment (rate of change) | 3.2 | 3.4 | 3.0 | 3.1 | 2.4 | 2.5 | 1.4 | 1.5 |
| Unemployment rate( in %) | 5.8 | 5.7 | 5.9 | 5.8 | 6.3 | 6.3 | 6.9 | 6.9 |
| | | | | | | | | |
| **Public finances** | | | | | | | | |
| | | | | | | | | |
| ***General government*** | | | | | | | | |
| Total expenditures (level) | 24842 | 24876 | 25922 | 25992 | 26924 | 27027 | 27959 | 28091 |
| Total revenues (level) | 24974 | 25047 | 26211 | 26335 | 27439 | 27602 | 28732 | 28926 |
| General government balance (level) | 132 | 171 | 289 | 343 | 515 | 575 | 773 | 835 |
| General government balance (in % of GDP) | 0.2 | 0.3 | 0.4 | 0.5 | 0.8 | 0.9 | 1.1 | 1.2 |
| | | | | | | | | |
| ***Central government*** | | | | | | | | |
| Central government balance (level) | -1101 | -1062 | -941 | -887 | -728 | -667 | -478 | -416 |
| Central government balance (in % of GDP) | -1.8 | -1.7 | -1.4 | -1.4 | -1.1 | -1.0 | -0.7 | -0.6 |
| | | | | | | | | |
| ***Gross public debt*** | | | | | | | | |
| Gross public debt (level) | 13912 | 13873 | 14814 | 14761 | 15488 | 15428 | 15906 | 15844 |
| Gross public debt (in % of GDP) | 22.5 | 22.4 | 22.8 | 22.6 | 23.0 | 22.8 | 22.8 | 22.6 |
| | | | | | | | | |

## III.7 Comparison with the previous Stability Programme update

The comparative analysis between the 17th and the 18th update of the SGP can be summed up in two main observations:

1. In the short term, relatively stable macroeconomic conditions and a substantial upward revision of public finances.
2. In the medium term, a slight upward revision of macroeconomic conditions and public finances.

In the short-term (also see section III.3):

– For 2016, the general government balance doubles from 0.8% of GDP to 1.6% of GDP: this improvement is due, on the one hand, to the better than expected macroeconomic conditions, and, on the other hand, by improved budgetary discipline resulting from the implementation of the "Zukunftspak" package of measures. Total government revenue thus rose from € 23,020 million to € 23,147 million, while expenditure was revised downwards from € 22,611 million to € 22,302 million.

– As for 2017, the general government balance remains virtually stable and is only slightly revised upwards to € 120 million or 0.2% of GDP.

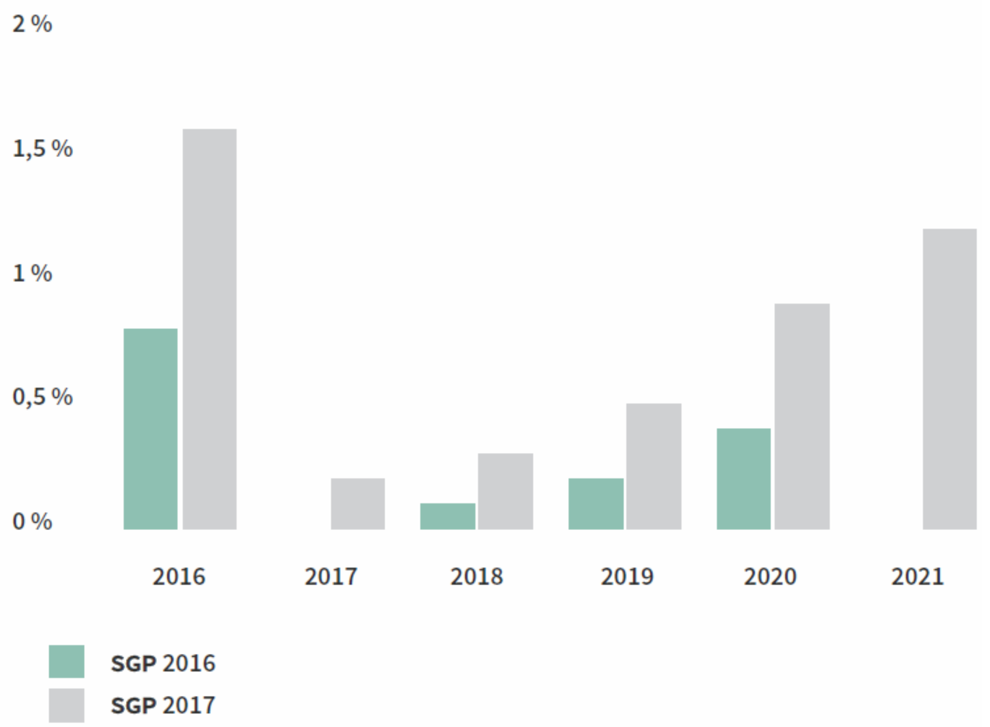
– At the end of 2016, gross public debt stood at € 10.9 billion, or 20.0% of GDP, well below the € 12.2 billion euros, or 24% of GDP, forecast in the previous update.

Regarding the medium-term outlook (also see section III.4):

– The general government balance is improving compared to the previous update of the SGP. The difference amounts to 0.2% of GDP in 2018, 0.3% of GDP in 2019 and 0.5% of GDP in 2020, due to the improved starting position and an improvement in macroeconomic conditions (especially in terms of employment).

