SCOPE Ratings

Sovereign Rating Methodology

Sovereign and Public Sector

16 March 2026

Summary

This rating methodology explains Scope's approach to assigning sovereign credit ratings.

The assessment continues to be based on five categories of sovereign risk: 'Domestic economic risk', 'Public finance risk', 'External economic risk', 'Financial stability risk' and ESG risks. Specifically, we

i) introduce a cap at the 'bb-' level for the SQM indicative rating for sovereigns with recent defaults;

ii) assess reserves-to-imports only for Emerging and Developing Economies as defined by the IMF;

iii) increase the weight of the 'Public Finance Pillar' to 25% (from 20%) and reduce the 'ESG' pillar to 20% (from 25%);

iv) delete the old-age-dependency ratio in the 'social factors' pillar and instead add the growth in the working-age-population to the 'Domestic Economic Risk' pillar;

v) move the unemployment rate to the 'social factors' pillar from the 'Domestic Economic Risk' pillar;

vi) adjust our calculations for GDP/ capita, interest payments/ revenues, primary balance, current account, reserves/ imports, NPLs, private sector credit growth, transitions risks, and governance;

vii) remove the biocapacity variable under the 'environmental factors' pillar;

viii) introduce a floor at the 'ccc' level for the SQM indicative rating; and

ix) clarify how debt ratings are derived from the issuer rating.

The changes are not expected to impact existing sovereign ratings or any other ratings assigned by Scope.

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1. Scope of application

This credit rating methodology details our methodological approach and credit rating criteria for the ratings of sovereign issuers and their debt issuances. Our ratings of a sovereign reflect our forward-looking assessment of its ability and willingness to honour debt obligations to private sector creditors in full and on time. Ratings are assigned to the issuer, i.e. the sovereign, and its debt instruments. We assign local-currency (LC) ratings and foreign-currency (FC) ratings using our long-term and short-term rating scales as described in section 8.1.

Definition of a sovereign issuer

We define sovereigns as member states of the International Monetary Fund[1]. Our ratings assigned to sovereigns or their issuances apply only to the risks faced by private sector creditors. The rating does not reflect a sovereign's ability and willingness to service other types of obligations, such as:

- obligations to multilateral development institutions, such as the International Monetary Fund or the World Bank; or
- obligations to other governments (Paris Club debt or intergovernmental debt).

Our ratings do not refer to risks faced by these official sector institutions as they typically enjoy preferential treatment[2]. However, and for the avoidance of doubt, such sovereign obligations to non-private institutions are accounted for in our risk assessment of private sector obligations.

Definition of a sovereign default

The definition of default is described in our Credit Rating Definitions and applies to sovereign debt obligations.

In addition, we would typically treat missed coupon or principal repayments on non-sovereign debt owed to private creditors benefiting from an irrevocable and unconditional guarantee issued by the sovereign as a default.

Scope's rating definitions and associated default probabilities associated with rating levels are available here.

2. Key components

In assigning a sovereign issuer rating, we incorporate the significant factors affecting the risk of upholding timely and full payment of interest and principal in the future. Our rating methodology looks at a broad range of economic, fiscal, external, financial and ESG-credit related factors to assess the government's ability and willingness to service its debt obligations.

The methodology provides a detailed explanation of our analytical framework and rating approach, including the rationale for each key rating factor as well as more granular assessment criteria. The methodology is based on scorecards that allow a consistent assessment of the relative strength of rated sovereigns and enhances rating transparency and comparability. To structure the rating process and ensure comparability across the peer group, we divide the sovereign analysis into five broad-based analytical categories, each of which contains quantitative and qualitative considerations:

1. Domestic economic risk
2. Public finances risk
3. External economic risk
4. Financial stability risk
5. Environmental, social and governance risk

We use our sovereign quantitative model (SQM) as the first step for determining an indicative sovereign rating. The SQM aggregates the main components of the five rating categories and yields a score, which is mapped to the long-term rating scale. For sovereigns with a reserve currency included in the IMF Special Drawing Rights basket, we automatically adjust this indicative rating upward by 1-3 notches. Conversely, for sovereigns with elevated political risk as assessed by the World Bank's *Political Stability and Absence of Violence/Terrorism* indicator, we automatically adjust this indicative rating downwards by 1-3 notches.

[1] The one exception is Hong Kong.

[2] Preferred creditor status reflects the incentives of a borrowing sovereign to prioritise debt repayment to multilateral institutions. These incentives include continued access to funds, availability of cheaper terms with longer maturities and the threat of sanctions.

We complement the SQM with a qualitative scorecard (QS) to account for analytical elements that cannot be captured quantitatively. The QS serves as a qualitative adjustment of the quantitative indicative rating, with a possible adjustment of ± 3 notches except when additional considerations apply, as detailed in Chapter 7.

Applying a formal and rigorous qualitative framework in the sovereign credit risk analysis has several benefits. First, it supplements our analysis of fundamental macro-economic and fiscal variables. We believe that a robust, qualitative framework helps with identifying changes in sovereign risk. Second, it allows us to assess the cascading impacts of alternative macro-economic assumptions and policy responses as well as the availability and quality of the potential action and reactions of governments and institutions that may be material for sovereign credit risk.

2.1 Schematic rating approach

Five risk categories are critical for our sovereign credit ratings: i) domestic economic risk, ii) public finance risk, iii) external economic risk, iv) financial stability risk, and v) environmental, social and governance risk. For each risk category, we analyse a group of key quantitative and qualitative factors to assess sovereign creditworthiness.

Figure 1: Five categories of sovereign credit risk

SQM (Quantitative)									
Sovereign Risk Category	Sub-Category	%	Variable		Reserve currency*	Political Risk**		Qualitative Scorecard	Add. Cons.
Domestic Economic Risk (35%)	Wealth & size	55	GDP per capita Nominal GDP	+	[0; +3]	[0; -3]	+	1. Growth potential 2. Monetary policy framework 3. Macro-economic stability & sustainability	+
	Growth & inflation	45	Real GDP growth Real GDP volatility Working-age population growth Inflation rate						
Public Finance Risk (25%)	Debt affordability	50	Interest payments/ revenues GG Gross debt/ revenues	+			+	1. Fiscal policy framework 2. Long-term debt trajectory 3. Debt profile & investor base	+
	Debt dynamics	50	Primary balance/ GDP GG Gross debt/ GDP						
External Economic Risk (10%)	International Position	33.3	Net IIP/GDP	+			+	1. Current account resilience 2. External debt structure 3. Resilience to short-term shocks	+
	Current account	33.3	Current account balance/GDP						
	External debt sustainability***	33.3	Reserves/Imports						
Financial Stability Risk (10%)	Banking sector	50	NPLs - Reserves / Capital	+			+	1. Banking sector performance 2. Financial sector oversight & governance 3. Financial imbalances	+
	Private sector	50	Private sector credit growth						
ESG Risk (20%)	Environment	15	Transition risks: CO2/GDP Transition risks: GHG/capita Physical risks	+			+	1. Environmental factors	+
	Social	15	Income inequality Unemployment rate Labour force participation					2. Social factors	
	Governance	70	WB Governance indicators**					3. Governance factors	

* Positive adjustment to sovereigns whose currency is included in the IMF's SDR basket.

** Average of four World Bank Governance Indicators. Political risk based on World Bank's Political Stability indicator.

*** Applies to Emerging Market Economies only (per IMF's classification). Equal weights for current account and net IIP for Advanced Economies.

Source: Scope Ratings

The final rating recommendation to the rating committee is derived over five stages. The first stage involves a rigorous review of data and forecasts. This review is based on historical data, estimates and projections on 26 economic, financial and political variables that we consider the most relevant. A quantitative score is mapped to an indicative rating on the long-term rating scale. In the second stage, we adjust the indicative rating upward by up to three notches for sovereigns issuing in a global reserve currency included in the IMF's Special Drawing Rights basket[3] to account for the associated benefits in a systematic and transparent manner. In the third stage, we adjust the indicative rating downward by up to three notches for sovereigns with elevated political risks as captured via the World Bank's *Political Stability and Absence of Violence/Terrorism* variable. This SQM indicative rating is capped at 'bb-' for sovereigns with recent defaults.

The fourth stage involves the use of the QS, which uses 15 qualitative assessments to refine the analysis, adjusting for sovereign-specific elements that cannot be captured quantitatively. Among these elements are assumptions about policy direction and implementation as well as the credibility and effectiveness of fiscal and monetary policy frameworks. We use the QS to ensure rigorous, systematic and transparent analysis of qualitative forward-looking factors. The qualitative adjustment to the quantitatively derived indicative rating is ± 3 notches, except in extraordinary circumstances as detailed in chapter 7. The fifth stage relates to any relevant credit considerations not yet captured by the model or scorecard, which the analyst presents to the rating committee. The rating committee decides on the final rating.

[3] This is based on the IMF's Special Drawing Rights basket which currently includes the USD, EUR, JPY, GBP and CNY. As stated by IMF: 'Currencies included in the SDR basket have to meet two criteria: the export criterion and the freely usable criterion. A currency meets the export criterion if its issuer is an IMF member or a monetary union that includes IMF members, and is also one of the top five world exporters. For a currency to be determined "freely usable" by the IMF, it has to be widely used to make payments for international transactions and widely traded in the principal exchange markets. Freely usable currencies can be used in fund financial transactions'.

