THE GOVERNMENT
OF THE GRAND DUCHY OF LUXEMBOURG
Ministry of Finance

20th UPDATE OF

THE STABILITY AND GROWTH PROGRAMME OF THE GRAND DUCHY OF LUXEMBOURG 2019-2023

Luxembourg, 23 April 2019

English courtesy translation of the official French version.

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I. OVERALL POLICY FRAMEWORK AND OBJECTIVES

The Stability and Growth Programme (SGP) is part of the annual cycle of economic policy coordination within the European Union known as the "European Semester" that goes hand in hand with Luxembourg's National Reform Programme (NRP) for smart, sustainable and inclusive growth, which was also established within the European Semester framework and which outlines the structural reforms for addressing the challenges facing Luxembourg. The preparation of these two documents follows the national social dialogue carried out with the social partners under the auspices of the Economic and Social Committee on 3 April 2019.

This 20th update of the SGP is the first under the country's new legislature and now covers the period between 2019-2023[1]. Due to the extraordinary simultaneity of the related procedures, the figures in the SGP are based entirely on those presented in the country's draft State Budget for 2019 and the multi-annual financial programming draft law for the period 2018-2022[2], while adding forecasts for 2023 in order to keep the customary forecasting period that covers the current year and the next four years.

Against this backdrop, it should be recalled that due to the parliamentary elections in October 2018, the Government had not submitted an annual and a multi-year budget to Parliament in October 2018. In order to ensure that public services continued to function and thus to allow the Government elected in October 2018 to prepare its first budget without distractions, temporary appropriations were voted under the so-called *"douzièmes provisoires"* process for the first four months of 2019.

Since taking office in December 2018, the new Government has launched the budgetary work to set the proper milestones for the coming years, by implementing an initial series of measures outlined in the Government programme for the period 2018 -2023. The nation's draft Budget for 2019, as well as the multi-annual financial programming draft law for the period 2018-2022, on the basis of which the 20th update of the SGP was drawn up, were presented to Parliament on 5 March 2019 and the two are scheduled to be adopted by the Parliament during the week of 25 April 2019.

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[1] The 20th update of the SGP represents the Medium Term National Fiscal Plan under Regulation 473/2013.

[2] In practice, this means that neither the national accounts figures updated by STATEC in March 2019 nor the public finance figures for 2018 submitted to Eurostat as part of the EDP notification of April 2019 have been incorporated at this stage. This has been done in order to maintain consistency between SGP figures and those relating to budgetary documentation. However, even if developments arising since the submission of the draft budget were incorporated, they would have no material impact on the data presented in this update of the SGP and would have led to the same conclusions, namely that Luxembourg would remain in full compliance with the requirements of the Stability and Growth Pact, while preserving room to manoeuvre with regard to the applicable MTO.

Through the presentation of the annual and the multi-year budgets as well as in this SGP, the Government emphasises its ambition to pursue a responsible and forward-looking fiscal policy based on the significant progress made during the previous legislature.

The budgetary strategy is enshrined in the Government's continued action focusing on policies in favour of social cohesion and the promotion of an attractive economic environment, while responding to climate and environmental related challenges. The excellent financial situation inherited from the previous legislature resulting from efforts to combat the negative spiral set in motion by the economic crisis, forms a solid basis for further strengthening the country's socio-economic resilience and for making investments in the future.

This first SGP of the legislature, however, emerges in an economic environment[3] marked by increased uncertainty due to a series of factors external to the euro zone that could lead to the end of the economic upturn observed in recent years. According to the latest forecasts from the European Commission, growth in the euro zone will fall from 1.9% in 2018 to 1.3% in 2019. Despite these less favourable circumstances, euro zone Member States should continue to enjoy positive growth, albeit less vigorous, in the upcoming years.

Despite the easing of the external economic environment, Luxembourg’s economic fundamentals remain positive. Real growth for 2019 is estimated at 3.0% and is expected to accelerate again in 2020, before converging in the medium term towards its potential level. In line with this growth profile, the labour market remains solid with employment growing at an average rate of 3% over the coming years. Unemployment continues its downward trend and its rate is expected to remain permanently below 5% as from 2019.

These quite positive economic prospects demonstrate the legitimacy of the courageous decisions taken by the Government during the previous legislature. These will continue to bear fruit and provide a solid foundation for continued proactive Government action in favour of quality growth and responsible public finances.

Strength in public finances is particularly evident at the central Government level, which ended the year 2018 with a surplus for the first time since 2008. This is the result of a substantial effort by the previous

[3] In accordance with European regulations, the Government's budgetary projections are based on macroeconomic forecasts independently elaborated by STATEC.

Government as soon as it took office in 2013, when the country faced the risk of a major fiscal slippage in the event of inaction. In the previous legislature, the Government succeeded in sustainably consolidating public finances and thus generating the conditions necessary for qualitative and job-creating growth.

According to the coalition agreement covering the period of 2018-2023, the Government is committed to meeting ambitious objectives in terms of public finances, namely:

- Compliance with the medium-term budgetary objective (MTO) throughout the legislature term;
- Ensuring that public debt is at all times maintained below 30% of GDP.

The Government is also committed to take the necessary measures to continuously remain on track with the budgetary trajectory, the rules of the Stability and Growth Pact and the two objectives stated above.

At the same time, in the upcoming years the Government's budgetary strategy will focus on several priority avenues for the future development of the country, namely:

- Maintaining an attractive and sustainable environment through an ambitious investment programme in the economic, social and environmental spheres through a constant high level of public investment, over 4.0% of GDP throughout the entire period;
- Support for digital transformation to improve and modernise the State and public services for citizens and businesses;
- Implementation of a coherent social policy aimed at reducing the widening income gap, stepping up the fight against poverty and exclusion and developing a fair tax policy;
- Promoting a competitive economic and fiscal environment with a high level of investment in research and innovation, fostering initiative and pursuing efforts to diversify the financial centre and the economy in general through the implementation of specific action plans for priority sectors;
- Implementation of an ambitious climate policy commensurate with the environmental challenges contributing to compliance with the Paris agreement and sustainable development goals;
- maintaining sound and resilient public finances by promoting control and efficiency in public spending.

Thus, in 2019, the Government's budget planning features the implementation of an initial series of measures aimed at laying the foundations for qualitative growth, in accordance with the political priorities set out by the coalition agreement.

Among the flagship measures to be implemented as from 2019 are the net increase in the minimum social wage by €100 per month and a significant increase in investments in areas such as housing, education, research, digitalisation, transportation infrastructure, sustainable energy, culture and social structures. Other measures are aimed at strengthening the competitiveness of the tax framework by lowering the percentage of the Luxembourg corporate income tax (CIT) by one percentage point to 17% and widening the income bracket to which the reduced rate for CIT applies. To keep up the fight against global warming, an increase in excise duties on diesel and gasoline is also included.

These measures combined are expected to total 0.5% of GDP in 2019. The tax revenue forecasts were conservative following the considerable performance in 2018, which was not reflected as a permanent gain in the years that follow, so that the balance general Government rose to + 1.0% of GDP in 2019 compared to + 2.6% of GDP in 2018.

In the medium term, public finances show gradual improvement in all sub-sectors of the Government. Driven by economic prospects that remain favourable and sustained control of public spending, the general Government balance should gradually improve from a surplus of 1.4% of GDP or €876 million in 2020 to 2.2% of GDP or €1,641 million in 2023. The central Government is the main driver behind this improvement, whose balance will move from a deficit of 0.8% of GDP or €515 million in 2020 to a surplus of 0.3% of GDP or €200 million in 2023.

Accordingly, throughout the period under review the Stability and Growth Pact should be fully complied with, and the structural balance will increase from + 0.9% in 2019 to + 2.2% of GDP in 2023. This ensures a sufficient buffer at all times with regard to the medium-term budgetary objective ("MTO").

Against this backdrop, the Government has decided to raise the MTO to + 0.5% of GDP for the period 2020-22 under the new minimum MTO of + 0.5% set out by the European Commission. This re-calibration is in line with the three-year cycle provided for in the European regulations and takes into account the updating of long-term ageing cost projections in the "Ageing Report 2018"[4].

Finally, it should be noted that the structural decline in public debt that began under the previous legislature will continue into the medium term. The public debt ratio, which amounted to 23.7% of GDP at the end of 2013, has indeed been reduced to 21.4% at the end of 2018. In the light of the State's

[4] Source: https://ec.europa.eu/info/publications/economy-finance/2018-ageing-report-economic-and-budgetary-projections-eu-member-states-2016-2070_en.

favourable financial position and the Government's far-sighted decisions in managing public funds, the downward trajectory will continue in upcoming years, despite the fact that public investments reach new record levels. Public debt could thus amount to 17.3% of GDP by 2023, the lowest ratio since 2009.

SUMMARY TABLE

PUBLIC FINANCES	2018			2019			2020			2021			2022			2023		
	in bn euros	in % of GDP	rate of change, in %	in bn euros	in % of GDP	rate of change, in %	in bn euros	in % of GDP	rate of change, in %	in bn euros	in % of GDP	rate of change, in %	in bn euros	in % of GDP	rate of change, in %	in bn euros	in % of GDP	rate of change, in %
TOTAL REVENUE	**26.971**	**45.9**	**+10.0**	**27.515**	**45.0**	**+2.2**	**29.106**	**45.0**	**+5.8**	**30.690**	**45.0**	**+5.4**	**32.297**	**45.0**	**+5.2**	**33.913**	**45.2**	**+5.0**
of which:																		
Taxes on production and imports ("indirect" taxes)	7.093	12.1	+7.7	7.227	11.8	+1.9	7.622	11.8	+5.5	8.053	11.8	+5.7	8.493	11.8	+5.5	8.925	11.9	+5.1
Current taxes on income, wealth, etc. ("direct" taxes)	9.883	16.8	+15.7	9.950	16.3	+0.7	10.573	16.3	+6.3	11.220	16.5	+6.1	11.950	16.7	+6.5	12.658	16.9	+5.9
Social contributions	7.304	12.4	+5.6	7.647	12.5	+4.7	8.099	12.5	+5.9	8.472	12.4	+4.6	8.874	12.4	+4.7	9.281	12.4	+4.6
TOTAL EXPENDITURE	**25.456**	**43.3**	**+7.2**	**26.883**	**43.9**	**+5.8**	**28.229**	**43.6**	**+5.0**	**29.688**	**43.5**	**+5.2**	**30.848**	**43.0**	**+3.9**	**32.272**	**43.0**	**+4.6**
of which:																		
Public investment	2.457	4.2	+9.6	2.619	4.3	+6.6	2.735	4.2	+4.4	3.105	4.6	+13.5	3.085	4.3	-0.7	3.299	4.4	+6.9
Social payments	11.715	19.9	+4.9	12.343	20.2	+5.4	12.998	20.1	+5.3	13.533	19.9	+4.1	14.133	19.7	+4.4	14.797	19.7	+4.7
Intermediate consumption	2.181	3.7	+6.2	2.346	3.8	+7.5	2.418	3.7	+3.1	2.484	3.6	+2.7	2.585	3.6	+4.1	2.693	3.6	+4.2
Compensation of employees	5.388	9.2	+8.4	5.771	9.4	+7.1	6.073	9.4	+5.2	6.339	9.3	+4.4	6.629	9.2	+4.6	6.972	9.3	+5.2
NET LENDING/BORROWING OF GENERAL GOVERNMENT	**1.514**	**2.6**		**0.632**	**1.0**		**0.876**	**1.4**		**1.002**	**1.5**		**1.449**	**2.0**		**1.641**	**2.2**	
Net lending/borrowing of central government	0.121	0.2		-0.650	-1.1		-0.515	-0.8		-0.482	-0.7		-0.044	-0.1		0.200	0.3	
Net lending/borrowing of local government	0.334	0.6		0.285	0.5		0.340	0.5		0.393	0.6		0.335	0.5		0.305	0.4	
Net lending/borrowing of social security funds	1.059	1.8		0.997	1.6		1.051	1.6		1.091	1.6		1.158	1.6		1.136	1.5	
STRUCTURAL BALANCE		**2.6**			**0.9**			**0.8**			**1.1**			**1.8**			**2.2**	
GROSS DEBT	**12.571**	**21.4**		**12.370**	**20.2**		**12.870**	**19.9**		**13.150**	**19.3**		**13.200**	**18.4**		**13.000**	**17.3**	

MACROECONOMIC INDICATORS	2018	2019	2020	2021	2022	2023
GROWTH						
Real GDP (in %)	3.0	3.0	3.8	3.5	3.0	2.5
Nominal GDP (in %)	6.3	4.1	5.8	5.3	5.2	4.6
Nominal GDP (levels, in bn euros)	58.791	61.213	64.740	68.177	71.745	75.049
PRICE DEVELOPMENTS						
Inflation NICP (in %)	1.5	1.6	1.7	1.6	1.8	1.7
EMPLOYMENT						
Employment (growth, in %)	3.7	3.4	2.9	3.0	2.6	2.0
Unemployment rate (harmonised, Eurostat, in %)	5.2	4.7	4.5	4.3	4.3	4.5

Source: Ministry of Finance and STATEC.

II. ECONOMIC SITUATION AND MACROECONOMIC FORECASTS

The underlying macroeconomic forecasts for the update of the SGP were produced by STATEC independently and were published as part of "Working Paper - Economics and Statistics no. 105/2019 - Medium-Term Economic Projections 2019 - 2023[5]" on 28 February 2019. According to its annual work schedule, a partial update of the economic projections will be presented by STATEC in its statistical review no. 1-2019.

II.1 The European and international macroeconomic environment

After registering a peak year in 2017, with a growth rate of 2.4% - the highest rate since the economic and financial crisis - the euro zone now appears to be at the end of the favourable economic cycle from which it benefited these last years.

Some of the driving elements of the positive trends of recent years seem to be dissipating. Trade tensions and the risk of a disorderly Brexit weigh on the prospects for European growth. The protectionist measures taken by the United States also seem to have affected growth in China in 2018 and are likely to accentuate this slowdown even more in the years to come, in the absence of normalisation of commercial relations.

Other unfavourable signals come from short-term surveys that indicate a loss of confidence among economic players. This trend is particularly prevalent in France and Germany, the two major contributors to the euro zone economy, both of whom encountered a decline in economic growth in 2018. The positive effects of the tax reform in the United States have pushed up household consumption and capital expenditure in the US, which are having a positive impact on the global economy. However, these positive effects will gradually evaporate over the next few years.

The rather gloomy prospects for the European and world economy are reflected in the stock markets which are of paramount importance for the Luxembourg economy. STATEC believes that the decline initiated in 2018 will continue in 2019. Less favourable than expected development of the financial market will probably have second-round effects on the Luxembourg financial sector, and hence on the Luxembourg economy.

[5] Source: «Working Paper - Économie et statistiques N° 105/2018 - Projections économiques à moyen terme 2019-2023 », STATEC, February 2019.

Despite the uncertainties surrounding the European economy in the short term, the fundamentals of the euro zone economy seem to be resilient to these recent trends. Unemployment is not veering off its downward trajectory and rates will continue to fall to around 7% in the medium term.

As in the past year, this update of the SGP is based on the assumption of a gradual, albeit rather slow increase in the inflation rate in the euro zone. According to current STATEC forecasts, the ECB would reach its target of an inflation rate that is near but below 2% by 2021 (1.9%).

Businesses and households continue to benefit from low interest rates, which will further boost domestic demand in the euro zone. In particular, private consumption is expected to be strong and act as the primary counterweight to the unfavourable economic pressures at the international level.

