18 March 2022

Sovereign and Public Sector

Grand Duchy of Luxembourg
Rating Report

SCOPE AAA STABLE OUTLOOK

Credit strengths

- Wealthy economy with solid fundamentals
- Sound public finances and robust fiscal framework
- Strong external position

Credit challenges

- Exposure to developments in global taxation and financial markets
- Fiscal pressures due to ageing population
- Rising vulnerabilities in the real estate sector

Rating rationale:

Wealthy economy with solid fundamentals: Luxembourg benefits from its high wealth levels and competitive economy, supported by strong labour productivity and high value-added sectors such as financial services and information and communication technology. These factors contribute to Luxembourg's economic resilience as demonstrated throughout the Covid-19 crisis and a robust growth outlook.

Sound public finances and robust fiscal framework: Luxembourg's public finances are characterised by consistent fiscal surpluses and a very low debt stock. This, combined with a robust fiscal framework, underpins our view that Luxembourg will maintain ample fiscal buffers to face future shocks.

Strong external position: Euro area membership, consistent current account surpluses and large external creditor position mitigate risks linked to Luxembourg's small, open economy.

Rating challenges include: i) a small, open economy that is exposed to developments in global taxation frameworks and international financial markets; ii) long-term fiscal pressures linked to population ageing and generous social security systems; and iii) rising financial vulnerabilities from rapidly increasing real estate prices and elevated private debt levels.

Luxembourg's sovereign rating drivers

Risk pillars		Quantitative scorecard		Reserve currency adjustment (notches)	Qualitative scorecard	Final rating
		Weight	Indicative rating		Notches	
Domestic Economic Risk		35%	aaa		0	
Public Finance Risk		25%	aaa		+1/3	
External Economic Risk		10%	aaa		0	
Financial Stability Risk		10%	aaa		-1/3	AAA
ESG Risk	Environmental Risk	5%	a+		0	
	Social Risk	5%	a		0	
	Governance Risk	10%	aaa		0	
Overall outcome		**aaa**		**+1**	**0**	

Note: The sum of the qualitative adjustments, capped at 1 notch per rating pillar, is weighted equally and rounded to the nearest integer. The reserve currency adjustment applies to currencies in the IMF's SDR basket.
For details, please see Scope's 'Sovereign Ratings' methodology. Source: Scope Ratings GmbH

Outlook and rating triggers

The Stable Outlook reflects Scope's view that risks to the ratings are balanced over the next 12 to 18 months.

Positive rating-change drivers

- N/A

Negative rating-change drivers

- Growth outlook deteriorates substantially
- Fiscal fundamentals weaken significantly
- Vulnerabilities in the financial system threaten macro-economic stability

Ratings and Outlook

Foreign and local currency

Long-term issuer rating	AAA/Stable
Senior unsecured debt	AAA/Stable
Short-term issuer rating	S-1+/Stable