Figure 2: Sovereign rating process summary

Step 1: Sovereign Quantitative model (SQM)
- Quantitative score using 26 variables for 125+ countries resulting in an indicative rating

Step 2: Reserve currency (RC)
- Positive adjustment of 1-3 notches to indicative rating if the currency is in the IMF's Special Drawing Rights basket

Step 3: Political risk
- Negative adjustment of 1-3 notches to indicative rating if the country has elevated political risk

Step 4: Qualitative scorecard (QS)
- 15 qualitative factors with potential ± 3 notches adjustment in aggregate to the quantitative indicative rating

Step 5: Additional considerations
- To account for considerations or extraordinary circumstances not captured by both the SQM and QS to determine the final rating

Source: Scope Ratings

In determining the final rating, the rating committee considers the sovereign's performance in each of the quantitative and qualitative analytical categories. The committee also considers relevant rating aspects that are insufficiently captured in the previous analytical stages but have emerged in the rating committee discussion.

3. Information and data sources

Our analysis is based predominantly on public information from a variety of sources. We may consider the confidential information submitted by sovereign issuers actively participating in the rating process. These sources typically include supranational organisations (such as the IMF, the European Commission, the European Central Bank, the Organisation for Economic Cooperation and Development, the World Bank, and the Bank for International Settlements), national statistical offices, national central banks, other government agencies and ministries, and other generally accepted sources. We will not rate a sovereign if data lacks sufficient coverage or quality.

4. Sovereign risk pillars

4.1 Domestic economic risk

Figure 3: Domestic economic risk

Source: Scope Ratings

Rationale and quantitative factors

The domestic economic risk pillar focuses on the sovereign's ability to support sustainable long-term growth and adapt to a variety of shocks. A record of sustained growth is a key indicator of a sovereign's ability to generate fiscal revenues. High domestic economic risk or weak economic prospects have proved decisive in past sovereign defaults[4]: many recent defaults and

[4] Tomz and Wright (2007) report that 62% of defaults over the last 200 years occurred in years where the level of output in the defaulting country was below its long-run trend.

debt re-structurings have resulted from years of adverse macro-economic developments and, for countries dependent on commodity exports, extended price drops of commodity prices.

The quantitative variables measure the dynamics of the economy, expressed in real GDP growth rates and GDP volatility, as well as the country's economic resilience as reflected in GDP per capita and nominal GDP. Other factors include inflation and the growth in the working-age-population. Further details on the rationale for the adoption of these variables in the SQM are provided in Annex I.

High per-capita incomes are associated with higher economic and financial wealth and suggest the predominance of high value-added activities in the economy (though not always applicable to countries that mainly export commodities). Economies with high nominal GDPs also tend to be more resilient to shocks. Volatile real GDP growth indicates macro-economic imbalances, increasing uncertainty about a sovereign's ability to repay obligations in full and on time.

An economy with inflation rates that deviate from levels that can sustain economic growth, for example, sustained periods of deflation or double-digit inflation rates, indicate underlying distortions that are harmful for economic performance. Finally, the growth in the working-age population provides an indication of a country's growth potential, with low or declining rates suggesting limited potential for higher growth rates in the future (unless significant productivity gains are made).

Qualitative factors

We complement the quantitative indicators with qualitative considerations on a country's growth potential and outlook, monetary policy framework and macro-economic stability and sustainability.

We examine historical growth trends and the country's growth prospects in the medium to long term. This entails assessing a sovereign's robustness, flexibility and growth potential, in addition to assessing structural rigidities that may affect the sovereign's economic performance or make it more vulnerable to exogenous shocks.

We also assess a country's monetary policy framework and foreign exchange policies. A sovereign's ability to pursue an efficient and coordinated set of monetary policies mitigates the risks of economic and financial shocks, supporting a faster economic recovery and more sustainable growth. We review the credibility and effectiveness of monetary policy based on the record of central banks in meeting objectives and responding to shocks. Central bank independence includes monetary authorities' degree of freedom in the timing and use of instruments, legally guaranteed independence from political interference, and budgetary independence.

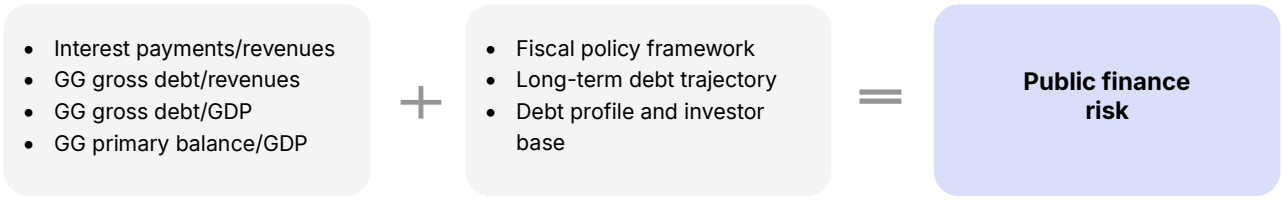
We also consider aspects that can prevent a central bank from achieving its policies. Shallow and undiversified domestic financial systems and capital markets may constrain the effectiveness of monetary policy, with weak transmission mechanisms from the banking sector to the real economy. A rigid exchange rate regime[5] may prevent a central bank from effectively influencing domestic inflation dynamics as policy objectives may conflict with the monetary policy goal of maintaining the exchange rate at set levels.

The macro-economic stability and sustainability assessment evaluates structural strengths and weaknesses conducive to a sovereign's growth prospects. We consider over-reliance on a specific industry or economic activity to be a weakness. We measure an economy's diversification based on the proportion of value added by sectors in the country's annual output. Over-reliance on external markets also poses significant risks. Shortfalls in domestic savings may force reliance on external funding and expose an economy to foreign investor sentiment, increasing vulnerability to external shocks.

[5] Rigid exchange rate regimes include all regimes other than free-floating, as classified by the IMF in the publication 'Annual report on exchange arrangements and exchange restrictions'.

4.2 Public finance risk

Figure 4: Public finance risk



Source: Scope Ratings

Rationale and quantitative factors

The analysis of public finance risk focuses on a sovereign's ability to maintain a strong balance sheet and repay maturing debt. We assess public finance strength using three key quantitative variables: the general government (GG) primary budget balance, interest payments as a percentage of general government revenues, and gross GG debt as a percentage of general government revenues and GDP. Further details on the rationale for the adoption of these variables in the SQM are provided in Annex I.

Many sovereign defaults are triggered by persistent fiscal imbalances[6]. For example, a period of budget deficits lasting longer than a period of economic downturn points to structural issues which, if not tackled, may lead to a build-up of debt and hinder the sovereign's ability to service or refinance debt[7]. A persistent primary budget deficit may also indicate a low capacity to service debt from own resources and an overreliance on markets to refinance.

We evaluate the GG primary balance and forecasts, as well as a sovereign's current and potential indebtedness by analysing debt levels and debt affordability ratios. While gross debt is comprehensive measure of sovereign debt, the history of sovereign defaults (see Annex III) suggests that high debt levels do not necessarily lead to default. A key indicator that captures this is the debt affordability ratio, i.e. GG interest payments relative to budgeted revenues.

Qualitative factors

We complement the quantitative fiscal risk variables with qualitative assessments of a sovereign's fiscal policy framework, long-term debt trajectory, as well as its debt profile and investor base.

Our analysis of a sovereign's fiscal framework evaluates a government's ability to generate revenues, plan and control expenditures, as well as the consistency, appropriateness and transparency of budgetary policies and processes, and their adequacy across various phases of the economic cycle and its synchronisation with monetary policy. We assess revenue flexibility as the ability to raise revenues through higher tax rates, an expansion of the tax base, or the sale of sovereign assets. Also important to the analysis are a sovereign's record of controlling expenditures, and the spending demands from an ageing population (pensions and healthcare).

The underlying drivers of sovereign debt dynamics are central to our analysis. We use a debt sustainability framework to assess a sovereign's debt trajectory under various scenarios. Public debt dynamics are analysed through medium- and long-term debt projections accompanied by sensitivity analyses, including stressed scenarios. This enables us to examine the fiscal position of sovereigns, assessing their resilience to sudden episodes of fiscal stress that may occur following the materialisation of public finance or macro financial risks. Medium-term sustainability challenges are assessed by focusing on the sovereign's initial budgetary position, and the levels and projected development of its debt. Within the debt sustainability analysis, we also examine a sovereign's exposure to a wide range of contingent liabilities[8] and assess the risk of their materialisation.

These include:

- contingent liabilities associated with the banking sector as well as state-guaranteed bank lending schemes
- contingent liabilities related to the non-financial sector, including government related entities

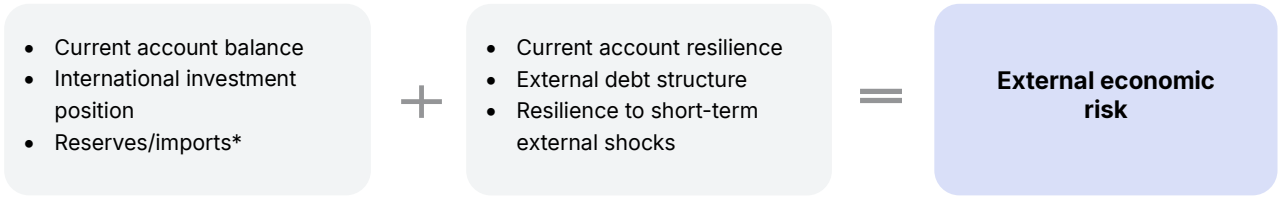
[6] Baldacci et al. (2011) provide a comprehensive assessment of the determinants of fiscal stress periods, covering public debt default as well as near-default events.
[7] The defaults of Moldova in 2002, Greece in 2012 and most recently Ukraine in 2015 are examples of such types of sovereign defaults.
[8] Bova et al. (2016) find that the average fiscal cost of a contingent liability realisation for the period 1990–2014 is 6% of GDP but costs can be as high as 40% for major financial sector bailouts.

