

Sovereign Rating Criteria

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Summary

(Editor's Note: This criteria report was originally published on 30 May 2018. Following our periodic review on 29 May 2021, we have republished these criteria. We revised paragraph "Assigning a sovereign's local currency rating" as a result of this review. We intend to complete the review of all affected ratings within six months.)

These rating criteria describe Pengyuan's analytical approach to assigning issuer credit ratings (ICRs) and issuance credit ratings to sovereigns globally. Pengyuan intends to use these criteria to provide markets and their participants with clarity on our analysis of sovereign credit risks and our ratings that reflect such risks. We realize these criteria cannot exhaust all rating factors that affect sovereign creditworthiness. However, it should enable readers to gain an understanding of our approach to assessing sovereign credit risks.

For these criteria, we define a sovereign as a member state of the United Nations or a state with its own government, enjoys fiscal independence and determines its own monetary regime. "Country" in these criteria refers to a country or jurisdiction that fits the above definition of a sovereign.

Pengyuan's sovereign ICRs reflect our views on sovereign creditworthiness, based on our quantitative and qualitative forward-looking assessment of a sovereign's ability and willingness to service financial obligations (hitherto referred to as "debt") to nonofficial creditors.

These criteria will be effective immediately on the date of final publication. We intend to complete the review of all affected ratings, if any, within six months thereafter, and we expect no impact on our current rating portfolio.

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Understanding Drivers of Sovereign Default

We believe a sovereign's willingness to service its debt would be in general positively correlated to its debt servicing ability. Sovereign creditworthiness would be determined mainly by its ability in debt repayment. In a few cases, willingness to service debt may be the key factor of sovereign default.

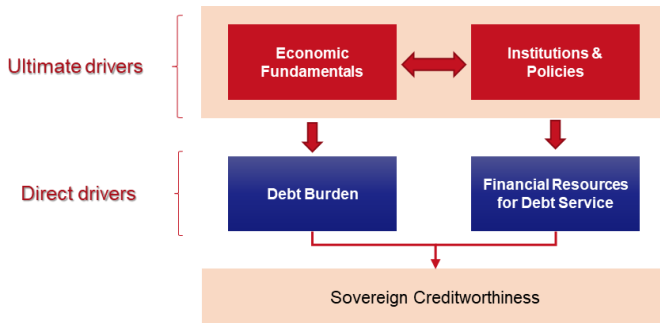
A sovereign's ability to service its debt depends on its ability—in comparison to its debt burden—to generate primary fiscal surplus, accumulate and draw reserves, create money, access new borrowing or take a combination of these measures, and would typically depend on the availability of foreign exchange in servicing foreign-currency debt.

A country may accumulate sovereign debt for various economic, institutional and policy reasons, such as to compensate for revenue shortfall amid weak economic performance, to pursue countercyclical fiscal policy or to finance populist spending. When a country/region with indebted sovereign is hit by shocks (such as war, sharp decline in prices of its key export commodities or adverse change in global monetary and financial conditions) or suffers from prolonged weak economic performance, its budgetary performance could deteriorate significantly. To make timely and full debt repayment under such circumstances, the government would need to draw on fiscal reserves and possibly foreign exchange reserves, resort to

monetary expansion, or access new borrowing. In the last case, the government may need to adopt policy changes and reforms to gain the confidence of private and/or official lenders in the country's economic and fiscal sustainability. If funding from these channels turns out to be insufficient, sovereign default could occur.

It is apparent from the above analysis of a simplified sovereign default scenario that debt accumulation and financial resources for debt servicing are direct factors of sovereign creditworthiness; both of them are driven mainly by a country's *economic fundamentals* (growth performance and external performance), *institutions and policies* and the interaction among them. This makes economic fundamentals as well as institutions and policies the key ultimate factors of sovereign creditworthiness (chart 1).

Chart 1 A Simplified Chart of Drivers of Sovereign Creditworthiness

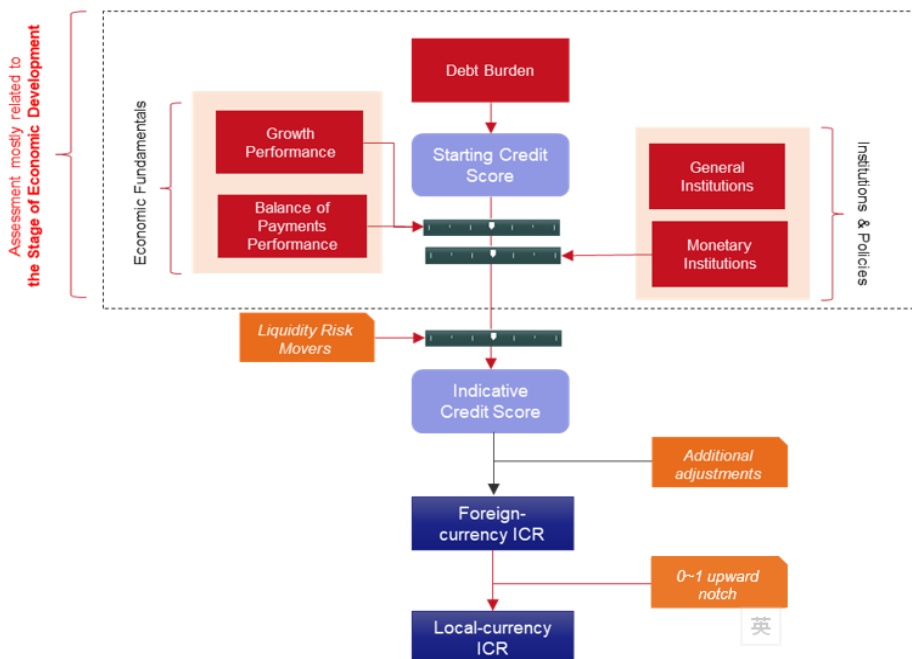


Note: This simplified chart does not cover explicitly factors affecting sovereign creditworthiness through driving liquidity risk, nor the few cases where a sovereign's willingness to service debt is a major independent driver of sovereign creditworthiness.

Sovereign Rating Framework

Our sovereign rating framework reflects but does not exactly mirror the above simplified chart of drivers of sovereign creditworthiness (chart 2). The framework attempts to untangle the complicated interaction among drivers of sovereign creditworthiness so as to facilitate the rating assignment and communication with users of our sovereign rating.

