INTERNATIONAL MONETARY FUND

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LUXEMBOURG

May 2016

2016 ARTICLE IV CONSULTATION—PRESS RELEASE; STAFF REPORT; INFORMATIONAL ANNEX; AND STATEMENT BY THE EXECUTIVE DIRECTOR FOR LUXEMBOURG

Under Article IV of the IMF's Articles of Agreement, the IMF holds bilateral discussions with members, usually every year. In the context of the 2016 Article IV consultation with Luxembourg, the following documents have been released and are included in this package:

- A **Press Release** summarizing the views of the Executive Board as expressed during its May 6, 2016 consideration of the staff report that concluded the Article IV consultation with Luxembourg.
- The **Staff Report** prepared by a staff team of the IMF for the Executive Board's consideration on May 6, 2016, following discussions that ended on March 1, 2016, with the officials of Luxembourg on economic developments and policies. Based on information available at the time of these discussions, the staff report was completed on April 20, 2016.
- An **Informational Annex** prepared by the IMF staff.
- A **Staff Supplement** updating information on recent developments.
- A **Statement by the Executive Director** for Luxembourg.

The documents listed below have been or will be separately released.

Selected Issues

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International Monetary Fund

INTERNATIONAL MONETARY FUND

COMMUNICATIONS DEPARTMENT

Press Release No. 16/216
FOR IMMEDIATE RELEASE
May 16, 2016

International Monetary Fund
700 19th Street, NW
Washington, D. C. 20431 USA

IMF Executive Board Concludes 2016 Article IV Consultation with Luxembourg

On May 6, 2016, the Executive Board of the International Monetary Fund (IMF) concluded the Article IV consultation with Luxembourg.[1]

Luxembourg's various competitive advantages of fiscal stability, a qualified workforce, prudent financial oversight, and business friendly regulations, have delivered strong growth and an expanding financial sector intermediating ever increasing flows. Economic growth reached 4.8 percent in 2015, well above the EU average, and was driven by net exports of financial services also benefiting from the world's major central banks' quantitative easing. Growth is projected at 3.5 percent this year, with continued strong job creation and subdued inflation.

In 2015, buoyant tax revenues due to higher-than-expected economic activity contributed to a fiscal surplus of 1 percent of GDP. The tax reform proposal tabled in 2016 contains a significant reduction in personal taxation and also in corporate income taxes starting in 2017. The measures are expected to result in a broadly balanced fiscal position over the medium-term.

Growth prospects are subject to downside risks, including from weakening international activity. Financial market stress could affect Luxembourg's performance. Implementation of the international tax transparency agenda, which Luxembourg has embraced, could weigh on economic activity and tax revenue.

[1] Under Article IV of the IMF's Articles of Agreement, the IMF holds bilateral discussions with members, usually every year. A staff team visits the country, collects economic and financial information, and discusses with officials the country's economic developments and policies. On return to headquarters, the staff prepares a report, which forms the basis for discussion by the Executive Board.

Executive Board Assessment[2]

Executive Directors commended the authorities for their prudent policies and sound institutions, which have underpinned the country's continued strong macroeconomic performance. Directors considered that growth prospects remain strong, although are subject to downside risks related to clouded global prospects, potential market volatility, and changing international tax rules. Against this backdrop, continued strong efforts are needed to tackle key challenges related to the oversight of the financial system, adapt the tax regime to the changing international environment, and implement structural reforms to diversify the economy and boost competitiveness.

Directors encouraged the authorities to further strengthen oversight of the financial system and to maximize the benefits from the Banking Union. They welcomed the authorities' commitment to continue to advocate for better oversight at the European level of nonbank holding companies that include banks and aim to improve risk monitoring. Given rising global risks, Directors stressed the importance of continued strong oversight of investment funds, and recommended that linkages between investment funds and banks be closely analyzed and monitored, including at the European level. Directors advised continued close monitoring of risks in the real estate market. They also encouraged an increase in the capital of the central bank to bolster its financial buffer.

Directors praised the authorities' ongoing commitment to prudent fiscal policies. They endorsed the targeting of a broadly balanced fiscal position and of low public debt over the medium term. Directors recommended deeper pension reforms to ensure the long term viability of the system. Directors welcomed the authorities' proactive engagement with the European and global tax transparency initiatives, and highlighted that the ongoing tax reform is an opportunity to broaden the corporate tax base and close loopholes contributing to tax avoidance. Directors considered that contingency measures should be put in place to address any revenue risks that

[2] At the conclusion of the discussion, the Managing Director, as Chairman of the Board, summarizes the views of Executive Directors, and this summary is transmitted to the country's authorities. An explanation of any qualifiers used in summings up can be found here: http://www.imf.org/external/np/sec/misc/qualifiers.htm.

may arise from weakening international activity, implementation of the international tax transparency agenda, and stress in financial markets.
Directors welcomed the authorities' efforts to diversify and expand activity beyond the financial sector to enhance the resilience of the economy. They concurred that additional measures are needed to reduce inactivity traps, ensure wages' alignment with productivity, and ease supply side constraints in the real estate market.

Directors praised the authorities for their policies to cope with elevated refugee inflows, and welcomed their integration strategy.

Luxembourg: Selected Economic Indicators

	2011	2012	2013	2014	2015	2016
					Est.	Proj.
Real economy	(Change in percent unless otherwise indicated)					
Real GDP	2.6	-0.8	4.3	4.1	4.8	3.6
Gross investment	16.2	-2.1	-3.0	10.0	5.8	4.2
Unemployment (percent of the labor force)	5.7	6.1	6.9	7.1	6.9	6.4
Resident employment (thousands)	223.9	229.3	233.4	238.4	242.8	247.8
Total employment (thousands)	370.1	379.0	385.5	395.6	405.7	416.0
CPI (harmonized), p.a.	3.7	2.9	1.7	0.7	0.1	0.5
Public finances	(Percent of GDP)					
General government revenues	43.8	44.7	44.0	43.8	42.9	42.8
General government expenditures	43.3	44.6	43.3	42.4	41.9	41.8
General government balance	0.5	0.2	0.7	1.4	1.0	0.9
General government gross debt	19.1	22.0	23.3	22.9	21.6	22.6
Balance of payments						
Current account balance	6.2	6.1	5.7	5.5	5.5	5.4
Balance of trade in goods and services	27.6	31.1	32.9	34.0	35.5	36.0
Factor income balance	-21.6	-24.5	-28.0	-29.3	-30.6	-31.2
Transfer balance	0.2	-0.5	0.8	0.8	0.6	0.6
Exchange rates	Member of the euro area					
U.S. dollar per euro	1.4	1.3	1.3	1.3	1.1	…
Nominal effective rate (2010=100)	100.5	98.1	100.2	100.5	97.0	…

Sources: Data provided by the authorities; IMF, WEO database; and IMF staff estimates.

INTERNATIONAL MONETARY FUND

LUXEMBOURG

STAFF REPORT FOR THE 2016 ARTICLE IV CONSULTATION

April 20, 2016

KEY ISSUES

Growth prospects remain strong but are subject to downside risks. The financial sector has been boosting Luxembourg's economic growth well above the EU average by intermediating ever increasing financial flows. However, clouded global prospects and market volatility as well as changing international tax rules weigh on the economic outlook.

Luxembourg needs to tackle specific prudential challenges, given the structure of its financial system. The Banking Union is particularly beneficial to Luxembourg's banking system. The authorities should advocate at the European level to undertake analysis and risk monitoring of linkages between banks and investment funds, which are an important trait of Luxembourg's financial system. While the EU framework of investment fund regulation is solid, risk monitoring and supervision must continue to evolve. Financial sector risks need to be monitored closely and, where necessary, Luxembourg should advocate appropriate international regulation.

The authorities should carry on the prudent policies that made Luxembourg's fiscal position one of the strongest in the EU. While targeting a small fiscal surplus, they should adapt the tax regime to the changing international environment and ensure the long-term viability of the pension system.

Luxembourg is well equipped to cope with the refugee influx. Asylum seekers are enrolled into language classes and other training programs. In addition, it would be helpful to extend to them the programs designed for the long-term unemployed and focus the ambitious economic diversification efforts on creating local lower-skill jobs.

Approved By
Jörg Decressin (EUR) and Mary Goodman (SPR)

Discussions took place in Luxembourg during February 17–March 1, 2016. The team comprised Messrs. E. De Vrijer (head), M. Gorbanyov, F. Painchaud, and T. Tressel, assisted from headquarters by Mr. D. Mason and Ms. A. Valladares (all EUR). Ms. A. Hubic (OED) joined the discussions.

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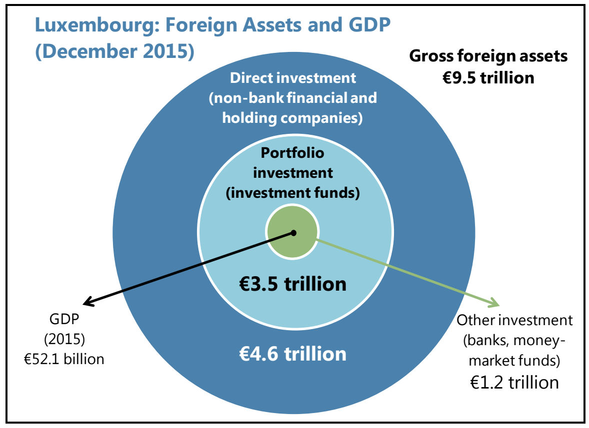
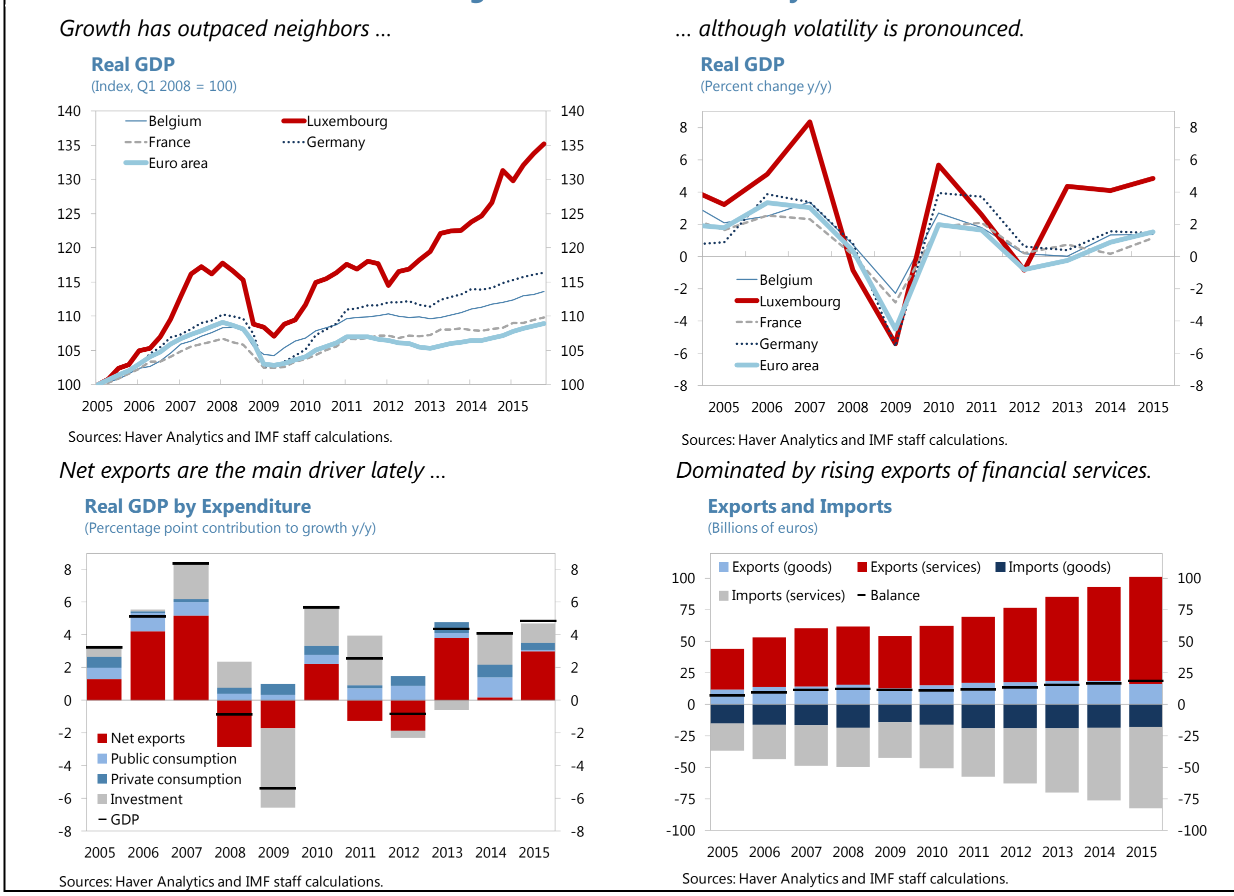
BACKGROUND AND RECENT DEVELOPMENTS



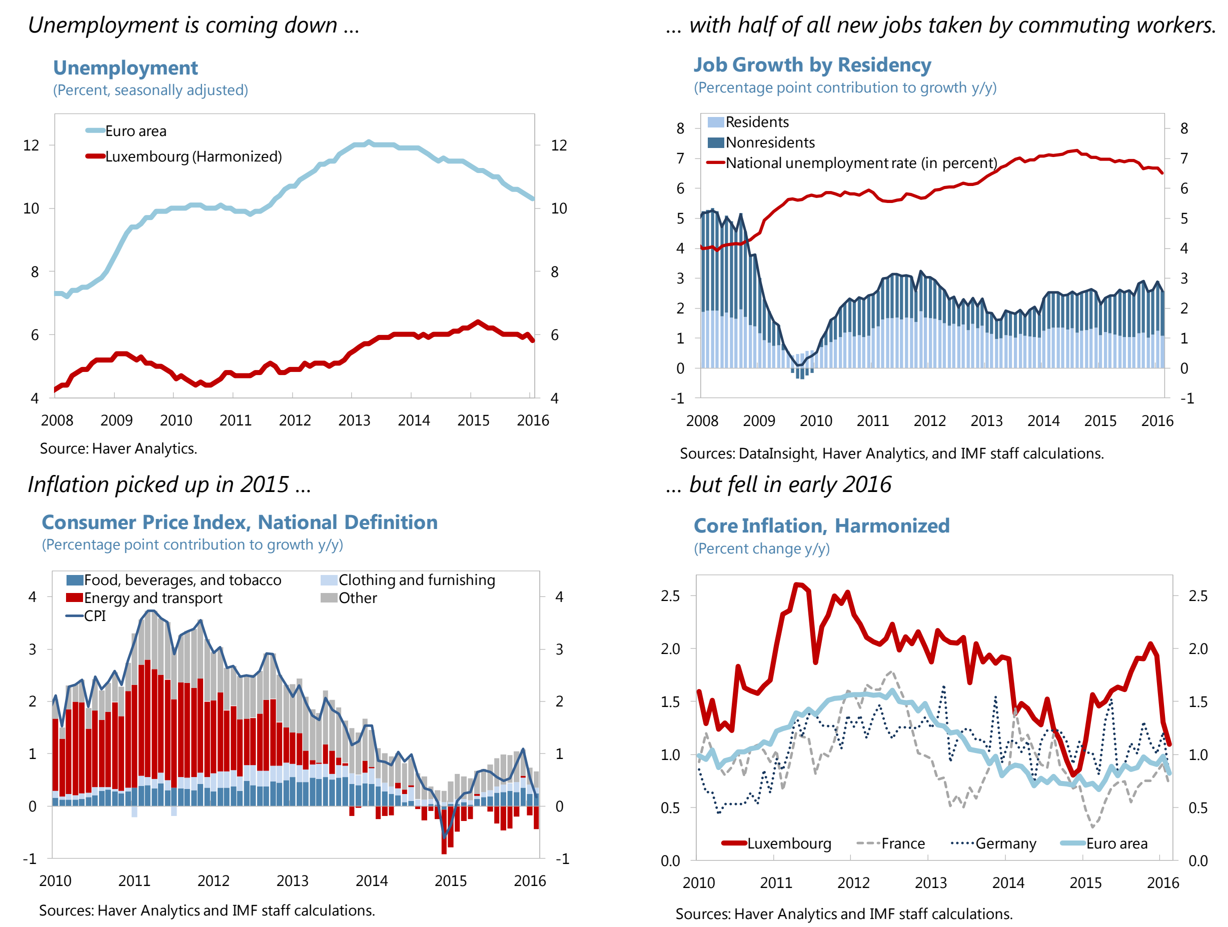
1. **Luxembourg's small open economy plays a pivotal role in intermediating global capital flows.** Deep-rooted traditions of fiscal prudence, business-friendly regulation, a skilled labor force, and low and predictable taxes have made Luxembourg a global financial center, home of multinational companies, and one of the richest countries in the EU. This has positioned the country to benefit from the surge in global financial assets induced by quantitative easing (QE) by the world's major central banks, search for yield, and safe haven flows. During 2015, gross international assets of the country increased by €1.1 trillion to €9.5 trillion (180 times GDP). Its large financial sector directly contributes ¼ of GDP, 18 percent of budget revenues, and 11 percent of employment.

Figure 1. Economic Activity



2. Economic performance in 2015 once again surprised on the upside. Despite the 2 percent VAT hike that frontloaded private consumption to 2014 and—together with other fiscal consolidation measures—depressed it in 2015, strong investments and net exports fuelled by financial services propelled GDP growth to an estimated 4.8 percent. Meanwhile, the current account surplus was steady at about 5½ percent of GDP in 2015, with a decline in merchanting activities offset by an increase in the services balance. Strong economic performance and active labor market policies have helped reduce the unemployment rate to 6½ percent by early 2016. After picking up in the second half of 2015, headline inflation dipped again to near zero early this year, in line with euro area trends.