- explicit guarantees by the sovereign and other implicit off-budget commitments (pension obligations, extra-budgetary funds, securitisations and public-private partnerships) not included in the previous two groups

We also assess a sovereign's debt profile and investor base and resulting ability to issue under stressed scenarios. We examine the composition, maturities, interest rates and currency structures of a sovereign's debt issues. Long maturities and durations make refinancing and interest rate shocks less likely. Conversely, significant foreign currency borrowings expose the sovereign to currency risk in times of financial and economic stress. Other areas of focus include, but are not limited to, the depth of the domestic capital market, access to concessional and multilateral sources of funding, cash buffers, and sovereign wealth funds.

4.3 External economic risk

Figure 5: External economic risk



*Only applies to Emerging and Developing Economies as defined by the IMF.
Source: Scope Ratings

Rationale and quantitative factors

The analysis of external economic risk focuses on the soundness and sustainability of a sovereign's external position and its resilience to external shocks. Persistent current account deficits, high net external debtor positions and limited external buffers, including over-reliance on short-term funding, are potential sources of external vulnerabilities, not only for emerging markets but in advanced economies as well. These vulnerabilities may reflect unsustainable consumption, asset price booms or a loss of competitiveness amplified by collapse in investor confidence and may lead to financial and economic crises and hence compromise sovereign creditworthiness.

We distinguish between Advanced Economies (AEs) and Emerging and Developing Economies (EMEs) per the IMF's country classification as we do not assess reserve adequacy for AEs. Specifically, our quantitative indicators for the external economic risk factors include the current account balance (applied to AEs and EMEs), the net international investment position (NIIP, applied to AEs and EMEs), and reserves/imports coverage (applied to EMEs only). Details on the rationale for the adoption of these variables are provided in Annex I.

Qualitative factors

We complement the external economic risk score with qualitative assessments of a sovereign's current account vulnerabilities, external debt structure, and resilience to short-term external shocks. Volatile current account receipts undermine a sovereign's ability to generate stable and reliable external revenues. Reliance on a single commodity (e.g. oil), a single service (e.g. tourism), or a single country for foreign worker remittances may expose the sovereign to shocks and sharp downturns of these commodity markets and respective countries.

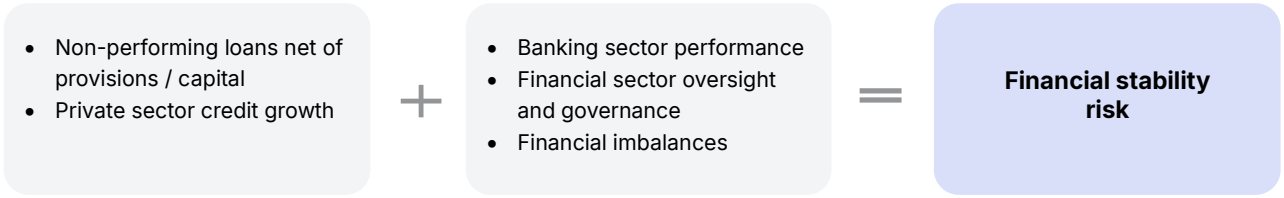
We evaluate the sustainability of external debt by focusing on the development and structure of external debt in both private and public sectors. We pay specific attention to economic sectors – households, corporates, banks, or the public sector – that are responsible for any external debt overhang and the sustainability of funding sources for the accumulated debt. We also review potential spill-over of private debt onto public sector balance sheets. Another important factor is the quality of the sources for external debt. Sovereigns with sizeable foreign direct investments or equity in local companies are less prone to capital flight during financial market turbulence. Portfolio and other debt-like capital inflows can prove more volatile and may result in an unsustainable build-up of external debt. We also review access to international capital markets, especially for emerging markets, and the affordability of capital from such markets. Finally, we assess the maturity profile of external debt, with an elevated share of short-term debt implying high short-term roll-over needs and thus higher exposure to changes in access to external financing.

For our assessment of a sovereign's resilience to short-term external shocks, we look at the sovereign's available external liquidity, such as international foreign-exchange reserves compared to external financing needs, including short-term external debt (original maturity short-term debt and current-year principal payments on long-term debt) and non-residents' deposits in domestic banks. Generally, emerging market economies are more exposed to 'original sin' problems and spill-over from financial

markets[9]. A low external liquidity ratio may signal weakness in the ability of major economic sectors to withstand a temporary loss of investor confidence and hence in the sovereign's ability to service debt using domestic resources when refinancing through external creditors becomes unavailable. Conversely, sovereigns with large assets (e.g. significant wealth funds) are assessed positively.

4.4 Financial stability risk

Figure 6: Financial stability risk



Source: Scope Ratings

Rationale and quantitative factors

The analysis of financial stability risk focuses on assessing the financial sector's overall strength and soundness, the effectiveness of regulation and supervision by the sovereign, and financial imbalances in the economy.

The financial sector is critical to economic development, given its role as a collector of savings, as an intermediary between savers and borrowers, and as a provider of payment infrastructure. In this regard, we capture the key sources of systemic risk which may challenge macro-economic stability. There is significant empirical evidence of the link between systemic financial sector crises and sovereign defaults[10]. The vulnerability of sovereigns to the strength of their financial sector has been prevalent in emerging market economies (currency crises, sudden stops) but also in advanced economies since the Great Financial Crisis.

Such crises may translate into sovereign debt crises through two channels of transmission. The first relates to the government's role to safeguard the financial system and the resulting materialisation of government-contingent liabilities adversely impacting fiscal sustainability[11]. The second relates to the macro-economic situation at the time of a crisis. A crisis in the financial sector may trigger a severe recession that weakens the sovereign's fiscal position.

We also focus on the impact of a potential sovereign default on the solvency of financial institutions, given the losses these institutions may incur as a result of sovereign debt holdings and funding costs[12]. Although sovereigns and financial institutions may be independent, interdependencies create feedback loops: problems on one side can be amplified by negative feedback into the other. Under these circumstances, financial sector crises can weaken sovereign creditworthiness.[13] Our quantitative variables for assessing financial stability risks include non-performing loans net of provisions over capital and private sector credit growth. Details on the rationale for the adoption of these variables in the SQM are provided in Annex I.

Qualitative factors

We complement these variables by examining a country's overall banking sector performance, financial sector oversight and governance, and financial imbalances. We analyse the main indicators of financial soundness including asset quality, profitability, liquidity and capital adequacy. A highly leveraged financial sector may be characterised by volatile funding structures with excessive reliance on wholesale funding or short-maturity instruments in foreign currencies. High leverage may expose a sovereign to large vulnerabilities that can undermine financial stability.

We assess the level of financial sector oversight including banking sector regulatory and supervisory frameworks, including the existence of a bank resolution framework and track record of orderly bank resolution cases, macro- or micro-prudential policies, and anti-money laundering or countering the financing of terrorism frameworks. Strong regulatory and oversight mechanisms are critical to reduce systemic risks in the financial system and support a sovereign's resilience to shocks and contagion.

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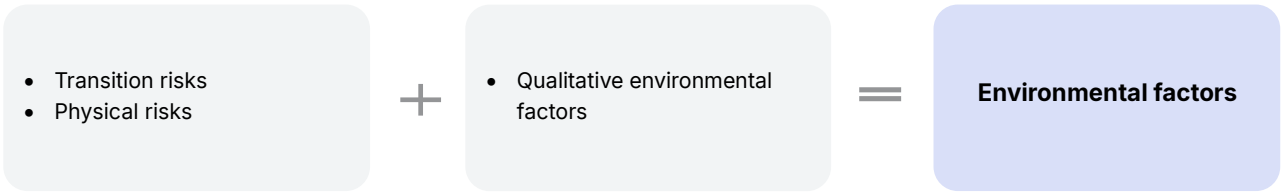
[9] 'Original sin' is the inability of emerging market economies to finance externally in domestic currency.
[10] See Balteanu and Erce (2014) and Correa and Sapriza (2014) for a detailed examination linking banking crises and sovereign defaults in emerging markets.
[11] Bova et al (2016) estimates of the fiscal costs of financial crises across advanced economies and emerging markets suggest between 5% and 15% of GDP.
[12] Financial institutions highly exposed to the sovereign have shown larger increases in solvency risk, sharper reductions in loans and more noticeable rises in lending rates than institutions less exposed.
[13] Financial institutions' exposure to domestic sovereign risk via government bond holdings amplified the transmission of stress to the banking system during the recent eurozone crisis. Altavilla, Pagano and Simonelli (2016) establish that sovereign exposure has a causal role in this amplification mechanism.

We also examine the extent of an economy's financial imbalances related to variations in credit growth, high household and corporate debt and high asset prices as these may have a sizeable impact on sovereign creditworthiness. We focus on credit-growth dynamics, which are closely associated with financial crises and take into account a sovereign's financial development to identify the potential for financial bubbles, especially for housing, stock or commodity markets. Such bubbles, when burst, may have a long-term effect on economic activity. The danger of asset price bubbles is that they may be self-reinforcing, especially if fuelled by financial leverage and lax credit standards[14]. For sovereigns with a low, but increasing, level of credit (typical in the Emerging Market Economies), rapid credit growth may point to a deepening of capital and financial markets, the emergence of new credit products, and an increase in the population's wealth and income.

4.5 Environmental, social and governance risk

This risk pillar comprises three separate risk categories: environmental, social and governance-related factors. Importantly, we recognise that environmental and social challenges are largely structural and likely to materialise over the longer term than the rating factors presented above. Still, they require an ambitious and timely policy response today and are increasingly relevant to sovereign credit quality. As such, our qualitative assessments for environmental and social factors account for longer-term considerations including the adequacy of current policies to tackle these challenges.