Lead Analyst

Thibault Vasse
+33 1 86 26 24 55
t.vasse@scoperatings.com

Team Leader

Dr Giacomo Barisone
+49 69 6677389-22
g.barisone@scoperatings.com

Scope Ratings GmbH

Neue Mainzer Straße 66-68
60311 Frankfurt am Main

Phone +49 69 6677389-0

Headquarters

Lennéstraße 5
10785 Berlin

Phone +49 30 27891-0
Fax +49 30 27891-100

info@scoperatings.com
www.scoperatings.com

Bloomberg: RESP SCOP

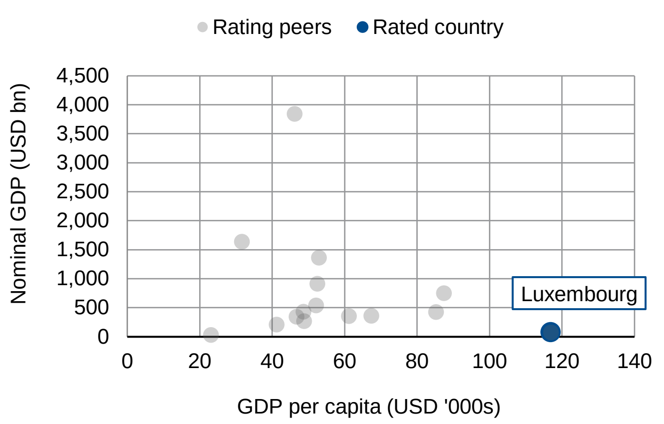
Domestic Economic Risks

- **Growth outlook:** Luxembourg has demonstrated remarkable resilience during the Covid-19 crisis, thanks to the government's large and multi-pronged fiscal support package, a favourable economic structure with strong performance in the ICT and financial service sectors, which limited the decline in real GDP to -1.3% in 2020. The economic rebound has been strong, with real GDP growth estimated at 6.9% in 2021. Growth should remain robust, at 3.2% in 2022, 3% in 2024, before gradually moderating back to the potential growth rate of 2.4%. Risks to the outlook remain, however, including rapidly rising inflation, the risk of tightening global financial conditions as well as the potential adverse repercussions of the Russian invasion of Ukraine, though Luxembourg's direct economic exposure is limited.
- **Inflation and monetary policy**: Inflation (HICP) accelerated to 3.5% on average in 2021, up from 0% in 2020, mostly driven by rising energy and commodity prices. Core inflation has been more moderate, at 1.5% on average over the same period. Further price pressures are expected to stem from the Ukraine crisis, especially considering Luxembourg's high reliance on imported oil and natural gas, which represent more than 80% of its energy supply. Higher commodity prices and extended supply-chain bottlenecks are likely to result in elevated inflation during 2022-23 across the euro area.
- **Labour markets**: Luxembourg's labour market weathered the Covid-19 crisis well relative to peers. The unemployment rate only rose moderately, in large part owing to extensive government support, peaking at 7.7% in May 2020 before steadily declining to 4.9% in January 2022, below pre-crisis levels while total employment stands 5.6% above its end-2019 level. The government expects labour markets to remain buoyant with annual employment growth forecast at 3.0% over 2022-23. The vacancy rate increased to 2.2% of total in Q3 2021, well above its pre-crisis level (1.5%) and an increasing number of companies point to labour shortages as a hindrance to output growth, especially in the industrial, financial services and public sectors.

Overview of Scope's qualitative assessments for Luxembourg's *Domestic Economic Risks*

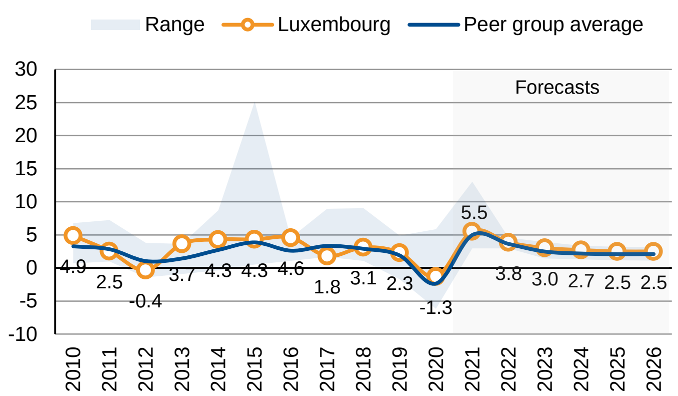
CVS indicative rating	Analytical component	Assessment	Notch adjustment	Rationale
aaa	Growth potential of the economy	Strong	+1/3	High growth potential, supported by sound economic policies and high value-added sectors
	Monetary policy framework	Neutral	0	ECB is a highly credible and effective central bank; appropriate monetary policy response to the Covid crisis
	Macro-economic stability and sustainability	Weak	-1/3	Small, open economy that is subject to volatility; exposed to changes in global tax environment