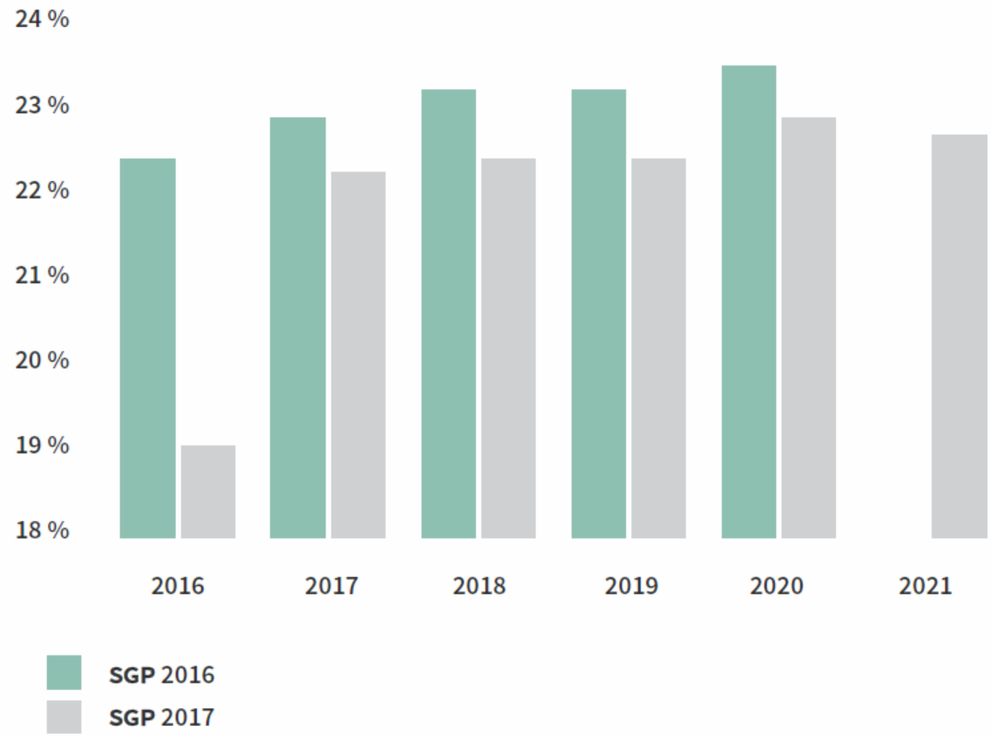
– In line with the improved fiscal position, the multi-year trajectory for public debt is more favourable over the medium term. Public debt now stabilizes below 23% of GDP over the period under review.

Chart 11 :
General Government Balance (in % of GDP)




*Source : SGP 2016, SGP 2017.*

Chart 12 :
Gross Public Debt (in % of GDP)




*Source : SGP 2016, SGP 2017.*

# IV. Quality of Public Finances

Upon taking office, the Government committed itself to restoring a sound public finances, through its two main budgetary objectives, namely compliance with the MTO and stabilization of public debt below 30% of GDP.

The fiscal strategy described in this update of the SGP and its annex reflects the Government's commitment to preserving the quality of public finances:

- On the expenditure side, emphasis is placed on elements that contribute positively to economic and social development: high levels of public investment in infrastructure, increased transfers for human capital formation, high social spending and dedicated expenditures to promote the diversification of the country's economy.
- On the revenue side, the tax reform contains specific measures aimed at strengthening the country's competitiveness and promoting job creation: the reduction of the headline corporate tax rate for companies from 21% to 18%; the increase in the investment tax rebate.

In addition, the quality of public finances can be analyzed through the following elements:

- in terms of the level of public spending relative to GDP, which has increased since the start of the financial and economic crisis in 2008, the ratio stands at 41.2% in 2016 compared to 47.9% on average in the euro area[18];
- similarly on the revenue side: in 2016, the ratio is 42.7% of GDP compared with 46.3% of GDP on average in the euro area.

As for the medium-term trajectory of public finances, it should be noted that:

- the share of public expenditure to GDP is assumed to decrease slightly from 41.2% of GDP in 2016 to 40.1% of GDP in 2021;
- the share intermediate consumption is falling from 3.6% of GDP in 2016 to 3.3% of GDP in 2021;
- the public investment ratio is expected to stabilize around 3.8% of GDP, while remaining at high absolute levels[19];
- regarding the debt burden, interest expenditure will remain low at around 0.3% of GDP;
- for revenues, the ratio will decrease from 42.7% of GDP in 2016 to 41.3% of GDP in 2021;
- in terms of composition, the share of direct taxes will go from 14.8% in 2016 to 14.3% in 2017 (mainly due to the tax reform) to reach 14.8% in 2021.

Finally, it should be noted that the quality of public should not only be measured in "quantitative" terms, but also in "qualitative" terms. In this sense, Luxembourg is planning to improve its budgetary framework in order to create more incentives for public expenditure managers to increase the quality of public spending.

[18] AMECO database.

[19] The less pronounced increase in the level of public investment at the end of the period, at t + 4, is related to the fact that projects currently under way will have been completed by then, although they are not yet replaced by new projects in multiannual programming due to lack of knowledge of the relevant priorities in four years' time.

# V. Long-term sustainability of public finances[20]

The various social security schemes are regularly analyzed to ensure their sound strategic management and their long-term viability. It is in this spirit that the reform of the general pension insurance system, which came into force on 1 January 2013, requires the General Inspectorate of Social Security (IGSS) to review the financial situation of the scheme every five years. One of the aims of the reform was to align the replacement rate with life expectancy and to provide for regulatory mechanisms in the event of insufficient financial resources. The Government has taken a number of measures to close the gap between the statutory and the actual retirement age, including the introduction of an active policy to facilitate retention of older employees.

As an analysis of the general scheme was planned to be carried out in 2017, the Government decided in its programme to conduct an initial assessment of the impact of the reform as of 2016. To this end, the Government has set up a "Pensions Group" in order to analyse halfway through the legislative period, on the basis of an actuarial analysis drawn up by the IGSS, the provisions introduced in 2013, including the readjustment mechanism. It is mandated with the task of discussing the financial sustainability of the scheme and deciding on the need to put in place possible adaptations. This working group is composed of experts from different ministries and professional chambers. The actuarial analysis of the IGSS on the financial situation of the general pension insurance scheme was presented to the Government, the working group and the press in December 2016[21].