Figure 7a: Environmental factors



Source: Scope Ratings

Rationale and quantitative factors

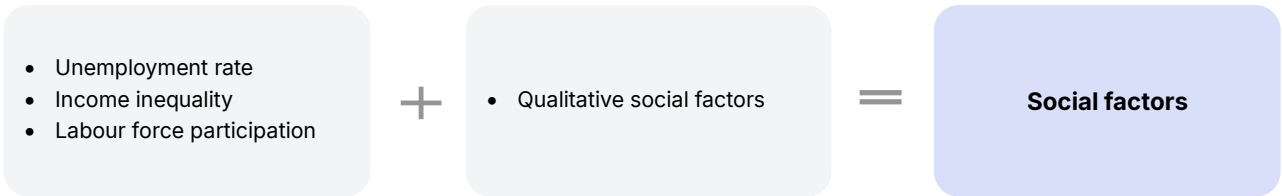
Environmental factors are increasingly relevant for sovereign credit risk and will impact both demand and supply in the decades to come[15]. Examples include rising costs from more frequent and extreme weather conditions as well as the structural change economies may have to undertake as and when policymakers and regulators adopt climate policies such as carbon pricing[16]. Conversely, some sovereigns may also benefit from climate change.

Our quantitative variables for assessing environmental risks include transition risks captured via CO_2 emissions per GDP and GHG emissions per capita and natural disaster risks as measured by the Notre Dame Global Adaptation Initiative (ND-GAIN). Further details on the rationale for the adoption of these variables in the SQM are provided in Annex I.

Qualitative factors

We complement our quantitative assessment, which focuses mostly on the exposure to these risks, with our qualitative assessment of a government's willingness and ability to mitigate transition and physical risks. Here, we assess environmental policy objectives and responses in view of the types of risks sovereigns face. For instance, transition risks should be met with ambitious climate change mitigation strategies, including carbon pricing and investments/subsidies for clean energy and infrastructure, housing and transportation, while physical risks are best addressed through climate adaptation measures.

Figure 7b: Social factors



Source: Scope Ratings

[14] Reinhart and Rogoff (2014) find that two out of five real estate market downturns were associated with systemic banking crises in advanced economies.
[15] Andersson, M., Baccianti, C. and Morgan, J. 2020. Climate change and the macro economy; ECB Occasional Paper Series.
[16] De Nederlandsche Bank: The price of transition. An analysis of the economic implications of carbon taxing, October 2018.

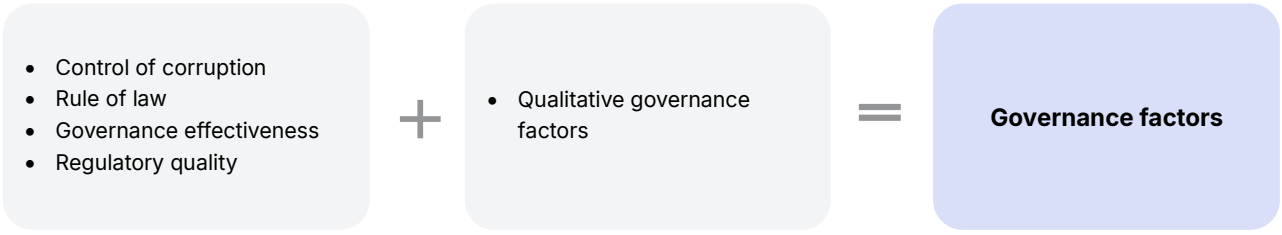
Rationale and quantitative factors

Social risks have a fundamental impact on economic development and social cohesion and can thus affect a sovereign's growth and public finance outlook as well as its political risks over the medium term. These risks therefore conceptually have an important interaction with other risk categories in our methodology, particularly, domestic economic risk, public finance risk and governance risk. This part of the analysis focuses on persistent, structural features of an economy and society. Our quantitative variables for assessing social risks include the unemployment rate, income inequality as measured via the income share of the bottom 50%, and the labour force participation rate. Further details on the rationale for the adoption of these variables in the SQM are presented in Annex I.

Qualitative factors

These variables, which capture a sovereign's current social factors, are complemented by our qualitative assessment of additional factors, which include those related to poverty, and the quality and sustainability of social systems and their implications for human capital formation, in line with the Sustainable Development Goals. Finally, we form a view on governments' willingness and ability to mitigate these risks through economic, labour market and social policies.

Figure 7c: Governance factors



Source: Scope Ratings

Rationale and quantitative factors

The analysis of governance factors focuses on the strength, soundness and policy implementation capacity of a country's institutions. Sovereign defaults may be triggered by weak institutions or a country's inability to formulate and implement appropriate policies in a timely way, which directly or indirectly affect their perceived willingness to service debt. Our quantitative indicators for governance risks are four of the six governance indices compiled by the World Bank: control of corruption, the rule of law, governance effectiveness, and regulatory quality. Further details on the rationale for the adoption of these variables in the SQM are provided in Annex I.

Qualitative factors

The quantitative variables are supplemented by assessments of qualitative factors that include recent events, policy, and institutional risks and considerations that may materially affect sovereign creditworthiness. Our analysis emphasises the sovereign's ability to implement structural reforms and fiscal measures, which may be politically difficult. We also review policy risk and overall orientation, predictability, and effectiveness of government policy, focusing on measures and initiatives most likely to impact economic and financial conditions. We also examine the frequency of changes in government, parliamentary compositions, and the sovereign's record in dealing with past political and economic crises.

5. Sovereign quantitative model (SQM)

We use our sovereign quantitative model as the first step for determining an indicative sovereign rating. The SQM encompasses the five analytical categories we apply to sovereign ratings. While the SQM is not a predictive model of default, it does assess a sovereign's relative credit strengths and weaknesses, allowing for a comprehensive quantitative analysis.

Figure 8: Five categories of sovereign credit risk

SQM (Quantitative)					Reserve currency*	Political Risk**
Sovereign Risk Category	**Sub-Category**	**%**	**Variable**			
Domestic Economic Risk (35%)	Wealth & size	55	GDP per capita Nominal GDP		**[0; +3]**	**[0; -3]**
	Growth & inflation	45	Real GDP growth Real GDP volatility Working-age population growth Inflation rate	+		
Public Finance Risk (25%)	Debt affordability	50	Interest payments/ revenues GG Gross debt/ revenues			
	Debt dynamics	50	Primary balance/ GDP GG Gross debt/ GDP	+		
External Economic Risk (10%)	International Position	33.3	Net IIP/GDP			
	Current account	33.3	Current account balance/GDP	+		
	External debt sustainability***	33.3	Reserves/Imports			
Financial Stability Risk (10%)	Banking sector	50	NPLs - Reserves / Capital	+		
	Private sector	50	Private sector credit growth			
ESG Risk (20%)	Environment	15	Transition risks: CO2/GDP Transition risks: GHG/capita Physical risks			
	Social	15	Income inequality Unemployment rate Labour force participation	+		
	Governance	70	WB Governance indicators**			

* Positive adjustment to sovereigns whose currency is included in the IMF's SDR basket.

** Average of four World Bank Governance Indicators. Political risk based on World Bank's Political Stability indicator.

*** Applies to Emerging Market Economies only (per IMF's classification). Equal weights for current account and net IIP for Advanced Economies.

Source: Scope Ratings

We have selected 26 quantitative variables as the basis of a rigorous quantitative analysis. These were chosen based on empirical research, economic theory, academic studies on factors driving historical defaults[17], analytical judgment, and availability. We consider these indicators to be good predictors of default and sovereign distress and hence offer strong explanatory power.

To calculate the quantitative score, we use a minimum-maximum algorithm for each of the 26 variables, which ranges from 1 to 100 as per the indicative rating. We use fixed minimum and maximum thresholds for each variable and place each sovereign within this range. Sovereigns with the strongest results for each rating indicator receive the highest rating score; sovereigns with the weakest results receive the lowest rating score.

For example, in the hypothetical situation where the positive (negative) threshold of a variable is identified as the value 1 (-8), the score of a variable with the value 0.5 (thus being close to the 'best' score) would be derived using the following calculation: $1 + 99 \times |(X - MIN)| / (MAX - MIN)$ or $1 + 99 \times |(0.5 - -8)| / (1 - -8) = 94.5$.

Scores are aggregated using a weighted average score to generate an overall rating score. In a final step, we use the aggregated quantitative score to determine the indicative rating as shown in the following table. The indicative ratings are in lower case to differentiate them from the final rating determined by the rating committee. We note that movements between indicative ratings are only determined after the analyst's review of quantitative results and are documented and approved by a rating committee.

[17] These Include Reinhart and Rogoff (2009), Manasse and Roubini (2003) and Baldacci et al. (2011).

The aim is to avoid scores which are at the limit of indicative ratings to move too rapidly and too frequently into another indicative rating thus creating unnecessary rating volatility.

Figure 9: Mapping sovereign quantitative model scores to indicative ratings

aaa	80.0-100.0	**bb+**	46.7-50.0
aa+	76.7-80.0	**bb**	43.3-46.7
aa	73.3-76.7	**bb-**	40.0-43.3
aa-	70.0-73.3	**b+**	36.7-40.0
a+	66.7-70.0	**b**	33.3-36.7
a	63.3-66.7	**b-**	30.0-33.3
a-	60.0-63.3	**ccc**	< 30.0
bbb+	56.7-60.0		
bbb	53.3-56.7		
bbb-	50.0-53.3		

Source: Scope Ratings

5.1 Forecasts and thresholds

The SQM incorporates historical, current and forward-looking data. As economic data and forecasts are revised and changed, we update the SQM quarterly, reviewing each country at least twice yearly. We use publicly available macro-economic and financial data with five-year forecasts for 11[18] out of the 26 selected variables (see Annex I). We calculate a weighted average before deploying the rating algorithm, providing a single data point that includes the last year of historical data, current-year data and a five-year forecast where available. This algorithm uses a dynamic weighting process in which weights for T_0 and T_{+1} change over a calendar year. This is because data availability improves the quality of forecasts, resulting in an assignment of higher weight to T_{+1} at the end of a calendar year.