Following negative developments in 2018 and 2019, stock markets should start to slowly climb in 2020 with a growth rate of around 4% at the end of the projection period.

The considerations outlined above indicate a growth trajectory for euro zone GDP marked by an acute slowdown in the short term (from 2.4% in 2017 to 1.5% in 2019) and leading to growth rates close to potential growth rates in the euro zone for 2023 (1.2%).

II.2 The economic situation in Luxembourg in the short and medium term

While real GDP growth was estimated at 1.5% in 2017, recovery occurred in 2018 that resulted in the Luxembourg economy achieving a rate of 3.0%. In the third quarter of 2018, non-financial services, particularly in the areas of information and communication, health and retail, as well as the financial sector, showed some resilience against less favourable trends elsewhere in Europe, which notably featured in declining stock markets.

However, because of its high degree of openness and its international orientation, the Luxembourg economy will certainly be affected by developments in the European economic environment. The latest surveys of the economy show a slight decline in business and household confidence in Luxembourg. This decline is nevertheless less pronounced than that observed in the euro zone.

At drafting of this SGP, STATEC still expects a growth rate of 3.0% in 2019, as the economy of the Grand Duchy is still underpinned by solid fundamentals. The labour market remains dynamic and employment should increase by an average of 3.1% between 2019 and 2021 before losing speed towards the end of the projection timeline. The expansion of the labour market will likely go hand in hand with a fall in unemployment during this period. Starting from a level of 5.2% in 2018, the unemployment rate should drop below the threshold of 5% in 2019 (4.7%), and then fall to 4.3% in 2021 (see Chart 1).

Domestic demand continues to drive Luxembourg's economy. Driven by rising real wages and the beneficial effects of the 2017 tax reform, growth in household consumption will resume pre-crisis rates for the first time in 2018 and 2019, then grow faster than income up until 2022.

Finally, in line with its efforts during the previous legislature, the Government is committed to providing the economy with the necessary infrastructure to prepare for the transition to qualitative and sustainable growth. To this end, the Government will continue high levels of public investment throughout the legislative term.

After having recorded growth of 3% in both 2018 and 2019, the financial markets should rebound to the benefit of the Luxembourg economy in 2020, with assumed growth in the Eurostoxx index of 6.4%, which will bring about a rate of growth of 3.8%. In the medium term, growth in the Luxembourg economy should move in line with the euro area economy and converge towards its potential rate, which according to STATEC is slightly below 3%.

Due to the downward revisions to growth rates in 2016 and 2017, the output gap, which measures the difference between an economy’s observed output and a theoretical output level for an economy that is fully employing the factors of production, turned negative in 2017, but should turn positive again in 2019. Potential growth is estimated at around 2.7% during the projection period (see the methodological insert in Chapter III.4).

The baseline scenario underpinning this SGP assumes an average increase of 5.2% in nominal GDP between 2018 - 2023. Chart 2 shows GDP trends in Luxembourg and the euro zone since 2013, illustrating the positive economic performance of the country in comparison with Europe.

Changes in inflation in Luxembourg during this period was conditioned both by external factors, such as the economic situation in Europe and movement in oil prices, and by domestic factors. Inflation, as measured by the National Consumer Price Index (NCPI), is expected to converge at 1.7% in 2023. These forecasts suggest that three index-linked payment increases could be triggered three times up until 2023, with the first occurring at the end of 2019.

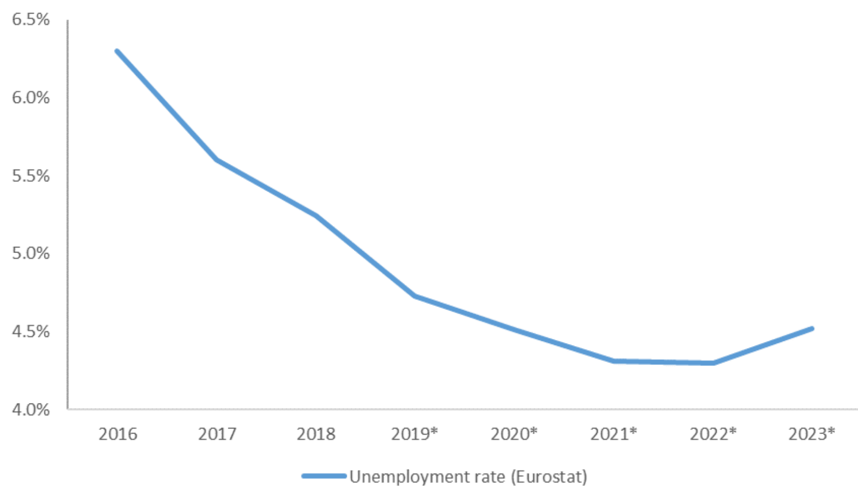
Risks and uncertainties

The previous sections gave a brief overview of the uncertainties surrounding the European and world economies. The Luxembourg economy will be faced with challenges, among which are the international tax developments, namely the OECD action plan to address the erosion of the tax base and profit shifting (BEPS), a Common Consolidated Corporate Tax Base (CCCTB), the Anti-Tax Avoidance Directive (ATAD) and digital taxation. These challenges also present opportunities to intensify efforts to diversify the Luxembourg economy over the medium term. Digitization, or even the automation, of the economy is likely to have a considerable impact on the labour market and will require the pursuit of structural innovation policies to promote sustainable and qualitative economic growth.

As usual, the economic context on which this SGP and the budget forecasts are based is built on a central scenario in which risks and opportunities are by definition balanced and therefore does not give room for economic shocks pointing in one direction or another.

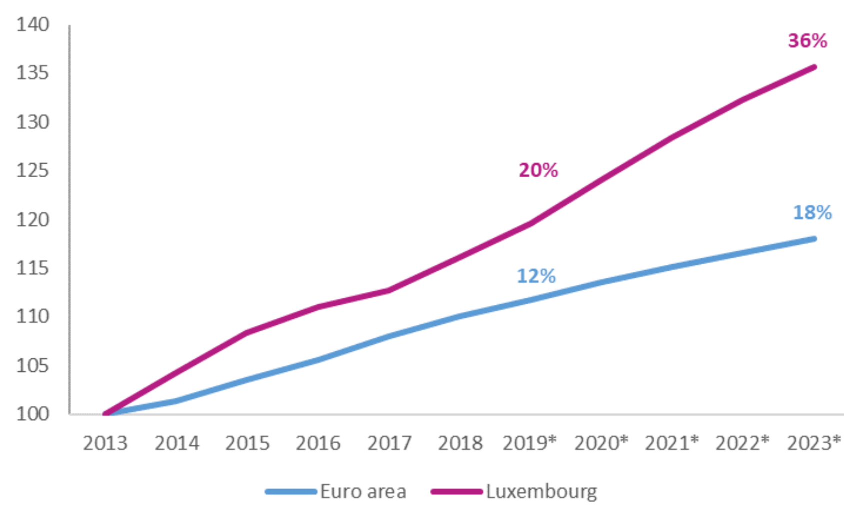
To illustrate the potential impact of some risks discussed in this chapter materializing, the SGP includes a sensitivity analysis in Section III.6. This analysis is based on the simulation of an unfavourable scenario based on the assumption of a *"global trade wa*r" as well as a favourable scenario assuming an accommodative economic policy supporting the global recovery. In addition, the analysis presents the simulation of a shock on interest rates.

Chart 1: Unemployment rate in Luxembourg (2016 - 2023)[6]



Source : Eurostat.

Chart 2: Real GDP trends in Luxembourg and within the euro area (base 100 = 2013)



Source : STATEC, European Commission (AMECO)

[6] Medium-term projections 2019-2023 are indicated with an asterisk.

III. BUDGETARY POSITION AND PUBLIC DEBT

III.1 General guidelines of the budgetary policy

The Government's fiscal policy described in this SGP is based on the strategy set out in the annual and multi-year budget proposals presented in March 2019 and is the logical continuation of the resolute and responsible actions undertaken by the previous Government.

The previous Government managed indeed to reverse the negative spiral the deficit and public debt fell into resulting from the fallout of the global crisis and the political inaction in the face of growing budgetary slippage. Accordingly, to cope with the prospect of fiscal imbalance, the previous Government had put in place a vast programme of modernization of state expenditure (the "Zukunftspak") and increased certain value added tax rates. This determined action completely compensated for the loss of €1 billion in VAT revenues on e-commerce from 2015 on.

Through the aforementioned measures, the previous Government has managed not only to redress the challenges posed by the crisis but also to decisively reverse the increase in public debt. As a result, the necessary groundwork has been done to resolutely prepare the country for the challenges of the future.

The soundness of public finances can be seen, among other things, at the level of the central Government for which the fiscal year 2018 was closed, for the first time in 10 years, with a surplus. This substantial improvement was achieved through rigid control of public spending and Government revenue inflows spurred by the good economic situation.

The Government has once again set ambitious fiscal targets in keeping with the spirit of a far-sighted fiscal policy and to maintain the significant advantage of an AAA rating as affirmed by the three major agencies.

The Government especially undertakes to achieve the following objectives:

(i) Comply with the medium-term budgetary objective (MTO) throughout the legislature term; and

(ii) Ensure that public debt is at all times maintained below 30% of GDP.

Government action on fiscal matters for the upcoming years is both responsible and forward-looking, while focusing on the major areas outlined in the coalition agreement. Accordingly, it is defined by a policy of social cohesion and promotion of a competitive economic and fiscal environment, while responding to the climate and environment challenge situation.

Among the flagship measures are:

- Continuing an investment policy conducive to qualitative growth, with particular emphasis on mobility and housing infrastructure, education, research, digitalisation, sustainable energy, culture and social structures;
- Implementation of various measures to promote compliance with climate commitments, including a bonus for acquiring electric vehicles and an increase of excise duties on oil products;
- Reducing the corporate income tax rate as of January 1, 2019;
- Increasing the minimum wage by a net €100 through the introduction of a social minimum wage tax credit[7].

This comprehensive fiscal strategy is appropriate not only to prepare the country for the challenges of the future, but also to maintain the fiscal space needed in a small, open, internationally oriented economy.

As such, it should be noted that the world economy appears to have reached a turning point. As discussed further in Chapter II.1, global trade tensions and the risks related to a disorderly Brexit are weighing on European growth prospects.

Macroeconomic projections for Luxembourg predict less dynamic growth than expected in the latest SGP update of the SGP in 2018. However, the outlook remains strong as Luxembourg continues to benefit from solid fundamentals.

Despite this less buoyant economic environment, the Government is committed to pursuing a responsible fiscal policy and taking the necessary measures to comply at all times with the budgetary path, the rules of the Stability and Growth Pact and the two objectives noted.

In this sense, the budgetary guidelines in this SGP update once again confirm full compliance of the budgetary rules of the preventive arm of the Stability and Growth Pact throughout the period under consideration, without submitting any request for use of the flexibility clauses provided for by the European rules.

[7] The increase of the minimum wage by €100 euros net is a result of the combined effect of the minimum wage tax credit, the 1.1% increase in the minimum wage as from 1 January 2019 and the projected 0.9% increase.

III.2 Medium-term budgetary objective (MTO)

The Stability and Growth Pact is made up of a set of rules, both preventive and corrective, aimed at regulating the fiscal policies of the EU Member States and thereby preventing the deterioration of public finances in Europe.

In response to the economic and financial crisis, these provisions were reinforced by the Treaty on Stability, Coordination and Governance in the European Union (TSCG), also known as the "Fiscal Stability Treaty" or "Fiscal Compact", which aims to preserve the economic and financial stability of the euro zone.

The budgetary policies of the Member States are a key instrument for ensuring budgetary discipline, in particular avoiding excessive deficits from emerging, and thus contributing to the stability of the Economic and Monetary Union (EMU) as a whole.

The Fiscal Treaty and the preventive arm of the Stability and Growth Pact are mainly geared to meeting a specific country-specific medium-term budgetary objective (MTO).

The MTOs are defined to ensure that the deficit targets are met while maintaining a margin of manoeuvrability and ensuring the sustainability of public finances in the medium and long term.

The MTOs are expressed in "structural" terms, meaning that they are adjusted for fluctuations in the economic cycle as well as for possible exceptional events, thus taking into account divergent economic situations in the Member States.

In order to take into account the most recent projections regarding the sustainability of public finances in the long term, the MTOs are reset every three years. Since the last MTO was set in 2016 for the 2017-2019 period, Luxembourg is required to set its MTO for 2020-2022 for this SGP update.

This MTO must respect the minimum reference value ("minimum MTO") established by the European Commission using harmonised methodology[8]. In particular, it takes into account changes in budgetary expenditure linked to population ageing as well as the public debt target of 60% of GDP under the Treaties[9].

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[8] The European Commission calculates minimum reference values, which does not prevent a Member State from setting a more ambitious MTO.

[9] For a more complete description, please see Chapter 1.2 of the European Commission's "*Vade mecum on the Stability & Growth Pact* ": https://ec.europa.eu/info/sites/info/files/economy-finance/ip075_en.pdf .

The new long-term projections of ageing-related costs were presented in 2018 in the "Ageing Report 2018"[10] of the European Working Group on Ageing. This report now covers the period up to 2070 and takes into account Eurostat's updated population projections (ESSPOP2015). Given that, in the case of Luxembourg, the above report shows a significant upward revision of ageing-related expenditure by 2070[11], the minimum reference value of the MTO, as calculated by the Commission European Union, now stands at + 0.5% of GDP for the period 2020-2022.

Thus, by virtue of its obligations under the Fiscal Treaty and the Stability and Growth Pact, the Government will again opt for the minimum calculated by the European Commission and set the MTO at +0.5 % of GDP for the period 2020-2022. This MTO is set in the same way in article 1 of the draft multiannual financial planning law covering the period 2018-2022, which is scheduled for adoption by Parliament during the week of 25 April 2019.

[10] Link: https://ec.europa.eu/info/publications/economy-finance/2018-ageing-report-economic-and-budgetary-projections-eu-member-states-2016-2070_en .

[11] The results for Luxembourg are shown in Table 7 of the Statistical Appendix.

III.3 The budget situation in 2018 and 2019

2018[12]

The Luxembourg economy has developed vigorously throughout 2018, posting a growth rate above that of the euro zone. This favourable context is reflected in the public finances, which have taken in substantially more tax revenues as well as by the benefits of the rebalancing process initiated by the Government. For example, the central Government has registered a budget surplus for the first time since 2008. The nominal balance rose from -€344 million (-0.6% of GDP) in 2017 to +€121 million (+0.2 of GDP) in 2018.

The spectacular performance of the central Government largely explains the doubling of the general Government balance from +€764 million (+ 1.4% of GDP) in 2017 to +€1,514 million (+ 2.6% of GDP) in 2018. This is significantly more than the sums forecasted for the budget in 2018, which at the time predicted a surplus of €332 million (0.6% of GDP). Local Governments observed their surpluses rise from €82 million (0.1% of GDP) to €334 million (0.6% of GDP) and social security balance remains relatively stable at +€1,059 million (+ 1.8% of GDP) in 2018, compared to +€1,025 million (+ 1.9%) in 2017.

Government revenue was particularly strong in 2018, posting 10% growth over 2017. Direct taxes account for the largest jump – an amount of €1,341 million. This change is primarily due to favourable economic conditions. Furthermore, the introduction of the electronic filing of tax returns for corporate income tax since 2017 have allowed to significantly increase the collection rate of taxes and will in future result in reducing the gap between tax collection and pre-payments.

The favourable macroeconomic environment also reflects well in the evolution of indirect taxes. VAT revenues increased by 9.3% over 2017, primarily due to good results in the finance and insurance, specialized and technical business activities, and administrative services sectors. These sectors account for approximately 70% of revenues recorded in the 2018.