This review includes an update of the long - term budgetary projections, which confirms the figures included in the 17$^{th}$ update of the Stability and Growth Program and in particular the positive effect of the mechanisms introduced in the 2012 reform on the long-term financial situation of the general pension insurance scheme. Indeed, depending on the moderating factor of the readjustment applied in the case of a deficit, the impact of the reform corresponds to a decrease in expenditure (in % of GDP) lying between 2.5 and 3.8 percentage points in 2060. The report also confirms the importance of not relying on the current high level of the compensation reserve. It is thus necessary to take advantage of the accumulated reserves with a view to examining in due course the desirability of corrective mechanisms, both in terms of revenue and benefits. It should be added that with a surplus of € 926 million in 2015, the compensation reserve for the scheme increased to € 16.54 billion at 31 December 2015, i.e. 4.4 times the amount of annual benefits paid out. Also, at unchanged contribution rates, funding for benefits is ensured beyond 2040. The working group, which has met twice, will have exchanges throughout the year and will present in due course its conclusions and recommendations.

It should also be pointed out that the forthcoming aging-related spending projections to be carried out in the framework of the Economic Policy Committee's Ageing Working Group will not be available until early 2018. Thus, the figures in this SGP update remain unchanged compared to those of the previous update (Table 7).

In addition to the pension reform, the Government has indicated its willingness to introduce additional incentives to delay the effective retirement age and allow for a more gradual transition to retirement, notably through the measures set out below:

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[20] This chapter should be read in conjunction with chapter 3.1 of the National Reform Programme in response to CSR 1 of the 2016 European Semester.

[21] For more information: http://www.gouvernement.lu/6548714/02-bilan-assurance-pension .

- **Reform of the reclassification system**: in order to prolong the working life of employees, the Government has reformed the system of reclassification in the event of partial incapacity for work. The central objective of this reform is to retain people in reclassification, while offering adequate protection to the most vulnerable. Effective January 1, 2016, the changes in professional reclassification are aimed in particular at speeding up procedures, better preserving the rights of persons in external reclassification and creating the necessary conditions to give priority to internal reclassification. The idea being to support the efforts of companies in the improvement of working conditions, in particular by involving experts, by promoting internal reclassification within companies versus external reclassification and the reintegration into employment of reclassified persons. The reform gives priority to internal reclassification by introducing an internal reclassification obligation for all companies with at least 25 employees. With regard to external reclassification, the law introduces new rules, in particular a protective status for an employee in external reclassification, and it will henceforth be possible to assign the jobseeker to external job reclassification. Similarly, the reclassification procedure is facilitated and accelerated, and there will be a periodic reassessment of the reclassified employee. In addition, the new system will reduce the long-term unemployment rate - many long-term job seekers being in external reclassification - and make the reclassification system more efficient.
  According to the latest available data, the reform has had a positive effect on the number of non-employed persons in external reclassification, and consequently registered with the Employment Agency (ADEM). As a result, the number of jobseekers in external reclassification has decreased by 12% between January 2016 and January 2017[22]. This also has a positive impact on the number of older job seekers, as half of all jobseekers in external reclassification are aged 50 or higher. Based on the initial conclusions drawn from the implementation of the law, it is envisaged to adjust it on certain points in close consultation with the social partners.

- **Complementary pensions**: on 7 March 2017, the Government tabled a draft law[23] allowing, as announced, an extension of the coverage of supplementary pension schemes, through a revision of the Law of 8 June 1999 on the regulation of supplementary pension schemes, to the self-employed as well as to certain categories of employees who are not subscribed to a supplementary scheme. The mechanism to be adopted should ensure that the basic principles are the same for the self-employed, the liberal professions and the employees concerned.

- The **vocational training programme**[24] and the **reinsertion-employment contract**[25]are two new measures, applicable since 1 January 2016, intended for job seekers aged at least 45 years, those in external reclassification or those who have the status of disabled employee. The first measure is an internship of a maximum duration of 6 weeks offering the opportunity for the job seeker to highlight his professional abilities within a company. The second measure offers job seekers the opportunity to improve their knowledge and professional abilities within a

[22] From 2587 in January 2016 to 2272 in January 2017.

[23] Parliamentary dossier number 7119.

[24] For more details : http://www.adem.public.lu/fr/demandeurs-demploi/beneficier-mesures-aides/mesures-emploi/stage-professionnalisation/index.html

[25] For more details: http://www.adem.public.lu/fr/demandeurs-demploi/beneficier-mesures-aides/mesures-emploi/Contrat-reinsertion-emploi/index.html .

company for a maximum of 12 months. These measures are targeted at companies that can offer a real chance of hiring on an open-ended contract.

- **Reform of early retirement schemes**[26]: in August 2015, the government introduced a bill to amend early retirement schemes (progressive solidarity and early retirement of shift workers and night workers, except for adjustment). The aim of this reform is to better target workers with difficult jobs by better taking account their working conditions, while at the same time aiming to keep older workers in jobs. The draft law thus provides for the abolition of the system of early retirement and the adjustment of other pre-retirement schemes with the exception of the adjustment regime to avoid layoffs for economic reasons and to prevent unemployment of employees with a low likelihood of reintegration. The reform is expected to come into effect before the summer of 2017.

- Good **management of the age pyramid within a company** is a key factor in maintaining the elderly workers in jobs, and the Government has taken the initiative to develop a legislative framework in this area. This arrangement provides for the social partners to be given a wide margin of discretion in order to take account of sectoral specificities and to allow approaches that take account of the specific problems of an individual company. The draft law introducing a package of measures on age policy[27], currently going through the legislative procedure, provides for an obligation for employers with more than 150 employees to draw up an age management plan on at least three of the following points: the recruitment of older employees, the anticipation of career development, the improvement of working conditions, access to continuing training and the transfer of knowledge and skills. Financial incentives are provided for the companies in question and for those that do not fall under the legal obligation but that draw up an age management plan on a voluntary basis. This draft law will be supplemented by a new provision in the agreement with the trade unions of 28 November 2014 which provides for the combination of a pension and part-time employment.