We use forecasts to form a forward-looking opinion on sovereign risk assuming a through-the-cycle approach. Consequently, we believe a rating is more likely to change when an economy undergoes a clear structural change or when the phase of the cycle has exposed fundamental weaknesses or strengths in sovereign creditworthiness.

The relation between quantitative factors and sovereign risks may differ across countries. The SQM rating score does not represent a linear relationship between quantitative indicators and sovereign default risks. This is particularly the case at the lower-end of the scale, which is capped at 'ccc' to capture our view that ratings near that level, tend to be driven more by qualitative and/or event-driven factors rather than slower-moving macro-economic or fiscal fundamentals.

The SQM acts primarily as a scoring tool to help form a recommendation for the rating committee. Essential to our approach are the indicative rating peer groups, which include the peers in the adjacent indicative ratings generated by the SQM. These allow comparative analysis across sovereigns and across time. This is essential to ensure consistency and provides the basis for the qualitative assessment in the QS.

5.2 Reserve currency

Global currencies are widely used in cross-border monetary operations, finance and trade. For the few issuing sovereigns, these currencies come with both benefits and costs and can therefore affect creditworthiness significantly. An international currency is much more than a foreign exchange reserve for central banks. It fulfils the three traditional functions of money for both private and public actors: a medium of exchange, a unit of account, and a store of value. An international currency provides a host of benefits for the issuing country. First, borrowing costs for the issuing sovereign are reduced due to high demand for its currency, increasing fiscal space and the ability to raise spending without materially affecting debt sustainability. In addition, domestic banks in the issuing country have access to the central bank's liquidity facilities, which translates into a competitive advantage over foreign banks. Domestic firms also benefit as their exchange rate risks are lower than those of foreign firms. Finally, a global reserve currency can be used by the issuing country politically, for instance, via sanctions, bolstering the country's global hegemony.

[18] Working-age population growth is forecast for 15 years.

At the same time, an international currency has costs. During times of global distress, they can appreciate strongly due to their safe-haven status, adversely affecting the cost-competitiveness of domestic producers. In addition, the absence of credible fiscal rules, low borrowing costs and sustained demand for its debt securities may induce governments to pursue fiscal expansion, resulting in high public debt. Countries issuing international currencies also face policy constraints as strong debt movements can increase interest rate volatility, complicating monetary policymaking.

There is no accepted list of global currencies, but the closest official recognition is a currency's inclusion in the IMF's Special Drawing Right (SDR) basket, created as a supplementary international reserve asset. While the abovementioned costs are captured in our SQM, particularly via the public finance risk and external economic risk pillars, benefits can be substantial but difficult to quantify. Therefore, for the few sovereigns which issue in a global reserve currency as defined above, we adjust the indicative rating by a minimum of +1 and a maximum of +3 notches based on the weight the currency receives in the IMF's SDR basket. Specifically, currencies with a weight of around 30% (20%) or above receive +3 (+2) notches, otherwise +1 notch. For now, for a sovereign in the euro area monetary union, we adjust the currency's weight in the SDR basket by the capital held by the member state's central bank as a shareholder of the ECB. We could change our assessment depending on institutional progress made towards a fully-fledged savings and investment union in Europe[19] and/or credible, permanent tools of the ECB allowing for policy interventions away from its capital key over the medium-to-long-term.

5.3 Political risk

Sovereign defaults may be triggered by political instability and exposure to domestic and external conflicts, including sustained protests, social instability, civil unrest, political or ethnic violence, secession or independence movements, armed political opposition, and military takeovers as well as geopolitical risks such as conflicts, tensions or armed conflict with or in neighbouring countries, economic sanctions or security threats.

Sovereigns, unlike corporates or financial institutions issuers, are not subject to bankruptcy laws and enforcement procedures and, despite having sufficient resources available, can thus deliberately choose not to repay debt. Default decisions are thus highly influenced by political developments[20]. Examples include defaults occurring during war time or significant transitions of power (during which debt can be declared as 'odious'[21]).

These considerations, which we classify as political risk and thus as distinct from governance risks, directly or indirectly affect the willingness and ability of governments to service debt[22]. The importance of political risk is underlined by its frequent contribution to sovereign defaults over past decades. For the avoidance of doubt, we do not mean to assess "country risk", which usually refers to the risk of government interfering with business operations. Political risk is thus hard to measure, at times chronic or persistent and in other instances sudden and acute. While no quantitative indicator captures these risk considerations in a fully objective, accurate, consistent and timely manner, we rely on the World Bank's Political Stability and Absence of Violence/Terrorism index as our key input variable.

We use a three-year average of the World Bank's political risk score and map it directly to negative notch adjustments to our indicative ratings. This assessment cannot provide uplift to the ratings. If the World Bank's indicator score is equal to or above -0.25, we make no negative adjustment. Conversely, if the score is below -0.25 (-0.90) we will make a 1-notch (2-notch) negative adjustment to the indicative rating. If the score is below -1.50, we apply a negative 3-notch adjustment to the indicative rating.

Movements between political risk adjustments, ranging from 0 to -3 notches, are only determined after the analyst's review of the quantitative result and are documented and approved by a rating committee. The aim is to avoid political risk adjustments, which are at the limit of the respective quantitative thresholds, to move too rapidly and too frequently into another political risk adjustment level thus creating unnecessary rating volatility.

Finally, if sudden events or unforeseen political changes justify a re-assessment of this risk driver compared to the notch adjustments provided by our quantitative political risk driver (the World Bank's *Political Stability and Absence of Violence/Terrorism* indicator) we may also overwrite the signal we obtain from the quantitative assessment. Our qualitative adjustment can be either positive or negative compared to the quantitative notch adjustment from our model when this risk driver is assessed as material.

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[19] Capital markets union: Final report by High-Level Forum pushes for the completion of the CMU.

[20] Several empirical studies reviewed in Hatchondo and Martinez (2010) find that the proximity of elections, the turnover of government officials, increases in political instability, and less democratic political systems are statistically associated with a higher default probability.

[21] The concept of odious debts was coined by the jurist Alexander Sack (1929). Odious debts are defined by Sack as debts contracted and spent against the interests of the population of a state, without its consent, and with full awareness of the creditor. These include war debts, subjugated or imposed debts, and regime debts.

[22] External conflict with Russia, coupled with a change in the country's leadership, contributed greatly to the default by Ukraine on a USD 18bn Eurobond in 2015. Other recent examples of defaults driven by political risk include Paraguay's debt restructuring in 2002-04 and Ecuador's default in 2008.

5.4 Past defaults

A sovereign's creditworthiness is also impacted by its history of debt repayment, including to official sector creditors, which may be driven by fundamental factors but also a government's willingness to pay in full and on time.

To account for the associated stigma of recent defaults, we distinguish between sovereigns that have never defaulted and those which have defaulted once (or multiple times) over the past 5 (10) years. Starting from the most recent credit event, we cap the SQM indicative rating at the 'bb-' level, after accounting for the reserve currency and political risk adjustments, for 5 (10) consecutive years for sovereigns which have defaulted once (multiple times)[23].

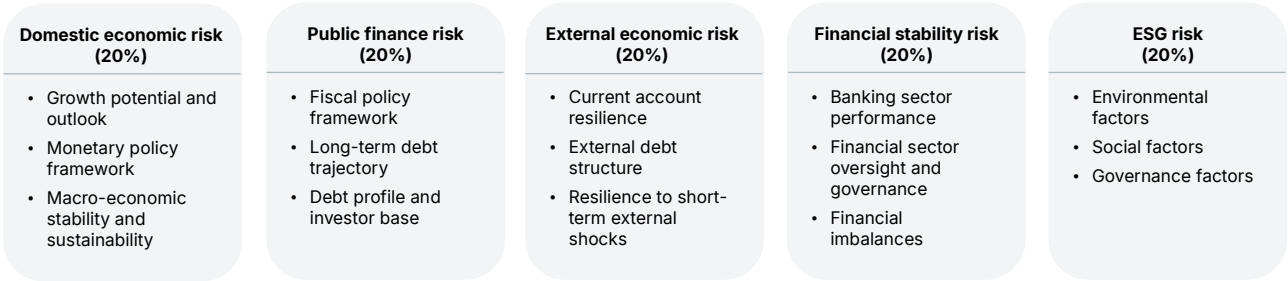
The duration and level of the cap on the indicative rating is informed by the most recent sovereign defaults. In practice, the cap will only apply to very few countries as most sovereigns have weak fundamentals for several years following a credit event, resulting in lower indicative ratings than the 'bb-' cap, in which case, the cap would not apply. However, applying the cap for 5 (10) consecutive years following a single (multiple) credit event(s) does not overly penalise those sovereigns that swiftly improve their credit fundamentals, regain sustainable market access, and even investment-grade status.

The rating committee relies on analytical judgment to decide whether we cap the SQM indicative rating consistently across all the issuer's ratings, depending on each sovereign's default history in local- and foreign-currency debt to private sector creditors under Scope's credit-rating definitions.

6. Qualitative scorecard (QS)

We complement the SQM with a qualitative scorecard (QS) to account for analytical elements not captured within the SQM. The QS is designed to expand on the SQM. It is organised into five risk pillars in the SQM (domestic economic risk, public finances risk, external economic risk, financial stability risk, and ESG risk), and includes three analytical components per pillar. The weights in the QS are the same across each category.