Chart 2: Framework for Assigning Sovereign Issuer Credit Rating



The key rating factors under our framework are divided into four categories:

1. Debt burden and stage of economic development
2. Economic fundamentals
3. Institutions and policies
4. Distinctive movers of underlying liquidity risk

We begin with assigning a *starting credit score* (SCS) in the range of “b-” to “aaa” to a sovereign based on its *debt burden* (debt level and debt growth) and the country’s *stage of economic development*. A sovereign with a higher debt level, faster debt growth and a lower stage of economic development gets a weaker SCS. The SCS represents our view of the benchmark creditworthiness of all sovereigns with similar debt burden at the same stage of economic development.

Thereafter, we consider the impact of other categories of rating factors (including sub-factors and additional considerations factors) on sovereign creditworthiness by making upward or downward notching adjustments to the SCS to arrive at an *indicative credit score* (ICS):

1. For the assessment of *economic fundamentals*, we first decide whether and to what extent to apply upward or downward notching to the SCS, by comparing the sovereign’s performance on anchor indicators to the benchmark performance of countries at the applicable stage of economic development (“Stage Norm”); then we apply upward or downward notching to the SCS taking into account the *main additional considerations factors*, by comparing the sovereign’s quantitative and/or qualitative features to thresholds not tied to the country’s *stage of economic development*.
2. For the assessment of *institutions and policies*, we decide whether and to what extent to apply upward or downward notching to the SCS, by comparing the sovereign’s institutional score against the applicable Stage Norm.
3. For the assessment of *distinctive movers of underlying liquidity risk*, we decide whether and to what extent to apply upward or downward notching to the SCS, by comparing the sovereign’s quantitative and/or qualitative features to the thresholds not tied to the country’s *stage of economic development*.

Typically, the aggregate notching adjustments to the SCS, based on the assessment of economic fundamentals and distinctive movers of underlying liquidity risk, will be capped at three notches upwards or downwards.

Additional Adjustment Factors

On top of the ICS, we consider a few additional factors to derive the foreign-currency ICR of a sovereign. These factors lead to downward or upward adjustments to the ICS of generally no more than three notches.

- (1) The willingness of a sovereign to service its debt that has not been captured by its positive correlation with its ability to service debt.;
- (2) The risk of geopolitical conflicts and severe natural disasters whose effects are not sufficiently captured by individual key rating factors;
- (3) Extreme risks related to economic fundamentals and/or institutions and policies that are not sufficiently captured by the largest downward adjustment to the respective rating factor, such as extremely weak growth, extremely high inflation or extremely high external debt.
- (4) Aggregate effect of rating factors on sovereign creditworthiness that has not been captured sufficiently in the assessment on the Key Rating Factors individually.

One Notch Flexibility

If none of the above additional factors applies, our sovereign foreign-currency ICR is within one notch of the ICS. Whether the ICR would be one notch higher or lower than the ICS depends on our review of relevant factors, such as the relative strength or weakness in creditworthiness compared with sovereigns that have or may have similar ICRs (if it has not been captured elsewhere in the methodology).

Local-currency Rating

Local-currency ICR is equal to foreign-currency rating for most sovereigns. However, we believe sovereigns with some features may have greater ability to service local-currency debt compared to foreign-currency debt in certain circumstances, therefore their local-currency ICR could be one notch higher than their foreign-currency rating.

Issuance Rating

We set the issuance credit rating of a senior unsecured sovereign foreign-currency debt equal to the sovereign foreign-currency ICR, unless the debt is fully guaranteed, in which case we assign an issuance rating based on our applicable criteria.

We set the issuance credit rating of a senior unsecured sovereign local-currency debt equal to the sovereign local-currency ICR, unless the debt is fully guaranteed, in which case we assign an issuance rating based on our applicable criteria.

Key Rating Factors

We explain in this section how we assess key rating factors to assign the SCS and determine upward and downward notching adjustments thereafter to arrive at the ICS.

For some key rating factors (including sub-factors and *main additional considerations factors*), we determine the notching adjustment to the SCS, or assign a score to facilitate the notching to the SCS, based on the value of an indicator. When the value of such an indicator falls on or very close to a threshold between two different notching outcomes or two different scores, we will choose the one which in our judgment better captures the credit risk.

Debt Burden and Stage of Economic Development

We assign a SCS (from letter “b-” to “aaa”) to a sovereign based on its debt burden—debt level and debt growth—and the country’s stage of economic development (table 1). The matrices are designed in such a way that sovereigns with higher debt level, faster debt growth and lower stages of economic development get weaker SCS.

Since a higher debt burden demands greater financial resources for debt servicing, a higher debt burden indicates weaker sovereign creditworthiness, all other things being equal. Indeed, many sovereigns that defaulted in the past had high and/or fast-growing debt a few years prior to default.

Meanwhile, the history of sovereign default over the past several decades indicates advanced economies rarely experienced sovereign default, even though several of them had high government debt relative to GDP. In contrast, most sovereign defaults happened to countries at lower stages of economic development, even though some of their government debt relative to GDP didn’t appear very high at the time of default. Some financial studies suggest advanced economies can sustain higher level of government debt than developing countries.

Table 1 Assigning Starting Credit Score

Table 1-1 Stage Five		Debt Level ¹					
	Typical Range	Below 0	0 ~ 30	30 ~ 60	60 ~ 90	90 ~ 120	>120
Debt Growth ²	Less than 1	aaa	aa+	aa	aa-	a	bbb+
	1 ~ 3	aaa	aa	aa-	a+	a-	bbb
	3 ~ 5	aa+	aa-	a+	a	bbb+	bbb-
	More than 5	aa	aa-	a	a-	bbb	bb+

Table 1-2 Stage Four		Debt Level					
	Typical Range	Below 0	0 ~ 30	30 ~ 60	60 ~ 90	90 ~ 120	>120
Debt Growth	Less than 1	aa	aa-	a+	a	bbb+	bbb-
	1 ~ 3	aa	a+	a	a-	bbb	bb+
	3 ~ 5	a+	a	a-	bbb+	bbb-	bb
	More than 5	a	a-	bbb+	bbb-	bb+	bb-

Table 1-3 Stage Three		Debt Level					
	Typical Range	Below 0	0 ~ 30	30 ~ 60	60 ~ 90	90 ~ 120	>120
Debt Growth	Less than 1	a+	a	a-	bbb+	bb+	bb
	1 ~ 3	a	a-	bbb+	bbb	bb	bb-
	3 ~ 5	bbb+	bbb	bbb-	bb+	bb-	b+
	More than 5	bbb	bbb-	bb+	bb-	b+	b

Table 1-4 Stage Two		Debt Level				
	Typical Range	Below 20	20 ~ 40	40 ~ 60	60 ~ 90	>90
Debt Growth	Less than 1	bbb+	bbb	bbb-	bb+	b+
	1 ~ 3	bbb	bbb-	bb+	bb	b
	3 ~ 5	bb+	bb	bb-	b+	b-
	More than 5	bb	bb-	b+	b-	b-

Table 1-5 Stage One		Debt Level			
	Typical Range	Below 20	20 ~ 40	40 ~ 60	>60
Debt Growth	Less than 1	bbb-	bb+	bb	b+
	1 ~ 3	bb	bb-	b+	b
	3 ~ 5	bb-	b+	b	b-
	More than 5	b	b-	b-	b-

Note: 1. Debt level: debt-to-GDP ratio at year_{t-1} in percentage points, actual or estimate. For these criteria, Year_t refers to the year of rating assessment (current year). 2. Debt growth: average increase in the ratio of debt-to-GDP over ten years spanning year_{t-6} and year_{t+3} in percentage points.

