INTERNATIONAL MONETARY FUND

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LUXEMBOURG

June 2024

2024 ARTICLE IV CONSULTATION—PRESS RELEASE; STAFF REPORT; 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 2024 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 29, 2024, 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 29, 2024, following discussions that ended on March 26, 2024, 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 May 13, 2024.
- An **Informational Annex** prepared by the IMF staff.
- A **Statement by the Executive Director** for Luxembourg.

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

Selected Issues
Financial Stability System Assessment

The IMF's transparency policy allows for the deletion of market-sensitive information and premature disclosure of the authorities' policy intentions in published staff reports and other documents.

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PRESS RELEASE

PR 24/209

IMF Executive Board Concludes 2024 Article IV Consultation with Luxembourg

FOR IMMEDIATE RELEASE

WASHINGTON, DC – June 7, 2024: On May 29, 2024, the Executive Board of the International Monetary Fund (IMF) concluded the Article IV Consultation with Luxembourg.[1]

Luxembourg' economy contracted in 2023 despite buoyant consumption, mainly due to weak external demand and residential investment. Inflation is subsiding but underlying measures remain high. Credit growth turned negative as demand dropped and real estate prices declined. Accordingly, the newly elected government has approved a mix of temporary and permanent measures to reinvigorate growth and boost competitiveness. The moderately expansionary fiscal stance is broadly appropriate to support growth, but more targeted and temporary measures would have been more efficient. The 2024 Financial Sector Assessment Program (FSAP) found the financial sector to be largely resilient against severe shocks.

Growth is expected to rebound moderately in 2024 and strengthen further in 2025, converging to its potential in the medium term. Headline inflation will decline below 3 percent this year, before temporarily increasing in 2025 once administrative energy price measures expire. Risks are tilted to the downside, stemming mainly from external demand and supply shocks, and a disorderly correction of asset prices, including domestic real estate valuations.

Executive Board Assessment[2]

Executive Directors agreed with the thrust of the staff appraisal. They welcomed Luxembourg's economic resilience, strong buffers and the envisaged economic recovery this year and beyond. Noting the uncertain environment from geopolitics and housing vulnerabilities, Directors emphasized the need for continued policy prudence to manage short-term vulnerabilities and reinvigorate long-term growth and productivity.

Noting the ample fiscal space and AAA credit risk rating, Directors commended the authorities' commitment to fiscal discipline and broadly agreed that a moderately expansionary fiscal

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[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.

[2] 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 summing up can be found here: http://www.IMF.org/external/np/sec/misc/qualifiers.htm.

stance in 2024 is appropriate, noting that more targeted and temporary measures could have facilitated a smoother transition of fiscal policy into contractionary territory. Over the medium-term, Directors emphasized the need for fiscal consolidation, to address rising spending pressures, notably from aging and climate transition, and to stabilize public debt. Improving spending efficiency and targeting, containing the wage bill, and expediting pension reform would be important, while tax reforms should be carefully calibrated to avoid revenue losses. In that context, Directors welcomed the authorities' intention to complement the EU rules with a medium-term objective and suggested complementing it with an operational expenditure rule and an enhanced role for the fiscal council.

Directors welcomed the authorities' measures to restore confidence in the housing sector and emphasized that orderly rebalancing of the housing market and steps to strengthen housing affordability, particularly by expediting measures to raise housing supply, should remain a priority.

Directors positively noted that the financial sector is resilient and well-capitalized. They commended the authorities for the progress with the implementation of the FSAP 2017 recommendations and encouraged them to sustain their commitment in that regard. They saw merit in further bolstering resilience through sectoral systemic risk buffers on real estate exposures. Directors supported activating income-based measures early in the recovery cycle to tackle structural households' indebtedness and considering gradually reducing the maximum LTV limit of 100 percent. Enhancing the macroprudential policy framework, including by reducing potential inaction bias, would also be important. Directors also noted the need for continued progress in strengthening the supervisory, regulatory and oversight frameworks and in mitigating AML/CFT risks.

Directors emphasized the need for sustained efforts to enhance productivity and growth. They welcomed the authorities' policy priorities, including on research and development, innovation, reskilling the labor force, streamlining regulations, and facilitating market entry and exit. They agreed that enhancing wage flexibility would boost competitiveness and labor mobility.

Table 1. Luxembourg: Selected Economic Indicators, 2019-29

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
					Projections						
Real Economy (percent change)											
Gross domestic product	2.9	-0.9	7.2	1.4	-1.1	1.3	2.9	2.5	2.3	2.3	2.3
Total domestic demand	4.9	-4.0	10.9	-1.0	2.4	1.9	3.3	2.7	2.6	2.5	2.5
Foreign balance 1/	-0.3	1.8	0.0	2.0	-2.6	-0.2	0.6	0.7	0.6	0.6	0.6
Labor Market (thousands, unless indicated)											
Unemployed (average)	15.4	18.7	17.1	14.6	16.2	18.6	18.9	18.6	18.3	18.3	18.4
(Percent of total labor force)	5.4	6.4	5.7	4.8	5.2	5.9	5.9	5.7	5.5	5.4	5.3
Total employment	463.3	471.6	485.1	501.4	512.7	519.5	529.6	541.3	553.4	565.4	577.5
(Percent change)	3.5	1.8	2.9	3.4	2.2	1.3	2.0	2.2	2.2	2.2	2.1
Prices and costs (percent change)											
CPI (harmonized), p.a.	1.7	0.0	3.5	8.2	2.9	2.6	3.1	2.1	2.0	2.0	2.1
CPI core (harmonized), p.a.	1.8	1.2	1.5	4.2	3.9	2.8	2.9	2.2	1.9	2.0	2.0
CPI (national definition), p.a.	1.7	0.8	2.5	6.3	3.7	2.7	3.2	1.8	2.1	2.0	2.0
Wage growth 2/	1.9	1.2	5.1	5.9	7.3	3.5	2.9	2.3	2.3	2.3	2.3
Public finances (percent of GDP)											
General government revenues	45.3	43.5	43.4	43.5	46.8	47.0	47.9	48.0	48.2	48.4	48.7
General government expenditures	43.1	47.0	42.8	43.9	48.1	49.2	49.4	49.2	49.5	49.9	50.2
General government balance	2.2	-3.4	0.5	-0.4	-1.3	-2.2	-1.5	-1.3	-1.3	-1.5	-1.6
General government cyclically-adjusted balance	0.6	-2.0	0.0	-0.5	-1.4	-1.7	-1.4	-1.3	-1.4	-1.5	-1.6
General government structural balance	0.6	1.8	1.1	0.3	0.2	-0.9	-1.4	-1.3	-1.4	-1.5	-1.6
General government gross debt	22.4	24.6	24.5	24.7	25.7	28.1	28.8	29.5	30.1	30.8	31.4
Balance of Payments (percent of GDP)											
Current account	8.9	8.6	7.9	7.6	6.8	7.0	7.3	7.3	7.2	7.3	7.2
Balance on goods	2.6	2.3	1.2	0.1	-0.2	-0.8	-0.8	-0.9	-0.9	-1.0	-1.0
Balance on services	33.7	37.0	37.3	37.2	34.4	33.9	33.5	33.5	33.4	33.2	33.1
Net factor income	-27.7	-30.7	-30.2	-29.1	-26.9	-26.3	-25.6	-25.6	-25.4	-25.2	-25.0
Balance on current transfers	0.3	0.0	-0.4	-0.6	-0.5	0.2	0.2	0.2	0.2	0.2	0.2
Exchange rates, period averages											
U.S. dollars per euro	1.12	1.14	1.18	1.05	1.08	…	…	…	…	…	…
Nominal effective exchange rate (percent change)	-0.6	1.7	0.6	-1.3	2.5	…	…	…	…	…	…
Real effective exchange rate (percent change)	-0.7	1.4	0.2	-3.0	0.1	…	…	…	…	…	…
Credit growth and interest rates											
Nonfinancial private sector credit (eop, percent change) 3/	7.2	5.0	5.3	4.4	-3.0	2.2	6.3	4.8	4.8	4.7	4.6
Government bond yield, annual average (percent)	-0.1	-0.4	-0.4	1.5	3.1	…	…	…	…	…	…

Sources: Luxembourg authorities and IMF staff estimates and projections.

1/ Contribution to GDP growth.

2/ Overall economy.

3/ Including a reclassification of investment companies from financial to non-financial institutions in 2015.

INTERNATIONAL MONETARY FUND

LUXEMBOURG

STAFF REPORT FOR THE 2024 ARTICLE IV CONSULTATION

May 13, 2024

KEY ISSUES

Context: The new government took office in November 2023 and key plans include lowering taxation to boost purchasing power and competitiveness. A financial sector assessment program (FSAP) concluded together with the Article IV in March 2024.

Recent developments: The steep rise in interest rates has taken a toll on economic activity. In 2023, despite buoyant consumption, GDP contracted due to weaker external demand and residential investment, and the labor market has cooled. Inflation is subsiding but underlying measures are still high. Credit growth turned negative—as demand dropped, and credit standards tightened—and real estate prices declined. Yet, the financial sector remains resilient with record bank profitability and capital and liquidity buffers higher than in EU peers. Household and corporate sectors entered the hiking cycles by the major central banks with stronger balance sheets. However, asset quality has deteriorated somewhat, albeit from strong levels, and liquidity pressure has been rising, especially in the real estate sector. The newly elected government has approved a mix of temporary and permanent measures to support purchasing power and housing demand. The medium-term fiscal outlook has worsened, although the public debt-to-GDP ratio is projected to remain among the lowest in AAA rated countries.

Outlook and risks: Gradually easing financial conditions, continuing disinflation, and expansionary fiscal policy is expected to help the economy rebound and the financial cycle bottom out. Inflation should decline in 2024, before temporarily increasing in 2025 once administrative price measures expire. The recovery is fragile amid heightened geopolitical tensions. Risks are tilted to the downside, stemming mainly from external demand/supply shocks and a disorderly correction of asset prices, including domestic real estate valuations.

Policy lines:

- **Fiscal policy.** Given the economic slowdown and ample fiscal space, the near-term fiscal stance is broadly appropriate, but the measures should have been more targeted and temporary. A contractionary fiscal stance is recommended in 2025 and the size of the adjustment should adapt to the growth/inflation dynamics. Over the medium term, in light of rising spending pressures and uncertainty around revenues, a gradual fiscal consolidation while increasing spending efficiency would be

appropriate to stabilize the debt and preserve the country's AAA rating. An early pension reform would ensure intergenerational equity. Tax reforms should avoid revenue losses, diversify revenue sources, and enhance equity.

- **Financial policy.** The 2024 FSAP found that, while there are a few weak entities, the financial sector is resilient against plausible severe scenarios.
- **Macroprudential policy.** Domestic systemic risks are abating with the turning of the credit and house price cycles, but the higher interest rates exposed some vulnerabilities, especially in stock of real estate exposures. Given concentration of these risks, banks' capital headroom should be used to introduce sectoral systemic risk buffers on real estate exposures. Commercial real estate risks should continue to be closely monitored. Should credit conditions tighten significantly, the stress requirement of 200 basis points could be reduced and CCyB could be eased without relaxing the LTV limits. Going forward, income-based measures should be activated early in the recovery cycle and a gradual reduction of the maximum loan-to-value limit of 100 percent should be considered. The institutional framework could be enhanced to reduce potential inaction bias by reducing the role of the government in macroprudential decisions, strengthening communication, including in case of inaction, and improving coordination with other policies (e.g., housing).
- **Supervisory, regulatory, and oversight frameworks.** The 2024 FSAP found commendable progress in implementing the 2017 FSAP recommendations. Areas of improvement include: (i) future-proofing the independence of the supervisory authorities; (ii) enhancing inter-agency cooperation on potentially weak parent banks; (iii) closing data gaps on OFIs to help monitor its significant connections to other entities; and (iv) reducing regulatory arbitrage risk. (e.g., through unregulated alternative investment funds). The authorities are advised to further fortify the emergency liquidity assistance framework.
- **Housing support measures.** The authorities' support measures should be better targeted and temporary and strike the right balance between smoothing the housing cycle and allowing prices to adjust, given the persistent overvaluation. The focus should be on preserving supply capacity, allowing greater density, and reducing delays, while frontloading public projects. Help-to-buy policies should be better targeted and land tax reform should be expedited to reduce structural imbalances and enhance affordability and equity.
- **Structural policy.** Sustained economic growth hinges on raising productivity, which has been stagnant since the Global Financial Crisis. Increasing investment in intangible assets, aligning workers' skills with the current demands of the economy, reducing administrative burden, and making the wage indexation system more flexible will be key to harnessing productivity gains and bolstering competitiveness.

Approved By
Laura Papi (EUR) and Natalia Tamirisa (SPR)

Discussions took place during March 13–26, 2024. The team comprised E. Stavrev (Head), X. Fang, and T. Jardak (all EUR), K Antoine (MCD) and E. Chhabra (STA), and was assisted by X. Li, C. Leroy, and H. Jung. The FSAP mission chief S. Mitra (MCM) participated in the concluding meetings and the press conference. Messrs. Dresse and Englaro (both OED) joined some meetings. The mission met with Minister of Finance Roth, Governor Reinesch, other officials, and representatives from the private sector and civil society.

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CONTEXT

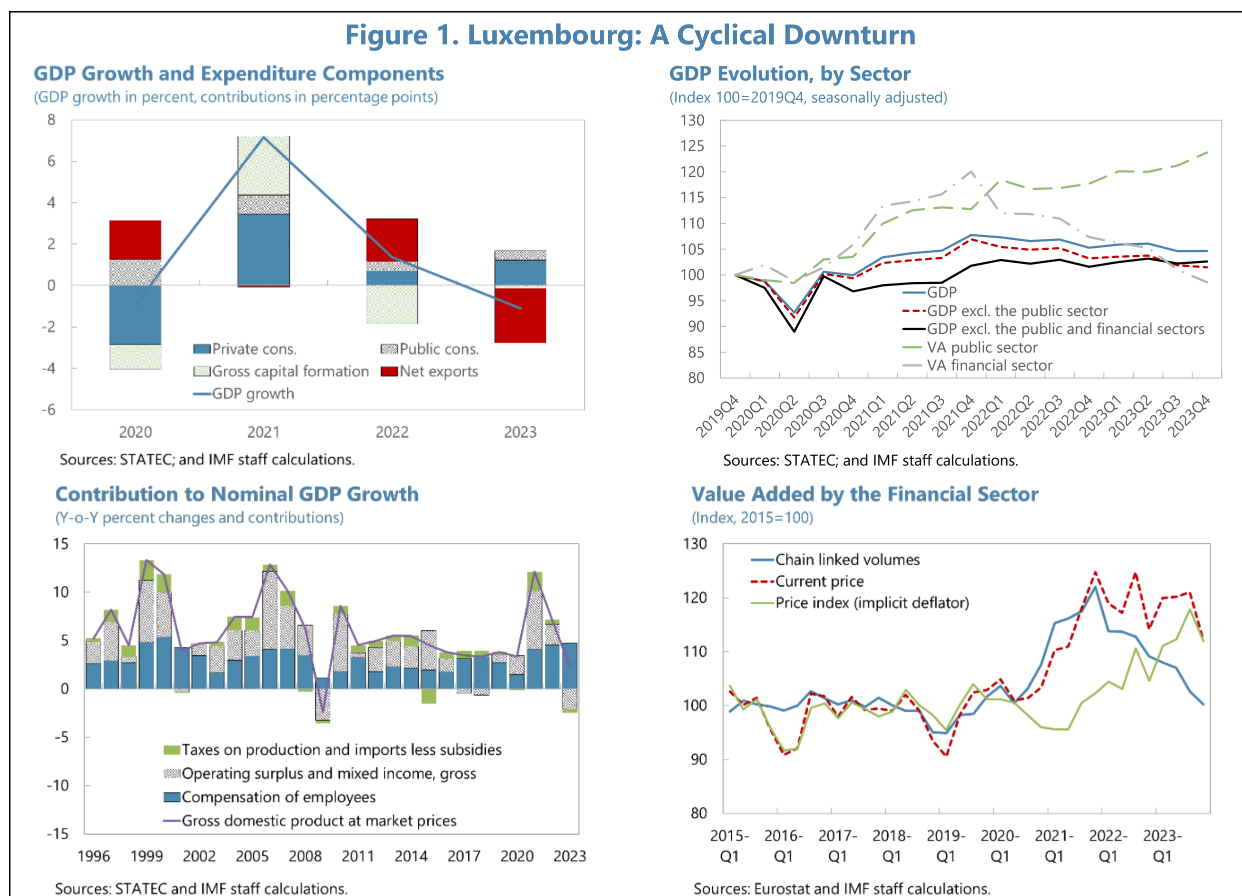
1. Luxembourg's economy entered the hiking cycle in a strong position. The post-pandemic recovery has been stronger than peers. Firms' profits benefited from robust demand and high inflation and accumulated cash buffers, despite some heterogeneity between and within sectors. A tight labor market, generous fiscal support, and automatic wage indexation boosted households' real income and savings. Loose monetary and financial conditions supported the financial sector performance and helped maintain capital and liquidity buffers at high levels. In late 2022 however, the recovery started to fade, and financial volatility increased, weighing on economic activity.

2. The newly elected government's key priorities for 2023–28 are boosting competitiveness and purchasing power. The opposition conservative party (CSV) won the October 2023 elections and formed a coalition with the liberals (DP, part of the former coalition). Because of the election, the budgetary cycle has been delayed. The government's key priorities focus on reinvigorating growth, including in the real estate sector in the short term, and boosting competitiveness through lower taxation and simplification/modernization of regulation. While some measures have already been implemented in response to the ongoing downturn, the timing and calibration of several measures/reforms has yet to be defined. The post-electoral context and a more challenging than expected external environment have affected the implementation of past IMF advice (Annex I).

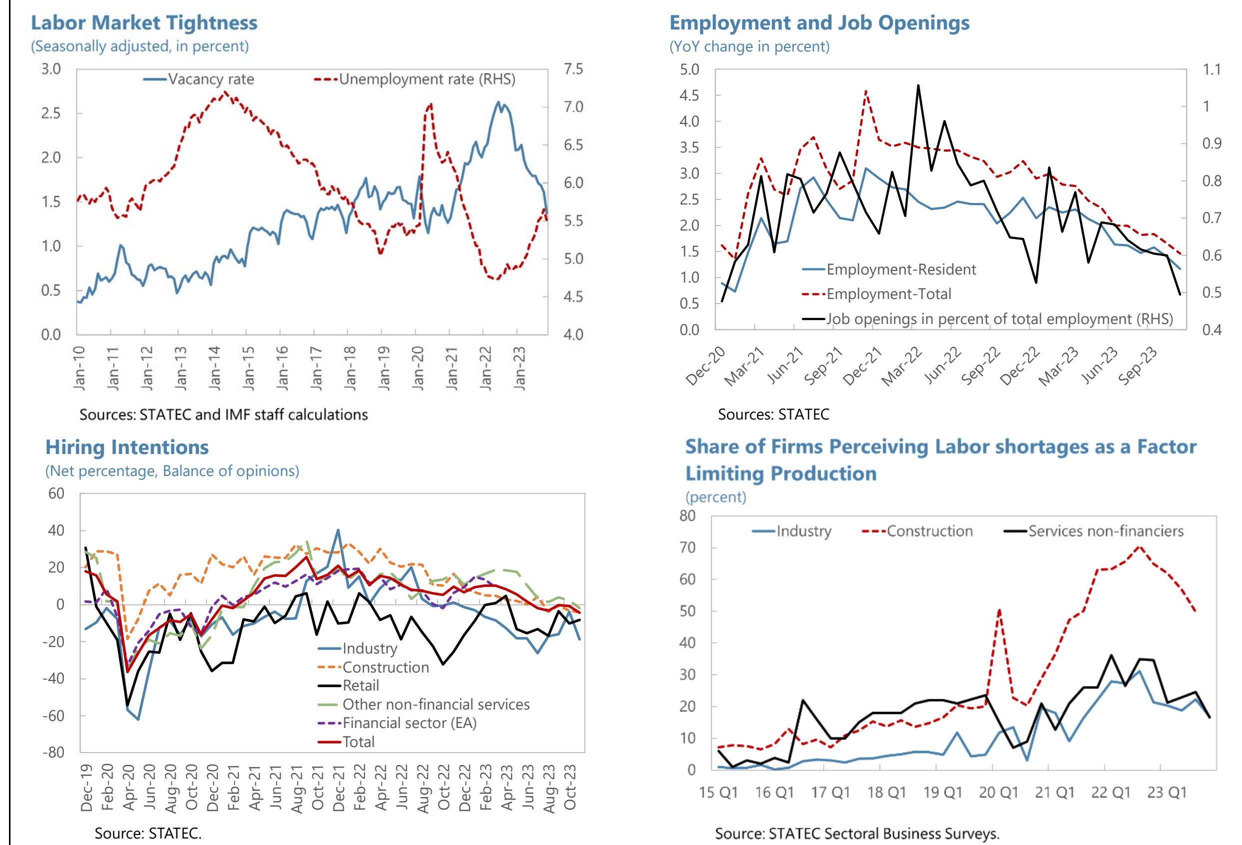
RECENT DEVELOPMENT

Tighter and volatile financial conditions have weighed on the economy, even if supportive fiscal policy and robust real wage growth buoyed consumption. The financial sector has been resilient so far supported by strong profitability, despite some deterioration in asset quality. Weak demand and uncertainty have put pressure on real estate prices, reducing overvaluation, but are raising concerns about more durable supply disruptions.

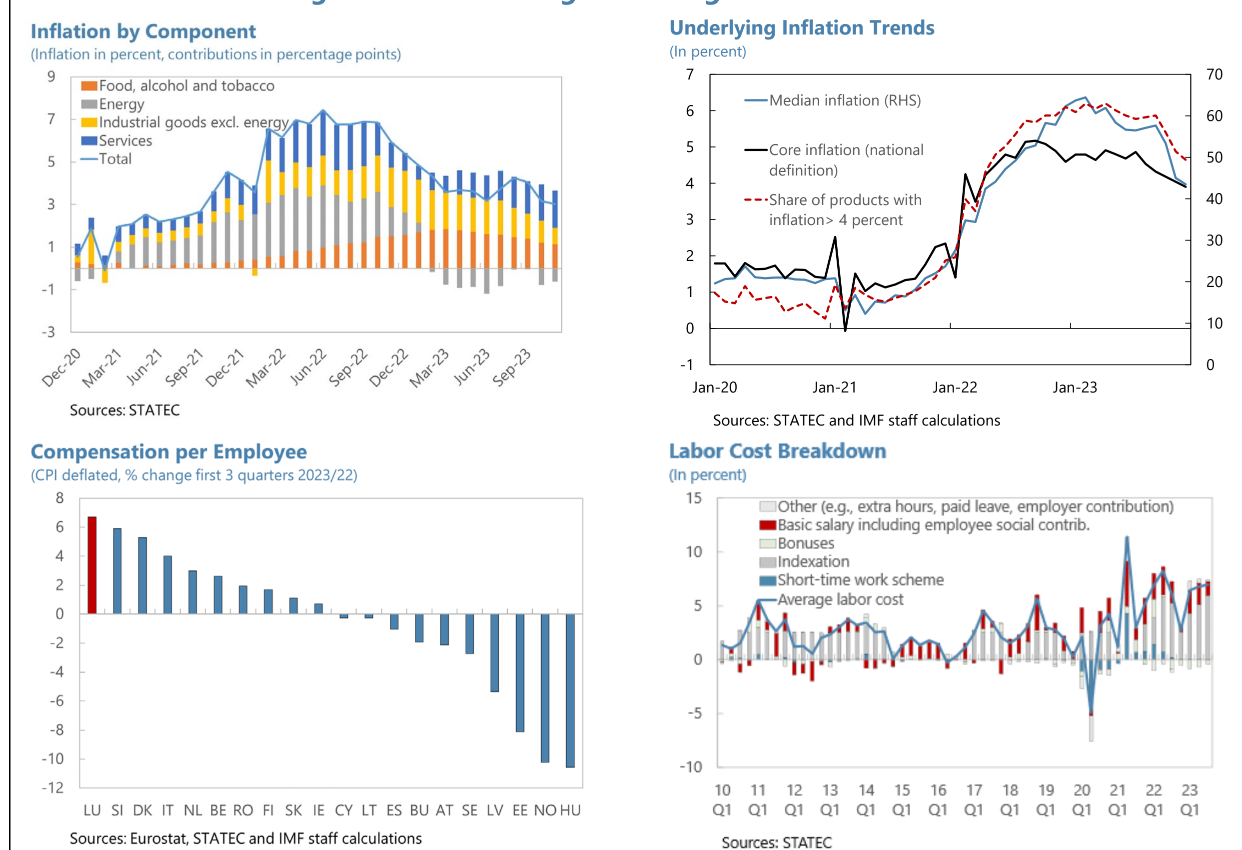
3. Growth was negative in 2023, with a broad-based slowdown across sectors. Preliminary figures show that real GDP contracted by 1.1 percent in 2023, mainly due to weaker external demand and residential investment. In parallel, robust real disposable income growth has supported consumption, and the households' saving rate remains 3 percentage point above pre-pandemic levels. The financial sector, construction, and transportation value added have recorded a sharp contraction, partly normalizing from high post-pandemic growth levels. Other sectors such as wholesale, retail, and business service activities have also contracted. However, nominal GDP increased, albeit more moderately than in 2022, supported by higher wages (+10½ percent), while corporate profits have declined on aggregate (-5 percent), despite record strong performance by banks.



4. **Labor market pressures are subsiding amidst persistent hiring challenges in some sectors.** Large net-job creation has slowed considerably, mainly in construction and manufacturing. Unemployment has risen faster than in peer countries (+0.9 percentage points from its 2022 lows), reaching 5.5 percent at end-2023 (5.6 percent in February 2024)—close to pre-COVID levels. Low-skilled still account for a majority of the unemployed, but the share of middle- and high-skilled labor in total unemployment has increased in recent quarters, in part among immigrants. While there is some resilience in total hours worked, vacancies have fallen by 36 percent and expectations of future employment by firms dropped. At the same time, firms across most sectors continue to face challenges to hire, reflecting persistent skills mismatches, especially in ICT, accounting, and management occupations.