Public spending is up 7.2% year-on-year, below the pace of revenue growth, which indicates a sort of positive fiscal scissor effect. The growing number of IT projects dealing with intermediate consumption is

[12] The figures for 2018 are based entirely on those estimated in the framework of the draft annual budget for 2019 and the draft multiannual financial programming law for the period 2018 to 2022, in order to maintain the consistency of the figures due to the simultaneity of the 20th update of the SGP with the actual budgetary procedure. The figures differ slightly from the data provided to Eurostat as part of the EDP notification in April 2019, although these do not give rise to different conclusions as to compliance with the budgetary rules of the Stability and Growth Pact.

particularly noticeable, which emphasises the digitisation efforts pursued by the State. Public investment will reach a new record of €2,457 million or 4.2% of GDP. Salary pay-outs registered a dynamic evolution, which can be explained by the triggering of the wage index-linked increase in August 2018, the implementation of the wage agreement and the significant staffing increases that were made by the State and public institutions.

2019

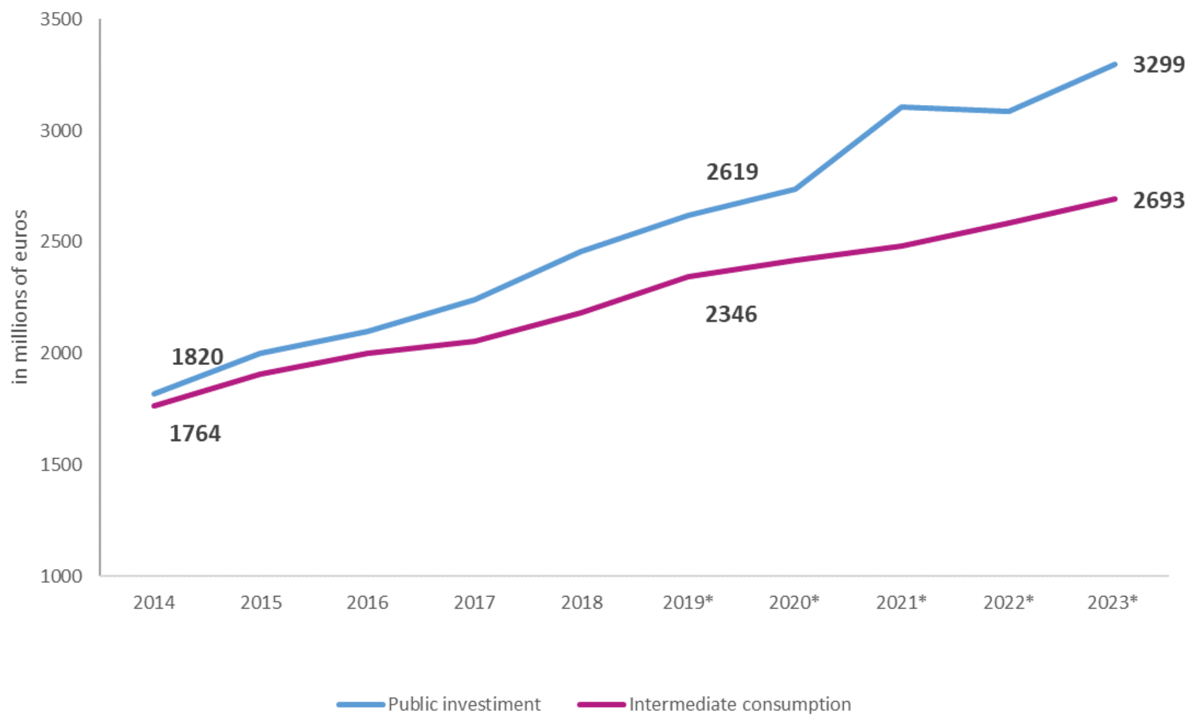
In 2019, the macroeconomic outlook will feature a less marked expansion within the euro zone. However, given the current economic situation, Luxembourg's economy is still likely to remain resilient to down turning trends and the public finances situation remains favourable.

The general Government balance will likely amount to +€632 million or + 1.0% of GDP in 2019, which represents a decrease of €882 million compared to 2018. This difference may be explained by the implementation of a first series of measures of the Government programme, whose total impact amounts to + 0.5% of GDP, as well as by a cautious approach in estimating tax revenues for 2019. The 2018 fiscal year was marked by significant tax revenues and, in keeping in line with the prudent practice of recent years, only a share of these gains are taken into account in the estimates for 2019. Thus, the positive balance of the central Government in 2018 moved from €121 million or 0.2% of GDP in 2018 to a negative balance of €650 million euros or 1.1% of GDP in 2019. Local Governments should record a positive balance of €285 million or 0.5% of GDP, which is only slightly lower than the balance in 2018. The social security surplus is also down slightly by €62 million compared to 2018, amounting to €997 million or 1.6% of GDP in 2019.

The change in public finances in 2019 will therefore feature the implementation of certain priority measures stemming from the December 2018 coalition agreement. The Government hopes to set out an equitable agenda that ensures both social cohesion, competitiveness and sustainable development.

Among the priorities in terms of strengthening social cohesion are the net increase in the minimum wage of €100, the continuous increase in budgetary appropriations for the childcare scheme, and even the introduction of the new social inclusion income system (REVIS). In order to strengthen the competitiveness of the Luxembourg economy, the IRC corporate tax rate will be reduced by 1 percentage point in 2019 and the income bracket to which the minimum corporate tax rate applies (15%) will also be increased from €25,000 to €175,000[13]. In addition, the Government continues to prioritise qualitative development and digitisation as the main vectors of economic policy by acting on the investment side. This is reflected in Chart 3, which shows trends in public investments compared to intermediate consumption since 2014.

Chart 3: Changes in public investment and intermediate consumption (2014 - 2023)



Source : Finance Ministry and STATEC

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

Regarding the compliance with the budgetary rules of the preventive arm of the Stability and Growth Pact, the following points should be noted:

- in 2018, the structural balance, estimated on the basis of STATEC calculations made using the harmonised methodology at European level, amounts to + 2.6% of GDP and is thus well above the MTO of -0.5% of GDP.

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[13] It should be emphasized that the intermediate tranche that smooths the transition from minimum to the maximum tax rate is set at € 26,250 plus 31% of taxable income exceeding €175,000 when the taxable income is between €175,000 and €200,001.

- in 2019, the structural balance will move to + 1.2% of GDP, affected by the combined impact of a worsening in the general Government's balances and a tightening output gap, yet remaining well above the MTO of -0.5% of GDP;

Luxembourg therefore continues to fully adhere to the rules of the Stability and Growth Pact in 2018 and 2019, while maintaining a considerable margin with regard to the MTO.

III.4 The budget situation from 2020 to 2023

In the medium term, the budgetary situation in Luxembourg is to be set in a still well-oriented macroeconomic context at the beginning of the period under review and evolving over the medium term towards its potential level. Growth in employment will remain strong throughout the period, albeit at slightly lower levels than in recent years.

Despite the less vigorous pace of the Luxembourg economy, the Government's medium-term budget strategy is characterized first and foremost by the hope of maintaining high levels of public investment on a continuous basis, at a rate of above 4% of GDP, to acquire the infrastructure needed to address both economic and demographic growth. The Government also seeks to engage in a coherent social policy aimed at reducing the widening income gap, stepping up the fight against poverty and exclusion and developing a fair tax policy. At the same time, it will seek to promote a competitive economic and fiscal framework by means of investments in research and innovation, while addressing climate and environmental challenges.

In budgetary terms, after a year in 2019 marked by a fall in the general Government surplus, its balance in 2020 is returning to a rising surplus situation. In 2020, the general Government balance situation should improve from a surplus of €632 million or 1.0% of GDP in 2019 to one of €876 million or 1.4% of GDP.

At the central Government level, this balance should amount to -€515 million or -0.8% of GDP in 2020, which represents an improvement of €135 million compared to the 2019 budget year, which is expecting a deficit of €650 million. The growth rate of public spending (+ 5.0%) should also be lower than that of public revenues (+ 5.8%) in 2020, while public investment are to be maintained at a high level.

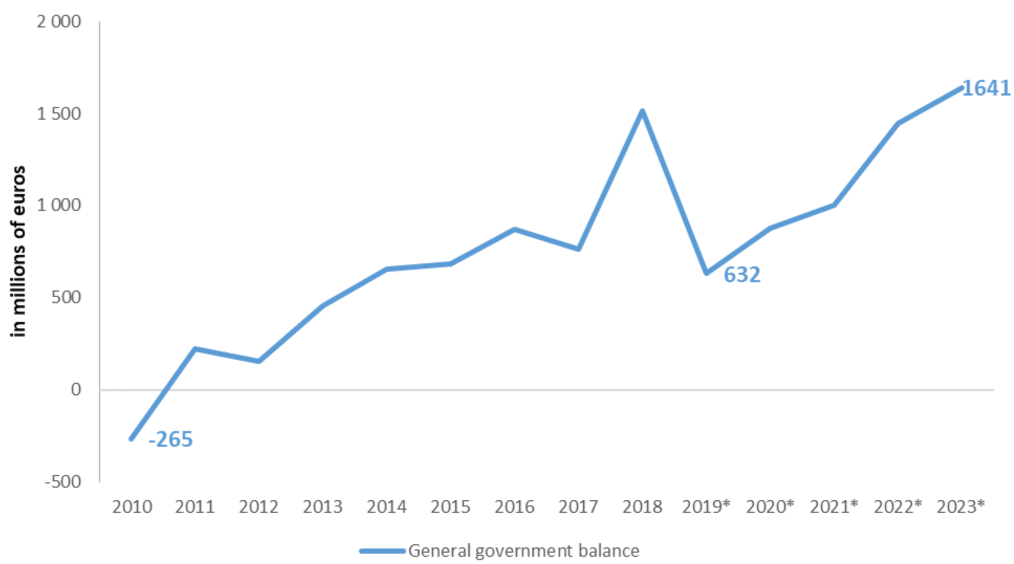
The surplus of local Government balances will likely be slightly higher, reaching a level of €340 million or 0.5% of GDP in 2020, compared to €285 million or 0.5% of GDP in 2019. The social security administration should continue to show a surplus balance of €1,051 million or 1.6% of GDP, remaining slightly above its level in 2019.

In the medium term, i.e. from 2021 to 2023, the budgetary outlook continues to remain excellent. Driven by economic prospects that remain favourable, the general Government balance should continue to improve throughout the period, moving from a surplus of 1.5% of GDP or €1,002 million in 2021 to 2.2% of GDP or €1,641 million in 2023. The central Government is the driving force behind this improvement, with a balance moving from a deficit of 0.7% of GDP or €482 million to a surplus of 0.3% of GDP or €200 million in 2023.

The improvement in public finances can be explained by the ability to control public spending, where expenditure growth remains under that of public revenue by 2023. Public expenditure is thus growing at an average of 4.6% compared to Government revenue growth of 5.2% over the 2021-2023 timeline, while public investment continues to grow at an average annual rate of 6.6% over the period and will attain an average ratio of 4.3% of GDP.

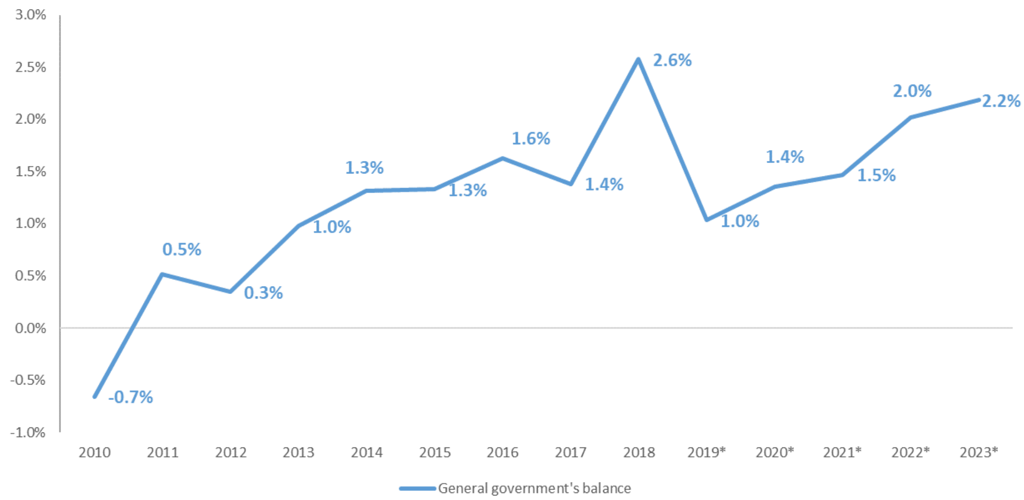
Government revenues will remain very high over the period 2021-2023, in line with the assumed growth profile, and are expected to expand at an average rate of 5.2% per year. This is slightly below the average observed throughout the previous legislative term (5.5%). Direct taxes, however, should continue to grow sustainably by around 6.2% on average per year.

Chart 4: Change in the general Government's balance (in millions of euros)



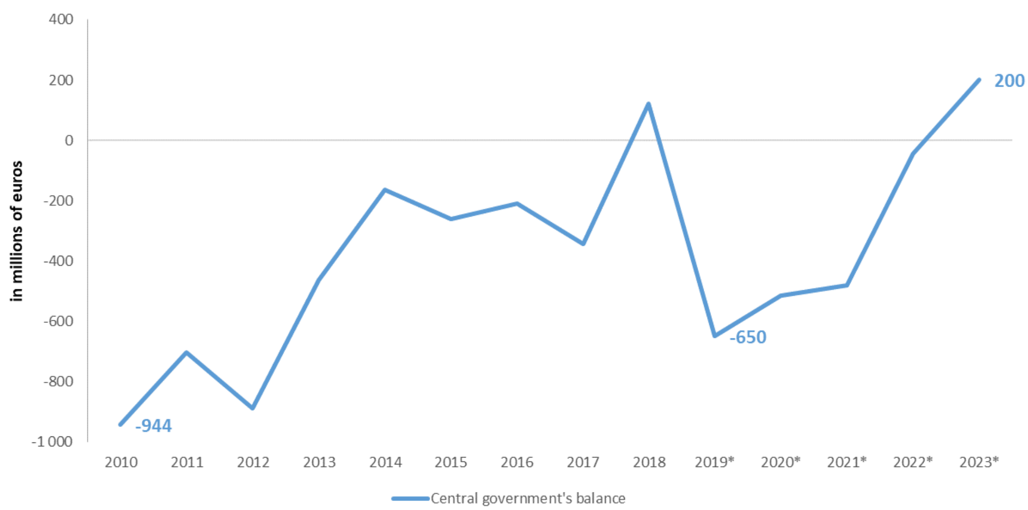
Source : Finance Ministry and STATEC

Chart 5: Change in the general Government's balance (as a % of GDP)



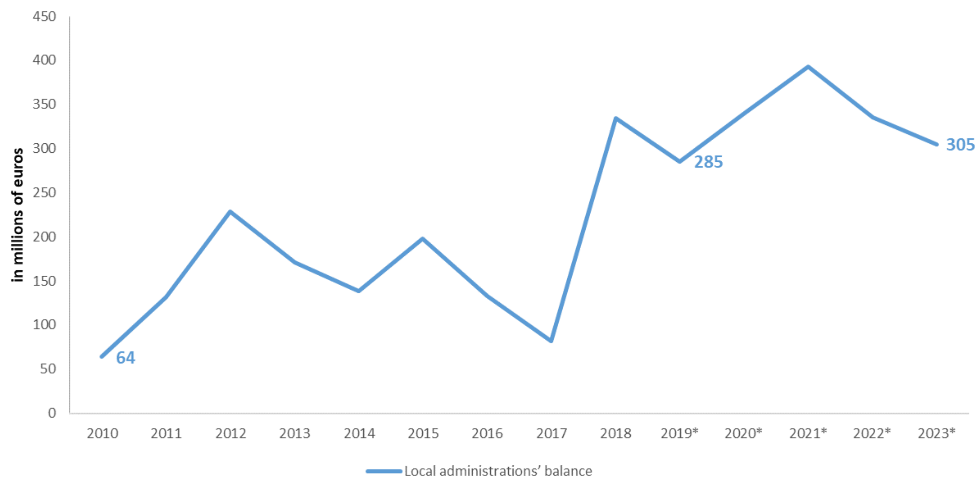
Source : Finance Ministry and STATEC.

