

# Sovereign Rating Criteria

## Master Criteria

### Scope

This report details Fitch Ratings' criteria for assigning new and existing ratings to sovereign issuers and issues. The assignment of Fitch's sovereign ratings reflects a combination of our proprietary Sovereign Rating Model (SRM) and a Qualitative Overlay (QO).

Sovereign Issuer Default Ratings (IDRs) and bond ratings are a forward-looking assessment of the capacity and willingness to honour debt obligations to private-sector creditors in full and on time. Sovereigns are assigned two IDRs: the Local-Currency (LC) IDR reflects the likelihood of default on debt issued (and payable) in the currency of the sovereign, while the Foreign-Currency (FC) IDR is an assessment of the credit risk associated with debt issued in foreign currencies. These criteria apply to both new and existing sovereign issuer and issue ratings.

### Key Rating Drivers

**Willingness and Capacity to Pay:** Fitch's approach to sovereign credit risk analysis is a synthesis of quantitative analysis and qualitative judgements that capture the willingness as well as the capacity of the sovereign to meet its debt obligations in full and on time. The activities and policy actions of the sovereign have a profound effect on and are also influenced by the performance of the country's economy as a whole, which in turn affects sovereign creditworthiness.

**Analytical Pillars:** Fitch's approach to sovereign rating analysis is an assessment of the following four analytical pillars, which inform the creditworthiness of the sovereign:

- **structural features** of the economy that render it more or less vulnerable to shocks, including the risks posed by the financial sector, political risk and governance factors;
- **macroeconomic performance, policies and prospects**, including growth prospects, economic stability and the coherence and credibility of policy;
- **public finances**, including budget balances, the structure and sustainability of public debt and fiscal financing and the likelihood of the crystallisation of contingent liabilities; and
- **external finances**, including the sustainability of current account balances and capital flows, and the level and structure of external debt (public and private).

**Weighting of Pillars:** Reflecting their importance to sovereign creditworthiness, structural features typically carry the highest weight within rating decision, as evidenced by their status as the highest-weighted pillar in the SRM. The weights of the other three pillars are typically lower, but this can vary, particularly in crisis situations.

**Sovereign Rating Model:** Fitch employs its SRM as the starting point for assigning sovereign ratings. The SRM replicates the principal elements of these rating criteria and generates a score calibrated to the Long-Term (LT) FC IDR scale. It is a multiple regression rating model rather than a probability of default model and employs historical, current and forward-looking data for 18 key variables.

**Qualitative Overlay:** Recognising that no quantitative model can fully capture all the relevant influences on sovereign creditworthiness, Fitch employs a forward-looking QO to adjust for factors not reflected or not fully reflected in the SRM output for any individual rating. The QO comprises a notch-adjustment system applied to the SRM output, with a potential notching range of +2/-2 for each of the four analytical pillars outlined above, and an overall notching adjustment range of +3/-3 for each rating, except in certain circumstances explained in these criteria.

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This report updates and replaces the criteria titled Sovereign Rating Criteria, dated 26 October 2020.

[Click on this link for an interactive version of the SRM and associated user guide.](#)

## Related Criteria

[Country Ceilings Criteria \(July 2020\)](#)

[Public-Sector Counterparty Obligations in PPP Transactions Rating Criteria \(July 2020\)](#)

[Third-Party Partial Credit Guarantees Rating Criteria \(June 2020\)](#)

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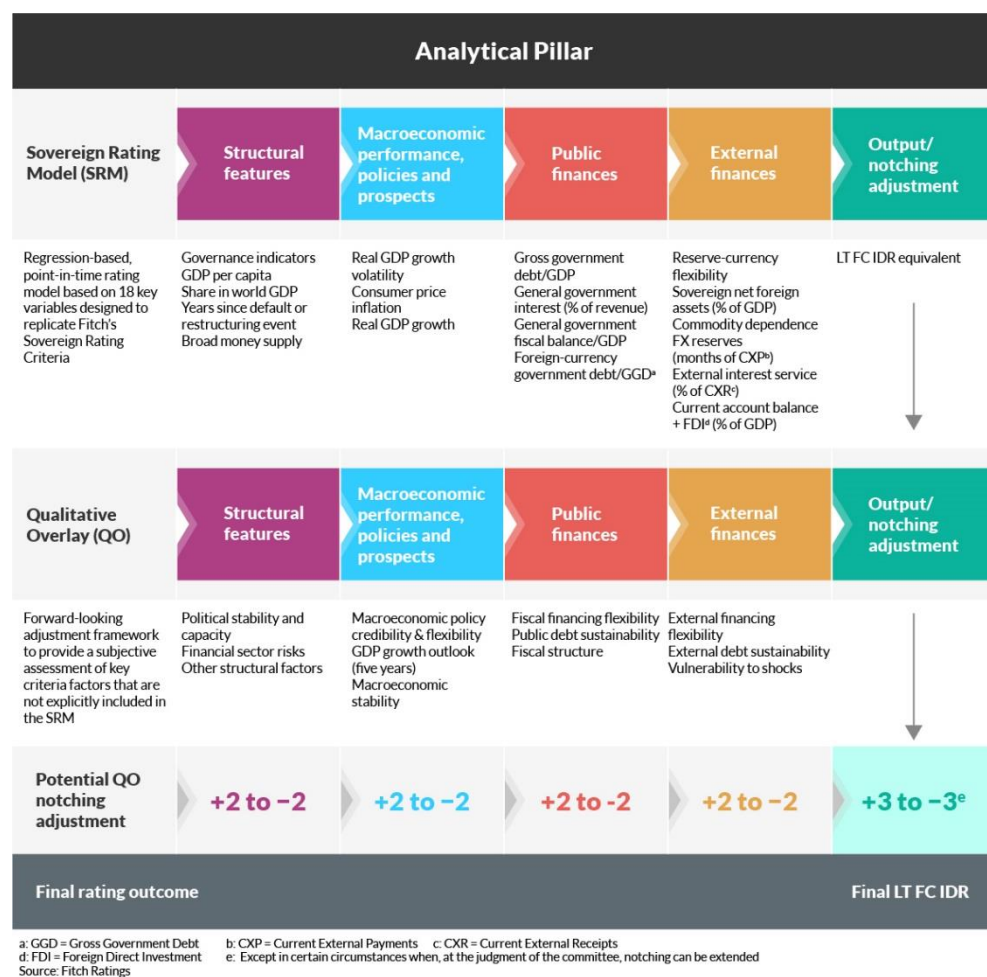
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## Sovereign Rating Criteria - Summary



## Country Risk vs Sovereign Risk

Country risk and sovereign credit risk are related but distinct concepts. The former refers to the risks associated with doing business in a particular country, while sovereign credit ratings are more narrowly focused on the risk of a sovereign government defaulting on its debt obligations. Risks to doing business can include weak property rights, unpredictable tax and legal regimes, and a volatile operating environment.

A specific country risk that is especially pertinent for cross-border investment and lending is the risk of controls being imposed by the sovereign authorities on the conversion of local into foreign currency and on its transfer abroad to meet external debt service obligations. Transfer and convertibility (T&C) risk is explicitly addressed by the Country Ceiling that is assigned to all countries with Fitch-rated sovereign issuers (see Fitch's [Country Ceilings Criteria](#)).

Though there is a positive association between sovereign and broader country risk, the sovereign credit profile can improve without necessarily an improvement in the country risk profile. Similarly, deterioration in country risk conditions does not necessarily imply a worsening in sovereign creditworthiness, though often that will be the case.

## What Is a Sovereign?

From a rating perspective, a sovereign issuer is the government (usually national or federal) that de facto exercises primary fiscal authority over a recognised jurisdiction.

Central banks, like other public-policy institutions, are agents of the sovereign, but as part of the macroeconomic policy framework are considered to be very closely linked to the sovereign. As such, Fitch typically treats rated securities issued by the central bank as equivalent to securities issued by the sovereign from a rating perspective, albeit those liabilities are typically not included in Fitch's calculation of government debt (see *Public Finances* section). If rated by Fitch, the LT FC IDR of the central bank would typically be aligned with the relevant sovereign LT FC IDR.

Because the sovereign is the highest authority and has the power to enforce its will in the jurisdiction it governs, creditors have very limited legal or other recourse in the event that the sovereign is unable or unwilling to service its debt. This is also the case at the international level, given the limitations of international law and its enforceability with respect to sovereign nations. Consequently, whether in terms of local- or foreign-currency debt, the analysis of sovereign credit risk must take into account the willingness to pay, as well as financial capacity.

## Sovereign Default Events

### Sovereign Default Events

#### Default event (resulting in 'D' or 'RD' Rating)

- Missed coupon or principal repayment on a public debt security issued by the sovereign.
- Missed coupon or principal repayment on a public debt security benefiting from an unequivocal, irrevocable and unconditional guarantee provided by the sovereign.
- Failure to pay debt obligations (other than public debt securities) owed to private creditors by the sovereign provided Fitch is satisfied that a default event has occurred.
- Failure to pay debt obligations (other than public debt securities) owed to private creditors by third parties that benefit from an unequivocal, irrevocable and unconditional guarantee from the sovereign, provided Fitch is satisfied that a default event has occurred.
- On completion of a distressed debt exchange (DDE; see below for more details), a unilateral; exchange or a debt moratorium initiated by the sovereign on a public debt security issued or guaranteed by the sovereign or a material change of terms of the original securities to avoid a payment default even if a DDE does not occur.
- A forced redenomination of sovereign debt into a different currency if creditors are not given the option of being repaid in the original currency of issuance and on the original terms of the debt, unless that currency ceased to exist.

Source: Fitch Ratings

Sovereigns have a wide range of financial relationships with resident and non-resident entities, whether foreign suppliers of goods (such as defence equipment) or local suppliers of services (such as teachers). The sovereign IDR, however, only relates to the probability of default on debt owed to private creditors. The table above provides a list of default events that would result in the sovereign's IDR being lowered to 'D' or 'RD'.

### Traditional Payment Defaults

In the case of traditional payment defaults, once a sovereign issuer either announces its intention to default or misses a payment on a debt obligation, but which is still subject to a grace period, Fitch typically will downgrade the sovereign IDR to 'C' to indicate that a default or default-like process has begun. If the missed payment has not been made by the end of the grace period, Fitch will downgrade the sovereign IDR to 'RD'. The sovereign IDR will be moved out of 'RD' when the default has been cured, either because payment has been made, or a debt restructuring has been completed and Fitch judges the sovereign to have normalised relations with a significant majority of creditors despite any outstanding non-performing securities. In situations of protracted legal or other disputes relating to defaults where an 'RD' rating has been assigned, Fitch will determine when it is appropriate to move the rating out of default, even in circumstances in which relations with all creditors have not been normalised.

In the event that Fitch becomes aware of a default event that is consistent with the above list but that has already been cured, Fitch will record the event by placing the sovereign's rating in 'RD' before lifting the rating out of default to a level consistent with its current credit fundamentals. This approach will apply only to events of default that have occurred during the preceding three-year period, and that would have been considered as default events under Fitch's *Sovereign Rating Criteria* prevailing at the time the event occurred.

### **Members of Currency Unions and Dollarised Economies**

Fitch will treat default by a sovereign issuer that is a member a monetary union on debt issued in the currency of that union as a default on its LC IDR, while default on any other debt will be treated as a default on its FC IDR. However, for fully dollarised economies, Fitch would treat default on their dollarised debt as a default on the sovereign's FC IDR.

### **Official Sector Debt**

Although reported failure to repay debt, other than a public debt security, owed to the official sector would not be judged a sovereign default event (reflecting the opacity of financial relations between governments and the influence of political and non-financial factors), if arrears to official creditors indicate growing financial distress and/or lack of willingness to pay, the sovereign rating could be adversely affected. Moreover, official creditors may seek comparable treatment for private-creditor claims as part of any restructuring of their own claims, notably by the Paris Club of Official Creditors. Examples of official sector creditors include the World Bank Group, the IMF, other international financial institutions (IFIs), bilateral development agencies, export credit agencies and publicly owned development banks.

### **Distressed Debt Exchanges**

As mentioned above, if a rated sovereign's debt is subject to a DDE (including a unilateral exchange or debt moratorium initiated by the sovereign) or other material weakening of terms not involving an exchange into a new instrument but designed to avoid a traditional payment default, an 'RD' rating will be assigned.

Fitch will consider an exchange offer to bondholders, or a unilateral exchange or debt moratorium initiated by the sovereign to be a DDE and recorded as an 'RD' if there is a material reduction in terms vis-à-vis the original contractual terms, and the exchange (or similar transaction) is necessary to avoid a traditional payment default. These principles can also be applied to the restructuring of bank loans extended to a sovereign borrower, which will not involve an exchange offer. A material reduction in terms could be any one or a combination of the following:

- Reduction in principal amount;
- Reduction in interest or fees;
- Extension of maturity date;
- Change in currency denomination of the debt;
- Change from a cash-pay basis to pay-in-kind (PIK), discount basis or other form of non-cash payment;
- Swapping of debt for equity, hybrids or other junior instruments;
- Exchange offers or cash tenders that are accepted only if the tendering bondholder also consents to indenture amendments that materially impair the position of holders that do not tender;
- Unilateral exchange or debt moratorium initiated by the sovereign.

The assessment of whether the exchange (or similar transaction) is necessary to avoid a traditional payment default is designed to exclude situations in which sovereign issuers not in a distress situation seek to take advantage of market pricing developments, liquidity conditions or other factors to engage in routine liability management exercises. Fitch does not consider these situations as DDEs.

Proposed debt exchanges by sovereign issuers that include a rescheduling of all or a material proportion of its debt obligations to both private and official-sector creditors can meet Fitch's definition of a DDE even in situations where the proportion of debt to private creditors is relatively modest. In such cases, the second of the two tests (ie that the exchange is necessary

to avoid a traditional payment default) may be met if Fitch assesses that the restructuring was necessary to avoid a payment default on the issuer's overall debt obligations, notwithstanding the relatively modest share of debt held by private creditors.

Fitch will review the circumstances of any exchange offer and consider the impact of each of the factors above. Theoretically, an exchange could be executed to be at least neutral to existing creditors, but the likelihood is very remote for a distressed issuer.