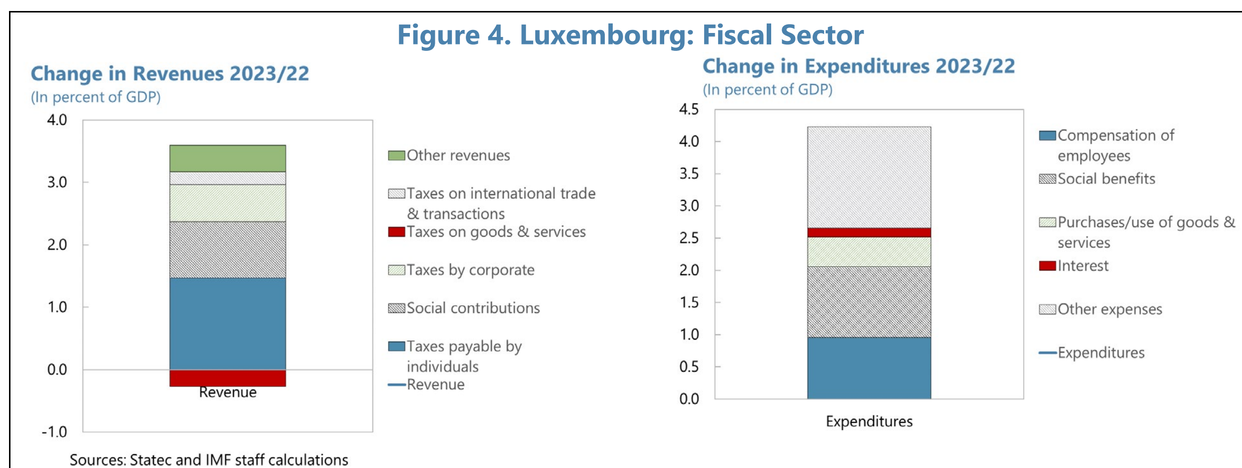
5. Like in other advanced economies, headline inflation has declined, while underlying inflation remained elevated on wage pressure. Headline inflation stood at 3.5 percent at end-2023, down from 5.4 percent a year earlier (3.2 percent in February 2024). Most of the decline is due to the reversal of supply shocks, in particular food and energy. However, services inflation has increased to 4¾ percent, as three consecutive indexations (+2.5 percent each) increased labor costs and the base effect from some administrative price measures dissipated. Hence, core inflation has been persistently elevated at 4 percent y/y, although sequential measures point to some softening since August 2023.



6. Despite the large cost-of-living-support measures, the fiscal deficit has been lower than expected. The overall deficit widened from 0.4 percent of GDP in 2022 to 1¼ percent in 2023 (the cyclically adjusted deficit, excluding the one-off EU budget contribution, has risen from ½ to 1.1 percent of GDP), due to a rapid increase in the wage bill and discretionary measures of the solidarity packages.[1] Overall, revenues increased by 10 percent through December 2023. Buoyant personal income taxes and social security contributions, supported by growth in salaries, higher corporate taxes, partly due to collection of tax arrears, and excises on tobacco and alcohol have more than offset declines in real estate taxes and foregone receipts due to the solidarity packages. The public debt has risen, although it remains low (25¾ percent of GDP in 2023).

[1] The wage bill increased by 1 percentage point of GDP in 2023, driven by the wage indexation tranches, wage negotiation agreement, and hiring in the public sector.

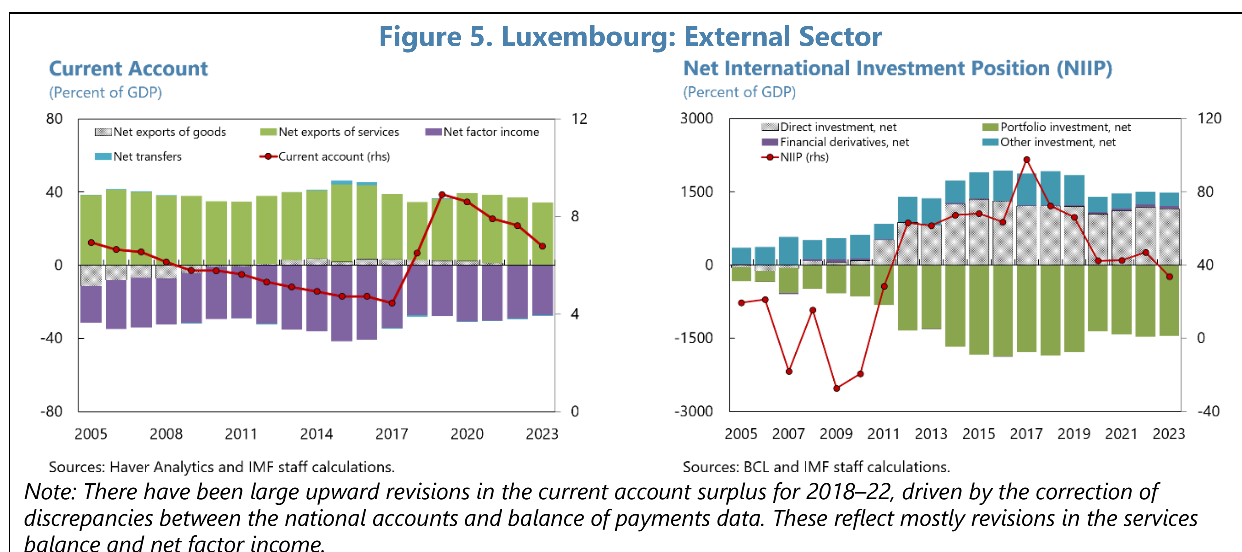
Figure 4. Luxembourg: Fiscal Sector



Sources: Statec and IMF staff calculations

7. Luxembourg's external position is assessed to be stronger than the level implied by medium-term fundamentals. The current account surplus is estimated to have edged down to 6.8 percent of GDP in 2023, mainly driven by declining net exports of services and higher remittances to foreign workers. The net international investment position (NIIP) declined by about 13.2 percentage points of GDP but is expected to strengthen gradually in the medium term and reach pre-pandemic levels. With the caveat that the EBA-lite methodology only partially captures Luxembourg's specific economic features (a large financial center), staff's External Balance Assessment (EBA-lite) indicates that Luxembourg's position is strong, with a current account gap of 3.1 percent of GDP, and an undervalued real effective exchange rate (Annex II).

Figure 5. Luxembourg: External Sector



Sources: Haver Analytics and IMF staff calculations.

Sources: BCL and IMF staff calculations.

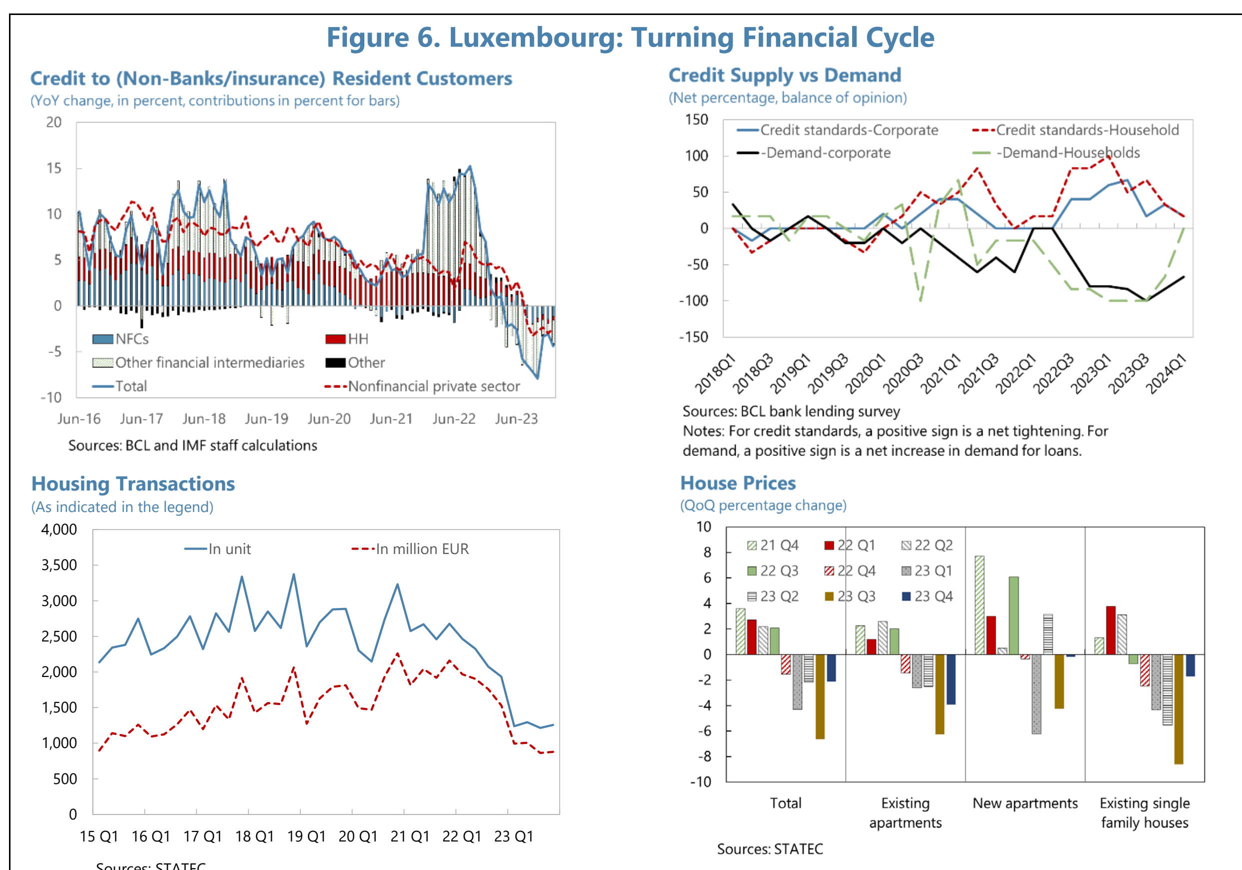
Note: There have been large upward revisions in the current account surplus for 2018–22, driven by the correction of discrepancies between the national accounts and balance of payments data. These reflect mostly revisions in the services balance and net factor income.

8. The credit cycle has turned, but the monetary policy tightening cycle is expected to be close to the end. Credit to the nonfinancial resident private sector contracted (3 percent y/y at end-2023) for the first time in more than 2 decades, reflecting both demand and supply. New mortgages plummeted due to lower demand for housing and a higher rejection rate by banks. For nonfinancial corporations (NFCs), credit growth also dropped significantly as firms are postponing capital expenditures and are relying on internal sources of funding. Nonetheless, forward-looking indicators suggest positive dynamics, especially for households. Despite a negative credit to GDP gap, the

authorities have maintained a positive countercyclical capital buffer (CCyB) at 0.5 percent to support banks' resilience.

9. A rebalancing in the property sector is underway (Annex VI).

- *Residential real estate.* Several years of rapidly increasing price to income and the recent steep rise in borrowing costs squeezed demand for housing (mortgages), including for buy-to-let. Heightened uncertainty about housing market prospects and expectations of new government support in 2024 further exacerbated the downturn. As a result, house prices declined in an orderly fashion (-14½ percent y/y in 2023Q4) with some heterogeneity across segments.[2] This, coupled with a rapid growth in disposable income, have contributed to reducing the overvaluation to a range of (10–25 percent). The price-to-rent ratio is also declining, with indications that new leases are growing rapidly.
- *Commercial real estate.* Lower yields relative to alternative investments and uncertainty about the sector's prospects led to frozen transactions in the sector, and prices came under pressure, especially for offices.



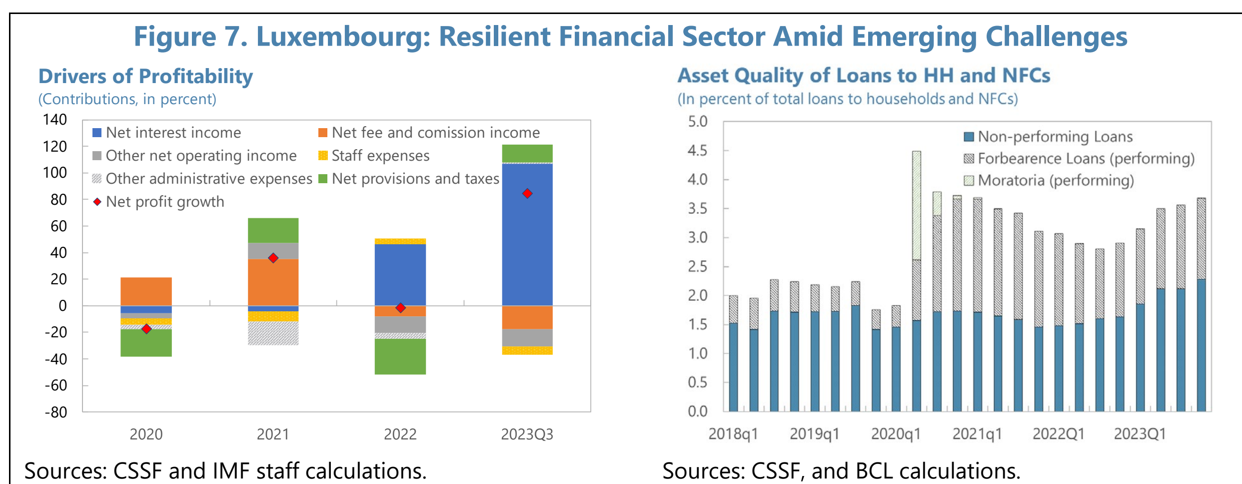
[2] Prices of existing single-family houses and new apartments declined by 19 percent and 7½ percent, respectively.

10. Overall, the financial sector remains resilient, despite a deterioration in asset quality.

- *Banks*. High interest rates have boosted interest margins and banks' profitability, which have almost doubled compared to 2022. Overall, capital and liquidity buffers remain at comfortable levels, with CET1 at 23 percent and LCR above 180 percent, but funding costs have been rising along with the pass-through of monetary policy tightening to deposit rates and a shift to term deposits. The weaker economy and higher debt service is affecting asset quality. The NPL ratio has increased, albeit from low levels, to 1.9 percent in 2023Q4 from 1.6 percent a year ago. The increase in NPLs has been larger for domestically oriented banks (2.6 percent in 2023 against 1.8 percent in 2022), which have a higher exposure to the real estate sector, both mortgages and credit to firms.

- *Investment funds*. The net asset value has slightly improved, reflecting favorable valuation effects, but net flows have been negative for a second consecutive year, despite some recovery in late 2023.

Figure 7. Luxembourg: Resilient Financial Sector Amid Emerging Challenges



Sources: CSSF and IMF staff calculations.

Sources: CSSF, and BCL calculations.

OUTLOOK AND RISKS

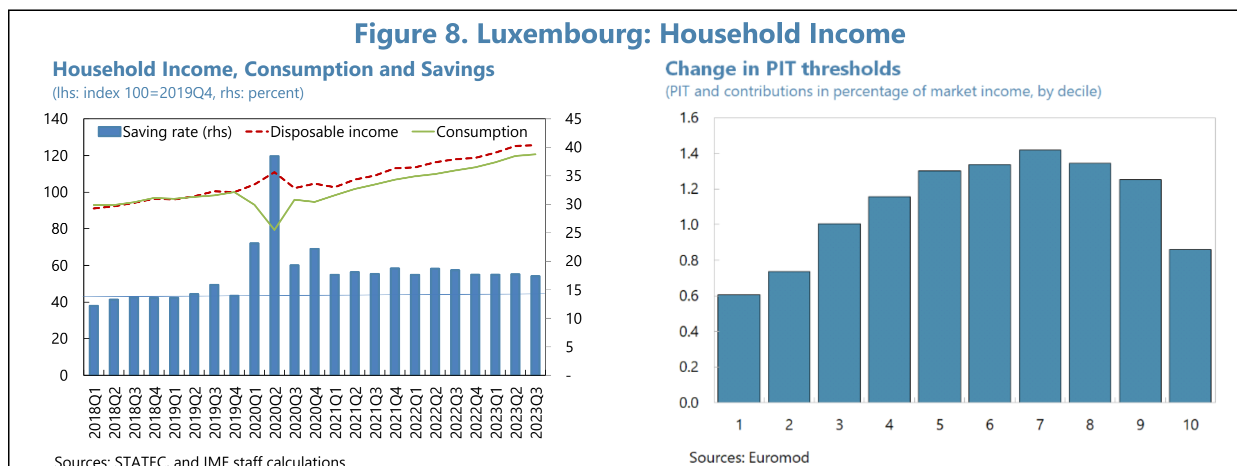
11. In line with the April 2024 WEO, the main external assumptions are for a soft landing. In the euro area, Luxembourg's main trading partner, the forecast is for: (i) growth this year to increase slightly (to 0.4 percent) driven by private consumption; (ii) inflation to continue easing; (iii) short-term bond rates to fall to 3.5 percent in 2024 and 2.6 percent in 2025; and iv) long-term bond yields to remain broadly stable at around 2.5 percent. The baseline assumes that the authorities will reduce the corporate income tax by 1 percentage point and adopt automatic indexation of the tax brackets for inflation in 2025. The cost-of-living measures are set to expire at end-2024.

12. Growth is expected to rebound to 1¼ percent and inflation to recede in 2024.

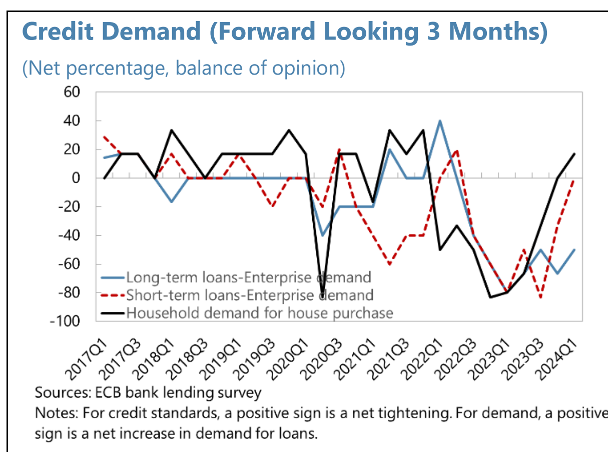
- Fiscal support to households (in particular, the adjustment of the income tax brackets for four wage indexation tranches in January 2024 and housing demand measures), high savings, and continued disinflation are expected to maintain robust consumption growth. Appetite for

residential investment is forecast to grow moderately, both due to financial incentives and reduced uncertainty (Figure 8). The output gap will continue widening as growth will fall short of potential. Unemployment is likely to increase further, as firms continue to adjust their labor cost in response to pressure on their profit margins. As monetary policy eases and confidence increases, growth is expected to strengthen in 2025 and converge to its potential (slightly over 2 percent, its average over 2015–23) in the medium term. However, achieving the potential growth rate depends on addressing supply side constraints in the economy and maintaining Luxembourg's attractiveness and competitiveness.

- Both headline and core inflation will decline below 3 percent, but core will likely remain somewhat above the ECB's target. Inflation is expected to rebound to 3.1 percent in 2025, once administrative energy price measures expire, before falling to 2 percent in 2026.



13. The credit to GDP gap is expected to remain negative, despite higher mortgage activity.[3] Real credit is foreseen to be broadly stable in 2024 and turn positive thereafter, as demand for mortgages gradually regains momentum from a decade low level at the end of 2023, boosted by government's housing measures, reduced uncertainty, and looser ECB monetary policy. The evolution of loans to the non-financial corporate sector is more uncertain but is likely to be sluggish in the near term as firms postpone their investment.



14. While softer global financial conditions and lower inflation have improved the outlook, near terms risks are tilted to the downside, mainly due to rising geopolitical tensions. The latter could reignite supply disruptions and commodity price volatility, impeding the disinflationary process with a risk of more entrenched inflation and losses of competitiveness in a

[3] The credit to GDP gap should be interpreted with caution as GDP is subject to large revisions. Also, relying on the credit-to-GDP gap as an indicator of the financial cycle may cause undesirable volatility in the policy response to business cycle shocks (de Resende et al, forthcoming).

context of automatic wage indexation. This would also lead to higher-for-longer interest rates and cause asset repricing and global systemic financial instability, with spillovers to Luxembourg's economy and financial sector. At the same time, a sharp global slowdown, while potentially accelerating disinflation and interest rate cuts, would dampen growth and employment and affect investors' confidence with negative impact on banks and investment funds. These scenarios would lead to pressure on fiscal revenues. Also, uncertainty arises from changes in international taxation. Domestically, risks stem mainly from a disorderly correction in the property market, which would cause more difficulties in the construction sector, higher NPLs, and banks' losses, as shown by the FSAP analysis (Annex III).

Authorities' Views

15. The authorities broadly agreed on the assessment of outlook and risks. They concurred that 2023 has been a challenging year, emphasizing nonetheless the strength of the initial conditions and the resilience of the economy. They indicated that there are early signs that the cycle is bottoming out and are, overall, confident in the capacity of the economy to rebound in 2024. While agreeing that uncertainty is high, they concurred that the main immediate domestic risk is the real estate sector and noted that they remain vigilant to potential spillovers from rising geopolitical tensions. They see also upside risks associated with the strength of the recovery in financial services, the evolution of saving rates, and the impact of government support measures.

POLICY DISCUSSIONS

The policy mix should aim at efficiently and durably reinvigorating growth, while helping disinflation, and managing vulnerabilities in the real estate sector. A credible gradual fiscal consolidation would help stabilize the debt in the medium term and create additional room for fiscal priorities. Key structural reforms are needed to address longer term challenges, including housing affordability, competitiveness, and ageing population.

A. New Government's Policy Plans: An Overview

16. In response to the downturn and difficulties in the real estate sector, the new government has deployed a large package to stimulate demand. In February 2024, the new government declared a state of crisis in the construction sector for six months, extending short-term work schemes to firms in the sector, and tabled a mix of temporary and permanent measures to stimulate demand for housing, mainly the buy-to-let segment. The package includes, among others, increasing temporarily the accelerated depreciation rate and other tax incentives for house purchases, as well as raising and extending of the interest payment deductibility thresholds. It was also decided to extend the public purchase program of new residential dwellings until 2027 with a cost of EUR480 million (0.6 percent of 2023 GDP).[4] These measures come on top of a package

[4] The City of Luxembourg is also increasing its stock of rental housing with a cost of EUR240 million.

announced by the former government as well as the expected boost to purchasing power from the adjustment to the personal income tax brackets for four indexation tranches.

17. Boosting competitiveness, notably of the financial sector, is a key priority of the new government's five-year program. To achieve this goal, the authorities pledged to lower the tax burden for corporations by bringing the statutory corporate tax rates down towards the OECD average. The government is also committed to maintaining a high level of investments in the digital and climate transition through public investment, public and private partnerships, and tax incentives. Also, the plan includes a lowering of the subscription tax for active ETFs to harness the benefits of this growing segment. Finally, the coalition program focuses on modernizing state functions and administrative procedures, and strengthening public services, such as health and education.

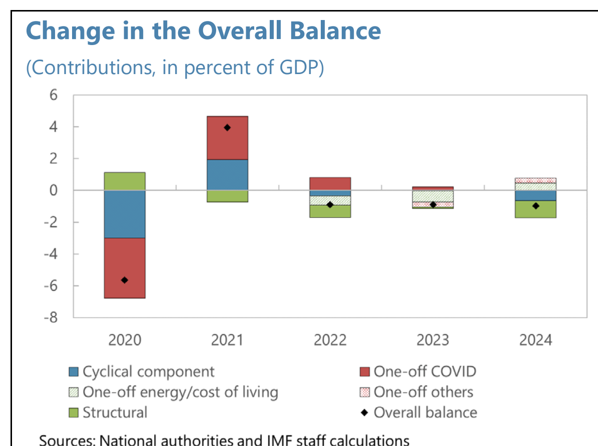
18. Several other measures are being considered but their design is still unclear. The authorities are considering smoothing the phasing out of administrative energy price measures (set to expire at-end 2024) to reduce potential impact on inflation and purchasing power. They are also exploring options to transition to individual taxation. Other tax cuts are also envisaged to render Luxembourg more attractive for highly-skilled non-resident workers. No compensatory measures have been discussed at this stage.

B. Fiscal Policy: Supporting Efficiently the Recovery While Helping Disinflation and Promoting Equitable and Sustainable Growth

19. Staff project the deficit to widen in 2024 and debt to increase over the medium term, albeit from very low levels. The phasing out of the temporary energy support measures will be gradual and offset by predominately permanent policy measures to support purchasing power, notably a steep adjustment of the income tax brackets for 4 indexation tranches in 2024 and measures to support housing demand.[5] The cyclically adjusted deficit excluding the one-off EU budget contribution is expected to widen by 1.1 percentage points to about 1.6 percent of GDP in 2024. Higher profits in the financial sector will help revenue performance in 2024–25 but could prove short-lived due to the adverse impact of higher interest rates on credit activity and provisioning needs, as well as the normalization of net interest margins. In the absence of compensatory measures, the shift from temporary to permanent measures,

Change in the Overall Balance

(Contributions, in percent of GDP)



Sources: National authorities and IMF staff calculations

[5] While the VAT rate has been restored and the conjunctural tax credit has expired – both since January 1st, 2024 –, administrative price measures will remain until end-2024. The authorities are exploring the possibility of smoothing the phasing out beyond 2024.

together with spending pressures related to ageing and military spending, will widen the overall fiscal deficit over the medium-term above debt-stabilizing levels.

20. The near-term fiscal stance is broadly appropriate but more targeted and temporary measures would have been preferable. Given the negative output gap, worsening labor market outcomes, high uncertainty in 2024, and large fiscal space, a moderately expansionary policy seems adequate. However, in a context of a rapid growth of households' real disposable income and consumption, and a saving rate well above pre-pandemic levels, the universal support for purchasing power would benefit disproportionately the most affluent. Therefore, a more targeted and time-bound approach would have been more appropriate and would have helped disinflation. Moreover, some measures to support the real estate sector could have been temporary or conditional on market situation (see below), especially given the likely looser monetary policy stance in coming quarters and structural housing imbalances.[6]

21. In 2025, as growth strengthens and monetary policy eases, fiscal policy should move into contractionary territory. The authorities should phase out all temporary measures, while cushioning the impact on the most vulnerable, if needed, through targeted transfers. They should avoid measures that distort price signals in a prolonged manner to allow for demand to adjust, notably in residential real estate given still overvalued prices. In case of a negative demand shock, additional fiscal support could be envisaged—mainly through automatic stabilizers and frontloading of public investment. At the same time, should (core) inflation persist at elevated levels, a more contractionary stance accompanied by targeted and temporary relief measures would be needed.

22. Over the medium term, high spending pressures and uncertainty around revenues warrant a more prudent fiscal policy. Luxembourg has substantial fiscal space and public debt is still among the lowest among triple A countries. However, public debt is not expected to stabilize under staff's baseline, increasing by 6–7 percentage points of GDP in the next five years. In addition, the implementation of some intended reforms and the materialization of fiscal risks mentioned above could lead to a worse public debt outcome. This, together with increasing ageing costs and the need to free up some resources for the digital and climate transitions call for a more prudent fiscal policy. Staff suggest a gradual consolidation of 0.15–0.2 percent annually (compared to the baseline) to stabilize the debt over the medium term.

23. The consolidation should be mainly expenditure driven, with a reprioritization of public spending. Government spending (as a share of GDP) has increased sharply in recent years relative to the average spending over 2011–16 (+8 percentage points of GDP), notably on personnel, transfers, and social benefits (see selected issues paper for details). While this has been in part driven by the pandemic and cost-of-living relief measures, most of the increase is structural. It has been due to increases in compensation of employees (higher number of employees and wages), ageing costs, and discretionary measures. As pressures are expected to continue, there is a need to rationalize public spending, by containing the wage bill, and improve efficiency of social spending.

[6] IMF (2022), Luxembourg: Selected Issues. A Multi-Pronged Strategy to Reduce Housing Market Imbalances in Luxembourg.