Nominal GDP and GDP per capita, USD '000s



Source: IMF, Scope Ratings GmbH

Real GDP growth, %



Source: IMF, Scope Ratings GmbH

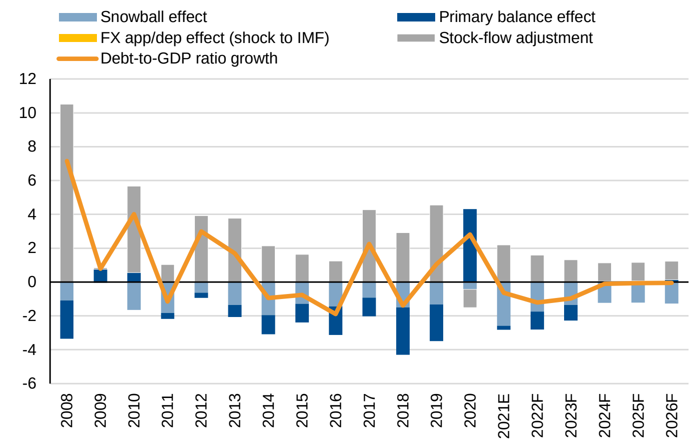
Public Finance Risks

- **Fiscal outlook:** Luxembourg benefits from strong public finances relative to peers thanks to its prudent budgetary management. The government's medium-term budgetary strategy has been designed to fully align with the national budgetary guidelines as well as those set by the European Commission and balances the need to provide discretionary support for the economic recovery and return public finances to a sound footing, in line with EU fiscal rules. The headline government balance returned to an estimated surplus in 2021 of 0.5% of GDP, thanks to strong recovery in revenue and to the phase out of Covid-19 related measures. We expect the fiscal surplus to increase to around 1% in 2022-23.
- **Debt trajectory:** Our baseline projections see Luxembourg's public debt-to-GDP ratio decreasing moderately to 22% by 2023, back to its pre-crisis levels, and stabilizing at that level thereafter. Strong growth prospects and the renewed commitment to fiscal discipline supported by the government's record of prudent budgetary policies underpin this view. These debt levels remain very comfortable and provide Luxembourg with ample fiscal space to respond to future crises.
- **Debt profile and market access:** The debt structure is very favourable with short-term debt representing 7% of total debt and no foreign currency exposure. The fiscal position is further bolstered by sizable government financial assets amounting to EUR 57.7bn (81% of GDP), mostly comprised of equity investments (47% of total), debt securities (21%), and deposit holdings (21%). Financing costs are very low, with the 10-year government bond yield at 0.4% on average in February 2022.

Overview of Scope's qualitative assessments for Luxembourg's *Public Finance Risks*

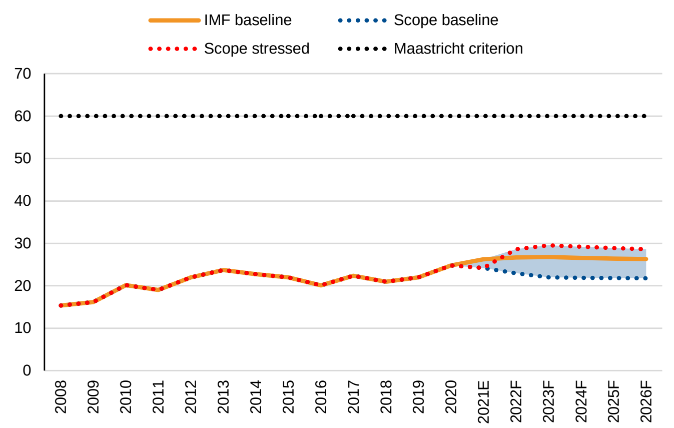
CVS indicative rating	Analytical component	Assessment	Notch adjustment	Rationale
aaa	Fiscal policy framework	Neutral	0	Effective fiscal policy frameworks with track record of conservative budgetary management
	Debt sustainability	Strong	+1/3	Very low debt levels and stable debt dynamics over the forecast horizon
	Debt profile and market access	Neutral	0	Favourable debt profile with a low interest payment burden