If, in Fitch's opinion, an announced intention to make an exchange offer will constitute a DDE, the sovereign's IDR will be lowered to 'C', indicating that default is highly likely in the near term. The ratings of the securities subject to the exchange will also be lowered to 'C'.

On closing of the exchange offer and following confirmation that the exchange will be completed (for example because the minimum threshold for participation has been met), Fitch will place the IDR of the sovereign into default, specifically 'RD'. The ratings of the tendered securities will be lowered to 'D' and will remain at that level for as long as the sovereign is rated 'RD'. The ratings of eligible securities that are not tendered and continue to be serviced will remain at 'C' until the exchange is completed and then rated according to the new credit fundamentals of the sovereign.

Following completion of the DDE, the sovereign IDR will likely be lifted out of 'RD' to a rating appropriate for its prospects on a forward-looking basis shortly after the effective date of the exchange, although the IDR will likely be constrained to the low speculative-grade range. However, if the share of eligible securities not tendered in the exchange is large and the securities are non-performing, the 'RD' rating will likely be maintained until the default is cured, such as through a further exchange, or until Fitch judges the sovereign to have normalised relations with a significant majority of creditors despite any outstanding non-performing securities.

When Fitch understands that a sovereign issuer plans to exchange several debt instruments with a range of maturity dates for new debt securities as and when the existing obligations fall due, Fitch will lower the sovereign's IDR to 'RD' at the time the first of those instruments is exchanged until Fitch is satisfied of the sovereign's intention to resume regular payments on all outstanding obligations.

## Debt Relief

Fitch generally views agreed debt relief from IFIs under multilateral initiatives to restore debt sustainability as a positive development for sovereign creditworthiness and hence ratings over the longer term. However, the need for such relief will initially exert a negative influence on sovereign creditworthiness, and potentially on the rating, in the short-to-medium term as it will be treated as a restructuring event within Fitch's SRM.

## Treatment of Long-Term and Short-Term IDRs in Default

In the event of either a traditional payment default or a DDE initiated by a sovereign issuer, the assignment by Fitch of a 'RD' rating on the ST FC IDR will also result in Fitch assigning a 'RD' rating to the LT FC IDR, irrespective of whether the sovereign has defaulted on any long-term debt obligations. The same approach will apply in the event of Fitch assigning a 'RD' rating to the sovereign's ST LC IDR. This reflects the status of the LT IDR as being the benchmark rating for recording default events within Fitch's rating definitions.

Conversely, however, it will be possible for Fitch to assign a 'RD' rating to a sovereign's LT FC or LC IDRs without assigning a 'RD' rating to the ST FC or LC IDRs if no default has occurred on the sovereign's short-term debt obligations.

## Sovereign Recovery Ratings

Fitch does not assign Recovery Ratings to sovereign debt instruments. Among the factors that affect recovery rates for securities are the seniority of the instrument relative to other obligations in the capital structure (when relevant), the enterprise value of the borrowing entity and any collateral in a distress scenario. These factors are difficult to apply to sovereign securities owing to sovereigns' unique characteristics and powers. Sovereigns rarely issue subordinated or otherwise structured debt. Furthermore, creditors are likely to find it difficult to enforce rights over collateral against a sovereign in its own courts; and there is no possibility of enforcing bankruptcy or liquidation on a sovereign.

## Sovereign Rating Model

Fitch employs its SRM as the starting point for assigning the agency's sovereign ratings. The SRM generates a score calibrated to the LT FC IDR scale. It is a rating model rather than a probability of default model and incorporates a combination of historical, current and forward-looking data.

### Model Design and Derivation

The SRM has been estimated from the application of Ordinary Least Squares (OLS) to the set of economic and financial variables referenced herein for all Fitch-rated sovereigns over 2000-2019 inclusive. Variables are included in the SRM based on their sovereign credit rationale, consistency of signs (+/-) with economic theory, and guided by statistical significance. The model uses empirical data, allows for very limited judgemental analyst input (following the initial calibration), and aims to provide a transparent, coherent framework for comparing sovereigns across regions and through time. The OLS regression is re-estimated and reviewed annually to incorporate additional data into the estimation period and to test for new potential variables, ensuring that the SRM evolves in line with Fitch's rating criteria.

### Model Variables

The SRM is a multiple regression model that employs 18 variables, referenced in *Appendix 1* of this report. Fitch uses centred three-year averages (therefore incorporating Fitch's forecasts for the current year) for the more dynamic variables, such as the current account and fiscal balances, to smooth the impact of volatility on the output. The coefficients Fitch uses to determine the weights of individual variables are also referenced in *Appendix 2*.

The 18 variables employed in the SRM are derived from a range of sources, including the sovereign issuer itself, BIS, the IMF and the World Bank. This data is updated for each rating review and at least quarterly, although the timeliness of availability of certain data points can vary across regions and individual sovereigns (see *Appendix 4: Data Sources, Limitations and Reasonable Investigation*).

The SRM is structured using the four pillars of analysis outlined on the first page of this report. The weights attributed to these pillars in the model, which are determined by the model itself rather than by analytical intervention, and are subject to periodic review, are shown in the table below.

### Sovereign Analytical Pillars – SRM Weights

Analytical pillar	Macroeconomic performance, policies & prospects			
	Structural features	Public finances	External finances	
SRM weights (%)	52.8	11.1	18.2	17.9

Source: Fitch Ratings

These weights are provided for illustrative purposes only. There is no subjective judgement involved and they are not used to estimate coefficients or when estimating the model output for a given sovereign. Rather, they are derived from standardised coefficients, which are, in turn, derived from an exactly equivalent OLS regression run on standardised data. Whilst the coefficients are used to calculate the SRM output, the weights are provided as an ancillary item to aid interpretation. They indicate, intuitively, how much of the variation in predicted ratings can be explained by variation in a given variable or group of variables.

### Model Output and Application

The output of the SRM is a score that is calibrated to Fitch's long-term rating scale and corresponds linearly to a predicted LT FC IDR for the sovereign issuer (see Fitch Rating Scale table). Fitch's sovereign analysts use the SRM output as the starting point in the rating process. The SRM output template can be found in *Appendix 2* of this report. The SRM incorporates a combination of historical, current and forward-looking data (see *Appendix 1*).

### Fitch Rating Scale

LT FC IDR	IDR score
AAA	16
AA+	15
AA	14
AA-	13
A+	12
A	11
A-	10
BBB+	9
BBB	8
BBB-	7
BB+	6
BB	5
BB-	4
B+	3
B	2
B-	1
CCC+	0

Source: Fitch Ratings



## Qualitative Overlay

As Fitch recognises that no quantitative model can fully capture all the relevant influences on sovereign creditworthiness, the agency also employs a QO designed to adjust for factors that are not reflected or not fully reflected in the SRM output for any individual rating. The QO is used to provide a subjective assessment, consistent with the criteria, of key factors within these rating criteria that are not able to be fully incorporated or reflected in the SRM. The QO is a formalisation of the qualitative elements that Fitch applies in assessing sovereign creditworthiness.

The QO is predominantly forward-looking in nature, based partly on Fitch's economic and financial projections, thereby complementing the SRM, which includes a mix of historical and forward-looking data (one year of forecasts as part of three-year centred averages for certain variables). The QO comprises a rating adjustment system applied to the SRM output, with a potential notching range of +2/-2 for each of the four analytical pillars (structural features, macro, public finances and external finances) and an overall rating adjustment range of +3/-3 for each rating, except in certain circumstances as outlined below.

The rating committee decides on rating adjustments for each of the four analytical pillars, primarily reflecting factors not already captured in the SRM – see *Qualitative Overlay Factors* table in Appendix 1 – and explained further in the following corresponding sections of these criteria. Additionally, and to illustrate, a QO rating adjustment may be made to reflect any of the following, which is not an exhaustive list:

- Relevant factors/variables are not included in the SRM, because they are not quantifiable, such as geopolitical risk; or because the variable could not be incorporated into the SRM, for example because the variable is not available for all sovereigns or is not statistically significant in the estimation period but is nevertheless believed to be relevant.
- Data for certain variables are feeding into the SRM but there is uncertainty about the data or there are data gaps. Adjustments for data gaps would typically be made in the relevant analytical pillar. Adjustments for data are more likely to be negative, but in certain cases could be positive.
- The SRM assumes a defined relationship, linear in most cases, between the variables and the SRM output score but once variables move beyond a certain threshold the level of vulnerability can increase at a greater pace than indicated by the SRM. A relevant example of this phenomenon is the sovereign's general government debt ratio, in which increases in debt above certain levels can exert a greater negative impact on sovereign creditworthiness than is reflected in the SRM.
- The values feeding into the SRM for a variable are different from the likely development of the variable over the forecast horizon.

As a secondary consideration, any recommended notching takes account of the relative qualities of the issuer compared with a peer group of issuers covering both the SRM output category and the rating category (if the two are different). Although the notching range for each of the four pillars allows for +2/-2 notches to be applied, the overall maximum adjustment relative to the SRM output is capped at +3/-3, meaning that the maximum notching adjustments for each of the pillars cannot be applied simultaneously.

In certain circumstances, Fitch's sovereign rating committee may extend the range of overall notching to address the inability of the SRM to adjust rapidly to or deal with such circumstances.

These circumstances could include, but are not limited to:

- a country in a crisis situation, which could include a severe recession, banking sector crisis, constrained ability to access market financing, or recourse to external official sector financing;
- a country recovering from a crisis (as defined above);
- a country that has defaulted and been assigned a rating of 'D' or 'RD' within the past five years;

- a country that has been downgraded by at least one rating category (ie three notches) within the past five years; and
- a country displaying signs of vulnerability to future shocks.

### Conditions and Exceptions to Application of SRM and QO

The application of the QO will be subject to the following conditions and exceptions:-

- **'CCC+' and Below:** For any sovereign issuer where the proposed LT FC IDR is 'CCC+' or below, or when the sovereign rating committee decides to assign a rating of 'CCC+' or below, the committee will not utilise the SRM and QO to explain the rating as it will instead reflect Fitch's rating definitions for the 'CCC+' and below rating levels. LT FC IDRs that are rated 'CCC+' or below can be upgraded to the 'B' category or above if the sovereign rating committee decides that the definitions for ratings of 'CCC+' and below are no longer appropriate for the issuer in question. In this situation, the combination of the SRM and QO will be re-adopted to determine the LT FC IDR of the issuer. In situations when the SRM output is 'CCC+' but the committee decides that upward notching using the QO is justified, the application of the QO will be consistent with the guidance outlined above, notching up from a starting point of 'CCC+' to determine the LT FC IDR. While Fitch's rating definitions incorporate the +/- modifiers for its ratings at all levels from 'AA' to 'CCC' inclusive, our practice is not to utilise the modifiers at the 'CCC' level for sovereign issuers. Ratings at this level therefore migrate from 'B-' to 'CCC' to 'CC' and similarly in the opposite direction.
- **Temporary Migration:** Additionally, in situations when the SRM output migrates from one rating notch to another – either up or down – but the migration results in the SRM score moving into a different rating notch level by a marginal amount, the committee can decide not to adopt the new SRM output as the starting point on which to apply the QO if it is deemed likely to be a temporary deterioration or improvement. Typically, the period for such a temporary deviation from the SRM output will be limited to a maximum of two years, although the rating committee can extend this period at its judgement.
- **SRM Re-estimation:** This ability for the sovereign rating committee not to adopt the SRM output as the starting point on which to apply the QO also extends to situations when a change in the output is caused by a re-estimation of the SRM, a process that Fitch undertakes on at least an annual basis. The ability not to adopt the SRM output as the starting point would typically be invoked when the change in a country's SRM score is marginal and when it is not clear that the credit fundamentals of the country have changed materially, notwithstanding the re-estimation of the SRM.
- **Data Revisions and Limitations:** In situations when sovereigns issue revisions to existing published data, these will be reflected in updated historical and projected variables in the SRM, and the potential impact on the rating, if any, will be considered at the next rating review following a full analysis of the implications of the revision by the analytical team.

Additionally, in the event of data limitations that are potentially material to the rating outcome, Fitch will consider making an adjustment in the QO within the relevant analytical pillar; eg if there is a lack of information on external assets and liabilities, a negative notching adjustment could be made to the External Finances section of the QO. If Fitch believes that this lack of information is so significant as to render any analysis insufficiently robust to support a rating or rating action, Fitch will not assign a rating, or will withdraw an existing rating.

The table below summarises the factors that Fitch considers to determine the level of notching in the QO. In each of the analytical pillars, the qualitative judgements reflect primarily factors not already captured in the SRM. As a secondary consideration, any recommended notching takes account of the relative qualities of the issuer compared with a peer group of issuers covering both the SRM output category and the rating category (if the two are different).



## I. Structural Features

### Key Criteria Factors

Governance quality	<ul style="list-style-type: none"> <li>• Government effectiveness</li> <li>• Rule of law</li> <li>• Control of corruption</li> <li>• Voice and accountability</li> <li>• Business environment</li> </ul>
Wealth and flexibility of economy	<ul style="list-style-type: none"> <li>• GDP per capita</li> <li>• Resilience to shocks</li> <li>• Depth of financial system</li> <li>• Savings rate and openness</li> </ul>
Political stability & capacity	<ul style="list-style-type: none"> <li>• Political stability and capacity</li> <li>• Legitimacy of regime</li> <li>• Conflict/war risk</li> <li>• Debt payment record</li> <li>• Risk to economic policy</li> </ul>
Financial sector risks	<ul style="list-style-type: none"> <li>• Quality of regulatory and supervisory systems</li> <li>• Macro-financial instability risk</li> <li>• Contingent liability risk</li> <li>• Banking Sector Indicator (BSI) and Macro-Prudential Indicator (MPI)</li> </ul>

Source: Fitch Ratings

Structural features, reflected in governance quality, wealth and flexibility of the economy and political risk, carry the heaviest weight in Fitch's Sovereign Rating Criteria.

