CareEdge RATINGS

CareEdge Sovereign Rating Methodology

January 30, 2024

For Public Consultation and Stakeholder Feedback

CONTENTS

A. Introduction

Sovereign issuers are unique given the powers within their jurisdictions to determine taxation and legal policies. CareEdge Sovereign Rating is an assessment of a Sovereign's ability and willingness to service its debt in full and in a timely manner.

This Sovereign Rating Methodology explains CareEdge's proposed approach to assessing a sovereign's credit risk, the underlying principles, pillars, and process of assessment, and the rating scale.

> We invite you to explore our Sovereign Rating Methodology and provide your valuable insights to help us enhance the methodology. You may provide the feedback till Friday, February 16, 2024 to Kiran Kavala (kiran.kavala@careedge.in) and Akanksha Bhende (akanksha.bhende@careedge.in). We will subsequently publish the final methodology post the feedback.

B. Approach

Our approach to Sovereign Ratings involves analysis and assessment under five broad pillars, which we believe are critical in determining a sovereign's creditworthiness. The assessment of each of these pillars is based on the consideration of historical, current as well as expected future trends. These pillars are:

a) Economic Structure & Resilience	b) Fiscal Strength	c) External Position & Linkages	d) Monetary & Financial Stability	e) Institutions & Quality of Governance

a) Economic Structure & Resilience – This is an assessment of the economic potential and flexibility of a sovereign to achieve sustained growth. We also consider environmental factors under this pillar, as adaptability to climate risk could be a critical aspect in achieving an economy's growth potential.

b) Fiscal Strength – This pillar assesses a sovereign's fiscal policy, debt profile, and ability to manage public finances effectively across economic cycles.

c) External Position & Linkages – Here we assess the fundamentals of a sovereign's external sector to absorb shocks as well as to build cushions primarily in the form of foreign exchange reserves.

d) Monetary & Financial Stability – This is an assessment of the Central Bank's 'monetary policy credibility' to mitigate economic risks and achieve stability in financial markets.

e) Institutions & Quality of Governance – This is an assessment of the effectiveness of a sovereign's economic and political institutions to provide a stable and predictable governance as well as policy environment.

Each of the above five pillars is assessed through primary and secondary factors, using a mix of quantitative and qualitative indicators. Primary factors are assessed largely on the basis of quantitative indicators, using both past and expected future data. Secondary factors are country-specific nuances that bring a qualitative overlay and analytical comprehensiveness.

Scoring Process and Rating Scale

We begin with deriving a Sovereign Risk Score, which forms the basis for arriving at CareEdge Sovereign Ratings. The ratings are assigned on the CareEdge Global Rating Scale (refer to Annexure 1).

The process starts with an assessment of primary factors through relevant indicators on a scale of 1 to 8, with 1 being the strongest and 8 being the weakest. The scores of each indicator are consolidated to arrive at a score for each pillar. Subsequently, the five pillar-level scores are further aggregated to obtain the overall Sovereign Risk Score. The weights for aggregating pillar-level scores are given in the table below. Adjustments in scores for secondary factors can be applied at all levels, including at indicator level, pillar level or overall level.

Since credit rating is an exercise of assessing the relative creditworthiness, we believe that the standard for comparison should be the same. Therefore, we have used the same metrics and scale at every level for all countries.

Pillar	Weightage
Economic Structure & Resilience	25.00%
Fiscal Strength	25.00%
External Position & Linkages	16.67%
Monetary & Financial Stability	16.67%
Institutions & Quality of Governance	16.67%

In our Methodology, the two pillars of Economic Structure & Resilience and Fiscal Strength carry relatively more weight. This is because Economic Structure & Resilience is the foundation for the macroeconomic fundamentals of any economy, including an ability to grow sustainably and absorb potential shocks. Further, Fiscal Strength reflects the government's financial management discipline and forms the basis of its debt-bearing capacity. In addition, the assessment of these two pillars is relatively more quantitative compared to other pillars.