Stage of Economic Development

We classify a country as one of five stages of economic development, ranging from “Stage One” (lowest) to “Stage Five” (highest), based mainly on the GDP per capita of the country (table 2). The classification reflects our assessment of the level of industrialization and urbanization, the development of high value-added services and the level of infrastructure in the country.

When the GDP per capita of a country falls within 20% of the threshold between two adjacent stages of economic development, we could assign the country to the higher or lower stage if we believe the level of industrialization and other aspects of economic development show much higher or lower strength respectively, relative to the stage of development purely based on GDP per capita.

If the GDP per capita of a country fluctuates or could fluctuate between GDP per capita brackets corresponding to two adjacent stages of economic development due to volatile exchange rates or other reasons, we would determine the applicable stage of economic development based on other aspects of economic development.

Table 2 GDP per Capita by Stage of Economic Development

Stage of Economic Development	Stage Five	Stage Four	Stage Three	Stage Two	Stage One
GDP per capita (\$)	>24,000	24,000~12,000	12,000~6,000	6,000~3,000	<3,000

Note: Current year estimate. GDP per capita in current price calculated at market exchange rate of local currency against U.S. dollar or other applicable exchange rate we decide in the absence of meaningful market exchange rate.

In general, countries at higher stages of economic development have not only higher levels of wealth and greater tax base than countries at lower stages of economic development, but also better debt management, more stable fiscal performance, less reliance on government for foreign-currency debt, greater access to long-term borrowings and foreign exchange markets, lower liquidity risk, more disciplined and effective monetary policies, and more political stability. Consequently, countries at higher stages of economic development can generally sustain a higher debt burden than countries at lower stages of economic development.

Debt Burden

Our assessment of debt burden focuses on the level and trend growth of general government debt (measured by the average increase in the *general government debt to GDP* ratio over a 10-year period). Debt affordability represented by the ratio of *general government interest expenditure to general government revenue* is implicitly captured by the trend debt growth, as lower debt affordability would lead to faster debt growth, all other things being equal.

For these criteria, general government means the aggregate of national and subnational governments (such as local, regional and state governments) and social security funds. We calculate the net general government debt as the gross debt of general government minus its liquid financial assets. Typical liquid financial assets of the general government include deposits in financial institutions. Some governments may have access to liquid financial assets held by sovereign wealth funds or other funds.

- When inflation in a country is very high (typically GDP deflator increased by more than 20 percentage points in a year) and thereby unsustainable, it could make the standardized calculation of trend debt growth (i.e. average debt growth over year_{t-6} to year_{t+3}) understate the medium to long term debt growth in future. In such cases, we would assign an SCS corresponding to the higher category of debt growth than that corresponding to the standardized calculation of trend debt growth. (For instance, if the general government debt to GDP ratio of a country at the “Stage 3” of economic development is 50% and the country experiences an increase in GDP deflator by more than 20 percentage points per year for several years over the 10-year period for calculating trend debt growth, the SCS of the sovereign could be “bbb+” or even “bbb-”).
- If the trend debt growth of the general government debt of a country is much faster than 5% annually (highest debt growth bracket) and the debt-to-GDP ratio is likely to move to the next higher bracket of debt level in one or two years, we may assign an SCS corresponding to the next higher bracket of debt level. If the trend debt growth of the general government debt of a country is much slower than 1% annually (lowest debt growth bracket) and the debt-to-GDP ratio

is likely to move to the next lower bracket of debt level in one or two years, we may assign an SCS corresponding to the next lower bracket of debt level.

Additional Considerations

1. **Contingent liabilities:** For these criteria, we define contingent liabilities as off-balance sheet liabilities that may move onto the government's balance sheet if they materialize. Some of these contingent liabilities are legally-based, such as contingent liabilities stemming from a guarantee provided by the government. Others may be related to government policies and state intention to financially support non-government sectors out of considerations of financial, economic and/or social stability. History indicates the materialization of contingent liabilities (especially that related to banking sectors under stress) can add much debt to government, thus weakening fiscal strength and possibly leading to sovereign default.

When we could put quantitative estimates on the contingent liabilities of the general government, we add the estimated contingent liabilities to the general government debt in determining the SCS (see below section on Estimate Contingent Liabilities). For countries lacking statistics and information to quantify contingent liabilities, if we believe the contingent liabilities are substantial and its materialization could weaken sovereign creditworthiness, we would generally lower the SCS by one notch.

We compute the total contingent liabilities of the general government as the sum of contingent liabilities from these four segments: (1) banking sector; (2) non-bank financial institutions; (3) non-financial public enterprises (NFPEs); (4) guarantee and other off-budget contingent liabilities. Typically, the largest contingent liability stems from the banking sector, partly because the government has a higher propensity to support the banking sector given its importance to the financial and economic system. As happened in several European countries from 2009 to 2011, sovereigns may choose to support the banking sector through providing blanket guarantees on bank deposits or injecting capital to the banking sector to ensure financial stability and prevent economic collapse.

We estimate the banking sector's contingent liabilities as the capital injection necessary to safeguard its normal functioning and financial stability under stress scenarios. This normally requires recapitalization to raise the banking sector's capital adequacy ratio under stress scenarios to meet regulatory standards. We estimate a *recapitalization ratio* for a country's banking sector, which multiplied by the banking sector's total assets yields the banking sector's contingent liabilities. We estimate the banking sector's recapitalization ratio for a country by assessing a number of factors such as: (1) indicators of the banking sector's asset quality, including but not limited to its non-performing loan (NPL) ratio and its dynamics through economic cycles; (2) bank capital adequacy ratios and related regulatory requirements; (3) the economic and financial development of the country; (4) historical government support of the banking sector in stress scenarios as well as regulatory and policy developments. The estimate is also informed by the relevant analyses and reports of national authorities, IMF and other research institutions.