### SRM Rationale

SRM variables	Measure	Impact	Weight (%)	Coefficient
Governance indicators	Latest	Positive	20.0	0.073
GDP per capita	Latest	Positive	13.3	0.042
Share in world GDP	Latest	Positive correlation with size	12.8	0.583
Years since default or restructuring event	Latest	Negative	5.4	-2.108
Broad money supply (% of GDP)	Latest	Positive	1.3	0.175
<b>Overall weight in SRM</b>			<b>52.8</b>	

Source: Fitch Ratings

The credit rationale for the inclusion of the above variables in the SRM is as follows:

- **Governance indicators** – Governance indicators are included to capture the capacity and willingness of the authorities to mobilise resources to fund debt payments and the risk that this might be disrupted by civil unrest, political instability or conflict, as well as the effectiveness of government and institutions in managing economic activity and absorbing adverse shocks. Therefore, they are also a proxy for many intangible and difficult-to-measure factors that enhance debt tolerance. The composite governance indicator is the simple average of a sovereign's percentile ranks for the six World Bank Worldwide Governance Indicators: "Rule of Law"; "Control of Corruption"; "Government Effectiveness", "Voice and Accountability", "Regulatory Quality" and "Political Stability and Absence of Violence". Each of the World Bank governance indicators is a statistical aggregation of perceptions of various aspects of governance from a range of public- and private-sector sources. Fitch uses the World Bank indicators in the criteria because of their comprehensiveness, methodological transparency, widespread use in other cross-country studies, and completeness of coverage geographically and over time.
- **GDP per capita** – High income per head implies that labour is engaged in high-value-added activities (though this is not necessarily the case for commodity producers) and hence that the economy is less vulnerable and better able to absorb adverse shocks.

Fitch uses GDP per head both as a measure of income and as a proxy for the stock and quality of labour and capital and financial wealth and an indicator of overall development. This variable is calculated as the percentile rank of per capita GDP in US dollars at market exchange rates in the current year across all Fitch-rated sovereigns.

For example, Luxembourg has a percentile rank of 100 – it has the highest GDP per capita of all Fitch-rated sovereigns. Ethiopia has a percentile rank of 3.4 – ie 96.6% of all Fitch-rated sovereigns have a higher per-capita income than Ethiopia. The rationale for using percentile ranks is to eliminate the impact on the SRM output of the positive trend in nominal per-capita income over the medium term for most countries. A market exchange rate estimate of per-capita income is preferred to a purchasing power parity (PPP) estimate because of the time lag in the availability of PPP-based estimates, possible errors in estimates of PPP and the difficulty of forecasting PPP per-capita income.

- **Share in world GDP** – This variable captures the relatively high vulnerability of small economies. For each country in each year, it is calculated as the natural logarithm of the share of the country's GDP in world GDP, measured in US dollar terms at market exchange rates. The rationale for this variable is primarily to incorporate the impact on the rating of exposure to shocks beyond those likely to be captured by the GDP volatility variable. The smaller a country, the higher the potential impact of an idiosyncratic natural disaster or severe exogenous shock on its economy and the less domestic economic agents, including the public sector, are able to hedge against such shocks. Typically, smaller economies are also less diversified, increasing the impact from sector-specific shocks, either domestic or exogenous in origin.

For smaller economies, the low liquidity of their debt instruments can be a barrier to entering international markets and can increase the cost of cross-border risk diversification. Share in world GDP is measured in logarithms because of the non-linearity of the size effect: small countries are vulnerable, but the marginal benefit of being larger declines rapidly. About 86% of Fitch-rated sovereigns have GDP of less than 1% of world GDP, and all but three of the 61 currently Fitch-rated sovereigns with a default or restructuring event (as defined below) since 1980 have been below this threshold.

- **Years since default or restructuring event** – All else being equal, a recent episode of sovereign debt restructuring (which could include either default or non-default events) generally reveals weaknesses in a country's policy framework that allowed fiscal, economic or political conditions to develop along a trajectory culminating in the restructuring; such an event can sometimes also be a signal of a sovereign's lack of willingness to pay, which is otherwise difficult to measure directly. However, the influence on the rating of even recent episodes of restructuring can be moderated by qualitative factors in the QO (see below).

Types of restructuring events that typically have been captured within this variable include any sovereign default event under these criteria (see *Sovereign Default Events*), including where we have adequate information to assess with reasonable confidence the occurrence of such an event prior to our rating coverage, international debt relief programmes including the Highly Indebted Poor Country (HIPC) Initiative, those administered by the G20, and Paris Club restructurings. Certain situations that appear to fulfil the criteria of a restructuring event may not be captured in this variable. For example, when a sovereign bilateral lender agrees to a mutually acceptable restructuring of a debt obligation owed by another sovereign (eg, extending maturities on bilateral loans that form part of a broader trade and investment relationship) and Fitch does not assess this to be a DDE as outlined in these criteria, such an event would not be regarded as a restructuring event for the purposes of this variable.

The proximity of the default or restructuring event is a non-linear function of time since the event. It is one in the year of the event and zero if there has been no event after 1980. In the year of the event, proximity of default/restructuring deducts about 2.1 notches from the model output; for each year that elapses since the event, its impact on the rating declines exponentially such that it halves in about 4.3 years.

**Broad money supply** – The ratio of broad money to GDP is used as a proxy for the level of financial intermediation in the economy. The richer the country (measured in terms of monetary assets available in an economy), the higher the level of public debt that the economy can tolerate. In testing, the best specification of this variable in the model was in terms of natural logarithms, suggesting a non-linear relationship between money supply and creditworthiness.

## QO Rationale

### QO factors – relative to SRM data and output

- **Political stability and capacity**, including the level of political risk, the risk of fundamental regime change and/or military conflict, broader geopolitical risks, the ability of the political system to address economic and fiscal challenges and willingness to pay.
- **Financial sector risks** reflecting Fitch's assessment of the health of the banking system and the level of macro-prudential risks in the economy, as measured by Fitch's BSI and MPI rankings, as well as other relevant considerations.
- **Other structural factors** including the quality of the business environment and economic flexibility reflected in, among other factors, the ability to attract investment, the level of domestic savings, openness to international flows and the ability to respond to shocks. It will also be possible to reflect here items such as unrepresentative levels of GDP and similar issues that can affect the Structural Features variables in the SRM.

Source: Fitch Ratings

The rationale for the inclusion of these QO factors is as follows:

- **Political stability and capacity** – Political and geopolitical risks can have an important bearing on sovereign creditworthiness. A high degree of consensus on major social and economic issues is associated with stable and predictable economic policies. Conversely, in a country that is riven by divisions along the lines of income distribution, race, religion or regional differences, the government of the day may encounter numerous challenges to its authority and undermine its ability to conduct effective economic and financial policies. Account is also taken of powerful vested interests that may block essential structural reforms.
  - Geopolitical risks, meanwhile, can take many forms, including conflicts or tensions in neighbouring countries, the imposition of economic sanctions, security threats or actual occurrences and broader supranational relationships. To the extent they are relevant for an individual sovereign issuer, these factors could be reflected in notching in this area of the QO.
  - While political risk is to some extent reflected in the quantitative variables included in the SRM (notably under “Political stability and the absence of violence” in the World Bank Worldwide Governance Indicators), there are broader political risk factors that could affect sovereign creditworthiness. These would include risks that the sovereign authorities will lack the political capacity and will to address economic and fiscal challenges or to mobilise resources necessary to honour their financial obligations. There might also be cases when recent political events are not yet captured in the World Bank Worldwide Governance Indicators but are judged to exert a material impact on creditworthiness.
  - On occasion, the advent or aftermath of elections or other intense political pressures can lead to a marked detrimental shift in economic policy, such as a loosening in fiscal policy ahead of elections, or a change in the policy framework if a populist government comes to power, or policy paralysis in the event of an inconclusive election result.
  - Other political risks relating to sovereign debt service that may need to be reflected by QO adjustments within this pillar include parliamentary or congressional approval or similar processes that may be needed to enable a sovereign government to issue new debt. In the event that such approval is not

forthcoming, downward QO notching in this pillar may be appropriate to reflect increased risks to sovereign debt service.

- In relation to the “Years since default or restructuring event” SRM variable, the influence on the rating of even recent episodes of default/restructuring will be greatly moderated if Fitch judges that the event is not symptomatic of a continuing weakness in the political capacity and will of the sovereign authorities to mobilise resources to honour debt obligations. Conversely, while the SRM does factor in an impact from default/restructuring events in this way, in certain circumstances Fitch could also make an adjustment in the QO that goes beyond the standard +/-3 notch adjustment range to reflect a relatively recent event, particularly if the agency views the event as indicative of weakness in the capacity and/or willingness of the sovereign to honour its debt obligations.
- **Financial sector risks** – There are two principal risks posed to sovereign creditworthiness by the country’s domestic banking sector: macroeconomic instability and contingent liability. The recapitalisation of banking systems has historically resulted in significant increases in the government’s debt burden; this risk is typically captured in the Structural Features pillar, even though the ultimate impact is likely to fall on the sovereign’s public finances. The risks to macroeconomic stability arise from a weak banking system that amplifies rather than absorbs shocks to the economy, for example by exacerbating exchange rate over-shooting in response to an external shock due to (explicit or implicit) currency mismatches on its balance sheet. The failure of a single large bank can also result in a collapse in confidence in the system as a whole, prompting deposit and capital flight and disrupting the ability of the sovereign to finance itself in domestic and international financial markets.
- **BSI measures system strength** – An important starting point for the analysis of banking system risk in the context of these criteria is Fitch’s Bank Systemic Risk (BSR) indicators, which are updated and published at least annually. One of the BSR measures is the Banking System Indicator (BSI), which aims to measure a banking system’s standalone financial quality or strength and is a simple weighted average of bank Viability Ratings for a critical mass of a country’s banks. The typical developed-country banking system is scored ‘a’, whereas the typical EM system is in the range ‘bbb’/‘bb’/‘b’. Financially weak systems with substantial liabilities (eg indicated by a high ratio of private credit to GDP) could imply large contingent liabilities for the sovereign and hence will be a negative rating factor. Conversely, financially strong bank systems that do not represent a material contingent liability and are efficient in attracting and allocating savings to investment projects represent a positive rating factor. In the event that the BSI score is a rating category or more below the Sovereign LT FC IDR, the rating committee will consider whether downward notching should be applied in the QO.
- **Intervention can impair sovereign creditworthiness** – Sovereign intervention in the banking system typically occurs through supervision and regulation, but can also take the form of financial support, including the “socialisation” of bank liabilities so as to ensure the solvency of the system, although recent developments in the context of bank resolution regulations have reduced the propensity of sovereigns to provide direct financial support. The capacity of the sovereign to intervene in support of the banking sector without materially impairing its own creditworthiness is a function of the credibility and capacity of the central bank as a lender of last resort and the capacity of the government to absorb domestic banking and financial-sector liabilities without threatening its own solvency and financing capacity.
- **Foreign ownership typically positive** – Other indicators of banking system soundness reviewed in the sovereign rating analysis include the ratio of non-performing to total loans, capital adequacy ratio (based on Basel definition when available) and relative shares of public and foreign ownership. Qualitative judgements are also made in conjunction with Fitch’s Financial Institutions Group on the effectiveness of bank supervision and regulation. Fitch takes some

comfort from high levels of foreign ownership, which is often associated with the transfer of more sophisticated financial management and technology that reduces the risk of bank failure; also, the foreign parent rather than the sovereign is the principal source of finance in the event of distress. In contrast, publicly owned banks have historically been subject to political interference and engaged in quasi-fiscal operations that have undermined financial soundness and often required substantial fiscal resources to resolve.

- **MPI ranking** – The other BSR measure is the Macro-Prudential Indicator (MPI), which ranges from ‘3’ – high potential vulnerability to financial stress over the medium term based on trends in credit expansion, equity and property prices and real exchange rates – to ‘1’ – low likelihood (see *Appendix 3: Macro-Prudential Indicator Model*). This indicator can provide an early-warning signal of potential financial distress that, in the most adverse circumstances, could result in macroeconomic instability and/or large contingent liabilities being realised by the sovereign. The MPI measures the extent to which these indicators have increased over a given time period and the potential level of overvaluation that could lead to financial instability in the economy and liabilities for the sovereign. When the MPI score is ‘2’ or ‘3’, indicating a relatively higher likelihood of vulnerability to potential stress, a downward notching adjustment may be applied in the QO. An MPI score of ‘1’ in itself typically does not warrant a positive notching adjustment.
- **Other Structural Factors** – including, among others, the quality of the business environment, the quality of human capital, the ability to attract investment, the level of domestic savings, openness to international flows and the ability to respond to shocks. Fitch uses the United Nations’ Human Development Index to determine the quality of human capital. The quality of the business environment can be important in influencing the level of investment in the economy, both domestic and foreign, which is typically a prerequisite for sustainable economic growth. Fitch uses a range of sources, including the World Bank’s Ease of Doing Business survey, to assess the quality of the business environment. It will also be possible to reflect here items such as unrepresentative levels of GDP and similar issues that can affect the Structural Features variables in the SRM. Countries where GDP data are unrepresentative of the economy’s underlying fundamentals may consequently benefit disproportionately in the SRM score; an appropriate adjustment can be reflected here.

## II. Macroeconomic Performance, Policies and Prospects

### Key Criteria Factors

Policy framework	<ul style="list-style-type: none"> <li>Coherence and credibility</li> <li>Robustness and resilience to shocks</li> </ul>
Gross Domestic Product (GDP) growth	<ul style="list-style-type: none"> <li>Level</li> <li>Volatility and sustainability</li> </ul>
Inflation	<ul style="list-style-type: none"> <li>Level and stability</li> <li>Dollarisation/indexation</li> </ul>
Real effective exchange rate	<ul style="list-style-type: none"> <li>Consistency with policy framework</li> <li>Vulnerability of fixed/pegged regimes</li> </ul>

Source: Fitch Ratings

Record of macroeconomic stability, underpinned by a credible policy framework, has a material positive influence on sovereign creditworthiness and ratings.