- **Lifelong learning** (LLL) is a key factor in maintaining workers, especially older workers, in jobs. In order to support and improve training programmes, the Government will continue to progressively implement the measures of the White Paper on the National Strategy for Lifelong Learning[28]. 8 measures are foreseen, including the adaptation of the LLL system to the learner's lifecycle and the diversity of Luxembourg society and the development of quality in adult education. Training and requalification schemes must also be adapted to the new challenge of the digitalization of the economy. New initiatives which may include an individual right to training for all employees and self-employed workers will be discussed with social partners.

- **Long-term care** is one of the fundamental pillars of the social security system in Luxembourg. Established by the Law of 19 June 1998 as the 5th pillar of social security, the purpose of long-term care insurance is to take care of the care provided to the dependent person at his own residence or in a specialized facility, as well as technical aids and adaptations to one's housing. Today, the long-term care system supports more than 13,500 people and there is a need to

[26] See parliamentary dossier 6844.
[27] See parliamentary dossier 6678.
[28] For more details : http://www.men.public.lu/catalogue-publications/adultes/informations-generales-offre-cours/livre-blanc-lifelong-learning/131025-s3l-livreblanc.pdf .

modernize it to meet the challenges of a constantly changing population while continuing to guarantee equitable access to quality benefits[29]. The main objectives of the planned reform are based on a better individualization of the services, on strengthening quality through clear standards and criteria with adequate controls, on simplifying procedures and on the consolidation of the system in the light of societal change and in full respect of the principles of the original 1998 law. In addition, the draft reform foresees the introduction of instruments allowing for a better monitoring of the long-term care insurance system and better anticipation of future changes. Thus, the adapted mechanism will be better prepared to continue to provide access to quality care in the future. The draft bill to reform the long-term care insurance system was introduced in the *Chambre des Députés* on July 8, 2016 (parliamentary file No. 7014) and is currently in the legislative process. The coming into force is planned for 1 January 2018.

[29] Key elements of the reform can be found here: http://www.mss.public.lu/actualites/2016/07/art_ass_dep/index.html .

# VI. Fiscal Governance Framework and Institutional Aspects

The law of 12 July 2014 on the coordination and governance of public finances has updated the legal framework governing the institutional aspects of public finances in Luxembourg in order to bring it into line with European requirements. This law transposes into national law the provisions of the Treaty on Stability, Coordination and Governance (TSCG), the Six Pack and the Two Pack.

The main innovations introduced by the law of 12 July 2014 are as follows:

- a fiscal rule stipulating that the budgetary position of the general government of a contracting party (to the TSCG) must be in balance or in surplus;
- the setting of a medium-term objective (MTO) as well as a related adjustment path;
- a budgetary rule on public expenditure at central government level;
- a credible and effective medium-term budgetary framework, including a four-year budgetary programme;
- an automatic correction mechanism in the event of a significant deviation from the MTO or the adjustment path;
- a budgetary procedure implemented if the state budget is not approved by Parliament;
- a binding procedure to impose on all entities of public administrations the communication of information;
- the establishment of a "National Public Finance Council", responsible for independently verifying compliance with the fiscal rule and the application of the automatic correction mechanism

Since 2016, the Government has also taken the initiative to better involve all the relevant stakeholders in the annual coordination cycle of the "European Semester". Thus, in 2017, two meetings between the Government and the social partners were organized within the framework of the *Conseil économique et social*

The Government's initiative to launch a dialogue with the social partners in the coordination cycle of the European Semester is in line with the efforts undertaken in recent years to involve the main actors, including the parliament, in the European Semester process.

During the 2017 cycle of the European Semester, the ex-ante involvement of the *Chambre des Députés* was confirmed by the organization of parliamentary debates around the NRP and the SGP in a plenary session of the *Chambre des Députés*, ahead of the transmission of the two key documents to the European Commission and the Council. These debates took places on the occasion of the State of the Nation speech of the Prime Minister during the week of April 24, 2017.

These measures are motivated by a concern to improve the consultation process and the practice of fiscal policy and thus to strengthen the governance of public finances in Luxembourg.

Other initiatives to improve the institutional aspects of public finances are launched:

- The institutionalization of the "*Comité de Prévision*" which will in future be called "*Comité économique et financier national*" and which will function under the authority of the Minister of the Economy and the Minister of Finance. The Committee will have the statutory task of coordinating work on the drafting of the NRP, the SGP and the draft budgetary plan and will be

called upon to carry out the tasks that the *Comité de Prévision* has carried out so far, A legal basis;
- optimization of the coherence and integration between the two processes for fiscal policy monitoring (Stability Programme, SGP) and structural reform policies (National Reform Programme, PNR);
- the further study of the European methodology to be used to compute the "structural balance".
- in terms of data transparency, since October 2015, the Government publishes monthly data on developments in the state of public finances for central government and the administration of social security[30].

In line with the 2013 governmental programme, the Government also intends to gradually reform the procedure for preparing and implementing the budget, based in part on the 2011 OECD report[31] and considering the following tracks[32]:

- the introduction of an objectives-based budget framework: objectives will be set for each ministry, which will allow citizens not only to know what the planned expenditure is, but also what the expenditure would be dedicated to;
- a reform of accounting rules in order to increase the efficiency of public expenditures and to improve the transition between European rules and national budgetary accounting rules;
- a better understanding of the future operating costs of any investment decision by carrying out systematic sensitivity analyzes measuring the impact on the budget of deviations from key assumptions;
- the strengthening of the "zero base budgeting" approach which incorporates the questioning of each expenditure and budget item;
- the introduction of an “annual discipline” consisting of a reduction in expenditure (excluding investments) by the Ministry by a certain percentage that the Government will fix each year and the introduction of a spending limit;
- a significant strengthening of financial reporting, internal audit and expenditure valuation;
- an analysis of the domains of the State and its housing stock in order to identify ways to use it more efficiently and better;
- the more effective integration of the financing of municipalities and the *secteur conventionné* into the budget process through an "internal stability pact" between the State, municipalities, public institutions and the agreed sector.