Figure 10: Five categories of sovereign credit risk (QS)



Source: Scope Ratings

Each analytical component is assessed on a three-point scale with notch adjustments of -1/3 for 'weak' assessments, 0 for 'average' assessments and +1/3 for 'strong assessments for an overall maximum adjustment range of ± 3 notches. The adjustments are aggregated, with each assessment weighted such that each risk pillar is worth one full rating notch while the overall assessment is capped at ± 3 notches. Each adjustment is the assessment of the relative strengths and weaknesses conducted in relation to peers with the same indicative rating, including the two adjacent ones (positive and negative). We document all steps of the process, including adjustment recommendations and their impact on the rating.

The QS assessment includes a comprehensive review of the qualitative factors detailed in Annex II. For each assessment, the analyst examines a given sovereign relative to its peer group. For this purpose, additional comparative analysis beyond the variables included in the SQM is conducted. The result is the implied QS notch adjustment, which is the basis for the analyst recommendation to the rating committee (see Annex IV for a country case study). The rating committee may adjust the rating beyond ± 3 notches under additional considerations not captured by the scorecard results.

[23] To inform the introduction of a cap on the SQM indicative rating, a credit event is defined as a default on local- and foreign-currency debt as reported by the Bank of Canada–Bank of England Sovereign Default Database. We will disclose whether the indicative cap is applied.

7. Additional considerations

The rating committee may adjust the outcome of the SQM and QS to account for considerations or extraordinary circumstances not captured by our scorecards. Some examples are detailed below.

7.1 Official sector financial assistance

We look at sovereigns that are in discussions with (or already benefit from) the official sector regarding financial assistance, either on an ad hoc basis, or via established frameworks and initiatives. Key credit-relevant questions include whether i) official sector assistance[24] is contingent on either policy reforms only, including the credibility of the adjustments to the policy mix, or as a last resort on private sector involvement (in the form of debt restructuring, implying a financial loss) and the associated estimate in potential burden sharing between the official and private sectors; ii) the assessment of gross financing needs and debt sustainability analysis are conducted before or after the request for private sector involvement; and iii) the official sector considers that potential burden sharing between official and private sectors is voluntary or not.

Our assessment of these negotiations can be either credit positive, credit neutral or credit negative. The severity of debt vulnerabilities and the scale of restructuring are shaped by many country-specific factors and assessed case by case. Generally, depending on i) pre-restructuring economic and fiscal conditions; ii) public debt structure; and iii) the state of the banking system and financial depth, we will view the following elements positively:

- Formal requests to benefit from official financial assistance, regardless of conditionality and reviews; and/or
- Official assistance, which, with a high degree of confidence, is contingent not on private sector involvement but policy reform only.

Conversely, we would view negatively:

- Official assistance, which, with a high degree of confidence, is contingent on private sector involvement;
- Developments pointing to an imminent default before negotiations with the official sector end; and/or
- Failure of negotiations with the official sector that is likely to undermine debt servicing capacity.

Finally, situations where sovereigns are ineligible for, or indeed formally refuse to benefit from, restructuring frameworks or initiatives are credit-neutral.

7.2 Extraordinary circumstances

Finally, examples of extraordinary circumstances beyond official financial assistance and political conflicts are:

- a sovereign in crisis following a sharp economic downturn or financial crisis accompanied by a crisis of confidence, leading to a much higher default risk in the short term yet to be reflected in data or forecasts; and
- an exceptionally severe exogenous shock (natural disasters, sudden changes in market liquidity and capital flows) that strongly increases default risk.

We will communicate transparently these and any other extraordinary or stressed circumstances where the rating committee sees the need for greater adjustment flexibility (for example, capital controls, lack of capital market access , severe climate change stresses) to incorporate sovereign fundamentals not captured by scorecard results.

8. Debt instruments

We assign senior unsecured debt ratings in line with the issuer rating. However, in case a sovereign issues debt instruments other than senior unsecured debt, we would assess the potential for any upward or downward notching on a case-by-case basis subject to the terms and conditions of the issuance. This may also be done in conjunction with other Scope methodologies.

8.1 Local- and foreign-currency ratings

We assign LC and FC ratings using our long-term and short-term rating scales.

The ability and willingness to pay in LC or FC debt is typically the same among investment-grade rated sovereigns (i.e. those rated BBB- and above). In rare cases for non-investment-grade rated sovereigns, we may assign a higher LC rating than the FC rating if default risk varies between FC and LC debts. In such cases, the following key factor(s) would need to be met:

[24] This typically includes bilateral sovereign and/or multilateral creditors such as the IMF, World Bank, development agencies or export credit agencies.

- Weak external fundamentals and outstanding risks as associated with currency depreciation;
- Significant proportion of central government debt burden denominated in FC;
- Established domestic capital markets and stronger capacity to refinance debt in LC; and/or
- Past preferential treatment of its LC versus FC debt or a strong basis for future disparity in willingness or capacity to pay LC versus FC debt.

Finally, in exceptional circumstances, such as debt sustainability challenges concentrated on LC, we could rate LC debt below FC debt. Annex III provides an overview of the default history of FC debt against LC debt.

8.2 Mapping from long-term to short-term ratings

We derive short-term ratings from the long-term ratings. The relevant elements for the differentials between LC and FC long-term ratings are the same for the short-term ratings. Accordingly, FC and LC short-term ratings are not always aligned.

8.3 Short-term local- and foreign-currency ratings

Our rating definitions provide six possible and overlapping short-term ratings over five long-term rating categories. The ability exclusive to a sovereign to create its own currency and obtain privileged market access typically results in higher financial flexibility and short-term solvency than for other issuers, for example, similarly rated corporates and financial institutions. As a result, for FC and LC short-term ratings, we will choose the higher of the two for sovereigns benefiting from an established reserve currency, sizeable foreign-exchange reserves or strong financial and policy flexibility. Conversely, we will choose the lower of the two for sovereigns with depleted reserves and low financial and policy flexibility.

9. Annex I: Sovereign quantitative model (SQM)

Variable	Description	Rationale	Unit	Min	Max	Sources
Domestic economic risk						
GDP per capita (PPP)	Seven-year weighted average of GDP per capita on a purchase-power-basis using past, current and five-year forecast; assessed in non-linear form (square root) and assessed against thresholds that are adjusted with the previous year's global inflation rate	The higher the GDP per capita, the broader the potential tax base the sovereign can rely on to pay its obligations. Moreover, a higher per-capita income is associated with higher productivity, as well as economic (stock of human and physical capital) and financial wealth (stock of financial assets).	USD	SQRT (2,604)	SQRT (83,341)	IMF
Nominal GDP	Seven-year weighted average of share of Nominal GDP in World GDP using past, current and five-year forecast data; assessed in non-linear form (natural log)	Nominal GDP is used to account for a sovereign's economic resilience to shocks and global economic clout.	%	Ln 0.02%	Ln 2.0%	IMF
Real GDP growth	Seven-year weighted average of real GDP growth using past, current, and five-year forecast data	A country's ability to generate sustainable long-term growth is important for its creditworthiness.	%	0.0%	6.0%	IMF
Real GDP volatility	Standard deviation of real GDP growth using data for the current and past 15 years	Highly volatile real GDP growth indicates the presence of imbalances in the economy and increases uncertainty about a sovereign's ability to repay obligations fully and on time.	Standard deviation	1.5	6.0	IMF
Inflation rate	Seven-year weighted average of inflation rate (yearly percentage change in the consumer price index) using past, current, and five-year forecast.	Long periods of high inflation undermine the credibility of the local currency as a main storage of value; conversely, undermines economic growth through its detrimental effect on consumption and business confidence. Inflation rates between 1.5% and 2.5% receive the highest score.	%	0%; 1.5%	2.5%; 10.0%	IMF
Working-age-population growth	Past and long-term weighted average of annual working-age population growth rates with forecasts up to 2045.	The working-age population describes the pace at which a country's population aged 15 to 64 is expanding or contracting, thus capturing the demographic challenges a sovereign is likely to face.	%	-0.75	3.0	UN
Public finance risk						
Gross debt/ revenues	Seven-year weighted average of gross debt as a percentage of government revenue using past, current and five-year forecast data; assessed in non-linear form (squared)	The gross debt ratio is a universal and comprehensive measure of sovereign indebtedness; relative to revenues it places the emphasis on a sovereign's ability to mobilise revenues to repay its debt.	% of government revenue	Squared 75.0%	Squared 300.0%	IMF
Interest payments/ revenues	Seven-year weighted average of interest payments on debt as a percentage of revenues using past, current and five-year forecast data; assessed in non-linear form (squared)	Interest payments as a share of budget revenue displays a sovereign's debt affordability.	% of government revenue	Squared 2.0%	Squared 20.0%	IMF
Primary balance/ GDP	Seven-year weighted average of primary balance as a percentage of GDP using past, current and five-year forecast data	A persistent primary budget deficit indicates a sovereign's low capacity to service its debt from own resources collected on national wealth and an overreliance on markets to refinance.	% of GDP	-3.0%	3.0%	IMF
Gross debt/ GDP	Seven-year weighted average of gross debt as a percentage of GDP using past, current and five-year forecast data; assessed in non-linear form (squared)	A persistent rise in a government's debt to GDP ratio indicates a combination of a low capacity to consolidate public finances and/or weak growth prospects.	% of GDP	Squared 15.0%	Squared 120.0%	IMF