Contributions to changes in debt levels, pps of GDP



Source: Scope Ratings GmbH

Debt-to-GDP forecasts, % of GDP



Source: Scope Ratings GmbH

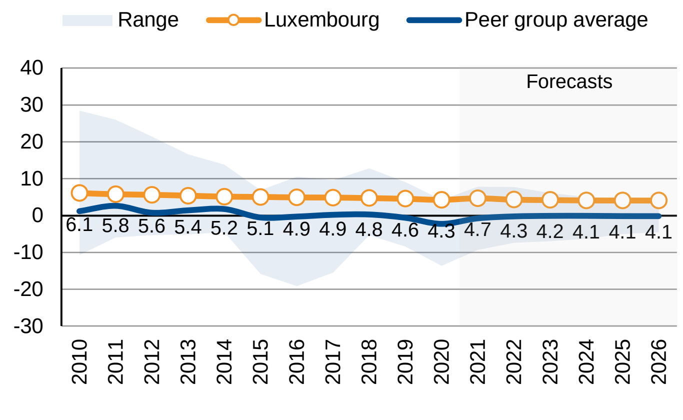
External Economic Risks

- **Current account:** Luxembourg has consistently generated current account surpluses, averaging 4.8% of GDP over 2015-19. After dipping to a modest deficit of 0.1% of GDP in the year to June 2021, the current account balance turned positive in the year to September 2021 (+1.7%), following an improvement of the primary income deficit. Looking forward, we expect the current account balance to benefit from recovering goods and services exports, though it should be negatively impacted in the medium-term by the sharp increase in energy prices that followed Russia's invasion of Ukraine.
- **External position:** After a marked deterioration, the net international position improved somewhat from 36% of GDP at year-end 2020 to 39% of GDP as of 2021 Q3, albeit remaining well below its pre-crisis high (54%). This improvement reflects the recovery in asset valuations, which have only partially offset the decrease in direct investments. Given its role as a financial service hub and centre for intra-corporation cash pooling, Luxembourg has very high external debt levels. External debt represented 4,740% of GDP in September 2021. Over a quarter of external debt is short-term while 37% is in the form of intercompany loans. Still, the large external debt levels present much lower risks than those implied by these ratios given that they have a limited link to Luxembourg's real economy.
- **Resilience to shocks:** Euro area membership bolsters the country's resilience to short-term shocks. Still, Luxembourg's small, open economy is highly integrated in global financial markets and is highly concentrated on financial services. It is thus exposed to short-term external shocks such as a sharp tightening in global financial conditions.

Overview of Scope's qualitative assessments for Luxembourg's *External Economic Risks*

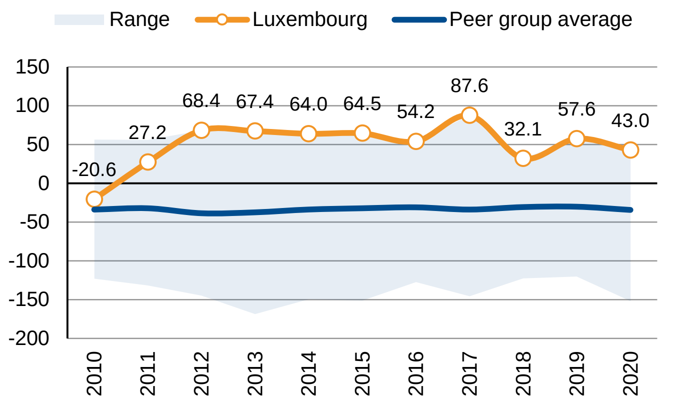
CVS indicative rating	Analytical component	Assessment	Notch adjustment	Rationale
aaa	Current account resilience	Neutral	0	Strong current account surpluses; reliance on financial service exports; sensitive to dividend policies vis-à-vis foreign investors
	External debt structure	Neutral	0	High external debt levels offset by external assets with a net international creditor position
	Resilience to short-term shocks	Neutral	0	Euro-area membership mitigates risks from strong integration with global financial markets