Chart 6: Change in the central Government's balance (in millions of euros)



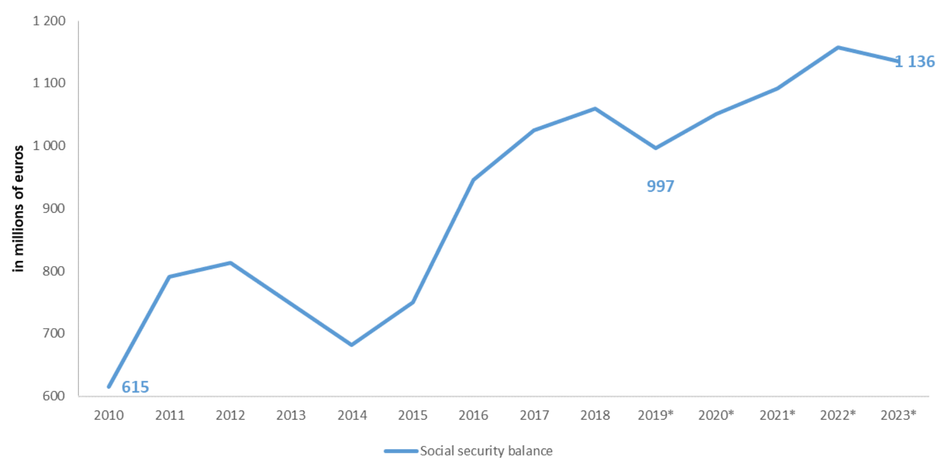
Source : Finance Ministry and STATEC.

Chart 7: Change in local administrations' balance (in millions of euros)



Source: Finance Ministry and STATEC.

Chart 8: Change in the social security balance (in millions of euros)



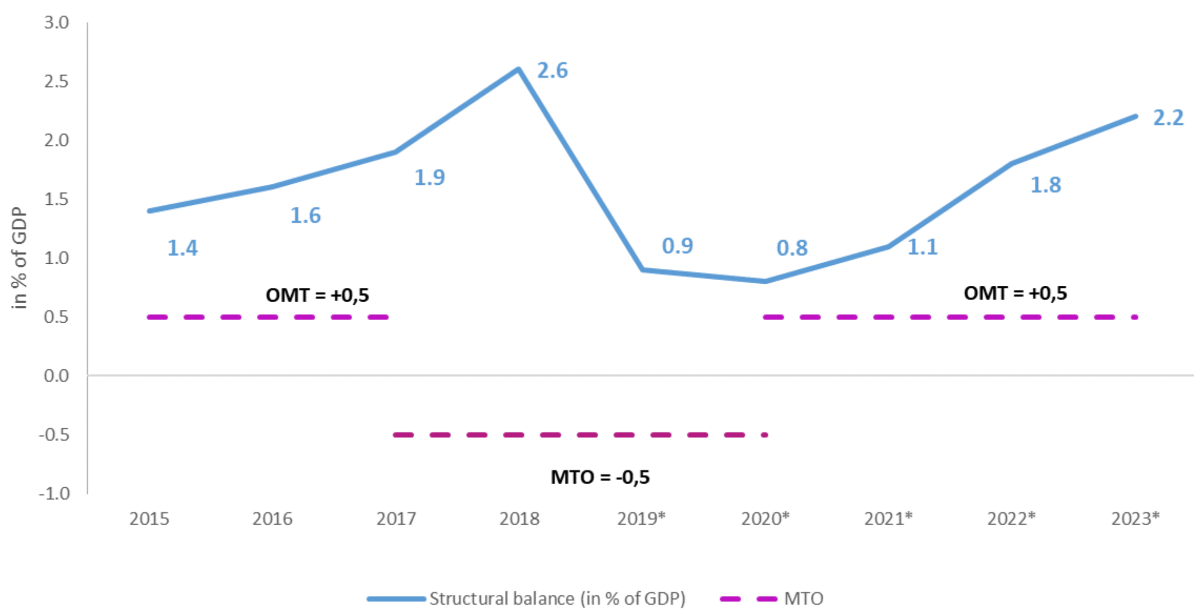
Source : Finance Ministry and STATEC.

Regarding the rules of the preventive arm of the Stability and Growth Pact, Luxembourg should continue to fully respect the rules of the preventive arm, while maintaining a margin of manoeuvre with regard to the MTO used throughout the period under consideration.

During the period 2020-2023, Luxembourg will always respect the primary rule of the Stability and Growth Pact. In particular, the structural balance - calculated using STATEC processes based on the European methodology - is estimated to be above the new MTO of + 0.5% of GDP: 0.8% of GDP in 2020, 1.1% of GDP in 2021, 1.8% of GDP in 2022 and 2.2% in 2023.

The slight decrease in the structural balance from + 0.9% in 2019 to + 0.8% in 2020 can be explained by the cyclical component. From 2021 to 2023, the structural balance should gradually regain ground, reaching + 2.2% of GDP in 2023, well above the MTO of + 0.5% of GDP. The improvement is the result of the increase in the general Government surplus and of an output gap that is narrowing as a result of the assumption stemming from the European methodology, which predicts a closing of the output gap at the end of the period.

Chart 9: Change in the general Government's structural balance (as a % of GDP)



Source: Finance Ministry and STATEC

Methodological Insert: Structural balance and estimate of the output gap

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

The MTO is defined in "structural" terms, i.e. by correcting for fluctuations in the business cycle and the impact of exceptional fiscal measures and other temporary measures.

In order to calculate the structural balance, it is important to assess the impact of cyclical variations on Government balances by estimating the difference between real GDP and potential GDP to obtain the output gap. The formula for moving from the nominal balance to the structural balance is as follows:

Structural Balance = Nominal Balance - 0.462 x (Output Gap)

The output gap measures the difference between the real state of the economy and a theoretical state in which an economy would make the best use of its production factors without creating tensions over prices and wages. The GDP emerging from this situation is called potential GDP.

In order to produce a cyclically adjusted nominal balance, the above formula estimates the response of the nominal balance to the economic cycle represented by the output gap. This responsiveness is accounted for by the semi-elasticity of the nominal balance relative to changes in GDP. More specifically, it measures the change in the nominal balance in percentage points of GDP following a 1.0% increase in GDP. The semi-elasticity of the nominal balance corresponds to the difference between the semi-elasticity of revenue and that of expenditure. These semi-elasticities are calculated by weighting the elasticities of the different categories of revenues by their weight with regard to total revenues. The weight of unemployment benefits in total expenditure is used when analysing expenditure.

In accordance with the methodology and timetable agreed upon at European level, these semi-elasticities are reviewed every nine years by recalculating individual elasticities in different categories of revenue and expenditure. Every six years, the weighting of the various income categories and unemployment benefits are reassessed. The European Commission recalculated these weights in 2018, which resulted in an update of the semi-elasticities for all Member States. The semi-elasticity of Luxembourg has thus increased from 0.445 to 0.462 and will be used in European economic governance processes from 2019.

The formula for determining the output gap is:

Output Gap

=

(Real GDP - Potential GDP) / (Potential GDP)

One of the major difficulties in calculating the output gap is that potential GDP and the output gap are two variables that cannot really be observed and therefore need to be estimated using statistical and econometric methods.

Due to increasing volatility and frequent revisions of GDP figures and hence forecasts in the case of Luxembourg, these estimates are traditionally characterised by a very high degree of uncertainty, combined with the fact that there are a multitude of different methodologies for estimating potential GDP and the output gap.

As the assessment of the structural balance by the European Commission is based on a harmonised European methodology for all EU Member States, the Government has been using since 2015 the same method in calculating the structural balance.

In doing so, it uses the expertise and data of STATEC, given the complexity of the calculations to be carried out and that the European Commission's forecast figures are generally not available at the time when SGP updates are finalised. For the purpose of this calculation, STATEC relies on the methodology of the European Commission, while using data from its own medium-term macroeconomic projections.

Despite the "imperfect" nature of this methodology, and because of the unavailability of the European Commission's forecasts, the approach taken should in principle make it possible to get as close as possible to the foreseeable calculations of the European Commission.

Finally, it should be noted that research work at STATEC continues to focus on studying and further refining ways to estimate the output gap. Under the joint initiative of the Ministry of Finance and STATEC, the European Commission has recently agreed to adapt the European methodology to the specificities of the Luxembourg economy, to better take into account the employment of cross-border workers when calculating Luxembourg's output gap.

* * *

In this update of the SGP, due to the exceptional situation of the budget procedure occurring at the same time as the finalisation of the SGP update, the calculations are based on STATEC's 2019-2023 macroeconomic forecasts, which are also at the basis of the draft law for multiannual financial programming for 2018-2022. The calculations do not include the updated national accounts for March 2019, the impact of which would appear to be very limited in the present situation.

The calculation of the structural balance is based on the following elements:

	2017	2018	2019	2020	2021	2022	2023
Nominal Balance	+1.4%	+2.6%	+1.0%	+1.4%	+1.5%	+2.0%	+2.2%
Real Growth	+1.5%	+3.0%	+3.0%	+3.8%	+3.5%	+3.0%	+2.5%
Potential Growth	+2.7%	+2.0%	+2.6%	+2.9%	+2.8%	+2.7%	+2.6%
Output Gap	-1.1%	-0.1%	+0.3%	+1.1%	+0.8%	+0.4%	0.0%
Structural Balance	***+1.9%***	***+2.6%***	***+0.9%***	***+0.8%***	***+1.1%***	***+1.8%***	***+2.2%***

Source : Finance Ministry and STATEC.

III.5 Public debt

When the previous Government took office in 2013, the Government set the goal of reversing the negative spiral of public debt and keeping debt level below 30% of GDP.

At the beginning of the second legislative term, the new forecasts prepared under the multi-annual financial programming draft law on which the figures of this SGP are based confirm that the Government's policy has proven successful. At the end of 2018, Luxembourg's public debt stood at €12,571 million, i.e. 21.4% of GDP or 2.3 percentage points lower than at the end of 2013.

In both absolute and relative terms of GDP, the figures show a clear improvement over those in the last SGP update. Thus, with relation to GDP, the public debt has fallen by about 1.3 percentage points and remains below the ratio of 22.7% projected in 2018. In absolute terms, the 2018 SGP still projected a debt level of €13,296 million in 2018; yet the year closed with an absolute debt level of €12,571 million, or €725 million lower.

Luxembourg continues to be one of the Member States with the lowest debt ratios in the euro zone despite undertaking record levels of public investment, while remaining well below the of 60% of GDP reference value of the European treaties and below the national ceiling of 30% of GDP as stated by the coalition agreement.

Outstanding bond issues are as follows:

Security name	Instrument	Issuance date	Maturity	Amount (in euro mn.)
LGB SUKUK 0.436%	Institutional loan	October 2014	October 2019	200
GRAND-DUCHY 3.375%	Bonds	May 2010	May 2020	2.000
GRAND-DUCHY 2.25%	Bonds	March 2012	March 2022	1.000
GRAND-DUCHY 2.125%	Bonds	July 2013	July 2023	2.000
GRAND-DUCHY 0.625%	Bonds	February 2017	February 2027	2.000
GRAND-DUCHY 2.25%	Bonds	March 2013	March 2028	750
GRAND-DUCHY 2.75%	Private placement	August 2013	August 2043	300

Source : Luxembourg State Treasury. By maturity date.

The forecast for 2019 reflects bond redemptions during the year and the likely absence of a funding requirement at the central Government level. For the following years, the forecasts of public debt automatically presuppose that the deficits of the central Government will be financed by subscribing to new bond issues or loans over the 2020 to 2022 projection period. Similarly, the surplus generated in 2023 will be used to pay down and thus reduce the public debt. In addition, the central Government would fully refinance all loans and loans maturing over the period, which explains the forecast trajectory outlined below.

Total financing requirements would therefore amount to approximately €5.6 billion over the 2019-2023 period (see Chart 11)[14]. In practice, however, the financing needs will be dictated by how the state's liquidity situation evolves, applicable market conditions, the choice of refinancing instrument, budgetary developments that are actually observed and other measures that may impact the need for financing,

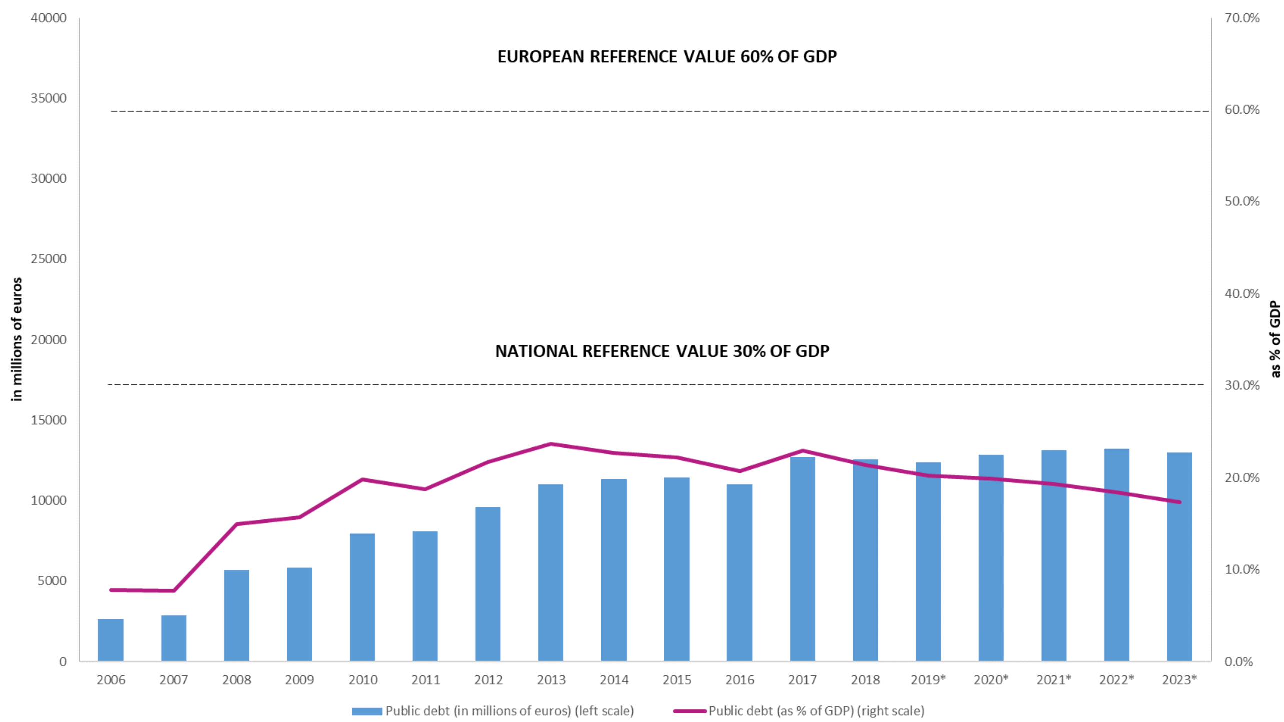
[14] Broken down, the financing requirement for 2019-2023 is assumed to be as follows: no financing requirement in 2019, €2,500 million in 2020 (of which 2,000 million in bond maturities), €280 million in 2021 (disregarding the purely accounting impact of military aircraft from the central Government's deficit), €1,050 million in 2022 (including 1,000 million in bond maturities) and €1,800 million in 2023 (to repay maturing loans).

which could lead to a different profile from that calculated mechanically in the projections regarding public debt.