External economic risk						
Net international investment position	Latest data on net international investment position as a percentage of GDP; if unavailable, the historical cumulative current account used as a proxy.	Recent crises have underscored the importance of external assets and liabilities as an important indicator of external vulnerability.	% of GDP	-75.0%	50.0%	EC, national banks, statistical offices
Current account	Seven-year weighted average of current account as a percentage of GDP using past, current and five-year forecast	Large and persistent current account deficits signal the risk of depletion of net foreign assets/liquidity/foreign-exchange reserves, indicating weak international competitiveness. They also signal a shortage of domestic savings in the economy, which increase reliance on capital inflows from non-residents.	% of GDP	-7.0%	5.0%	WB
Reserves/imports	Latest data on reserves expressed in terms of the number of months of imports of goods and services	Sovereigns whose currencies are not widely used often mitigate associated external risks through the availability (and use) of their reserves. Applies only to Emerging and Developing Economies.	Months coverage	2.0	8.0	IMF, WB
Financial stability risk						
Non-performing loans net of reserves / capital	Latest data on non-performing loans net of provisions over total capital	Banks' risky operations, assessed via asset quality net of provisions over capital, could pose a threat to macro-economic stability given the banking sector's role as a collector of savings, intermediary between savers and borrowers, and a payment infrastructure provider. Weak capitalisation buffers could increase the risk for government interventions in case heightened portfolio weaknesses and/or elevated sovereign bond exposures	% of total	2.5%	20.0%	IMF, WB
Private sector credit growth	7-year average of annual change in outstanding private sector credit	Excessive private sector credit growth could serve as an early warning for a banking crisis or financial imbalances. It points to the build-up of financial vulnerabilities within the economy.	%	-2.5%	20.0%	WB
Environmental (E), social (S) and governance (G) risk						
E: Transition risks	Latest data on fossil CO_2 emissions per USD 1,000 of GDP	Transitional risks refer to the likely economic and fiscal costs due to policy and regulatory actions to foster carbon-free economies. As and when policymakers and regulators adopt and expand carbon pricing mechanisms, economies and societies with a higher share of carbon-intensive industries and consumption patterns are likely to face higher i) economic costs, which include the structural change economies may have to undergo; and ii) fiscal costs, which include direct expenditures, investments and subsidies. In addition, the impact on sovereign risk may further materialise via trade channels when trade barriers for carbon-intensive products adversely impact domestic industries not subject to carbon-pricing at home.	Metric tonnes of CO_2equivalent	0.05	0.25	EDGAR
	Latest data on greenhouse gas emissions per capita		Metric tonnes of CO_2equivalent	2.0	10.0	EDGAR
E: Natural disaster risks	Latest data on Notre Dame Global Adaptation Initiative country index scores	Sovereigns more exposed to natural disasters may face higher economic and fiscal costs due to more frequent and extreme weather conditions. Score of the ND-GAIN Country Index, which is composed of two key dimensions of adaptation: vulnerability and readiness.	Index score	40.0	70.0	ND-GAIN

		Vulnerability measures a country's exposure, sensitivity and capacity to adapt to the negative effects of climate change. ND-GAIN measures overall vulnerability by considering six life-supporting sectors – food, water, health, ecosystem service, human habitat, and infrastructure. Readiness measures a country's ability to leverage investments and convert them to adaptation actions. ND-GAIN measures overall readiness by considering three components – economic readiness, governance readiness and social readiness.				
S: Unemployment rate	Latest data on unemployment rate	High unemployment is usually associated with significant structural bottlenecks and can seriously hamper growth and weaken the country's ability to adapt to new challenges. It can also add pressure on public finances through unemployment benefits.	%	3.0%	15.0%	WB
S: Income inequality	Latest data on income share of bottom 50%; if unavailable, regional average used as proxy.	Income inequality may lead to low social mobility (hindering human capital formation) and high social conflicts and corruption that impede sustainable economic growth and development.	%	10.0%	25.0%	WID
S: Labour force participation	Latest data on labour force participation	The share of an economically active population affects economic growth not only directly by adding to total output but also indirectly by lowering hysteresis and contributing to a dynamic labour market.	%	50.0%	80.0%	WB
G: Control of corruption	Latest data on control of corruption	Public power is exercised for private gain, including both petty and grand forms of corruption, as well as the 'capture' of the state by elites and private interests. High (low) scores are associated with good (bad) governance, policymaking and lower (higher) sovereign risk.	Index score	-1.00	1.50	WB
G: Rule of law	Latest data on rule of law	Agents have confidence in and abide by the rules of society, in particular the quality of contract enforcement, property rights, the police, and the courts; likelihood of crime and violence. High (low) scores are associated with good (bad) governance, policymaking and lower (higher) sovereign risk.	Index score	-1.00	1.50	WB
G: Governance effectiveness	Latest data on governance effectiveness	Quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. High (low) scores are associated with good (bad) governance, policymaking and lower (higher) sovereign risk.	Index score	-1.00	1.50	WB
G: Regulatory quality	Latest data on regulatory quality	Ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. High (low) scores are associated with good (bad) governance, policymaking and lower (higher) sovereign risk.	Index score	-1.00	1.50	WB
The four governance scores are averaged and assessed together.						

Reserve currency					
Reserve currency	Latest weight (%) of currency in IMF's Special Drawing Rights basket	Sovereign bonds issued in currencies with global use in international capital markets enjoy higher liquidity in times of crisis and have a robust secondary market.	%	See section 3.2.	IMF
Political risk					
Political stability and absence of violence/ terrorism	Three-year average of latest data on political stability and absence of violence/terrorism.	The likelihood of political instability and/or politically motivated violence, including terrorism, affects government stability and policy predictability and thus a sovereign's ability and willingness to honour debt repayments.	Index score	See section 3.3.	WB
Past defaults					
Past defaults	Scope's classification of past sovereign defaults over a rolling period of up to 10 years.	History of debt repayment may be driven by fundamental factors but also a government's willingness to pay at a certain time. To account for the associated stigma of recent defaults.	Yes / No	See section 5.4	Scope; Bank of Canada-Bank of England Sovereign Default Database

Source: Scope Ratings

10. Annex II: Qualitative scorecard (QS)

Variable	Description	Rationale	Assessment		
All notch adjustments are taken in comparison with peers in the quantitatively derived indicative rating group					
1 Domestic economic risk			**Strong (+1/3 notch)**	**Average (0 notch)**	**Weak (-1/3 notch)**
1.1 Growth potential and outlook	An examination of a country's medium- to long-term growth potential and outlook	Medium- and long-term growth potential, in particular its innovative capacity, business environment, and human/physical capital accumulation, contributes to a sovereign's capacity to generate revenues and repay debt.	Strong outlook, good growth potential	Average outlook, growth potential	Weak outlook/ growth potential under trend
1.2 Monetary policy framework	Assesses the coherence, credibility and effectiveness of a country's monetary policy framework, including the effectiveness of prudential regulation in generating sustainable growth, curtailing macro-economic imbalances and supporting crisis resolution	Ineffective monetary policies characterised by a weak monetary policy transmission mechanism increase the risk of too high or too low growth, macro-economic imbalances and bubbles, too high or too low inflation, exchange rate volatility, and financial market shocks.	Good policies, effective implementation	Adequate policies and implementation	Poor policies/ ineffective implementation
1.3 Macro-economic stability and sustainability	Assesses macro-economic imbalances arising from weak economic diversification and/or labour market rigidities	Sustainable economic growth increases resilience to adverse economic shocks and the ability to recover quickly following a shock.	Strong stability, only minor imbalances	Average stability, imbalances under control	Weak stability, imbalances problematic
2 Public finances risk			**Strong (+1/3 notch)**	**Average (0 notch)**	**Weak (-1/3 notch)**
2.1 Fiscal policy framework	Captures the fiscal framework and ability of the government to generate revenues, plan and control expenditure as well as assesses the consistency and appropriateness of budgetary policies and processes	The fiscal framework is key to preserving public debt sustainability and ensuring growth-friendly fiscal policies, mitigating the effects of economic downturns and shocks.	Strong fiscal flexibility; appropriate fiscal stance; effective and prudent fiscal framework;	Average fiscal flexibility and fiscal framework	Limited fiscal flexibility; ineffective fiscal framework; inadequate fiscal stance
2.2 Long-term debt trajectory	Assesses the debt trajectory of a sovereign under several scenarios and its resilience under sudden episodes of fiscal stress that may occur following the materialisation of economic, fiscal or financial risks.	Debt dynamics are analysed to assess medium- to long-term sustainability challenges, including contingent liabilities.	Declining trajectory and/or low debt burden	Broadly stable debt trajectory and/or average debt burden	Rising debt trajectory and/or high debt burden
2.3 Debt profile and investor base	Assesses sovereign's financing needs, debt composition, maturity, interest rate, and currency structure. This includes cash holdings and other liquid assets (sovereign wealth funds), the depth of the domestic capital markets, access to international capital markets, and access to concessional and multilateral sources of financing (including the safety net funds for a country member of a monetary union).	A sovereign with low financing needs, a debt structure characterised by a long maturity and a high share of fixed-rated debt will be less exposed to refinancing risk and interest rate shocks. Uninterrupted access to internal and external sources of funding allows debt to be rolled over. Liquid government assets can be sold to service debt if required.	Good debt structure and/or market access	Average debt structure and/or market access	Weak debt structure and/or market access
3 External economic risk			**Strong (+1/3 notch)**	**Average (0 notch)**	**Weak (-1/3 notch)**
3.1 Current account resilience	Assesses financing of current account and development of external imbalances arising from a non-diversified and/or narrow range of export markets, reliance on remittances.	Current account volatilities, if not counterbalanced, can put pressure on the local currency.	Strong resilience; reliable and/or stable current account financing	Average, resilience and/or adequate current account financing	Weak resilience, concentrated and/or unreliable financing of current account