### SRM Rationale

SRM variables (%)	Measure	Impact	Weight (%)	Coefficient
Real GDP growth volatility	Latest	Negative	5.5	-0.886
Consumer price inflation	3-year centred average	Negative	3.0	-0.053
Real GDP growth	3-year centred average	Positive	2.6	0.084
<b>Overall weight in SRM</b>			<b>11.1</b>	

Source: Fitch Ratings

The credit rationale for the inclusion of the above variables in the SRM is as follows:

- Real GDP growth volatility** – Macroeconomic volatility constrains savings and investment, distorts the development of the financial sector, and hinders long-term business decision-making. It also adversely affects the capacity of the sovereign (as well as the broader public and private sectors) to tolerate a given level of indebtedness. Protracted periods of economic instability render the economy and public finances much more vulnerable to shocks and hence prone to interruptions in sovereign debt service. An exponentially weighted standard deviation of historical annual percent changes in real GDP is used by Fitch to assess GDP growth volatility, such that the most recent annual percent change accounts for 15% of the volatility calculation. This means, for example, that the most recent 10 years' data account for 80% of volatility calculation and the most recent 20 years account for 96% of volatility calculation.
- Consumer price inflation** – Sovereigns underpinned by economies that have benefited from a record of low inflation and stable economic growth will tend to be rated more highly than those that have (or have experienced in the recent past) chronic high inflation and severe economic cycles. The legacy of previous episodes of high and volatile inflation can persist for several years. The longer the period that low-to-moderate inflation is sustained, the greater the confidence that it will remain so. Economies with a long history of high inflation often exhibit high degrees of indexation and dollarisation, as foreign currency becomes the chief store of value and the exchange rate the key reference price for the economy. The SRM specification for this variable has been adjusted to reduce the positive influence of persistently low inflation, which – in Fitch's view – is not necessarily positive for sovereign creditworthiness. The updated inflation variable has been set to a minimum of 2% and a maximum of 50% (the latter to reflect a threshold for hyper-inflation).
- Real GDP growth** – Economies with sustained high rates of economic growth are typically better able to absorb adverse shocks, and the volatility of public finances is correspondingly lower. In addition, the maintenance of consistent strong growth rates over an extended time period will eventually lead to a country's average income and wealth levels increasing towards those of higher rated peers, thereby enhancing creditworthiness (see *Structural Features* section).



## QO Rationale

### QO factors – relative to SRM data and output

- **Macroeconomic policy credibility and flexibility**, including coherence and robustness in terms of consistency, flexibility and credibility of monetary and fiscal policies
- **GDP growth outlook** over the medium term relative to peers
- **Macroeconomic stability** reflected in, among other factors, the level of imbalances, unemployment levels and trends, and contributions to growth of different sectors of the economy

Source: Fitch Ratings

The rationale for the inclusion of these QO factors is as follows:

- **Macroeconomic policy credibility and flexibility** – Fitch considers a credible policy framework to be one in which responsible monetary and fiscal policies work in tandem towards a sustainable long-term growth path while minimising the impact on output and inflation of adverse economic shocks. Countries that have benefited from a long period of sound macroeconomic policies are likely, other things being equal, to enjoy stable and higher non-inflationary growth, leading to higher income levels and greater resilience to shocks.
  - **Fixed or pegged exchange rates can increase vulnerability** – Sovereign debt crises have often been preceded by a currency collapse and financial crisis due to inappropriate exchange-rate policies that have failed to adjust to shocks and/or are inconsistent with other economic policies, and in particular fiscal policy. Although a fixed exchange-rate regime may be the optimal arrangement for countries with certain characteristics, the experience of economic and sovereign debt crises since the mid-1990s suggests that fixed and in particular pegged exchange-rate regimes can be especially damaging to the economy and sovereign creditworthiness if they fail. Consequently, in the rating analysis of sovereigns that operate fixed or managed exchange-rate regimes, particular attention is given to the consistency and sustainability of the macroeconomic policy framework, as well as to the robustness of the financial sector, balance-of-payments trends and the level of international reserves and other foreign assets relative to liquid foreign-currency and external liabilities.
  - **Foreign demand for domestic assets increases policy flexibility** – The greater the depth of demand for sovereign and local-currency assets, the greater the flexibility of monetary and fiscal policies in responding to adverse shocks. Shallow demand for local-currency assets is typically reflected by a high degree of dollarisation, low level of financial intermediation (measured by the ratio of private credit to GDP) and under-developed domestic capital markets. The less price-elastic the demand for local-currency assets, the weaker the capacity of the central bank to act as a credible lender of last resort to the financial sector, while the government has less scope to incur and fund large budget deficits. Countries with currencies that exhibit reserve-currency characteristics enjoy exceptionally strong financial and policy flexibility.
  - **Fiscal policy key in monetary unions** – Monetary and exchange-rate policies figure less prominently in sovereign assessments of countries allied to a currency union, such as the eurozone, or that are fully dollarised (in contrast to economies that are partially dollarised and still have a local currency). In these instances when monetary and exchange-rate policies are not under the direct control of the sovereign authorities, greater emphasis is placed on appropriate fiscal and structural adjustment policies and the competitiveness and flexibility of the economy.
  - **Dollarised economies limit monetary policy** – A large stock of foreign-currency deposits in a banking system can quickly become a drain on the system's foreign assets (including central bank international reserves) and a source of capital flight. The ratio of foreign currency to total deposits – the dollarisation ratio – is one of the relative factors within this pillar. Dollarisation and indexation of

contracts (debt as well as wages) limit the capacity of monetary and exchange rate policies to contain and manage shocks, while also reducing the scope to monetise local-currency sovereign debt obligations while containing inflationary pressures.

- **Macro data outturns may mask weakness** – While the quality of the policy framework will to some extent be reflected in the quantitative variables included in the SRM, any recent changes in policy direction will take time to be observed in the data out-turns. Also, stronger or weaker policy frameworks may not translate into materially divergent economic performance until a crisis occurs, but Fitch believes that it is important to factor such differences into its sovereign ratings throughout the cycle.
- **GDP growth outlook** – Although the SRM GDP growth variable captures an element of forward-looking analysis by incorporating one year of projections within the three-year centred average calculation, it does not take account of the medium-term growth outlook for the economy, which is relevant for macroeconomic performance and also for the future trajectory of public finances. In assessing this factor, Fitch considers the five-year outlook for GDP growth relative to both the issuer's past performance and rating category peers.
- **Macroeconomic stability** – The SRM variables do not include any specific quantitative measures of certain macroeconomic factors, such as unemployment levels or developments in sectors of the economy such as real estate that have a propensity for generating instability. While GDP volatility and inflation could provide evidence of macroeconomic imbalances or instability, Fitch will analyse other potential sources of instability as part of this qualitative assessment, including a forward-looking view on whether such imbalances could affect the sovereign's credit profile.

### III. Public Finances

#### Key Criteria Factors

Government debt	<ul style="list-style-type: none"> <li>Gross general government debt/GDP</li> <li>Debt tolerance</li> <li>Maturity, interest rate and currency mix</li> <li>Financing flexibility and market access</li> <li>Fiscal assets</li> <li>Contingent liabilities</li> </ul>
Fiscal balance	<ul style="list-style-type: none"> <li>General government balance/GDP</li> <li>Budgetary flexibility/rigidity</li> <li>Breadth of revenue base</li> </ul>
Debt dynamics	<ul style="list-style-type: none"> <li>Sustainability of public debt</li> <li>Scenario analysis based on forecasts for primary balance, GDP growth and interest costs</li> </ul>
Fiscal policy	<ul style="list-style-type: none"> <li>Consistency, prudence and transparency of fiscal rules and framework</li> </ul>

Source: Fitch Ratings

The level, structure and projected trajectory of public debt combined with the consistency and prudence of fiscal policy are the main factors in the analysis of public finances.

#### SRM Rationale

SRM variables	Measure	Impact	Weight (%)	Coefficient
Gross general govt debt/GDP	3-year centred avg.	Negative	8.3	-0.022
General govt interest (% of revs)	3-year centred avg.	Negative	4.9	-0.047
General govt fiscal bal./GDP	3-year centred avg.	Directional	2.5	0.047
FC govt debt/gross govt debt (%)	3-year centred avg.	Negative	2.5	-0.007
<b>Overall weight in SRM</b>			<b>18.2</b>	

Source: Fitch Ratings

The credit rationale for the inclusion of the above variables in the SRM is as follows:

- Gross general government debt to GDP** – A heavy government debt burden will, other things being equal, be associated with a higher risk of default. However, the level at which the public debt burden ceases to be sustainable varies across countries and over time, and hence there is no simple linear relationship between the stock of government debt relative to GDP on one side and sovereign creditworthiness and ratings on the other. This reflects the reality that more highly rated countries with developed capital markets usually have higher debt capacity than countries with more limited financing options. Debt tolerance is therefore also typically higher for developed-economy countries at higher rating levels than for less developed countries.
- The principal measure of sovereign indebtedness that Fitch has adopted is gross general government debt relative to GDP. In Fitch's opinion, gross government debt is the most relevant and comprehensive measure of sovereign indebtedness and the one that best lends itself to cross-sovereign comparative analysis. The general government's net debt position (gross general government debt less its deposits with financial institutions) is also an important indicator of indebtedness and can be more closely aligned with the government's ongoing budgetary financing and liquidity needs.

For a number of sovereigns, general government data are not available or are only published with long time lags. In those cases, Fitch may decide to use central government data if it believes that the central government data are a sufficiently close proxy to the general government. This applies to all public finance variables in the SRM.
- General government interest payments to government revenue** – The cost of servicing government debt (expressed as a percentage of revenues) is an important consideration in the context of the public finances. The cost of borrowing is one of the key variables assessed and projected as part of Fitch's debt sustainability analysis and helps to determine the future trajectory of government debt. High and/or rising interest burdens

erode sovereign solvency and limit the sovereign's flexibility in the management of public finances, potentially constraining its ability to implement counter-cyclical fiscal policy to provide stimulus during periods of macroeconomic weakness.

- **General government fiscal balance to GDP** – The general government fiscal balance reflects the net balance of revenues accrued and expenditures incurred on an annual basis. Typically, sustained high fiscal deficits (as a percentage of GDP) will tend to be indicative of loose fiscal policy management and, other things being equal, are likely to lead to rising indebtedness.
- **Foreign-currency government debt to total government debt** – Foreign currency-denominated (or indexed) debt, expressed as a percentage of gross general government debt, can be thought of as capturing what is known as “original sin” – the limited ability of the government to borrow at longer maturities in its own currency. This issue is also related to reserve-currency flexibility (see *External Finances* section): governments located in large and sophisticated economies with a history of relative macroeconomic (and especially price) stability can typically raise funds predominantly in their own currency, at home as well as abroad. For fully dollarised economies, this ratio is always set at 100%.

Governments that borrow substantially in foreign currency create currency risk on their balance sheets as revenues (usually from domestic taxes) are typically denominated in local currency. In the event of a devaluation or depreciation of the local currency, a sovereign will typically see its foreign-currency-denominated debt increase as a share of GDP and revenues. Furthermore, this currency risk can materialise at – and exacerbate – times of economic and financial stress as this is often when devaluations occur. The presence of “original sin” can even precipitate or accelerate crises or stress if lenders fearing future problems become reluctant to roll over debt. In addition, sovereign borrowers in foreign currency are usually more reliant on foreign investors, who may be a less stable source of funding than domestic investors with a “home bias”, and therefore are more vulnerable to sudden stops in capital flows. In contrast, reserve-currency flexibility confers huge advantages in terms of fiscal and monetary policy flexibility.

## QO Rationale

### QO factors – relative to SRM data and output

- **Fiscal financing flexibility**, including the record of market access, ability to issue at sustainable yields and long maturities in domestic currency, the depth of local capital markets, access to other potential sources of financing (eg multilateral), expected ability to issue in a stress scenario, presence of large sovereign deposits or other resources
- **Public debt sustainability**, including projected peak and trajectory of debt dynamics, taking into consideration the credibility of the fiscal framework, the cost of financing (including access to concessional funding) and ageing-related pressure on the primary balance, sovereign assets, and the extent and nature of contingent liabilities that could crystallise on the sovereign balance sheet
- **Fiscal structure**, focusing on the breadth of the revenue base, the concentration/diversification of revenue sources and the level of budgetary rigidity in terms of current spending

Source: Fitch Ratings

The rationale for the inclusion of these QO factors is as follows:

- **Fiscal financing flexibility**
  - **Market access record and ability to issue in a stress scenario** – During periods of market stress or dislocation, the ability of a sovereign issuer to retain market access and to fund itself at sustainable yields becomes an extremely important consideration. This means that the analysis of a sovereign's public finances – carrying a nominal weight of 18.0% in the SRM – becomes materially more important during periods of market dislocation. If crisis conditions and related volatility are expected to continue for a protracted period, the question of market access assumes even greater importance within the analysis. Sovereigns that have lost market access in previous periods of stress may be subject to a negative notching adjustment in the QO, although such lost market access could

alternatively be reflected in an adjustment in the *External Finances* section of the QO to reflect a broader loss of external market access than just the Sovereign. In those circumstances, only one adjustment would be made to avoid double-counting.

- **Debt structure and depth of capital markets** – Fitch examines the maturity, interest rate and currency composition of government debt, which informs its judgement on the extent of market-based risk faced by the government. A sovereign can gain additional financing flexibility and an ability to sustain relatively high levels of debt if it has a well-regulated, liquid domestic government debt market that is underpinned by a broad range of investors (local institutional investors such as pension and other savings funds), willing and able to provide a range of financing alternatives (including long-maturity and fixed-rate funding), and is resilient to all but extreme economic and political shocks. A government debt stock that is characterised by long maturity and duration materially reduces refinancing and interest rate risks. Similarly, extensive hedging of foreign exchange and interest rate exposures in relation to a sovereign's debt structure can mitigate these risks. Conversely, a prevalence of short-term or unhedged debt renders the government balance sheet much more vulnerable to market-based risk.

The availability of concessional financing (see *Relationships with official sector creditors* below) would also be considered in the context of our debt structure analysis.