Compared with 2017, the public debt will have ultimately decreased by €126 million in 2018. Debt is expected to further decline in 2019 and should continue on a downward path to 17.3% of GDP by 2023, the lowest level since 2009. In any case, public debt remains well below the 30% of GDP ceiling set in the 2018 Government programme.

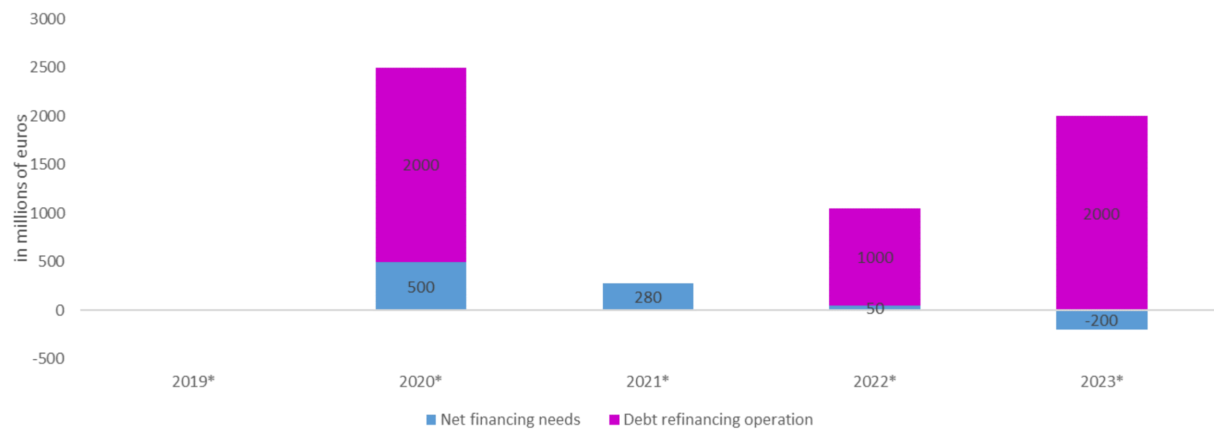
Luxembourg's AAA credit rating with stable outlook from all major credit rating agencies allow the country to refinance at very favourable interest rates, implying that the cost of servicing the public debt (i.e. the interest expense) remains relatively stable at around 0.2% of GDP. This compares favourably at the EU level, as only Estonia and Sweden have a lower interest burden (see Chart 12).

Chart 10: Change in public debt



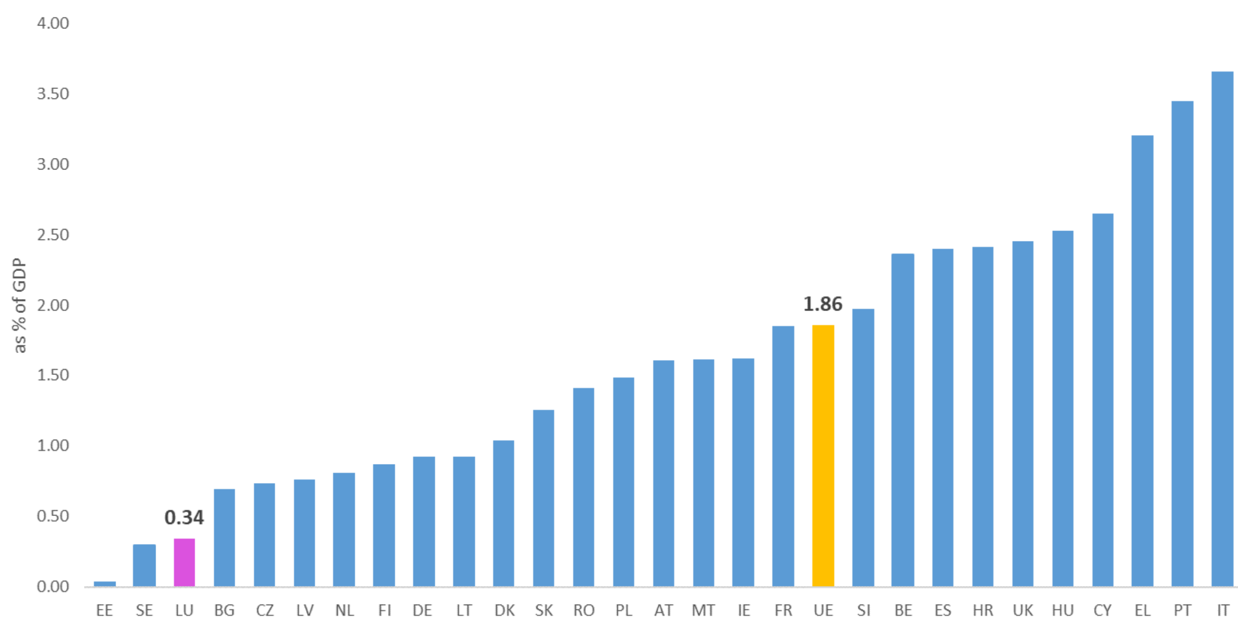
Source: Finance Ministry and STATEC.

Chart 11: Assumed funding requirements for 2019-2023 (in millions of euros)



Source : Finance Ministry

Chart 12: Interest charges within the EU in 2018 (as a % of GDP)



Source: European Commission (AMECO).

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Central Government debt, and to a lesser extent local Government debt, are the main components of the country's public debt. This also includes the debt of public institutions as well as guarantees granted by the Government under PPP (guarantee law) contracts and those granted as debts issued by the EFSF. A Eurostat decision has decreed that these must be recorded as debts charged to the general Government accounts.

Since the pension fund balance will continue to be in surplus, excess revenues will continue to be allocated to the Compensation Fund to provide funding for pension benefits in the future. This reserve amounted to around 33% of GDP as at 31 December 2018, and is above the level of public debt. Luxembourg also holds stakes in commercial and non-commercial companies with an estimated value of around 10% of GDP and an Intergenerational Sovereign Wealth Fund (FSIL) has been in place since 2015 to create savings for future generations. The assets of the FSIL amount to approximately 0.5% of GDP.

Luxembourg therefore holds financial assets totalling around 43.5% of GDP, more than double its public debt.

III.6 Sensitivity analysis

Due to its small size, its international orientation and its exposure to the uncertainties of the financial markets, Luxembourg's economy can be subject to significant fluctuations.

Since these fluctuations cannot be accurately predicted, using a sensitivity analysis can help visualise alternative trajectories for growth and public finances compared to the central scenario that serves as the basis for this SGP. Such an analysis focuses on the effects of both positive and negative risks related to substantial changes in the external environment and interest rates.

Simulation of shocks to the external environment

The following analysis is based on the simulation of an unfavourable scenario grounded in the assumption of a "global trade war" as well as a favourable scenario assuming an accommodative economic policy supporting global recovery.

The adverse scenario considers the combined impact of a significant deterioration of global trading relationships and a hard Brexit, with no agreement. The following assumptions are made with regard to the worsening situation in international trade: (i) an extension of the scope of US tariffs on products from China, as well as an additional increase in their rates (ii) the introduction of tariffs by the United States on all goods originating from the euro zone, particularly affecting the automotive sector. As for Brexit without agreement, the alternative scenario implies a considerable increase in tariff and non-tariff barriers between the United Kingdom and the European Union.

Thus, under this theoretical exercise, the negative shock would lead to a 0.7 percentage point decrease in the assumed rate of growth for the euro zone in 2019. Real growth in the Luxembourg economy would stand at 1.3% for the same year. For 2020, the Luxembourg economy would attain stronger growth levels, which would nonetheless remain below those assumed by the central scenario and would subsequently register larger increases under the assumption of a more vigorous recovery in the euro zone for the period 2021-2023.

Public finances would suffer in comparison with the figures presented under the central scenario, with aggregate increases over the period of € 2,200 million to the central Government deficit. Public debt would amount to 20.9% of GDP by 2023 instead of the 17.3% of GDP offered in the central scenario.

The favourable scenario is based on the assumption of an interaction of three international developments that would exert a positive impact on global growth. First, it is assumed that the United States would remove the tariffs on products from China and would be satisfied with negotiations on the subject with the European Union, which would then lead to a substantial relaxation of trade tensions. Then, in the face of disappointing developments in labour markets and wages, central banks in advanced economies would decide to delay normalising their stance on monetary policy. Finally, China would relax its fiscal policy in order to mitigate its economic slowdown.

As a result of these factors, a 0.5 percentage point increase beyond the base case for 2019 would occur in the euro zone. This would exert a positive shock in Luxembourg that would amount to 0.4 percentage points and real GDP growth should cross the 4.0% mark in 2020 and 2021 (4.4% and 4.0% respectively). The central Government balance would improve with a surplus of €753 million in 2023 and there would be a more pronounced decline in the public debt, which would amount to 14.7% of GDP at the end of the period.

Main macroeconomic variables

Legend: SC1= unfavourable scenario ; SC2= favourable scenario

	2018	2019			2020			2021			2022			2023		
	base	SC1	**central**	SC2	SC1	**central**	SC2	SC1	**central**	**SC2**	SC1	**central**	SC2	SC1	**central**	SC2
Real GDP euro area (change in %)	**1.8**	0.8	**1.5**	2.0	0.7	**1.6**	2.2	1.0	**1.4**	1.6	1.5	**1.3**	1.1	1.3	**1.2**	1.0
Real GDP (change in %)	**3.0**	1.3	**3.0**	3.4	3.4	**3.8**	4.4	3.6	**3.5**	4.0	3.6	**3.0**	3.2	2.8	**2.5**	2.4
Nominal GDP (change in %)	**6.3**	1.2	**4.1**	4.7	4.8	**5.8**	6.5	5.2	**5.3**	6.0	5.9	**5.2**	5.4	5.0	**4.6**	4.3
Employment level (change in %)	**3.7**	3.0	**3.4**	3.4	2.6	**2.9**	3.1	3.0	**3.0**	3.3	2.8	**2.6**	2.8	2.3	**2.0**	2.1
Unemployment rate (in %) (definition ADEM)	**5.5**	5.1	**5.0**	5.0	5.0	**4.8**	4.7	4.9	**4.6**	4.3	4.9	**4.6**	4.3	5.2	**4.8**	4.4
Eurostoxx (change in %)	**-3.0**	-21.9	**-4.5**	-0.4	8.4	**6.4**	8.3	11.5	**5.6**	6.2	9.9	**4.8**	3.9	5.1	**4.1**	2.3

Public finances

General Government

	2018	2019			2020			2021			2022			2023		
	base	SC1	**central**	SC2	SC1	**central**	SC2	SC1	**central**	**SC2**	SC1	**central**	SC2	SC1	**central**	SC2
Nominal balance (in mio euros)	**1 514**	232	**632**	726	295	**876**	1 101	515	**1 002**	1 377	1 049	**1 449**	1 938	1 286	**1 641**	2 194
Nominal balance (in % of GDP)	**2.6**	0.4	**1.0**	1.2	0.5	**1.4**	1.7	0.8	**1.5**	2.0	1.5	**2.0**	2.6	1.8	**2.2**	2.9

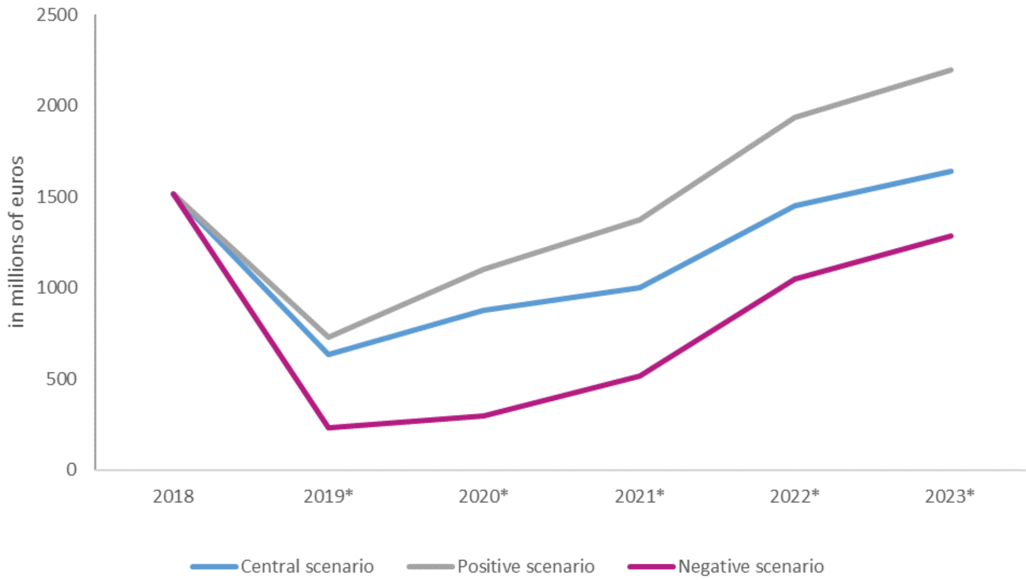
Central Government

Nominal balance (in mio euros)	**121**	-1 050	**-650**	-556	-1 096	**-515**	-291	-969	**-482**	-107	-444	**-44**	445	-155	**200**	753
Nominal balance (in % of GDP)	**0.2**	-1.8	**-1.1**	-0.9	-1.8	**-0.8**	-0.4	-1.5	**-0.7**	-0.2	-0.6	**-0.1**	0.6	-0.2	**0.3**	1.0

Public debt

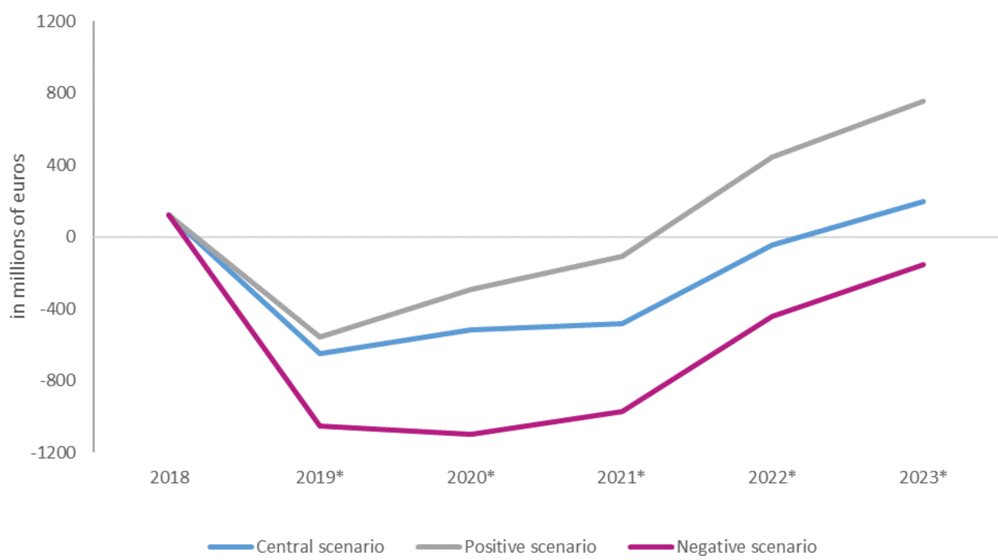
Public debt (in mio euros)	**12 571**	12 771	**12 370**	12 276	13 851	**12 870**	12 551	14 618	**13 150**	12 456	15 068	**13 200**	12 018	15 224	**13 000**	11 264
Public debt (in % of GDP)	**21.4**	21.5	**20.2**	19.9	22.2	**19.9**	19.1	22.3	**19.3**	17.9	21.7	**18.4**	16.4	20.9	**17.3**	14.7