For non-bank financial institutions, we believe a government would generally support those of systemic importance in stress scenarios. The *non-bank financial institution contingent liabilities* are equal to the product of total assets of systemically important non-bank financial institutions and applicable recapitalization ratio. The applicable recapitalization ratio is estimated in analyses similar to that applied to the banking sector.

For NFPEs, we expect a government to support the debt repayment of NFPEs that play important policy roles for the government or whose failure would frustrate key policy targets of the government. The contingent liabilities is equal to the product of *total debt of supported NFPEs* and the *share of not self-supporting debt*. Depending on the number of NFPEs that the government may support and the availability of relevant information, we may estimate the *share of not self-supporting debt* with a bottom-up approach (a "share" for every supported NFPE), blanket approach (a "share" for all supported NEPEs) or mixed approach (bottom-up approach for some NFPEs and blanket approach for other NFPEs or groups of NFPEs).

2. **High reliance on foreign-currency denominated debt:** When a country has high share (typically 40% or more) of foreign-currency denominated general government debt, we would generally lower the SCS by one or two notches. In case of large exchange rate depreciation, the debt level of the government could deteriorate materially.
3. **General government borrowing for capital spending:** Capital spending on key infrastructure and utilities could enhance the growth potential and trend growth of a country, if such spending helps remove bottlenecks in infrastructure and utilities. Effective capital spending could lead to the formation of saleable assets. All other things being equal, government debt incurred by capital spending could be less of a drag on sovereign creditworthiness than the same level

of government debt incurred by finance current expenditure. We would raise by one notch the SCS if the capital spending is sizable and the resulting assets are expected to boost economic growth substantially over the medium to long term.

4. **Use of alternative data:** When data about the general government is not available or the quality of available data appears poor, we use the available data (“alternative data”) that we believe most relevant to assessing sovereign creditworthiness, such as fiscal data about the central government and gross general government debt. When we believe such alternative data could miss material parts of credit risk posed by the actual debt profile of the general government (because of the narrower coverage of the alternative data and/or the quality of the alternative data), we would generally lower the SCS derived from the alternative data by one notch.

Economic Fundamentals

We assess economic fundamentals according to two sub-factors: growth performance and balance of payment performance. A sovereign with materially better or weaker performance on these sub-factors relative to peers at the same stage of economic development would get upward or downward notching to its SCS.

For each sub-factor, we would apply a downward (or upward) adjustment of one notch to the SCS if the performance of a country is weak (or strong) based on an anchor indicator compared to the Stage Norm for the indicator, or two notches if the performance of a country is very weak (or very strong) compared to the Stage Norm (table 3).

We set the Stage Norm and thresholds for notching for each stage of economic development, based on the average trend growth of all countries at each stage and our understanding of normal performance across stages of economic development and over time. For the sake of illustration at the risk of oversimplification, “weak” or “strong” means roughly the performance of a country is off the average of countries at the same stage of economic development by one standard deviation; “very weak” or “very strong” means roughly the performance of a country is off the average of countries at the same stage of economic development by one and a half standard deviations.

Table 3 A simplified and Illustrative Way to Set Threshold for Notching

Notching to SCS	Two downward notches	One downward notch	One upward notch	Two upward notches
Performance compared to Stage Norm (= Stage Mean ¹)	Very Weak	Weak	Strong	Very Strong
Threshold for notching	1.5x SD ² weaker than Stage Mean	1x SD weaker than Stage Mean	1x SD Stronger than Stage Mean	1.5x SD Stronger than Stage Mean

Note: 1. Stage Mean: average of indicator value of countries at the same stage of economic development. 2. SD: standard deviation of anchor indicator value of countries at the same stage of economic development.

Thereafter, we apply further notching to the SCS if a country has features listed in the “Main Additional Considerations” section, which are not common to sovereigns. In most cases, if a sovereign demonstrates a feature listed in that section, we would adjust the SCS by one notch upwards or downwards.

Aggregate adjustment to the SCS under each sub-factor is generally capped at two notches downwards or upwards.

2.1 Growth Performance

Our anchor indicator for growth performance is the trend growth of a country. Robust and sustainable economic growth of a country could provide the sovereign with a strong revenue base. This boosts the sovereign creditworthiness by making the debt burden of the sovereign more sustainable in the long term. From the perspective of economic resilience, countries with strong trend growth are generally more competitive than countries with low trend growth and are likely to perform better under stress scenarios by standing out as relatively favourable places for business and investment. The history of sovereign defaults indicates weak growth performance for a prolonged time resulted in sovereign defaults in a number of cases.

The trend growth is generally calculated over a long period, typically equal to the weighted average of real GDP growth over 10 years (including current year estimate and three-year projection, with historical growth carrying less weight) and adjusted for factors not related to the credit fundamentals of a sovereign (such as change in base year for GDP accounting). If a country is experiencing marked idiosyncratic structural changes (structural changes not experienced by peers at the same stage of economic development) and the impact on trend growth is not sufficiently captured by the 10-year weighted average growth, we will adjust the weighted average growth to capture the impact. Calculating the trend growth in this way helps grasp the relative fundamental growth strength of a country in a forward-looking perspective.

Main Additional Considerations

- **Economic concentration or other drivers of growth volatility:** For countries with high reliance on a single volatile industry or sector (typically accounting for much higher than 10% of GDP) or other kinds of volatile economy, we generally lower the SCS by one notch. The calculated trend growth of such countries is less useful for predicting the growth performance of the country in the coming years compared to countries with more balanced economic structures and stable growth. Thus, the calculated growth score could overstate the strength of economic fundamentals.

History suggests that countries with high reliance on a single volatile industry or sector could experience great deterioration in growth performance and marked rise in debt burden, when the prices or revenue of that economic segment declines sharply. Some of these countries defaulted eventually.

However, if the prices of major outputs of the above-mentioned volatile segment appear close to the bottom of the medium to long term price cycle with limited downside risk, we will not lower the SCS.

2.2 Balance of Payments Performance

Our anchor indicator for balance of payment performance is the trend level of the current account balance, which in our view is the main driver of a country's external sustainability in the long term. A weaker current account balance could dampen investor confidence in a country and constrain a sovereign's access to foreign exchange for repayment of foreign-currency debt. A country with a weaker trend level of current account balance is more likely to experience adjustment in policies and financial conditions (including but not limited to exchange rates) that could dampen growth and push up the debt of the sovereign. Thus, the sovereign creditworthiness of such a country would be weaker than that of a country with strong external sustainability.