Figure 2. Unemployment, Employment, and Inflation



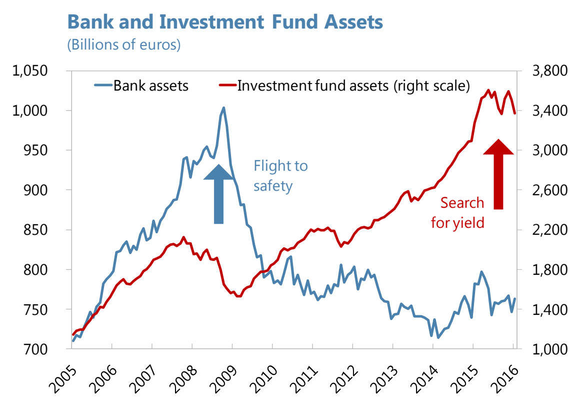
3. The financial sector continues to expand. Luxembourg's mostly outward oriented financial system has developed into the leading private banking center in the eurozone, a central location of banks providing intra-group liquidity management, and the second largest investment fund industry in the world after the U.S.

- *Banking system*. Nearly all 144 banks located in Luxembourg are foreign-owned and service international cash management, custodian and specialized financial operations. Only five banks are domestically owned and government ownership is significant in three of these. The banking system has a very high average capital adequacy ratio (CAR) of nearly 20 percent and very low non-performing loans. After peaking during the global financial crisis, total bank assets have fluctuated around €770 billion, reflecting cross-border intra-group liquidity services provided by Luxembourg's banks. Since Luxembourg began sharing data on deposits in 2015, according to the EU Savings Directive, small retail deposits from neighboring countries have been increasingly replaced with larger inlays of high net worth individuals.

- *Funds industry*. Since end-2008, about 20 percent (or €1.2 trillion) of all new net inflows into investments funds worldwide came to Luxembourg funds. Benefiting from major central banks' QE, assets under management (AUM) in the funds industry jumped 28 percent y/y to €3.6 trillion in May 2015, but have stagnated since then amid global markets' volatility. Reflecting a search for yield, net inflows in funds reached €298 billion in 2015, which accounted for 72 percent of the increase in AUM for the year. Income of local depository banks and of other providers of ancillary services benefited from the rising AUM. In the year to September 2015, bank fee income increased by 3 percent y/y while net interest margins stagnated. Tax receipts also benefited directly and indirectly from the strong performance of funds.

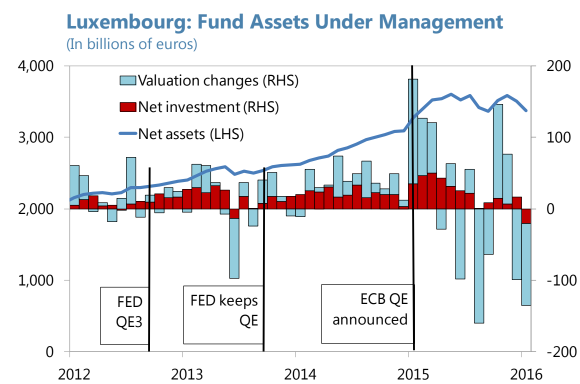
Figure 3. Financial Sector Developments

Bank assets have fallen while fund assets have grown …



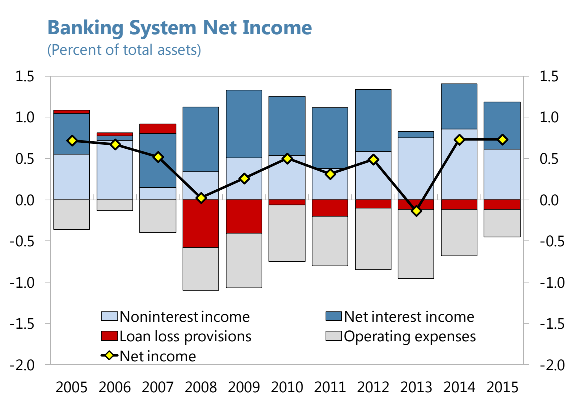
Source: BCL.

… the latter boosted by QE and search for yield.



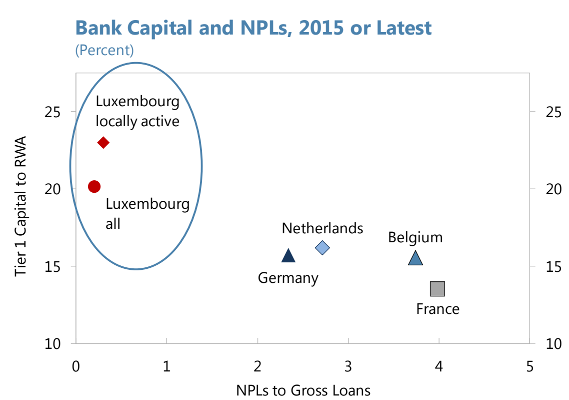
Source: Luxembourg authorities.

Fund management likely has lifted banks' net income …



Sources: CSSF and IMF staff calculations.

… and banks report strong capital and asset quality



Sources: BCL and IMF Financial Soundness Indicators.

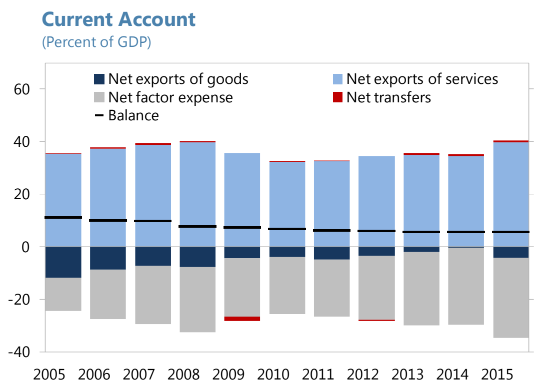
4. **Luxembourg's fiscal position is among the strongest in the EU.** The estimated fiscal surplus of 1 percent of GDP in 2015 was the highest in the EU, and gross public debt of 21.6 percent of GDP is the second-lowest. This compares favorably to the average debt-to-GDP ratio in other financial centers (65–70 percent of GDP) and to countries with an AAA rating from at least 2 agencies (62 percent of GDP). Moreover, the public sector's assets by far exceed its liabilities resulting in a positive public net wealth of 43 percent of GDP at the end of 2015:Q3.

5. **Luxembourg's provision of advance tax rulings to some multinational companies is being challenged by the European Commission (EC)**. The EC has decided that the advance tax ruling of Fiat involved improper state aid. The authorities disagreed with the EC decision and appealed it in court. Meanwhile, the EC is investigating the much larger tax rulings of Amazon and MacDonald's (Appendix I).

6. **Luxembourg has supported the tax transparency agenda during its EU Presidency in the second half of 2015.** It participated in the OECD/G20 Base Erosion and Profit Shifting (BEPS) project and committed to join the EU-wide automatic exchange of advance tax rulings effective from 2017. Recognizing the progress, the OECD Global Forum on tax transparency removed Luxembourg from its list of non-compliant countries in October.

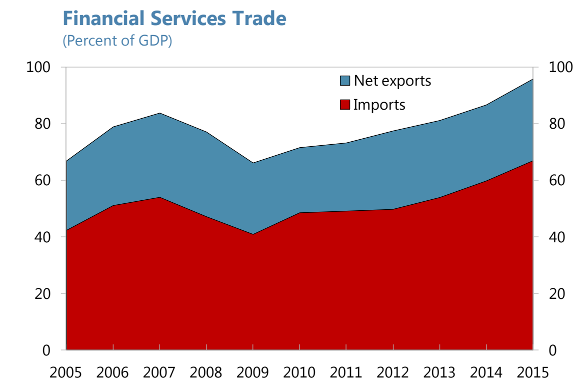
Figure 4. External Sector Developments

The current account surplus has remained stable …



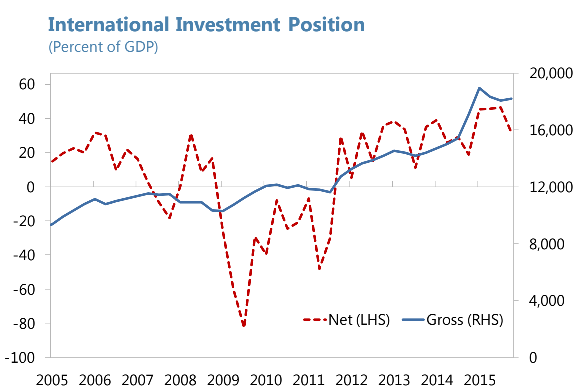
Sources: Haver Analytics and IMF staff calculations.

… while net exports of financial services have remained strongly positive.



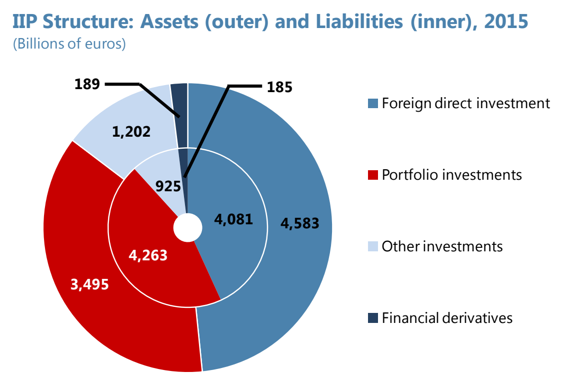
Source: BCL.

Massive gross IIP position dwarfs net assets …



Sources: Haver Analytics and IMF staff calculations.

… reflecting large FDI and portfolio investment claims.



Sources: Haver Analytics and IMF staff calculations.

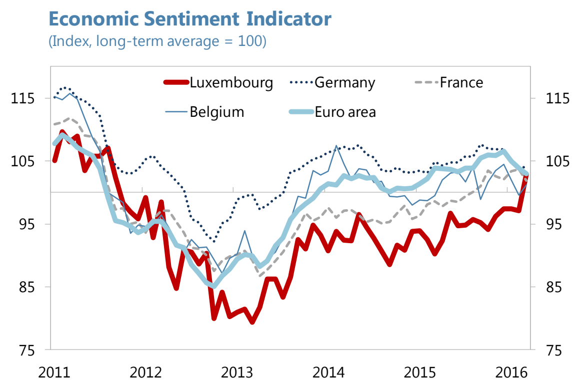
7. The country is coping well with the refugee influx. From September 2015, asylum applications have increased about threefold year-on-year. Building on past experience, the authorities accommodate families with children who are considered easier to integrate over time. To enroll refugees in schools, training programs, and language classes, the authorities called on retired teachers to return to work.

OUTLOOK AND RISKS

8. Growth is expected to remain solid over the medium term, underpinned by robust domestic demand and net exports. GDP growth should ease to about 3½ percent in 2016 and to its long-term trend of 3 percent thereafter. Strong contribution of net exports of services to growth over the medium term reflects Luxembourg's role as financial hub. Improving domestic sentiments will sustain a rebound in private consumption from the low base of 2015. From 2017, domestic demand should get a boost from planned personal income tax cuts. Despite solid growth and the encouraging drop in the unemployment rate in 2015, skills mismatches, inactivity traps, and refugees entering the labor market will likely keep unemployment at about 6 percent over the medium term. With the expected resumption of wage indexation next year, inflation is projected to pick up to 1.3 percent in 2017, and reach around 2 percent over the medium term.

Figure 5. Growth Projections and Domestic Sentiment

Domestic sentiment, while improving, remains below the long-run average …



Source: Haver Analytics.

… and Luxembourg's performance is likely to remain bounded by euro area and global growth.

Source: IMF staff calculations.

Luxembourg: Baseline Macroeconomic Framework, 2013–21									
	2013	2014	2015	2016	2017	2018	2019	2020	2021
			Projections						
Real GDP (percent change)	4.3	4.1	4.8	3.6	3.3	3.2	3.1	3.0	3.0
Domestic demand (percentage pt. contribution to growth)	0.4	3.9	1.7	2.1	2.4	2.2	2.0	1.9	1.9
Net exports (percentage pt. contribution to growth)	3.8	0.1	3.0	1.8	0.9	1.0	1.1	1.0	1.0
CPI inflation (percent change)	1.7	0.7	0.1	0.5	1.3	1.6	1.7	1.9	2.1
General government balance (percent of GDP)	0.7	1.4	1.0	0.9	0.1	0.1	0.1	0.1	0.1
General government gross debt (percent of GDP)	23.3	22.9	21.6	22.6	22.9	23.1	23.1	23.2	23.1
Unemployment rate (percent, national definition)	6.9	7.1	6.9	6.4	6.3	6.2	6.2	6.1	6.0
Current account balance (percent of GDP)	5.7	5.5	5.5	5.4	5.3	5.2	5.1	5.0	5.0
Nonfinancial private sector credit (eop, percent change)	6.4	4.9	15.7	7.7	5.0	3.8	3.4	2.8	2.8

Source: Staff estimates.

9. **Luxembourg's external position is projected to remain strong and broadly in line with medium-term fundamentals.** The current account surplus is expected to hover around 5 percent of GDP over the medium term, supported by a large surplus in services partially offset by net income payments and a negative balance on goods. The financial account will feature very large gross flows due to Luxembourg's position as a financial center. Given the projected current account surpluses, Luxembourg's positive net international investment position is expected to gradually increase over the medium term. The External Balance Assessment (EBA-lite) approaches indicate that Luxembourg's external position is broadly consistent with its fundamentals. Its REER appears slightly overvalued and the current account is relatively close to its norm (Appendix III).

10. **The medium-term outlook depends on Luxembourg's adjustment to the tax transparency challenges.** EC probes into the advance tax rulings and other EU and international tax transparency initiatives can undermine Luxembourg's tax advantages and prompt transnational companies to relocate. If these risks were to materialize, they could affect both the country's growth prospects and fiscal revenues. However, creating a taxation level playing field could ultimately benefit Luxembourg by accentuating other competitive advantages, such as its AAA ratings from all three major rating agencies, political stability, prudent fiscal stance, business friendly environment, and qualified multilingual labor force.

11. **Financial market stress could affect Luxembourg's performance.** In case of severe external shocks, unraveling financial exposures—including between banks and the funds industry—could prompt dislocations in markets or institutions beyond the scope of the national authorities. A re-assessment of the outlook or a re-evaluation of risks in global asset markets could lead to a sharp adjustment of asset prices and a decompression of credit spreads adversely affecting Luxembourg's investment funds and banking system, which would be conduits of these spillovers across asset classes and countries. The impact on the banking system could be mitigated if Luxembourg becomes the recipient of safe havens inflows, but banks, funds management companies and providers of ancillary services would likely experience a decline of taxable income. Despite the new EU resolution framework, there remains a tail risk that banking sector difficulties would force the national authorities to step in with a bail-out of domestic banks. However, these risks do not

outweigh the benefits of the ongoing capital markets integration and banking union in the EU, which are crucial to Luxembourg's success as a European financial hub.

12. Other risks include weaker-than-expected growth in the euro area, Brexit, and another surge of refugees. Luxembourg's business model relies on continued integration within the European Union, especially for its expanding financial sector, which is subject to uncertainty due to the UK's EU membership referendum. More generally, Luxembourg also remains vulnerable to lower-than-expected growth in Europe. This highlights the need for Luxembourg to diversify its services exports away from Europe and boost competitiveness, especially of non-financial sectors. In addition, another surge in refugee arrivals could put strain on Luxembourg's capacity to accommodate and integrate them.

13. Banks' exposure to the real estate market is a risk to watch closely. Rising house prices largely reflect strong demand outstripping supply, partly because of supply bottlenecks and zoning regulations. For the handful of banks that lend domestically, mortgage loans amount to €23 billion at end-October 2015, or about 45 percent of GDP. To discourage banks from providing risky loans, in 2013 the *Commission de Surveillance du Secteur Financier* (CSSF) raised the capital provision requirements from the regular 35 percent to 75 percent for new mortgage loans with a loan-to-value ratio above 80 percent. Since 2008, household debt has risen by 10 percent of GDP, but remains moderate at 59 percent of GDP.

14. *The authorities projected higher economic growth than staff and viewed risks to the outlook as broadly balanced over the medium term.* *They concurred that growth would converge to its trend rate of about 3 percent over the long run, but projected that the expanding financial sector and stronger EU activity would sustain it at around 4 percent in 2016–19. Also, the authorities agreed with staff that Luxembourg's external position is broadly in line with fundamentals. They believed that their proactive implementation of the tax transparency measures—including those spearheaded by Luxembourg during its EU presidency in the second half of 2015—would mitigate the potential downside risks as more and more jurisdictions worldwide are joining the efforts to level the international taxation playing field. Moreover, the pressures to align taxes with economic activity would motivate some companies to increase their presence in the country, while the elimination of aggressive tax regimes in all countries would accentuate Luxembourg's many other competitive advantages, such as its triple-AAA rating. While the integration of financial sector oversight in the Banking Union is strengthening the resilience of the banking system, the authorities considered that the existing risk management framework, as well as the diversified investor base and asset composition of investment funds would help buffer the impact of financial market volatility on Luxembourg.*

POLICY DISCUSSIONS

A. Financial Sector Policies

15. **The European Banking Union and EU financial regulations frameworks are particularly positive for Luxembourg.** Given the dominant presence of foreign banks with cross-border activities, the Single Supervisory Mechanism (SSM) is an improvement in supervision, reducing home-host hurdles for cross-border banks, and can establish a consistently high level of oversight. The authorities should take advantage of the SSM to advocate for better oversight at the European level of nonbank holding companies that include banks and should take pro-active steps to improve risk monitoring. The Single Resolution Mechanism (SRM) can ensure swift intervention ahead of insolvency, with pooled financial support from the industry in the Single Resolution Fund (SRF). The European Deposit Insurance Scheme recently proposed by the European Commission would complete the Banking Union. Luxembourg's investment fund industry enjoys EU passports under the regulatory norms in the Undertakings for the Collective Investment in Transferable Securities (UCITS) Directives and the Alternative Investment Fund Managers (AIFM) Directive; these allow offering investment funds across EU countries while supervision is in the competency of the CSSF. The significant enlargement of the resources of the CSSF in recent years is welcome and its capacity should be commensurate with the increasing size and complexity of the financial sector.