Chart 13: Shock simulation – Change in the general Government's balance (in millions of euros)



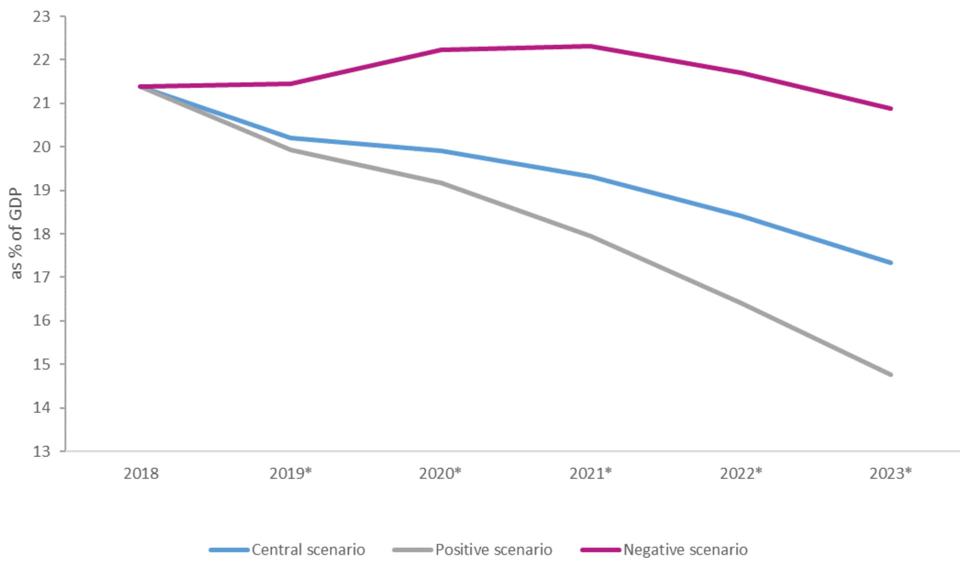
Source : Finance Ministry and STATEC

Chart 14: Shock simulation – Change in the central Government's balance (in millions of euros)



Source : Finance Ministry and STATEC

Chart 15: Shock simulation – Changes to the public debt (as a % of GDP)



Source : Finance Ministry and STATEC

Simulation of an interest rate shock

In order to simulate the impact of another factor likely to affect Luxembourg's financial markets, growth and public finances, the effects of a shock on short-term interest rates have also been analysed.

Based on shock modelling processes, an annual increase in interest rates of 100 basis points with relation to the trajectory assumed by the central scenario would have a negative impact on Luxembourg real GDP growth of 0.4 percentage points by 2023. The effects of such a shock on the labour market would be negligible.The rate of growth of domestic employment would lose 0.2 percentage point in 2023 while the unemployment rate would rise to 4.9%.

Public finances would be only marginally affected by an interest rates shock. The general Government balances would remain largely in surplus and the central Government is expected to show a small deficit at the end of the period. Public debt is expected to rise to 17.9% of GDP by 2023.

Main macroeconomic variables

	2019		2020		2021		2022		2023	
	choc -	central	choc -	central	choc -	central	choc -	central	choc -	central
Short term interest rate(%)	0.2	**-0.3**	1.2	**0.2**	1.9	**0.4**	2.7	**0.7**	3.5	**1.0**
Long term interest rat (%)		**1.5**		**2.1**		**2.6**		**3.0**		**3.3**
Real GDP (change in %)	3.0	**3.0**	3.7	**3.8**	3.3	**3.5**	2.8	**3.0**	2.1	**2.5**
Employment (change in %)	3.4	**3.4**	2.9	**2.9**	2.9	**3.0**	2.4	**2.6**	1.8	**2.0**
Unemployment rate (in %) (definition ADEM)	5.0	**5.0**	4.8	**4.8**	4.6	**4.6**	4.7	**4.6**	4.9	**4.8**
Eurostoxx (change in %)	-3.6	**-4.5**	7.8	**6.4**	6.8	**5.6**	5.7	**4.8**	4.8	**4.1**

Public finances

General Government

	2019		2020		2021		2022		2023	
	choc -	central	choc -	central	choc -	central	choc -	central	choc -	central
General government balance (in mio euros)	631	**632**	880	**876**	973	**1 002**	1 350	**1 449**	1 419	**1 641**
General government balance (in % of GDP)	1.0	**1.0**	1.4	**1.4**	1.4	**1.5**	1.9	**2.0**	1.9	**2.2**

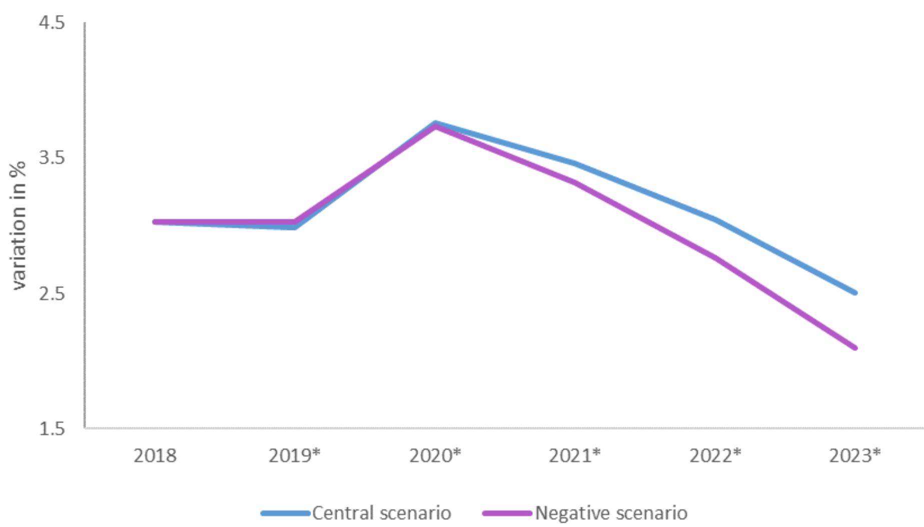
Central Government

	2019		2020		2021		2022		2023	
	choc -	central	choc -	central	choc -	central	choc -	central	choc -	central
General government balance (in mio euros)	631	**632**	880	**876**	973	**1 002**	1 350	**1 449**	1 419	**1 641**
General government balance (in % of GDP)	1.0	**1.0**	1.4	**1.4**	1.4	**1.5**	1.9	**2.0**	1.9	**2.2**

Public debt

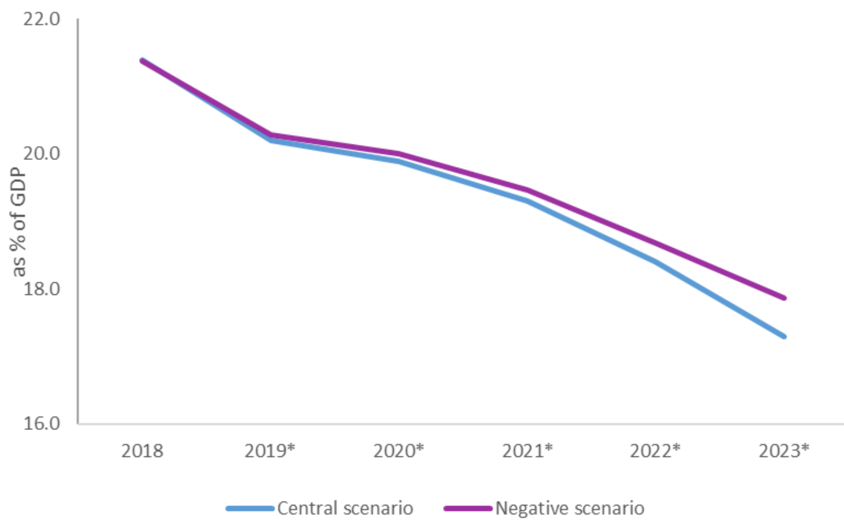
Public debt (in mio euros)	12372	**12370**	12875	**12870**	13184	**13150**	13334	**13200**	13355	**13000**
Public debt (in % of GDP)	20.3	**20.2**	20.0	**19.9**	19.5	**19.3**	18.7	**18.4**	17.9	**17.3**

Chart 16: Interest rate shock - Changes to Real GDP (year-on-year change in %)



Source : STATEC.

Chart 17: Interest rate shock – Changes to the public debt (as a % of GDP)



Source : Finance Ministry and STATEC

III.7 Comparison with the previous Stability and Growth Programme

The comparative analysis between the 19th and the 20th update of the SGP can be summarised by two principal observations:

1) In the short term, macroeconomic conditions have been revised downwards, while public finances clearly improved in 2018.
2) In the medium term, for the 2020-2022 period, macroeconomic conditions and public finances are being revised downward.

Please also refer to Chapter III.3 for remarks on the short term.

- The general Government balance improved considerably in 2018, moving from + 1.1% of GDP to + 2.6% of GDP. This move is mainly attributable to a significant increase in tax revenues, which is the result of conducive economic conditions and a larger than expected collection of direct taxes. The difference between forecasted revenues for 2018 in the 19th update of the SGP and the current figures thus amounts to €1.3 billion, while expenditures changed to a lesser extent.
- The general Government balance has been revised slightly downward for 2019, from + 1.4% of GDP to + 1.0% of GDP. This decrease is due to the high level of public investment that the Government intends to pursue through the implementation of an initial set of measures from the

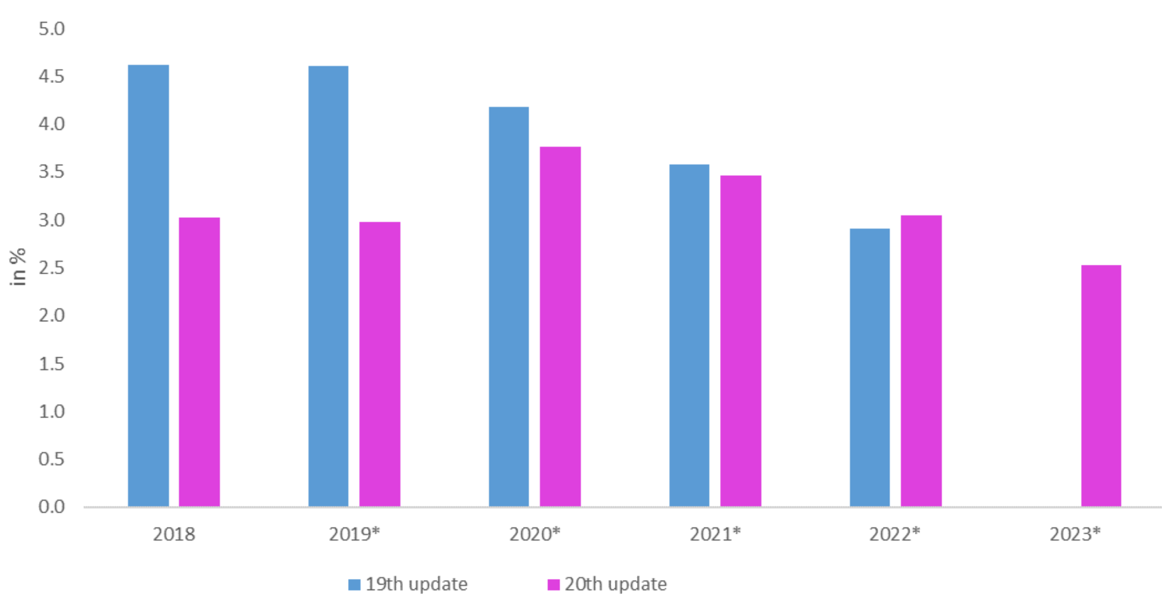
coalition agreement as well as prudent revenue projections. Indeed, the additional receipts recorded in 2018 in tax revenue have not been fully reflected as a permanent gain throughout the period under review.

- At the end of 2018, public debt amounted to €12.6 billion, i.e. 21.4% of GDP, which is a clear drop compared to the amount forecasted in the 19th update (-1.3 percentage points). The same is true for 2019, where the public debt amounts to €12.4 billion, an additional decrease of €200 million that may be explained by the repayment of SUKUK paper using existing liquidities.

Please also refer to Chapter III.4 for remarks on the medium term.

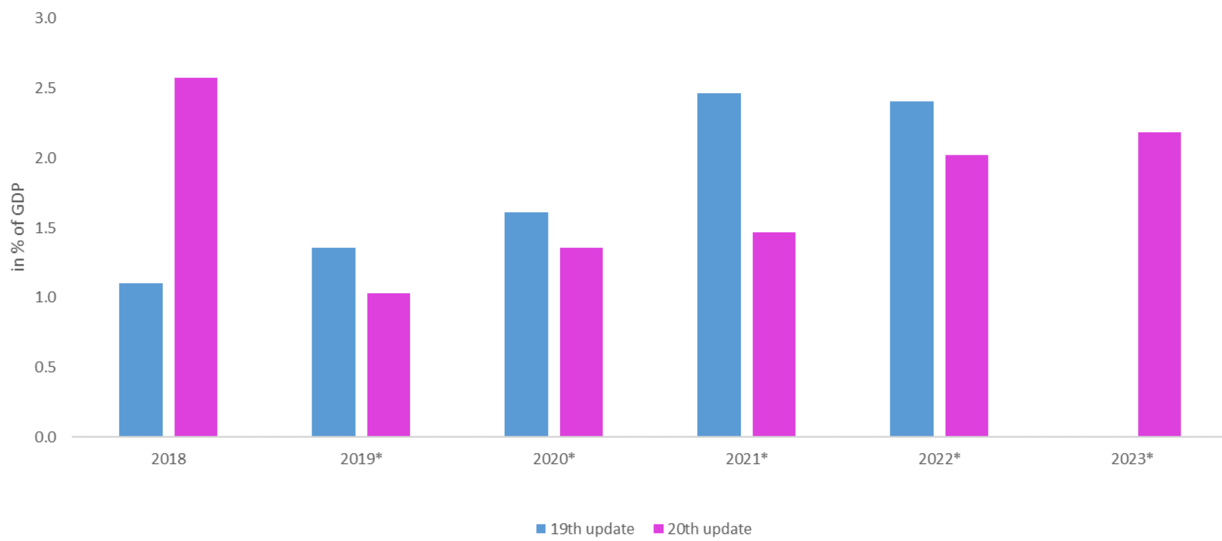
- The general Government balance is down slightly compared to the previous update of the SGP. The difference is expected to be -0.3 or -0.4 percentage points of GDP in 2020 and 2022, while dropping by one full percentage point in 2021. Maintaining a high level of public investment is one of the cornerstones of the Government programme. Public investment expenditure is revised upwards by €300 million per year for 2020 and 2022 over the last update of the SGP, which explains the weak decline in the medium term.
- Like the 19th update of the SGP, public debt will continue to fall throughout the period, amounting to 17.3% of GDP in 2023, which is the lowest level of debt in 10 years.