The balance of payments is a statistical statement that summarizes transactions between residents and non-residents over a period of time. It consists of the current account, capital account and financial account. The current account receipts refer to the sum of proceeds from exports of goods and services and some income (mostly compensation of employees and investment income from non-residents). The balance of the current account always equals the total balance of the capital account and financial account (inclusive of statistical errors and omissions). Thus, an assessment of the current account balance in the long term helps give an understanding of the external sustainability of a country.

The trend level of the current account balance is generally calculated over a long period, typically equal to the weighted average of the current account balance (as a percentage of GDP) over 10 years (including the current year estimate and three-year projection, with the historical current account balance carrying less weight), and adjusted for factors not related to the credit fundamentals of a sovereign (such as statistical changes in balance of payment compilations). If a country is experiencing marked idiosyncratic structural changes (structural changes not experienced by peers at the same stage of economic development) and the impact on the trend level of the current account balance is not sufficiently captured by the 10-year weighted average level, we will adjust the weighted average level to capture the impact. Calculating the trend current account balance in this way gives insight into the relative fundamental external sustainability of a country according to a forward-looking perspective.

Additional Considerations

- **Very volatile current account performance:** If a country's balance of payments could be very volatile, for instance due to a highly concentrated export base and/or high volatility in terms of trade (mostly seen in commodity-exporting countries), the trend growth could overstate the external sustainability of the country. In such cases, we would typically lower by one notch the SCS. Terms of trade is defined as the ratio between the index of export prices and the index of import prices.

The history of sovereign defaults suggests that volatile current account balance performance of commodities exporters was a major driver of sovereign defaults in a number of cases.

- **High external debt burden:** Countries with the same trend of current account balance of payments may exhibit divergent external debt burdens. For countries with very high external debt burdens, we believe the starting balance of payments (BOP) score overstates the external sustainability. Thus, we would generally lower the BOP score by one or two notches (one notch if the ratio of external debt to current account receipt is greater than 150% or two notches if the ratio is greater than 300%).

We typically measure the net external debt as the total debt-type liabilities to non-residents (equal to total external liabilities minus foreign direct investment and portfolio equity investment) minus the official reserves. Therefore, inter-company lending that is reported as a component of foreign direct investment according to the Balance of Payment Manual of the IMF does not typically enter our measure of external debt burden.

For countries where the banking sector has large external assets, we will deduct banking sector debt-type external assets from the total debt to arrive at the net external debt, if we believe the banking sector is sound and resilient.

- **Very strong international investment position:** Countries with the same BOP score may have divergent international investment positions (IIPs). For countries with very strong international investment positions (net IIP generally greater than 50% of current account payment for countries with positive trend level of the current account balance, or greater than 100% for countries with negative trend level of the current account balance), we believe the starting BOP score understates the external sustainability. Thus, we would generally raise the SCS by one notch.
- **Current account deficit induced by sustained capital inflow:** If a country issues or controls a reserve currency or is a long-preferred investment destination for international capital, it may have a current account deficit that is both induced and accommodated by sustained capital inflow. In that case, the trend current account balance could understate the external sustainability of such a country. Thus, we raise by one notch the SCS if the trend current account balance of such a country is in deficit, and raise by two notches the SCS of the country issuing the most important reserve currency in the world.

Typically, the status of a reserve currency is quite stable over a very long period, as it is supported by widespread and entrenched investor confidence in the economic and institutional strength of the country issuing the reserve currency, the country's deep and open capital markets, and the soundness of its financial systems. We could identify the "reserve currency" for these criteria as a currency that accounts for more than 2% of the world's total allocated foreign exchange reserves, based on the IMF report "Currency Composition of Official Foreign Exchange Reserves." Currently we regard US dollar, Euro, Japanese Yen and Pound Sterling as the reserve currencies for these criteria, of which the US dollar is the most important reserve currency in the world.

Institutions and Policies

Our assessment of institutions and policies focuses on the extent to which a country's institutions and policymaking would -- relative to all other countries -- support (or constrain) a sovereign's ability to service its debt. A country's institutions and policymaking shapes the sovereign's creditworthiness through affecting the debt burden and economic fundamentals. Some of these impacts have been captured directly or indirectly under the discussion of key rating factors in the previous sections, for instance through affecting the projection of economic and fiscal indicators. However, it is worthwhile to dedicate a section to assess institution and policymaking to better understand the debt burden and economic fundamentals, the dynamics in stress scenarios and investor sentiment that affect sovereign creditworthiness.

In addition to our assessment of general institutions, we dedicate a sub-section to assess monetary institutions, given their importance to sovereign creditworthiness and the complexity of monetary institutions. For these criteria, we define monetary institutions as the monetary and financial system of a country. Strong monetary institutions could help a country allocate financial resources effectively to support economic fundamentals and provide a government with an option (monetary flexibility) to use monetary expansion to stimulate economic activity in stress scenarios.

Our assessment of monetary institutions and general institutions focuses on two aspects:

(1) How well the institutions and policies respond to internal and external shocks to support economic performance and fiscal sustainability in the long term; and

(2) To what extent institutions and policies are creating a stable/predictable environment for business, mitigating economic imbalances and thus facilitating sustainable economic growth and public finance development over the medium to long term; or to the contrary, leading to an unstable/unpredictable business environment, giving rise to economic and fiscal imbalances and thus the risk of sharp correction even in the absence of exogenous shocks.

In assessing general institutions and monetary institutions, we first determine a score for the sub-factor in the range of “1” (weakest) to “7” (strongest). We then apply a downward (or upward) adjustment by one notch to the SCS if the monetary institution score of a country is weak (or strong) compared to the Stage Norm, or downward (or upward) adjustment by two notches to the SCS if the monetary institutions score of a country is very weak (or very strong) compared to the Stage Norm.

3.1 General Institutions

We score the general institutional strength of a sovereign by taking a holistic view of key aspects of institutions and policies relevant to sovereign creditworthiness (except for monetary institutions), considering both the features of the institutions and policymaking as well as their track record and prospects of supporting sustainable economic growth and public finance.

Then we apply downward (or upward) notching to the SCS if the general institutions score is weak (or strong) compared to the Stage Norm (table 4).

Table 4 Notching for Relative Strength of General Institutions

Notching to SCS	Number of notches = General Institutional Score – Stage Norm				
	Stage Five	Stage Four	Stage Three	Stage Two	Stage One
Stage Norm	6	5	4	3	2

The key aspects of general institutions and policies include:

1. **Political and social stability.** A stable political environment reflects and reinforces social stability, which facilitates business and economic development. In contrast, political conflict, frequent strikes and social turmoil hurt an economy by hindering business and government operations and dampening the predictability of macroeconomic policies and regulations. Typically, a country with political stability tends to be governed by a majority party for at least two consecutive terms for most of the time over a few decades and sees smooth transfer of power from one administration to the next. Whether a coalition government without a majority party could be potentially unstable would be assessed on country-specific circumstances.