16. **Ensuring steady deepening of interagency collaboration in the context of the SSM and of the SRM is key.** As 72 percent of bank assets in Luxembourg fall under the supervision of the ECB, the timely flow of information on micro-prudential risks, where the CSSF has primary access to supervisory information, is a critical element of the system. The CSSF participates in on- and off-site supervision of Significant Institutions as part of the joint supervisory teams (JSTs) and contributes to the development of ECB supervisory policies. JSTs also advise on waivers to the large exposure limit and national Liquidity Coverage Ratios (LCR). Such waivers should be granted only under strict criteria and deep analysis. The CSSF also contributes to the development of the ECB supervisory approach to be applied by National Competent Authorities (NCAs) in the context of Less Significant Institutions (LSIs). Regarding the SRM, the CSSF together with the Single Resolution Board initiated in 2015 the drafting of transitional resolution plans in relation to a first batch of priority institutions. The CSSF also transferred in January 2016 the ex-ante contributions collected in 2015 to the newly established SRF. For eight years, banks will be making contributions to the SRF reaching in total at least 1 percent of covered deposits.

17. **Luxembourg is implementing EU banking union directives recently transposed in national laws.** The law transposing the Fourth Capital Requirements Directive (CRDIV) was adopted in July 2015. Luxembourg's banking supervisor has raised capital buffers for systemically important banks by an extra 0.5–1 percent by January 2019 and introduced countercyclical capital buffers, initially with zero values. The new liquidity ratio of Basel III has forced some banks to use BCL's deposit facility to meet the LCR. To comply with LCR requirements, banks that upstream liquidity to their parent will have to develop rigorous liquidity management infrastructures. The law transposing

the Bank Recovery and Resolution Directive (BRRD) and the Deposit Guarantee Schemes Directive (DGSD) passed Parliament in December 2015, completing the implementation of the Single Rule Book in Luxembourg.

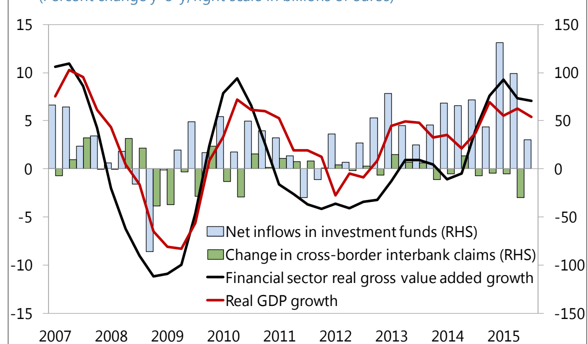
18. The high interconnections of Luxembourg's financial system with the rest of the world make it a recipient and conduit of global financial volatility (Selected Issues Paper, Chapter 1):

- *Investment funds may propagate shocks across assets when rebalancing portfolios.* They enjoy a diversified investor base (75 percent from Europe), and have global exposures to debt securities and equity across many advanced and emerging countries with the euro area accounting for 35 percent of these exposures, the U.S. 26 percent, and emerging markets 13 percent. They are linked to banks in Luxembourg, which have cross-border and foreign currency interbank claims accounting for 54 percent of total banking assets at mid-2015; 60 percent of these claims are intra-group claims.[1]

- *Volatility in financial markets would affect the domestic economy through investment funds.* Volatility of real GDP growth is highly correlated with the volatility of investment fund assets' growth, which in turn fluctuates with global market developments. Fiscal revenues from the financial sector—overall accounting for about 8 percent of GDP in 2014—would also be affected by market fluctuations.[2]

Financial Sector Flows and Value Added Growth

(Percent change y-o-y; right scale in billions of euros)



Sources: BCL, Haver Analytics, and BIS.

19. Globally, the investment fund industry is subject to increasing risks:

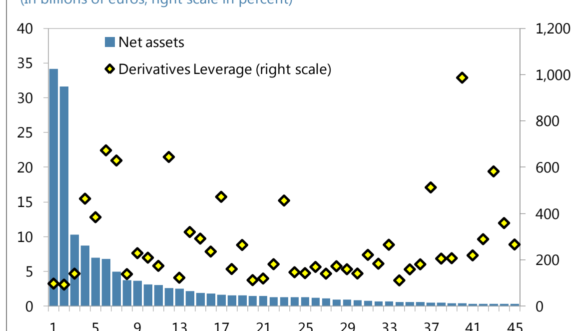
- *Credit risk.* As a result of a search for yields, exposures have shifted to more risky and less liquid assets. Exposure of Luxembourg funds to corporate bonds had risen from €141 billion (or 29 percent of total bond investments) at the end of 2008 to €648 billion (or 45 percent of total bond investments) in October 2015.

- *Counterparty risk.* Such risks could occur for instance in the securities lending activities of funds, and in repos, and derivatives.

- *Market risk.* A shock could occur as investors reassess rich valuations in one or several countries or asset classes (such as high yield corporate bonds). The growing use of derivative

Sample of Luxembourg Funds with Leverage > 100 Percent

(In billions of euros; right scale in percent)



Sources: Bloomberg and IMF Staff estimates.

[1] Selected Issues Paper, Chapter 1 provides an analysis of how investment funds can propagate shocks across countries and asset classes.

[2] Selected Issues Paper, Chapter 1 analyzes the transmission of shocks to the Luxembourg real economy.

leverage increases sensitivity to market movements, such as those resulting from interest rate shifts.

- *Redemption risk.* High asset valuations, the large cash pools of corporations invested in recent years, and first-mover advantages increase the likelihood of sudden runs on investment funds. Experience from the global financial crisis and of the 2011–12 euro area crisis shows that gross and net redemptions can be large.

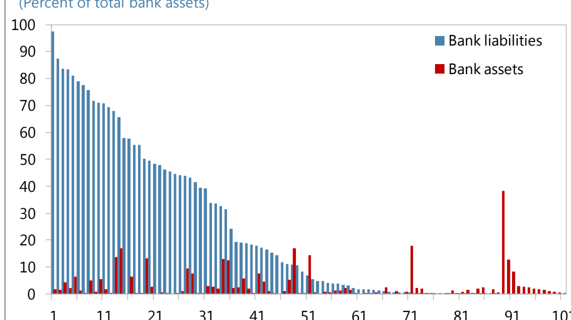
- *Liquidity risk.* Some funds may be less liquid than redemption terms and conditions, further exacerbating susceptibility to runs. To protect fund value, asset managers could first sell risky assets, potentially aggravating the market impact especially in less liquid markets. Cash holdings would initially increase in the portfolio of investment funds for precautionary reasons, but would decline if redemptions are sustained over time. Investors could also reallocate from more risky to less risky investment funds.

- *As asset prices increasingly move in unison, benefits of diversification dwindle.* If a shock becomes severe, fire sales affecting one market or asset class could spread to other countries or assets.[3] In such circumstances, global factors can drive the returns of diverse funds, and common responses of asset managers across countries and asset classes can offset the benefits of portfolio diversification.

20. Shocks can be transmitted from the investment fund industry to banks (Box 1). While investors bear the risks of investment funds, shocks affecting the investment fund industry could be transmitted to the banking system through various links, and impact Luxembourg as activity in the financial sector declines. On the other hand, the banking system, where contingent liabilities of the vast majority of (foreign-owned) banks would be the responsibility of their home country, might also benefit from safe haven flows.

- *Direct exposures to banks.* Luxembourg's investment funds hold claims on domestic and foreign banks via bond and stock holdings, derivative exposures, loans, and deposits. These overall exposures amounted to €821 billion in 2015:Q3, 73 percent of which outside Luxembourg. Domestically, investment funds hold substantial claims on banks such as deposits and derivative instruments. Deposits are concentrated among depository banks, and are channeled to the parent or to other banks. Sudden and sustained redemptions from investors could trigger a sell-off of bank securities or a withdrawal of deposits to avoid selling-off less liquid assets, with potentially adverse impacts on the banking system. On the other hand, bank deposits could increase as asset managers

Individual Luxembourg Bank Exposures to Investment Funds and Money Market Funds
(Percent of total bank assets)



Source: BCL.

[3] Global Financial Stability Report, Chapter 1, October 2015.

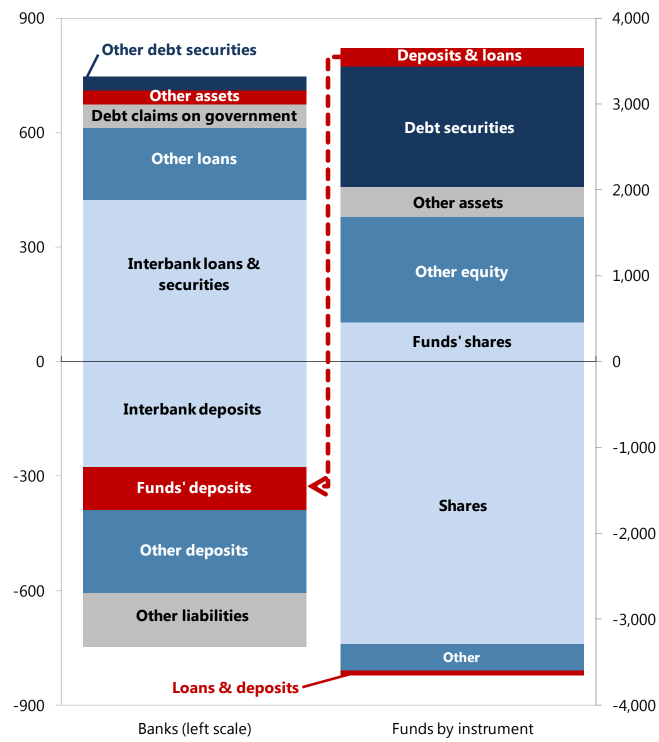
rebalance portfolios, or as investors seek safe assets. Abroad, investment funds have significant holdings of bank bonds, stocks, derivatives, and deposits. Investment funds' liabilities to banks in Luxembourg and banks abroad are also large, amounting to €175 billion in 2015:Q3.

Box 1. Linkages between Investment Funds and Banks

Securities and derivatives. Investment funds hold significant claims on banks in the form of bonds, equities, loans and derivative contracts, valued at €601 billion, and have €175 billion of liabilities to banks in the form of derivatives, loans and short sales in 2015:Q3, including €133 billion of derivative contracts.

Cash balances. Investment funds hold large bank deposits, estimated at €220 billion in 2015:Q3, about half of which are concentrated in Luxembourg's depository banks, totaling 50 percent of their liabilities. Deposits of investment funds can be volatile, with a standard deviation of monthly net deposit inflows of about €5 billion since 2009. During the global financial crisis, while aggregate net redemptions reached around €100 billion between September and December 2008, total deposits of investment funds initially increased in 2008:Q4 as a result of fire sales, and then declined by €13.7 billion in 2009:Q1, among which €5 billion were withdrawn from Luxembourg banks. In 2011:Q4, deposits declined by €9 billion, of which €3.6 billion from Luxembourg banks.

Bank and Investment Fund Assets and Liabilities, Dec 2015
(Billions of euros)



Sources: BCL, and IMF staff calculations.

Liquidity support. While asset managers are legally separated from investment funds, they can provide temporary credit lines to meet redemptions in situations of acute illiquidity. As the balance sheets of asset managers are small compared to the value of funds, such support might come from the owners or affiliates of asset managers, including large banks or insurance companies which could also directly buy investment fund's shares.

Bank services. Banks provide services to funds, such as depository services, pricing, brokerage, and accounting services which are often priced in proportion to total fund assets, and sometimes share common clients with asset managers. Banks, as well as insurance companies, also serve as counterparties for securities lending by investment funds and various types of derivative contracts held by investment funds.

Business integration. Substantial direct connections between the asset managers, related banks or insurance companies would create further scope for contagion.

Reputational risks. In case of a deep crisis in one market, contagion can spread to other segments of the financial system and, potentially, affect Luxembourg's established trademark as a financial center.

- *Other linkages.* Banks, in particular depository banks, derive income from providing various and substantial services to investment funds, are counterparties for securities lending, and sometimes have common clients with asset managers. In addition, there are significant ownership links between Luxembourg fund management companies and large banking groups or insurance companies, creating further scope for contagion during periods of severe market volatility, including through reputational effects or implicit guarantees.

21. Oversight of investment funds and asset managers should remain strong and continue to evolve.[4] Risk monitoring and the frameworks for risk management and supervision of investment funds are laid out in the UCITS directives III and IV, covering 80 percent of the funds in Luxembourg, and in the AIFM Directive covering other funds. The data reporting allows the CSSF to obtain precise information on individual investment funds, and the CSSF has oversight over the liquidity stress tests that the asset managers have to perform. Adequate resources should be allocated to the oversight to ensure that sound risk management practices, prudential norms or rules governing liquidity, leverage, redemptions and asset valuation are in place at the fund and at the asset manager levels. Some areas require specific attention:

- Data monitoring should allow detecting early warning signs of realization of market risk, credit risk or liquidity risk and possible shocks through redemptions.
- Data monitoring should allow identifying funds' sensitivity to interest rates and credit market movements. The use of derivatives that could boost yields and leverage, securities lending, and liquidity mismatches between assets and redemption terms should be more specifically scrutinized, especially given the increased use of derivative leverage by several of Luxembourg's bond funds in recent years.
- The CSSF should evaluate investment funds' resilience under various stress test scenarios. Risks should be assessed not only at the investment fund level but also from a financial stability perspective, allowing for correlated shocks across funds and for significant large portfolio reallocations between funds and net redemptions.
- The toolkit of liquidity risk management of investment funds by asset managers and regulators—comprising redemption fees, gates, side pockets and suspension of redemptions—should be tested to severe stress scenarios and continue to evolve with international best practice.

22. Risk monitoring and policy frameworks should take into account linkages between banks and investment funds:

- Joint scenario analysis between banks and investment funds including liquidity stress tests should be undertaken. The large fund exposures to corporate bonds could turn illiquid and cause sharp movements in fund value, which, joined with redemptions and shocks to other asset classes, could have indirect effects on banks' income. Changes in direct exposures to banks could affect banks' liquidity position and funding.

[4] Chapter 3 of the April 2015 Global Financial Stability Report concluded that oversight of the asset management industry should be strengthened at the global level.

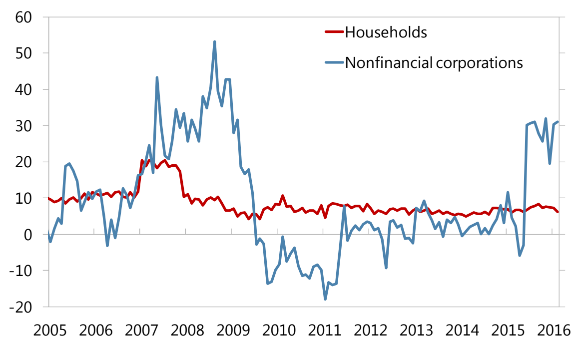
- As redemptions could affect banks in Luxembourg and abroad, the authorities should advocate further financial stability analysis of these linkages in the SSM, and include them in the design of joint fund-bank stress test scenarios, including asset managers who are owned by systemic banks.
- To mitigate the impact of potential shocks, banks should be compliant with the local LCR with good collateral, while the Eurosystem should stand ready to provide liquidity to banks if a shock materializes.

23. The *Comité de Risque Systémique* (CRS) should play an important role in the macroprudential oversight of Luxembourg's financial system. The committee, bringing together the Ministry of Finance, the BCL, the CSSF, and the *Commissariat aux Assurances*, has added the analysis of linkages between investment funds and banks to its work program at the national level, but it should also ensure that the linkages are examined at the European Systemic Risk Board (ESRB), and, if needed, that corrective actions are recommended. On the housing market and in light of ever rising housing prices, the authorities should explore the effectiveness of recent measures in containing risk and whether further macro-prudential measures such as limits to loan-to-value ratios in addition to those already taken in 2013 would be appropriate.

Figure 6. Credit and Housing Market Developments

Credit to households has grown steadily …

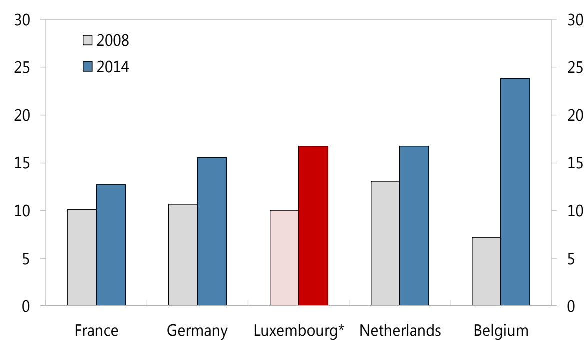
Credit to Households and Nonfinancial Corporations
(Percent change y/y)



Sources: DataInsight and IMF staff calculations.

… raising the share of mortgages in bank assets.

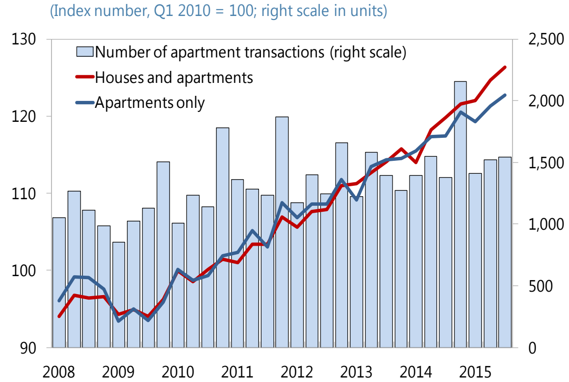
Mortgage Loans of Domestic Banks
(Percent of total assets)



Sources: Haver Analytics and IMF staff calculations.
* 2013 data.