Chart 18: Comparison between the 19th and 20th update of the SGP - Real GDP (as a %)



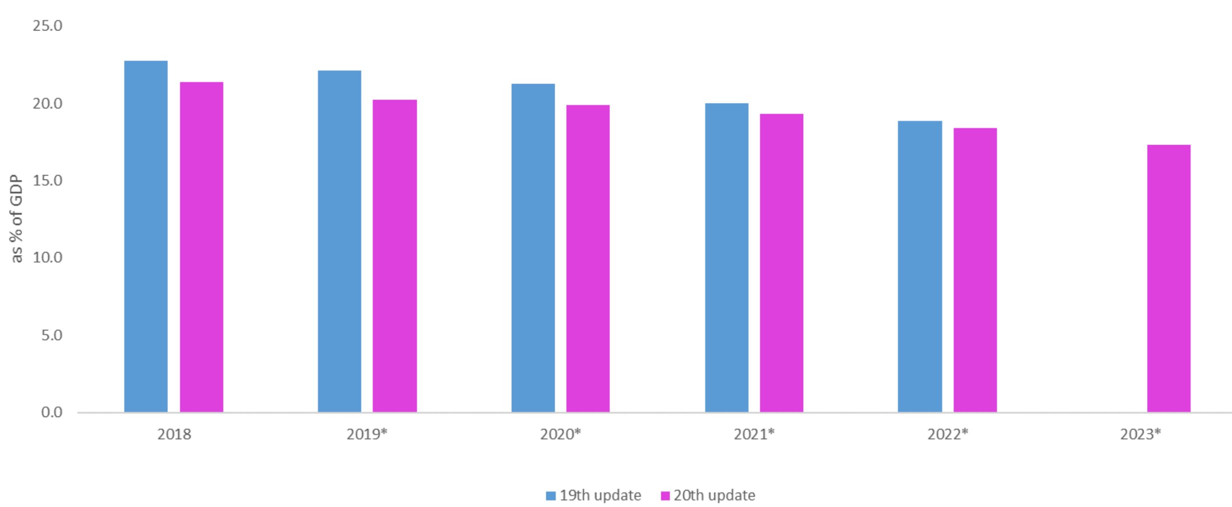
Source : Finance Ministry and STATEC

Chart 19: Comparison between the 19th and 20th update of the SGP - General Government balance (as a % of GDP)



Source : Finance Ministry and STATEC

Chart 20: Comparison between the 19th and 20th update of the SGP - Public debt (as a % of GDP)



Source : Finance Ministry and STATEC

IV. QUALITY OF PUBLIC FINANCES

With a view to sound management of public finances, the Government adopted the same budgetary objectives as under the previous legislature in its coalition agreement, namely to comply with the MTO at all times and to consistently maintain public debt below 30% of GDP throughout the legislative term.

The excellent budgetary situation that emerges from the figures of this SGP is mainly the result of the fiscal recovery efforts undertaken by the previous Government, combined with a general recovery of the economy. This sustained economic recovery has greatly contributed to renewed confidence among citizens, businesses and investors.

Although preliminary budgetary balances are a good illustration of the steady improvement in public finances, the quality of public spending is measured not only in quantitative terms, but also in qualitative terms. The Government has continuously promoted the quality of public finances.

The draft budget for 2019, as submitted on 5 March 2019, already incorporates several major aspects of the coalition agreement. One may highlight the qualitative measures, which are fully in line with the broad guidelines of the coalition agreement, namely competitiveness, sustainability and social cohesion.

On the expenditure side, these broad lines are expressed through specific measures such as: (i) an ambitious level of public investment, with particular emphasis on housing and transport infrastructure; (ii) the introduction of a €5,000 subsidy for the purchase of electric vehicles; (iii) the creation of a Ministry of Digitalisation; (iv) increased effort in favouring childhood and youth policies.

On the revenue side, the trend is characterized by the following actions: (i) an additional decrease in the corporate income tax rate; (ii) an increase of the net minimum wage of €100 via the introduction of a minimum wage tax credit; (iii) an increase in excise duties on oil products; and (iv) beginning in 2020, free public transportation on the Luxembourg territory.

The importance attached to the quality of public finances is also confirmed by a comparison with other European entities:

- Despite an ambitious public investment policy, the total level of Luxembourg's public expenditure as a percentage of GDP remains lower than at the European level, with a ratio of 43.2% in Luxembourg in 2018 compared to 46.7% in the euro zone.

- It is clear that Luxembourg is getting closer to the European average with regard to public revenue, driven by the fine performance registered in 2018. Total tax revenue amounted to 45.8% of GDP in 2018 compared to 46% on average in the euro zone.

Finally, the following observations should be made in relation to the medium-term trajectory of public finances:

- The share of public expenditure in GDP is expected to gradually decrease starting in 2019, as a result of less pronounced growth in intermediate consumption. The share of intermediate consumption will fall to 3.6% of GDP in 2023, while public investment will hover around 4.4% of GDP throughout the period.
- Due to the downward trend in public debt, financing expenditure for the debt continues to be among the lowest in the European Union. Interest expense amounted to 0.3% of GDP in 2018, which is well below the European average of 1.9% (see Chart 12).
- Government revenues will drop from 45.9% of GDP in 2018 to 45.2% of GDP in 2023, primarily because of estimates that can best be described as cautious.
- In terms of public revenues composition, direct taxes will rise from 16.8% of GDP in 2018 to 16.9% in 2023, while indirect taxes should remain stable around 11.8% of GDP over the entire period.

V. LONG-TERM SUSTAINABILITY OF PUBLIC FINANCES

Social security systems are regularly analysed to ensure their sound strategic management and long-term financial viability. It is in this spirit that the reform of the general pension scheme, which came into effect on 1 January 2013, stipulates that the General Social Security Inspectorate (IGSS) analyse the financial position of the scheme every five years. One of the aims of this reform was to align the replacement rate with life expectancy and to provide for compensating mechanisms in the event of insufficient financial resources. Consequently, the Government has taken a series of measures aimed at closing the gap between the statutory and effective retirement age of persons, including the introduction of an active policy making it easier for older employees to remain employed.

Although an analysis of the overall scheme was to be carried out in 2017, the Government decided in its programme to make an initial assessment of the impact of the reform as early as 2016. Accordingly, in April 2016, the Government agreed to establish a working group in the middle of the legislative term made up of experts from different ministries and professional chambers, who were tasked with verifying the consistency of newly introduced provisions, including the readjustment mechanism, on the basis of an actuarial opinion prepared by the IGSS.

The actuarial report of the IGSS on the financial situation of the general pension scheme was presented in December 2016 to the working group and to the press[15]. It confirms the positive effect of the mechanisms introduced in the context of the 2012 reform of the pension insurance on the long-term financial situation of the general pension scheme. Depending on the moderating coefficient of readjustment applied in the event of a deficit, the outcome of the reform process foresee a decrease in expenditure of between 2.5 and 3.8 percentage points of GDP in 2060. The report also highlights the fact that the general pension scheme is currently in a comfortable financial position. With a current account surplus of €1,071 million in 2017, the pension reserve was increased by €18.9 million at 31 December 2017, which represents 4.5 times the amount of annual benefits. However, the report stresses that it is important not to rely on the current high level of the pension fund reserve. It is a matter of taking advantage of the accumulated reserve with a view to discussing the appropriateness of corrective mechanisms in due time, both in terms of revenue and benefits.

[15] Source : http://www.mss.public.lu/publications/bilan_actuariel/bilan_technique_pensions_2016.pdf

The working group report was published on 17 July 2018[16]. The updated long-term projections confirms the validity of the main characteristics of the demographic and financial trajectories set out in the report. Consequently, the working group notes that, while it enjoys a favourable situation in the short and medium term, the general pension scheme faces potential risks in the long term. Where appropriate and in spite of the uncertainty inherent in any economic forecast, it is necessary to discuss the adjustment measures of the long-term regime with regard to actual changes in longevity, real growth in the labour market and yields from the reserves. From a global point of view, the working group stresses that any implementation of measures to modernize the pension system should consider keeping older employees in their jobs, the insurance aspects of the scheme, the safeguarding of social cohesion and the social purpose of the scheme, and the determination of benefits according to the financial resources available to the scheme.

This update of the SGP takes into account the new projections for age-related expenditure made within the 'Ageing Working Group' of the Economic Policy Committee of the ECOFIN Council, as part of the publication of the report on ageing in 2018 (Table 7). According to previous forecasts included in the 2015 ageing report, age-related expenditures were assumed to amount to 25.8% of GDP in 2060. Updating of projections now shows a rate of 28.1% of GDP in 2060 (30.9% in 2070), a relative upward revision of 2.4 percentage points, which comes mainly from pension spending, which will rise from 13.4% of GDP in 2060 to 16% of GDP in 2060.

This increase in expenditure as a percentage of GDP is the result of a revision of the demographic and macroeconomic assumptions. Indeed, the lower figures coming out of the new demographic trajectory prepared by EUROSTAT (ESSPOP2015) means lower growth in employment in the medium and long term. This, combined with more pronounced changes to productivity before 2040, generates a higher level of GDP until 2040 (when productivity effect overcompensates employment effect) but lower between 2040 and 2060 (where the employment effect is dominant).

As a result, the upward revision of ageing-related expenditure as a percentage of GDP by 2060 can be summed up as a numerator effect corresponding to the lagged effect of increased economic dynamism until 2040 on pension expenditure in 2060 and, to a lesser extent, a denominator effect corresponding to the downward revision of GDP in 2060.

[16]Source : http://www.mss.public.lu/publications/bilan_actuariel/groupe-de-travail-pensions.pdf

In addition to the reform of the general pension scheme, the other major reform implemented to ensure the sound strategic management and long-term sustainability of social security schemes concerns long-term care insurance.

Long-term care insurance is one of the fundamental pillars of the Luxembourg social security system. Established by the law of 19 June 1998 as the fifth pillar of social security, the purpose of long-term care insurance is "the payment by benefits in kind of aid and care to dependent persons, which are provided (...) within the framework of home care or aid and care establishments, as well as technical aid and aids for adapting home infrastructure for care". Today, the long-term care insurance scheme supports around 14,000 people and it was necessary to modernise in order to meet the challenges of a constantly changing population and to continue to ensure equitable access to quality services[17].

The main objectives of the reform[18], which went into effect on 1 January 2018, consist in better individualisation of the offer of quality services that meet the daily needs of each person, an improvement in quality by standards and clear criteria with adequate controls, simplification of procedures and consolidation of the system in the light of societal developments and in compliance with the fundamental principles of the 1998 Basic Law. In addition, the law provides for tools to better monitor the entire system of long-term nursing care insurance, thus allowing better anticipation of future changes. To support the rollout of the reform and to ensure the best possible follow-up, the Minister of Social Security has set up a high-level monitoring group where the main actors as well as employee and beneficiary representatives can work together. This step is part of the Luxembourg Government's efforts to involve the social partners and more broadly all stakeholders in the developing and implementing the various reforms through concerted action by all parties. The various measures of the reform and the concerted action ensure that the mechanism is better equipped to continue providing access to quality care in the future, while ensuring the financial viability of the scheme.

[17] To review the key elements of the reform, please go to: http://www.mss.public.lu/actualites/2016/07/art_ass_dep/index.html
[18] Text of the law: Law dated 12 July 2017.

VI. INSTITUTIONAL ASPECTS OF PUBLIC FINANCES

Legislative modifications

With the entry into force of the law dated 12 July 2014 on the coordination and governance of public finances[19], the legal framework governing the institutional aspects of public finances has undergone substantial changes to bring it into line with the new European requirements. This law transposed the provisions of the *TSCG*[20], the "*Six Pack*"[21] and the "*Two-Pack*"[22] measures into national law. The primary new elements introduced by the law dated July 12, 2014 are the following:

- the rule stating that the fiscal position must be in balance or in surplus;
- a medium-term objective (MTO) and a corresponding fiscal adjustment path must be set;
- a budget rule on central Government expenditure;
- a medium-term budgetary framework with four-year programming;
- a correction mechanism that will trigger with significant deviation;
- a special procedure in case the annual budget of the State cannot be adopted;
- provisions to promote the transparency of public finances[23]; and
- the institution of the "National Council of Public Finance" (CNFP) as an independent body responsible for monitoring public finances.

Involvement of stakeholders in the European Semester

Since 2016, the Government regularly and systematically involves stakeholders in the annual cycle of policy coordination known as the "European Semester". This Government initiative is motivated by the desire to improve consultations with the main stakeholders and the vital forces of the country, and hence to generally bolster the governance process of public finances in Luxembourg.

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[19] Text of the law: http://www.legilux.public.lu/leg/a/archives/2014/0122/a122.pdf#page=2 .
[20] Text of the treaty as approved by the law dated 29 March 2013: http://data.legilux.public.lu/eli/etat/leg/div/2013/04/26/n1/jo
[21] The Six Pack measures include the following legal texts: Directive No. 2011/85/EU, Regulation No. 1173/2011, Regulation No. 1174/2011, Regulation No. 1175/2011, Regulation No. 1176/2011 & Regulation No. 1177/2011.
[22] The Two Pack measures include the following legal texts: Regulation No. 472/2013 & Regulation No. 473/2013.
[23] Regarding tax expenditures in particular, implicit commitments (guarantees, etc.), and equity investments in private and public companies.

For example, a social dialogue meeting between the social partners and the Government was organised under the auspices of the Economic and Social Council (ESC) on 3 April 2019[24] to discuss Government priorities on the basis of the "Country Report Luxembourg 2019". Parliament's involvement is ensured by the presentation and debates on the NRP and the SGP at the plenary sessions of Parliament, prior to submission to the European Commission during the week of 22 April 2019.

National Economic and Financial Committee

Under the authority of the Ministers of Economy and Finance, the National Economics and Finance Committee (CEFN) is called upon to coordinate the work enabling the Government to meet its obligations under European economic and financial governance. This committee was institutionalized in 2017 to replace the former "Forecast Committee", which at the time coordinated the public entities involved in preparing economic and budgetary forecasts.

The main tasks of the CEFN are as follows:

- coordinating work on the development of the SGP, the NRP and the draft budget plan (DBP);
- coordinating the preparation of unchanged policy forecasts based on macroeconomic forecasts prepared by STATEC;
- facilitating the exchange of data and information between the competent national authorities;
- at the request of the Government, developing analyses of the potential impact of measures having a material repercussions on public finances or the economic situation.

More recently, an update of the DBP, prepared under an unchanged policy in October 2018, was transmitted to the European authorities on 5 March 2019. In addition, the CEFN has prepared a macroeconomic forecasting memo following the parliamentary elections in October 2018. This memo provided a detailed overview of developments in Luxembourg's economy and public finances with unchanged policy as well as the potential risks and uncertainties that Luxembourg could face in the short and medium term.

Reconciliation of public finance concepts following the ESA 2010 and according to the provisions of the 1999 law

[24] The 3 April 2019 social dialogue session may be consulted at the following link: https://ces.public.lu/fr/actualites/2019/semestre-europeen-2019.html

As part of the draft State Budget for 2019, several measures have been implemented in order to bring the public finances perspective closer to the different concepts currently applied, namely ESA 2010 and current accounting rules of the law dated on 8 June 1999 on the Budget, Accounting and Treasury of the State[25].

The national Budget as established annually on the basis of domestic legislation effectively differs in several aspects from the figures of the central Government established according to the ESA 2010. These differences arise principally from the fact that the central Government constitutes an entity that exceeds the scope of the State Budget and also includes the receipts and expenditures of the Government Budget in addition to the revenues and expenditures of the State's special funds, as well as those of bodies that are "controlled" or financed mainly by the State (public institutions, foundations, state services with separate management, etc.). As a result, balances are not directly comparable when using the common benchmark. In order to understand it better, the two benchmarks have been brought closer for the 2019 Budget project, whereas the “compte prévisonnel” is still presented using the former method.