2. **Effectiveness of institutions and policymaking in promoting sustainable economic growth and public finance**

- **Role of government and market:** We believe effective political institutions would assign proper roles to the government and market respectively in an economic system, given the stage of development and other socio-political circumstances of the country. The government of a country at an early stage of development may need to lay down market institutions, take the lead in building infrastructure and nurture competitive advantages. As an economy becomes wealthier and more sophisticated and moves to a higher stage of economic development, the government would usually focus more on fostering a stable macroeconomic environment, enforcing fair and effective regulations, and providing reasonable levels of social services and welfare. If a government plays an excessive or inadequate role (such as intervening intensively in

economic activities or providing insufficient public services and regulations), it could constrain sustainable economic growth, which would eventually be detrimental to the health of public finance.

- **Policy framework and targets:** The most effective institutions would set realistic and reasonable policy frameworks and targets; make use of appropriate policy instruments; ensure stability of institutions and consistency of policies that work effectively through rule by law and well-established practices; make necessary policy adjustments (learning and error-correction) and implement reform based on changing circumstances and outlook; address both short-term priorities and long-term needs; and learn from past experience. Policy changes and reforms should happen in a timely manner. An instance of effective policy is one that promotes diversification of an economy which relies highly on the export of a few commodities or reserves large portions of revenue from such exports in good years for cushioning commodity price shocks in future. In contrast, resorting to aggressive fiscal expansion prior to elections or related to the political cycle is detrimental to sustainable public finance.
- **Crisis prevention and risk management:** A country with the most effective institutions and policies would have the ability to manage stress and crisis, including by setting aside fiscal reserves and foreign exchange reserves as well as having fiscal and monetary room to respond to crisis. Response to crisis would be swift and decisive. For countries lacking the ability to resort to counter-cyclical measures, effective crisis management may take the form of fiscal consolidation and structural reform to strengthen the long-term vitality of the economy and public finance (such as through pension reform), and thereby maintain investor confidence and secure financial support from international financial institutions.
- **People and socio-political aspects of effective governance:** Strong leadership, capable technocrats, social cohesion and alignment of policies with fundamental and realistic social needs as well as inclusive growth facilitate efficient and effective policymaking. Checks and balances generally reduce the odds and severity of policy missteps, although excessive checks and balances make timely policymaking more challenging in a country experiencing political polarization. Corruption and other forms of improper influence by interest groups could dampen the inclusiveness of economic growth and in many cases efficient allocation of resources, which is detrimental to the sustainability of economic growth and the health of public finance.
- **Data and transparency:** Availability of relevant and quality statistics, especially economic, fiscal, financial and trade statistics that make for realistic and effective policies and mitigate the risk of policy missteps.

We factor in relevant country circumstances in assessing the effectiveness of institutions and policies. We also factor in the evolution of institutions along the path of economic development. Effective checks and balances may take various forms depending on the country's circumstances. For instance, monetary policies may tolerate higher inflation in developing countries.

3.2 Monetary Institutions

For monetary institutions, we first assign an initial score based on inflation ("inflation score"), then adjust the initial score by factoring in *Main Additional Considerations* factors to arrive at the final monetary institutions score. The adjustment to the inflation score is additive except the final monetary institutions score has a maximum of "7" and a minimum of "1".

We then apply downward (or upward) notching to the SCS if the score is weak (or strong) compared to the Stage Norm (table 5).

Table 5 Notching for Relative Strength of Monetary Institutions

Notching to SCS	Two notches downward		One notch downward	One notch upward	Two notches upward	
Monetary Institutions Score minus Stage Norm	<-2		-2~ -1	1~2	>2	
Stage of Economic Development	Stage Five	Stage Four	Stage Three	Stage Two	Stage One	
Stage Norm	5.5	5	4.5	4	3.5	

We believe low and stable inflation is a sign of a strong monetary institution, since it facilitates sustainable economic growth, helps build confidence in monetary policy and enables the government to resort to monetary expansion in stress scenarios without incurring high inflation and disrupting economic activity. Thus, a low and stable CPI inflation corresponds to a stronger score.

The inflation score is the weighted average of the score on the level of consumer price inflation (CPI inflation) and the score on the volatility of CPI inflation over a 10-year period (including current year estimate and three-year forecast) (table 6). The inflation level score carries a weight of 70%, while the inflation volatility score carries a weight of 30%. The volatility of CPI inflation is measured by its standard deviation.

In rare cases where a country experiences deflation, signaled by an average CPI inflation below zero, we will lower by one notch the SCS without scoring monetary institution. This reflects our belief that deflation is not only a symptom of economic weakness but also a sign of ineffectiveness of monetary policy to bring the economy on a healthy path.

In cases of average CPI inflation falling between zero and 1%, we will lower by one notch the SCS without scoring monetary institution, if we believe there is significant deflationary pressure. Otherwise, we assign an inflation performance score of “6”, based on low and stable but suboptimal inflation.

Table 6 Assigning Score to Inflation Performance

Inflation level score	7	6	5	4	3	2	1
Average CPI inflation ¹	1%~2.5%	2.5%~3.5%	3.5%~4.5%	4.5%~6%	6%~8%	8%~10%	>10%
Inflation volatility score	7	6	5	4	3	2	1
Volatility of CPI inflation ²	<1	1~1.5	1.5~2	2~2.5	2.5~3	3~3.5	>3.5

Note: 1. Average CPI inflation over ten years spanning year_{t-6} and year_{t+3}. For a country where average CPI inflation is lower than 1%, see the relevant context for scoring guidance. 2. Volatility of CPI is represented by the standard deviation of CPI inflation (in percentage points) over same ten years.

Main Additional Considerations

- **Exchange rate regime:** If a country implements a pegged or heavily-managed exchange rate regime (or other regimes that lack exchange rate flexibility), a currency board or does not have a local currency, this constrains the country’s ability to use monetary policy to support economic and financial stability (including response to crisis). In such cases, we generally lower the monetary score by one or two points, depending on the extent of exchange rate rigidity and the potential negative impact on sovereign creditworthiness. However, effective capital controls, foreign exchange market intervention, financial regulation and other government measures may mitigate or offset the constraint of the exchange rate regime on monetary flexibility and justify smaller or no downward adjustment to the monetary score.
- **Central bank independence:** If we believe the central bank or monetary authority of a country has much stronger (or weaker) independence than most central bank peers, as evidenced by legislation and practice (or lack of legislation), we would raise (or lower) the score by one point accordingly.
- **Financial stability and development:** If we estimate that a country experiences high and fast rising macro-leverage (measured by the ratio of broad monetary aggregate to GDP or the ratio of *domestic credit to private sector* to GDP), significant risk of asset price bubbles, high and unsustainable financialization (typically signaled by a very high share of financial services in GDP) or severely under-developed financial system, we would lower the score typically by one point. If we believe a country’s financial system experiences significant underdevelopment, which is a major constraint on economic development, we could lower the score by one point.
- **Currency union:** For a member country of a currency union, if we believe it doesn’t have substantial and effective influence on monetary policy, we lower the score by one point.