Measures could focus on further means-testing for social benefits (e.g., family benefits), greater efficiency in public spending (such as education and health), and an early reform of the pension system.

24. With spending pressures and uncertainty about revenues, the announced/planned tax measures/reforms should be carefully designed and calibrated to avoid revenue losses.

- *Personal income tax.* Staff welcome the planned transition to individual taxation and the frequent adjustment of the tax brackets for inflation. However, this should be achieved in a budget neutral manner along with a comprehensive review of the tax-benefit system for individuals that aims at enhancing equity and boosting labor supply. The authorities should also refrain from retroactive adjustment of the tax brackets given households' strong financial position.

- *Corporate taxes.* The government's pledge to reduce the statutory corporate income tax (CIT) rate to bring it to the OECD average, all things equal, could erode revenues, without necessarily attracting new investments. It would also benefit mostly very few taxpayers, given the concentration of corporate taxes. Instead, targeted tax incentives to promote investment in R&D, green transition, and digitalization would be more effective in enhancing productivity and long-term sustainability.

- *Property taxation.* The authorities should expedite the establishment of land taxation. The decision to increase caps in interest payment deductibility could have unintended distributional consequences and longer-term impact on house prices and financial stability. Accordingly, the authorities should consider gradually phasing it out.[7]

25. A well-designed national fiscal framework, complementing the EU Economic Governance Framework, will help better anchor fiscal policy. The new EU fiscal framework is not binding for "safe" countries like Luxembourg with debt level and fiscal deficit below 60 percent and 3 percent of GDP, respectively. Thus, complementing the EU rules with a national fiscal framework would better anchor fiscal policy, given that the self-imposed notional debt limit of 30 percent has been discontinued. The authorities' commitment to the AAA rating and their intention to adopt a medium-term objective (MTO) as an anchor to fiscal policy is a step in the right direction. A national MTO could be set based on structural fiscal balance that considers the changes in spending (e.g., aging, climate, and security) over a longer time horizon. In this context, multi-year expenditure ceilings could serve as an operational rule to ensure the medium-term anchor is achieved. EU peers provide good examples. In particular, Netherlands' fiscal framework, built around multiannual expenditure ceilings, features the following desirable key elements: (i) a broad coverage of the expenditure ceilings, including central government, health care, and social security; (ii) independent macro-fiscal forecasts that have improved budget transparency and credibility; and (iii) a coalition agreement among political parties on the ceilings over a four-year term of the government, which

[7] In a recent study, the housing observatory found that interest payment deductibility benefit mostly higher income households.

has enhanced adherence to the rules. In the same vein, Sweden sets an expenditure ceiling for the central government (including pensions) in nominal terms for the current and subsequent three years. This rule is consistent with an over-the-cycle surplus target that has allowed full operation of automatic stabilizers and flexibility for discretionary actions.[8]

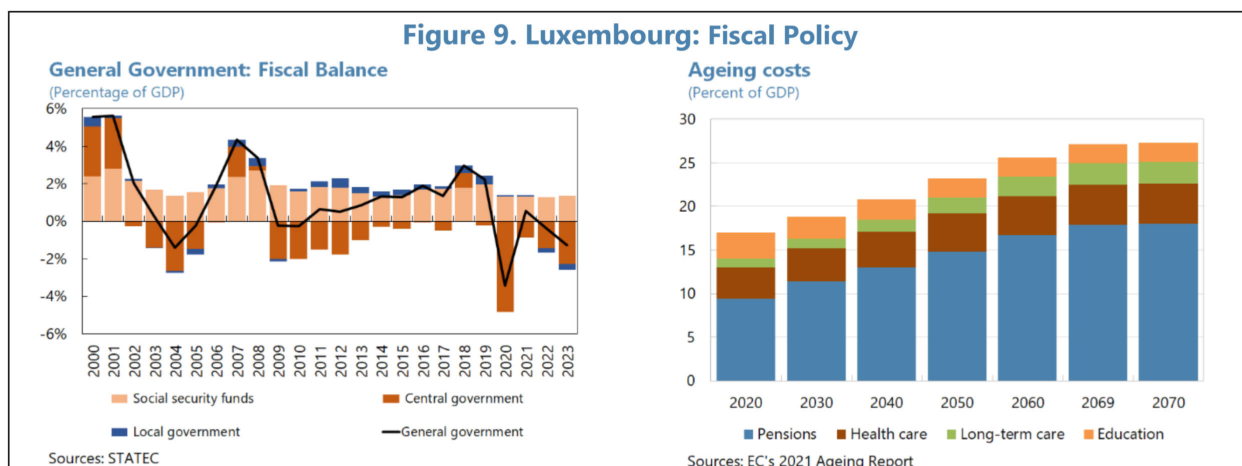
26. Institutional safeguard plays an important role in the success of fiscal frameworks. A credible fiscal framework is usually accompanied by strong institutions. The credibility and transparency of the proposed fiscal reforms would require strengthening the role of the fiscal council. In addition to the ex-post assessment of macro-fiscal projections and its consistency with the EU and national frameworks, the fiscal council could conduct medium-term macroeconomic projections, undertake debt sustainability analysis, assess fiscal risks, provide recommendations on budgetary policy and fiscal framework, and evaluate budgetary implications of the government's proposed measures. There is also room to improve the medium-term budgeting framework and the quality of government finance statistics, namely by adopting a fully accrual accounting which would help better assess the fiscal stance.

27. The new government should expedite actions to preserve the long-term sustainability of the social security system. The pension system reserves are comfortable (32 percent of GDP), but its long-term sustainability is not guaranteed. Pension costs are expected to rise by 2 percentage points of GDP by 2040, while contributions are expected to plateau due to slower net migration flows. The existing institutional safeguards and stabilizers are not foreseen to be triggered before 2028. Staff reiterate the call for proactive action by lowering the replacement rate—the highest in Europe—and disincentivizing early retirement. Action is also needed to contain the increasing deficit of the health and maternity insurance (*Assurance maladie-maternité (AMM)*. Options for reforms could include increasing contribution rates or a cap on contributory income and containing expenditures through caps on spending and reassessment of priorities.

Authorities' Views

28. The authorities are more optimistic about the fiscal outlook and reiterated their commitment to fiscal prudence. The authorities indicated that the 2024 budget deficit is a transitory one and that the 2025 budget will identify medium-term savings on the expenditures side, including on public wage bill and other efficiency gains. They are also upbeat on the positive economic impulse of tax relief measures, which would limit potential revenue losses. They emphasized their strong commitment to preserve the AAA sovereign rating, as highlighted by their intention to complement the EU economic and governance framework with a more stringent national fiscal framework. Finally, they stated that they are exploring different options for potential pension reform, which will be discussed with the social partners at a later stage.

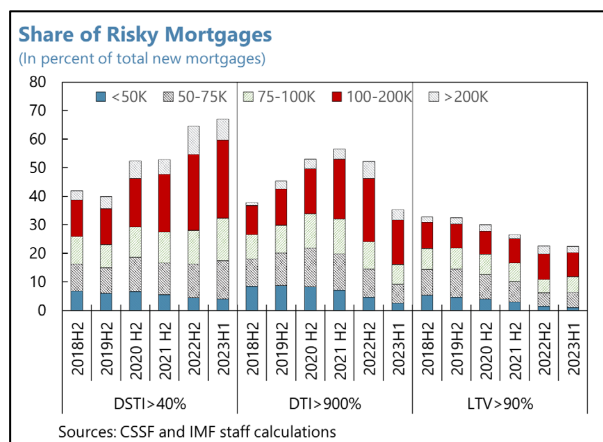
[8] Caselli et al. "Second-Generation Fiscal Rules: Balancing Simplicity, Flexibility, and Enforceability," IMF Staff Discussion Notes 2018/004, International Monetary Fund.



C. Financial Sector Policies: Preserving Financial Sector Resilience Against Real Estate Vulnerabilities and Strengthening the Oversight Framework

Risk Assessment and Macroprudential Policy

29. Cyclical systemic risks have abated somewhat. With the contraction in GDP, credit, and house prices in 2023 and supportive fiscal measures, cyclical systemic risks have receded somewhat, as the probability of an abrupt correction in the credit and housing markets has diminished (for example, CSSF estimates house price at risk at around 10 percent over the next year, with a 10 percent probability). The credit cycle is likely to bottom out, although higher NPLs might keep credit growth subdued. At the same time, the risk profile of new mortgages has improved somewhat, recording lower loan-to-value and debt-to-income ratios. The CSSF's requirement of a 200-basis points sensitivity analysis of credit worthiness at mortgage origination has helped reduce the share of variable rate new mortgages (from 58 percent in September 2022 to 42½ percent in February 2024). However, the debt-service-to-income ratio continued to increase, reflecting in part lower maturities.



30. The steep increase in interest rates exposed vulnerabilities on the banks' stock of real estate exposures to highly indebted households and firms.

- *Household sector and residential real estate risks*. Households' indebtedness is high (debt to income of 180 percent and a debt service to income of 14 percent). High net wealth partially mitigates this but is dominated by illiquid assets and is unequally distributed. The FSAP analyses suggest that households' debt servicing capacity would be constrained under the IMF's baseline

scenario, especially for lower income households and those with variable rate mortgages. Under a severe adverse scenario (higher interest and unemployment rates), despite automatic stabilizers, the share of "financially vulnerable households" and debt at risk increase to 14 and 30 percent, respectively. Credit risk would spread to more affluent households, especially since this group contracted mortgages in recent years. This could put pressure on consumption and investment decisions (Figure 11).

- *Corporate sector risks*. Staff analysis suggests that NFCs entered the hiking cycle with stronger balance sheets, which would help them weather the impact of the current tightening in the baseline. Yet, there is significant heterogeneity across firms and sectors.[5] Macro-micro simulations show that 50 percent of firms (holding 40 percent of NFCs debt) would face a liquidity gap in the adverse scenario, potentially increasing the risk of default and exposing them to higher refinancing risks and/or costs. Firms in real estate activities and to a lesser extent construction, which account for 62 percent of domestically oriented banks' exposures to NFCs, have weak initial conditions and are exposed to larger cyclical downturns, and these are likely to face larger liquidity pressures (Figure 12).

31. Commercial real estate (CRE) risks appear manageable, but continued vigilance is required. Despite the ongoing correction in prices, the vacancy rates remain low, which augur well for the recovery when interest rates soften, and confidence recovers. That being said, the office sector in particular is still experiencing dynamic shifts in demand, given the impact of hybrid work on lease renewals and the transition to sustainable buildings. Banks have a relatively low exposure to CRE loans (6–7 percent of total bank loans), and a high coverage ratio (94 percent) and an average loan-to-value ratio (LTV) of 54 percent, allowing some room to absorb potential shocks. However, these ratios may not fully capture the latest valuation effects (especially in CRE as low transactions hinder price discovery), and the concentration of CRE loans may differ across banks and funds. CRE exposures are concentrated in real estate funds (comprising less than 5 percent of NAVs of the investment fund sector) and are mainly cross-border exposures, with only EUR3 billion oriented to the domestic market. These funds have moderate leverage (130 percent), and liquidity shortfalls are relatively limited, reducing the risks on the domestic sector. Liquidity risks are also mitigated by longer notice periods (quarterly or longer). Finally, the domestic insurance and pension sectors have low exposures to real estate. Following the ESRB recommendation on CRE vulnerabilities, in a welcome development, the authorities have stepped up data collection and monitoring of lending practices to the sector, and Luxembourg has been assessed as fully compliant. These efforts should continue and a better understanding of the OFIs intermediation role as well as inward and outward cross-border investments would be beneficial (Figure 13).

[5] 40 percent of firms in the sample have an interest coverage below 1 and more than a fifth have negative equity.

Table 1. Luxembourg: Bank Solvency Stress Test Results: Breakdown by Business Model					
	Universal, Retail and Commercial Banking	Private Banking	Custodian Banking and Activities Linked to Investment Funds	Corporate Finance	Other(Covered bonds banking, clearing treasury or payment services)
CET 1 Ratio Before Stress	20.9%	25.2%	42.2%	14.6%	42.4%
CET 1 Ratio–Baseline (end of 1st year)	22.0%	26.7%	43.5%	15.2%	47.6%
CET 1 Ratio–adverse (end of 1st year)	17.0%	16.8%	42.6%	13.8%	46.5%
Capital Depletion in the Adverse Scenario	-3.8%	-8.5%	0.4%	-0.9%	4.1%

Table 2. Luxembourg: Summary of Bank Liquidity Stress Test Results

Stress Tests	Scenarios	Baseline	Deposit Run	Combined	Weak Bank/ Same-name Funds
LCR	Number of banks below threshold (<100%)	0	5	6	3
	Share of total sample assets (%)	0	21.7	23.8	17.6
NSFR	Number of banks below threshold (<100%)	0	/	/	/
	Share of total sample assets	0	/	/	/
Cash-flow Based	Number of banks with net funding gap (eop CBC<0)	1	3	6	5
	Share of total sample assets (%)	0.5	14.2	23.8	19.0

Source: IMF staff estimates
Notes: "Baseline": for liquidity coverage ratio (LCR) and net stable funding ratio (NSFR), European Banking Authority (EBA) assumptions; for cash-flow based analysis, ECB 2019 Sensitivity Analysis of Liquidity Risk baseline. "Deposit Run": deposit run rates based on Credit Suisse (Switzerland) and First Republic Bank (US) run episodes (also see October 2023 GFSR Chapter 2, Box 1). "Combined": Deposit run + market stress (lower inflow rates and higher haircuts of assets). "Weak Bank": Higher deposit run rates + market stress, only for the sub-sample of 16 banks with global parent banks found to be weak in the October 2023 GFSR Chapter 2 or banks that have same-name funds within the group (end-of-period counterbalancing capacities).

32. The financial sector is assessed to be largely resilient against severe shocks.

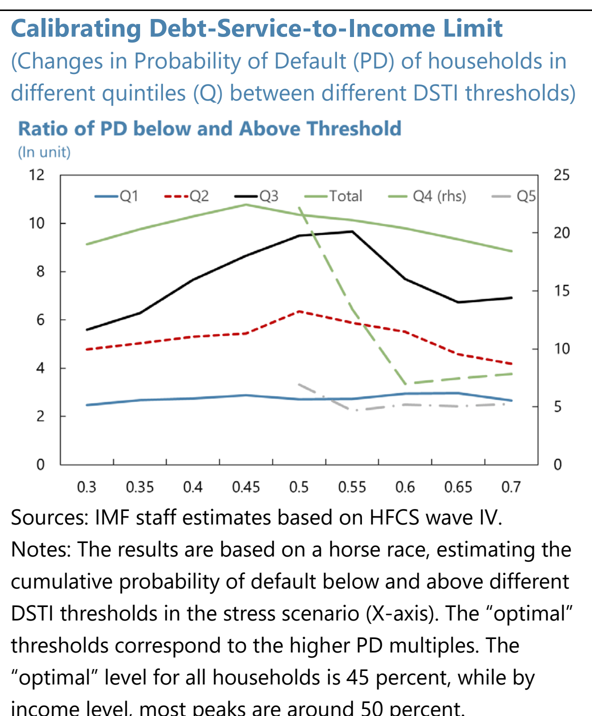
- The FSAP shows that in the baseline scenario the *banking system, overall,* will benefit from high interest rates, with a small share of weak banks. In the adverse scenario, where higher interest rates accompany a severe recession, banks overall have enough capital and liquidity buffers to absorb the shocks. Although the share of weak banks in total assets would double, the recapitalization needs would remain easily manageable. All banks can sustain retail deposit outflows up to 20 percent. Only a few would need to dip into their liquidity buffers in more severe scenario, mainly those affected by potential weakness in some foreign parent banks (identified in the 2023 October GFSR).
- The *investment fund and insurance sectors* have sufficient liquidity buffers to withstand large shocks and minimize second-round effects on international securities markets and spillbacks on the economy. The majority of the money market funds could absorb significant increases in interest rates (up to 300 basis points), while larger shocks would expose vulnerabilities in a few funds.

33. The authorities should preserve resilience against real estate vulnerabilities already built-up, preferably through sectoral systemic risk buffers. The authorities rightly kept the CCyB unchanged at 0.5 percent despite the negative credit-to-GDP gap, which de facto acts as a positive neutral CCyB. The authorities should use banks' existing capital headroom to increase macroprudential capital requirements, preferably through targeted capital-based measures. Staff recommends a sectoral systemic risk buffer on households and corporates real estate sector exposures as it allows a more precise targeting of the source of vulnerabilities. High banks' profitability and comfortable capital headroom reduce procyclical risks. Macroprudential policy should remain nimble. Should credit worsens significantly, the stress-test requirement of 200 basis points could be reduced and the CCyB relaxed, while avoiding loosening the LTV. Given the openness and complexity of the financial system, the authorities are strongly encouraged to evaluate the adoption of a positive neutral CCyB (PNCCyB) in the medium-term.

34. Structural households' indebtedness should be addressed early in the recovery cycle through borrower-based measures. Income-based measures should be introduced early in the recovery cycle—with preparations on calibrations and targeting starting immediately—to counter household indebtedness. The FSAP analysis suggests introducing a stressed-DSTI around 45–50 percent, possibly tied to the current interest rate stress test required by CSSF for mortgages. The authorities should also consider gradually reducing the maximum loan-to-value for first-time homebuyers. A heterogeneous agent model calibrated for Luxembourg shows that the introduction of income-based limits in a context of supply rigidity could reduce house prices and households' indebtedness in the medium term (Figure 14). This effect outweighs the financial constraint for middle income households, suggesting that this might help mitigate the middle-income squeeze. The affordability cost for low-income households could be compensated through social housing measures and, more generally, housing supply-side considerations (see subsection D).

Calibrating Debt-Service-to-Income Limit

(Changes in Probability of Default (PD) of households in different quintiles (Q) between different DSTI thresholds)



Sources: IMF staff estimates based on HFCS wave IV.

Notes: The results are based on a horse race, estimating the cumulative probability of default below and above different DSTI thresholds in the stress scenario (X-axis). The "optimal" thresholds correspond to the higher PD multiples. The "optimal" level for all households is 45 percent, while by income level, most peaks are around 50 percent.

35. Efforts are also needed to address potential inaction bias and enhance the effectiveness of macroprudential policy. Although some actions have been taken in response to mounting households and real estate vulnerabilities, these measures focused more on strengthening resilience, tended to come somewhat late in the cycle, and were only partially effective in addressing rising households' indebtedness. With housing affordability high on the political agenda, there is a risk of inaction bias. To mitigate this risk, the 2024 FSAP recommends

upholding the primacy of the financial stability objective of the macroprudential decision-making authorities by: (i) reducing the role of the Ministry of Finance in macroprudential policy decisions deliberated in the CdRS; and (ii) strengthening accountability and transparency by systematically communicating on macroprudential policy decisions and underlying factors, even in cases where no action is taken, while enhancing accessibility to the general public. Finally, greater coordination between financial stability and fiscal and housing policies could enhance effectiveness, while minimizing potential costs of macroprudential measures.

Supervisory, Regulatory and Oversight Frameworks

36. The authorities have made commendable progress in implementing recommendations from the 2017 FSAP (Appendix I, FSSA). Resources have increased in the supervisory agencies. The authorities have appreciably increased data collection, reporting, and analysis of systemic risks monitoring, especially on real estate and investment funds. Significant steps have been taken in aligning regulatory frameworks with international standards and reinforcing on-site inspections for banks and investment funds. The authorities have engaged in more active international collaboration especially during stress episodes (e.g., liability-driven investment crisis) and have been contributing actively to international fora, including on investment funds regulation.

37. The well-supervised financial sector could further benefit from targeted regulatory and supervisory improvements. The 2024 FSAP did not find evidence of lack of operational independence of the supervisory authorities in practice. Nevertheless, the authorities should consider legal amendments to protect procedural safeguards to future-proof independence of *Commission de Surveillance du Secteur Financier* (CSSF) and *Commissariat aux Assurances* (CAA) from potential government influence. Large cross-border connections require further enhanced inter-agency cooperation, particularly on: (i) information sharing for bank group entities; (ii) risk-based onsite supervision of investment funds' foreign delegates; and (iii) monitoring cross-border flows for money laundering/financing of terrorism risks. To formalize the division of responsibilities between CSSF and *Banque centrale du Luxembourg* (BCL) on liquidity supervision of Less Significant Institutions, the draft Memorandum of Understanding should be finalized. CSSF supervisory risk assessment should incorporate group links between depositaries and investment fund managers as risk factors into the risk-based approach and enhance monitoring of linkages with other financial institutions. The enforcement powers of CSSF in investment funds should be increased with higher fines and harmonization between types of funds, to reduce the risk of regulatory arbitrage. Separately, the authorities should continue to strengthen the financial safety net framework.

38. As the authorities continuously advance the understanding of ML/TF risks, additional measures should be considered to manage ML/TF risks related to cross-border flows. Monitoring and analysis of cross-border payments data, combined with macro-economic data could highlight unusual payment patterns, warranting further scrutiny by supervisors. This analysis would benefit from information exchanges with the key financial institutions and with foreign and domestic authorities. The authorities should continue to ensure the sufficiency of resources available to AML/CFT supervision.

Authorities' Views

39. National authorities generally appreciated the FSAP conclusions but had more nuanced views on the need for immediate action in some areas. They agreed that the main risks currently arise from real estate exposures. However, the authorities cited several additional mitigating factors (including high households' wealth, high coverage ratios, and high capital buffers) and foresee lower risk for consumption than the IMF. Current macroprudential policies composed of capital and borrower-based measures are seen as appropriate to the present challenges and sufficient to mitigate the pockets of vulnerabilities identified. They consider that the activation of additional macroprudential instruments might further depress demand and lead to potentially procyclical and unintended effects. They regularly assess the appropriateness of the current macroprudential measures. On the institutional side, the Ministry of Finance considers the current governance arrangements of the CdRS to be appropriate.

40. The authorities broadly agreed with the recommendations to continue improving supervision. The authorities considered the institutional framework for supervision to be appropriate and in line with European and international standards.

D. Real Estate Sector and Housing Policies: Preserving Supply Capacities

41. Real estate activity has dropped significantly, raising concerns about more durable supply disruptions. The decline in real estate activity has been accompanied by a sharp drop in building permits. Bankruptcies in the sector have increased, especially among some structurally weak firms, and layoffs doubled, raising concerns of more permanent disruptions to downstream activities, with potentially larger imbalances between supply and demand going forward. Another concern is that this could increase an already high concentration of real estate developers.

42. The authorities' response should allow an orderly rebalancing of the housing market, while expediting supply-side measures to enhance structurally affordability. Measures to support housing demand, especially untargeted tax incentives and buy-to-let, could help alleviate pressure on the construction sector. However, these benefits are likely to be short-lived and would lead to a suboptimal equilibrium where affluent households will benefit disproportionately, especially in the context of long-standing housing affordability concerns, and house prices will continue to grow faster than income levels, with potential unintended effects on households' indebtedness. Over time, they risk feeding moral hazard and promoting risk-taking behavior by borrowers and lenders. Instead, in line with the 2023 Article IV, staff propose to frontload public projects using public land, with greater involvement of the private sector and expedite supply-side measures that could reduce costs and delays for real estate developers (e.g., densification, red tape). The authorities' decision to extend the coverage of the short-term work scheme to construction firms and facilitate reallocation of workers within the sector will mitigate supply disruptions and are welcome. Additional assistance to viable real estate developers under strict conditions and support in the completion of unfinished projects (e.g., in the form of guarantees under strict underwriting standards) could also be considered. Once the cycle turns, the authorities are encouraged to better

target their help-to-buy policies, phasing out gradually the interest payment deductibility, while reducing rent controls. They should also expedite the passage of the law on land taxation to reduce land hoarding.

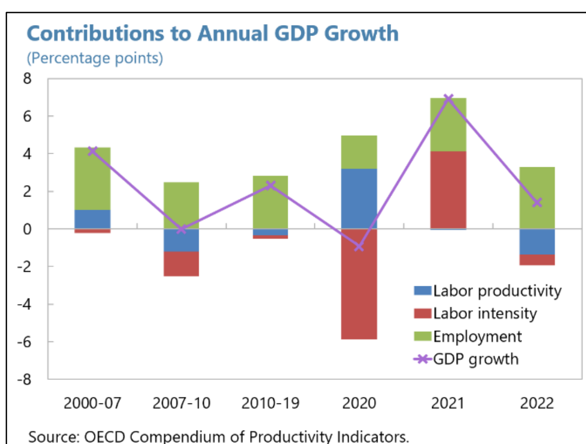
Authorities' Views

43. The authorities acknowledged the difficult trade-offs and agreed on the need to expedite supply measures. They emphasized the risks associated with the sizable downturn in the sector and the need to smooth the cycle through temporary measures. They consider that the government support is key to restoring the confidence in the sector and avoiding durable disruptions to supply. Regarding costs, the authorities indicated that the authorities prefer financing growth than financing unemployment. They reiterated their commitment to enhance supply. In this context, a national roundtable table on housing involving different stakeholders was organized to identify supply bottlenecks and potential corrective measures.

E. Structural Policies: Boosting Labor Supply, Competitiveness and Productivity

44. The broad slowdown in productivity growth in Luxembourg since the Global Financial Crisis (GFC) warrants sustained policy efforts to enhance productivity. Despite higher levels of productivity, productivity growth on average (0.3 percent) has been much slower in Luxembourg than its neighbors (0.9 percent) between 1995–23. Decomposition of labor productivity growth reveals that most of the changes in productivity have been driven by within-sector productivity developments. The slower growth can in part be attributed to the increasing productivity differential observed between frontier (80th percentile) and laggard firms (20th percentile). In non-financial services, frontier firms were about five times more productive than laggards in 2009, after which this ratio has been steadily increasing.[9] This is further exacerbated by the negative contribution of total factor productivity to labor productivity.