Current account balance, % of GDP



Source: IMF, Scope Ratings GmbH

NIIP, % of GDP



Source: IMF, Scope Ratings GmbH

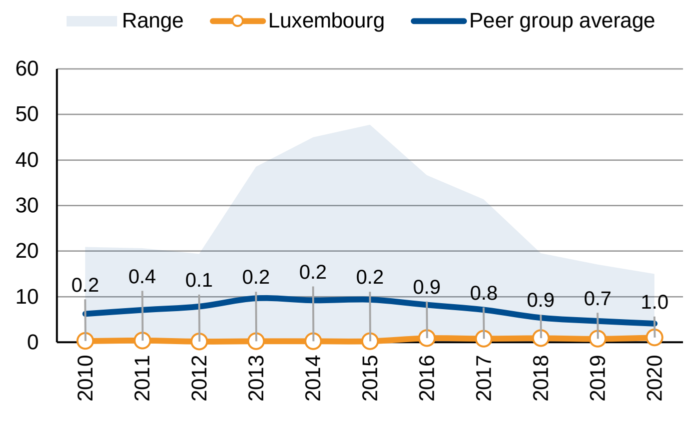
Financial Stability Risks

- **Banking sector:** Luxembourg benefits from its resilient banking sector characterized by high capitalization levels (Tier 1 ratio of 19.4%), strong asset quality (NPL ratio of 0.8%) and comfortable profitability (ROE of 8.7%). Thanks to broad-based policy support, the impact of the Covid-19 shock on the banking sector has been limited. Solvency risks have not materialized, asset quality deteriorated somewhat in 2020 but has since recovered and profitability metrics have exceeded pre-crisis levels. At end-2021, the direct exposure of Luxembourg banks to the Russian market represented 0.45% of their total assets, 5.6% of which were denominated in Russian rouble.
- **Private debt:** Non-financial corporate debt is the highest in the EU, at around 3.7 times of GDP in September 2021 stemming from Luxembourg's position as an international business treasury centre and reflects large amounts of intra-company cross border loans. Liabilities are usually matched by equivalent assets. Household indebtedness is high relative to disposable income at around 170%, one of the highest levels in the EU. The majority of household debt is made up of mortgage loans, most of which are variable rate, thus exposing households to interest rate risk. Elevated household debt is largely mitigated by high household wealth.
- **Financial imbalances:** Growth in housing prices has accelerated in recent years owing to strong demographic and economic growth, increasing mortgage debt combined with supply-side constraints. Growth in mortgage lending to households averaged 11% over 2015-19, while house and appartement prices grew by 7% and 10% respectively. Residential prices continued to grow despite the pandemic, with the Eurostat house price index reaching 22% above pre-crisis levels in September 2021. This worsens housing affordability, exacerbates already high household indebtedness and poses increasing risks to financial stability. Following a recommendation from the European Systemic Risk Board, Luxembourg implemented loan-to-value limits to mortgage loans in 2021 to tame credit growth.

Overview of Scope's qualitative assessments for Luxembourg's *Financial Stability Risks*

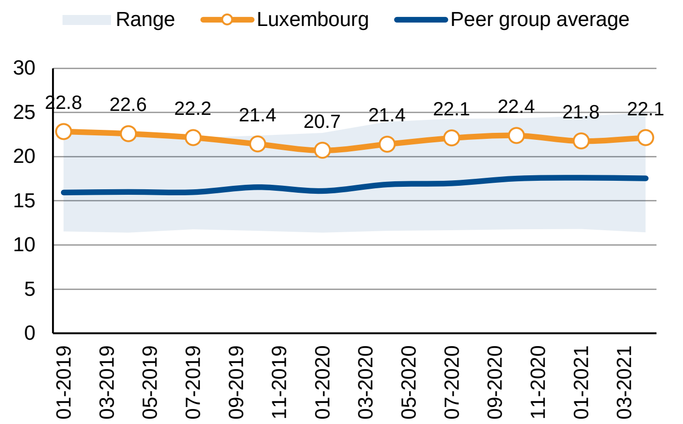
CVS indicative rating	Analytical component	Assessment	Notch adjustment	Rationale
aaa	Banking sector performance	Neutral	0	Efficient banking sector with large capital buffers and strong asset quality but some profitability pressures
	Banking sector oversight	Neutral	0	Efficient, credible oversight frameworks under the Central Bank of Luxembourg and the ECB
	Financial imbalances	Weak	-1/3	Gradually increasing imbalances in the housing sector due to supply constraints; high private debt levels