Distinctive Movers of Underlying Liquidity Risk

For sovereigns with similar solvency risk, the higher the liquidity risk, the weaker the sovereign creditworthiness. We explain in this section how we apply downward or upward notching to the SCS to capture the impact of distinctive movers of underlying liquidity risk on sovereign creditworthiness.

We believe liquidity risk is partly correlated with solvency risk. For instance, sovereigns with little solvency risk tend to have access to a greater and more diversified investor base, which reduces their rollover risk compared to sovereigns with high solvency risk. We assess in this section risk factors that drive the liquidity risk of a sovereign (“distinctive movers of underlying liquidity risk”).

4.1 Government Borrowing

- The funding needs and borrowing patterns of governments have implications for the fundamental liquidity risk of the sovereign. All other things being equal, higher funding needs or borrowing from more volatile sources increase the liquidity risks. Thus, if a government has very high borrowing needs (for instance due to high budgetary deficit, maturation of large debt or materialization of large contingent liabilities) or the government borrows heavily from non-residents, we would typically lower the SCS by one notch.

We regard a government as “having high borrowing needs” if the needs are close to 10% of GDP or more in a single year over the next three years (year_t to year_{t+2}) or a high single-digit percentage of GDP at one point of time over the next three years.

We regard a government as “borrowing heavily from non-residents”, if such borrowing accounts for 40% or more of government commercial debt in a developing country or 60% or more of government debt in a developed country. The country classification for this purpose is in line with the latest classification in the World Economic Outlook (WEO) report of IMF, with advanced economies under WEO terminology corresponding to developed countries in these criteria. For countries issuing or controlling a reserve currency, we do not lower the SCS.

In case a government has or is close to having both features, we would apply one or two notches of downward adjustment to better capture the impact of the resulting liquidity risk on sovereign creditworthiness.

The aggregate downward adjustment to the SCS, based on government borrowing needs and patterns, is capped at two notches.

- For a government with high liquid financial assets in the form of fiscal reserves or other readily usable forms, we raise the SCS by one notch to reflect low liquidity risk.

4.2 External Liquidity Risk

We apply one to two notches of downward or upward adjustments to the SCS to reflect distinctive external liquidity risk.

1. **For sovereigns issuing or controlling a reserve currency:** We raise the SCS by two notches for countries issuing or controlling a reserve currency to reflect very low external liquidity risk. These sovereigns are likely to have little difficulty in accessing new borrowings in the market at times of global economic stress, mainly as investors appear to prefer to hold the debt securities of these sovereigns in such stress scenarios (a phenomenon frequently called “flight to quality”).
2. **For other countries:** We assess their external liquidity risk based on sub-scores on the *basic balance of payments* and a *narrow measure of reserve adequacy*. We raise by one or two notches the SCS for countries with low and very low external liquidity risk and apply a downward adjustment by one or two notches for countries with high or very high external liquidity risk respectively (table 7).

In assessing the external liquidity risk of developing countries, we apply stricter conditions regarding reserve adequacy. This is because developed countries generally have well-established and better access to international bond markets, and much less need for reserves to support external liquidity.

Table 7 Notching Based on Relative External Liquidity Risk

	External liquidity risk category	Adjustment to SCS	Category conditions ¹	
			Basic balance of payments ² /GDP	Narrow measure of reserve adequacy ²
Developed ³ countries	Very Low	2 notches up	>5%	<40%
	Low	1 notch up	>0%	<60%
	High	1 notch down	< -2%	>300%
	Very High	2 notches down	< -5%	>600%
Developing countries	Very Low	2 notches up	>5%	<20%
	Low	1 notch up	>0%	<30%
	High	1 notch down	< -2%	>150%
	Very High	2 notches down	< -5%	>300%

Note: 1. A country would need to satisfy both the conditions on basic balance of payments and narrow measure of reserve adequacy to be assigned into one of the above four ranking of external liquidity risk. 2. Based on actual/estimate of year_{t-1} and trend over year_{t-1}~year_{t+2}. 3. Country classification in line with latest classification in the World Economic Outlook report of IMF, with advanced economies under WEO terminology corresponding to developed countries in these criteria.

The *basic balance of payments* is defined as the sum of the current account balance and the net flow of foreign direct investment, which largely measures whether and to what extent the real economic sector provides external liquidity (in case of basic surplus) or needs external liquidity (in case of basic deficit). The net flow of foreign direct investment equals the *net inflow of foreign direct investment* by non-residents minus the *net outflow of overseas direct investment* by residents.

The *narrow measure of reserve adequacy* is defined as the ratio of the short-term debt by remaining maturity (including short-term deposits in domestic banks by non-residents) to the *accessible foreign exchange reserve*, which reflects mainly a country's ability to service external debt with official reserves in the stress scenario that external creditors do not roll over debt due in the upcoming year.

For the criteria, the *accessible foreign exchange reserve* equals the official reserves minus items not readily available for foreign exchange operations and repayment of external debt. For instance, reserves sold forward is not readily available and should not be included in the *assessable foreign exchange reserve*.

- Some countries may have access to substantial foreign-currency liquidity under facilities such as the IMF Standby Arrangement, or bilateral or multilateral currency swaps. When there is sufficient evidence that the country can access such facilities at times of distress and the drawable funds—if regarded as accessible reserves of the government—could help bring down the external liquidity risk from high level, we would not lower the SCS.
 - If a developing country's high level of *narrow reserve adequacy* is driven by low external debt that resulted from very limited market access, recent debt reduction or similar restructuring, rather than very low underlying external liquidity risk, we would not raise the SCS.
 - For a sovereign with limited external data, we equate the external liquidity notching to that of another country ("reference country") similar in income level (approximated by GDP per capita in US dollars), trend level of current account balance and volatility of current account performance, subject to a possible additional downward adjustment of one notch to the SCS if we believe its external strength is notably weaker than the reference country.
3. **Poor quality of external data:** If the external data of a country lacks consistency (for instance, having large errors and omissions for several years, or unjustifiably large mismatch between the balance of payments and international investment position numbers) or appears to be of very weak quality in other ways, we may lower by one notch the SCS, as the weak external data may conceal very high external liquidity risk.