45. Policies that catalyze technology innovation and increase R&D spending can help rekindle productivity growth. With an aging population and fewer average hours worked per person, growth without productivity gains has its limits. To boost productivity growth, policies should focus on two fronts. First, increasing overall productivity, i.e., moving out the productivity frontier by increased investments in intangible assets. Investment in intangible assets (R&D, computer software, and

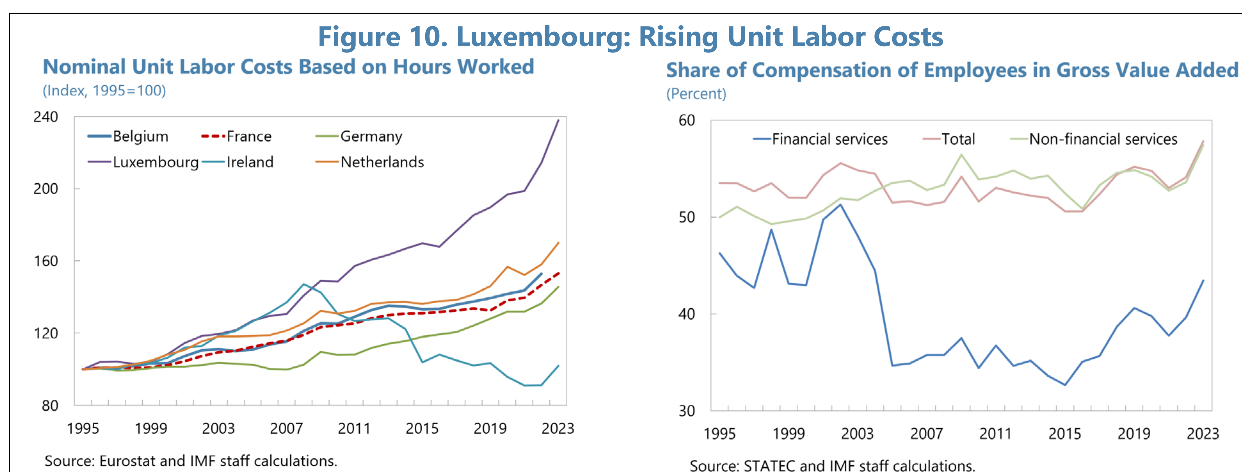


[9] Productivity dispersion and allocative efficiency Firm-level evidence for Manufacturing and Non-financial services in Luxembourg (STATEC Research).

other intellectual property products) has been stagnant at about one percent of GDP for the past two decades. Use of generative artificial intelligence (AI) has the potential to unlock substantial productivity gains. Access to these technologies and re-skilling (and up-skilling) of individuals to realize these gains may require investment in relevant skills and infrastructure. Second, reduce the productivity dispersion between frontier and laggard firms by ensuring innovation diffusion within sectors and reducing skill mismatches. Reduced administrative burden and the recently implemented laws that facilitate entry and exit of companies from the market should help improve allocative efficiency and enhance competition.

46. Increasing the flexibility of the wage indexation system would not only boost competitiveness but also enhance labor mobility. There has been a decoupling of real wages and productivity growth in Luxembourg since the GFC. On average, between 2011–22, unit labor costs increased by 3.5 percent, while labor productivity declined by 0.2 percent, with notable differences across sectors (Annex III). The rise in unit labor costs becomes even more stark in comparison to neighboring countries which have also seen growing costs but at a much slower rate. Within Luxembourg, the share of compensation of employees in gross value added has been increasing since 2015. The growing labor costs, a result of a tight labor market and automatic wage indexation, could impact investment levels and capital accumulation in the long run. This could further worsen the productivity dispersion between frontier and laggard firms hindering their ability to invest in intangible assets.

Figure 10. Luxembourg: Rising Unit Labor Costs



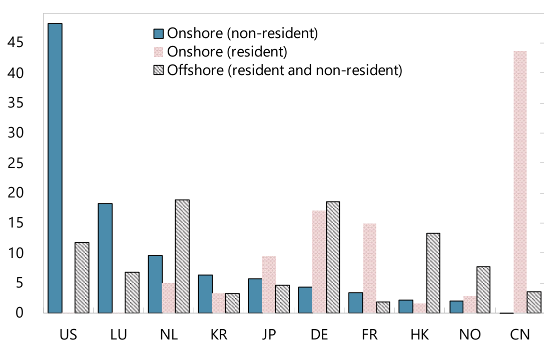
47. Building on its well-developed ecosystem, Luxembourg should further harness the benefits of sustainable finance and fintech while managing associated risks. Luxembourg has been among the first movers in developing the infrastructure for sustainable finance. This has allowed the country to be one of the world's environmental, social and governance growth (ESG) finance hubs (Box 1). However, competition has been growing in recent years. Preserving the country's comparative advantage would require accelerating efforts to attract talents. This could be achieved by creating an ESG finance curriculum, better harnessing the synergies between fintech, artificial intelligence (AI), and sustainable finance (e.g., by applying digital technology solutions to ESG data and risk management challenges), and mutualizing compliance costs.

Box 1. Cementing Luxembourg's Leadership Position in Sustainable Finance

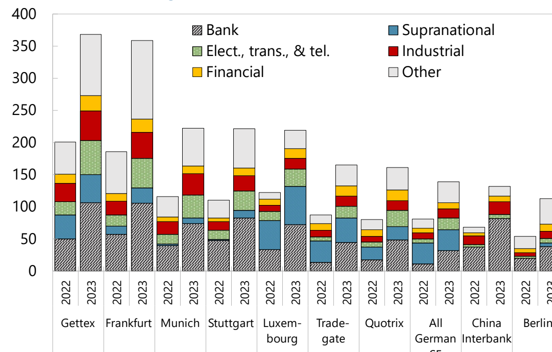
Luxembourg is a world pioneer in sustainable finance. The Luxembourg green exchange was established in 2016 as the first platform on exchange of green securities. Issuance of green bonds has increased exponentially in 2023 (upper right chart), and capitalization topped the EUR 1 trillion mark in February 2024. The community of issuers include mainly supranational institutions such as the European Union, multilateral development banks, financial institutions, and corporates across a range of different sectors. More than 18 percent of non-resident participants issued foreign bonds categorized as green bonds in Luxembourg, ranking the country second in the world (upper left chart). Luxembourg has been also the first European country to issue a sovereign sustainability bond in 2020.

Luxembourg's investment fund industry is also well positioned to harness the benefits from sustainable finance. Luxembourg is domicile to 34 percent of the assets under management of article 8 funds and 51 percent of article 9 funds (bottom left chart). Net inflows into these funds have been negative since mid-2022 due to reclassifications. Yet, the harmonization of labels and taxonomies and filling of data gaps at the European and international level is expected to increase investors' trust in the coming years. Luxembourg domiciled funds on average charge 0.21 percent for Article 9 investment funds, ranking them among the most competitive in Europe (bottom right chart). This, together with the well-developed ecosystem and business/investor-friendly tax system augur well for the future of sustainable finance in Luxembourg.

2023 Market Share of Green Bonds
(Percent)

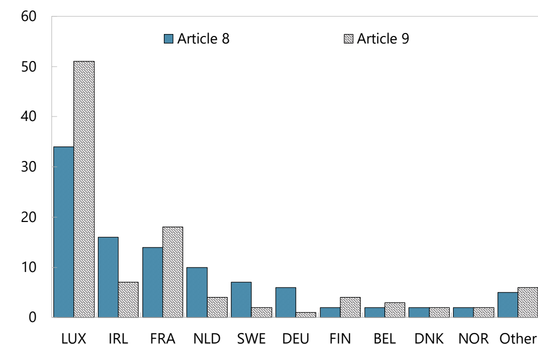


World Green Bond Size by Issuer Sector 2022 to 2023
(Billion euro outstanding)

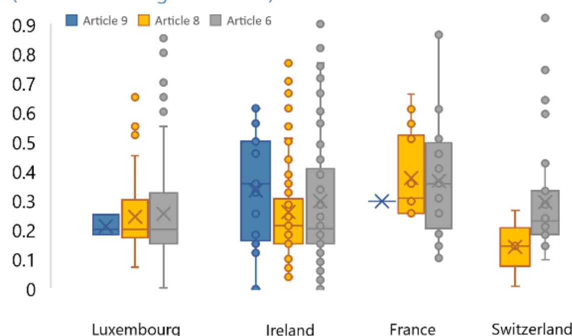


Source: Bloomberg (data as of Mar 14, 2024).
Notes: The EU Sustainable Finance Disclosure Regulation (SFDR) enacted in February 2023 categorizes all funds into one of three categories: Article 6 (no sustainability focus), Article 8 ('light green', promoting environmental characteristics), and Article 9 (sustainable investment).

The SFDR Article 8 and 9 Market by Domicilation
(Percent of total, at the end of Q4, 2022)



Distribution of Funds Expense Ratio
(Percent of average net assets)



Sources: (LHS) European Fund and Asset Management Association (Jun 2023), and (RHS) Bloomberg (data as of Mar 14, 2024).
Note: Expense ratio includes various operational costs such as administrative, compliance, distribution, management, marketing, record-keeping fees, and shareholder services.

Authorities' Views

48. The authorities acknowledged that there has been a discernible slowdown in productivity growth since the GFC. Luxembourg's national productivity board (*Conseil national de la productivité*) identified the need for differentiated policies to boost productivity to cater to the specific needs of the sector. They emphasized that research and development, innovation, reskilling of the workforce, and relaxation of the regulatory framework are key priority areas. The authorities offer free training programs (focusing of specific sectors), including language training to reduce skill mismatches. There is also a research program in STATEC, which focuses on understanding the determinants of productivity to aid evidence-based policy making.

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49. The outlook is for a gradual recovery, although uncertainty remains high and risks predominantly to the downside. Following negative GDP growth last year, buoyant consumption and a gradual recovery of residential investment are expected to lift growth in 2024 and strength it in 2025. Yet, the output gap will remain negative. Inflation is expected to recede further in 2024 but remain somewhat above the ECB's target until 2026. The outlook is highly uncertain and risks to growth remain to the downside, given heightened geopolitical tensions and risks in the domestic real estate sector.

50. Fiscal policy should balance reinvigorating growth and helping disinflation in a cost-efficient manner. The moderately expansionary fiscal stance in 2024 is broadly appropriate. Yet the composition of the stimulus could have been more efficient. Given the robust consumption growth and historically high saving rate, more targeted and temporary measures would have been more appropriate, and a contractionary stance should be considered in 2025. That said, fiscal policy should remain agile, slowing the adjustment if growth surprises to the downside and accelerating it, while providing targeted and temporary support, if inflation becomes more entrenched.

51. Despite ample fiscal space, the authorities should adopt a more prudent fiscal policy to stabilize the debt in the medium term. Spending pressures and uncertainty around fiscal revenues are elevated and could lead to a rapid increase of public debt, albeit from low levels. Hence, a gradual fiscal consolidation would stabilize the debt in the medium term and provide further room for the government's key priorities and reforms, including the digital and green transition, and better prepare the country for the expected increase in ageing costs. Improving spending efficiency, including by better targeting social benefits, containing the wage bill, and expediting the pension reform are highly encouraged. Also, carefully calibrating tax reforms is needed to avoid revenue losses, while boosting labor supply, investment, and productivity.

52. The authorities' intention to complement the EU's Economic Governance Framework with a national fiscal framework is welcome. To help better anchor fiscal policy, the authorities intend to complement the EU rules with a medium-term objective (MTO), which could be helpful improving the predictability of fiscal policy while taking into account longer term pressure, including ageing costs. The MTO could be strengthened by an operational rule based on net primary

expenditure ceilings and an enhanced role for the national fiscal council. This would also require stronger multi-year budgeting framework, including better assessment of fiscal risks, and improvement of fiscal statistics.

53. Macroprudential policy settings should aim at preserving resilience in the short term and tackling elevated structural households' indebtedness early in the recovery cycle. While the banking system is strong and should be able to weather severe shocks, real estate exposures are concentrated in domestically oriented banks. Introducing a systemic risk buffer on real estate exposures could help preserve resilience with minimal procyclical impact. Continued close monitoring of real estate risks, ensuring adequate provisioning, and sound lending practices are paramount. The authorities should also stand ready to activate income-based measures, such as debt-service to income once the cycle turns. They should also consider gradually reducing the maximum LTV limit of 100 percent. If credit supply tightens significantly, the stress test requirement of 200 basis points could be reduced, and CCyB relaxed while keeping the LTV limits unchanged. The institutional setting could be further enhanced to improve the effectiveness of macroprudential policy and reduce the risk of inaction bias. This could be achieved by reducing the role of the government in macroprudential policy decisions, strengthening communication, including in case of inaction, and strengthening coordination with other policies.

54. Maintaining the momentum in implementing FSAP recommendations could further bolster financial sector's resilience. The operational independence of the supervisory authorities should be future-proofed, and inter-agency cooperation on supervision of global banking groups should be further enhanced. It is critical to have adequate supervisory processes to ensure that those banking groups with funding gaps in the FSAP stress tests have effective liquidity risk management in place, including contingency funding plans at group level when subsidiaries in Luxembourg have not set up separate standing facilities with the BCL. Monitoring the linkages of investment funds with other financial institutions and the CSSF's enforcement framework should be enhanced. Also, the authorities are advised to fill in remaining gaps in the crisis management and deposit insurance framework.

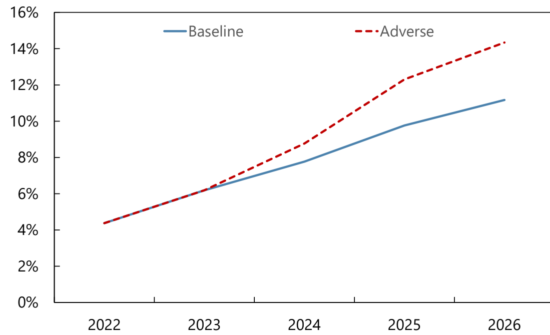
55. The authorities' real estate measures should be redesigned to allow prices to adjust, while speeding up much needed reforms to reduce structural imbalances. In the short term, temporary support measures should be designed in a way that allows prices to adjust to restore affordability. This could be achieved through higher public investment in affordable and social housing using public lands and in partnership with private builders as well as higher densification and reduction of administrative/regulatory burden. Continuing short-term work scheme in the construction sector and targeted support to viable firms, will help preserve supply capacities. In the longer term, better targeting help-to-buy policies—especially phasing out interest deductibility—and policies to unlock housing supply, including through land tax reform are needed to reduce structural imbalances.

56. Sustained economic growth hinges on boosting productivity and competitiveness. Increasing investment in intangible assets, aligning workers' skills with current and most importantly future demand of the economy, and preparedness to harness the potential productivity gains from generative AI will be key to ensuring productivity gains. In the short term, the authorities should hasten the reduction of regulatory and administrative burdens and enhance wage flexibility.

57. Staff recommend that the next Article IV consultation take place on the standard 12-month cycle.

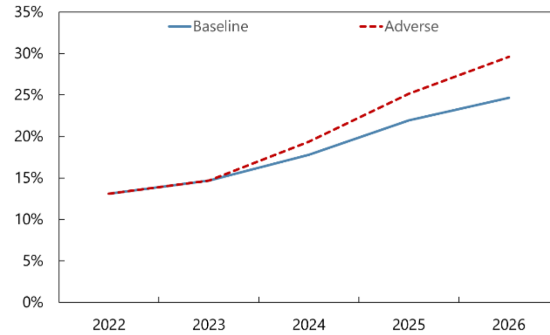
Figure 11. Luxembourg: Households Stress Test Results

Households at Risk- Share of Debt with PD>0
(In percent of households debt)



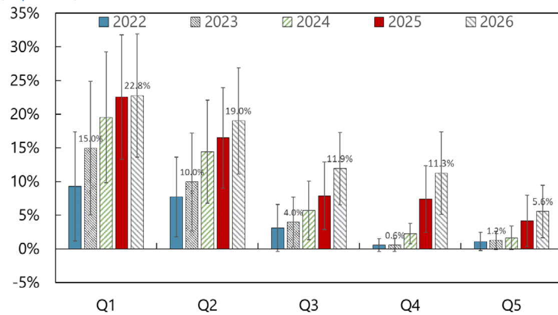
Sources: Joint BCL-IMF estimates based on HFCS wave IV.

Debt at Risk- Share of Debt with PD>0
(In percent of households debt)



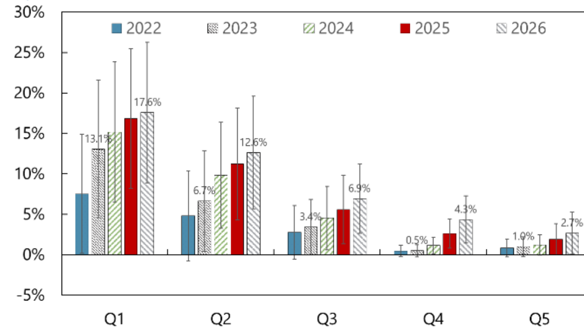
Sources: Joint BCL-IMF estimates based on HFCS wave IV.

Households at Risk - Probability of Default > 0 by Income Quintile (Adverse)
(In percent)



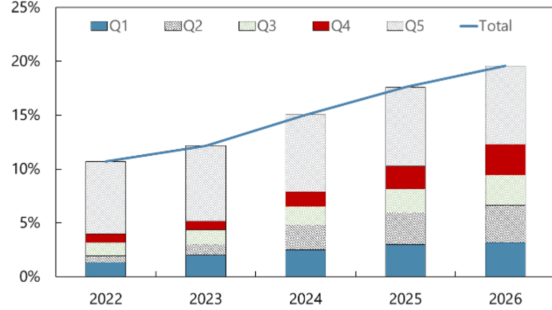
Sources: Joint BCL-IMF staff estimates based on HFCS estimates.

Mean "Indicative" Probability of Default by Income Quintile (Adverse)
(In percent)



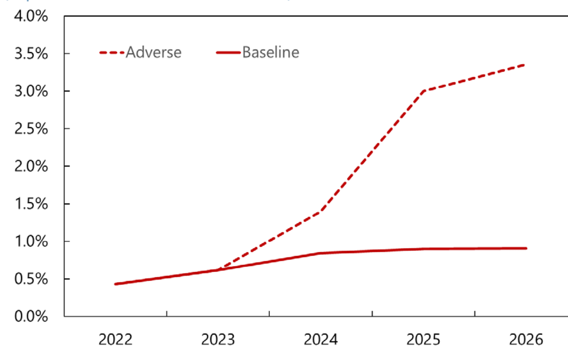
Sources: Joint BCL-IMF estimates based on HFCS wave IV.

Exposure at Default and Contributions by Income Quintiles (Adverse)
(In percent of total households loans)



Sources: BCL-IMF staff joint estimates

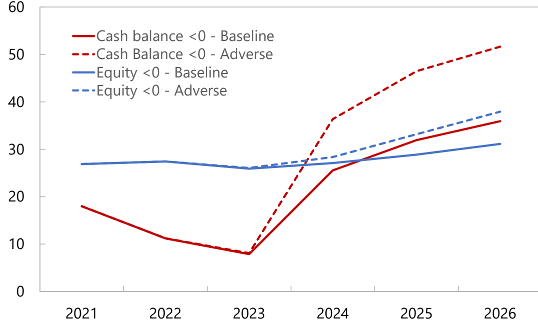
Expected Losses
(In percent of total households debt LHS)



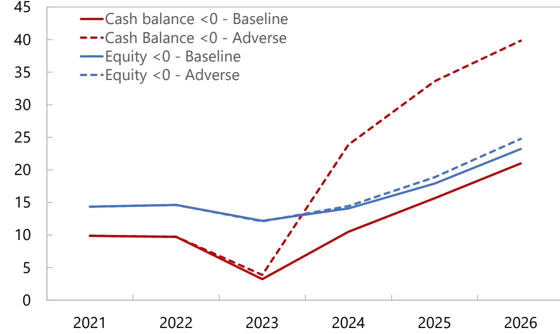
Sources: BCL-IMF joint estimates based on HFCS wave IV.

Figure 12. Luxembourg: Corporate Stress Test Results

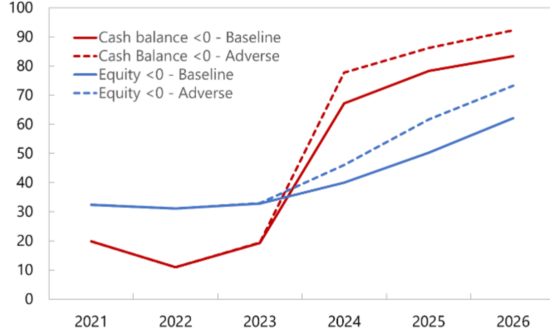
Firms at Risk
(In percent)



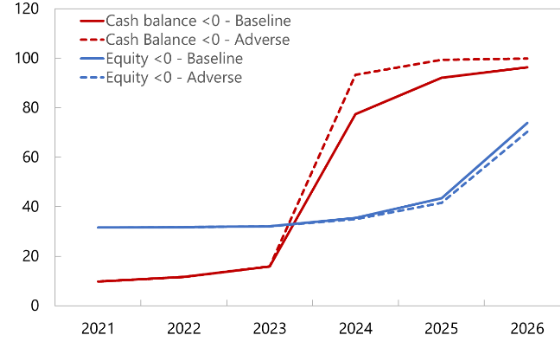
Debt at Risk
(In percent)



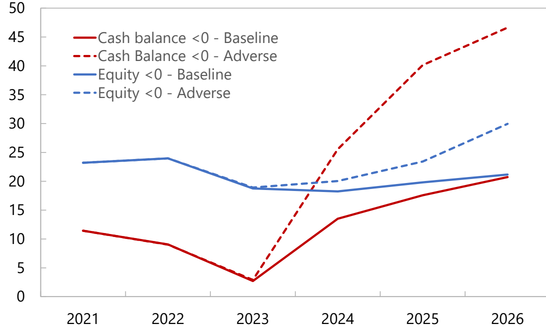
Firms at Risk (Real Estate Activities)
(In percent)



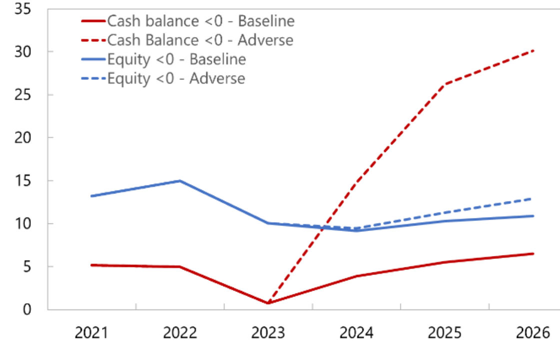
Debt at Risk (Real Estate Activities)
(In percent)



Firms at Risk (Construction)
(In percent)



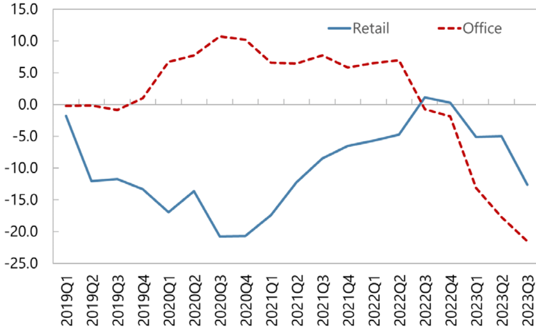
Debt at Risk (Construction)
(In percent)



Sources: Central balance sheet office (STATEC); and IMF staff estimates

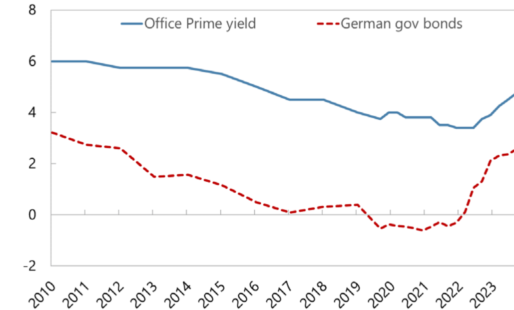
Figure 13. Luxembourg: CRE Vulnerabilities

CRE Prices
(YoY change in percent)



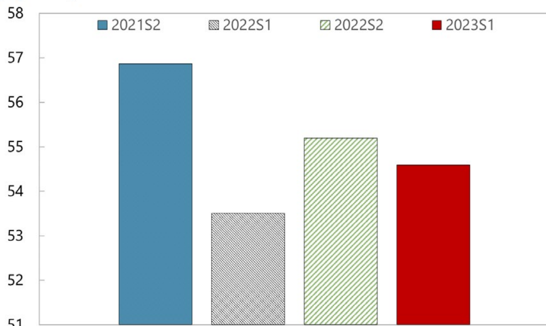
Sources: Cushman and Wakefield, CSSF calculation

CRE Yields
(In percent)



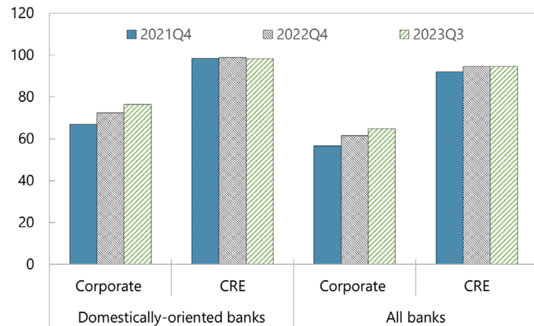
Sources: BNP Paribas Real Estate and CSSF calculations

Weighted Average LTV on CRE Loans Stock
(In percent)



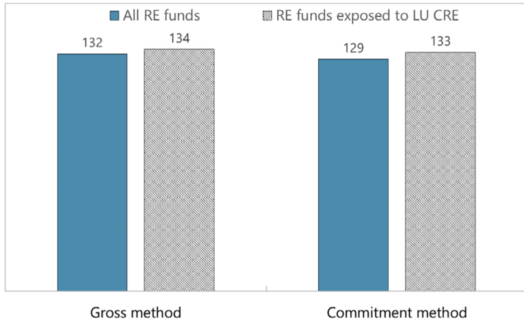
Sources: CSSF

Loans Coverage Ratio
(In percent)



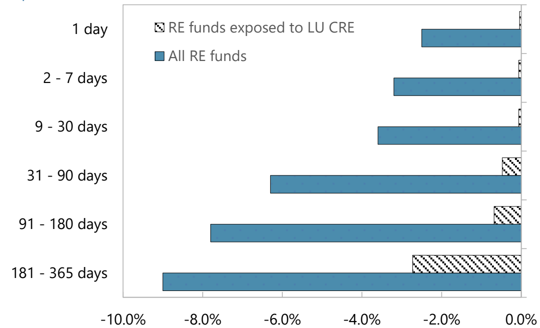
Sources: CSSF

Leverage of Real Estate Funds
(In pecent)



Sources: CSSF

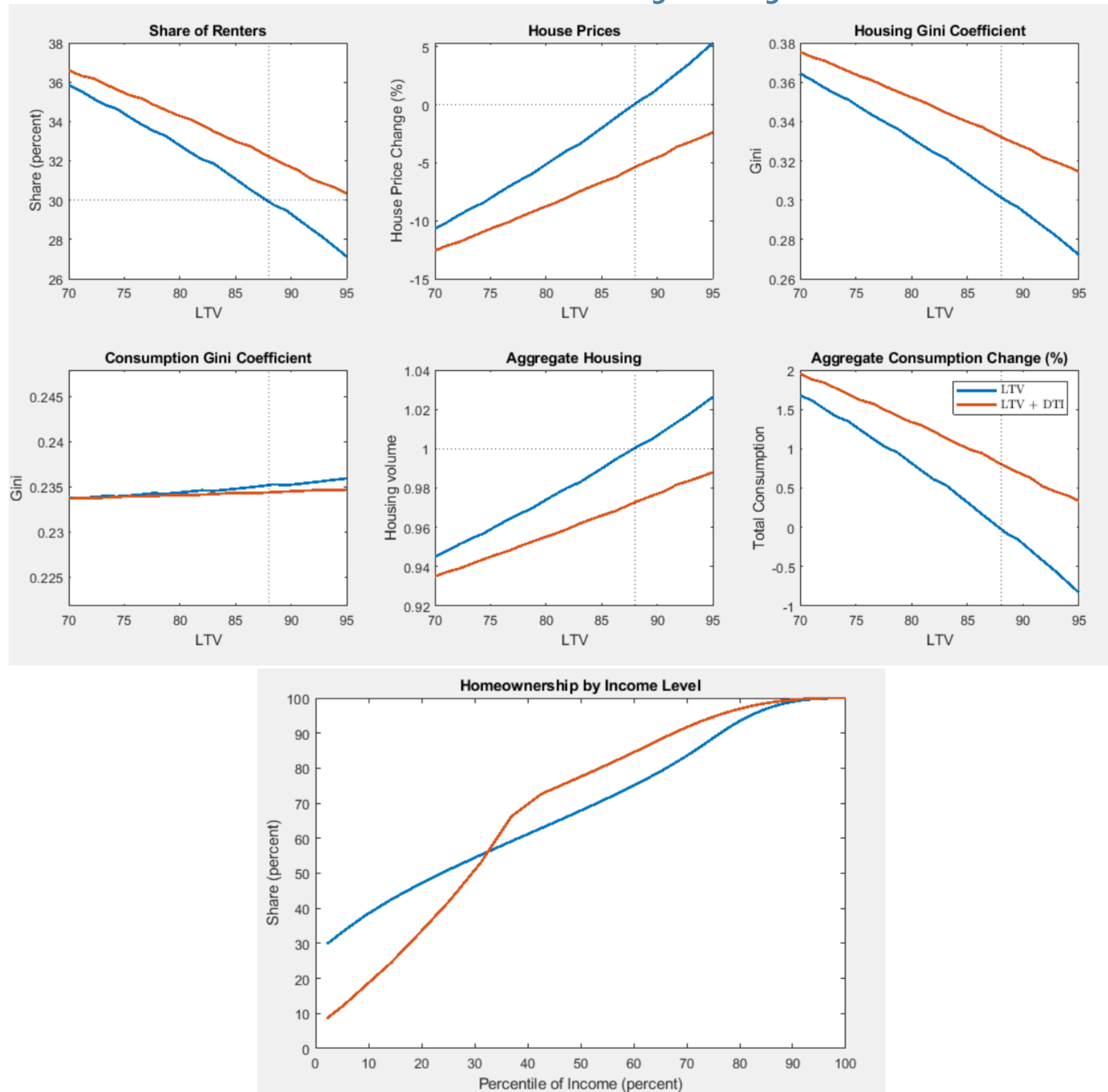
Liquidity Shortages (Real Estate Funds)
(In percent of net asset value)



Sources: CSSF

Notes: Liquidity surplus/deficit is calculated as the difference between the portfolio liquidity and the investor liquidity both reported in percent of the NAV which is then cumulated over liquidity buckets. Liquidity shortage is defined as the sum of the negative liquidity surpluses (i.e., deficits) at the level of each fund, without considering any (positive) liquidity surplus.