Housing prices are on an upward trend …

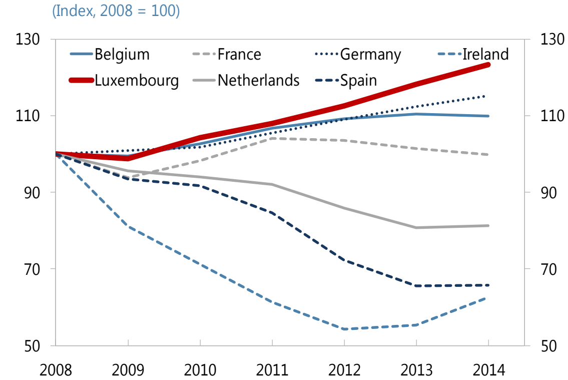
National Housing Prices and Transactions
(Index number, Q1 2010 = 100; right scale in units)



Sources: BCL and IMF Staff calculations.

… outpacing most of the euro area.

Harmonized Housing Prices
(Index, 2008 = 100)



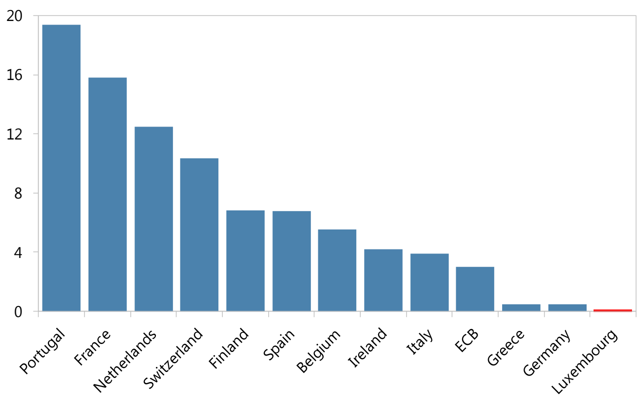
Sources: Haver Analytics and IMF staff calculations.

24. The authorities should increase the capital of the *Banque Centrale du Luxembourg* (BCL). Adding capital now should anticipate that capital may fall when monetary policy is normalized, and ensure that BCL operational expenses are well covered (Box 2). Even if redenomination risks of Target 2 claims have receded in recent years, the comprehensive net worth of the central bank is important from a risk management perspective. An agreement between the government and the BCL should be reached and implemented swiftly.

Box 2. Capital Increase of the Banque Centrale du Luxembourg

Capital of Selected Central Banks (03/2016 or 12/2015)

(In percent of total assets)



Sources: Haver Analytics and central bank websites.

The BCL would benefit from a one-off capital increase. The low level of capital of the BCL means that it currently operates with little financial buffers to cover its net present value of operating expenses. Such buffers could dwindle were the BCL to experience losses or lower returns going forward.

Risks to the BCL balance sheet appear manageable. In contrast to several other euro area central banks, the BCL has very limited exposures to financial institutions (€6 billion), hence credit risk vis-à-vis euro area financial entities is limited. Its creditor position in the Target 2 balance of the Eurosystem (reflected in liabilities of €57 billion to depository institutions) means that it might experience losses only if tail risks such as redenomination risks materialize. As a net borrower from euro area depository institutions, some remuneration risks could materialize going forward when monetary policy is normalized. Market risk and currency risk would arise mainly from the large exposures vis-à-vis non-euro area residents and are affected by the global evolution of asset prices and returns.

The financial strength of the BCL matters for the functioning of the Eurosystem. Given that the monetary policy stance is decided by the Governing Council of the ECB, the voice of euro area national central banks is best heard if political interference can be avoided by ensuring their financial strength. Moreover, national central banks' capital also matters because, as owners of the ECB, they should stand ready to recapitalize the ECB would a need arise.

25. Progress has been made in implementing the 2012 AML/CFT standard and further critical work is underway. As a result of legislation passed in 2014–15, all acts of terrorist financing covered by the 2012 standard are criminalized, bearer shares must be immobilized, and authorized operators acting in the Luxembourg Freeport are subject to AML/CFT measures. Work is currently underway to implement the revised FATF standard and the 4th AML/CFT EU Directive, including listing tax crimes amongst the predicate offenses to the money laundering offense, and facilitating timely access to information on beneficial owners of legal persons and arrangements. The authorities are encouraged to pursue these efforts—which are critical in light of ongoing international initiatives to curb tax evasion and the misuse of corporate structures—on a timely basis, and to ensure that the intensity of AML/CFT supervision of the financial sector remains commensurate with the level of money laundering and terrorist financing risks.

26. The upcoming mandatory Financial Stability Assessment (FSA) is an opportunity to review the financial system in greater depth. As a systemic jurisdiction, Luxembourg is subject to mandatory FSAs. For the FSA to be completed on time, the Financial Sector Stability Assessment (FSSA) report must be discussed in the Board with the 2017 Article IV consultation. Staff encouraged the authorities to consider further analysis of bank-fund linkages as part of the FSA.

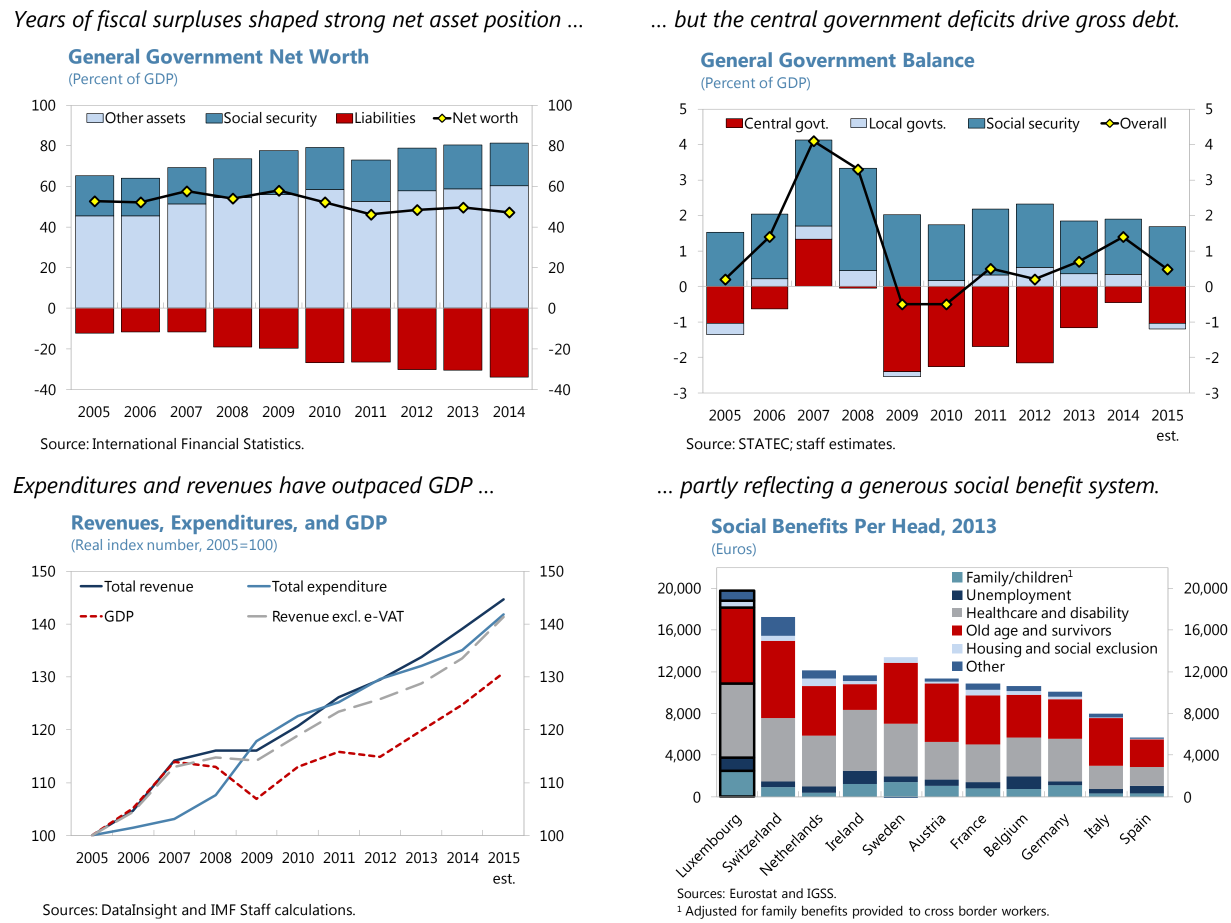
27. The authorities considered the Banking Union strongly positive for the euro area as a whole and for Luxembourg. *They noted that the attractiveness of the euro area financial system as a whole will be improved once the fully fledged banking union is achieved. The authorities argued in favor of achieving the last pillar of the Banking Union, the common European deposit insurance scheme, to complete the Union backstop. Being a full member of the SSM (and of the other pillars of the Banking Union) generates strong benefits to Luxembourg and also facilitates home-host discussions, including for non-EU cross-border banks. The authorities noted that waivers granted to large exposure limits or the LCR would follow strict supervisory rules and assessment by the JSTs with decisions taken at the SSM Supervisory Board. Regarding oversight of nonbank holding companies of banks, measures are taken to monitor ownership links at the time of authorization.*

28. The authorities agreed that linkages between investment funds and banks warrant further analysis. *They considered that bank-fund linkages require further analysis from a macro-prudential perspective and should be included in the design of joint fund-bank stress test scenarios. The CRS has added the analysis of these linkages to its work program. Investment strategies of investment funds are well advertized in their prospectus and management companies must perform mandatory liquidity risk management and stress tests which are reviewed by the CSSF. The authorities argued that the existing EU Directives provide a solid framework for risk monitoring, risk management and supervision of Luxembourg's investment funds. They are also actively participating in international discussions in this area and they are well informed about international developments. They consider themselves well positioned to implement resulting recommendations and to integrate improvements in their regulatory practices. In that respect, they welcomed the UCITS V and AIFM Directives which have clarified and strengthened the role and responsibilities of depository banks. They felt that the diversification strategies of the large number of investment funds provide a buffer to the impact of market volatility on Luxembourg's financial system, thus mitigating downside risks to the economy. They agreed that the housing market merits continued monitoring, as continued price rises may not be sustainable.*

B. Fiscal Policy

29. The medium-term revenue risks related to the international tax transparency agenda and financial sector volatility, and the long-term pension challenges make it appropriate for Luxembourg to run a small fiscal surplus and aim to set the public debt ratio on a slightly downward path. The structural fiscal surplus of around ½ percent of GDP over the medium term could be achieved by fully implementing previously announced consolidation measures in the *Zukunftspak* while limiting the size of the announced tax reduction package. In combination with a gradual pension reform, this should rebalance public finances to eliminate central government deficits, set the public debt–to-GDP ratio on a slightly declining path, and ensure long-term viability of the pension scheme.

Figure 7. Fiscal Sector Developments



30. After better than expected performance in 2015, Luxembourg's fiscal position is projected to remain strong in 2016, with the fiscal surplus remaining at about 1 percent of GDP. Changing EU rules on allocating VAT from e-commerce subtracted about 1.2 percent of GDP from fiscal revenues in 2015. Moreover, one-offs including a public sector wage hike, costs of the EU presidency, public infrastructure investment, and accommodating refugees added around 0.2 percent of GDP to public spending. On the positive side, rising AUMs in Luxembourg-based funds boosted subscription tax intake by up to 0.2 percent of GDP. The fiscal adjustment package offsetting the e-VAT loss (*Zukunftspak*) delivered spending cuts of 0.2 percent of GDP. In addition, tax increases brought in extra revenues of 0.6 percent of GDP, even as the 2-percent VAT rate hike raked less revenue than expected amid weak domestic demand. Barring revenue shocks or discretionary spending, the general government's fiscal surplus should remain at nearly 1 percent of GDP in 2016, as *Zukunftspak* adjustment measures should largely offset higher refugee-related spending of around ¼ percent of GDP.

Changes in Fiscal Balance in 2015
(percent of GDP)

Fiscal balance	**-0.4**
Loss of e-VAT	-1.2
One-off spending	-0.2
Subscription tax	+0.2
Zukunftspak	+0.2
Tax hikes	+0.6

Source: Staff estimates.

According to the EC, Luxembourg is one of only five EU countries fully compliant with the Stability and Growth Pact (SGP).

31. The ongoing tax policy review presents an opportunity to address fiscal revenue risks from the EU and international tax transparency initiatives and volatile financial flows. EC state aide probes, enhanced transparency for tax rulings, international agreements on tax information exchanges, and OECD/G20 anti-Base Erosion and Profit Shifting (BEPS) recommendations should in time help to create a more level international corporate taxation playing field and reduce the national scope to grant favorable tax treatment to selected companies. This can diminish their incentives to conduct business through Luxembourg and affect corporate income taxes which yield as much as 5 percent of GDP. Furthermore, shifts in investment portfolio allocations can put at risk the subscription tax yielding 1½ percent of GDP and other fiscal revenues generated by the funds industry. Moreover, falling oil and gas prices diminish incentives for cross-border retail fuel sales, undercutting fuel excise and VAT revenues yielding about 2 percent of GDP. In this context, the tax reform should aim at widening the corporate tax base while eliminating special tax regimes and lowering statutory tax rates. The decision to phase out the IP Box tax regime from mid-2016 is a step in this direction. The government should also develop contingency measures, including revisiting the low real estate taxes, in case negative revenue risks materialize.

32. Tax reform proposals unveiled at end-February contain a significant reduction in personal taxation and also in the corporate income tax rate from 2017. In addition to allowing expiration of the temporary surcharge on personal income, the government proposed to rebalance the income tax brackets to reduce the tax burden on all but the wealthiest households; allow families to file their taxes jointly or separately; realign parental tax benefits; and increase home ownership incentives. Corporations would benefit from reduction in the statutory profit tax rate by 3 percentage points to about 26 percent by 2018. These measures would reduce total fiscal revenue by up to 1 percent of GDP, fully using up the projected fiscal surpluses over the medium term. While some of the tax measures aim to increase housing supply, the envisaged tax relief for home buyers would aggravate existing imbalances given that demand for real estate structurally outstrips supply.

33. While acknowledging that the proposed tax cuts are broadly affordable, staff emphasized the need to use the available fiscal space for growth-enhancing measures. Staff argued for limiting the tax cuts to less than ½ percent of GDP, broadening the tax base, and using part of the fiscal surplus for public investments in infrastructure. However, staff recognized that the medium-term fiscal position would remain broadly appropriate under the proposed tax cuts. Under the baseline, Luxembourg’s public debt would stay well below the authorities’ ceiling of 30 percent of GDP over the medium term and remain sustainable under plausible scenarios, including a sizeable contingent liability shock stemming from the banking sector (Tables 7–8).

34. Continued reform of the pension system is necessary to ensure its viability over the long run (Box 3). While the pension system is currently generating surpluses, population ageing is expected to put significant pressure on pension expenditures. Despite factoring in continued strong migrants inflows and a doubling of Luxembourg's population by 2060, the 2015 EU Ageing Report projected an increase of pension expenditures of about 4 percent of GDP between 2013 and 2060. Under a less optimistic assumption for migrant inflows, the 2012 Ageing Report projected an increase in pension expenditures of about 9 percent of GDP by 2060. Accordingly, the upcoming 2016 pension review should propose additional parametric reforms of the pension system to increase the effective retirement age, now the lowest among the neighboring countries.

35. *The authorities reaffirmed their commitment to sound fiscal policies and stressed that the announced tax reductions are commensurate with the fiscal position's strength*. *They noted that significant fiscal surpluses in 2014–15 emerging from upward revision of the initial prudent estimates and another large surplus projected for 2016 have stoked pressures to cut taxes. The authorities also noted limited public support for further reform of the pension system that is running current surpluses and has accumulated reserve assets of about 30 percent of GDP. Steady economic growth and migrant inflows have led to an upward revision of the potential GDP growth rate as well as an improved outlook for long-term pension and age-related spending. Recognizing these developments, the EC proposed to lower its MTO for Luxembourg from 0.5 percent of GDP structural fiscal surplus to 0.5 percent of GDP deficit. The authorities project that Luxembourg fiscal position will remain in small surplus even after the tax cuts, which is well above the new MTO.*

36. *The authorities acknowledged that implementing EU and OECD tax transparency requirements could lead to some fiscal losses upfront but benefit the country in the long run.* *They pointed out that the losses from changing EU rules on allocating VAT from e-commerce proved less than initially estimated as several large companies preferred to stay in Luxembourg, and some even expanded their operations. In the same vein, the authorities considered that the OECD and EU initiatives countering tax base shifting and, in time, creating a more level international taxation playing field, would motivate some companies to increase their economic presence in Luxembourg, which could offset the immediate fiscal losses from enhanced tax transparency. Meanwhile, the authorities have reaffirmed their disagreement with the EC decision that the advance tax ruling provided to FIAT involved improper state aid. They appealed this decision in court and expect the court hearings to take a few years.*

Box 3. Pension Reform in Luxembourg

Luxembourg's pay-as-you-go pension system is generous and currently generating surpluses. Its effective retirement age is low while its replacement rate (average pension benefit as a share of average wage at retirement) is amongst the highest in Europe. However, Luxembourg's public pension expenditures are lower than pension contributions owing to the current advantageous demographics.