[30] http://www.budget.public.lu/lu/budget2016/evaluation-mensuelle/index.html (the provision of local government data is currently in progress).
[31] Working Party of Senior Budget Officials : Budgeting in Luxembourg, Analysis and recommendations, OECD, 2011
[32] In no particular order and non-exhaustive.

# STATISTICAL ANNEX

**Table 1a. Macroeconomic prospects**

| | ESA Code | Year 2016 | Year 2016 | Year 2017 | Year 2018 | Year 2019 | Year 2020 | Year 2021 |
|---|---|---|---|---|---|---|---|---|
| | | Level | rate of change | rate of change | rate of change | rate of change | rate of change | rate of change |
| **1. Real GDP** | B1*g | 48,859 | 4.2 | 4.4 | 5.2 | 4.4 | 2.8 | 1.9 |
| **2. Nominal GDP** | B1*g | 54,195 | 3.5 | 6.6 | 7.1 | 5.6 | 3.7 | 3.5 |
| **Components of real GDP** | | | | | | | | |
| **3. Private consumption expenditure** | P.3 | 14,793 | 0.9 | 2.9 | 2.4 | 1.6 | 0.6 | 0.7 |
| **4. Government consumption expenditure** | P.3 | 7,970 | 3.2 | 3.3 | 1.6 | 2.6 | 2.2 | 2.6 |
| **5. Gross fixed capital formation** | P.51 | 8,922 | 0.2 | 12.6 | 8.8 | 6.3 | 1.6 | -0.1 |
| **6. Changes in inventories and net acquisition of valuables (% of GDP)** | P.52 + P.53 | | … | 1.7 | 1.6 | 1.6 | 1.5 | 1.5 |
| **7. Exports of goods and services** | P.6 | 103,625 | 4.9 | 7.4 | 8.7 | 8.5 | 7.8 | 6.9 |
| **8. Imports of goods and services** | P.7 | 86,647 | 4.0 | 8.3 | 8.8 | 8.8 | 8.0 | 7.3 |
| **Contributions to real GDP growth** | | | | | | | | |
| **9. Final domestic demand** | | - | 0.8 | 4.0 | 2.9 | 2.3 | 0.9 | 0.6 |
| **10. Changes in inventories and net acquisition of valuables** | P.52 + P.53 | - | -0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **11. External balance of goods and services** | B.11 | - | 3.5 | 0.4 | 2.3 | 2.1 | 1.9 | 1.3 |

**Table 1b. Price developments**

| | ESA Code | Year 2016 | Year 2016 | Year 2017 | Year 2018 | Year 2019 | Year 2020 | Year 2021 |
|---|---|---|---|---|---|---|---|---|
| | | Level | rate of change | rate of change | rate of change | rate of change | rate of change | rate of change |
| **1. GDP deflator** | | 1.11 | -0.5 | 2.1 | 1.8 | 1.1 | 0.9 | 1.6 |
| **2. Private consumption deflator** | | 1.07 | 0.6 | 1.8 | 1.7 | 1.9 | 1.8 | 1.6 |
| **3a. HICP** | | 100.4 | 0.0 | 2.4 | 1.5 | 1.9 | 1.8 | 1.8 |
| **3b. NICP** | | 100.3 | 0.3 | 1.8 | 1.6 | 2.0 | 2.0 | 1.9 |
| 4. Public consumption deflator | | 1.15 | 2.9 | 3.3 | 3.1 | 3.0 | 3.0 | 3.0 |
| 5. Investment deflator | | 1.03 | -4.4 | 0.6 | 1.3 | 1.4 | 1.5 | 1.6 |
| **6. Export price deflator (goods and services)** | | 1.17 | -1.8 | 2.4 | 3.7 | 1.8 | 0.2 | 0.6 |
| **7. Import price deflator (goods and services)** | | 1.17 | -1.5 | 2.7 | 3.1 | 1.8 | 0.7 | 1.1 |

**Table 1c. Labour market developments**

| | ESA Code | Year 2016 | Year 2016 | Year 2017 | Year 2018 | Year 2019 | Year 2020 | Year 2021 |
|---|---|---|---|---|---|---|---|---|
| | | Level | rate of change | rate of change | rate of change | rate of change | rate of change | rate of change |
| **1. Employment, persons[1]** | | 418.4 | 3.0 | 3.2 | 3.4 | 3.1 | 2.5 | 1.5 |
| 2. Employment, hours worked[2] | | 615.5 | 3.1 | 2.8 | 3.0 | 2.7 | 2.2 | 1.2 |
| **3a. Unemployment rate (%) (harmonized definition Eurostat)** | | - | 6.0 | 5.6 | 5.3 | 5.4 | 5.9 | 6.5 |
| **3b. Unemployment rate (%) (ADEM definition)** | | - | 6.4 | 6.0 | 5.7 | 5.8 | 6.3 | 6.9 |
| **4. Labour productivity, persons[3]** | | - | 1.1 | 0.9 | 1.6 | 1.1 | 0.0 | 0.0 |
| 5. Labour productivity, hours worked[4] | | - | 0.4 | 1.3 | 2.0 | 1.5 | 0.4 | 0.3 |
| **6. Compensation of employees** | D.1 | 25.7 | 3.5 | 6.9 | 5.6 | 6.4 | 5.0 | 4.7 |
| **7. Compensation per employee** | | 65.0 | 0.5 | 3.4 | 2.0 | 3.0 | 2.2 | 3.1 |

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

[2]National accounts definition.

[3]Real GDP per person employed.

[4]Real GDP per hour worked.