Figure 14. Luxembourg: Impact of the Introduction of Income-Based Limits: Evidence from a Continuous Heterogenous Agent Model



Sources: Fornino and Jardak (Forthcoming).

Notes: The upper chart compares the long-term outcomes (steady states) relative to the baseline in the following cases: the LTV varies continuously from 70 percent to 95 percent (blue line) and a DTI is introduced along with the LTV tightening (orange line). The bottom chart compares the share of homeowners by income level in the baseline, where the LTV limit is set at current level (blue line) and when it is combined with a DTI (orange line).

Table 3. Luxembourg: Selected Economic Indicators, 2019–29

					Projections						
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Real Economy (percent change)											
Gross domestic product	2.9	-0.9	7.2	1.4	-1.1	1.3	2.9	2.5	2.3	2.3	2.3
Total domestic demand	4.9	-4.0	10.9	-1.0	2.4	1.9	3.3	2.7	2.6	2.5	2.5
Private consumption	2.5	-8.5	11.3	2.3	4.0	2.6	3.8	2.9	2.6	2.6	2.5
Public consumption	2.8	7.3	5.1	2.6	2.5	2.8	2.3	2.5	2.5	2.5	2.5
Gross investment	11.6	-6.4	16.4	-9.8	-0.8	-0.3	3.5	2.5	2.5	2.5	2.5
Foreign balance 1/	-0.3	1.8	0.0	2.0	-2.6	-0.2	0.6	0.7	0.6	0.6	0.6
Exports of goods and nonfactor services	6.0	0.6	10.3	-0.6	-1.4	1.2	2.5	2.5	2.4	2.4	2.4
Imports of goods and nonfactor services	7.4	-0.4	12.4	-1.9	-0.1	1.5	2.6	2.5	2.5	2.5	2.5
Labor Market (thousands, unless indicated)											
Resident labor force	286.8	294.0	298.0	302.3	309.2	314.7	320.7	327.0	333.3	339.8	346.5
Unemployed (average)	15.4	18.7	17.1	14.6	16.2	18.6	18.9	18.6	18.3	18.3	18.4
(Percent of total labor force)	5.4	6.4	5.7	4.8	5.2	5.9	5.9	5.7	5.5	5.4	5.3
Resident employment	271.4	275.3	280.8	287.8	293.0	296.1	301.8	308.3	315.1	321.6	328.1
(Percent change)	2.6	1.4	2.0	2.5	1.8	1.1	1.9	2.2	2.2	2.1	2.0
Cross-border workers (net)	191.9	196.2	204.3	213.7	219.7	223.4	227.9	233.0	238.3	243.8	249.4
Total employment	463.3	471.6	485.1	501.4	512.7	519.5	529.6	541.3	553.4	565.4	577.5
(Percent change)	3.5	1.8	2.9	3.4	2.2	1.3	2.0	2.2	2.2	2.2	2.1
Prices and costs (percent change)											
GDP deflator	0.9	4.3	4.6	5.7	3.4	2.4	3.0	1.9	2.0	2.0	2.0
CPI (harmonized), p.a.	1.7	0.0	3.5	8.2	2.9	2.6	3.1	2.1	2.0	2.0	2.1
CPI core (harmonized), p.a.	1.8	1.2	1.5	4.2	3.9	2.8	2.9	2.2	1.9	2.0	2.0
CPI (national definition), p.a.	1.7	0.8	2.5	6.3	3.7	2.7	3.2	1.8	2.1	2.0	2.0
Wage growth 2/	1.9	1.2	5.1	5.9	7.3	3.5	2.9	2.3	2.3	2.3	2.3
Nominal unit labor costs 2/	2.5	3.9	0.9	8.0	10.9	3.6	1.9	2.0	2.2	2.2	2.1
Public finances (percent of GDP)											
General government revenues	45.3	43.5	43.4	43.5	46.8	47.0	47.9	48.0	48.2	48.4	48.7
General government expenditures	43.1	47.0	42.8	43.9	48.1	49.2	49.4	49.2	49.5	49.9	50.2
General government balance	2.2	-3.4	0.5	-0.4	-1.3	-2.2	-1.5	-1.3	-1.3	-1.5	-1.6
General government cyclically-adjusted balance	0.6	-2.0	0.0	-0.5	-1.4	-1.7	-1.4	-1.3	-1.4	-1.5	-1.6
General government structural balance	0.6	1.8	1.1	0.3	0.2	-0.9	-1.4	-1.3	-1.4	-1.5	-1.6
General government gross debt	22.4	24.6	24.5	24.7	25.7	28.1	28.8	29.5	30.1	30.8	31.4
Balance of Payments (percent of GDP)											
Current account	8.9	8.6	7.9	7.6	6.8	7.0	7.3	7.3	7.2	7.3	7.2
Balance on goods	2.6	2.3	1.2	0.1	-0.2	-0.8	-0.8	-0.9	-0.9	-1.0	-1.0
Balance on services	33.7	37.0	37.3	37.2	34.4	33.9	33.5	33.5	33.4	33.2	33.1
Net factor income	-27.7	-30.7	-30.2	-29.1	-26.9	-26.3	-25.6	-25.6	-25.4	-25.2	-25.0
Balance on current transfers	0.3	0.0	-0.4	-0.6	-0.5	0.2	0.2	0.2	0.2	0.2	0.2
Exchange rates, period averages											
U.S. dollar per euro	1.12	1.14	1.18	1.05	1.08	...	...	...	...	...	...
(Percent change)	-5.2	1.9	3.7	-11.0	2.6	...	...	...	...	...	...
Nominal effective rate (2010=100)	101.7	103.4	104.0	102.7	105.3	...	...	...	...	...	...
(Percent change)	-0.6	1.7	0.6	-1.3	2.5	...	...	...	...	...	...
Real effective rate (CPI based; 2010=100)	99.6	101.0	101.2	98.2	98.3	...	...	...	...	...	...
(Percent change)	-0.7	1.4	0.2	-3.0	0.1	...	...	...	...	...	...
Credit growth and interest rates											
Nonfinancial private sector credit (eop, percent change) 3/	7.2	5.0	5.3	4.4	-3.0	2.2	6.3	4.8	4.8	4.7	4.6
10-year government bond yield, annual average (percent)	-0.1	-0.4	-0.4	1.5	3.1	...	...	...	...	...	...
Memorandum items: Land area = 2,586 sq. km; population in 2019 = 626,108; GDP per head = €101,446											
GDP (billions of euro)	62.4	64.5	72.4	77.5	79.3	82.2	87.1	91.0	95.0	99.1	103.4
Output gap (percent deviation from potential)	0.7	-1.7	2.9	2.1	-1.0	-1.7	-0.8	-0.3	0.0	0.0	0.0
Potential output growth	2.1	1.6	2.4	2.2	2.0	2.0	2.0	2.0	2.0	2.3	2.3

Sources: Luxembourg authorities; IMF staff estimates and projections.

1/ Contribution to GDP growth.

2/ Overall economy.

3/ Including a reclassification of investment companies from financial to non-financial institutions in 2015.

Table 4. Luxembourg: Balance of Payments, 2019–29[1]
(Percent of GDP)

						Projections					
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Current account	8.9	8.6	7.9	7.6	6.8	7.0	7.3	7.3	7.2	7.3	7.2
Balance on goods and services	36.2	39.3	38.5	37.4	34.2	33.1	32.7	32.6	32.4	32.3	32.1
Trade balance 1/	2.6	2.3	1.2	0.1	-0.2	-0.8	-0.8	-0.9	-0.9	-1.0	-1.0
Goods exports	38.7	33.3	33.9	33.8	32.0	31.5	31.9	32.7	33.6	34.5	35.4
Goods imports	36.1	31.0	32.7	33.6	32.3	32.3	32.7	33.6	34.5	35.5	36.5
Balance on services	33.7	37.0	37.3	37.2	34.4	33.9	33.5	33.5	33.4	33.2	33.1
Services exports	166.9	170.7	182.4	177.3	173.4	176.8	175.5	175.9	175.9	176.0	176.2
Services imports	133.2	133.7	145.1	140.1	138.9	142.9	142.0	142.4	142.6	142.8	143.0
Net factor income	-27.7	-30.7	-30.2	-29.1	-26.9	-26.3	-25.6	-25.6	-25.4	-25.2	-25.0
Compensation of employees, net	-17.1	-16.0	-16.3	-17.0	-18.1	-18.6	-18.4	-18.4	-18.5	-18.5	-18.6
Compensation of employees, credit	2.9	3.0	2.7	2.6	2.5	2.9	2.8	2.8	2.8	2.9	2.9
Compensation of employees, debit	19.9	19.0	19.1	19.6	20.7	21.5	21.2	21.3	21.3	21.4	21.5
Investment income, net	-10.6	-14.7	-13.8	-12.1	-8.8	-7.7	-7.2	-7.1	-6.9	-6.6	-6.4
Investment income, credit	496.2	425.5	376.9	345.6	389.6	342.5	329.6	322.5	316.0	309.8	303.8
Investment income, debit	506.8	440.2	390.8	357.7	398.4	350.1	336.8	329.7	322.9	316.4	310.3
Balance on current transfers	0.3	0.0	-0.4	-0.6	-0.5	0.2	0.2	0.2	0.2	0.2	0.2
Capital and financial account	-8.9	-8.6	-7.9	-7.7	-6.8	-7.0	-7.3	-7.3	-7.2	-7.3	-7.2
Capital account	-0.1	-0.1	1.0	0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
Financial account	8.7	8.5	8.9	7.9	6.5	6.7	6.9	6.9	6.9	7.0	6.9
Direct investment, net	91.9	9.4	191.0	104.0	55.1	49.6	44.7	40.2	36.2	32.6	29.3
Abroad	-464.3	-169.0	15.9	-464.7	-253.2	-228.0	-205.3	-184.8	-166.3	-149.7	-134.7
In reporting economy	-556.2	-178.5	-175.1	-568.7	-308.3	-277.6	-250.0	-225.0	-202.4	-182.2	-164.0
Portfolio investment, net	-98.8	-3.0	-247.1	-120.7	25.4	25.4	25.4	25.4	25.4	25.4	25.4
Portfolio investment, assets	287.8	330.3	519.8	-182.9	67.6	140.5	164.8	172.9	175.6	176.5	176.8
Portfolio investment, liabilities	386.6	333.3	767.0	-62.2	42.2	115.1	139.4	147.5	150.2	151.1	151.4
Financial derivatives, net	16.2	9.3	18.8	14.6	-5.4	-5.4	-5.4	-5.4	-5.4	-5.4	-5.4
Other investment, net	-0.6	-7.2	44.2	9.9	-68.8	-63.0	-57.8	-53.3	-49.3	-45.6	-42.4
Other investment, assets	109.7	182.5	226.0	-109.4	-40.8	-40.8	-40.8	-40.8	-40.8	-40.8	-40.8
Other investment, liabilities	110.4	189.7	181.8	-119.3	28.0	22.2	16.9	12.5	8.5	4.8	1.6
Reserve assets	0.1	0.0	2.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Errors and omissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Sources: STATEC and IMF staff calculations.
1/ Includes merchanting trade operations.

Table 5. Luxembourg: General Government Operations, 2019–29
(Percent of GDP unless otherwise indicated)

	2019	2020	2021	Est. 2022	Projections 2023	2024	2025	2026	2027	2028	2029
					In percent of GDP						
Revenue	45.3	43.5	43.4	43.5	46.8	47.0	47.9	48.0	48.2	48.4	48.7
Taxes	28.2	26.8	27.2	27.1	29.1	29.5	30.1	30.2	30.5	30.6	30.9
of which, corporate income taxes	6.0	4.8	4.5	4.4	5.0	5.1	5.2	5.1	5.0	4.9	4.9
of which, personal income taxes	10.8	11.1	11.3	11.6	13.0	13.1	13.4	13.6	13.8	14.0	14.2
of which, taxes on international trade &	2.6	2.2	2.4	2.2	2.4	2.5	2.4	2.4	2.4	2.4	2.4
of which others	8.8	8.7	9.0	8.9	8.6	8.8	9.0	9.1	9.2	9.2	9.3
Social contributions	12.4	12.6	11.9	12.0	12.9	12.7	13.1	13.1	13.1	13.2	13.2
Grants	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other revenue	4.8	4.1	4.3	4.4	4.8	4.7	4.6	4.6	4.6	4.6	4.6
Expenditure	43.1	47.0	42.8	43.9	48.1	49.2	49.4	49.2	49.5	49.9	50.2
Expense	41.2	44.6	41.1	42.2	46.1	47.3	47.4	47.3	47.6	48.0	48.3
Compensation of employees	10.2	10.8	10.2	10.2	11.2	11.8	11.8	11.8	11.9	11.9	11.9
Use of goods and services	4.3	4.3	4.2	4.5	4.9	5.0	4.9	4.8	4.7	4.7	4.7
Interest	0.3	0.2	0.2	0.2	0.3	0.4	0.5	0.6	0.6	0.7	0.7
Social benefits	18.5	20.7	18.2	18.8	19.9	20.5	20.7	20.8	21.1	21.4	21.7
Other expense	8.0	8.5	8.3	8.5	9.8	9.7	9.5	9.3	9.3	9.3	9.3
Gross public investment	4.1	4.7	4.1	4.2	4.7	4.6	4.8	4.7	4.6	4.7	4.7
Net acquisition of nonfinancial assets	1.9	2.4	1.8	1.7	2.0	1.9	2.0	1.9	1.9	1.9	1.9
Gross operating balance	6.5	1.4	4.8	4.0	3.6	2.4	3.3	3.4	3.3	3.2	3.1
Net operating balance	4.1	-1.0	2.3	1.3	0.7	-0.3	0.5	0.6	0.6	0.4	0.3
Net lending / borrowing	2.2	-3.4	0.5	-0.4	-1.3	-2.2	-1.5	-1.3	-1.3	-1.5	-1.6
Net acquisition of financial assets	5.1	-0.5	3.6	3.3	...	…	…	…	…	…	
Monetary gold and SDRs	...	...	...	...	...	…	…	…	…	…	
Currency and deposits	3.6	-1.8	2.3	1.4	...	…	…	…	…	…	
Securities other than shares	0.5	1.1	2.0	0.2	...	…	…	…	…	…	
Loans	0.1	0.1	0.2	0.0	...	…	…	…	…	…	
Shares and other equity	1.0	0.5	-1.1	1.0	...	…	…	…	…	…	
Insurance technical reserves	...	...	...	...	...	…	…	…	…	…	
Financial derivatives	0.3	-0.3	0.3	0.2	...	…	…	…	…	…	
Other accounts receivable	-0.4	-0.2	-0.2	0.4	...	…	…	…	…	…	
Net incurrence of liabilities	2.9	2.9	2.7	2.8	...	…	…	…	…	…	
Special Drawing Rights (SDRs)	...	...	...	...	...	…	…	…	…	…	
Currency and deposits	0.0	0.0	0.0	0.0	...	…	…	…	…	…	
Securities other than shares	2.5	3.1	3.5	1.9	...	…	…	…	…	…	
Loans	-0.1	-0.2	-0.9	0.0	...	…	…	…	…	…	
Shares and other equity	0.0	0.0	0.0	0.0	...	…	…	…	…	…	
Insurance technical reserves	0.0	0.0	0.0	0.0	...	…	…	…	…	…	
Financial derivatives	0.0	0.0	0.0	0.0	...	…	…	…	…	…	
Other accounts payable	0.5	0.0	0.1	0.9	...	…	…	…	…	…	
Memorandum items:											
GDP (in billions of euro)	62.4	64.5	72.4	77.5	79.3	82.2	87.1	91.0	95.0	99.1	103.4
Structural balance	0.6	1.8	1.1	0.3	0.2	-0.9	-1.4	-1.3	-1.4	-1.5	-1.6
Output gap (in % of potential GDP)	0.7	-1.7	2.9	2.1	-1.0	-1.7	-0.8	-0.3	0.0	0.0	0.0
Public gross debt (Maastricht definition)	22.4	24.6	24.5	24.7	25.7	28.1	28.8	29.5	30.1	30.8	31.4
10-year sovereign bond yield (annual average in %)	-0.1	-0.4	-0.4	1.5	3.1						

Sources: Luxembourg authorities; and IMF staff estimates.

Table 6. Luxembourg: Central Bank and Depository Corporations Survey, 2016–23
(Million Euros)

	2016	2017	2018	2019	2020	2021	2022	2023
CENTRAL BANK								
Net Foreign Assets	**188653**	**182591**	**190621**	**187071**	**234966**	**283016**	**250706**	**247861**
Net Domestic Assets	**-88192**	**-86820**	**-87608**	**-88153**	**-86639**	**-78732**	**-85345**	**-88261**
Net domestic claims	6957	9403	9332	8938	10398	18687	11820	8771
Claims on Central government (net)	564	976	1113	1156	2303	3522	3529	3243
Claims on State and Local Government	0	0	0	0	0	0	0	0
Claims on Public Nonfinancial Corporations	0	0	0	0	0	0	0	0
Claims on Private Sector	0	0	0	0	0	0	0	0
Claims on Other Depository Corporations	4908	5666	5191	4787	8092	15165	8291	5528
Claims on Other Financial Corporations	1485	2761	3028	2995	3	0	0	0
Other items net	-95149	-96223	-96940	-97091	-97037	-97419	-97165	-97032
Monetary Base	**100463**	**95772**	**103014**	**98915**	**148328**	**204284**	**165360**	**159601**
DEPOSITORY CORPORATIONS								
Net Foreign Assets	**333219**	**335582**	**354729**	**362097**	**377140**	**423302**	**389377**	**379163**
Net Domestic Assets	**-111617**	**-104867**	**-107325**	**-97938**	**-96390**	**-95430**	**-63274**	**-90433**
Net domestic claims	104307	107283	112044	119625	120731	129391	148311	138702
Claims on Central government (net)	77	-1320	-916	-2276	42	-489	-1226	-1168
Claims on State and Local Government	1029	958	951	957	972	1023	1187	1341
Claims on Public Nonfinancial Corporations	0	0	0	0	0	0	0	0
Claims on Private Sector	54102	58444	63501	68040	71086	75229	78687	76257
of which: Private Sector Credit	52117	56830	61640	66130	69323	72700	76255	74014
Claims on Other Financial Corporations	49099	49201	48508	52904	48631	53628	69663	62272
Other items net	-215924	-212150	-219369	-217563	-217121	-224821	-211585	-229135
Broad Money	**221606**	**230717**	**247406**	**264155**	**280750**	**327879**	**326099**	**288737**

Sources: IMF Monetary and Financial Statistics.

Table 7. Luxembourg: Financial Soundness Indicators, 2016–23

(Percent)

	2016	2017	2018	2019	2020	2021	2022	2023
All Banks								
Capital adequacy								
Regulatory capital to risk-weighted assets	25.0	25.9	24.8	22.6	24.8	23.9	23.0	24.0
Regulatory tier 1 capital to risk-weighted assets	24.0	25.1	24.0	22.1	22.8	21.9	22.0	22.0
Common equity tier 1 to risk-weighted assets								
Capital to assets	7.0	8.4	8.0	7.4	8.6	7.9	8.0	9.0
Profitability and efficiency								
Return on assets	0.8	0.7	0.6	0.5	0.5	0.6	0.6	1.1
Return on equity	11.0	8.1	7.4	7.4	6.2	5.5	5.0	9.0
Interest margin to gross income	25.0	27.9	27.1	26.7	24.9	21.3	26.0	34.0
Trading income to total income	3.0	1.3	3.5	2.9	1.5	1.5	2.0	1.0
Noninterest expenses to gross income	69.0	73.6	77.5	78.8	79.5	81.1	77.0	72.0
Personnel expenses to noninterest expenses	25.0	25.9	24.9	25.1	24.2	22.4	22.0	22.0
Asset quality and structure								
Residential real estate loans to total loans	6.2	6.2	6.8	6.9	8.5	13.0 1/	15.0	15.0
Household debt to GDP	60.0	59.5	59.8	64.3	69.7	71.0	72.0	72.0
Nonperforming loans to total gross loans	0.9	0.8	0.9	0.7	1.0	1.3 1/	1.6	1.9
Nonperforming loans net of provisions to capital	4.5	4.5	6.4	5.4	6.2	3.7	3.9	5.4
Provisions to total non perfoming loans	39.3	36.9	27.6	32.8	30.0	51.4	59.8	50.3
Sectoral distribution of loans (in percent of total loans)								
Residents	33.0	33.4	33.7	32.0	36.9	40.4	37.0	37.0
Nonresidents	67.0	66.6	66.3	68.0	63.1	59.6	63.0	63.0
Liquidity								
Liquid assets to total assets	21.2	22.9	24.9	24.7	29.8	32.0 1/	33.0	32.0
Liquid assets to short-term liabilities	31.8	31.7	34.6	33.2	38.8	35.0 1/	37.0	36.0
Customer deposits to total (non interbank) loans	106.0	102.9	106.2	107.7	109.0	76.0 1/	72.0	73.0
Liquidity Coverage Ratio						167.6	155.0	165.9
Net Stable Funding Ratio						139.2	136.3	135.1
Domestically Oriented Banks								
Capital adequacy								
Regulatory capital to risk weighted assets	23.0	23.0	22.9	22.5	22.9	23.1	23.0	23.0
Regulatory tier 1 capital to risk weighted assets	23.0	22.1	22.1	21.8	22.2	22.4	22.0	23.0
Capital to assets	9.0	8.2	8.8	8.7	8.9	8.7	9.0	9.0
Profitability and efficiency								
Return on assets	1.0	0.8	0.8	0.7	0.7	0.8	0.8	1.2
Return on equity	11.0	9.7	8.8	8.6	7.6	9.0	10.0	8.0
Interest margin to gross income	56.1	54.8	52.8	51.5	52.2	47.6	52.0	57.0
Asset quality and structure								
Residential real estate loans to total loans	28.0	26.7	24.9	25.6	28.0	36.7	37.0	37.0
Sectoral distribution of loans (in percent of total loans)								
Residents	71.0	69.5	67.5	71.0	76.4	80.9	82.0	82.0
Nonresidents	29.0	30.5	32.5	29.0	23.6	19.1	18.0	18.0
Liquidity								
Liquid assets to total assets	19.5	20.3	20.9	23.4	24.0	29.1	28.0	29.0
Liquid assets to short-term liabilities	26.0	27.2	28.0	30.7	32.3	32.9	32.0	33.0
Customer deposits to total (non interbank) loans	124.0	128.0	112.0	108.1	99.0	87.5	89.0	88.0

Sources: BCL, and CSSF.

1/ Change in underlying data source and calculation methodology (EBA 3).

Annex I. Implementation of Past IMF Advice

IMF advice	Progress/comments
Fiscal	
Short term. Significantly reduce fiscal stimulus to contain aggregate demand and inflation pressure by keeping the cyclically adjusted balance broadly unchanged. Shift to more targeted and less price-distortionary energy support measures and continue investing in energy efficiency and renewables. In case of severe demand shocks, allow automatic stabilizers to fully operate and consider targeted support, complementing them with a suspension of wage indexation in case of supply shocks.	*Partially implemented*. A worse than expected economic performance led to delayed fiscal consolidation and expansionary fiscal stance. However, most of the support has been done through permanent and untargeted measures. The administrative energy prices are expected to be phased out in 2025 or smoothed.
Medium term. Preserve buffers though prudent spending and an early pension reform. Better anchor fiscal policy and reduce procyclicality of fiscal policy by adopting a medium-term objective based on the overall balance and a ceiling on expenditure growth. Increase the frequency of the tax brackets adjustments for inflation in a budget-neutral way, within a comprehensive review of the tax and social benefits system to enhance its efficiency and distributional impact.	*Partially implemented*. The medium-term fiscal outlook has somewhat worsened due to a shift to permanent stimulus measures and other spending pressures. The government is exploring options to contain growth in expenditures. Although abandoning the self-imposed debt limit, the authorities remain committed to preserving the AAA rating. They will complement the EU EGF with a national fiscal rule (a MTO). The income tax brackets were adjusted above inflation and in a non-neutral way. Going forward, the income tax brackets will be adjusted frequently for inflation, but no compensatory measures have been identified yet. Regarding pension reform, discussions with social partners is planned in coming years.
Financial Sector	
Risks. Continue monitoring potential pockets of vulnerabilities, especially in real estate, as well as liquidity and interest rate risks. *Macroprudential*. maintain the countercyclical capital buffer (CCyB) unchanged for now. Consider introducing income-based limits to avoid further buildup of vulnerabilities. Increase resilience to a severe downturn in the real estate market through targeted capital measures (apply sectoral systemic risk buffer, increase minimum risk weights, and link them to LTV). Should the credit cycle deteriorate considerably, could consider relaxing the CCyB, while keeping the LTV limit unchanged.	*Partially implemented*. Monitoring of real estate risks have been stepped up. The CCyB has been kept unchanged but no other capital- based measures have been undertaken. Income-based measures have not been implemented given the downturn in housing demand and correction of real estate prices but could be considered in case of recovery.