- **Sovereign deposits and other fiscal assets** – Fitch also takes into account the government's liquid financial assets, such as unencumbered deposits, which could be drawn down to finance its budget deficit in the event of difficult market access. When assets are material and Fitch is able to establish that they are liquid, unencumbered and can be used to refinance or repay government debt, their presence can result in positive QO notching.
- **Relationships with official sector creditors** – Relations with the international community, including with IFIs (ie the IMF and development banks) and major global or regional powers, may also influence the assessment of financing flexibility. Unwillingness for political or other reasons to secure policy-conditional financing from the IMF and other IFIs reduces the sovereign's financing options in a distress scenario.

Conversely, a well-designed, credible and internationally funded economic programme can stabilise local financial markets, normalise the flow of private capital, and lay the basis for sustained recovery. Nonetheless, emergency financial support from the IFIs is a sign of distress, and it is likely that the sovereign credit profile and rating will have deteriorated over the months preceding receipt of external assistance.

- **Public debt sustainability**

- **Trajectory and peak of public debt dynamics** – The sustainability of a given level of government debt is also a function of its path over time. When debt levels are rising significantly, particularly if there is weak credibility that fiscal policies will be sufficient to adjust the primary budget balance (ie the budget balance excluding net interest payments) to establish and sustain the debt ratio on a downward path over the medium to long term, the SRM variable for the current level of general government debt/GDP may not fully capture the risks to long-run solvency of the government. On occasion, a very high level of government debt/GDP may warrant a negative adjustment in the QO if, for example, it is judged that the SRM does not capture sufficiently the non-linearity associated with risks surrounding a modest increase in the debt ratio that could be better tolerated if the debt level were lower.
- Fitch's proprietary Debt Dynamics Model (DDM) is usually employed to assist the rating committee in judging the sustainability of a given debt level and current fiscal policy settings. The DDM output is a projection for government

debt/GDP typically across a five-year horizon. This is based on assumptions, also across a five-year horizon, for the input variables – general government primary balance, general government interest payments, GDP deflator, real GDP growth, the exchange rate and stock flow adjustments. Fitch may extend DDM projections beyond five years when considered relevant for the rating assessment.

- Several alternative projections for government debt/GDP are produced when running the DDM, based on alternative sets of input assumptions. This provides sensitivity analysis of the output with respect to shocks (such as fiscal slippage, increase in the cost of borrowing, economic recession or currency depreciation) in the input variables, relative to the baseline assumptions.
- In determining whether to apply a QO adjustment, the rating committee will consider the trajectory of general government debt/GDP according to baseline input assumptions (for example, summarised by the peak and the overall percentage point change in general government debt/GDP over the projection period), the likelihood of this outcome, the results of the sensitivity analysis and the government's record on fiscal policy.
- Fitch does not employ its DDM for countries with negligible or zero public debt burdens, as it would not produce any meaningful output on which to base its analysis of the public finances. Additionally, Fitch may decide not to employ its DDM for sovereign issuers in distress situations when the medium-term trajectory of the debt profile is less relevant than near-term financing and repayment capacity considerations.
- **Government assets** – Fitch will take into account the sovereign's financial assets, such as deposits or portfolio investments in sovereign wealth funds, to the extent that its net debt and overall solvency position is materially stronger than indicated by its gross debt position (which feeds into the SRM). Fitch does not typically consider illiquid assets, including government stakes in state-owned enterprises, as potentially sources of liquidity for debt service in the near term even if they are large, as they tend to be difficult to liquidate in a crisis scenario. However, in some cases they can be liquidated over time to support solvency and debt sustainability.
- **Size and potential crystallisation of contingent liabilities** – Contingent liabilities for the government are myriad, ranging from explicit guarantees on other entities' debt to future liabilities arising from unfunded pension commitments and potential support for the domestic banking sector or the private sector more generally. Analysis of contingent liabilities is hampered by a lack of comprehensive and consistent data across countries. In assessing the extent to which contingent liabilities affect the sovereign's creditworthiness, Fitch takes into account both the size of the explicit and (when measurable) implicit contingent liabilities and the likelihood of them crystallising on the sovereign's balance sheet.
- In Fitch's view, debt measures that include the liabilities of the broader public sector, such as state-owned or controlled entities, can obscure the underlying state of government finances and the analysis of any fiscal adjustment that may be required to underpin confidence in the long-term solvency of the sovereign. Consequently, Fitch does generally not assess the debt obligations of state-owned enterprises as sovereign debt liabilities for the purpose of calculating the sovereign's gross general government debt stock, even though their credit profile may be closely linked to that of the sovereign.
- That said, Fitch may include the financial liabilities of a public-sector entity as part of government debt if there is an explicit and full guarantee from the government for those liabilities and Fitch judges that the guarantee is almost certain to be called, but these situations are likely to be extremely rare.



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- Fitch will also take account of the potential adverse impact on budget deficits and debt levels from adverse demographic trends such as an ageing population and rising old age dependency ratio (population 65 years and older relative to those of working age). Fitch will reflect demographic pressures in ratings as a product of their proximity and severity, taking account of the likelihood of reforms to mitigate their effects.
  - Fitch also takes into account other sovereign financial obligations, which in some cases can include obligations under public-private partnerships (eg guarantee or grantor payments), but these would typically only be included in our sovereign debt ratio calculations when there is a clear legal obligation and they are deemed likely to crystallise.
  - **Fiscal structure** – The degree of budgetary rigidity is also a factor that influences Fitch’s analysis of the vulnerability of public finances to shocks, as well as the sustainability of a given debt burden. This analysis focuses on the breadth of the revenue base, the concentration/diversification of revenue sources, and the level of budgetary rigidity in terms of current spending.

## IV. External Finances

### Key Criteria Factors

Balance of payments	<ul style="list-style-type: none"> <li>Current account balance</li> <li>Commodity or sector dependence</li> <li>Structure and volatility of capital flows</li> <li>External debt service</li> </ul>
External balance sheet	<ul style="list-style-type: none"> <li>Sustainability of external debt</li> <li>Stock of external assets and liabilities</li> <li>Net foreign asset position</li> <li>Focus on net rather than gross external debt</li> <li>Maturity and currency structure</li> <li>Official sector vs market debt</li> </ul>
External liquidity	<ul style="list-style-type: none"> <li>International liquidity ratio</li> <li>Willingness of non-residents to extend credit and purchase domestic assets</li> <li>Reserve-currency flexibility</li> </ul>

Source: Fitch Ratings

The composition and stock of foreign assets and liabilities, as well as the capacity of the economy to generate foreign exchange, are taken into account in assessing external finances.

### SRM Rationale

SRM variables	Measure	Impact	Weight (%)	Coefficient
Reserve-currency flexibility	Latest	Positive	7.6	0.542
Sovereign net foreign assets (% of GDP)	3-year centred avg.	Positive	7.1	0.012
Commodity dependence	Latest	Negative	1.1	-0.004
Foreign-exchange reserves (months of CXP) <sup>a</sup>	Latest	Positive	1.5	0.032
External interest service (% of CXR)	3-year centred avg.	Negative	0.4	-0.006
Current account balance + foreign direct investment (% of GDP)	3-year centred avg.	Directional	0.1	0.002
<b>Overall weight in SRM</b>			<b>17.9</b>	

<sup>a</sup> Only for countries without RCF

Source: Fitch Ratings

The credit rationale for the inclusion of the above variables in the SRM is as follows:

- Reserve-currency flexibility** – The variable for RCF captures the reality that countries whose currencies have a significant role in global official foreign-exchange reserve portfolios are less likely to experience funding stress, reflecting stable demand for assets denominated in their currency. For countries (such as the US) with exceptionally strong reserve-currency flexibility, these assets tend to be a destination for safe-haven capital flows in times of market stress. RCF benefits fiscal as well as external financing flexibility as the majority of reserve assets are government bonds and RCF therefore tends to increase external demand for a country's sovereign debt, but Fitch categorises the variable in its External Finances section of the SRM. The RCF indicator is based on hard data (from the IMF COFER database) so as to avoid subjective judgements.<sup>1</sup>
- Sovereign net foreign assets (SNFAs)** – A measure of the government's financial position with respect to the rest of the world is the net foreign asset/debt position of the sovereign. Sovereign net foreign assets are defined as official central bank foreign-exchange reserves plus other sovereign external assets less sovereign external debt. Other sovereign external assets include sovereign-controlled external assets (for

<sup>1</sup> In assessing reserve-currency characteristics, Fitch uses data from the IMF's COFER database (updated quarterly with a four-month lag) to determine the share of currencies in global reserve portfolios. This currently includes eight currencies: the US dollar, euro, yen, pound, Canadian dollar, Australian dollar, the Swiss franc and the Chinese yuan. Fitch gives each country in the eurozone the same RCF score in the SRM (which only includes hard data), but makes adjustment in the QO to recognise that not all countries in the eurozone have the same degree of RCF. The agency does not attribute RCF to countries that are simply dollarised or euroised rather than being members of currency areas with benefits, such as access to central bank liquidity.

example held by sovereign wealth funds or public pension funds) that are sufficiently liquid and could support fiscal and current account funding. Such equity, debt or other assets would normally be included only if data on holdings over time are available from official sources or can reasonably be estimated by Fitch. Sovereign external debt would include liabilities held by non-residents issued by the government, the central bank and other sovereign entities (including sovereign wealth funds (SWF)).

- **Commodity dependence** – The greater the reliance on commodities for export receipts, the greater the vulnerability to terms-of-trade or other shocks and, other things being equal, the weaker is sovereign creditworthiness. This is particularly the case when the country depends mainly on a single commodity (or service such as tourism) rather than a basket of commodities that offers more diversification. This variable is calculated as the proportion of current external receipts that are non-manufactured goods. Following the World Bank definition, in which such data are available, Fitch uses Standard International Trade Classification (SITC) Revision 3 data and we define manufactured goods as categories 5 (chemicals) plus 6 (basic manufactures, excluding 68 - non-ferrous metals), 7 (machinery & transport equipment), and 8 (miscellaneous manufactured articles). When such data are available, re-exports are excluded from the calculation for non-manufactured goods exports in order to focus on commodity endowments.
- **Foreign-exchange reserves** – The level of international foreign-exchange reserves accumulated by the country's central bank represents an important buffer or measure of resilience to shocks for countries that do not benefit from RCF. Expressed as the number of months of cover of import payments, this variable highlights the extent to which the economy can continue to finance its imports in the absence of access to external funding. It is also instructive with respect to assessing a country's ability to meet its external debt service in foreign currency. In terms of the country's exchange rate, the level of international reserves can also be an important factor in determining exchange rate policy, as managed or pegged exchange rates will require a certain level of foreign-exchange reserves to be credible.
- **External interest service** – Substantial external debt servicing and refinancing needs increase the vulnerability of the balance of payments and economy to external shocks, such as episodes of volatility in international capital markets. They may also imply a high or costly external debt burden and that the economy will require a surplus on its trade in goods and (non-factor) services to service its debt. Fitch also assesses the sustainability of the external debt burden through the debt service ratio (repayments of principal on medium- and long-term external debt plus gross interest payments on all external debt relative to Current External Receipts (CXR)).
- **Current account balance + foreign direct investment** – A large current account deficit (relative to the size of the economy and CXR) can be a source of risk to macroeconomic stability. This is particularly the case if it is financed by potentially volatile capital flows, such as portfolio capital and short-term debt, and international borrowing that can lead to a rising external debt burden rather than equity foreign direct investment (FDI). A "sudden stop" in financing for a current account deficit can precipitate a currency devaluation or recession, which might have a negative impact on creditworthiness. The current account of the balance of payments is a record of a country's current transactions with non-residents. FDI is typically a less risky form of financing as it is equity (rather than debt) or inter-company loans (which are typically rolled over) and is often associated with investment that increases a country's productive capacity rather than consumption.
- Fitch examines the underlying drivers and main components of the current account (such as exports and imports of goods and services, income payments and private transfers including remittances) to identify strengths and weaknesses. When remittances are an important source of external receipts, Fitch will assess their volatility and potential vulnerability to shocks. It will also consider the current account balance from the perspective of national savings and investment balances, competitiveness, and whether a current account deficit reflects public- or private-sector deficits.

## QO Rationale

### QO factors – relative to SRM data and output

- **External financing flexibility**, reflecting the resilience and range of external financing sources for the economy, eg record of market access by domestic borrowers in international markets at sustainable yields and long maturities, access to other sources of external financing (including assets held in sovereign wealth funds), availability of explicit or implicit guarantees or other forms of support by foreign governments or multilateral institutions and the liquidity position
- **External debt sustainability**, reflecting the extent of any external imbalances that may have developed and the level, trend and structure of external debt and assets
- **Vulnerability to shocks**, reflecting the potential for events to crystallise weaknesses in the structure of external finances

Source: Fitch Ratings

The rationale for the inclusion of these QO factors is as follows:

- **External financing flexibility**
  - **Record of market access** – Fitch assesses the record of market access by a country's borrowers in international markets as a qualitative indicator of the resilience of its external debt service capacity, particularly at times of severe stress. It will consider whether the yield, maturity, currency and holders of external borrowing give rise to or indicate vulnerability to sustained market access. It will also consider the potential availability of alternative sources of financing such as from multilateral institutions. When a country (either the sovereign and/or parts of the private sector) has lost market access in the past or is judged to have relatively weak financing flexibility, Fitch makes an adjustment in the QO. This is particularly the case for countries in the eurozone, which benefit from the common eurozone RCF in the SRM. Fitch will consider potential downward notching in situations in which the sovereign has limited or no market access, although the propensity to notch down for this reason will be lower for low non-investment-grade sovereigns, where market access may naturally be more limited.
  - **Resilience of external financing flows** – For those countries with managed exchange rate regimes and which are already heavily indebted (and hence likely to be credit constrained), Fitch will put additional emphasis in its rating analysis on the resilience of external financing flows (eg the likelihood of policy-conditional funding from the IFIs) and whether ex ante external financing needs are likely to be met. The availability of explicit or implicit guarantees or other forms of support by foreign governments or multilateral institutions will also be considered here. Moreover, previous episodes of private capital flight will weigh negatively on the rating analysis.
  - **International liquidity ratio** – A good measure of an economy's vulnerability to external financing shocks arising from maturity mismatches on its external balance sheet is Fitch's International Liquidity Ratio (ILR). The ILR expresses the stock of the banking system's liquid foreign assets (including the central bank international reserves) relative to liquid foreign liabilities, including non-resident holdings of local-currency debt irrespective of maturity, as well as external debt with a residual maturity of less than one year. An ILR of greater than '1' (expressed in Fitch sovereign credit research as 100%) implies that the stock of short-term and liquid external liabilities is exceeded by the stock of short-term and liquid foreign assets, providing a cushion against temporary closure of international capital markets.
  - **Sovereign wealth funds** – Fitch can make an adjustment in its QO when it considers external assets held by SWF or pension funds to be sufficiently large and liquid to provide a benefit to external financing flexibility beyond that captured in the reserve coverage variable, or when insufficient data prevent their incorporation

in the SNFA variable, but Fitch is able to make an acceptable approximation of the size of the assets.