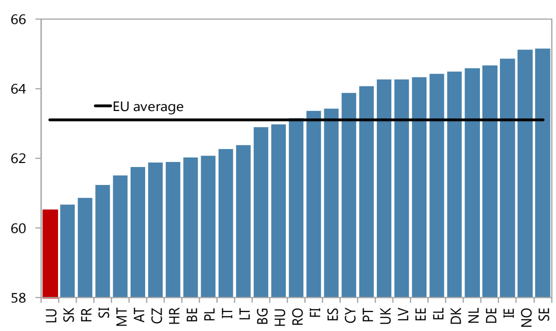
However, pension expenditures are expected to increase significantly over time. The EC in its 2012 Ageing Report projected an increase in pension expenditures from 9.2 percent of GDP in 2010 to 18.6 percent of GDP by 2060, owing to adverse demographics due to population ageing. The recent 2015 Ageing Report forecasts a more benign increase in pension expenditures (from 9.4 percent of GDP in 2013 to 13.4 percent of GDP in 2060), mainly due to more robust population growth, via net migration. This appears more optimistic than the recent population projection produced by the United Nations.

Continued reform of the pension system is advisable. The very strong population growth projection, through long-term net migration, should be treated with caution. Additional pension reform should thus be considered, including through increasing the effective retirement age and lowering benefits, to improve the sustainability of the system and fairness across generations. As such, additional measures would strengthen the pension reform introduced in 2012, which included (i) a slow and gradual decline in the replacement rate; (ii) automatic decline in indexation, benefits and increase in contributions in the event that future expenditures exceed contributions; and (iii) incentives to postpone retirement. [1, 2]

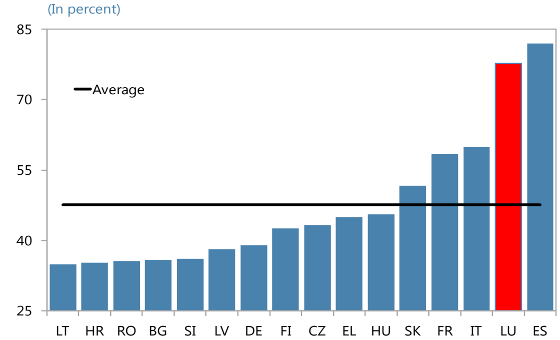
[1] See "16th Update of the Stability and Growth Programme of the Grand Duchy of Luxembourg 2015-2019", May 2015.

[2] See also "Déficit, Croissance et Bien-Etre Intergénérationnel : Comment Réformer les Pensions au Luxembourg", Cahier d'Etudes No 87, Banque Centrale du Luxembourg, March 2014.

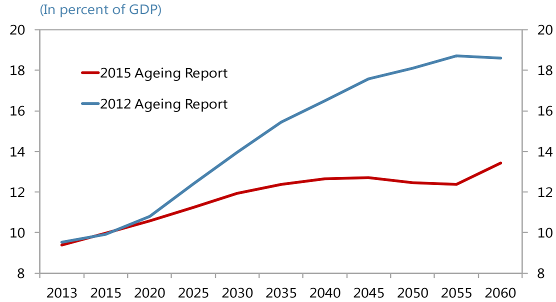
Average Effective Exit Age from Labour Market, 2014



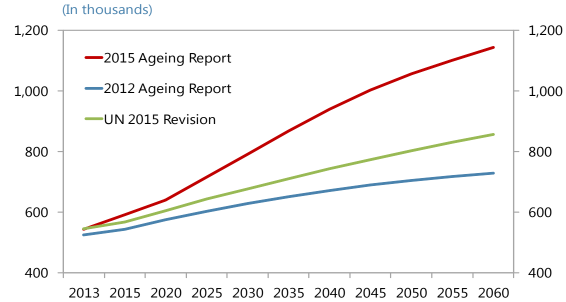
Public Pension Replacement Rate[1, 2], 2013
(In percent)



Public Pension Expenditures Projection
(In percent of GDP)



Population Projection
(In thousands)

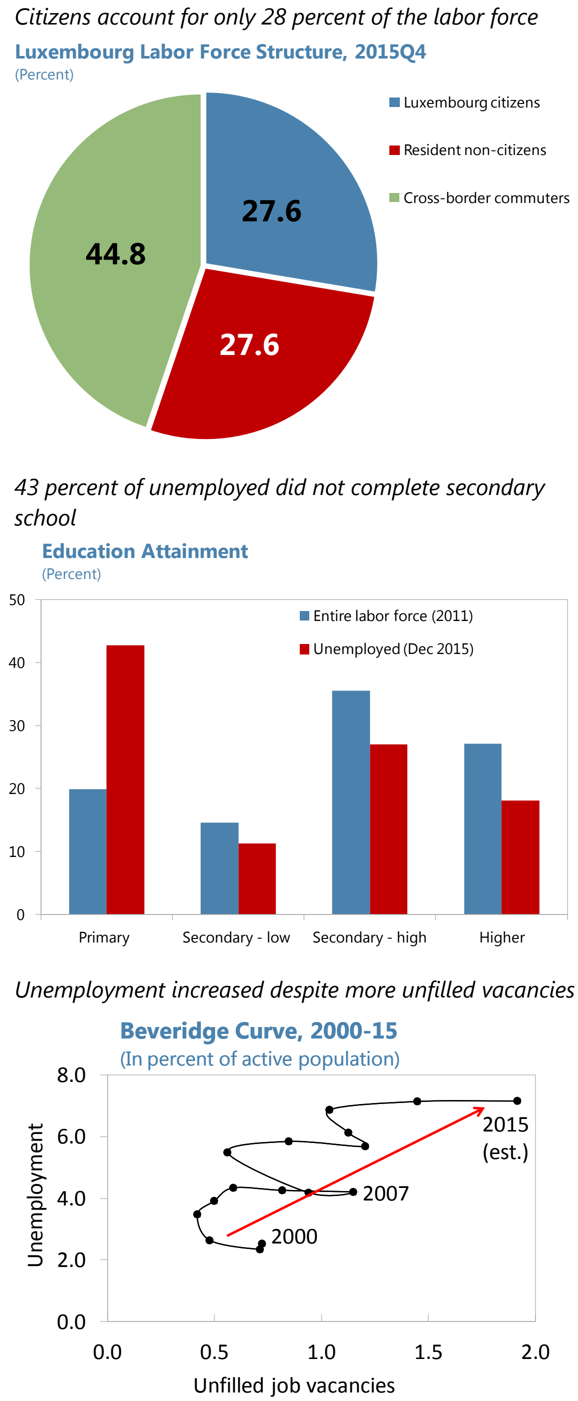


Source: The 2015 Ageing Report, European Commission and Fund staff calculations.
[1] The replacement rate is the average benefit as a share of average wage at retirement.
[2] Exlcudes countries with mandatory and quasi-mandatory occupational pension scheme.

C. Structural Reforms for Growth and Employment

37. The government is taking steps to diversify the economy. Expanding activity beyond the financial sector is important to enhance the resilience of the economy and create jobs for low-skilled workers. To diversify the economy, the authorities promote development in a few priority sectors, including automotive components, eco-innovation, healthcare and biotechnologies, information and communication, materials and production, and space technologies. The authorities champion Luxembourg's role as a logistical transit hub in the EU, have engaged in the pan-European project to build a supercomputer, and announced ambitious plans to create a legal framework for investing in mining asteroids. These should be complemented with structural reforms to address supply-side constraints, such as easing zoning requirements for real estate construction or removing restrictions for weekend and after hours work.

Figure 8. Labor Market



Sources: STATEC and IMF staff calculations.

38. Deeper labor market reforms are needed to reduce inactivity traps and promote employment of low-skilled locals as well as incoming refugees. The unemployment rate increased from 2 percent in 2000 to 7 percent in 2014, of which nearly half was long-term unemployed, as the economy created more jobs for cross-border workers than for locals. Underscoring the structural nature of unemployment driven by skills mismatches, the share of people who did not finish secondary school among the unemployed is 43 percent, more than double their share in the labor force. Strong economic growth and innovative measures by the public employment service (ADEM) encompassing vocational training, apprenticeship programs, subsidized partial employment, and the Youth Guarantee Scheme have helped reduce the unemployment rate to 6.5 percent in early 2016. Reducing unemployment further over the medium term would require deeper reforms to address skill mismatches, upgrade education outcomes, improve the quality of vocational training and enhance the apprenticeship system. To reduce inactivity traps, the authorities could explore options to refocus generous unemployment and social benefits so as to promote active job search and acceptance of available vacancies, while ensuring that real wages remain in line with productivity.

39. Luxembourg is well-equipped to cope with elevated refugee inflows (Selected Issues Paper, Chapter 2). The government has allocated sufficient budget financing to refugee accommodation programs. For faster integration of refugees in the labor market, the authorities could consider issuing them temporary employment permits while their asylum application is considered. In addition, it would be helpful to extend to refugees who have been granted asylum the employment promotion programs currently available for the long-term unemployed.

40. *The authorities stressed the proactive measures being taken to diversify the economy.* *Among other initiatives, laying the foundations for future innovations and growth, Luxembourg is set to become the first nation in the world that set up a legal framework for mining asteroids.*

41. *The authorities underscored the success of their policies for tackling long-term unemployment and facilitating integration of refugees.* *ADEM's personalized programs tailored to the needs of unemployed and labor demand as well as efforts to re-classify out of the labor force persons with work restrictions related to medical conditions have helped reduce the unemployment rate. Luxembourg's past experience in accommodating refugee waves, such as the one resulting from the Bosnian war in the early 1990s, have informed current policies emphasizing language training and welcoming families with children who are considered easier to assimilate over time.*

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42. Luxembourg's growth prospects remain strong but are subject to increasing downside risks from weakening international activity and stress in financial markets. The financial sector, intermediating ever increasing financial flows, propped Luxembourg's economic growth well above the EU average. Various competitive advantages, such as Luxembourg's triple-AAA rating and its qualified labor force, would continue to benefit the country. However, implementation of the international tax transparency agenda, which Luxembourg has embraced, could weigh on economic activity and tax revenue. Financial volatility triggered by a reassessment of underlying risks in global markets could lead to an adjustment of asset prices and financial flows, adversely affecting Luxembourg's financial system. Other risks include weaker-than-expected growth in the euro area, Brexit, and another surge of refugees.

43. The Banking Union, underpinned by strong collaboration and adequate supervisory resources, is particularly beneficial for Luxembourg. The SSM should be able to improve supervision, especially of cross-border banks, and can establish a consistent and high level of oversight. The significant enlargement of the resources of the CSSF in recent years is welcome and they should be commensurate with the increasing size and complexity of the financial sector.

Likewise, the SRM can ensure swift intervention ahead of insolvency, with financial support from the industry pooled in the SRF. The recent transposition of the Deposit Guarantee Scheme Directive and of the Bank Recovery and Resolution Directive completes the legal implementation of the Single Rule Book in Luxembourg. The authorities should also advocate for better oversight at the European level of nonbank holding companies that include banks and should take pro-active steps to improve risk monitoring.

44. Continued strong oversight of investment funds and their management companies is necessary. The use of derivatives that boost leverage, liquidity mismatches between assets and redemption terms, and the use of securities lending to improve cash returns should be more specifically scrutinized. In line with evolving international best practice, data monitoring should allow identifying funds' sensitivity to interest rates and credit market movements.

45. Risk monitoring and regulatory frameworks should take into account the linkages between banks and investment funds. These linkages, which work through direct exposures, services provided by banks, and ownership are an important trait of Luxembourg financial system and could have stability implications in instances of severe financial market volatility, making Luxembourg a recipient and a conduit of shocks. Luxembourg should propose to discuss these linkages at the European level and include them in the design of joint fund-bank stress test scenarios. Risks should be assessed not only at the investment fund level but also from a broader financial stability perspective.

46. Risks in the real estate market should continue to be closely monitored. Steadily rising house prices appear to mainly reflect supply bottlenecks against a growing demand. The authorities should explore the effectiveness of recent macro-prudential measures in containing risks and whether further measures such as limits to loan-to-value ratios are appropriate.

47. The revenue risks of the international tax transparency initiatives and volatile financial flows make it appropriate for Luxembourg to run a small fiscal surplus and low public debt. Luxembourg needs to maintain sufficient buffers in case of need. This justifies targeting a small fiscal surplus of around ½ percent of GDP over the medium term, which would set the public debt to GDP ratio on a slightly downward path. While recognizing that the announced tax cuts are affordable, staff advised limiting their size or using the fiscal space for growth-enhancing measures.

48. The ongoing tax reform is an opportunity to broaden the tax base and adjust to the changing international taxation environment. The international tax transparency initiatives call for closing loopholes used for tax avoidance. The tax reform should aim at widening the corporate tax base, such as by phasing out the IP Box tax regime, and eliminating special tax regimes while lowering statutory tax rates. The government should develop contingency measures, including revisiting the low real estate taxes, in case negative revenue risks materialize.

49. Continued reform of the pension system is advisable. Population ageing is expected to put significant pressure on the system in the future, especially when cross-border workers begin to retire. Accordingly, the ongoing 2016 pension review should propose additional parametric reforms of the pension system, such as of the minimum contributions period and conditions for early retirement.

50. The government is appropriately taking steps to diversify the economy and reduce unemployment. Expanding activity beyond the financial sector is important to enhance the resilience of the economy and should be supported with measures to better align workers' skills with the economy's demands and reduce inactivity traps while ensuring that real wages remain in line with productivity. Structural reforms addressing supply-side constraints, such as easing zoning requirements for real estate construction, could also help.

51. Luxembourg is well-equipped to cope with elevated refugee inflows. The country's emphasis on enrollment of the newcomers into language classes, schools, and other training programs is in line with best international practice.

52. Staff recommends the next Article IV Consultation with Luxembourg be held on the standard 12 month cycle.

Table 1. Luxembourg: Selected Economic Indicators, 2013–21

	2013	2014	2015	2016	2017	2018	2019	2020	2021
			Est.	Projections					
Real economy (percent change)									
GDP	4.3	4.1	4.8	3.6	3.3	3.2	3.1	3.0	3.0
Domestic demand	0.5	5.7	2.4	3.1	3.4	3.2	2.9	2.8	2.8
Private consumption	1.0	3.8	0.2	3.2	3.8	3.3	3.0	2.9	2.9
Public consumption	3.9	4.5	2.7	1.5	2.1	2.6	2.7	2.8	2.8
Gross investment	-3.0	10.0	5.8	4.2	4.0	3.3	2.9	2.8	2.8
Foreign balance 1/	3.7	0.1	2.9	1.7	0.9	1.0	1.1	1.0	1.0
Exports of goods and nonfactor services	6.9	6.8	7.0	4.7	5.6	5.5	5.1	5.3	5.3
Imports of goods and nonfactor services	5.7	8.0	6.5	4.5	6.1	5.9	5.4	5.6	5.7
Labor market (thousands, unless noted otherwise)									
Resident labor force	250.6	256.8	260.7	264.9	269.4	274.0	278.6	283.4	288.2
Unemployed	17.2	18.3	17.9	17.1	17.0	17.0	17.2	17.3	17.3
(Percent of labor force)	6.9	7.1	6.9	6.4	6.3	6.2	6.2	6.1	6.0
Resident employment	233.4	238.4	242.8	247.8	252.3	256.9	261.4	266.1	270.9
(Percent change)	1.8	2.2	1.9	2.0	1.8	1.8	1.7	1.8	1.8
Cross border workers (net)	152.6	157.2	162.8	168.2	173.7	179.5	185.2	190.7	196.1
Total employment	386.0	395.6	405.7	416.0	426.1	436.4	446.5	456.8	467.1
(Percent change)	1.8	2.5	2.5	2.6	2.4	2.4	2.3	2.3	2.3
Prices and costs (percent change)									
GDP deflator	2.4	1.0	1.6	1.4	1.7	1.7	1.9	2.0	2.1
CPI (harmonized)	1.7	0.7	0.1	0.5	1.3	1.6	1.7	1.9	2.1
CPI core (harmonized)	2.0	1.3	1.7	1.1	1.3	1.5	1.7	1.9	2.1
CPI (national definition)	1.7	0.6	0.5	0.7	1.3	1.6	1.7	1.9	2.1
Wage growth 2/	3.6	3.0	0.8	0.8	3.0	2.5	2.5	2.5	2.5
Nominal unit labor costs 2/	1.1	1.4	-1.4	-0.2	2.1	1.7	1.7	1.8	1.8
Public finances (percent of GDP)									
General government revenues	44.0	43.8	42.9	42.8	41.8	41.7	41.6	41.7	41.7
General government expenditures	43.3	42.4	41.9	41.8	41.7	41.6	41.6	41.5	41.6
General government balance	0.7	1.4	1.0	0.9	0.1	0.1	0.1	0.1	0.1
General government structural balance	1.1	1.6	0.7	0.7	0.0	0.1	0.0	0.1	0.1
General government gross debt	23.3	22.9	21.6	22.6	22.9	23.1	23.1	23.2	23.1
Balance of payments (percent of GDP)									
Current account	5.7	5.5	5.5	5.4	5.3	5.2	5.1	5.0	5.0
Balance on goods	-2.1	-0.4	-4.2	-3.9	-4.2	-3.9	-4.0	-4.0	-3.8
Balance on services	34.9	34.4	39.7	39.9	39.8	39.7	39.9	39.8	39.7
Net factor income	-28.0	-29.3	-30.6	-31.2	-30.9	-31.2	-31.4	-31.4	-31.5
Balance on current transfers	0.8	0.8	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Exchange rates, period averages									
U.S. dollars per euro	1.33	1.33	1.11	...	...	...	...	...	...
(Percent change)	3.3	0.1	-16.5	...	...	...	...	...	...
Nominal effective rate (2010=100)	100.2	100.5	97.0	...	...	...	...	...	...
(Percent change)	2.1	0.3	-3.5	...	...	...	...	...	...
Real effective rate (CPI based; 2010=100)	100.7	100.2	96.6	...	...	...	...	...	...
(Percent change)	2.1	-0.4	-3.7	...	...	...	...	...	...
Credit growth and interest rates									
Credit to nonfinancial private sector (percent change)	6.4	4.9	15.7	7.7	5.0	3.8	3.4	2.8	2.8
Government bond yield, annual average (percent)	1.9	1.3	0.4	...	...	...	...	...	...
Memorandum items: Land area = 2,586 sq. km; population in 2016 = 576,000; GDP per head = €90,400									
GDP (billions of euro)	46.5	48.9	52.1	54.7	57.5	60.3	63.4	66.6	70.0
Output gap (percent deviation from potential)	-0.9	-0.3	0.8	0.6	0.3	0.2	0.1	0.0	0.0
Potential output growth (percent)	2.9	3.5	3.8	3.7	3.6	3.4	3.2	3.1	3.0

Sources: Luxembourg authorities; and IMF staff estimates.
1/ Percentage point contribution to GDP growth.
2/ Overall economy.