NPLs, % of total loans



Source: IMF, Scope Ratings GmbH

Tier 1 ratio, % of risk-weighted assets



Source: IMF, Scope Ratings GmbH

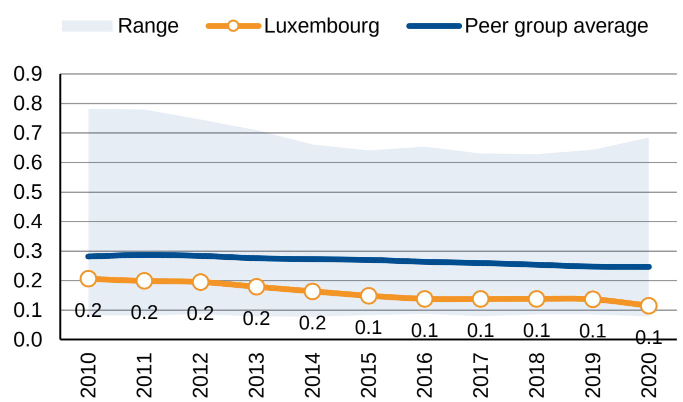
ESG Risks

- **Environment:** In per capita terms, Luxembourg has some of the highest greenhouse gas emissions per capita in the EU, generating 0.34% of the EU's total greenhouse gas emissions despite only accounting for 0.14% of total EU population. Its energy mix is dominated by fossil fuels (78% of total primary energy supply in 2018), including the largest share of oil among IEA member countries (60%). It is also highly dependent on resource imports given its small, natural resource poor territory. The government has adopted ambitious energy sector targets for 2030 to reduce non-ETS emissions by 50-55% versus 2005, (above the 40% reduction required by the EU). It plans net-zero greenhouse gas emissions and 100% renewable electricity by 2050. The country has adopted measures that will help reach its emissions target, including the introduction of a carbon tax in January 2021 which was increased in 2022 to EUR 25 per tonne and will increase further over the medium term.
- **Social:** Social outcomes are strong in an EU context though poverty levels and income inequality have worsened over the past decade. The proportion of people at risks of poverty or social exclusion stood at 20.9% in 2020, up from 17.8% in 2009. Similarly, the S80/S20 ratio increased from 4.3 to 5.0, while the income share of the bottom 40% shrank from 22.2% to 20.6% over the same period. While Luxembourg benefits from more favourable demographic dynamics than European peers, the generosity of its social system could come under strain in the context of population ageing. The EU commission expects the cost of population ageing to grow by about 6.3pps of GDP over 2019-50, one of the largest increases among EU-peers.
- **Governance:** The country benefits from a stable political environment. Strong democratic institutions and broad consensus on key issues, including European integration also support political coherence. Xavier Bettel has been prime minister since 2013 and was confirmed after the 2018 elections, with support from a coalition formed by his party (the Democrats), the Socialist Party and the Greens. The next elections are scheduled for 2023.