- **External debt sustainability**

- **External solvency** – A heavy external debt burden will, other things being equal, be associated with a greater risk of default, balance-of-payments crisis or exchange rate crisis. However, what constitutes a sustainable external debt burden varies across countries and over time, and hence there is no simple linear relationship between it and sovereign creditworthiness and ratings (this is why it is not statistically significant and not included in the SRM). Nonetheless, Fitch believes it is an important factor affecting creditworthiness so includes it in the QO.
- **Net external debt** – A principal measure of external solvency is based on the concept of net external debt (ie the difference between gross external debt and residents' debt claims on non-residents) relative to GDP and CXR. The emphasis on net rather than gross measures of external debt is because as economies become more internationalised, the stock of foreign assets and liabilities, including debt, may increase. As such, high and rising gross external debt does not necessarily imply a deterioration in the country's overall external position if matched by a corresponding increase in foreign assets. Fitch also looks at the country's net international investment position, which includes equity as well as debt investments.
- **External debt sustainability factors** – As well as the level of net external debt, Fitch will consider its dynamics, drivers and structure. A rapidly rising net external debt ratio poses more risks than a stable one, particularly if trends in the current account or its financing do not suggest a stabilisation on current policies or in the foreseeable future. Fitch can make an adjustment in its QO when large sovereign external assets, for example in SWFs or pension funds, provide a level of confidence on external debt sustainability beyond what is captured in the SNFA variable.

- **Vulnerability to shocks**

- **Balance-sheet structure can increase vulnerability** – The structure of the country's external balance sheet in terms of its currency, maturity and distribution by sector of the economy or the concentration or exposures of its creditors can make it more susceptible and vulnerable to shocks.
- **Exogenous shocks** – Adverse shocks to key industries (not captured already in commodity dependence), trade partners, creditors, capital markets or unforeseen events can affect the resilience of a country's balance of payments and capacity to meet its external debt service obligations. If these are material and not captured elsewhere in its analytical framework, Fitch will make an adjustment in the QO to reflect their impact or risk.

## Sovereign FC and LC Ratings

Fitch assigns LT FC and LC IDRs to sovereigns and ratings to specific debt instruments issued by sovereigns according to its published rating definitions.

### Local-Currency vs Foreign-Currency IDRs

In Fitch's view, the LC and FC credit profiles for any given sovereign are typically indistinguishable at investment-grade level, ie 'BBB-' and above. Consequently, subject to the guidance below, we typically expect to equalise LC and FC IDRs and associated debt obligation ratings for investment-grade sovereigns. For non-investment-grade sovereigns, the potential for divergent credit profiles is greater, particularly for sovereigns that are in or approaching distress, ie at the 'CCC+' level and below.

The table below summarises the range of potential relationships between the LC and FC ratings assigned to sovereign issuers.

### Local-Currency vs. Foreign-Currency Sovereign Ratings – Summary

- LC rating typically equal to the FC rating
- LC rating could be 1-2 notches higher in certain circumstances (see table below)
- FC rating **rarely** could be higher than LC rating
- Notching (in either direction) can increase in distress/default situations, particularly when it is clear that FC will likely default without LC defaulting or vice-versa

Analytical factor	Key/ supporting	LC = FC	LC > FC	LC < FC
Existing and expected future public finance fundamentals relative to external finance fundamentals	Key	Average/weak	Strong	Exceptionally weak
Previous treatment of LC and FC creditors	Key	No previous preferential treatment of LC	Previous preferential treatment of LC	Previous preferential treatment of FC
Domestic capital market/banking sector	Supporting	Shallow/illiquid/short maturities/expensive	Deep/liquid/long maturities/affordable	Shallow/Illiquid
Inflation	Supporting	Volatile/indexation	Low/stable	High/volatile
Foreign-exchange regime	Supporting	Currency board/peg/currency union/dollarised	Free float/own currency	n.a.
LC vs FC debt burdens	Supporting	-	Low or neutral LC burden vs FC debt	Heavy LC debt burden vs FC debt

Source: Fitch Ratings

### Factors Affecting LC vs. FC Notching

As indicated above, the factors that have an influence on the level of notching, if any, of the LC IDR relative to the FC IDR fall into the following broad categories. These particularly apply in situations in which the primary constraint on the sovereign ratings stems from vulnerabilities in external finances or when there is a record of the sovereign extending preferential treatment to LC creditors.

- **Strong existing and expected public finance fundamentals** relative to external finance fundamentals is a key factor supporting notching of an LC IDR above the FC IDR.



- **Previous preferential treatment of LC or FC debt** in terms of the sovereign's debt repayment record or an otherwise strong rationale for either LC or FC creditors to be preferred is a key factor.
- **An established domestic capital market** that is an ample and reliable source of fiscal funding in local currency at relatively low cost and medium-to-long maturities is a supporting factor in notching an LC IDR above the FC IDR.
- **An established record of low and stable inflation**, reflected in the absence of inflation indexation and relatively high levels of monetisation, supports monetary flexibility and hence is a supporting factor in notching the LC IDR above the FC IDR.
- **The degree of flexibility a sovereign maintains in managing its exchange rate** may affect the notching of its LC IDR. Sovereigns with a currency board arrangement, that are members of a common currency area or use the currency of another country, for example, would receive no LC IDR uplift. Freely floating, own-currency regimes, meanwhile would represent a supporting factor in notching the LC IDR above the FC IDR.
- **LC v FC debt burdens** will influence the extent to which either LC or FC IDRs can be notched higher than each other. A proportionately higher LC debt burden compared with the FC debt burden will tend to lead to lower notching for the LC IDR and vice-versa. This would be a supporting factor.

## Extent of Potential Notching

### LC vs. FC Notching

LC IDR vs. FC IDR	Rationale/conditionality
LC IDR = FC IDR	Baseline position
LC IDR +1 notch	Either or both of the <b>key factors</b> are present
LC IDR +2 notches or more	Rarely – would expect either/both of the <b>key factors</b> and a majority of <b>supporting factors to be present</b> or in distress/default situations where we judge it likely that FC debt will default but LC debt will continue to perform
LC IDR –1 notch	Rarely, when LC debt burden is much higher than FC debt and/or FC creditors have been preferred to LC creditors previously. Also, would typically expect domestic capital markets to be shallow/illiquid and inflation high/volatile.

Source: Fitch Ratings

Other considerations within the criteria in the context of assigning LC and FC ratings are as follow:

**Ability to default selectively** – Compared with non-sovereign entities that are subject to the bankruptcy and legal regimes in the jurisdiction(s) in which they operate, the sovereign has much greater scope to default selectively. The most relevant distinction from a sovereign credit perspective is between foreign and local obligations in terms of currency denomination of debt (see above), though the market in which it is issued and the predominance of holder (ie resident versus non-resident) are also factors that can result in differences in the ratings assigned to debt instruments in the same currency. Consequently, though the same obligor, there can be a rating distinction between debt denominated and payable in foreign and local currency.

**Dual currency structures** – This is an important consideration since the currency of payment can differ from the currency in which the bond is denominated. If, for example, the bond is denominated in local currency but repayment is specified as being in foreign currency, a foreign-currency rating will be assigned to the bond. This is because even if the bond is denominated in local currency, the sovereign's capacity (and willingness) to make payments in foreign currency is the same as if the debt were also denominated in foreign currency, even though the market exchange rate risk is borne by the bondholder. Similarly, debt issued in local capital markets but denominated and payable in foreign currency is assigned a foreign-currency rating. Conversely, bonds denominated in foreign currency but repayable in local currency are assigned a local-currency rating, typically aligned with the LC IDR.

**Sovereign access to foreign currency dependent on economy** – Sovereigns typically receive nearly all of their income (taxes, charges) in local currency; the exceptions are commodity producers and dollarised economies. Consequently, for external debt servicing they must purchase foreign currency in the foreign-exchange market (or from the central bank) or borrow it. The government's access to foreign currency therefore depends on the economy's (rather than the sovereign's) capacity to generate foreign currency and the willingness of market participants to exchange it for local currency – and, if unwilling, the government's capacity to expropriate it.

**LC debt not immune to default** – In contrast, not only are tax and other receipts in local currency, but most sovereign governments through the central bank have ultimate control over the domestic money supply and in theory could print currency to fund themselves, albeit not indefinitely and at the cost of high inflation. Although many sovereigns have preferential access to domestic capital markets, which can be a more reliable source of funding than international capital markets, especially during periods of distress, it remains entirely feasible for sovereigns to default on local-currency debt, and there have been numerous examples of such defaults in the past two decades (see [Sovereign 2019 Transition and Default Study](#)).

## Sovereign Short-Term Ratings

Similar to other Corporate Finance ratings, Fitch's ST IDRs or obligation ratings for sovereigns are based in all cases on the short-term vulnerability to default of the rated entity or security and relate to the capacity to meet financial obligations in accordance with the documentation governing the relevant obligation, using a scale between 'F1+' and 'D'. Short-term ratings are assigned to obligations whose initial maturity is viewed as short term based on market convention.

### Short-Term Local- and Foreign-Currency Ratings

ST IDRs and issuance ratings are relevant for and assigned to debt with a contractual maturity of 13 months or less. Both ST LC and FC IDRs are rated on Fitch's short-term rating scale.

### Mapping from Long-Term to Short-Term Ratings

For sovereigns, ST ratings are determined from LT ratings according to Fitch's standard rating correspondence table. ST FC IDRs are determined from LT FC IDRs, and ST LC IDRs are determined from LT LC IDRs. The factors that are relevant for differentials between LC and FC LT ratings are also often relevant for ST ratings, so it does not necessarily make sense to always equalise FC and LC ST ratings.

Fitch would not as a matter of course rate all ST LC IDRs at 'F1+' for the same reason that it does not rate all LT LC IDRs at 'AAA': sovereigns can and do default on local-currency debt<sup>2</sup>.

The rating correspondence table in the sidebar margin provides two possible options for ST ratings at five LT rating levels: 'A+' (to 'F1' or 'F1+'), 'A' (to 'F1' or 'F1+'), 'A-' (to 'F2' or 'F1'), 'BBB+' (to 'F2' or 'F1') and 'BBB' (to 'F3' or 'F2'). According to Fitch Rating Definitions, the Fitch Rating Correspondence Table is "a guide only and variations from this correspondence will occur"<sup>3</sup>. However, Fitch would expect variations to be rare in the case of sovereign ratings.

In order to foster transparency, predictability and consistency, Fitch has introduced some simple guidelines for the 'mapping' from LT to ST ratings when there is this option, set out below.

### Mapping for Local-Currency Ratings

Fitch will choose the higher of the two options for all ST LC ratings.

ST LC ratings are inherently about liquidity and financing flexibility. A sovereign's powers of money creation and capacity to ensure preferential market access (for example through regulation and "financial repression") mean its financing flexibility and short-term creditworthiness will typically be high relative to other entities (such as banks and corporates) at similar LT LC IDRs.

### Rating Correspondence Table

Long-term rating	Short-term rating
AAA	F1+
AA+	F1+
AA	F1+
AA-	F1+
A+	F1 or F1+
A	F1 or F1+
A-	F2 or F1
BBB+	F2 or F1
BBB	F3 or F2
BBB-	F3
BB+	B
BB	B
BB-	B
B+	B
B	B
B-	B
CCC+	C
CCC	C
CCC-	C
CC	C
C	C
RD/D	RD/D

Source: Fitch Ratings

<sup>2</sup> Even if a sovereign has its own currency and a compliant central bank and could print enough money to service its debts, it might not do so as hyperinflation is a costly option.

### Mapping for Foreign-Currency Ratings

Fitch will choose the higher of the two options, if:

- The sovereign has an RCF score greater than zero. Countries with reserve currencies enjoy comparatively strong financial and policy flexibility and the authorities would be able to exchange local currency for other major currencies to meet any FX debt service due; or
- Fitch assesses that the sovereign has a robust international liquidity position. The main indicator that we will use to make that assessment is the Fitch International Liquidity Ratio (ILR). We will typically assess the liquidity position as sufficiently robust if the ratio is at least 100% for the current year. This implies that the stock of liquid external assets exceeds the stock of short-term external liabilities, providing confidence about the sovereign's ability to meet its external payment obligations even in the event of a temporary closure of international capital markets.

Otherwise, we will choose the lower of the two options.

Fitch may also take into account other indicators in its assessment of the robustness of a country's international liquidity position. This would particularly be the case if the liquidity ratio was close to 100% or there were gaps in the data. For example, a sovereign rating committee might decide to affirm a country's ST FC IDR if its liquidity ratio moved just above or just below the 100% mark from one rating review to the next (rather than upgrade or downgrade it), particularly if the change was expected to be temporary, for example owing to an unusually heavy/light amortisation schedule that year or to valuation effects related, for example, to official foreign exchange reserves (the liquidity ratio is calculated in US dollars). Given that the ILR is a variable that on occasion can be estimated based on certain assumptions and/or subject to fluctuations from year to year, it is possible that the implementation of this guidance could introduce a somewhat higher level of volatility into short-term sovereign ratings. In view of the nature of short-term ratings, the agency feels that this is not an unreasonable outcome.

### Rating Through the Cycle

Fitch aims for its sovereign ratings to be consistent through time as well as across countries. In terms of the former, Fitch distinguishes in its analysis of public and external finances between "cyclical" and "structural" developments and trends, for example by taking account of estimates (if available) of cyclically adjusted budget balances. This is consistent with our approach of rating through the economic cycle.