Table 2. Luxembourg: Balance of Payments, 2013–21[1/]

(Percent of GDP)

	2013	2014	2015	2016	2017	2018	2019	2020	2021
						Projections			
Current account	5.7	5.5	5.5	5.4	5.3	5.2	5.1	5.0	5.0
Balance on goods and services	32.9	34.0	35.5	36.0	35.6	35.7	35.9	35.8	35.9
Trade balance 2/	-2.1	-0.4	-4.2	-3.9	-4.2	-3.9	-4.0	-4.0	-3.8
Goods exports	39.1	37.9	30.8	28.6	28.1	27.8	27.2	26.7	26.3
Goods imports	41.1	38.2	35.0	32.5	32.3	31.8	31.2	30.7	30.1
Balance on services	34.9	34.4	39.7	39.9	39.8	39.7	39.9	39.8	39.7
Services exports	144.1	152.8	163.1	165.6	169.3	173.3	176.8	181.0	185.5
Services imports	109.2	118.5	123.4	125.7	129.5	133.6	137.0	141.2	145.8
Net factor income	-28.0	-29.3	-30.6	-31.2	-30.9	-31.2	-31.4	-31.4	-31.5
Compensation of employees, net	-16.8	-16.6	-15.9	-16.2	-16.3	-16.4	-16.5	-16.5	-16.6
Compensation of employees, credit	2.8	2.8	2.7	2.7	2.7	2.7	2.8	2.8	2.8
Compensation of employees, debit	19.6	19.3	18.6	18.9	19.0	19.1	19.2	19.3	19.3
Investment income, net	-11.2	-12.8	-14.7	-15.0	-14.6	-14.7	-15.0	-14.9	-14.9
Investment income, credit	453.5	330.4	349.2	343.4	337.8	332.5	326.2	319.8	312.9
Investment income, debit	464.7	343.2	363.9	358.4	352.4	347.2	341.2	334.7	327.8
Balance on current transfers	0.8	0.8	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Capital and financial account	-5.7	-5.5	-5.4	-5.4	-5.3	-5.2	-5.1	-5.0	-5.0
Capital account	-1.6	-2.0	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1
Financial account	4.0	3.5	4.3	4.3	4.2	4.1	4.0	3.9	3.9
Direct investment, net	-311.8	64.5	92.4	29.5	26.6	23.9	21.5	19.4	17.4
Abroad	827.0	364.7	536.9	429.6	386.7	348.1	313.3	282.0	253.8
In reporting economy	1138.8	300.2	444.5	400.1	360.1	324.2	291.8	262.7	236.4
Portfolio investment, net	-179.3	-186.5	-189.7	-196.1	-196.1	-196.1	-196.1	-196.1	-196.1
Portfolio investment, assets	343.7	494.1	492.2	492.0	492.0	492.0	492.0	492.0	492.0
Portfolio investment, liabilities	523.0	680.7	681.9	688.1	688.1	688.1	688.1	688.1	688.1
Financial derivatives, net	-41.9	1.1	-12.1	0.0	0.0	0.0	0.0	0.0	0.0
Other investment, net	536.9	124.6	113.8	171.0	173.8	176.3	178.6	180.7	182.6
Other investment, assets	543.8	218.8	57.7	173.1	242.3	242.3	242.3	242.3	242.3
Other investment, liabilities	6.9	94.2	-56.1	2.1	68.6	66.0	63.7	61.7	59.7
Reserve assets	0.1	-0.2	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Errors and omissions	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0

Sources: STATEC; and IMF staff estimates.

1/ Balance of Payments Manual 6 (BPM6) presentation.

2/ Includes merchanting trade operations.

Table 3. Luxembourg: General Government Operations, 2013–21

(Percent of GDP)

	2013	2014	2015	2016	2017	2018	2019	2020	2021
			Est.			Projections			
Revenue	44.0	43.8	42.9	42.8	41.8	41.7	41.6	41.7	41.7
Taxes	27.0	27.0	26.5	26.6	25.6	25.5	25.4	25.4	25.5
Social contributions	12.3	12.3	12.2	12.0	12.0	12.1	12.0	12.0	12.0
Other revenue	4.6	4.5	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Expenditure	43.3	42.4	41.9	41.8	41.7	41.6	41.6	41.5	41.6
Expense	41.9	41.0	40.5	40.2	40.1	40.1	40.0	40.0	40.0
Compensation of employees	9.0	8.9	8.6	8.6	8.5	8.5	8.5	8.5	8.5
Use of goods and services	3.7	3.6	3.9	3.8	3.8	3.8	3.8	3.8	3.8
Interest	0.4	0.4	0.3	0.4	0.4	0.4	0.3	0.3	0.4
Social benefits	20.9	20.7	20.4	20.3	20.3	20.2	20.2	20.2	20.2
Other expense	7.9	7.5	7.2	7.2	7.2	7.2	7.2	7.2	7.1
Net acquisition of nonfinancial assets	1.3	1.3	1.5	1.6	1.6	1.5	1.5	1.5	1.5
Gross operating balance	4.3	5.1	4.7	4.8	3.9	3.9	3.9	3.9	3.9
Net operating balance	2.0	2.8	2.5	2.5	1.7	1.7	1.6	1.7	1.7
Net lending / borrowing	0.7	1.4	1.0	0.9	0.1	0.1	0.1	0.1	0.1
Net acquisition of financial assets	2.6	5.1	...	...	...	...	...	...	...
Monetary gold and SDRs	...	...	...	...	...	...	...	...	...
Currency and deposits	0.8	1.2	...	...	...	...	...	...	...
Securities other than shares	0.8	1.4	...	...	...	...	...	...	...
Loans	0.3	0.7	...	...	...	...	...	...	...
Shares and other equity	2.1	2.0	...	...	...	...	...	...	...
Insurance, pensions, and standardized	...	...	...	...	...	...	...	...	...
Financial derivatives	0.0	0.0	...	...	...	...	...	...	...
Other accounts receivable	-1.4	0.0	...	...	...	...	...	...	...
Net incurrence of liabilities	1.9	3.7	...	...	...	...	...	...	...
Special Drawing Rights (SDRs)	...	...	...	...	...	...	...	...	...
Currency and deposits	0.0	0.0	...	...	...	...	...	...	...
Securities other than shares	2.3	0.4	...	...	...	...	...	...	...
Loans	0.5	0.3	...	...	...	...	...	...	...
Shares and other equity	0.0	0.0	...	...	...	...	...	...	...
Insurance technical reserves	0.0	0.0	...	...	...	...	...	...	...
Financial derivatives	0.0	0.0	...	...	...	...	...	...	...
Other accounts payable	-0.9	3.0	...	...	...	...	...	...	...
Memorandum items:									
Structural balance	1.1	1.6	0.7	0.7	0.0	0.1	0.0	0.1	0.1
Output gap	-0.9	-0.3	0.8	0.6	0.3	0.2	0.1	0.0	0.0
Public gross debt (Maastricht definition)	23.3	22.9	21.6	22.6	22.9	23.1	23.1	23.2	23.1

Sources: Luxembourg authorities; and IMF staff estimates.

Table 4. Luxembourg: General Government Financial Balance Sheet, 2012–15
(Millions of euros unless noted otherwise)

	2012	2013			2014			2015 Q3		
	Closing balance	**Trans-actions**	**Other economic flows**	**Closing balance**	**Trans-actions**	**Other economic flows**	**Closing balance**	**Trans-actions**	**Other economic flows**	**Closing balance**
Net financial worth	21,231	319	938	22,489	702	-447	22,744	-17	-186	22,485
Financial assets	34,491	1,188	679	36,358	2,513	255	39,126	-24	-139	38,963
Currency and deposits	5,815	368	0	6,183	565	0	6,748	-56	0	6,692
Debt securities	6,851	349	-6	7,195	670	-1	7,864	734	-3	8,595
Loans	1,484	149	0	1,634	339	0	1,973	-45	0	1,927
Equity and inv. fund shares	15,499	978	681	17,158	955	255	18,368	-307	-136	17,926
Financial derivatives	5	-4	4	5	2	0	7	0	0	7
Other financial assets	4,836	-653	0	4,183	-18	0	4,166	-350	0	3,816
Liabilities	13,260	869	-260	13,869	1,811	702	16,382	49	47	16,478
Currency and deposits	237	12	0	249	11	0	260	7	0	268
Debt securities	5,456	1,050	-260	6,247	200	702	7,149	0	47	7,196
Loans	4,344	217	0	4,561	139	0	4,700	-108	0	4,592
Other liabilities	3,223	-410	0	2,813	1,461	0	4,273	149	0	4,423
Statistical discrepancy		0			0			-56		
Memorandum items:										
Net financial worth (percent of GDP)	48.7			48.3			46.5			43.1
Financial assets (percent of GDP)	79.2			78.1			80.0			74.8
Liabilities (percent of GDP)	30.4			29.8			33.5			31.6
GDP	43,574			46,541			48,897			52,113

Sources: IFS; and IMF staff estimates.

Table 5. Luxembourg: International Investment Position, 2011–15[1/]

	2011	2012	2013	2014	2015
Billions of Euros					
International investment position	12.5	15.5	16.3	9.1	16.5
Assets	5,365.1	6,175.8	6,703.7	8,358.7	9,470.5
Liabilities	5,352.6	6,160.3	6,687.4	8,349.6	9,454.0
Direct investment	227.3	386.9	379.9	445.6	502.0
Assets	2,241.3	2,724.5	2,990.6	3,949.5	4,583.3
Liabilities	2,014.1	2,337.6	2,610.7	3,503.9	4,081.3
Portfolio investment	-362.0	-622.9	-640.9	-710.9	-768.1
Assets	2,077.4	2,328.4	2,544.4	3,105.6	3,495.4
Liabilities	2,439.4	2,951.3	3,185.3	3,816.5	4,263.5
Financial derivatives	5.8	4.5	-0.1	13.1	4.0
Assets	176.6	167.2	165.6	125.4	188.7
Liabilities	170.8	162.8	165.7	112.3	184.7
Other investment	140.6	246.4	276.7	260.6	277.7
Assets	869.0	955.0	1,002.3	1,177.6	1,202.3
Liabilities	728.4	708.6	725.7	917.0	924.6
Reserve assets	0.8	0.8	0.7	0.7	0.7
Percent of GDP					
International investment position	29.5	35.7	35.1	18.7	31.6
Assets	12,705.5	14,173.1	14,403.9	17,094.5	18,173.1
Liabilities	12,675.9	14,137.4	14,368.7	17,075.8	18,141.5
Direct investment	538.3	887.9	816.3	911.3	963.4
Assets	5,307.9	6,252.5	6,425.8	8,077.1	8,795.1
Liabilities	4,769.6	5,364.6	5,609.4	7,165.8	7,831.7
Portfolio investment	-857.2	-1,429.6	-1,377.1	-1,453.8	-1,473.9
Assets	4,919.6	5,343.5	5,467.0	6,351.2	6,707.4
Liabilities	5,776.9	6,773.1	6,844.1	7,805.1	8,181.3
Financial derivatives	13.7	10.2	-0.1	26.8	7.8
Assets	418.1	383.7	355.9	256.4	362.1
Liabilities	404.4	373.5	356.0	229.6	354.4
Other investment	333.0	565.4	594.5	532.9	533.0
Assets	2,058.0	2,191.7	2,153.7	2,408.3	2,307.2
Liabilities	1,725.0	1,626.3	1,559.2	1,875.3	1,774.2
Reserve assets	1.9	1.7	1.5	1.5	1.4

Sources: STATEC and IMF Staff estimates.

1/ Balance of Payments Manual 6 (BPM6) presentation.

Table 6. Luxembourg: Financial Soundness Indicators, 2011–15

(Percent)

		2011	2012	2013	2014	2015	
						Sep	Dec
All Banks							
Capital adequacy	Regulatory capital to risk weighted assets	16.9	18.3	19.9	19.4	20.6	20.9
	Regulatory tier 1 capital to risk weighted assets	14.7	15.9	17.4	18.1	19.7	20.2
	Capital to assets	5.1	6.0	6.2	6.2	6.8	7.0
Profitability and efficiency 1/	Return on assets	0.6	0.7	0.7	0.7	0.8	0.8
	Return on equity	9.6	10.9	11.0	11.7	11.8	10.9
	Interest margin to gross income	30.0	32.1	27.6	27.2	27.5	27.2
Asset quality and structure	Residential real estate loans to total loans	3.1	3.3	3.7	4.0	4.2	4.3
	Household debt to GDP	53.0	55.1	55.4	58.6	59.3	59.3
	Nonperforming loans to total gross loans	0.3	0.3	0.2	...	...	...
	Sectoral distribution of loans (in percent of total loans)						
	Residents	22.2	25.1	21.2	21.0	23.7	27.0
	Nonresidents	77.8	75.0	78.8	79.0	76.3	73.0
Liquidity	Liquid assets to total assets	58.5	59.3	59.9	60.3	57.9	...
	Liquid assets to short-term liabilities	67.1	69.0	69.8	70.5	67.4	...
	Customer deposits to total (non interbank) loans	127.7	123.0	147.1	156.2	144.0	129.4
Domestically Oriented Banks							
Capital adequacy	Regulatory capital to risk weighted assets	22.2	24.4	26.0	23.0	23.0	...
	Regulatory tier 1 capital to risk weighted assets	20.1	21.8	23.0	23.0	23.0	...
	Capital to assets	7.0	8.5	9.0	8.0	9.0	...
Profitability and efficiency	Return on assets	0.7	0.8	1.0	0.9	1.1	...
	Return on equity	8.3	9.0	8.0	11.0	12.0	...
	Interest margin to gross income	67.9	63.9	56.0	60.0	60.0	...
Asset quality and structure	Residential real estate loans to total loans	19.5	21.5	24.0	27.0	26.0	...
	Nonperforming loans to total gross loans	0.8	0.3	0.3	...	...	...
	Sectoral distribution of loans (in percent of total loans)						
	Residents	50.9	51.9	55.0	59.0	58.0	...
	Nonresidents	49.1	48.1	45.0	41.0	42.0	...
Liquidity	Liquid assets to total assets	42.2	44.4	43.0	43.0	44.0	...
	Liquid assets to short-term liabilities	48.2	54.4	53.0	51.0	51.0	...
	Customer deposits to total (non interbank) loans	156.5	160.5	160.0	144.0	147.0	...

Sources: Financial Soundness Indicators Database, BCL, and CSSF.

Table 7. Luxembourg Public Sector Debt Sustainability Analysis (DSA)—Baseline Scenario

(In percent of GDP unless otherwise indicated)

Debt, Economic and Market Indicators [1/]

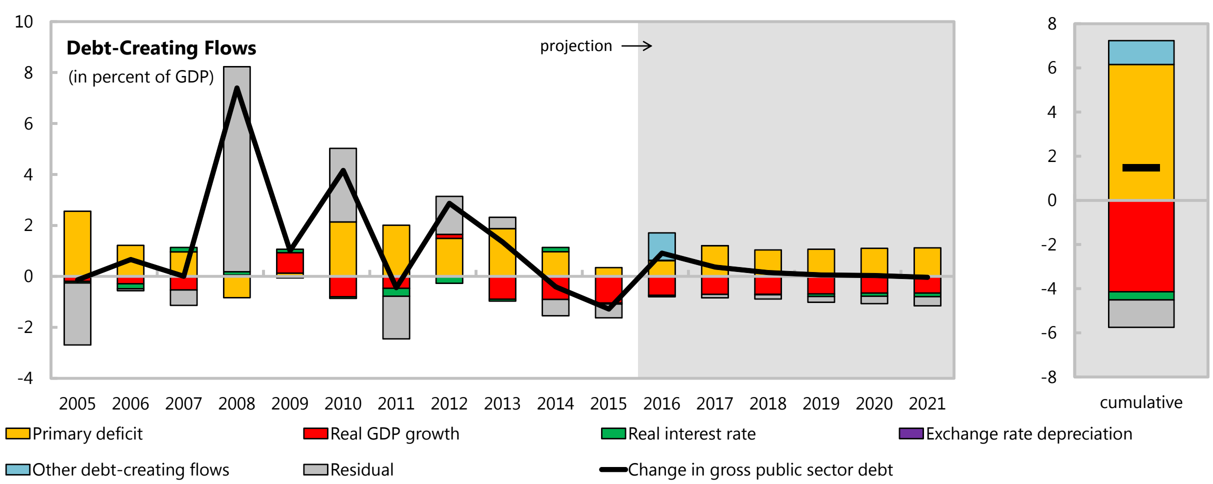
	Actual			Projections					
	2005-2013 [2/]	2014	2015	2016	2017	2018	2019	2020	2021
Nominal gross public debt *	14.9	22.9	21.6	22.6	22.9	23.1	23.1	23.2	23.1
Public gross financing needs	0.8	0.7	0.1	1.5	1.6	2.2	1.1	3.7	0.6
Real GDP growth (in percent)	2.5	4.1	4.8	3.6	3.3	3.2	3.1	3.0	3.0
Inflation (GDP deflator, in percent)	3.5	1.0	1.6	1.4	1.7	1.7	1.9	2.0	2.1
Nominal GDP growth (in percent)	6.1	5.1	6.6	5.0	5.0	5.0	5.1	5.1	5.1
Effective interest rate (in percent) [4/]	3.2	1.8	1.5	1.5	1.7	1.7	1.5	1.5	1.5

As of April 29, 2016		
Sovereign Spreads		
EMBIG (bp) 3/		-27
5Y CDS (bp)		n.a.
Ratings	Foreign	Local
Moody's	Aaa	Aaa
S&Ps	AAA	AAA
Fitch	AAA	AAA

*Differs slightly from figures presented in the selected economic indicators table due to differing projection methodologies.