Overview of Scope's qualitative assessments for Luxembourg's *ESG Risks*

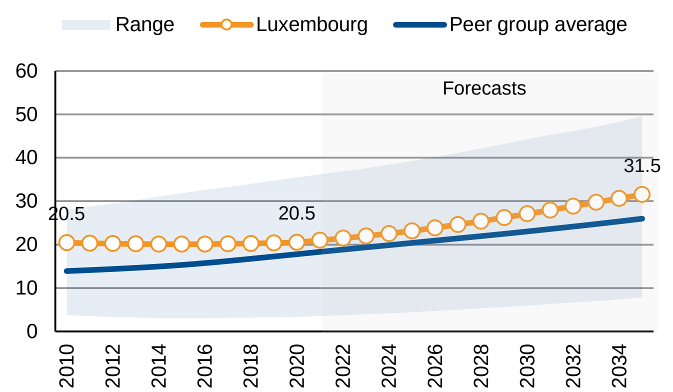
CVS indicative rating	Analytical component	Assessment	Notch adjustment	Rationale
aaa	Environmental risks	Neutral	0	Ambitious climate goals with accelerating climate policy momentum; limited share of renewables; rapid population growth poses challenges
	Social risks	Neutral	0	Strong social outcomes, supported by generous social systems; increasing women participation rates; poverty and inequalities are increasing
	Institutional and political risks	Neutral	0	Strong democratic institutions and stable political landscape

CO2 emissions per GDP, mtCO2e



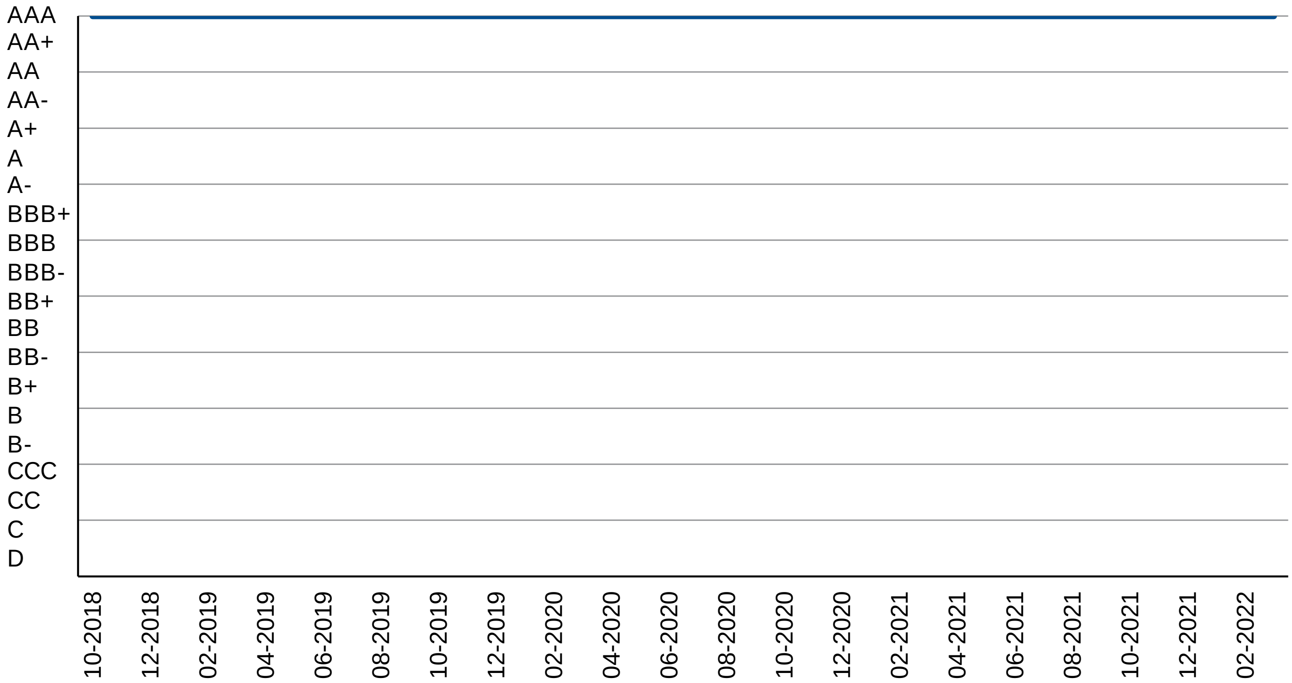
Source: European Commission, Scope Ratings GmbH

Old age dependency ratio, %



Source: United Nations, Scope Ratings GmbH

Appendix I. Rating history



Appendix II. Rating peers

Rating peers are related to sovereigns with an indicative rating in the same rating category or in adjacent categories per Scope's Core Variable Scorecard.