## Peer Analysis

**Quantitative indicators** – Variables relating to sovereign creditworthiness are compared across countries and over time. Measures of quantitative indicators of sovereign creditworthiness by rating category (eg the 'BBB' category would consist of 'BBB-', 'BBB' and 'BBB+') are regularly updated.

**Importance of qualitative factors** – It is evident, however, that there is not a simple linear relationship between sovereign ratings and every metric that Fitch considers in its rating analysis. In part, this merely reflects the multivariate nature of the analysis such that the relationship between, for example, the government debt burden and the sovereign rating is conditioned on a range of other variables, such as income per head. But it also in part reflects qualitative factors that influence the ability and willingness of a sovereign to honour its financial obligations. These "intangible" influences on sovereign creditworthiness in part explain why "advanced economies" are able to sustain a much higher debt burden, even after taking into account per capita income. The importance of these qualitative factors explains the relevance of Fitch's QO used in tandem with the SRM to arrive at the sovereign's LT FC IDR. These factors, together with the quantitative variables contained in the SRM, are set out in detail in each of the sections above covering the four analytical pillars (structural features, macroeconomic, public finances, external finances).

## Variations from Criteria

Fitch's criteria are designed to be used in conjunction with experienced analytical judgement exercised through a committee process. The combination of transparent criteria, analytical judgement applied on a transaction-by-transaction or issuer-by-issuer basis, and full disclosure via rating commentary strengthens Fitch's rating process while assisting market participants in understanding the analysis behind our ratings.

A rating committee may adjust the application of these criteria to reflect the risks of a specific transaction or entity. Such adjustments are called variations. All variations will be disclosed in the respective rating action commentaries, including their impact on the rating when appropriate.

A variation can be approved by a ratings committee when the risk, feature, or other factor relevant to the assignment of a rating and the methodology applied to it are both included within the scope of the criteria, but when the analysis described in the criteria requires modification to address factors specific to the particular transaction or entity.

### Disclosures

Fitch discloses the following information in each of its published Sovereign Rating Action Commentaries (with the exception of FC IDRs rated 'CCC+' and below):

- SRM output in the form of an LT FC IDR;
- QO rating adjustment to arrive at the final published LT FC IDR; and
- details of situations in which Fitch decides not to adopt the SRM output as the starting point for its rating assignment in line with the provisions in these criteria outlined under *Conditions and Exceptions to Application of SRM and QO*.

## Rating Assumption Sensitivity

Fitch's opinions expressed in its sovereign ratings are forward-looking and reflect the agency's views on current and potential future credit developments. Sovereign ratings can be subject to positive or negative rating actions based on, but not limited to, the factors set out below, which reflect the core pillars of these rating criteria and are the primary sensitivities that can influence the ratings and/or Outlook. Such rating actions can be informed by the Sovereign Rating Model or the Qualitative Overlay or a combination of both.

**Structural Features:** Changes in the structure of the economy that render it more or less vulnerable to shocks, including the risks posed by the financial sector, political developments and risks, governance quality and institutional strength.

**Macroeconomic Performance, Policies and Prospects:** Changes in a country's macroeconomic performance, particularly in its ability to generate robust and stable growth without creating imbalances, or changes in the quality and credibility of its policy framework.

**Public Finances:** Changes in the robustness of a country's public finances, reflected in the evolution of its fiscal balance, the structure and sustainability of government debt and fiscal financing, and the likelihood of crystallisation of contingent liabilities.

**External Finances:** Changes in the robustness and sustainability of external balances and flows, including current account balances, foreign-exchange reserves and capital flows, and the level and structure of the country's external debt.

## Appendix 1: SRM Variables and Qualitative Overlay Factors

### Sovereign Rating Model – Explanatory Variables

Variable	Description
<b>Structural features</b>	
Composite governance indicator	Simple average percentile rank of World Bank Worldwide Governance Indicators: “rule of law”; “government effectiveness”; “control of corruption” and “voice & accountability”; “regulatory quality”; “political stability & absence of violence”
GDP per capita	Percentile rank of GDP per capita in US dollars at market exchange rates
Share in world GDP	Natural logarithm of % share in world GDP in US dollars at market exchange rates
Years since default or restructuring event	Non-linear function of the time since the last event; the indicator is zero if there has been no such event after 1980. For each year that elapses, the impact on the model output declines.
Money supply	Natural logarithm of broad money (% of GDP)
<b>Macroeconomic performance</b>	
Real GDP growth volatility	Natural logarithm of an exponentially weighted standard deviation of historical annual percent changes in real GDP
Consumer price inflation	Three-year centred average <sup>a</sup> of the average annual % change in consumer price index (CPI), truncated between 2% and 50%
Real GDP growth	Three-year centred average <sup>a</sup> of the average annual % change in real GDP
<b>Public finances, general government</b>	
Gross general govt debt	Three-year centred average <sup>a</sup> of gross (general) government debt (% of GDP)
Interest payments	Three-year centred average <sup>a</sup> of gross government interest payments (% of general government revenues)
General govt fiscal balance	Three-year centred average <sup>a</sup> of general government (budget) balance (% of GDP)
Public foreign-currency debt	Three-year centred average <sup>a</sup> of public foreign-currency-denominated (and indexed) debt (% of general government debt)
<b>External finances</b>	
Reserve-currency flexibility	Reserve-currency flexibility based on the natural logarithm of the share of that country’s currency in global foreign-exchange reserve portfolios (plus a technical constant), as reported by the IMF in its COFER database (updated quarterly with a four-month lag)
Commodity dependence	Non-manufactured merchandise exports as a share of current account receipts (CXR)
Official international reserves for non-reserve-currency sovereigns	Year-end stock of international reserves (including gold) expressed as months’ cover of current external payments (CXP). This variable is set to zero for all sovereigns with a reserve-currency flexibility score above zero.
Sovereign net foreign assets	Three-year centred average <sup>a</sup> of sovereign net foreign assets (% of GDP)
Current account balance plus net foreign direct investment	Three-year centred average <sup>a</sup> of Current Account Balance (CAB) plus net FDI (% of GDP)
External interest service	Three-year centred average <sup>a</sup> of external interest service expressed as a share of CXR

Note: For expanded definitions of Sovereign indicators, please refer to the “Definitions and Sources” section of Fitch’s Sovereign Data Comparator

<sup>a</sup> Three-year centred averages are centred on the previous year for rating committees in January-June, and on the current year for rating committees in July-December. For other variables, a single year data point is used – this would be the previous year for rating committees in January-June, and the current year for rating committees in July-December

Source: Fitch Ratings

## Qualitative Overlay Factors

## QO Definitions

Analytical pillar	Definition	Notching from SRM output
Macroeconomic outlook, policies and prospects	<ul style="list-style-type: none"> <li><b>Macroeconomic policy credibility and flexibility</b>, including coherence and robustness in terms of consistency, flexibility and credibility of monetary and fiscal policies</li> </ul>	
	<ul style="list-style-type: none"> <li><b>GDP growth outlook</b> over the medium term relative to peers</li> </ul>	
	<ul style="list-style-type: none"> <li><b>Macroeconomic stability</b> in terms of the level of imbalances, unemployment levels and trends, and contributions to growth of different sectors of the economy</li> </ul>	
	Exceptionally strong macro outlook, policies and prospects relative to SRM data and output	+2
	Strong macro outlook, policies and prospects relative to SRM data and output	+1
	Average macro outlook, policies and prospects relative to SRM data and output	0
	Weak macro outlook, policies and prospects relative to SRM data and output	-1
Public finances	Exceptionally weak macro outlook, policies and prospects relative to SRM data and output	-2
	<ul style="list-style-type: none"> <li><b>Fiscal financing flexibility</b>, including: record of market access; ability to issue at sustainable yields and long maturities in domestic currency; debt service record; the depth of local capital markets; access to other potential sources of financing (eg multilateral); expected ability to issue in a stress scenario; presence of large sovereign deposits/sovereign wealth fund resources</li> </ul>	
	<ul style="list-style-type: none"> <li><b>Public debt sustainability</b>, including projected peak and trajectory of debt dynamics, taking into consideration the credibility of the fiscal framework, the cost of financing (including access to concessional funding) and ageing-related pressure on the primary balance, sovereign assets, the extent and nature of potential contingent liabilities (eg from the banking sector, state-owned enterprises or international commitments) that could crystallise on the sovereign balance sheet</li> </ul>	
	<ul style="list-style-type: none"> <li><b>Fiscal structure</b>, focusing on the breadth of the revenue base, the concentration/diversification of revenue sources and the level of budget rigidity in terms of current spending</li> </ul>	
	Exceptionally strong public finances relative to SRM data and output	+2
	Strong public finances relative to SRM data and output	+1
	Average public finances relative to SRM data and output	0
External finances	Weak public finances relative to SRM data and output	-1
	Exceptionally weak public finances relative to SRM data and output	-2
	<ul style="list-style-type: none"> <li><b>External financing flexibility</b>, reflecting the resilience and range of external financing sources for the economy (eg record of market access by domestic borrowers in international markets at sustainable yields and long maturities, access to other sources of external financing, availability of explicit or implicit guarantees or other forms of support by foreign governments or multilateral institutions, and the liquidity position)</li> </ul>	
	<ul style="list-style-type: none"> <li><b>External debt sustainability</b>, reflecting the extent of any external imbalances that may have developed and the level, trend and structure of external indebtedness</li> </ul>	
	<ul style="list-style-type: none"> <li><b>Vulnerability to shocks</b>, reflecting the potential for events to crystallise weaknesses in the structure of external finances</li> </ul>	
	Exceptionally strong external finances relative to SRM data and output	+2
	Strong external finances relative to SRM data and output	+1
Structural features	Average external finances relative to SRM data and output	0
	Weak external finances relative to SRM data and output	-1
	Exceptionally weak external finances relative to SRM data and output	-2
	<ul style="list-style-type: none"> <li><b>Political stability and capacity</b>, including the level of political risk, the risk of fundamental regime change and/or military conflict, broader geo-political risks, the ability of the political system to address economic and fiscal challenges and willingness to pay</li> </ul>	



## QO Definitions (Cont.)

Analytical pillar	Definition	Notching from SRM output
	<ul style="list-style-type: none"> <li><b>Financial sector risks</b>, as evidenced by our <b>BSI</b> and our <b>MPI</b> when available, reflecting the risk of financial sector liabilities falling on the sovereign, the level of financial stability in the system and the ability of the financial sector to support growth. When the BSI score is a rating category or more below the Sovereign LT FC IDR, the rating committee will consider whether downward notching should be applied in the QO. When the MPI score is '2' or '3', a downward notching adjustment may be applied in the QO.</li> <li><b>Other structural factors</b> including the quality of the business environment and economic flexibility reflected in, among other factors, the ability to attract investment, the level of domestic savings, openness to international flows and the ability to respond to shocks. It will also be possible to reflect here items such as unrepresentative levels of GDP and similar issues that can affect the Structural Features variables in the SRM.</li> </ul>	
	Exceptionally strong structural features relative to SRM data and output	+2
	Strong structural features relative to SRM data and output	+1
	Average structural features relative to SRM data and output	0
	Weak structural features relative to SRM data and output	-1
	Exceptionally weak structural features relative to SRM data and output	-2

Source: Fitch Ratings

### Example Sovereign Rating Model Printout

	<b>FC IDR</b>			
	<b>SRM</b>	<b>Actual</b>	<b>LC IDR</b>	<b>Country</b>
<b>Sovereign/median</b>	<b>estimate</b>	<b>Rating</b>	<b>(notching)</b>	<b>Ceiling</b>
Sovereign at committee	BBB [8.1]	BBB	[1] BBB+	BBB+
Illustrative peer sovereign 1	BBB+ [9.2]	BBB	[1] BBB+	BBB+
Illustrative peer sovereign 2	BBB- [6.7]	BBB	[0] BBB	BBB+
Illustrative peer sovereign 3	BBB- [7.4]	BBB	[0] BBB	BBB
Illustrative peer sovereign 4	BBB [7.9]	BBB-	[1] BBB	BBB+
Illustrative peer sovereign 5	BBB- [6.7]	BBB-	[1] BBB	BBB+
Illustrative peer sovereign 6	BBB [7.8]	BBB-	[0] BBB-	BBB
Illustrative peer sovereign 7	BBB+ [8.9]	BBB-	[0] BBB-	BBB-
Illustrative peer sovereign 8	BBB [7.8]	BBB	[0] BBB	BBB
Illustrative peer sovereign 9	A- [9.8]	A-	[1] A	A
Illustrative peer sovereign 10	A [10.6]	A-	[0] A-	A
BBB				
A				

The chart displays two metrics over time: Actual (solid dark blue line) and SRM (rounded) (dashed green line). Both metrics start around 7.5 in 2004 and remain relatively stable until 2011. After 2011, both show a downward trend, reaching a low point around 2014 before recovering slightly by 2019.