**Table 1d. Sectoral balances**

| % of GDP | ESA Code | Year 2016 | Year 2017 | Year 2018 | Year 2019 | Year 2020 | Year 2021 |
|---|---|---|---|---|---|---|---|
| **1. Net lending/borrowing vis-à-vis the rest of the world** | B.9 | - | - | - | - | - | - |
| **2. Net lending/borrowing of the private sector** | B.9 | | | | | | |
| **3. Net lending/borrowing of general government** | EDP B.9 | 1.6 | 0.2 | 0.3 | 0.5 | 0.9 | 1.2 |
| **4. Statistical discrepancy** | | - | - | - | - | - | - |

**Table 2a. General government budgetary prospects**

| | ESA Code | Year 2016 | Year 2016 | Year 2017 | Year 2018 | Year 2019 | Year 2020 | Year 2021 |
|---|---|---|---|---|---|---|---|---|
| | | Level | % of GDP | % of GDP | % of GDP | % of GDP | % of GDP | % of GDP |
| **Net lending (EDP B.9) by sub-sector** | | | | | | | | |
| **1. General government** | S.13 | 845 | 1.6 | 0.2 | 0.3 | 0.5 | 0.9 | 1.2 |
| **2. Central government** | S.1311 | -215 | -0.4 | -1.8 | -1.7 | -1.4 | -1.0 | -0.6 |
| **3. State government** | S.1312 | … | … | … | … | … | … | … |
| **4. Local government** | S.1313 | 170 | 0.3 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 |
| **5. Social security funds** | S.1314 | 889 | 1.6 | 1.7 | 1.7 | 1.6 | 1.6 | 1.5 |
| **General government (S13)** | | | | | | | | |
| **6. Total revenue** | TR | 23,147 | 42.7 | 41.3 | 40.5 | 40.3 | 40.8 | 41.3 |
| **7. Total expenditure** | TE[1] | 22,302 | 41.2 | 41.1 | 40.2 | 39.8 | 39.9 | 40.1 |
| **8. Net lending/borrowing** | EDP B.9 | 845 | 1.6 | 0.2 | 0.3 | 0.5 | 0.9 | 1.2 |
| **9. Interest expenditure** | EDP D.41 | 184 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 |
| **10. Primary balance**[2] | | 1,028 | 1.9 | 0.5 | 0.6 | 0.8 | 1.1 | 1.4 |
| **11. One-off and other temporary measures**[3] | | … | … | … | … | … | … | … |
| **Selected components of revenue** | | | | | | | | |
| **12. Total taxes** (12=12a+12b+12c) | | 14,325 | 26.4 | 25.5 | 24.9 | 24.8 | 25.1 | 25.4 |
| **12a. Taxes on production and imports** | D.2 | 6,244 | 11.5 | 11.0 | 10.8 | 10.7 | 10.6 | 10.6 |
| **12b. Current taxes on income, wealth, etc** | D.5 | 8,021 | 14.8 | 14.3 | 13.9 | 14.1 | 14.4 | 14.8 |
| **12c. Capital taxes** | D.91 | 60 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| **13. Social contributions** | D.61 | 6,455 | 11.9 | 11.8 | 11.6 | 11.6 | 11.8 | 12.0 |
| **14. Property income** | D.4 | 710 | 1.3 | 1.3 | 1.3 | 1.2 | 1.2 | 1.2 |
| **15. Other**[4] | | 1,657 | 3.1 | 2.7 | 2.7 | 2.6 | 2.7 | 2.7 |
| **16=6. Total revenue** | TR | 23,147 | 42.7 | 41.3 | 40.5 | 40.3 | 40.8 | 41.3 |
| **p.m.: Tax burden** (D.2+D.5+D.61+D.91-D.995)[5] | | 20,780 | 38.3 | 37.3 | 36.5 | 36.5 | 36.9 | 37.4 |
| **Selected components of expenditure** | | | | | | | | |
| **17. Compensation of employees + intermediate consumption** | D.1+P.2 | 6,574 | 12.1 | 12.1 | 11.9 | 11.7 | 11.7 | 11.8 |
| 17a. Compensation of employees | D.1 | 4,650 | 8.6 | 8.6 | 8.4 | 8.3 | 8.4 | 8.5 |
| 17b. Intermediate consumption | P.2 | 1,924 | 3.6 | 3.5 | 3.4 | 3.4 | 3.3 | 3.3 |
| **18. Social payments** (18=18a+18b) | | 10,563 | 19.5 | 19.3 | 18.7 | 18.5 | 18.7 | 19.0 |
| ***of which* Unemployment benefits**[6] | | 415 | 0.8 | 0.7 | 0.6 | 0.6 | 0.5 | 0.5 |
| 18a. Social transfers in kind supplied via market producers | D.6311, D.63121, D.63131 | 2,440 | 4.5 | 4.5 | 4.3 | 4.3 | 4.4 | 4.4 |
| 18b. Social transfers other than in kind | D.62 | 8,123 | 15.0 | 14.8 | 14.3 | 14.2 | 14.4 | 14.6 |
| **19=9. Interest expenditure** | EDP D.41 | 184 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 |
| **20. Subsidies** | D.3 | 719 | 1.3 | 1.4 | 1.3 | 1.2 | 1.1 | 1.1 |
| **21. Gross fixed capital formation** | P.51 | 2,051 | 3.8 | 4.0 | 3.9 | 3.8 | 3.7 | 3.7 |
| **22. Capital transfers** | D.9 | 437 | 0.8 | 0.8 | 1.0 | 1.2 | 1.2 | 1.1 |
| **23. Other**[7] | | 1,774 | 3.3 | 3.2 | 3.1 | 3.0 | 3.1 | 3.2 |
| **24=7. Total expenditure** | TE[1] | 22,302 | 41.2 | 41.1 | 40.2 | 39.8 | 39.9 | 40.1 |

[1] Adjusted for the net flow of swap-related flows, so that TR-TE=EDP B.9.
[2] The primary balance is calculated as (EDP B.9, item 8) plus (EDP D.41, item 9).
[3] A plus sign means deficit-reducing one-off measures.
[4] P.11+P.12+P.131+D.39+D.7+D.9 (other than D.91).
[5] Including those collected by the EU and including an adjustment for uncollected taxes and social contributions (D.995), if appropriate.
[6] Includes cash benefits (D.621 and D.624) and in kind benefits (D.631) related to unemployment benefits.
[7] D.29+D4 (other than D.41) + D.5+D.7+P.52+P.53+K.2+D.8.