3.2 External debt structure	Assesses structure, composition, maturity, and ownership of external debt in both the public and private sectors.	High external private-sector debt may undermine foreign investors' confidence in the economy, resulting in a decline in capital inflows and net outflows.	Low external debt; favourable structure and/or limited imbalances	Average external debt; and/or imbalances largely manageable	High external debt; unfavourable structure; and /or problematic imbalances
3.3 Resilience to short-term external shocks	Evaluates short-term liabilities of all sectors of the economy against liquid short-term assets and shows the ability to continue foreign exchange debt servicing if external markets are closed. For sovereigns with a reserve currency, this adjustment is only used under exceptional circumstances to avoid double-counting.	Sufficient internal foreign exchange sources boost resilience to market volatility and temporary shutdown in external markets.	Shocks have small effect; and/or management good	Shocks have an average effect; and/or adequate management	Vulnerable to shocks; and/or management problematic
4 Financial stability risk			**Strong (+1/3 notch)**	**Average (0 notch)**	**Weak (-1/3 notch)**
4.1 Banking sector performance	Analyses main macro and micro-prudential indicators of financial soundness including asset quality, profitability, liquidity, and capital adequacy. Scope's banking team analysts contribute to this assessment where relevant.	Weak funding structure, capital buffers, and stretched liquidity can undermine financial stability.	Very good performance and buffers; and/or favourable funding structure	Average performance, buffers and/or funding structure	Weak performance, limited buffers; and/or unfavourable funding structure
4.2 Financial sector oversight and governance	Evaluates policy measures to minimise systemic risks and support the banking system. This includes macro-prudential rules and policies as well as bank regulation standards that enhance resilience to shocks and contagion.	Strong financial sector oversight and sound corporate governance arrangements are a critical pillar of financial stability.	Strong oversight frameworks	Average oversight frameworks	Weak oversight frameworks
4.3 Financial imbalances	Evaluates the implications of financial imbalances for banks, in particular credit-fuelled growth, private sector indebtedness, sovereign-bank nexus and asset bubbles	Financial imbalances pose a material risk to macro-economic stability.	Limited imbalances and/or strong policy response	Some imbalances and/or average policy response	Significant imbalances and/or weak policy response
5 ESG risk			**Strong (+1/3 notch)**	**Average (0 notch)**	**Weak (-1/3 notch)**
5.1 Environmental factors	Assesses a country's vulnerability to environmental risks as well as its government's ability and commitment to address these risks, in particular the sectoral dependence on transition risks and need and ability to invest in adaptation infrastructure.	Transition and physical risks can have a profound impact on countries' economic structures and fiscal developments. Governments play a critical role in implementing an appropriate policy and investment response.	Limited exposure; largely effective and coherent climate policies	Average, partially effective climate policies, some contradictions	High vulnerability; weak, partially ineffective and/or contradictory climate policies
5.2. Social factors	Assesses a country's labour market, income inequality, effectiveness of the education and health system and other social considerations as well as policy responses to discriminatory practices or regulatory hurdles to social inclusion.	Social considerations can have important consequences for a country's growth potential, fiscal developments or political risks over the medium term.	Largely effective and coherent policies on social issues	Balanced policies on social issues	Weak, partially ineffective policies, and/or contradictory policies on social issues
5.3 Governance factors	Assesses impact of major policy decisions and institutional developments.	Strong institutions and reform-oriented governments have the ability to implement policies, including during crises times, which significantly impact a country's fundamentals.	Strong institutions, reform momentum, clear and uncontested handover of power, favourable policy direction	Average institutions and policy direction	Weak institutions, policy paralysis and/or problematic policy direction, unclear handover of power

Source: Scope Ratings

11. Annex III: Foreign vs local currency sovereign defaults

The history of defaults on foreign-currency versus local-currency rated debt is limited. This indicates a lack of a uniform relationship between the denomination of debt and the likelihood of default. A historical analysis of defaults conducted by the Bank of Canada and the Bank of England reviews the annual number and volume of defaults in 1960-2024 on both local- and foreign-currency debt, tracking bank loans and bonds. As banks withdrew from sovereign lending over the past 25 years, defaults on foreign-currency bonds (rather than loans) have increased.

Figure 11: Number of sovereigns in default (to private creditors)

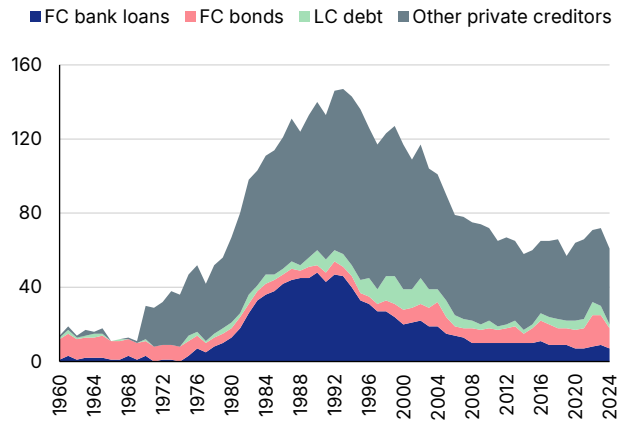
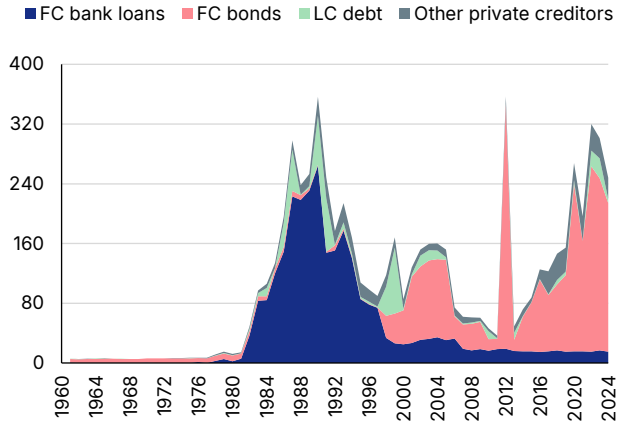


Figure 12: Total debt in default, USD bn (to private creditors)



Sources: Bank of Canada, Bank of England, Scope Ratings

12. Annex IV: Country case study

SQM and QS results for a hypothetical sovereign

Sovereign Quantitative Model (SQM)

Sovereign Risk Category	Sub-Category	New	Variable	Score/ Indicative rating	Reserve currency*	Political risk**
Domestic Economic Risk (35%)	Wealth & size	55	GDP per capita Nominal GDP	68 (a+)	[0; +3]	[0; -3]
	Growth & inflation	45	Real GDP growth Real GDP volatility Working-age population growth Inflation rate			
Public Finance Risk (25%)	Debt affordability	50	Interest payments/revenues GG Gross debt/revenues	55 (bbb)		
	Debt dynamics	50	Primary balance/ GDP GG Gross debt/GDP			
External Economic Risk (10%)***	International Position	33.3	Net IIP/GDP	38 (b+)		
	Current account	33.3	Current account balance/GDP			
	External debt sustainability	33.3	Reserves/GDP			
Financial Stability Risk (10%)	Banking sector	50	NPLs - Reserves / Capital	49 (bb+)		
	Private sector	50	Private sector credit growth			
ESG Risk (20%)	Environment	15	Transition risks: CO2/GDP & CO2/capita Natural disaster risks	59 (bbb+)		
	Social	15	Income inequality Unemployment rate Labour force participation			
	Governance	70	WB Governance indicators**			

Qualitative Scorecard

Qualitative adjustment	Strong	Neutral	Weak
1. Growth potential	0.33	0.00	-0.33
2. Monetary policy framework	0.33	0.00	-0.33
3. Macro-economic stability & sustainability	0.33	0.00	-0.33
1. Fiscal policy framework	0.33	0.00	-0.33
2. Debt sustainability	0.33	0.00	-0.33
3. Debt profile & investor base	0.33	0.00	-0.33
1. Current account resilience	0.33	0.00	-0.33
2. External debt structure	0.33	0.00	-0.33
3. Resilience to short-term shocks	0.33	0.00	-0.33
1. Banking sector performance	0.33	0.00	-0.33
2. Banking sector oversight & governance	0.33	0	-0.33
3. Financial imbalances	0.33	0.00	-0.33
1. Environmental factors	0.33	0.00	-0.33
2. Social factors	0.33	0.00	-0.33
3. Governance factors	0.33	0.00	-0.33
Sum of adjustments		-0.66	

* Positive adjustment to sovereigns whose currency is included in the IMF's SDR basket.

** Average of four World Bank Governance Indicators. Political risk based on WB's Political Stability indicator.

*** Applies to Emerging Market Economies only (per IMF's classification). Equal weights for current account and net IIP for Advanced Economies.

SQM	Indicative rating	bbb+
	Reserve currency adjustment	N/A
	Political risk adjustment	-1
	Indicative rating	bbb
	Sum of QS adjustments (notches)	-1
	Final rating recommendation	BBB-

Error! Not a valid link. To calculate the rating score within the SQM, we use a minimum-maximum algorithm to determine a rating score for each of the 26 indicators. We assess each rating indicator within the defined minimum and maximum thresholds. Sovereigns with the strongest (weakest) results for each indicator receive the highest (lowest) rating score. The score result translates to an indicative rating that is always presented in lower case rating notes and is adjusted automatically to account for reserve currency and political risk considerations. Within the QS assessment the analyst conducts a comprehensive review of the qualitative factors. This includes but is not limited to economic scenario analysis and a review of debt sustainability, fiscal and financial performance and policy implementation. Each category has three assessments for a total of 15. For each assessment, the analyst examines a given sovereign relative to its peer group. For this purpose, additional comparative analysis beyond the variables included in the SQM is conducted. These assessments are then aggregated using equal weights. The result is the implied QS notch adjustment, which is the basis for the analyst recommendation to the rating committee.

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