Financial Sector	
Bolster resilience of *investment funds* by enhancing the effectiveness of swing pricing through better calibration to stress episodes and tailoring redemption terms to asset liquidity and investment strategy. Continue to coordinate actively with other supervisors, including on cross-border spillovers, and contribute to international efforts to strengthen oversight and regulatory and macroprudential requirements, especially concerning liquidity and leverage.	*Good progress*. The authorities have initiated a joint study with IMF staff on the impact on calibration of swing pricing on the effectiveness of this tool during stress episodes. They continue to participate actively in international fora to develop the regulatory and macroprudential framework for investment funds.
Structural	
Housing affordability. Focus on boosting supply by frontloading public construction projects, reducing bottlenecks, and increasing density. Avoid measures that boost housing demand and impede the adjustment of housing prices to more affordable levels.	*Little progress*. The authorities have added measures to support housing demand in the face of the sharp downturn. There are ongoing discussions with the industry to identify supply bottlenecks, in particular regulatory hurdles, with intentions to simplify procedures and increase densification in line with staff.
Wage indexation. Consider indexing to core inflation (complemented as needed with targeted support for the poorest). Consider introducing progressive wage indexation and switching to a rule-based suspension of the system (e.g., based on competitiveness indicators that would encourage greater decentralization of wage bargaining).	*Not implemented*. The authorities have no plans to change the wage indexation system. In case of supply shocks, a tripartite meeting will be held to deal with it. Nonetheless, they are focusing on lower taxation and reduced regulatory and administrative burden to support competitiveness.
Reducing gender gap. Transition toward the individualization of taxation. Relax access to work permits for spouses of immigrants. Implement measures to further enhance work flexibility and work-life balance means-test family benefits.	*Progress underway*. The authorities have eased the obtention of work permits for immigrants' spouses. The government of Luxembourg passed two laws transposing the European Union (EU) Directive 2019/1158 on work-life balance for parents and carers into local law, introducing paid careers' leave and paid force majeure leave, as well as an extension to the existing paternity leave entitlement. The government is exploring options to transition to individual taxation by 2026.

Annex II. External Sector Assessment

Overall Assessment: *The external position of Luxembourg in 2023 was stronger than the level implied by medium-term fundamentals and desirable policies.* This assessment is based on EBA-lite quantitative models, a review of developments in the balance of payments and net foreign asset positions, with the caveat that the methodology captures only partially Luxembourg's role as a financial hub and center for intra-corporation cash pooling.

Potential Policy Responses: In the near term, government's recently announced measures will delay fiscal consolidation and contribute to narrowing of the current account (CA). In the medium term, greater public sector investment in areas such as affordable housing, infrastructure, digitization, and green transition will help potential growth.

Foreign Assets and Liabilities: Position and Trajectory

Background. Luxembourg's net international investment position (NIIP) declined from 47 percent of GDP in 2022 to 33.8 percent in 2023, the lowest level it has been in the past decade. As a share of GDP, the increases in net portfolio investment (10.8 percentage points) and net other investment (10.3 percentage points) were offset by a decline in net direct investment of 33.5 percentage points.

Assessment. Projections of continued CA surpluses over the medium term suggest that NIIP will recover gradually to its pre-pandemic level. The large and positive NIIP and its trajectory do not raise sustainability concerns.

2023 (% GDP)	NIIP: 33.8	Gross Assets: 14711.4	Debt Assets: 3219.3	Gross Liabilities: 14677.6	Debt Liabilities: 1076.3

Current Account

Background. The CA surplus narrowed to 6.8 percent of GDP in 2023 from 7.6 percent in 2022.[1] Luxembourg's surplus reflects a strong services balance (34.4 percent of GDP), which is partly offset by a deficit in net factor income (26.9 percent of GDP), reflecting Luxembourg's status as a global financial center. The narrowing of the surplus in 2023 is a result of decline in the net export of goods and services as a share of GDP (3.1 percentage points) partly compensated by an increase in net factor income as a share of GDP (2.1 percentage points).

Assessment. The cyclically adjusted CA balance is estimated to be 6.7 percent of GDP in 2023. This assessment is based on the quantitative External Balance Assessment (EBA-lite), supplemented by staff judgement. The EBA-lite model only partially captures Luxembourg's specific circumstances as a financial center, including a large investment fund industry and a very small open economy with a large share of non-resident workers. Exports and imports of financial services which drive Luxembourg's current account are less sensitive to relative prices changes, and the large number of non-resident workers affects net factor income and population-based variables in the models. As in previous years, the EBA-lite explanatory variable "output per worker" is adjusted to reflect that close to 50 percent of Luxembourg's labor force is non-resident. Even after this adjustment, the CA norm estimated using EBA-estimated coefficients should be viewed with caution since Luxembourg, being an outlier along many dimensions, is not in the EBA sample. With this caveat in mind, the EBA CA gap is 3.1 percent of GDP, which includes a policy gap of

3.6 percent of GDP. The identified policy gap reflects lower-than-desired public health expenditure and a fiscal stance looser than the country-specific norm, but not relative to the average world fiscal stance. It should be noted however that over the longer term the CA surplus will narrow because of rising aging costs that are not accounted for by the CA norm calculated at the desired medium-term policy levels. Pension reforms should therefore be front loaded to reduce fiscal pressures in the long-term.

Luxembourg: EBA-lite Model Results, 2023

	CA model 1/	**REER model** 1/
	(in percent of GDP)	
CA-Actual	**6.8**	
Cyclical contributions (from model) (-)	0.1	
Additional temporary/statistical factors (-)		
Natural disasters and conflicts (-)	0.0	
Adjusted CA	**6.7**	
CA Norm (from model) 2/	**8.2**	
Adjustments to the norm (-)	-4.6	
Adjusted CA Norm	**3.6**	
CA Gap	**3.1**	**5.7**
o/w Relative policy gap	3.8	
Elasticity	-1.4	
REER Gap (in percent)	**-2.3**	**-4.2**

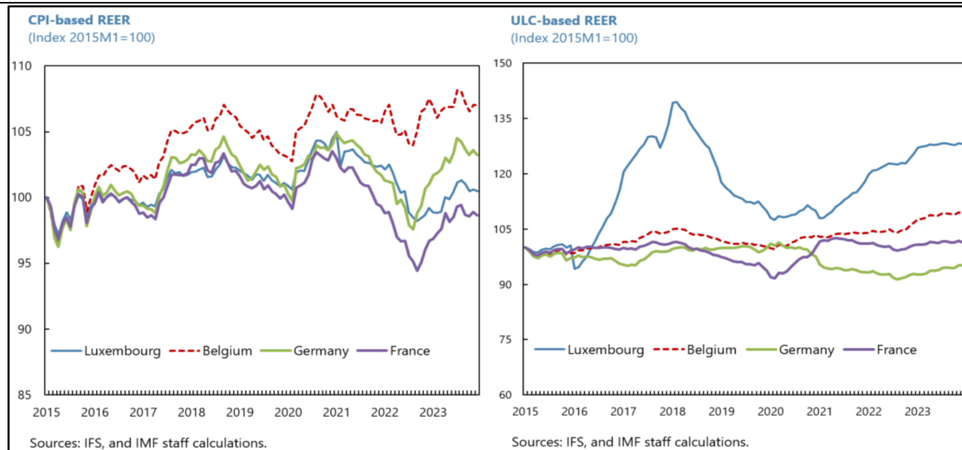
1/ Based on the EBA-lite 3.0 methodology
2/ Cyclically adjusted, including multilateral consistency adjustments.

1\ There have been large upward revisions in the current account surplus for years between 2018–22 driven by the correction of discrepancies between the national accounts and balance of payments data. Authorities plan to revise the data prior to 2018 over time as well.

Real Exchange Rate

Background. The average real effective exchange rates (REER) based on CPI remained relatively unchanged in 2023, while the ULC-based REER appreciated by 4.5 percent. Between 2022 and 2023, Luxembourg's CPI-based REER appreciated the least, while the ULC-based REER appreciated the most relative to its neighboring countries.

Assessment. The staff assessed CA gap implies a REER undervaluation of 2.3 percent. The REER index model suggests an undervaluation of 9.3 percent, which includes a policy gap of 4.2 percent.



Capital and Financial Accounts: Flows and Policy Measures

Background. The financial account surplus narrowed from 7.9 percent of GDP in 2022 to 6.5 percent of GDP in 2023. The capital account deteriorated slightly from a surplus of 0.2 percent of GDP in 2022 to a deficit of 0.3 percent of GDP in 2023.

Assessment. Risks are limited, given the strength of Luxembourg's external position.

FX Intervention and Reserves Level

Background. The euro has the status of global reserve currency.

Assessment. Reserves held by euro area countries are typically low relative to standard metrics. The currency is free floating.

Annex III. Slowdown in Labor Productivity Growth

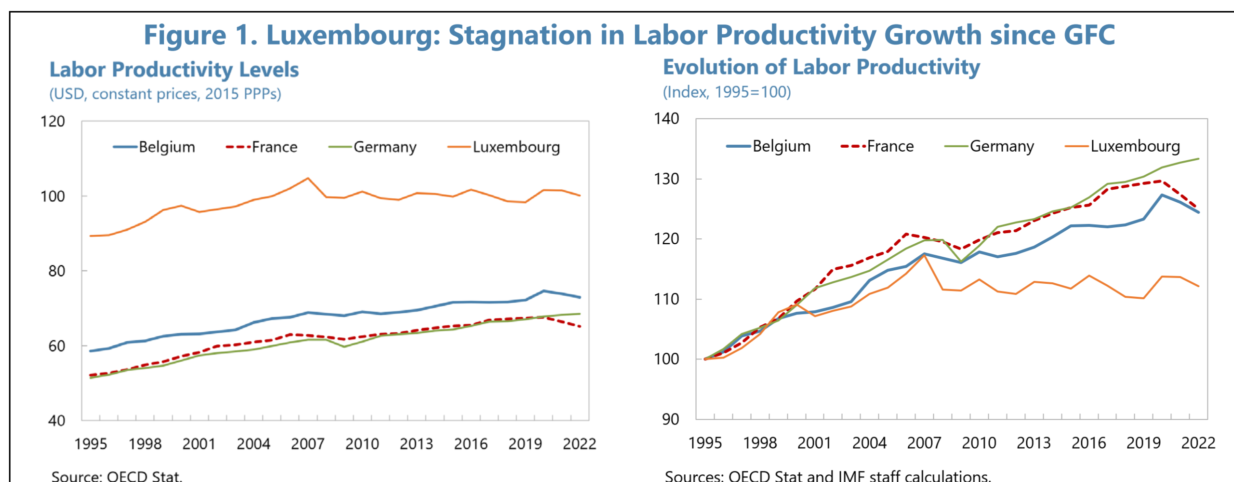
Despite Luxembourg's historically high productivity levels, there has been a slowdown in its productivity growth relative to neighboring countries post-Global Financial Crisis (GFC). Negative contribution of TFP to labor productivity growth suggests declining efficiency of input utilization. Temporary productivity gains from technology integration during the COVID-19 pandemic and structural shifts between industries have been offset by sectoral reallocation post-pandemic. The information and communication sector has contributed positively to labor productivity growth, while financial activities contributed negatively post-euro crisis. Investing in intangible assets can drive TFP growth, leading to increased productivity within sectors. To sustain long-term per capita income growth, Luxembourg should focus on R&D, technological innovation, competitive efficiency, and leverage generative AI.

1. Productivity is the cornerstone of economic growth and improving living standards. In the years following the GFC, there has been a discernible deceleration in productivity growth in most advanced economies. Several potential reasons have been identified for the observed slowdown, including: (i) high baseline levels of productivity making incremental gains difficult; (ii) transition from manufacturing to service-based economies where productivity gains are harder to achieve; (iii) limited transformative impact of recent technological innovations; iv) slower pace of innovation diffusion within sectors; and v) insufficient investment in tangible and intangible assets. Stagnating productivity in Luxembourg could be a result of one or multiple of these factors. However, the significantly pronounced slowdown observed in the Luxembourg relative to its neighbors merits a deeper analysis of the underlying causes.

2. Real labor productivity (GDP per hour worked) in Luxembourg is high but has been largely stagnant since the GFC. Unlike its neighbors', labor productivity in Luxembourg in 2022 continues to be below its 2007 level (Figure 1). On average, Luxembourg's productivity grew (0.4 percent) less quickly than that of neighboring countries (0.9 percent) between 1995–2022. Higher levels of productivity can be achieved if more capital is used for production, if labor quality increases, and if labor and capital are used together more efficiently, i.e., higher total factor productivity (TFP). Decomposing labor productivity growth into these three elements reveals that relative to its neighbors, TFP in Luxembourg contributes negatively to labor productivity growth (Figure 2).[1] Negative contribution of TFP implies that the efficiency and effectiveness with which inputs are being utilized are deteriorating. This could be a result of decline in or slower adoption of new technologies (contribution of tangible information and communication technologies (ICT) and intangible capital to labor productivity growth is negligible), decreased efficiency, or misallocation of resources.

[1] The analysis on the drivers of labor productivity growth refers to the productivity growth of the market economy, i.e., excludes real estate (L), public administration and defense, education, health activities (O-Q), and activities of households as employers (T–U).

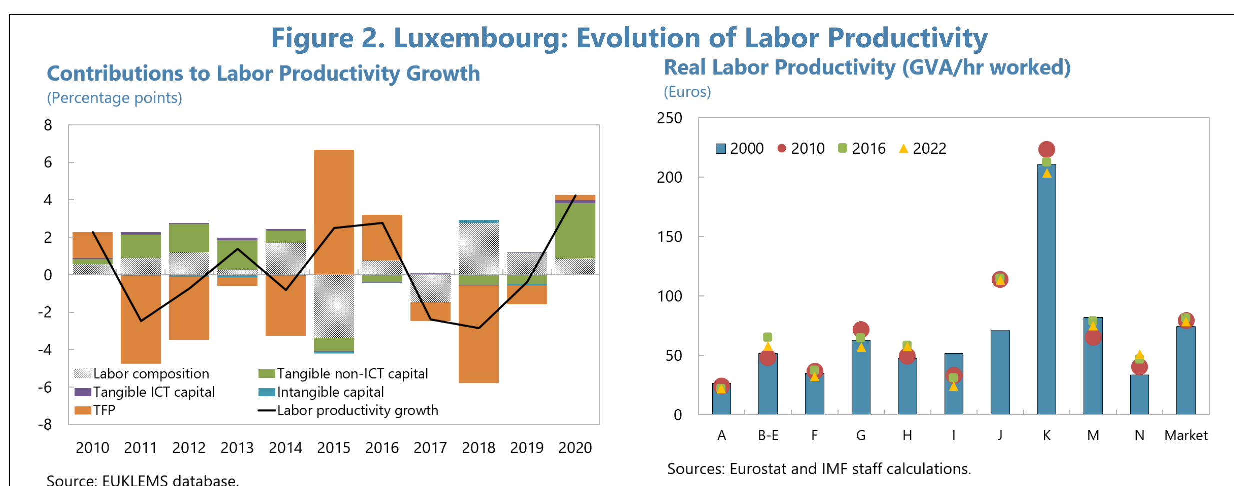
Figure 1. Luxembourg: Stagnation in Labor Productivity Growth since GFC



Source: OECD Stat.

Sources: OECD Stat and IMF staff calculations.

Figure 2. Luxembourg: Evolution of Labor Productivity



Source: EUKLEMS database.

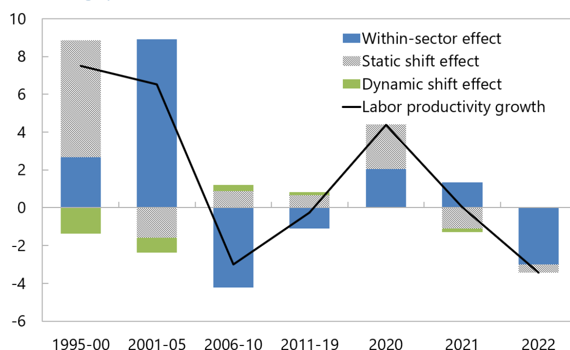
Sources: Eurostat and IMF staff calculations.

3. Within-sector developments explain most of the changes in productivity growth in recent years.[2] Shift-share analysis helps decompose labor productivity growth into within-sector productivity gains (within-sector effect) and structural changes caused by between-industry reallocation (sum of static and dynamic shift effect) of resources (Figure 3). The rebound in labor productivity in 2020 is a result of both within sector productivity gains likely from swift integration of technology and innovation in industries to respond to the challenges triggered by the Covid pandemic and between-industry reallocation of resources necessitated by the pandemic (Figure 3). These gains seem to have partly dissipated because of reallocation of hours to sectors recovering post pandemic (i.e., accommodation and restaurants), which are also typically characterized by lower productivity. In the years preceding the pandemic, the within-sector effect dominated and contributed negatively to productivity growth. In most years, this was driven by the financial and insurance sectors and wholesale/retail trade (Figure 3). The between-industry reallocation effect is limited over shorter time horizons as it captures structural changes in the allocation of resources, which take longer to materialize.

[2] The NACE codes refer to the following sectors, A: agriculture, forestry, and fishing; B–E: industry (except construction), F: construction; G-I: wholesale and retail trade, transport, accommodation and food service activities, J: information and communication, K: financial and insurance activities, M–N: professional, scientific and technical activities; administrative and support service activities, R: arts, entertainment and recreation; S: other service activities.

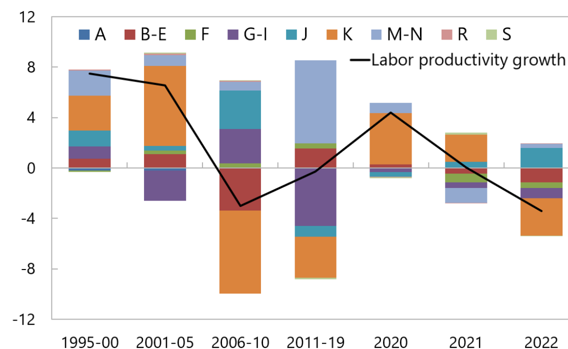
Figure 3. Luxembourg: Decomposition of Labor Productivity Growth Using Shift-Share Analysis

Decomposition of Labor Productivity Growth
(Percentage points)



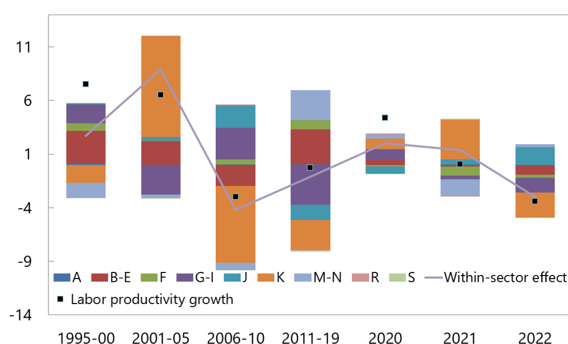
Sources: Eurostat and IMF staff calculations.

Industry Contributions to Labor Productivity Growth
(Percentage points)



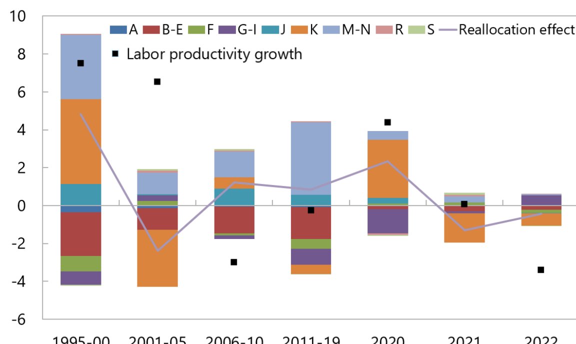
Sources: Eurostat and IMF staff calculations.

Industry Contributions to Within-sector Effect
(Percentage points)



Sources: Eurostat and IMF staff calculations.

Industry Contributions to Overall Reallocation Effect
(Percentage points)



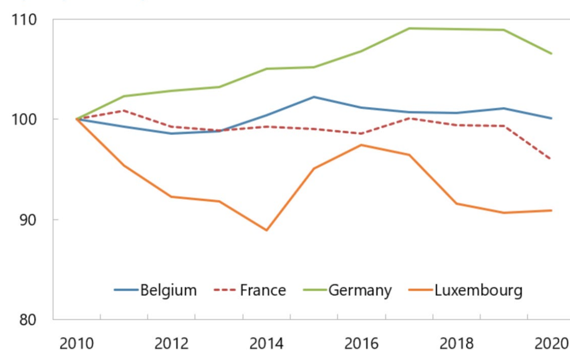
Sources: Eurostat and IMF staff calculations.

Note: Labor productivity growth in 2020 is relative to 2019.

4. **The sectors contributing to productivity growth have shifted over time.** Between 2000–22, while the biggest negative contributors to productivity growth were manufacturing (C) and wholesale/retail trade sector (G-I), information and communication (J) sector as well as professional activities (M-N) were the largest positive contributors. However, since the euro area crisis (over the period 2010–22), the financial and insurance activities sector (K) contributed more negatively than manufacturing. At the same time, the positive contribution of the information and communication sector (J) declined (likely due to diminishing gains after the dot-com boom), and that of administrative and support service activities (M-N) increased (e.g., due to efficiency gains from adoption of new technologies) (Figure 3).

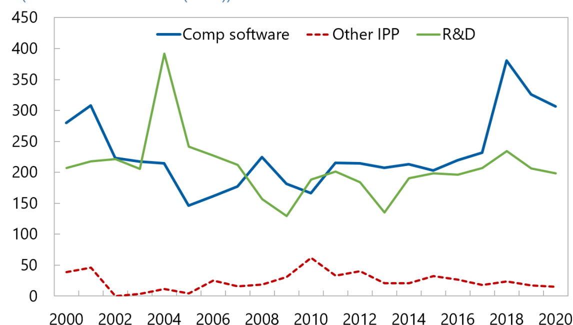
Figure 4. Luxembourg: Investment in Intangible Assets Plays a Role in Enhancing TFP

Total Factor Productivity
(Index, 2010=100)



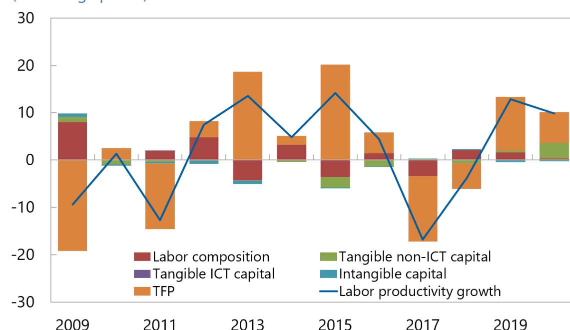
Sources: EUKLEMS database and IMF staff calculations.

Market Economy: Gross Fixed Capital Formation in Intangible Assets
(Chain-linked volumes (2015))



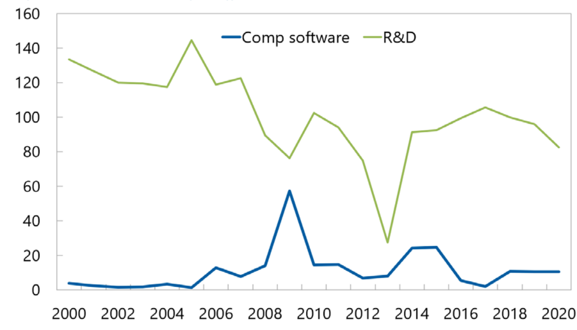
Source: EUKLEMS database.

Contributions to Labor Productivity Growth in the Manufacturing Sector
(Percentage points)



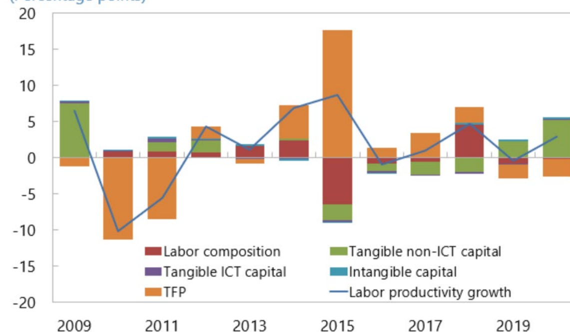
Source: EUKLEMS database.

Manufacturing: Gross Fixed Capital Formation in Intangible Assets
(Chain-linked volumes (2015))



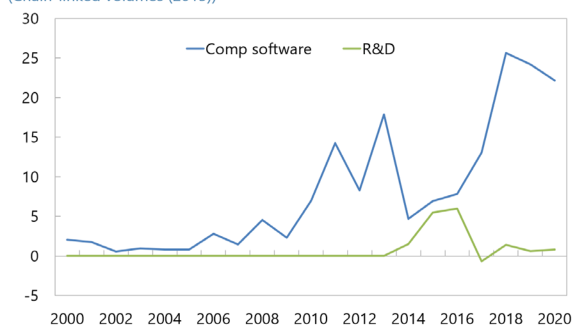
Source: EUKLEMS database.

Contributions to Labor Productivity Growth in Admin & Support Service Activities Sector
(Percentage points)



Source: EUKLEMS database.