Contribution to Changes in Public Debt

	Actual			Projections							
	2005-2013	2014	2015	2016	2017	2018	2019	2020	2021	cumulative	debt-stabilizing primary balance [9/]
Change in gross public sector debt	1.9	-0.4	-1.3	0.9	0.4	0.1	0.1	0.0	0.0	1.5	-0.8
Identified debt-creating flows	1.0	0.2	-0.7	1.0	0.5	0.3	0.3	0.3	0.3	2.7	
Primary deficit	1.3	1.0	0.3	0.6	1.2	1.0	1.1	1.1	1.1	6.2	
Primary (noninterest) revenue and grants	26.9	28.7	28.2	29.4	28.7	28.6	28.4	28.3	28.3	171.6	
Primary (noninterest) expenditure	28.2	29.7	28.5	30.0	29.9	29.6	29.4	29.4	29.4	177.7	
Automatic debt dynamics [5/]	-0.3	-0.7	-1.1	-0.7	-0.7	-0.7	-0.8	-0.8	-0.8	-4.5	
Interest rate/growth differential [6/]	-0.3	-0.7	-1.1	-0.7	-0.7	-0.7	-0.8	-0.8	-0.8	-4.5	
Of which: real interest rate	-0.1	0.2	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.4	
Of which: real GDP growth	-0.2	-0.9	-1.0	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-4.1	
Exchange rate depreciation [7/]	0.0	0.0	0.0	...	...	...	...	...	...	...	
Other identified debt-creating flows	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	1.1	
Privatization/Drawdown of Deposits (+ r	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	1.1	
Contingent liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other debt flows (incl. ESM and Euroare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Residual, including asset changes [8/]	0.9	-0.6	-0.5	-0.1	-0.1	-0.2	-0.2	-0.3	-0.4	-1.2	



Source: IMF staff.

1/ Public sector is defined as central government.

2/ Based on available data.

3/ Long-term bond spread over German bonds.

4/ Defined as interest payments divided by debt stock (excluding guarantees) at the end of previous year.

5/ Derived as $[(r - \pi(1+g) - g + ae(1+r)]/(1+g+\pi+g\pi))$ times previous period debt ratio, with r = interest rate; π = growth rate of GDP deflator; g = real GDP growth rate; a = share of foreign-currency denominated debt; and e = nominal exchange rate depreciation (measured by increase in local currency value of U.S. dollar).

6/ The real interest rate contribution is derived from the numerator in footnote 5 as $r - \pi(1+g)$ and the real growth contribution as -g.

7/ The exchange rate contribution is derived from the numerator in footnote 5 as $ae(1+r)$.

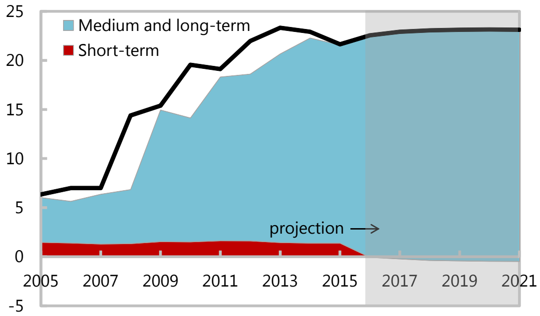
8/ Includes asset changes and interest revenues (if any). For projections, includes exchange rate changes during the projection period.

9/ Assumes that key variables (real GDP growth, real interest rate, and other identified debt-creating flows) remain at the level of the last projection year.

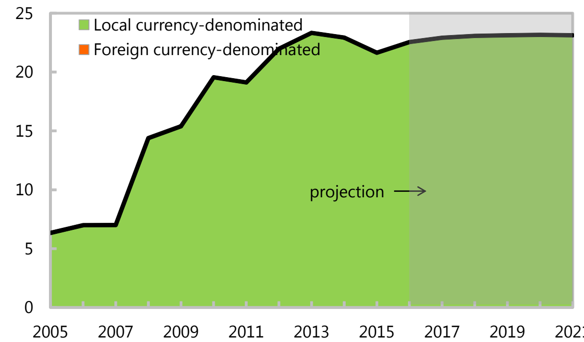
Table 8. Luxembourg Public DSA—Composition of Public Debt and Alternative Scenarios

Composition of Public Debt

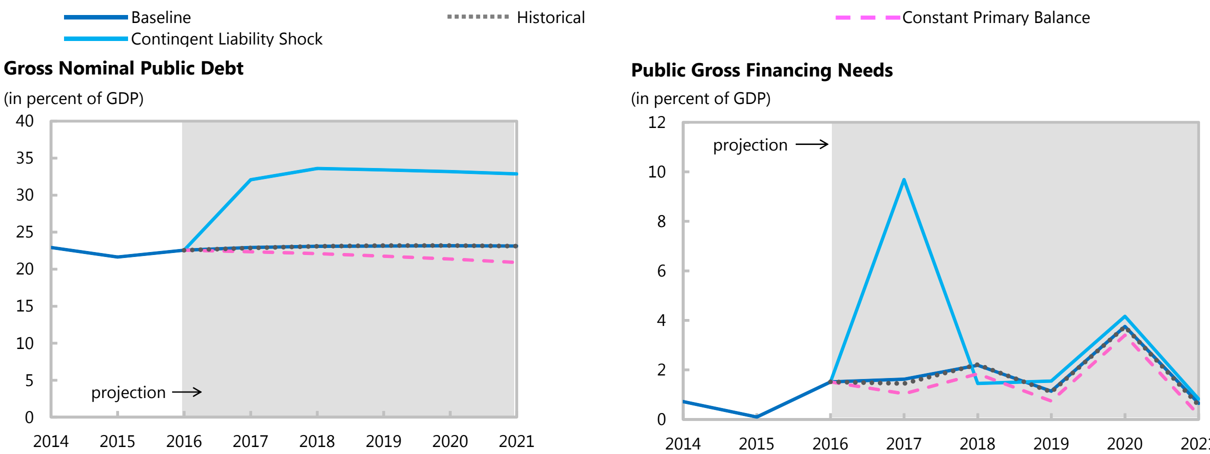
By Maturity
(in percent of GDP)



By Currency
(in percent of GDP)



Alternative Scenarios



Underlying Assumptions
(in percent)

Baseline Scenario	2016	2017	2018	2019	2020	2021
Real GDP growth	3.6	3.3	3.2	3.1	3.0	3.0
Inflation	1.4	1.7	1.7	1.9	2.0	2.1
Primary Balance	-0.6	-1.2	-1.0	-1.1	-1.1	-1.1
Effective interest rate	1.5	1.7	1.7	1.5	1.5	1.5
Constant Primary Balance Scenario						
Real GDP growth	3.6	3.3	3.2	3.1	3.0	3.0
Inflation	1.4	1.7	1.7	1.9	2.0	2.1
Primary Balance	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
Effective interest rate	1.5	1.7	1.7	1.6	1.6	1.6

Historical Scenario	2016	2017	2018	2019	2020	2021
Real GDP growth	3.6	2.8	2.8	2.8	2.8	2.8
Inflation	1.4	1.7	1.7	1.9	2.0	2.1
Primary Balance	-0.6	-1.0	-1.0	-1.0	-1.0	-1.0
Effective interest rate	1.5	1.7	1.7	1.6	1.6	1.6
Contingent Liability Shock						
Real GDP growth	3.6	-0.7	-0.8	3.1	3.0	3.0
Inflation	1.4	0.7	0.7	1.9	2.0	2.1
Primary Balance	-0.6	-9.2	-1.0	-1.1	-1.1	-1.1
Effective interest rate	1.5	2.1	1.9	1.9	1.9	1.9

Source: IMF staff.

Table 9. Luxembourg: Risk Assessment Matrix			
Source of risks	**Relative likelihood and transmission channels**	**Impact if realized**	**Policy response**
Business model risk: Changes in EU and international taxation rules and transparency standards for cross-border activities	**Medium** A large share of fiscal revenues depends on cross border operations	**High** Tax base erosion and reduction of budget revenues	Diversify fiscal revenue base, develop contingency plans, and continue pension reform
G-RAM risk: Structurally weak growth in key advanced and emerging economies.	**High** Luxembourg is particularly vulnerable to adverse shocks in the EA given its strong trade and financial linkages.	**Medium** Adverse impact on export and GDP growth.	Diversify financial services exports toward non euro area markets, advance structural reforms and infrastructure investments to boost competitiveness
G-RAM risk: Sharp asset price decline and decompression of credit spreads.	**Medium** More than a quarter of Luxembourg's GDP is directly generated by the financial and insurance sectors.	**Medium** Moderate impact on domestic economy through investment funds and banks unless the global stress is especially severe. Impact could be limited if Luxembourg acts as a recipient of safe havens inflows.	Monitor financial sector exposures and risks, linkages between investment funds and banks, conduct stress tests, ensure robust contingency planning and stand ready to provide liquidity support to banks.
G-RAM risk: Heightened risk of fragmentation/security dislocation in part of the Middle East, Africa, and Europe, leading to a sharp rise in refugees.	**High** Lack of integration of refugees into the labor force could raise unemployment rates and put pressure on national budgets.	**Low** Short-term fiscal costs would be commensurate with the size of refugee inflows. Large inflows could undermine social cohesion.	Integrate refugees into the labor force as fast as possible through language classes and training.
G-RAM risk: British voters elect to leave the European Union in their June 23 referendum	**High** Luxembourg is particularly exposed to shocks in the EU and disruption of financial sector flows	**High** Negotiations on post-exit trade, financial, and migration relationships could ensue in a period of heightened uncertainty and elevated financial volatility, with potential contagion.	Ensure robust contingency planning for operational risks that may arise in the event of heightened market volatility. Re-double efforts to secure the benefits of economic integration and cooperation across Europe.

Appendix I. Luxembourg: The EC State Aid Decision and International Tax Transparency Initiatives

The EC state aid decision and international tax transparency initiatives limit Luxembourg's and other national authorities' discretion to provide favorable tax treatment to multinational companies, thereby reducing the latter's incentives to conduct business through the country.

The EC has decided that the advance tax rulings of Fiat in Luxembourg and Starbucks in the Netherlands and the Belgian "excess profit" tax scheme involved improper state aid.[1] The EC has requested the national tax authorities to recover the improper tax savings. For Fiat and Starbucks, the repayments could amount to €20–30 million. Belgium would need to recover about €700 million from at least 35 companies. The national authorities disagreed with the EC decision and have appealed it at the European Court of Justice, which could take a few years to consider the cases.

The EC decision sets an important precedent for reexamining tax treatment of multinational companies in Luxembourg and across the EU. Currently, the EC is probing the legality of Amazon's and MacDonald's advance tax rulings in Luxembourg and of Apple's in Ireland, where potential repayments can be much higher. Moreover, the same approach could be applied for re-examining tax payments of any company that obtained a favorable tax ruling from the national authorities in Luxembourg and other EU countries over the last 10 years.

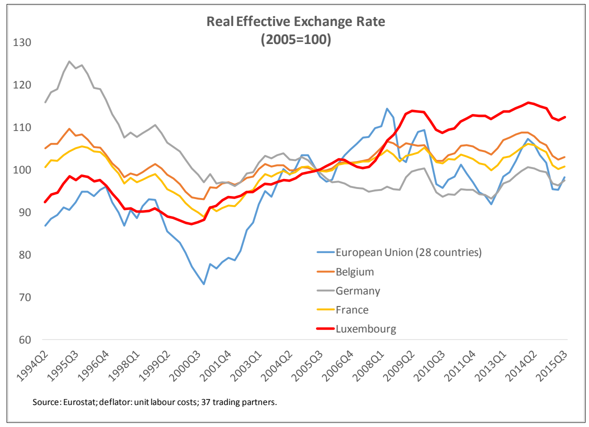
The EC decision comes on top of the EU and OECD/G20 push for tax transparency. In the EU, the hitherto confidential national advance tax rulings have been open for bilateral exchange between tax authorities upon request and will be automatically shared from 2017. This decision followed "LuxLeaks" publications in late 2014 revealing that Luxembourg's tax rulings allowed companies to legally reduce their effective tax rates to as low as 1 percent. Meanwhile, the G20 summit in November 2015 endorsed recommendations of the OECD project on combating Base Erosion and Profit Shifting (BEPS) that address harmful tax practices and pave the way for automatic exchange of information for tax purposes from 2017. In the U.S., a proposal to tax overseas profits of U.S. corporations—currently not subject to U.S. taxation until repatriated—stirred debates, but did not make it to the "omnibus" budget bill adopted in December 2015.

Luxembourg has committed to greater transparency in its tax practices. The authorities switched to automatic exchange of information on interest payments under the EU Savings Directive from 2015. They also agreed to implement an extension of that Directive to cover account balances and other sources of income including dividends from 2017. In late 2014, they committed to implement the OECD Standard for Automatic Exchange of Financial Account Information. In January 2016, Luxembourg and 30 other OECD countries signed agreements for the automatic exchange of country reports from 2017.

[1] http://europa.eu/rapid/press-release_IP-15-5880_en.htm
http://europa.eu/rapid/press-release_IP-16-42_en.htm

Appendix II. Luxembourg: External Sector Assessment

Staff assesses Luxembourg's external position to be broadly consistent with its medium-term fundamentals and desirable policies. The assessment is based on empirical analyses, a review of developments in the balance of payments and net foreign asset position, as well as consideration of Luxembourg's status as a global financial center.



The current account surplus remained at 5½ percent of GDP in 2015. This reflected mainly a strong surplus in services only partly offset by a deficit in net factor income. As a result, the net international investment position has improved to about €16.5 billion (31.6 percent of GDP), with both gross assets and liabilities increasing by roughly 13¼ percent fueled by ample international liquidity. At end-2015, gross assets and liabilities reached €9.5 trillion (about 180 the size of GDP), highlighting Luxembourg's role as a financial center. After the financial crisis, Luxembourg's real effective exchange rate (REER) has appreciated more than its trading partners, suggesting a loss of competitiveness.

Empirical estimates rely on the external-balance-assessment lite (EBA-lite). The EBA-lite consists of three approaches: (i) the REER approach; (ii) the current account approach; and (iii) the external sustainability approach. Given Luxembourg's status as a financial center and the associated difficulties with estimating external assets and liabilities and their income flows, the REER approach is deemed the most appropriate.

- The REER approach suggests a moderate overvaluation of 8.6 percent. For the purpose of estimating productivity, the working-age population was adjusted to take into account the large number of non-residents working in Luxembourg. Moreover, the measure of trade openness used for Luxembourg excluded exports and imports of financial services (which are unlikely to be sensitive to relative price effects).

- The current account (CA) approach suggests a CA norm of 7.7 percent of GDP, taking into consideration Luxembourg's status as a financial center.

- The external sustainability approach indicates a slight undervaluation.

External Balance Assessment (Lite)

	Real Exchange Rate Gap
Current account approach	3.4%
REER approach	8.6%
External sustainability approach	-2.2%
Average	3.3%
Memorandum	
Policy Gap	
Current account approach	1.1%
REER approach	0.1%
Current account norm	7.7%
Elasiticity of curent account	-0.63

Appendix III. Implementation of the 2015 Article IV Recommendations

Recommendation	Authorities' Response
Fiscal	
In light of global anti-tax avoidance initiatives, ensure that firm-specific tax rulings do not encourage unduly complex structures	The authorities have embraced the tax transparency and information sharing initiatives, and will phase out the IP Box tax regime from mid-2016
Targeting a medium-term budget surplus, use the 2016 tax policy review to make the revenues more robust to the global tax initiatives.	Rather than diversifying the tax base, the government announced tax cuts consuming previously projected fiscal surpluses from 2017
Pursue further pension reforms to make the system more resilient to population ageing	The 2016 pension sustainability review is considering parametric changes to the system
Transfer some central government assets and future extraordinary receipts to the wealth fund	The small wealth fund resources remain limited to a part of fuel duties and VAT on e-commerce
Financial	
Faster passage of the EU banking laws completing the Single Rule Book, a pillar of the banking union	The Bank Recovery and Resolution and the Deposit Guarantee Scheme Directives were transposed in national law on December 18th , 2015
Operationalize a purposeful systemic risk committee	The *Comité du Risque Systémique* responsible for coordinating implementation of macroprudential policy was established on April 1, 2015, and took macroprudential measures regarding capital buffers in November 2015
Being a voice for strong cross-border oversight, including effective EU regulatory arrangements for nonbank companies that control banks	Mitigating actions are being taken at the SSM to monitor ownership links of banks at the authorization level
Closely monitor domestic real estate exposures, interconnections in the domestic financial sector and new risks from financial diversification	The CSSF has undertaken stress tests of bank exposures to real estate, and interconnections and new risks including from investment fund – bank linkages are being monitored by the BCL
Improve transparency of financial sector operations and strengthen the AML/CFT framework	Luxembourg began automatic exchange of bank deposit information on January 1, 2015 and is committed to enhancements from 2017
Structural	
Make vocational training more nimble, better equip workers with relevant skills, and lift youth and women's participation in the labor force	Innovative measures by the public employment service (ADEM) have helped set the unemployment rate on a declining path in 2015

INTERNATIONAL MONETARY FUND

LUXEMBOURG

April 20, 2016

STAFF REPORT FOR THE 2016 ARTICLE IV CONSULTATION—INFORMATIONAL ANNEX

Prepared By European Department

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FUND RELATIONS

(As of March 31, 2016)

Membership Status: Joined December 27, 1945; Article VIII.