Additional Adjustment Factors After Indicative Credit Score

On top of the indicative credit score, we consider a few additional factors to arrive at a foreign-currency rating of a sovereign:

- (1) **A sovereign government's willingness to service its debt:** When a sovereign government may not be willing to service its debt despite the lack of apparent constraints on its debt servicing capacity, it could have great implications for the likelihood of sovereign default. Although a government's willingness (or lack of it) to pay its debt is related to its institutional features (especially political settings), we believe the impact on sovereign creditworthiness could be quite substantial in some cases and may not be fully captured through assessment of general institutions. Thus, we consider the uncaptured willingness to pay as an adjustment factor after the ICS.

Typically for a country with a sovereign default history in the past decade, we would apply up to three notches of downward adjustment to the ICS. However, if we believe the institutional change and political development since the previous sovereign default has brought about material improvement in the country or region's debt payment culture, we may just lower the ICS by one notch or apply no downward adjustment at all.

- (2) **Risk of geopolitical conflict and extreme natural disasters:** When we believe the impact of low-probability high-cost geopolitical conflict and extreme natural disasters could not be sufficiently captured by individual key rating factors, we would lower the ICS by one or more notches to capture its impact on sovereign creditworthiness.
- (3) **Extreme risk on key rating factors:** If the value of one or more anchor indicators is remarkably weaker than the threshold value for the worst score associated with that anchor indicator (for instance, trend growth or trend CPI inflation being worse than the Stage Norm by much more than two standard deviations), it may substantially increase the sovereign credit risk. In such cases, we would lower the sovereign ICS by one or more notches to capture its impact on sovereign creditworthiness.
- (4) **Uncaptured aggregate effect of rating factors:** If we believe the aggregate impact of rating factors on sovereign creditworthiness is substantially greater than what has been captured by the ICS, we would lower or raise the ratings by typically one or two notches to fully capture the impact. For instance, if a sovereign performs weaker (or stronger) than the Stage Norm regarding several anchor indicators or main additional considerations factors but not to the extent of justifying lowering (or raising) the ICS for any one of them, it may signal much higher (or lower) sovereign credit risk than reflected in the ICS. We may lower (or raise) the ICS by one notch to better capture the sovereign creditworthiness in such cases.

Assigning A Sovereign's Local-currency Rating

When examining the recent historical record, we observed that sovereigns defaulted less frequently on local-currency debt than on foreign-currency debt. This suggests some governments may have stronger capacity and/or willingness to service local-currency debt than foreign-currency debt in some circumstances.

In this globalized world, we expect most governments would not distinguish between repaying local-currency debt and foreign-currency debt. Whether a sovereign's local-currency rating could be higher than its foreign-currency rating would be typically a matter of payment capacity, although in rare cases a weaker willingness to pay foreign-currency debt compared to local-currency debt could lead to higher local-currency ICR than foreign-currency ICR.

There are a number of factors that may support a higher local-currency sovereign ICR than foreign-currency ICR. In particular, we would consider a sovereign's fiscal and monetary flexibility, institutional effectiveness, and local capital market development. We would also examine a sovereign's track record in enforcing local-currency and foreign-currency creditor rights to gain insight into its willingness to fulfill different classes of debt obligations in stress scenarios. In any case, we would typically limit the difference between local-currency and foreign-currency sovereign ratings to one notch. This reflects our view that currency denomination would generally only have a moderate impact on a sovereign debt instrument's credit performance.

Fiscal and monetary flexibility. In general, we believe a government with strong fiscal and monetary positions is better placed to meet its local-currency obligations through increased domestic money supply^[1]. We would assess the government's fiscal burden, monetary independence, the relative levels of local-currency and foreign-currency debt outstanding, and the inflation environment. We believe these determine a sovereign's ability to create money without jeopardizing social and economic stability.

Institutional effectiveness. We believe a sovereign's governance effectiveness plays a critical role in ensuring social and political stability, especially during times of economic stress. Our analysis focuses on a jurisdiction's governance framework and the government's role in the economy. Major weaknesses in governance may significantly constrain a government's ability to satisfy its local-currency obligations through money creation.

Local capital market development. In our opinion, a robust domestic capital market would facilitate the government's local-currency debt management by providing liquid and diverse funding channels. Well-established banking, insurance, pension and asset management industries may also provide sustainable demand for local-currency sovereign debt instruments, particularly on the long end of the curve.

Previous treatment of local-currency and foreign-currency creditors. A sovereign might have preferential treatment of local-currency or foreign-currency creditors, which are oftentimes determined by political considerations and the characteristics of the debt. For instance, it is less likely to restructure local-currency debt if the local-currency creditors consisted of systemically important entities that would likely become insolvent in the event of a local-currency default. A track record of a sovereign's debt repayment provides a strong indicator of its willingness to extend preferential treatment to local-currency or foreign-currency creditors.

In general, we believe that the capacity and willingness to repay local-currency or foreign-currency debt is indistinguishable for sovereigns with investment-grade ratings. The visibility on the relative default likelihood on two different classes of debt instruments is extremely limited when a sovereign's default is remote. As a result, we typically do not differentiate between the local-currency and foreign-currency ICRs for investment-grade sovereigns. For non-investment-grade sovereigns, along with the increased proximity to default, the potential for divergent local-currency and foreign-currency creditworthiness is becoming greater.

We are mostly like to assign a higher local-currency sovereign rating than the foreign-currency sovereign rating when the following circumstances exist:

- Sovereigns have strong public finance fundamentals but weak external fundamentals;
- Sovereigns have a history of preferential treatment of local-currency creditors over foreign-currency creditors;
- Sovereigns have significantly higher foreign-currency debt burdens than local-currency debt burdens;
- Sovereigns have an illiquid currency and limited foreign-exchange reserves.

Assigning Issuance Rating

We set the issuance credit rating of a senior unsecured sovereign foreign-currency debt equal to the sovereign foreign-currency ICR, unless the debt is fully guaranteed, in which case we assign the issuance rating based on our applicable criteria.

We set the issuance credit rating of a senior unsecured sovereign local-currency debt equal to the sovereign local-currency ICR, unless the debt is fully guaranteed, in which case we assign the issuance rating based on our applicable criteria.

Related Criteria and Research

- Rating Symbols and Definitions, 7 May 2018
- General Principles of Credit Ratings, 21 November 2017

^[1] This is not the case for countries adopting currency of another country, or members of a currency union that cannot effectively influence the monetary policy of the currency union.

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