Admin & Support Services: Gross Fixed Capital Formation in Intangible Assets
(Chain-linked volumes (2015))

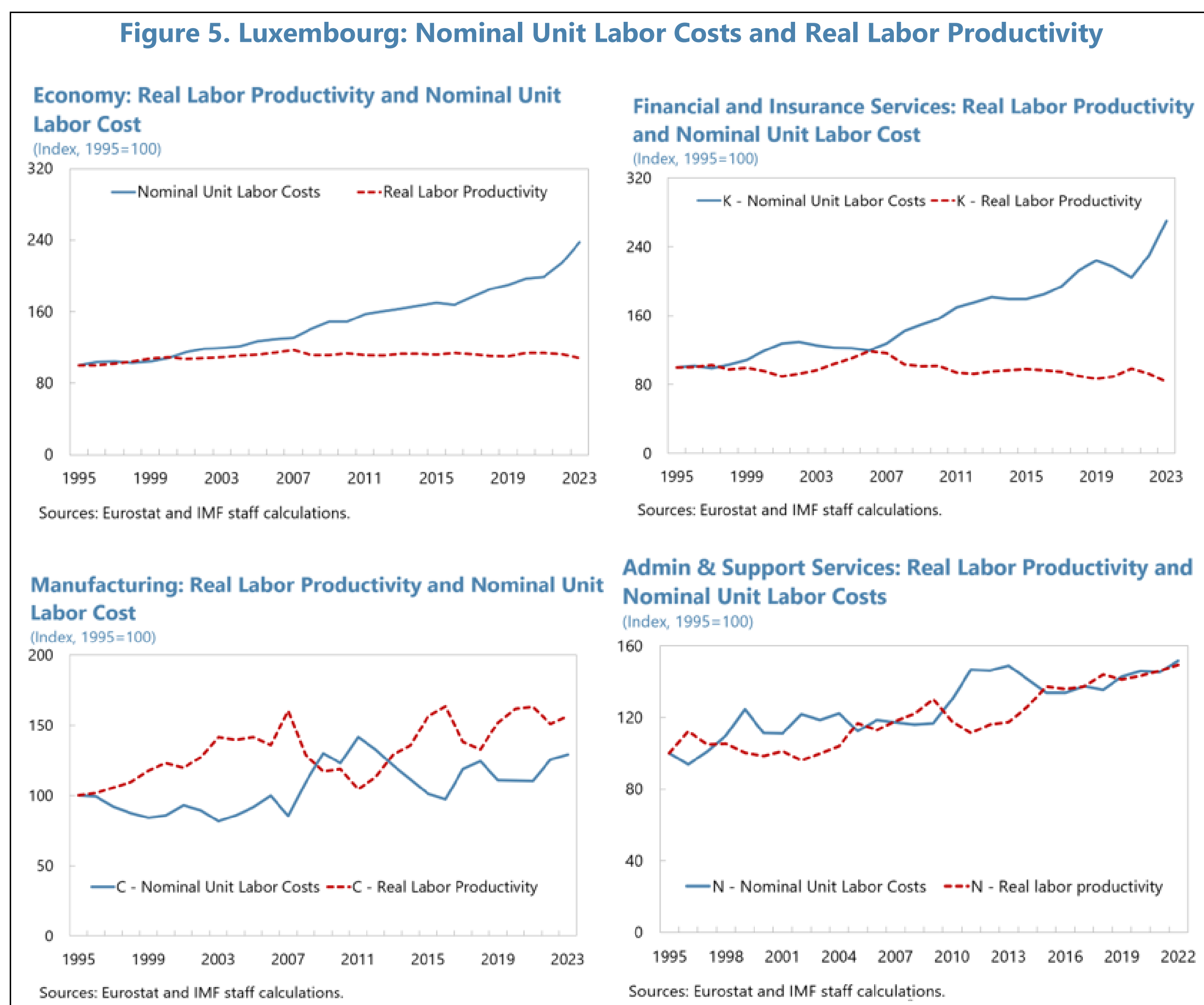


Source: EUKLEMS database.

5. **Investments in intangible assets (i.e., R&D, computer software) have a positive effect on TFP growth.** Investments in intangible assets, such as R&D, computer software or intellectual property products, can lead to innovations that can significantly increase operational efficiency. The increase in labor productivity in the manufacturing sector (and its positive contribution to within-sector effects) between 2010–16 is driven by the positive contribution of TFP (Figure 4). There is also

a corresponding increase in investment in research and development (R&D) in the sector starting 2013. Similarly, in the administrative and support services sector, TFP contributes significantly to labor productivity growth, likely driven by investments in computer software, which enhance efficiency. The slowing of aggregate labor productivity can also be linked to the stagnation of R&D investment since the GFC (Figure 4).

Figure 5. Luxembourg: Nominal Unit Labor Costs and Real Labor Productivity

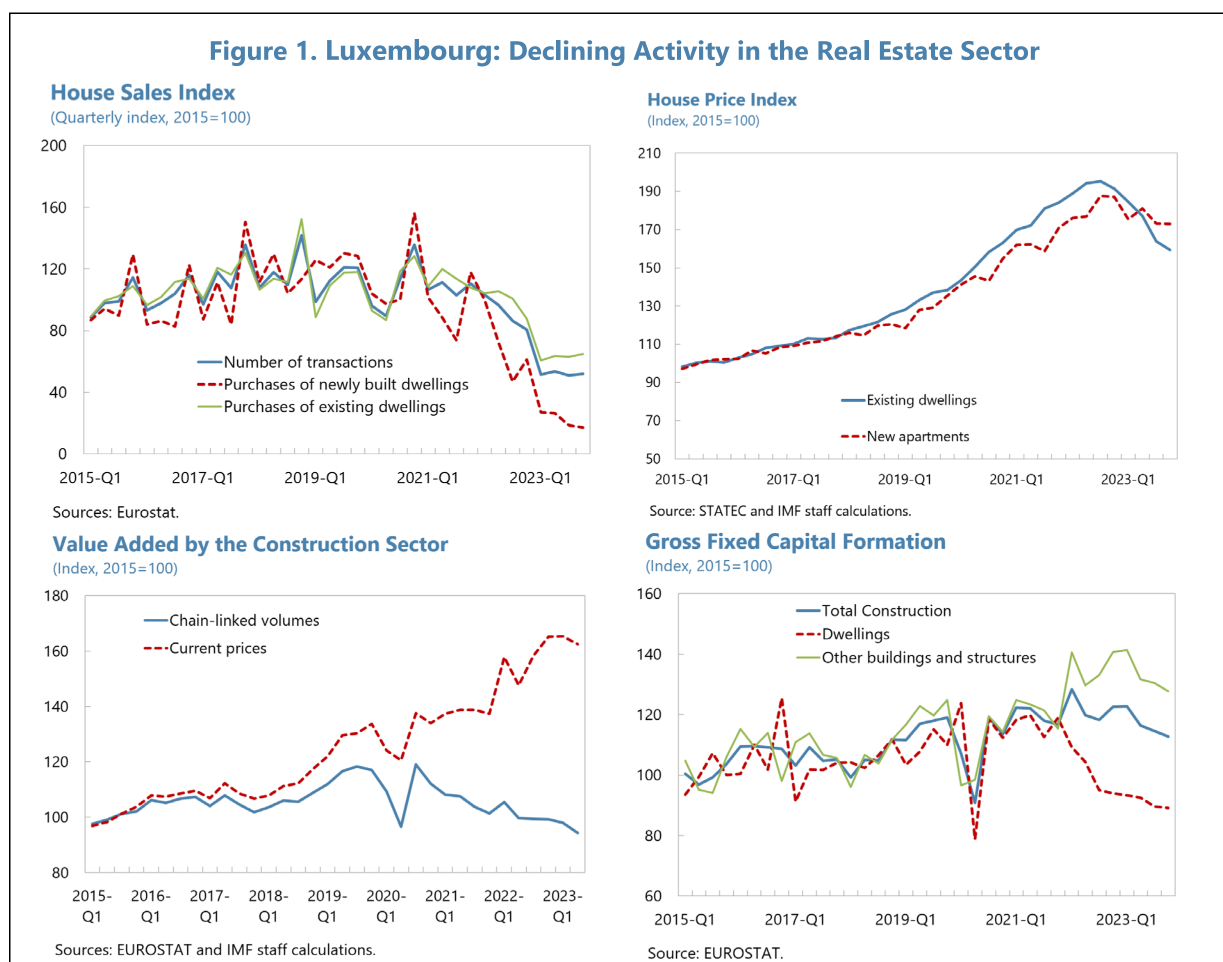


6. **Real labor productivity has not kept pace with the real wages, which have been increasing rapidly because of the wage indexation system.** In Luxembourg, on average, nominal unit labor costs grew by 3.5 percent, while the real labor productivity declined by 0.2 percent between 2011–22. For manufacturing (C) and administrative and support services (N), sectors which have seen increases in operational efficiency, real labor productivity grew faster than nominal unit labor costs for the same period (Figure 5). However, much like the aggregate economy, real labor productivity for financial and insurance services (K) declined (-1 percent) while nominal unit labor costs increased significantly (3.9 percent). Given the importance of the financial and insurance services for the Luxembourgish economy, efforts should be made to close the unfavorably widening gap between productivity and costs to maintain competitiveness.

Annex IV. Developments/Risks in the Real Estate Sector

The Luxembourg housing market, after years of robust growth, entered a downward phase in 2023, with demand plummeting due to rising interest rates, leading to a significant drop in housing transactions. This downturn reversed the trend of steadily increasing house prices, though they remain overvalued. The ripple effects of this cooling market have also been felt in the construction sector, where activity has diminished, as indicated by falling confidence indicators, decrease in real Gross Value Added (GVA), and falling investment. This has led to an uptick in bankruptcies and job losses, with a rising share of non-performing loans in the sector. In response, the authorities declared a 'state of crisis' and introduced a mix of temporary and structural measures aimed at stimulating demand and mitigating disruptions in the sector.

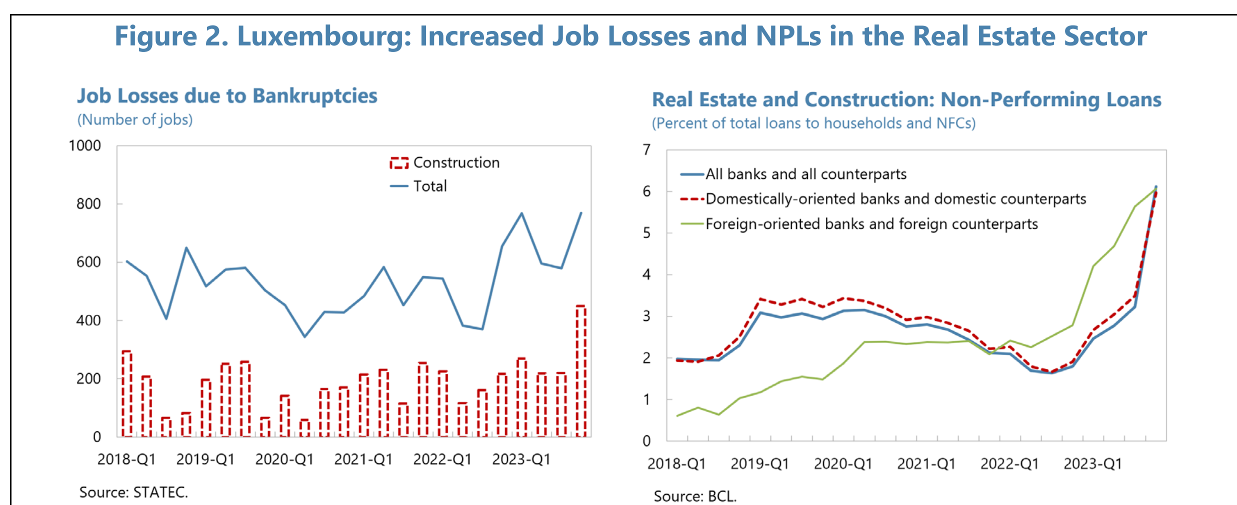
1. The housing market in Luxembourg has entered a downwards phase amidst falling demand driven by rising interest rates after several years of strong growth. The number of housing transactions in 2023 declined sharply by about 43 percent, with the most pronounced decline being for new apartments (~68 percent). This cooling down of the housing market has also led to a decline in house prices, which have experienced sustained rapid increases over the past few years. Between



2018–22, house prices increased, on average, by 10 percent annually, until the first quarter of 2023. In 2023, on average, house prices declined by 10 percent (14½ percent y/y), with the decline in price of existing dwellings and new apartments being 12.4 percent and 3.6 percent respectively (Figure 1). Nonetheless, housing prices remain overvalued.

2. Falling demand in the housing market has had a negative impact on construction activity. The decline in the confidence indicators since early 2022 has been a harbinger of continued weakening of activity in the construction industry. Both components of the confidence indicator—business owners' perception of their order books and their outlook on employment—have been trending downwards since early 2022. Gross value added (GVA) in real terms in the construction sector fell by 7 percent in 2023, with some heterogeneity across sub-sectors (Figure 1). However, nominal GVA increased moderately by 3 percent widening the gap between the two measures. Investment in the construction sector fell by 4.6 percent in 2023, with residential investment seeing a larger decline of 9.4 percent while investment in other buildings and civil engineering structures declined relatively moderately by 2.4 percent (Figure 2).

Figure 2. Luxembourg: Increased Job Losses and NPLs in the Real Estate Sector



3. The decline in real estate activity has also been accompanied by an increase in bankruptcies and layoffs in the sector. In 2023, job losses due to bankruptcies in the construction sector totaled close to 1100 people, which is a 60 percent increase compared to the previous year. However, this is not very different from the job losses seen in the years preceding 2022. As is the case with GVA and investment, the share of the 'construction of buildings' sub-sector in the number of bankruptcies has increased. Non-performing loans in the construction and real estate sector also increased by 4.3 percentage points from end-2022 to reach 6.1 percent (Figure 2).

4. All these economic indicators show a clear deterioration in the construction sector. However, this slowdown should be seen in the broader context of the economic slowdown in the euro area as well as the Luxembourg housing market where house prices have risen sharply over the past decade, leading to concerns about affordability. The decline in prices as a result of the slowdown is warranted to facilitate housing affordability. Against this background, it is important to ensure that this adjustment causes minimal disruptions, while bearing in mind the structural supply-demand imbalances.

5. The government declared a 'state of crisis' in the sector and unveiled a whole host of measures aimed at stimulating demand in the sector and reducing disruptions to downstream activities. The package consists of special tax measures limited to 2024, structural tax measures that are not limited in time, as well as other support measures (Table 1). Overall, the time-limited measures are focused on the demand side, which, given the structural supply constraints, could limit price adjustment that would help affordability. In addition, even if temporary, the demand-support measures could be inefficient, shifting the burden to the public sector, while creating expectations for future public support (i.e., moral hazard). Regarding the structural measures, the support of supply is welcome, but more cost-efficient measures, such as ordering new dwellings on government land, would be preferable.

Table 1. Luxembourg: Government Support Measures for the Housing Sector

Tax Measures	
Limited to 2024 (January 1–December 31, 2024)	**Structural (Not limited in time)**
Increase in the "Bëllegen Akt" tax credit for principal residence from €30,000 to €40,000	Increase of the tax exemption of net income from social rental management from 75 to 90 percent.
Introduction of a new "Bëllegen Akt" tax credit of €20,000 per individual for investment in rental housing.	Extension of capital gains tax exemption for the sale of property to the Housing Fund (Fonds du Logement).
Decrease of the tax rate to a quarter of the overall rate for capital gains if the property is held for at least two years.	Increased exemption of the mortgage interest deductible by one-third.
Accelerated depreciation rate of 6 percent for 6 years for investments in rental housing, subject to a maximum annual cap of €250,000.	Introduction of a 25 percent exemption on premiums paid by employers for rental accommodation for young employees.
Fiscal neutralization of capital gains transferred in housing used for social rental management or belonging to energy performance class A+.	
Other Support Measures	
For individuals	**For the construction sector**
Adjustment of the income limits for obtaining individual aid to reflect changes in the standard of living.	Extension and reinforcement of the VEFA (*vente en l'état futur d'achèvement*) project acquisition program (allocation of €480 million to buy new dwellings between 2024–27).
Increase in income limits for eligibility of home-ownership grants (and by extension savings grants).	The Special Fund for Affordable Housing will invest over €900 million in the creation of affordable housing between 2024–26.
Adjustment of the maximum amount of the rent subsidy for households with dependent children.	
Increase the income limit eligible for an interest subsidy and increase in the maximum rate of interest subsidy from 2.45 to 3.5 percent.	
Adjusting the conditions for a state guarantee for obtaining a mortgage.	
Temporary increase in eligibility ceilings for affordable housing sales provided by public developers.	

Annex V. Sovereign Risk and Debt Sustainability Analysis

Figure 1. Luxembourg: Risk of Sovereign Stress

Luxembourg: Risk of Sovereign Stress

Horizon	Mechanical signal	Final assessment	Comments
Overall	…	Low	The overall risk of sovereign stress is low in the near term. In the medium term, while debt is stabilizing, some idiosyncratic risks related for example to changes in international taxation and spending pressures on defense and digital and climate transformation may be higher than expected, which calls for prudent recurrent spending. Notwithstanding the automatic assessment of the pension system, an early reform could create space of additional capital and targeted social spending while achieving intergenerational equity.
Near term 1/			
Medium term	Low	Low	Medium-term risks are assessed as low against a mechanical low signal as well as the strength of institutions, the depth of the investor pool, and adequate fiscal resources.
Fanchart	Low	…	
GFN	Low	…	
Stress test	...	…	
Long term	…	Moderate	The authorities actuarial assessment shows that pension expenditure are expected to exceed social contributions by 2028. The general pension scheme's reserves are projected to be depleted by 2047.
Sustainability assessment 2/	Not required for surveillance countries	n.a.	Not applicable
Debt stabilization in the baseline			No

DSA Summary Assessment

Commentary: Luxembourg is at a low overall risk of sovereign stress and debt is sustainable. While the fiscal consolidation has been delayed by the fiscal packages to tackle the energy shock and support the economic recovery, most indicators will normalize as the stimulus is rolled-back. Debt is projected to stay at 30-33 percent of GDP over the medium-term. Medium-term liquidity risks as analyzed by the GFN Financeability Module are low. Over the longer run, Luxembourg should continue with prudent fiscal policy measures and structural reforms to continue supporting growth.

Source: Fund staff.

Note: The risk of sovereign stress is a broader concept than debt sustainability. Unsustainable debt can only be resolved through exceptional measures (such as debt restructuring). In contrast, a sovereign can face stress without its debt necessarily being unsustainable, and there can be various measures—that do not involve a debt restructuring—to remedy such a situation, such as fiscal adjustment and new financing.

1/ The near-term assessment is not applicable in cases where there is a disbursing IMF arrangement. In surveillance-only cases or in cases with precautionary IMF arrangements, the near-term assessment is performed but not published.

2/ A debt sustainability assessment is optional for surveillance-only cases and mandatory in cases where there is a Fund arrangement. The mechanical signal of the debt sustainability assessment is deleted before publication. In surveillance-only cases or cases with IMF arrangements with normal access, the qualifier indicating probability of sustainable debt ("with high probability" or "but not with high probability") is deleted before publication.

Figure 2. Luxembourg: Debt Coverage and Disclosures

1. Debt coverage in the DSA: 1/

CG	GG	NFPS	CPS	Other
	GG (chosen)			

1a. If central government, are non-central government entities insignificant? n.a.

2. Subsectors included in the chosen coverage in (1) above:

Sectors		Subsectors captured in the baseline	Inclusion
CPS, NFPS, GG: expected, CG	1	Budgetary central government	Yes
CPS, NFPS, GG: expected, CG	2	Extra budgetary funds (EBFs)	No
CPS, NFPS, GG: expected	3	Social security funds (SSFs)	Yes
CPS, NFPS, GG: expected	4	State governments	Yes
CPS, NFPS, GG: expected	5	Local governments	Yes
CPS, NFPS	6	Public nonfinancial corporations	Yes
CPS	7	Central bank	Yes
CPS	8	Other public financial corporations	Yes

3. Instrument coverage:

Currency & deposits	Loans	Debt securities	Oth acct. payable 2/	IPSGSs 3/
Chosen coverage	Chosen coverage	Chosen coverage	Missing from recommended coverage	Missing from recommended coverage

4. Accounting principles:

Basis of recording		Valuation of debt stock		
Non-cash basis 4/	Cash basis	Nominal value 5/	Face value 6/	Market value 7/
	Chosen	Chosen		

5. Debt consolidation across sectors:

Consolidated	Non-consolidated
	Chosen

Color code: chosen coverage; Missing from recommended coverage; Not applicable

Comments: Debt/GDP for the DSA is projected based on the stock of General Government debt in 2023, but evolves from 2024 according to Central Government flows, given the social security surplus.

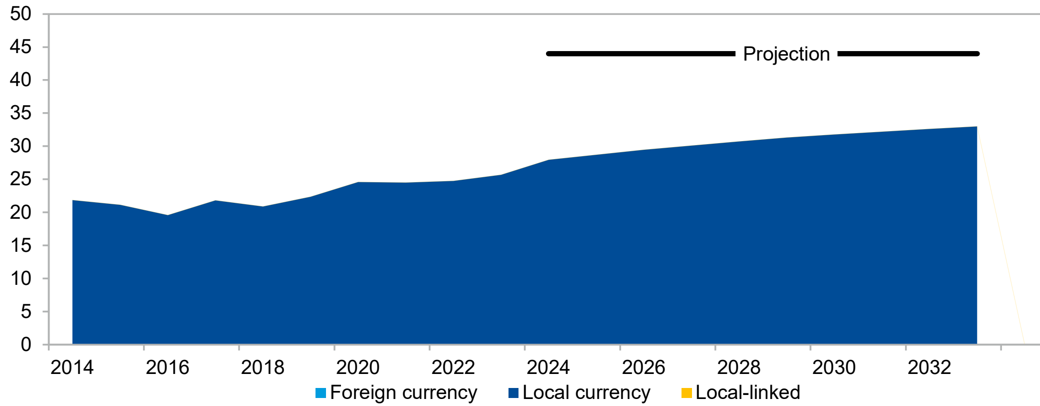
Reporting on intra-government debt holdings

Issuer \ Holder	Budget. central govt	Extra-budget. funds	Social security funds	State govt.	Local govt.	Nonfin. pub. corp.	Central bank	Oth. pub. fin corp	Total
1 Budget. central govt									0
2 Extra-budget. funds									0
3 Social security funds									0
6 Nonfin pub. corp.									0
7 Central bank									0
8 Oth. pub. fin. corp									0
Total	0	0	0	0	0	0	0	0	0

1/ CG=Central government; GG=General government; NFPS=Nonfinancial public sector; PS=Public sector.
2/ Stock of arrears could be used as a proxy in the absence of accrual data on other accounts payable.
3/ Insurance, Pension, and Standardized Guarantee Schemes, typically including government employee pension liabilities.
4/ Includes accrual recording, commitment basis, due for payment, etc.
5/ Nominal value at any moment in time is the amount the debtor owes to the creditor. It reflects the value of the instrument at creation and subsequent economic flows (such as transactions, exchange rate, and other valuation changes other than market price changes, and other volume changes).
6/ The face value of a debt instrument is the undiscounted amount of principal to be paid at (or before) maturity.
7/ Market value of debt instruments is the value as if they were acquired in market transactions on the balance sheet reporting date (reference date). Only traded debt securities have observed market values.

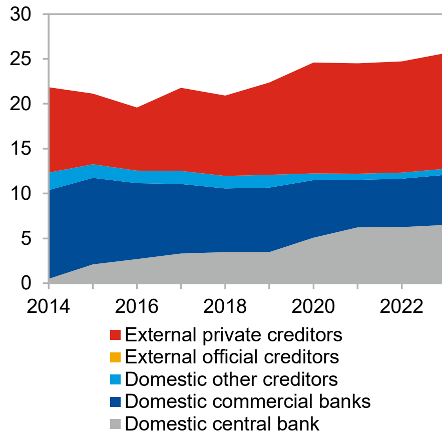
Figure 3. Luxembourg: Public Debt Structure Indicators

Debt by Currency (percent of GDP)



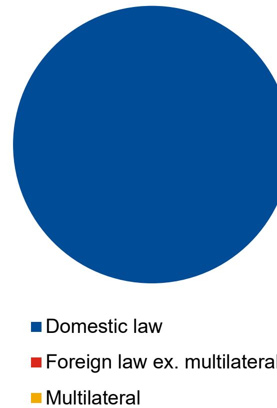
Note: The perimeter shown is general government.

Public Debt by Holder (percent of GDP)



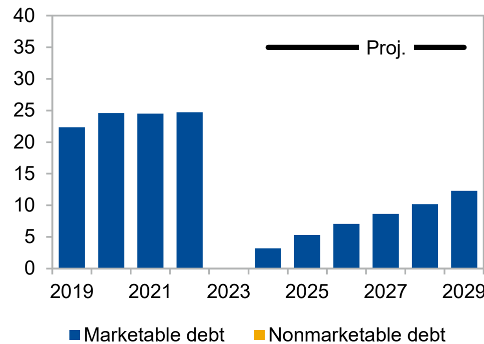
Note: The perimeter shown is general government.

Public Debt by Governing law, 2023 (percent)



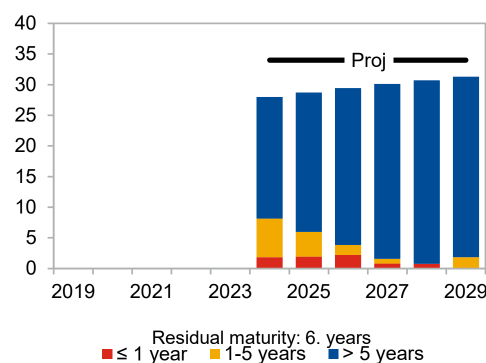
Note: The perimeter shown is general government.

Debt by Instruments (percent of GDP)



Note: The perimeter shown is general government.

Public Debt by Maturity (percent of GDP)



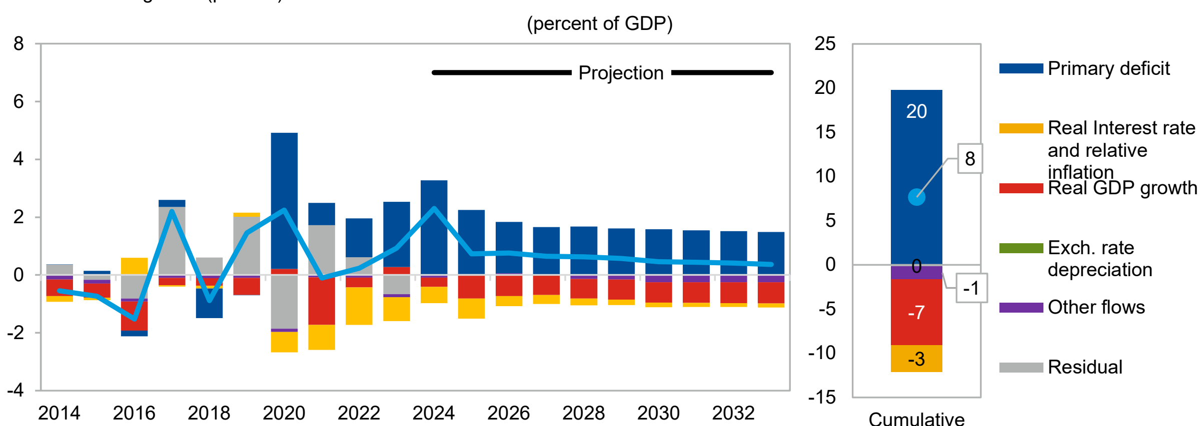
Note: The perimeter shown is general government.

Commentary: The debt is held exclusively by external private creditors and is held in domestic currency limiting exchange rate risk. With the bulk of the debt having a maturity > 5 years, the impact of the current increase in interest rates will only be felt gradually.