**Table 2b. No-policy change projections**

| | | Year 2016 | Year 2016 | Year 2017 | Year 2018 | Year 2019 | Year 2020 | Year 2021 |
|---|---|---|---|---|---|---|---|---|
| | | Level | % of GDP | % of GDP | % of GDP | % of GDP | % of GDP | % of GDP |
| **1. Total revenue at unchanged policies** | | 23,147 | 42.7 | 41.3 | 40.5 | 40.3 | 40.8 | 41.3 |
| **2. Total expenditure at unchanged policies** | | 22,302 | 41.2 | 41.1 | 40.2 | 39.8 | 39.9 | 40.1 |
| **3. General government balance at unchanged policies** | | 845 | 1.6 | 0.2 | 0.3 | 0.5 | 0.9 | 1.2 |

**Table 2c. Amounts to be excluded from the expenditure benchmark**

| | | Year 2016 | Year 2016 | Year 2017 | Year 2018 | Year 2019 | Year 2020 | Year 2021 |
|---|---|---|---|---|---|---|---|---|
| | | Level | % of GDP | % of GDP | % of GDP | % of GDP | % of GDP | % of GDP |
| **1. Expenditure on EU programmes fully matched by EU funds revenue** | | 92 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| **2. Unemployment benefit expenditure**[1] | | 415 | 0.8 | 0.7 | 0.6 | 0.6 | 0.5 | 0.5 |
| **3. Effect of discretionary revenue measures** | | 97 | 0.2 | -0.6 | -0.2 | 0.0 | 0.0 | 0.0 |
| **4. Revenue increases mandated by law** | | … | … | … | … | … | … | … |

[1] Absolute level of unemployment expenditure, based on COFOG 10.50

**Table 3. General government expenditure by function**

| % of GDP | COFOG Code | Year 2016 | Year 2016 |
|---|---|---|---|
| | | % of GDP | % of total |
| 1. General public services | 1 | 4.7 | 11.3 |
| 2. Defence | 2 | 0.4 | 1.0 |
| 3. Public order and safety | 3 | 1.0 | 2.4 |
| 4. Economic affairs | 4 | 4.9 | 12.0 |
| 5. Environmental protection | 5 | 1.0 | 2.5 |
| 6. Housing and community amenities | 6 | 0.5 | 1.1 |
| 7. Health | 7 | 4.7 | 11.5 |
| 8. Recreation, culture and religion | 8 | 1.2 | 2.9 |
| 9. Education | 9 | 4.7 | 11.5 |
| 10. Social protection | 10 | 18.0 | 43.7 |
| 11. Total expenditure | TE | 41.2 | 100.0 |

**Table 4. General government debt developments**

| % of GDP | ESA Code | Year 2016 | Year 2017 | Year 2018 | Year 2019 | Year 2020 | Year 2021 |
|---|---|---|---|---|---|---|---|
| **1. Gross debt**[1] | | 20.0 | 22.2 | 22.4 | 22.6 | 22.8 | 22.6 |
| **2. Change in gross debt ratio** | | -1.6 | 2.2 | 0.3 | 0.2 | 0.2 | -0.2 |
| **Contributions to changes in gross debt** | | | | | | | |
| **3. Primary balance**[2] **(General government)** | | 1.9 | 0.5 | 0.6 | 0.8 | 1.1 | 1.4 |
| 3.b. Primary balance (Central government) | | -0.1 | -1.5 | -1.4 | -1.1 | -0.7 | -0.3 |
| **4. Interest expenditure**[3] | | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 |
| **5. Stock-flow adjustment** | | -2.0 | 0.4 | -1.5 | -1.2 | -0.8 | -0.7 |
| **p.m.: Implicit interest rate on debt**[4] | | 1.6 | 1.6 | 1.5 | 1.3 | 1.4 | 1.1 |

[1]As defined in Regulation 3605/93 (not an ESA concept).
[2]Cf. item 10 in Table 2.
[3]Cf. item 9 in Table 2.
[4]Proxied by interest expenditure divided by the debt level of the previous year.

**Table 5. Cyclical developments**

| % of GDP | ESA Code | Year 2016 | Year 2017 | Year 2018 | Year 2019 | Year 2020 | Year 2021 |
|---|---|---|---|---|---|---|---|
| **1. Real GDP growth (%)** | | 4.2 | 4.4 | 5.2 | 4.4 | 2.8 | 1.9 |
| **2. Net lending of general government** | EDP B.9 | 1.6 | 0.2 | 0.3 | 0.5 | 0.9 | 1.2 |
| **3. Interest expenditure** | EDP D.41 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 |
| **4. One-off and other temporary measures**[1] | | …. | … | … | … | … | … |
| 5. Potential GDP growth (%) | | 3.7 | 3.6 | 3.8 | 3.8 | 3.6 | 3.5 |
| 6. Output gap | | -1.2 | -0.4 | 0.9 | 1.5 | 0.7 | -0.9 |
| 7. Cyclical budgetary component | | -0.6 | -0.2 | 0.4 | 0.7 | 0.3 | -0.4 |
| 8. Cyclically-adjusted balance (2 - 7) | | 2.1 | 0.4 | -0.1 | -0.2 | 0.6 | 1.6 |
| 9. Cyclically-adjusted primary balance (8 + 3) | | 2.4 | 0.7 | 0.2 | 0.1 | 0.8 | 1.8 |
| **10. Structural balance (8 - 4)** | | 2.1 | 0.4 | -0.1 | -0.1 | 0.6 | 1.6 |