General Resources Account:

	SDR million	Percent of quota
Quota	1,321.80	100.00
Fund holding of currency	1,090.67	82.51
Reserve Tranche Position	231.15	17.49
Lending to the Fund		
New Arrangements to Borrow	89.47	

SDR Department:

	SDR million	Percent of allocation
Net cumulative allocation	246.62	100.00
Holdings	244.50	99.14

Outstanding Purchases and Loans: None

Latest Financial Arrangements: None

Projected Payments to Fund (SDR Million); based on existing use of resources and present holdings of SDRs):

			Forthcoming		
	2016	2017	2018	2019	2020
Principal	0.01	0.01	0.01	0.01	0.01
Charges/Interest	0.01	0.01	0.01	0.01	0.01

Implementation of HIPC Initiative: Not applicable

Safeguards Assessments: Not applicable

Exchange Rate Assessment: Luxembourg's currency is the euro, which floats freely and independently against other currencies. Luxembourg has accepted the obligations of Article VIII, Sections 2, 3, and 4, and maintains an exchange system free of restrictions on payments and transfers for current international transactions, other than restrictions notified to the Fund under Decision No. 144 (52/51).

Last Article IV Consultation: The last Article IV consultation was concluded on May 11, 2015. The associated Executive Board assessment is available at http://www.imf.org/external/np/sec/pr/2015/pr15218.htm and the staff report (IMF Country Report No. 15/144) at http://www.imf.org/external/pubs/cat/longres.aspx?sk=42983.0 . Luxembourg is on the standard 12 month consultation cycle.

Financial Sector Assessment Program (FSAP) Participation and ROSC: The Financial System Stability Assessment (FSSA) for the last mandatory FSA was discussed by the Board on May 13, 2011. The FSSA and accompanying Reports on the Observation of Standards and Codes (ROSCs) are available at http://www.imf.org/external/pubs/cat/longres.aspx?sk=24995.0.

Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT): In February 2014, the Financial Action Task Force (FATF) recognized that Luxembourg had made significant progress in addressing deficiencies identified in the February 2010 mutual evaluation report and decided to remove the country from the regular follow-up process. The FATF report is available at http://www.fatf-gafi.org/countries/j-m/luxembourg/documents/fur-luxembourg-2014.html.

STATISTICAL ISSUES

A. Assessment of Data Adequacy for Surveillance

General: Data provision is adequate for surveillance, although macroeconomic data are sometimes released with a significant lag. The Central Service for Statistics and Economic Studies (Statec) regularly publishes a full range of economic and financial data and provides an advance release calendar for main statistical releases at http://www.statistiques.public.lu/fr/agenda/calendrier-diffusion/index.html.

Online access to Statec's databases is available to all users simultaneously at the time of release through the Statistics Portal of Luxembourg. Key publicly accessible websites for macroeconomic data and analysis are:

Statistics Portal of Luxembourg	http://www.statistiques.public.lu/fr/
Statec	http://www.statec.public.lu/fr/index.html
Central Bank of Luxembourg	http://www.bcl.lu/en/index.php
Ministry of Finance	http://www.mf.public.lu/

National Accounts: Luxembourg avails itself of the flexibility under the Special Data Dissemination Standard (SDDS) for the timeliness of its national accounts, generally disseminating national accounts data not later than four months after the reference period (the SDDS timeliness requirement for the national accounts is three months). Reduction of the reporting lag would aid surveillance.

B. Data Standards and Quality

Luxembourg has been a subscriber to the SDDS since May 12, 2006. Luxembourg uses SDDS flexibility options also on the timeliness of the analytical accounts of the central bank.

No data ROSC is available.

Table of Common Indicators Required for Surveillance

(As of April 11, 2015)	Date of Latest Observation	Date Received	Frequency of Data[7]	Frequency of Reporting[7]	Frequency of Publication[7]
Exchange Rates	04/04/16	04/04/16	D	D	D
International Reserve Assets and Reserve Liabilities of the Monetary Authorities[1]	02/29/16	03/30/16	M	M	M
Reserve/Base Money	02/29/16	03/30/16	M	M	M
Broad Money	02/29/16	03/30/16	M	M	M
Central Bank Balance Sheet	02/29/16	03/30/16	M	M	M
Consolidated Balance Sheet of the Banking System	02/29/16	03/30/16	M	M	M
Interest Rates[2]	04/04/16	04/04/16	D	D	D
Consumer Price Index	03/01/16	04/06/16	M	M	M
Revenue, Expenditure, Balance and Composition of Financing[3] – General Government[4]	2015	04/11/16	A	A	A
Revenue, Expenditure, Balance and Composition of Financing[3]– Central Government	2015 Q4	02/29/16	Q	Q	Q
Stocks of Central Government and Central Government-Guaranteed Debt[5]	2015	04/11/16	Q	Q	Q
External Current Account Balance	2015	03/24/16	Q	Q	Q
Exports and Imports of Goods	12/31/15	02/24/16	M	M	M
GDP/GNP	2015 Q4	03/24/16	Q	Q	Q
Gross External Debt	2015 Q4	03/24/16	Q	Q	Q
International Investment Position[6]	2015 Q4	03/24/15	Q	Q	Q

[1] Including reserve assets that are pledged or otherwise encumbered.
[2] Both market-based and officially-determined, including discount rates, money market rates, and rates on treasury bills, notes, and bonds.
[3] Foreign, domestic bank, and domestic nonbank financing.
[4] The general government consists of the central government (budgetary funds, extrabudgetary funds, and social security funds) and the state and local governments.
[5] Including currency and maturity composition.
[6] Includes external gross financial asset and liability positions vis-à-vis nonresidents.
[7] Daily (D); weekly (W); monthly (M); quarterly (Q); annually (A); irregular (I); and not available (NA).

INTERNATIONAL MONETARY FUND

LUXEMBOURG

2016 ARTICLE IV CONSULTATION—SUPPLEMENTARY INFORMATION

May 3, 2016

Prepared By European Department

This supplement provides information that has become available since the issuance of the staff report on April 21, 2016. The thrust of the staff appraisal is unchanged.

The authorities updated their fiscal projections and policy objectives in the Stability and Growth Program released at end-April. The government agreed with the EC proposal to lower Luxembourg's medium-term objective (MTO) to a structural fiscal deficit of 0.5 percent of GDP, but reaffirmed its commitment to keep the gross public debt below 30 percent of GDP over the medium term. The government's fiscal deficit and public debt projections—underpinned by an upward revision of the estimated fiscal surpluses in 2014–15—are consistent with those of the staff report. The government estimates Luxembourg's potential GDP growth at 3.2 percent, nearly the same as estimated by staff. In view of the volatile international environment, however, the authorities expect significant fluctuations of the projected GDP growth around the long-term trend, while staff envisages a gradual convergence to it.

Luxembourg: Updated Fiscal Estimates and Projections, 2014–20
(Percent of GDP unless otherwise indicated)

	2014	2015	2016	2017	2018	2019	2020
		Est.			Projections		
General government balance							
Staff report	1.4	1.0	0.9	0.1	0.1	0.1	0.1
Authorities' April update	1.7	1.3	0.8	0.0	0.1	0.2	0.4
General government gross debt							
Staff report	22.9	21.6	22.6	22.9	23.1	23.1	23.2
Authorities' April update	…	21.5	22.4	22.9	23.1	23.2	23.5
Memorandum items:							
Real GDP growth (percent)							
Staff report	4.1	4.8	3.6	3.3	3.2	3.1	3.0
Authorities' April update	…	4.8	2.9	4.5	4.9	3.5	2.3

Source: Luxembourg authorities; and IMF staff estimates.

Statement by Mr. Menno Snel, Executive Director for Luxembourg and Ms. Amela Hubic, Senior Advisor to the Executive Director
May 6, 2016

The Luxembourg authorities thank the staff for their comprehensive analysis and constructive discussions during the mission in Luxembourg. The staff's analysis provides an objective view of the macroeconomic situation in the country and its economic challenges.

Economic outlook

The economic performance has been strong over the last three years, with an average real GDP growth of 4.4 percent and close to 5 percent in 2015. Growth was mainly driven by robust domestic demand and strong net services exports. Also, an AAA credit rating with a stable outlook, a stable political and social environment, and sound public finances are key elements that support Luxemburg's economic growth.

The government projects the economy to grow by 2.9 in 2016 and on average by 3.8 percent over the period 2017-2020. The somewhat lower projected medium-term growth compared with the historical averages before the crisis is due to: (i) slower recovery of the euro area economies; (ii) progressive exit from accommodative monetary policy in the euro area; and (iii) less favorable stock exchange developments. However, this lower growth profile is accompanied by positive developments in the labor market.

Strong and dynamic job creation led to an increase in employment of 2.5 percent. Employment is projected to increase by 2.8 percent over the medium-term. Unemployment is on a downward path thanks to the government's active labor market policies that help tackling the long-term unemployment of low-skilled workers. The unemployment rate was at 6.5 percent at the beginning of 2016, down from around 7 percent in 2014 and is projected to continue to decrease over the medium-term to about 6 percent.

In line with the euro area trends and lower oil prices, average inflation remains low. This low inflation environment limited the impact of the 2 percentage point increase in VAT rates in 2015. Over the medium term, inflation is projected to average 1.6 to 2 percent. The current account recorded a surplus of 5.5 percent in 2015 and is expected to stay close to 5 percent in the medium term, reflecting a surplus in services partly offset by a negative balance in goods.

Public finances

Luxembourg's fiscal position remains sound and is one of the strongest in the euro area. The budget balance recorded a surplus of around 1.3 percent of GDP on average over the last three years, and the gross public debt level remains stabilized slightly above 20 percent of GDP. The country has managed to maintain its low level of public debt as well as a significant budgetary safety margin with respect to the Maastricht deficit reference value of 3 percent of GDP, demonstrating the government's commitment to sound fiscal policies. In this context, the government decided to adopt a lower medium term objective (MTO), a structural deficit of 0.5 percent of GDP, over the period 2017–2019, which is in line with new minima-requirements calculated by the EC.

In 2015, public finances were characterized by three main factors: (i) the entry into force of the new regime for the VAT on e-commerce that resulted in a loss of 1 percent of GDP of VAT revenues; (ii) the implementation of a multi-annual counter-financing strategy with an impact of 0.7 percent of GDP in its first year; and (iii) the improvement of the macroeconomic conditions with a positive impact on the government revenue. The conjunction of these three elements allowed the general government balance to reach a surplus of 1.3 percent of GDP—a much better outcome than initially estimated.

On February 29, 2016, the government announced the details of the *tax reform* which were further specified on April 21. With this reform, the government wanted to improve the tax system by making it more simple, competitive, efficient, and fair. The reform targets both the companies and the households, but the latter are the largest beneficiaries. It will be implemented as of January 1, 2017, and its cost is estimated around 0.6 and 0.8 percent of GDP for the period 2017–2020. The non-neutral impact of this reform is justified by a favorable general government balance over the last three years, the positive economic outlook and the relatively low level of public debt.

The fiscal position is projected to remain in a small surplus over the medium term, even with the cost of tax reform taken into account, well above the newly adopted MTO, and for the entire 2017–2020 period. Public investment will also remain high over this period as the government considers it to be important for the development and the potential growth of the economy. The high level of investment is also justified by the population growth as well as by the continuous increase of employment.

The debt-to-GDP ratio is at 21.6 percent of GDP in 2015, entirely denominated in euro and well below the Maastricht debt reference value of 60 percent of GDP. It is worth noting that significant assets to fund future pension liabilities -29.4 percent of GDP at the end of 2015-have been set aside in a specialized and dedicated fund. Also, taking all government assets into account, the public sector is a net creditor. The public debt is projected to remain around 23 percent of GDP over the period 2016-2020, demonstrating the government's commitment to keep the public debt below 30 percent of GDP.

Although the fiscal indicators are currently positive, the country is facing some structural challenges that may impact its public finances. Potential growth has declined and the high degree of openness of the economy and its specialization in financial services make public revenues vulnerable to high volatility. Also, several tax initiatives—such as the OECD/G20 BEPS project or EU rule changes and investigations - that are underway might have some consequences for the public revenues. The ageing population will also impact public finances over the long-term. The government concurs with the staff's view about the need to place the old-age pension system on a sustainable path, and recognizes that a close monitoring of this issue is required. As provided under the 2013 pension regime, the government can assess, using actuarial studies, every 5 years, the consistency between the assumptions underlying the reform and the updated financial trajectory of the scheme. This review has been advanced by a year and is now taking place in 2016. In this context, the government took note of staff's recommendations and stands ready to consider them in this review. It is also worth highlighting that the government has already put in place several initiatives with an objective to delay the effective retirement age, such as, but not limited to, the reform of the pre-retirement regime, professional reclassification and the complementary pension amendments.

Financial sector

Luxembourg's forward-looking financial sector remains resilient and sound. It is a financial hub in the euro area that serves private and institutional clients around the world, and its diversification continues with Fintech activities as the latest effort. The ongoing regulatory changes at European and international levels represent challenges, closely monitored by the authorities who stand ready to take the necessary measures aimed at consolidating and strengthening the competitiveness and resilience of the financial sector in the long term.

Banking sector. The aggregate banking sector balance sheet has overall stabilized in the last few years, reflecting an increase of asset values but also some new inflows. The capitalization and liquidity ratios are sound, and the NPLs are very low. The banking sector continues to be profitable and remains an important liquidity provider. The authorities share the staff's view that the European banking union is good for the euro area and is especially beneficial for Luxembourg as the more integrated prudential oversight under the SSM will eliminate potential 'blind spots' for the national supervisors, and strengthen the resilience of the banking system. In this regard, the authorities believe that it is essential to complete the banking union by putting in place a common European backstop for the single resolution fund as well as the third pillar of the banking union, the common European deposit insurance scheme. As for the oversight of nonbank holding companies of banks, discussed in 2015 Article IV Consultation, measures are taken to monitor ownership links at the time of authorization.

Investment fund industry. As the staff rightly point out in their report, the growing investment fund industry remains an important component of the financial system in Luxembourg. Over the last few years, the industry has benefited from favorable financial markets and has increased the amount of assets under management, also thanks to new inflows. It continues to invest in a diversified class of assets and caters to a diverse pool of investors without any major concentration risks. This diversification has been an important factor for the observed resilience of the overall financial sector during past crises and continues to help buffer the impact on financial market volatility on Luxembourg.

For this year's Article IV consultation, the staff has used the investment fund industry in Luxembourg as a case study. They presented a very detailed and thorough analysis of the industry, and have taken a close look at the linkage between the investment fund industry and the banks in Luxembourg. The authorities took note of the risk factors identified by staff. However, they believe that it would have been beneficial to also present the benefits of a growing investment fund industry for Luxembourg and for the euro area. Next to that it is important to emphasize that a lot is already in place, and that the investment strategies of investment funds are laid down in their prospectus and the management companies must perform mandatory liquidity risk management and stress tests which are reviewed by the *Commission de Surveillance du Secteur Financier* (CSSF). The existing EU Directives provide a solid framework for risk monitoring, risk management and supervision of

Luxembourg’s investment funds. Furthermore, the authorities welcome the UCITS V and AIFM Directives which have clarified and strengthened the role and the responsibilities of the depository banks.

The recently established *Systemic Risk Committee* (SRC) will, among other duties, closely monitor the links between the banks and the fund industry as well as the developments in the housing market. This committee has already had its first discussions on this linkage on the basis of the study conducted by the *Banque centrale du Luxembourg* (BCL)—who provides the Secretariat to the SRC. In addition, the IMF’s FSAP exercise, which will take place this year, is expected to cover this linkage. The authorities are looking forward to working closely with the IMF staff during this exercise which will help strengthen Luxembourg’s financial model further - proven to be resilient in the recent global crisis.

The increase of the capital of the BCL. The government has committed to finding a progressive and sustainable solution to endow the BCL with adequate capital. The discussions between the government and the BCL are ongoing.

Other issues
Diversification of the economy continues. The government continues to pay careful attention to developing a climate conducive to business and investment, which should help pursuing efforts to diversify the structure of the economy. Specific sectors of growth such as logistics, ICT and bio- and eco-technologies have been chosen for this purpose. These diversification efforts are already starting to bear fruit, in particular in the rapidly growing logistics sector. The government continues to encourage innovation, looking for possible niches by using some of the existing frameworks/infrastructure: a pan-European project to build a supercomputer and a plan to create a legal framework for space mining are some of the latest examples. Lastly, the diversification of the forward-looking financial sector across the business activities, investment destinations and the customer bases is expected to further enhance the diversification of the financial sector itself.

Recent influx of refugees from the Middle East. Luxembourg hosts around 3500 asylum seekers since mid-2015, which account for nearly 0.5 percent of its population. The past experience in handling refugee and migration flows as well as the population’s positive attitude towards refugees, have helped the government to rapidly mobilize resources. Drawing on this past experience, the government is aware that it is extremely important to integrate refugees as quickly as possible. This is achieved by enrolling the children in schools from day one, providing intensive language courses and issuing work permits rapidly. To be able to do so - given the rapid influx of refugees - the government called on retired teachers to return to part-time work. As for the diploma recognition, the government is eyeing the German example. The government also reduced the time between the asylum application and the work permit granted to refugees from 9 to 6 months, in order to allow them to enter the labor market more quickly. Lastly, while it successfully managed to cope so far with the refugee influx, thanks also to the sound fiscal position, any renewed strong influx of refugees would likely put pressure on the country’s capacity to host.