Peer group*
Austria
Denmark
Estonia
Finland
Germany
Ireland
Luxembourg
Netherlands
Norway
Sweden
Switzerland

Publicly rated sovereigns only; the full sample may be larger.

Appendix III. Statistical table for selected CVS indicators

This table presents a selection of the indicators (24 out of 29) used in Scope's quantitative model, the Core Variable Scorecard.

	2016	2017	2018	2019	2020	2021E	2022F	2023F
Domestic Economic Risk								
GDP per capita, USD 000s'	105.4	108.6	117.9	115.8	116.9	131.3	137.9	144.0
Nominal GDP, USD bn	60.7	64.2	71.0	71.1	73.2	83.8	89.7	95.4
Real growth, %[1]	4.6	1.8	3.1	2.3	-1.3	6.9	3.2	2.9
CPI inflation, %	0.0	2.1	2.0	1.7	0.0	2.7	1.4	1.9
Unemployment rate, %[1]	6.2	5.8	5.1	5.4	6.3	5.7	4.7	4.5
Public Finance Risk								
Public debt, % of GDP[1]	20.1	22.3	21.0	22.0	24.8	24.2	23.0	22.0
Interest payment, % of government revenue	-0.6	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6	-0.8
Primary balance, % of GDP[1]	1.7	1.1	2.8	2.2	-4.3	0.3	1.1	0.9
External Economic Risk								
Current account balance, % of GDP	4.9	4.9	4.8	4.6	4.3	4.7	4.3	4.2
Total reserves, months of imports	0.03	0.02	0.02	0.03	0.03	-	-	-
NIIP, % of GDP	54.2	87.6	32.1	57.6	43.0	-	-	-
Financial Stability Risk								
NPL ratio, % of total loans	0.9	0.8	0.9	0.7	1.0	-	-	-
Tier 1 ratio, % of risk weighted assets	23.9	25.1	24.3	21.4	22.4	21.4	-	-
Credit to private sector, % of GDP	96.7	100.9	105.8	108.7	105.8	-	-	-
ESG Risk								
CO^2 per EUR 1,000 of GDP, $mtCO^2e$	138.1	137.7	138.1	136.5	114.7	-	-	-
Income quintile share ratio (S80/S20), x	5.2	6.1	6.4	-	-	-	-	-
Labour force participation rate, %	69.6	70.0	70.8	71.7	-	-	-	-
Old age dependency ratio, %	20.1	20.2	20.3	20.4	20.5	21.0	21.5	22.0
Composite governance indicator[2]	1.7	1.7	1.7	1.7	1.7	-	-	-

[1] Forecasted values are produced by Scope and may differ from those presented in the charts of the previous sections
[2] Average of the six World Bank Governance Indicators
Source: European Commission, IMF, World Bank, Scope Ratings GmbH

Appendix IV. Economic development and default indicators

IMF Development Classification	Advanced economy
5y USD CDS spread (bps)	N/A

Scope Ratings GmbH

Headquarters Berlin

Lennéstraße 5
D-10785 Berlin

Phone +49 30 27891 0

Frankfurt am Main

Neue Mainzer Straße 66-68
D-60311 Frankfurt am Main

Phone +49 69 66 77 389 0

Paris

23 Boulevard des Capucines
F-75002 Paris

Phone +33 6 62 89 35 12

Oslo

Karenslyst allé 53
N-0279 Oslo

Phone +47 21 62 31 42

Madrid

Paseo de la Castellana 141
E-28046 Madrid

Phone +34 915 726 711

Milan

Via Nino Bixio, 31
20129 Milano MI

Phone +39 02 30315 814

Scope Ratings UK Limited

London

52 Grosvenor Gardens
London SW1W 0AU

Phone +44 20 7824 5180

info@scoperatings.com
www.scoperatings.com

Disclaimer