Figure 4. Luxembourg: Baseline Scenario

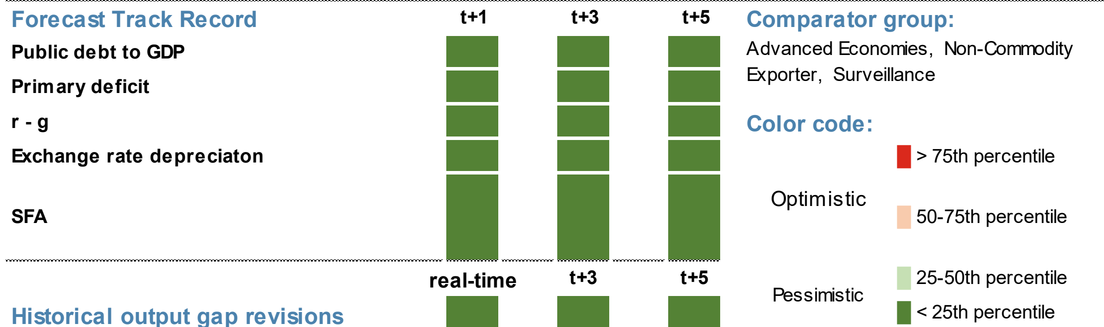
(percent of GDP unless indicated otherwise)

	Actual	Medium-term projection						Extended projection			
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Public debt	25.7	28.0	28.7	29.5	30.1	30.7	31.3	31.8	32.2	32.6	33.0
Change in public debt	0.9	2.3	0.7	0.8	0.6	0.6	0.6	0.5	0.4	0.4	0.4
Contribution of identified flows	1.6	2.3	0.8	0.8	0.7	0.6	0.6	0.5	0.5	0.4	0.4
Primary deficit	2.3	3.3	2.2	1.8	1.6	1.7	1.6	1.6	1.5	1.5	1.5
Noninterest revenues	32.1	32.4	33.0	33.2	33.3	33.5	33.8	33.1	32.5	31.9	31.3
Noninterest expenditures	34.4	35.7	35.2	34.9	34.9	35.2	35.4	34.7	34.0	33.4	32.7
Automatic debt dynamics	-0.6	-0.9	-1.5	-1.1	-1.0	-0.9	-0.9	-0.9	-0.8	-0.9	-0.9
Real interest rate and relative inflation	-0.8	-0.6	-0.7	-0.4	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1
Real interest rate	-0.8	-0.6	-0.7	-0.4	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1
Relative inflation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Real growth rate	0.3	-0.3	-0.8	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Real exchange rate	0.0	…	…	…	…	…	…	…	…	…	…
Other identified flows	-0.1	-0.1	0.0	0.1	0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2
Contingent liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other transactions	-0.1	-0.1	0.0	0.1	0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2
Contribution of residual	-0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross financing needs	4.6	3.7	3.8	3.7	4.2	3.4	3.8	3.4	3.8	4.1	4.4
of which: debt service	2.5	0.6	1.8	2.1	2.8	2.0	2.4	2.1	2.5	2.8	3.1
Local currency	2.5	0.6	1.8	2.1	2.8	2.0	2.4	2.1	2.5	2.8	3.1
Foreign currency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Memo:											
Real GDP growth (percent)	-1.1	1.3	2.9	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Inflation (GDP deflator; percent)	3.4	2.3	2.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Nominal GDP growth (percent)	2.3	3.5	5.9	4.5	4.4	4.3	4.3	4.3	4.3	4.3	4.3



Staff commentary: Public debt will rise a bit but then stablize, reflecting expectations of a narrowing of primary deficits and stable economic conditions.

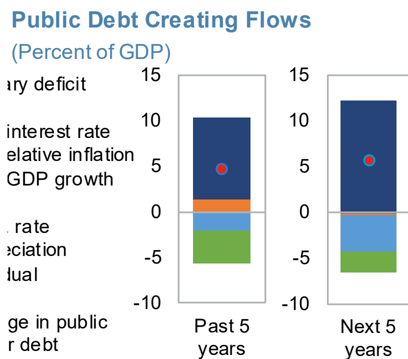
Figure 5. Luxembourg: Realism of Baseline Assumptions



Comparator group:
Advanced Economies, Non-Commodity Exporter, Surveillance

Color code:
Optimistic: > 75th percentile; 50-75th percentile
Pessimistic: 25-50th percentile; < 25th percentile

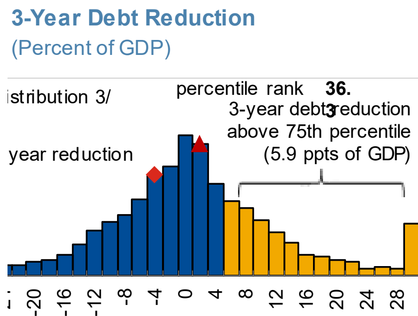
Public Debt Creating Flows
(Percent of GDP)



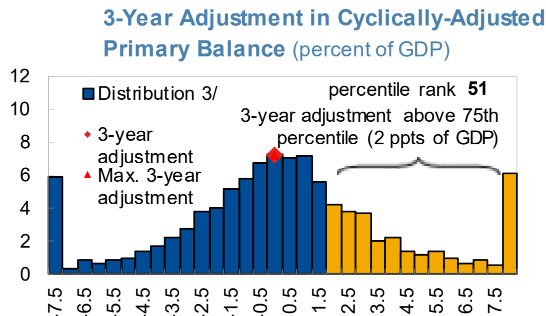
Bond Issuances (bars, debt issuances (RHS, %GDP); lines, avg marginal interest rates (LHS, percent))

-3%
-4%
10,000
0
5y hist
2024
2025
2026
2027
2028
2029
5+ yr term
1-5 yr term
<1 yr term
Spread vs 10-yr US Treas.
Implied spread, Laubach rule

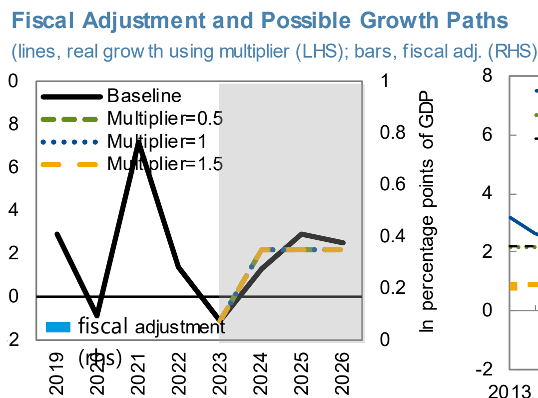
3-Year Debt Reduction
(Percent of GDP)



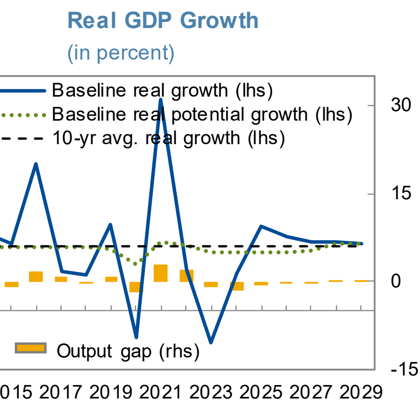
3-Year Adjustment in Cyclically-Adjusted Primary Balance (percent of GDP)



Fiscal Adjustment and Possible Growth Paths
(lines, real growth using multiplier (LHS); bars, fiscal adj. (RHS)



Real GDP Growth
(in percent)



Commentary: The realism analysis does not point to major concerns: past forecast errors do not reveal any systematic biases and the projected fiscal adjustment and debt reduction are well within norms.

Figure 6. Luxembourg: Medium-Term Risk Analysis

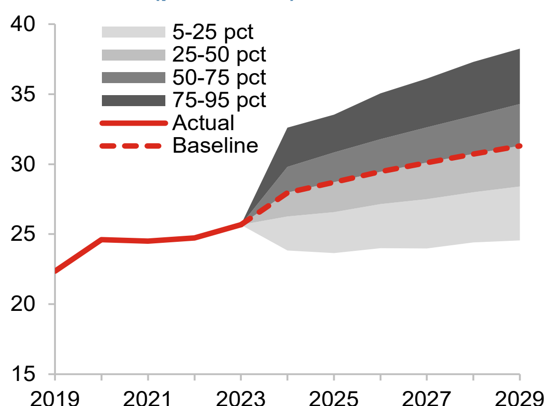
Debt fanchart and GFN financeability indexes

(percent of GDP unless otherwise indicated)

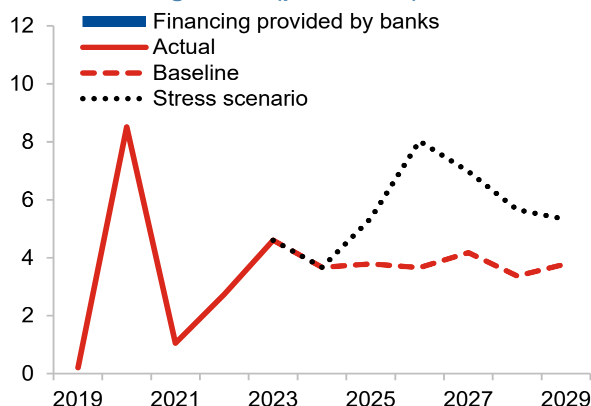
Module	Indicator	Value	Risk index	Risk signal	Adv. Econ., Non-Com. Exp, Program (0 25 50 75 100)
Debt fanchart module	Fanchart width	13.7	0.2	…	
	Probability of debt not stabilizing (pct)	95.8	0.8	…	
	Terminal debt level x institutions index	3.6	0.1	…	
	Debt fanchart index	**…**	**1.1**	**Low**	
GFN finance-ability module	Average GFN in baseline	3.7	1.3	…	
	Bank claims on government (pct bank assets)	0.4	0.1	…	
	Chg. in claims on govt. in stress (pct bank assets)	1.2	0.4	…	
	GFN financeability index	**…**	**1.8**	**Low**	

Legend: Interquartile range; Luxembourg

Final Fanchart (pct of GDP)



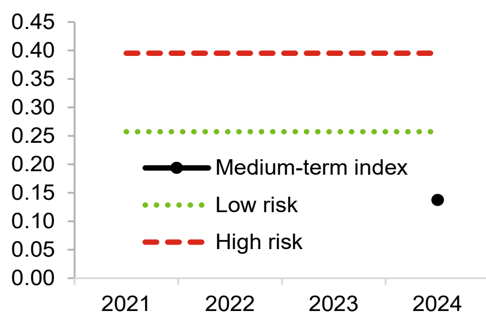
Gross Financing Needs (pct of GDP)



Triggered stress tests (stress tests not activated in gray)

Banking crisis | Commodity prices | Exchange rate | Contingent liab. | Natural disaster

Medium-term Index



Medium-term Risk Analysis

Debt fanchart index	1.1	2.1	0.5	0.2
GFN finaceability index	7.6	17.9	0.5	0.0
Medium-term index (MTI)	0.3	0.4	…	0.1, Low

Prob. of missed crisis, 2024-2029 (if stress not predicted): 0.0 pct

Prob. of false alarm, 2024-2029 (if stress predicted): 75.0 pct.

Commentary: Of the two medium-term tools, the Debt Fanchart Module is pointing to higher levels of risk, while the GFN Financeability Module suggests lower level of risk. In both cases, risks of debt distress are low.

Annex VI. Data Issues

Table 1. Luxembourg: Data Adequacy Assessment for Surveillance

Data Adequacy Assessment Rating 1/							
A							
Questionnaire Results 2/							
Assessment	National Accounts	Prices	Government Finance Statistics	External Sector Statistics	Monetary and Financial Statistics	Inter-sectoral Consistency	Median Rating
	A	A	A	A	B	A	A
Detailed Questionnaire Results							
Data Quality Characteristics							
Coverage	A	A	A	A	B		
Granularity 3/	B		A	B	B		
			A		A		
Consistency			A	A		A	
Frequency and Timeliness	A	A	A	A	A		

Note: When the questionnaire does not include a question on a specific dimension of data quality for a sector, the corresponding cell is blank.
1/ The overall data adequacy assessment is based on staff's assessment of the adequacy of the country's data for conducting analysis and formulating policy advice, and takes into consideration country-specific characteristics.
2/ The overall questionnaire assessment and the assessments for individual sectors reported in the heatmap are based on a standardized questionnaire and scoring system (see IMF *Review of the Framework for Data Adequacy Assessment for Surveillance* , January 2024, Appendix I).
3/ The top cell for "Granularity" of Government Finance Statistics shows staff's assessment of the granularity of the reported government operations data, while the bottom cell shows that of public debt statistics. The top cell for "Granularity" of Monetary and Financial Statistics shows staff's assessment of the granularity of the reported Monetary and Financial Statistics data, while the bottom cell shows that of the Financial Soundness indicators.

A	The data provided to the Fund is adequate for surveillance.
B	The data provided to the Fund has some shortcomings but is broadly adequate for surveillance.
C	The data provided to the Fund has some shortcomings that somewhat hamper surveillance.
D	The data provided to the Fund has serious shortcomings that significantly hamper surveillance.

Rationale for staff assessment. Data provision to the Fund is adequate for surveillance. Luxembourg publishes timely economic statistics and most of the underlying metadata. National accounts and balance of payments data are subject to large revisions. As identified by the FSAP, areas of improvement for monetary and financial statistics include identification of OFIs in the corporate micro data to improve vulnerability assessments, and monitoring the linkages between OFIs and investment funds as well as their cross-border flows.

Changes since the last Article IV consultation. Balance of payments data has been revised starting 2018 to make it consistent with the national accounts data. More efforts have been taken to collect data on commercial real estate (CRE) and lending practices to the sector. The ESRB has assessed Luxembourg as fully compliant.

Corrective actions and capacity development priorities. Fiscal statistics could be improved by moving fully to accrual accounting to better assess the fiscal stance (cyclically adjusted balance).

Use of data and/or estimates different from official statistics in the Article IV consultation. In the absence of CRE price index, staff have used private sector estimates (Cushman and Wakefield).

Other data gaps.

Table 2. Luxembourg: Data Standards Initiatives

Luxembourg adheres to the Special Data Dissemination Standard (SDDS) Plus since November 2019 and publishes the data on its National Summary Data Page. The latest SDDS Plus Annual Observance Report is available on the Dissemination Standards Bulletin Board (https://dsbb.imf.org/).

Table 3. Luxembourg: Table of Common Indicators Required for Surveillance

As of April 22, 2024

	Data Provision to the Fund				Publication under the Data Standards Initiatives through the National Summary Data Page			
	Date of Latest Observation	Date Received	Frequency of Data[6]	Frequency of Reporting[6]	Expected Frequency[6,7]	Luxembourg[8]	Expected Timeliness[6,7]	Luxembourg[8]
Exchange Rates	21-Apr-24	22-Apr-24	D	D	D	D	...	...
International Reserve Assets and Reserve Liabilities of the Monetary Authorities[1]	Mar-24	Apr-24	M	M	M	M	1W	1W
Reserve/Base Money	Mar-24	Apr-24	M	M	M	M	2W	2W
Broad Money	Mar-24	Apr-24	M	M	M	M	1M	1M
Central Bank Balance Sheet	Feb-24	Apr-24	M	M	M	M	2W	1M
Consolidated Balance Sheet of the Banking System	Feb-24	Apr-24	M	M	M	M	1M	1M
Interest Rates[2]	21-Apr-24	22-Apr-24	D	D	D	D	NA	...
Consumer Price Index	Mar-24	Apr-24	M	M	M	M	1M	1M
Revenue, Expenditure, Balance and Composition of Financing[3]–General Government[4]	2023	Apr-24	A	A	A/Q	A	2Q/12M	2Q
Revenue, Expenditure, Balance and Composition of Financing[3]–Central Government	Feb-24	Apr-24	M	M	M	M	1M	1M
Stocks of Central Government and Central Government-Guaranteed Debt[5]	Dec-23	Mar-24	Q	Q	Q	Q	1Q	1Q
External Current Account Balance	Dec-23	Mar-24	Q	Q	Q	Q	1Q	82D
Exports and Imports of Goods and Services	Jan-24	Mar-24	M	2M	M	M	8W	56D
GDP/GNP	Dec-23	Mar-24	Q	Q	Q	Q	1Q	85D
Gross External Debt	Dec-23	Mar-24	Q	Q	Q	Q	1Q	1Q
International Investment Position	Dec-23	Mar-24	Q	Q	Q	Q	1Q	1Q

[1] Includes reserve assets pledged or otherwise encumbered, as well as net derivative positions.

[2] Both market-based and officially determined, including discount rates, money market rates, 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, extra budgetary funds, and social security funds) and state and local governments.

[5] Including currency and maturity composition.

[6] Frequency and timeliness: ("D") daily; ("W") weekly or with a lag of no more than one week after the reference date; ("M") monthly or with lag of no more than one month after the reference date; ("Q") quarterly or with lag of no more than one quarter after the reference date; ("A") annual.; ("I") irregular; and ("NA") not available.

[7] Encouraged frequency of data and timeliness of reporting under the e-GDDS and required frequency of data and timeliness of reporting under the SDDS and SDDS Plus. Any flexibility options or transition plans used under the SDDS or SDDS Plus are not reflected. For those countries that do not participate in the IMF Data Standards Initiatives, the required frequency and timeliness under the SDDS are shown for New Zealand, and the encouraged frequency and timeliness under the e-GDDS are shown for Eritrea, Nauru, South Sudan, and Turkmenistan.

[8] Based on the information from the Summary of Observance for SDDS and SDDS Plus participants, and the Summary of Dissemination Practices for e-GDDS participants, available from the IMF Dissemination Standards Bulletin Board (https://dsbb.imf.org/). For those countries that do not participate in the Data Standards Initiatives, as well as those that do have have a National Data Summary Page, the entries are shown as "..."

INTERNATIONAL MONETARY FUND

LUXEMBOURG

STAFF REPORT FOR THE 2024 ARTICLE IV CONSULTATION—INFORMATIONAL ANNEX

May 13, 2024

Prepared By European Department

CONTENTS

FUND RELATIONS ____ 2

FUND RELATIONS

(As of March 31, 2024)

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	965.03	73.01
Reserve Tranche Position	356.83	27.00
Lending to the Fund		
New Arrangements to Borrow		

SDR Department:

	SDR million	Percent of allocation
Net cumulative allocation	1,513.51	100.00
Holdings	1,567.84	103.59

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				
	2024	2025	2026	2027	2028
Principal	0.02	0.02	0.02	0.02	0.02
Charges/Interest	0.02	0.02	0.02	0.02	0.02

Implementation of HIPC Initiative: Not applicable

Safeguards Assessments: Not applicable

Exchange Rate Arrangement: The exchange rate arrangement of the euro area is free floating. Luxembourg's participates in a currency union (EMU) with 19 other members of the EU and has no separate legal tender. The euro, the common currency, 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 multiple currency practices and restrictions on the making of payments and transfers for current international transactions,

other than restrictions maintained solely for security reasons, which have been notified to the Fund pursuant to the Executive Board Decision No. 144 (52/51).

Last Article IV Consultation: The last Article IV consultation was concluded on May 17, 2023. The associated Executive Board assessment is available at IMF Executive Board Concludes 2023 Article IV Consultation with Luxembourg and the staff report (IMF Country Report No. 2023/176) at 1LUXEA2023001.pdf. 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 05, 2017. The FSSA and accompanying Reports on the Observation of Standards and Codes (ROSCs) are available at
http://www.imf.org/en/Publications/CR/Issues/2017/05/15/Luxembourg-Financial- System-Stability-Assessment-44907

Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT): In September 2023, the Financial Action Task Force (FATF) recognized the quality of the existing AML/CFT framework of Luxembourg and placed it under regular monitoring, which corresponds to the best possible result following a mutual evaluation. The FATF report is available at https://www.fatf-gafi.org/en/publications/Mutualevaluations/MER-Luxembourg-2023.html.

Statement by Mr. Luc Albert Dresse, Executive Director for Luxembourg and Mr. Michel Pierre Daniel Scholer Advisor to the Executive Director May 29, 2024

On behalf of the Luxembourg authorities, we would like to extend our gratitude to Mr. Emil Stavrev and Ms. Srobona Mitra, and their respective teams, for the fruitful exchanges and the successful Art. IV and FSAP engagement. The authorities broadly agree with staff's appraisal while offering some nuanced perspectives and will carefully consider their thoughtful policy advice.

Luxembourg's sound fiscal policies allowed it to implement a vigorous fiscal response to the COVID-19 pandemic and the energy crisis brought about by Russia's war of aggression against Ukraine. The cost-of-living measures introduced in 2022 proved instrumental in keeping inflation in check (+3.7 percent in Luxembourg vs. +5.4 percent in the euro area in 2023) but came with a high fiscal cost (approx. 4 percent of GDP until end-2024).

In a difficult environment marked by geopolitical tensions, trade disruptions, high interest rates, and strained public finances, the government, which took office in November 2023, plans to implement an ambitious economic and fiscal agenda. A major priority is to attract investment and boost the economy by means of growth-friendly policies and responsible fiscal management. Fiscal measures to increase both households' purchasing power and companies' competitiveness will be key levers to get the economy, which experienced a slowdown in 2023, back on track. A recently adopted comprehensive policy package aims at relaunching construction sector activity and facilitating housing access. These measures will be flanked with sustained high investments in the twin transition to future-proof the economy.

Notwithstanding these ambitious policies, the government is strongly committed to prudent fiscal and financial policymaking; the preservation of the AAA credit rating being the overarching objective. Efficient public spending and far-sighted budgetary governance will contribute to rebuilding fiscal buffers and the consolidation of public finances in the medium-term. Along with effective supervision of the financial sector, as recognized by this year's FSAP, these policies will solidify the economy's resilience to future shocks and financial market volatility.

Macroeconomic outlook and risks

After experiencing a slowdown in 2023 (-1.1 percent), mainly due to a slump in the financial sector's performance and a sluggish construction sector suffering from high interest rates, the Luxembourg economy is set to progressively recover as of 2024. External demand and residential investment should pick up, fueled by lower interest rates and renewed confidence arising from government measures. The substantial support measures to fight the energy crisis and continued disinflation in the euro area should help lower domestic inflation in 2024 (2.2 percent according to the independent national statistical institute STATEC). Despite a weaker economic environment, the labor market remains solid with an unemployment rate hovering around 5.5 percent in the medium-term.

The Luxembourg economy shows strong resilience against downward pressures. Heightened geoeconomic fragmentation leading to new supply-chain disruptions would slow down the recovery of the global economy and entail renewed inflation pressures, directly affecting Luxembourg's small and open economy. If central banks were forced to maintain higher interest rates for longer, Luxembourg could suffer from weaker external demand as well as slower credit growth and lower investment. Nevertheless, emboldened by the financial sector's past performances after economic downswings, the authorities are confident in the sector's ability to make a strong recovery and bolster the economy this year. The authorities

also see potential upside risks in the government's measures to unlock consumers' still elevated pandemic-related savings. The most recent confidence indicator, which reached its highest level in a year in April 2024, is an encouraging sign in that regard.

Fiscal policy

The economic recovery is a priority for the government. Alleviating the fiscal burden on companies and households in order to stimulate investments and demand is thus a key priority. The income tax brackets were adjusted to neutralize the effect of the last four automatic wage indexations caused by record-high inflation. Additional tax bracket adjustments and targeted tax relief measures are being planned. In the same vein, the government aims to avoid a harsh phase-out of the energy support measures. The establishment of a lower nominal corporate income tax (CIT) and exchange-traded funds (ETF) will buttress the competitiveness of businesses and the financial sector alike. While taking note of staff's considerations regarding a CIT rate decrease, the authorities expect this measure to increase Luxembourg's competitiveness and reinvigorate the economy, hence generating new revenue.

To foster a return to sustained economic growth, the government will tackle the economy's structural challenges. To address housing shortages and affordability concerns and counteract the recent deterioration in the construction sector and related social risks, a set of fiscal incentives to invest in housing was enacted, such as tax credits and an accelerated depreciation rate for investments in rental housing. Public investment to promote the green and digital transitions will be maintained at around 4 percent of GDP. The authorities concur with staff that the demographic evolution is a major challenge for the pension system going forward. As is tradition in Luxembourg, a variety of options to ease the pressure on the system shall be addressed in the context of a broad dialogue between the government and social partners.

A sustainable medium-term path for public finances is at the core of the government's fiscal policy. The authorities thank staff for their interesting SIP. While they acknowledge that the new measures will negatively affect the government balance, they remain more optimistic about the fiscal outlook. Indeed, in light of recent changes in the EU fiscal governance framework, the authorities announced the introduction of a national medium-term budgetary objective (MTO) as a guidepost to curtail current expenditure and better target social spending. Combined with recovery-driven revenue, strengthening the national fiscal framework will contribute to maintaining a sustainable debt trajectory. Some major revenue categories have kept their momentum through the first quarter of 2024, which could indeed suggest a more sustained uptake. To further increase public administration effectiveness, the authorities intend to leverage digitalization to increase tax administrations' revenue mobilization.

Financial sector

The authorities agree with staff's assessment that the financial sector is resilient against severe adverse shocks, on the back of high capital and liquidity buffers. FSAP stress tests reveal that even under extreme scenarios combining multiple sources of disruptions, the share of weak banks remains small, and potential recapitalization needs are easily manageable. Furthermore, the current high interest rate environment benefits banks' profitability thereby partially offsetting the risk of NPLs whose overall number remains low.

Investment funds are able to absorb significant shocks. Improvements to the supervisory framework have paid off and the investment fund sector staved off damages related to the recent stress episodes relatively easily, partly through close cooperation between Luxembourg supervisors and their foreign counterparts. In the case of substantial interest rate hikes, FSAP stress tests show that investment funds

have enough liquidity to manage redemptions of up to 40 percent, which is particularly noteworthy since the hikes used in the tests exceeded historic shocks that hit the sector.

Luxembourg's financial sector oversight framework has proven its worth and is fit for purpose. The authorities welcome staff's acknowledgment of the further progress made since the last FSAP in 2017. More resources and more stringent data collection and reporting requirements have further improved the effectiveness of the supervisory framework. Staff highlights that the authorities' response to the 2023 market turmoil was quick and efficient. The government considers the composition of the supervisory authorities' boards to be appropriate and comparable to that of other supervisory authorities.

Risks to the financial sector emanating from real estate sector vulnerabilities are contained. The increase in NPLs can be partially explained by banks taking an increasingly conservative stance in terms of forward-looking provisioning. Households' indebtedness is counterbalanced by high income and wealth levels as well as the high proportion of fixed loans. Furthermore, banks' substantial capital and liquidity buffers considerably mitigate financial sector risks. Therefore, the authorities deem interest rate stress tests to be a suitable substitute for non-targeted income-based measures with potentially negative economic effects.

Structural policies

Rising interest rates caused activity in the construction sector to drop significantly. Combined with high construction costs, an unprecedented decrease in transactions of apartments under construction put a number of companies in financial difficulties. Against this backdrop, the government took action notably to mitigate the social impact of this slowdown. Aside from fiscal measures, substantial public investments into new dwellings are worth noting. Still, the authorities agree that structural supply-demand imbalances fundamentally drive price dynamics and will need to be addressed in the medium-term.

The government affirms its commitment to the green transition as evidenced by high public investments. One pillar of this ambitious investment strategy is the construction of an integrated multimodal mobility network in which public and private modes of transportation complement each other. The authorities also appreciate staff zooming in on Luxembourg's pioneering role in sustainable finance. Luxembourg was the first country to create a green exchange and establish a sustainability bond framework. Today, Luxembourg is the leading listing center for sustainable bonds in the world and the financial sector plays an important role in mobilizing funding for sustainable investment projects around the globe.

The authorities will employ a comprehensive policy mix to boost labor productivity. As staff notes in Annex III to the staff report, Luxembourg's labor productivity growth has been below that of its peers since the GFC. The authorities will continue to focus on re- and upskilling the workforce, in particular in the areas of digitalization, language learning, and R&D to narrow the productivity gap.