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

**Table 6. Divergence from previous update**

| | ESA Code | Year 2016 | Year 2017 | Year 2018 | Year 2019 | Year 2020 | Year 2021 |
|---|---|---|---|---|---|---|---|
| **Real GDP growth (%)** | | | | | | | |
| **Previous update** | | 2.9 | 4.5 | 4.9 | 3.6 | 3.7 | … |
| **Current update** | | 4.2 | 4.4 | 5.2 | 4.4 | 2.8 | 1.9 |
| **Difference** | | *1.3* | *-0.1* | *0.3* | *0.8* | *-0.9* | … |
| **Nominal GDP growth (%)** | | | | | | | |
| **Previous update** | | 4.5 | 6.8 | 6.8 | 5.9 | 4.6 | … |
| **Current update** | | 3.5 | 6.6 | 7.1 | 5.6 | 3.7 | 3.5 |
| **Difference** | | *-1.0* | *-0.2* | *0.3* | *-0.3* | *-0.9* | … |
| **General government net lending (% of GDP)** | EDP B.9 | | | | | | |
| **Previous update** | | 0.8 | 0.0 | 0.1 | 0.2 | 0.4 | … |
| **Current update** | | 1.6 | 0.2 | 0.3 | 0.5 | 0.9 | 1.2 |
| **Difference** | | *0.8* | *0.2* | *0.2* | *0.3* | *0.5* | … |
| **Structural balance (% of GDP)** | | | | | | | |
| **Previous update** | | 1.9 | 0.6 | 0.0 | 0.0 | 0.6 | |
| **Current update** | | 2.1 | 0.4 | -0.1 | -0.1 | 0.6 | 1.6 |
| **Difference** | | *0.2* | *-0.2* | *-0.1* | *-0.1* | *0.0* | … |
| **General government gross debt (% of GDP)** | | | | | | | |
| **Previous update** | | 22.4 | 22.9 | 23.1 | 23.2 | 23.5 | … |
| **Current update** | | 20.0 | 22.2 | 22.4 | 22.6 | 22.8 | 22.6 |
| **Difference** | | *-2.4* | *-0.7* | *-0.7* | *-0.6* | *-0.7* | … |

**Table 7. Long-term sustainability of public finances**

| (in % of GDP) | AR 2015 *) | | | AR 2012 **) | | |
|---|---|---|---|---|---|---|
| | 2013 | 2060 | 2060-2013 | 2013***) | 2060 | 2060-2013 |
| **Age-related expenditures** | **19,5** | **25,8** | **6.2** | **18** | **29.7** | **11.7** |
| Pension expenditure | 9.4 | 13.4 | 4.1 | 9.7 | 18.6 | 8.8 |
| Health care expenditure | 4.6 | 5.1 | 0.5 | 3.6 | 4.5 | 0.9 |
| Long-term care expenditure | 1.5 | 3.2 | 1.7 | 1.1 | 3.1 | 2 |
| Education expenditure | 3.3 | 3.5 | 0.2 | 3.1 | 3.1 | 0 |
| Unemployment expenditure | 0.7 | 0.5 | 0.2 | 0.5 | 0.5 | 0 |
| *Reserve pension fund ("fonds de compensation")* | *13.8* | *0* | | *13* | *0* | |
| | | | | | | |
| **Assumptions** | AR 2015 *) | | | AR 2012 **) | | |
| | 2013 | 2060 | 2060-2013 | 2013***) | 2060 | 2060-2013 |
| Labour productivity growth | -0.3 | 1.5 | 1.8 | 0.7 | 1.5 | 0.8 |
| Potential growth | 1.4 | 1.9 | 0.5 | 2.2 | 1.7 | -0.5 |
| Participation rates (men, aged 15-64) | 76 | 73.3 | -2.7 | 75.6 | 71.6 | -4 |
| Participation rates (women, aged 15-64) | 62.6 | 66.6 | 4 | 60 | 63.3 | 3.3 |
| Total participation rate (aged 15-64) | 69.4 | 70 | 0.6 | 67.9 | 67.5 | -0.4 |
| Population (in million) | 0.5 | 1.1 | 0.6 | 0.5 | 0.7 | 0.2 |
| Working-age population (15-64/total) | 69 | 61.3 | -7.7 | 68.4 | 58.5 | -9.9 |
| Ratio non-active/active (65+/15-64) | 20 | 36 | 16 | 20 | 45 | 24.8 |
| Ratio elderly active/active (55-64/15-64) | 16.3 | 19.3 | 3 | 16 | 20.1 | 4.1 |
| Unemployment rate (15-64) | 5.9 | 4.2 | -1.7 | 4.4 | 4.2 | -0.2 |

Sources:
*) 2015 Ageing report (AR) baseline scenario, 2015 constant policy scenario
**) 2012 Ageing report baseline scenario, 2012 constant policy scenario
***) estimated values for 2013 expenditure, assumptions are based on 2010 as reference year

**Table 7a. Contingent liabilities**

| % of GDP | Year 2016 |
|---|---|
| **Public guarantees** | 7.0 |
| *Of which: linked to the financial sector* | 5.5 |

**Table 8. Basic assumptions**

| | Year 2016 | Year 2017 | Year 2018 | Year 2019 | Year 2020 | Year 2021 |
|---|---|---|---|---|---|---|
| **Short-term interest rate (annual average)** | -0.3 | -0.3 | -0.3 | 0.2 | 1.0 | 1.5 |
| **Long-term interest rate (annual average)** | 0.8 | 1.0 | 1.0 | 1.3 | 1.9 | 2.5 |
| **USD/€ exchange rate (annual average)** | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| **Euro area GDP growth** | 1.7 | 1.6 | 1.8 | 1.6 | 1.3 | 1.1 |
| **Growth of relevant foreign markets** | 3.6 | 4.1 | 4.4 | 3.5 | 2.5 | 1.7 |
| **Oil prices (Brent, USD/barrel)** | 43.6 | 54.6 | 54.6 | 54.6 | 54.6 | 54.6 |