If SRM is	Then
≥ 15.5	AAA
≥ 14.5	AA+
≥ 13.5	AA
≥ 12.5	AA-
≥ 11.5	A+
≥ 10.5	A
≥ 9.5	A-
≥ 8.5	BBB+
≥ 7.5	BBB
≥ 6.5	BBB-
≥ 5.5	BB+
≥ 4.5	BB
≥ 3.5	BB-
≥ 2.5	B+
≥ 1.5	B
≥ 0.5	B-
Else	CCC+

	<b>Sovereign at committee vs. BBB median    A median</b>	
Structural	Weakness	Weakness
Macro	Neutral	Weakness
Public finances	Neutral	Neutral
Ext. finances	Strength	Neutral

Model indicator	Data point	Weight (%)	Coefficient <sup>a</sup>	Sovereign data	SRM output	Sov. vs. BBB median	Data for BBB median	SRM output	Sov. vs. A median	Data for A median	SRM output	Sensitivity: Sovereign vs. alternative input	Alternative input data	SRM output
<b>SRM result</b>					<b>8.13</b>	<b>-0.4</b>		<b>8.54</b>	<b>-3.1</b>		<b>11.28</b>	<b>-0.9</b>		<b>9.00</b>
					<b>= BBB</b>			<b>= BBB+</b>			<b>= A</b>			<b>= BBB+</b>
Governance indicators	Latest (Percentile)	20.0	0.073	55.0	+4.03	-0.2	58.1	+4.25	-1.5	76.0	+5.57	-0.3	59.0	+4.32
GDP per capita	Latest (Percentile)	13.3	0.042	49.5	+2.09	-0.1	50.8	+2.15	-0.7	65.5	+2.77	-0.2	55.0	+2.32
Share in world GDP	Latest (Nat log)	12.8	0.583	0.1	-1.47	-0.6	0.2	-0.86	-0.8	0.3	-0.66	-	0.1	-1.47
Years since default/ restructuring	Latest (Complex)	5.4	-2.108	25	-0.01	-0.0	No Default	-	-0.0	No Default	-	-	25.0	-0.01
Broad money (% of GDP)	Latest	1.3	0.175	83.8	+0.78	+0.1	59.3	+0.72	-0.0	88.2	+0.79	-	83.8	+0.78
<b>Structural</b>		<b>52.8</b>			<b>+5.42</b>	<b>-0.8</b>		<b>+6.26</b>	<b>-3.0</b>		<b>+8.46</b>	<b>-0.5</b>		<b>+5.94</b>
					<b>Weakness</b>					<b>Weakness</b>				
GDP volatility	Latest (Nat log)	5.5	-0.886	2.8	-0.78	+0.1	3.2	-1.04	-0.0	2.7	-0.88	-	2.8	-0.90
CPI growth	3y centred avg. (Truncated (2%, 50%))	3.0	-0.053	3.7	-0.21	-0.0	3.4	-0.18	-0.1	2.4	-0.12	-	3.7	-0.19
GDP growth	3y centred avg	2.6	0.084	1.2	+0.11	-0.2	3.6	+0.30	-0.2	3.8	+0.32	-0.1	2.0	+0.17
<b>Macro</b>		<b>11.1</b>			<b>-0.87</b>	<b>-0.1</b>		<b>-0.92</b>	<b>-0.3</b>		<b>-0.69</b>	<b>-0.1</b>		<b>-0.92</b>
					<b>Neutral</b>					<b>Weakness</b>				
GGD (% of GDP)	3y centred avg.	8.3	-0.022	35.0	-0.74	+0.0	35.9	-0.78	+0.2	42.3	-0.92	-0.1	32.0	-0.69
GGI (% of Rev)	3y centred avg.	4.9	-0.047	1.6	-0.07	+0.2	6.9	-0.32	+0.1	4.7	-0.22	-	1.6	-0.08
GGB (% of GDP)	3y centred avg.	2.5	0.047	1.0	+0.05	+0.2	-2.3	-0.11	+0.1	-2.1	-0.10	-	1.0	+0.05
PFGD (% of GGD)	3y centred avg.	2.5	-0.007	80.7	-0.52	-0.3	36.0	-0.24	-0.5	11.9	-0.08	-	80.7	-0.55
<b>Public finances</b>		<b>18.2</b>			<b>-1.28</b>	<b>+0.1</b>		<b>-1.46</b>	<b>-0.0</b>		<b>-1.32</b>	<b>-0.1</b>		<b>-1.27</b>
					<b>Neutral</b>					<b>Neutral</b>				
Reserve-currency status (RC)	Latest	7.6	0.542	-	-	-	-	-	-	-	-	-	-	-
SNFA (% of GDP)	3y centred avg.	7.1	0.012	32	+0.36	+0.3	3	+0.03	+0.2	15	+0.17	-0.2	50.0	+0.59
Commodity dependence	Latest	1.1	-0.004	42.1	-0.12	-0.1	20.9	-0.09	-0.1	10.6	-0.04	-	42.1	-0.17
Reserves (months of CXP) (RC = 0)	Latest	1.5	0.032	8.0	+0.22	+0.1	4.9	+0.16	+0.1	3.9	+0.13	-	8.0	+0.26
Ext. int. service (% of CXR)	3y centred avg.	0.4	-0.006	2.2	-0.03	+0.0	4.3	-0.03	+0.0	2.3	-0.01	-	2.2	-0.01
CAB + FDI (% of GDP)	3y centred avg.	0.1	0.002	9.2	+0.02	+0.0	0.6	+0.00	+0.0	2.2	+0.00	-	9.2	+0.02
<b>External finances</b>		<b>17.9</b>			<b>+0.45</b>	<b>+0.4</b>		<b>+0.08</b>	<b>+0.2</b>		<b>+0.24</b>	<b>-0.2</b>		<b>+0.67</b>
					<b>Strength</b>					<b>Neutral</b>				
<b>Intercept term</b>			<b>4.583</b>		<b>+4.583</b>			<b>+4.583</b>			<b>+4.583</b>			<b>+4.583</b>

<sup>a</sup> The coefficients in the SRM are presented in the above table to either two or three decimal places. However, functionally, the SRM uses coefficients with 15 significant figures (up to 20 decimal places). Source: Fitch Ratings

## Appendix 3: Macro-Prudential Indicator Model

### MPI Score Definition

Fitch's MPI score provides an indicator of the build-up of potential stress in banking systems that could materialise up to three years after an early warning is first indicated. The score, which is on a scale from 1 to 3, is an output from the agency's Macro-Prudential Indicator Model.

The model contains separate modules for Emerging Markets (EMs) and Developed Markets (DMs). In both cases, four input variables are used – private-sector credit, real effective exchange rate (RER), real equity prices and real property prices. Scores defined as follows:

- **MPI 1** indicates low vulnerability to potential systemic stress, meaning private-sector credit data are below trigger thresholds.
- **MPI 2** indicates moderate vulnerability, triggered by excessive real private-sector credit growth (for EMs) or private-sector credit/GDP levels (for DMs) alone. None of the RER, real property price or real equity price indicators is above trigger thresholds.
- **MPI 2\*** indicates moderate vulnerability (as above), accompanied by severe data limitations that may hide latent risks. If the missing data were available, the higher MPI 3 score might be triggered. The asterisk denotes that at least two data series are unavailable.
- **MPI 3** indicates high vulnerability, triggered by excessive real credit growth (for EMs) or credit/GDP levels (for DMs), and at least one further trigger (either RER, real equity prices or real property prices).

### Model Limitations

The success rate of the model can, in part, be measured by the number of crises correctly anticipated in the model estimation period. This is over 70% for DMs and 50% for EMs.

However, this type of early warning analysis inevitably gives rise to some false positives and false negatives. The calibration of the trigger thresholds is intended to minimise these errors while maintaining an acceptable success rate. Likewise, the setting of the input time horizon is designed to be long enough to take into account the time it can take for banking system stress to emerge, but not so long as to reduce the indicator's analytical usefulness. The ratio of correct signals to false alarms is 50%. The resulting MPI scores can therefore only be a starting point for Fitch's in-depth country and banking system analysis.

All the data, especially for EMs, are subject to sometimes major revisions, can be volatile and are difficult to forecast. Consequently, scores are subject to change as data are revised and forecasts are firmed up.

The scope of the model covers only one potential source of banking crises, namely those associated with excessively fast credit growth.

### Deviations Model for Developed Markets

For DMs (equivalent to the IMF's "Advanced Economies"), the MPI score is derived from the deviation of key variables from trend. Here, the four input variables are the ratio of private-sector credit/GDP and indexes for the RER, real equity prices and real property prices. Trends are derived from as long a time series as is available, using a Hodrick-Prescott filter, but are sensitive to the development of actual data and will change over time. Due to the need to review actual data against stable long-term trends, Fitch does not include RER, property price or house price data when less than 15 years' data is available. The assessment is based on three years of annual data.

High vulnerability to potential systemic stress is designated MPI 3 and is defined as:

- a ratio of private-sector credit/GDP more than 5pp above trend in a single year; and
- at least one of the asset price or exchange rate indicators triggering:
  - real property prices more than 17% above trend in the same year; or
  - real equity prices more than 50% above trend (two years previously); or
  - RER more than 15% above trend in the same year.

Moderate vulnerability (MPI 2) occurs when the credit/GDP ratio is above its trigger value, whatever the other indicators may show. An MPI score of '1' denotes low potential vulnerability.

### **Changes Model for Emerging Markets**

For EMs, the focus is on percentage changes in the key variables. EMs often have less reliable time series data that are available over shorter periods. This makes the data less amenable to the trend analysis used in the deviations model. Here, the four input variables are private-sector credit growth, RER growth, real equity price growth and real property price growth. The assessment is based on three successive pairs of annual data. A trigger in any two-year period is relevant to a country's MPI score.

High vulnerability to potential systemic stress is designated MPI 3 and is defined as:

- real private-sector credit growth exceeding an average 15% a year over two years; and
- at least one of the asset price or exchange rate indicators triggering:
  - real property price growth of more than 5% each year in the same period; or
  - real equity price growth of more than 17% each year (in the preceding two years); or
  - real effective exchange rate appreciation of more than 4% each year in the same period.

Moderate vulnerability (MPI 2) occurs when real private-sector credit growth exceeds the trigger 15%, whatever the other indicators may show. An MPI score of '1' denotes low potential vulnerability.

## Appendix 4: Data Sources, Limitations and Reasonable Investigation

### Data Sources

These criteria, Fitch's sovereign analysis and rating decisions are based on relevant information available to its analysts. The sources of this information are the issuer and the public domain. This includes relevant publicly available information on the issuer, such as financial and economic data published by national authorities and international agencies, as well as regulatory filings. Data used in both Fitch's Rating Action Commentaries (RACs) and Rating Reports (RRs) will be correct as at the time of publication, albeit potentially subject to subsequent revision in the event that data are adjusted ex-post. The rating process can also incorporate information provided by third-party sources. If this information is material to the rating or a specific rating action, Fitch will disclose the relevant source in its written commentary with respect to such rating or rating action.

While key data and information are subject to critical review by Fitch, such as cross-checking with third-party sources when available, the agency relies on the accuracy and reliability of information published by national authorities and international agencies, as well as the veracity of the information provided directly by representatives of the sovereign. Moreover, for some countries, broad economic and financial data that is typically incorporated in Fitch's sovereign credit and rating analysis have material shortcomings in terms of reliability and coverage. Such data limitations, when judged to be material, are noted in Fitch's sovereign RACs and FRRs and are taken into account by the rating committee when assigning sovereign ratings. However, Fitch does not assign sovereign ratings if it judges that the data limitations are so great as to render any analysis insufficiently robust to support a rating opinion.

### Limitations

Ratings, including Rating Watches and Outlooks, assigned by Fitch are subject to the limitations specified in Fitch's Ratings Definitions and available at <https://www.fitchratings.com/site/definitions>.

In addition, ratings within the scope of these criteria are subject to the following specific limitations: Reported failure to pay debt owed to other governments and official creditors by the sovereign, including multilateral institutions such as the IMF and the World Bank will not be considered a default event within these criteria.

### Reasonable Investigation

When assigning and maintaining sovereign ratings, Fitch conducts a reasonable investigation of the factual information relied upon by it in accordance with its rating criteria and obtains reasonable verification of that information from independent sources, to the extent that such sources are available for a given sovereign issuer.

## Appendix 5: Sovereign Ratings and ESG

Fitch seeks to reflect relevant environmental, social and governance (ESG) factors into its sovereign ratings, as it does for all factors that it believes are relevant and material for creditworthiness.

Governance has always been an integral part of Fitch's sovereign credit analysis, underscored by the World Bank's Worldwide Governance Indicators having the highest weight of any variable in the SRM. Many social factors also directly or indirectly affect many of the SRM variables and QO factors. In general, for sovereign issuers environmental factors are typically a lesser influence on current ratings. As climate change becomes more material, it is likely to become a more important influence on sovereign ratings.

### Climate Change

Climate change is gradually starting to have an effect on sovereign creditworthiness. However, analysis of the potential impact is embryonic and the uncertainties are very high.

There are several elements to assessing sovereigns' exposure to climate change.

- 'Physical' risks include the potential impact of higher temperatures, increasing drought, rising sea levels and more extreme weather events and incidences of natural disasters.
- 'Transition' risks include exposure to potentially 'stranded assets' (such as fossil fuel resources that might never be utilised owing to a transition to a greener economy), for example driven by changes in global policies, technology or consumer preferences.
- Adaption and mitigation capacities of sovereigns to partially offset adverse effects of climate change, for example through deploying resources and know-how to limit physical risks or diversifying economies to limit transition risks.

Ex-post, the impact of some aspects of climate change such as increased incidents and intensity of natural disasters or reduced fiscal and external revenues from fossil fuels will be at least partially captured in SRM variables such as GDP growth and the public and external finances.

Some SRM variables also have some correlation with ex-ante climate change risks, including share in world GDP (which captures diversification and resilience to shocks), GDP per capita and governance indicators (which capture some aspects of adaption and mitigation capacity) and commodity dependence (which may capture some aspects of 'stranded asset' risk). Fitch can also use the QO to make forward-looking rating adjustments when it believes that the risk of climate change is sufficiently relevant and material to sovereign creditworthiness.

Uncertainties over the extent of and impact of climate change are very high. To generate robust quantitative assessments of the exposures of different sovereigns would, amongst other factors, require further analysis or assumptions on:

- future international policy actions related to greenhouse gas emissions;
- the effect of the resulting concentration of greenhouse gases in the atmosphere on global temperatures and sea levels ("representative concentration pathway") and the distribution of risks around the base case;
- consequential sovereign exposure to country-level changes in temperature, drought, sea levels, extreme weather and incidences of natural disasters, and holdings of potentially stranded assets;
- the likely effectiveness of mitigation strategies;
- the impact of all these potential climate and policy developments on variables that affect sovereign creditworthiness such as GDP, the public and external finances and political risk;
- relevant time and rating horizons: most of the more severe impact from climate change is not expected to occur until 2050-2100, while current ratings decisions will typically place more weight on current developments than uncertain long-term projections, in the same way that we factor in other long-term risks such as demographic trends and unfunded pension liabilities.

Analysis and data are moving forward rapidly. Fitch will continue to seek to capture risks related to climate change in its sovereign ratings more fully over time.



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