Despite these substantial efforts, gaps may still remain. This is the reason that other lines of thought are also being considered for further modernising state accounting systems to improve the reading and understanding of public finance figures.

[25] Text of the law: http://legilux.public.lu/eli/etat/leg/loi/1999/06/08/n2/jo .

STATISTICAL APPENDIX

Table 1a. Macroeconomic prospects

	ESA Code	Year 2018	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023
		Level	rate of change	rate of change	rate of change	rate of change	rate of change	rate of change
1. Real GDP	B1*g	49413	3.0	3.0	3.8	3.5	3.0	2.5
2. Nominal GDP	B1*g	58791	6.3	4.1	5.8	5.3	5.2	4.6
Components of real GDP								
3. Private consumption expenditure	P.3	16282	5.0	4.3	3.6	2.6	2.3	2.0
4. Government consumption expenditure	P.3	8506	3.6	3.4	3.1	2.7	2.8	3.1
5. Gross fixed capital formation	P.51	9497	-3.8	15.7	13.6	-0.1	-2.9	-4.4
6. Changes in inventories and net acquisition of valuables (% of GDP)	P.52 + P.53		-0.1	-1.0	-1.1	-0.9	-0.4	-0.5
7. Exports of goods and services	P.6	105799	6.2	4.4	7.2	7.2	7.1	6.8
8. Imports of goods and services	P.7	92188	6.2	6.2	8.6	6.9	6.7	6.6
Contributions to real GDP growth								
9. Final domestic demand		-	1.5	5.0	4.7	1.3	0.6	0.2
10. Changes in inventories and net acquisition of valuables	P.52 + P.53	-	0.0	0.0	0.0	0.0	0.0	0.0
11. External balance of goods and services	B.11	-	1.6	-2.0	-0.9	2.2	2.5	2.3

Table 1.b Price developments

	ESA Code	Year 2018	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023
		Level	rate of change	rate of change	rate of change	rate of change	rate of change	rate of change
1. GDP deflator		1.19	3.2	1.1	1.9	1.8	2.1	2.0
2. Private consumption deflator		1.11	1.7	1.8	1.9	1.7	1.9	1.5
3a. HICP		104.21	2.0	1.1	1.8	1.5	1.7	1.7
3b. NICP		103.59	1.5	1.6	1.7	1.6	1.8	1.7
4. Public consumption deflator		1.17	2.3	2.4	2.4	1.5	1.6	2.0
5. Investment deflator		1.07	1.3	1.5	1.8	1.6	2.0	2.0
6. Export price deflator (goods and services)		1.27	2.8	1.3	3.0	3.1	3.2	3.1
7. Import price deflator (goods and services)		1.24	2.3	1.1	3.1	3.6	3.7	3.4

Table 1.c Labour market developments

	ESA Code	Year 2018	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023
		Level	rate of change	rate of change	rate of change	rate of change	rate of change	rate of change
1. Employment, persons[1]		448.8	3.7	3.4	2.9	3.0	2.6	2.0
2. Employment, hours worked (in million of hours worked)		443.7	3.8	3.1	2.6	2.7	2.2	1.7
3a. Unemployment rate (%) (harmonised definition, Eurostat)		-	5.2	4.7	4.5	4.3	4.3	4.5
3b. Unemployment rate (%) (ADEM definition)		-	5.5	5.0	4.8	4.6	4.6	4.8
4. Labour productivity, persons[2]		-	-0.7	-0.4	0.8	0.5	0.5	0.5
5. Labour productivity, hours worked[3]		-	-0.7	-0.1	1.1	0.8	0.8	0.8
6. Compensation of employees (in billion of euros)	D.1	29.4	5.4	6.2	6.6	4.8	5.3	4.7
7. Compensation per employee (in thousands of euros)		69.5	1.4	2.5	3.4	1.6	2.5	2.5

Table 1.d Sector balances

% of GDP	ESA Code	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023
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	2.6	1.0	1.4	1.5	2.0	2.2
4. Statistical discrepancy		-	-	-	-	-	-

Table 2a. General Government budgetary prospects

	ESA Code	Year 2018	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023
		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	1 514	2.6	1.0	1.4	1.5	2.0	2.2
2. Central government	S.1311	121	0.2	-1.1	-0.8	-0.7	-0.1	0.3
3. State government	S.1312	...	...	...	...	...	...	...
4. Local government	S.1313	334	0.6	0.5	0.5	0.6	0.5	0.4
5. Social security funds	S.1314	1059	1.8	1.6	1.6	1.6	1.6	1.5
General government (S13)								
6. Total revenue	TR	26 971	45.9	45.0	45.0	45.0	45.0	45.2
7. Total expenditure	TE[1]	25 456	43.3	43.9	43.6	43.5	43.0	43.0
8. Net lending/borrowing	EDP B.9	1 514	2.6	1.0	1.4	1.5	2.0	2.2
9. Interest expenditure	EDP D.41	193	0.3	0.3	0.2	0.2	0.2	0.2
10. Primary balance[2]		1 707	2.9	1.3	1.6	1.6	2.2	2.3
11. One-off and other temporary measures[3]		...	...	...	...	...	...	...
Selected components of revenue								
12. Total taxes (12=12a+12b+12c)		17 208	29.3	28.3	28.4	28.6	28.9	29.2
12a. Taxes on production and imports	D.2	7 093	12.1	11.8	11.8	11.8	11.8	11.9
12b. Current taxes on income, wealth, etc.	D.5	9 883	16.8	16.3	16.3	16.5	16.7	16.9
12c. Capital taxes	D.91	233	0.4	0.2	0.3	0.3	0.2	0.2
13. Social contributions	D.61	7 304	12.4	12.5	12.5	12.4	12.4	12.4
14. Property income	D.4	717	1.2	1.3	1.3	1.2	1.2	1.2
15. Other[4]		1 741	3.0	2.9	2.7	2.8	2.6	2.4
16=6. Total revenue	TR	26 971	45.9	45.0	45.0	45.0	45.0	45.2
p.m.: Tax burden (D.2+D.5+D.61+D.91-D.995)[5]		24 513	41.7	40.8	41.0	41.0	41.2	41.6
Selected components of expenditure								
17. Compensation of employees and intermediate consumption	D.1+P.2	7 570	12.9	13.3	13.1	12.9	12.8	12.9
17a. Compensation of employees	D.1	5 388	9.2	9.4	9.4	9.3	9.2	9.3
17b. Intermediate consumtpion	P.2	2 181	3.7	3.8	3.7	3.6	3.6	3.6
18. Social payments (18=18a+18b)		11 715	19.9	20.2	20.1	19.9	19.7	19.7
of which **Unemployment benefits**[6]		422	0.7	0.7	0.6	0.6	0.6	0.6
18a. Social transfers in kind supplied via market producers	D.6311, D.63121, D.63131	2 753	4.7	4.8	4.8	4.8	4.7	4.7
18b. Social transfers other than in kind	D.62	8 963	15.2	15.3	15.3	15.1	15.0	15.0
19=9. Interest expenditure	EDP D.41	193	0.3	0.3	0.2	0.2	0.2	0.2
20. Subsidies	D.3	744	1.3	1.2	1.2	1.1	1.1	1.1
21. Gross fixed capital formation	P.51	2 457	4.2	4.3	4.2	4.6	4.3	4.4
22. Capital transfers	D.9	569	1.0	1.2	1.3	1.3	1.3	1.3
23. Other[7]		2 155	3.7	3.5	3.5	3.6	3.6	3.5
24=7. Total expenditure	TE[1]	25 456	43.3	43.9	43.6	43.5	43.0	43.0

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

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

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

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

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

[6] Includes cash benefits (D.621 et 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 2018	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023
		Level	% of GDP	% of GDP	% of GDP	% of GDP	% of GDP	% of GDP
1. Total revenue at unchanged policies		26 971	45.9	45.0	45.1	45.2	45.2	45.4
2. Total expenditure at unchanged policies		25 456	43.3	43.5	43.2	43.0	42.5	42.5
3. Net borrowing/lending (general government)		1 514	2.6	1.5	2.0	2.2	2.7	2.9
3.a. Net borrowing/lending (central government)		121	0.2	-0.5	-0.2	0.1	0.7	1.0
3.b. Net borrowing/lending (local government)		334	0.6	0.5	0.5	0.6	0.5	0.4
3.c. Net lending/borrowing (social security funds)		1 059	1.8	1.6	1.6	1.6	1.6	1.5

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

		Year 2018	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023
		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	0.1
2. Cyclical unemployment expenditure[1]		422	0.7	0.7	0.6	0.6	0.6	0.6
3. Effect of discretionary revenue measures		119	0.2	0.4	0.1	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 2017	Year 2023
1. General public services	1	4.9	4.9
2. Defence	2	0.5	0.5
3. Public order and safety	3	1.1	1.1
4. Economic affairs	4	5.7	5.7
5. Environmental protection	5	1.0	1.0
6. Housing and community amenities	6	0.6	0.6
7. Health	7	4.9	4.9
8. Recreation, culture and religion	8	1.3	1.3
9. Education	9	4.7	4.7
10. Social protection	10	18.4	18.4
11. Total expenditure	TE	43.1	43.0

Table 4. General Government debt developments

	ESA Code	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023
1. Gross debt[1]		21.4	20.2	19.9	19.3	18.4	17.3
2. Change in gross debt ratio		-1.6	-1.2	-0.3	-0.6	-0.9	-1.1
Contributions to changes in gross debt							
3a. Primary balance[2] **(general government)**		2.9	1.3	1.6	1.6	2.2	2.3
3b. Primary balance (central government)		0.5	-0.8	-0.5	-0.5	0.1	0.4
4. Interest expenditure[3]		0.3	0.3	0.2	0.2	0.2	0.2
5. Stock-flow adjustment		-1.4	-2.2	-1.1	-1.3	-1.0	-0.8
p.m.: Implicit interest rate on debt[4]		1.5	1.2	1.2	0.9	0.9	0.9

[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 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023
1. Real GDP growth (%)		3.0	3.0	3.8	3.5	3.0	2.5
2. Net lending of general government	EDP B.9	2.6	1.0	1.4	1.5	2.0	2.2
3. Interest expenditure	EDP D.41	0.3	0.3	0.2	0.2	0.2	0.2
4. One-off and other temporary measures[1]		….	…	…	…	…	…
5. Potential GDP growth (%)		2.0	2.6	2.9	2.8	2.7	2.6
6. Output gap		-0.1	0.3	1.1	0.8	0.4	0.0
7. Cyclical budgetary component		-0.1	0.1	0.5	0.4	0.2	0.0
8. Cyclically-adjusted balance (2 - 7)		2.6	0.9	0.8	1.1	1.8	2.2
9. Cyclically-adjusted primary balance (8 + 3)		3.0	1.2	1.1	1.3	2.0	2.3
10. Structural balance		2.6	0.9	0.8	1.1	1.8	2.2

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

Table 6. Divergence from previous update

	ESA Code	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023
Real GDP growth (%)							
19th update		4.6	4.6	4.2	3.6	2.9	…
20th update		3.0	3.0	3.8	3.5	3.0	2.5
Difference		*-1.6*	*-1.6*	*-0.4*	*-0.1*	*0.1*	…
Nominal GDP growth (%)							
19th update		5.6	6.1	5.3	5.2	4.8	…
20th update		6.3	4.1	5.8	5.3	5.2	4.6
Difference		*0.7*	*-2.0*	*0.4*	*0.2*	*0.5*	…
General government net lending (% of GDP)	EDP B.9						
19th update		1.1	1.4	1.6	2.5	2.4	…
20th update		2.6	1.0	1.4	1.5	2.0	2.2
Difference		*1.5*	*-0.3*	*-0.3*	*-1.0*	*-0.4*	…
Structural balance							
19th update		1.2	1.0	1.2	2.2	2.4	
20th update		2.6	0.9	0.8	1.1	1.8	2.2
Difference		*1.5*	*-0.1*	*-0.4*	*-1.1*	*-0.6*	…
General government gross debt (% of GDP)							
19th update		22.7	22.1	21.3	20.0	18.8	…
20th update		21.4	20.2	19.9	19.3	18.4	17.3
Difference		*-1.3*	*-1.9*	*-1.3*	*-0.7*	*-0.4*	…

Table 7. Long-term sustainability of public finances

(% of GDP)	AR 2018 *)					AR 2015 **)		
	2016	2060	2060-2016	2070	2070-2016	2016 ***)	2060	2060-2016
Age-related expenditure	**18.1**	**28.1**	**10.1**	**30.9**	**12.9**	**20**	**25.8**	**5.7**
of which pension expenditure	9	16	6.9	17.9	8.9	9.9	13.4	3.5
of which health care expenditure	3.9	4.9	1	5.1	1.2	4.6	5.1	0.5
of which long-term care	1.3	3.5	2.2	4.1	2.8	1.6	3.2	1.6
of which education expenditure	3.3	3.3	0	3.4	0.1	3.2	3.5	0.3
of which unemployment expenditure	0.5	0.4	-0.1	0.4	-0.1	0.7	0.5	-0.2
Pension reserve fund ("fonds de compensation") (in billion of dollars)	*17.8*	*0*		*0*		*18.3*	*0*	
Assumptions	AR 2018 *)					AR 2015 **)		
	2016	2060	2060-2016	2070	2070-2016	2016 ***)	2060	2060-2016
Labour productivity growth	0.5	1.5	1	1.5	1	0.1	1.5	1.5
Real GDP growth	3	1.7	-1.4	1.7	-1.3	2.3	1.9	-0.3
Participation rate (males, aged 15-64)	75.2	71.8	-3.5	72.1	-3.2	75.6	73.3	-2.4
Participation rate (females, aged 15-64)	64.8	66.4	1.6	66.5	1.8	64.1	66.6	2.5
Total participation rates (aged 20-64)	70.1	69.1	-1	69.3	-0.8	70	70	0
population (in million)	0.6	1	0.4	1	0.5	0.6	1.1	0.6
Working-age population (15-64/total)	69.3	58.8	-10.5	57.2	-12.1	68.7	61.3	-7.4
Ratio non-active/active (65+/15-64)	20.6	44.6	24	48.9	28.2	20.8	35.6	14.8
Ratio elderly active/active (55-64/15-64)	16.9	21.1	4.2	20.1	3.2	16.9	19.3	2.4
Unemployment rate (15-64)	6.2	5	-1.2	5	-1.2	5.5	4.2	-1.2

Sources:
*) 2018 Ageing report (AR) baseline scenario, 2018 constant policy scenario.
**) 2015 Ageing report baseline scenario, 2015 constant policy scenario.
***) estimated values for 2016 expenditure, base year 2013.

Table 7a. Contingent liabilities

% of GDP	Year 2018
Public guarantees	6.9
of which guarantees to the financial sector [1]	6.1

Table 8. Basic assumptions

	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023
Short-term interest rate (annual average)	-0.3	-0.3	0.2	0.4	0.7	1.0
Long-term interest rate (annual average)	1.1	1.5	2.1	2.6	3.0	3.3
Exchange rate €/$ (annual average)	1.18	1.17	1.23	1.25	1.25	1.25
Nominal effective exchange rate	1.02	1.02	1.02	1.01	1.01	1.01
EU GDP growth	1.8	1.5	1.6	1.4	1.3	1.2
Growth of relevant foreign markets	2.4	3.9	3.8	3.5	3.3	3.0
Oil prices (Brent, $/baril)	71	62	66	67	69	71