The definition of default is given in Annexure 2.

C. Sovereign Rating Methodology

The following table lists the relevant primary factors for each of the five pillars that form the foundation of our Sovereign Rating Methodology:

Pillars	Primary Factors
Economic Structure & Resilience	Economic Size
	Income Level
	Economic Growth and Volatility
	Fixed Capital Investment
	Trade Diversity
	Environmental Sustainability
Fiscal Strength	Gross General Government (GG) Debt Level
	Trend in Gross GG Debt
	Gross GG Debt Composition
	Debt Affordability
	Quality of Government Expenditure

Pillars	Primary Factors
External Position & Linkages	Current Account Position
	Foreign Direct Investment
	Exposure to Volatile Capital Flows
	Adequacy of Foreign Currency Reserves
	External Debt Profile
Monetary & Financial Stability	Exchange Rate Regime
	Inflation Management
	Health of Banking and Financial Sector
	Depth of Financial Markets
Institutions & Quality of Governance	Accountability and Political Stability
	Regulatory Quality and Government Effectiveness
	Rule of Law and Control of Corruption

D. Pillar-Wise Rating Factors

1. Economic Structure & Resilience

Economic Structure & Resilience of a sovereign is broadly an assessment of its size, income level, growth potential and ability to withstand various shocks. The resilience of an economy is underpinned by stable and strong economic growth which determines both competitiveness and employment opportunities. This in turn augments citizens' standard of living and contributes to the sovereign's revenue generation ability. For a virtuous cycle of growth, productive investments are critical. With environmental sustainability becoming increasingly important, investment in clean energy is also important.

Another important dimension is the extent of economic diversification. A well-diversified economy provides the flexibility to withstand various shocks while fostering inclusive and sustainable growth. On the other hand, an over-reliance on a few sectors makes an economy vulnerable to sudden external shocks as demonstrated in the pandemic-led disruption of some tourism and resource-dependent economies.

As discussed above, for the assessment of Economic Structure & Resilience, we have identified a set of broad primary factors together with related indicators to capture the essence of the primary factor. We further adjust our assessment using secondary factors for analytical comprehensiveness.

Economic Structure & Resilience		
Primary Factors	**Indicators**	**Secondary Factors**
Economic Size	Nominal GDP, USD	• Demographic Profile • Business Environment and Competitiveness • Reform Orientation • Income Inequality • Labour Productivity • Sectoral Concentration • Exposure to Climate Risk and Natural Disasters
Income Level	GDP Per Capita, PPP (Constant Prices), USD	
Economic Growth and Volatility	Average Real GDP Growth, Standard Deviation of Real GDP Growth	
Fixed Capital Investment	Gross Fixed Capital Formation as a % of GDP	
Trade Diversity	Market Concentration Index, and Export/ Import Product Concentration Indices	
Environmental Sustainability	Share of Renewable Energy Consumption, and Carbon Emissions Per Capita/ Per Million Dollars of GDP	

a) **Economic Size** - A large economy has a greater ability to absorb shocks. This is typically because of associated diversity, economic influence, and a capacity to generate a relatively stable revenue stream. The size of the economy also has a bearing on the global stature of an economy and its overall growth potential. At the same time, even though certain smaller economies may not have the benefit of scale, they might still have advantages in aspects relating to flexibility, income levels, and growth prospects which are captured in other indicators.

To capture the sheer size of an economy, we look at the as the current year's nominal GDP and the average of the next five years.

b) **Income Level -** The per capita GDP is a good measure of income level in the economy and indicates a sovereign's tax potential. It is also an indicator of the welfare spending requirement of the government. We look at the latest available per capita income in PPP (purchasing power parity) terms to measure income level, as it enables a more accurate comparison of average income levels across economies, adjusting for the differences in price levels and equalising purchasing power across currencies.

c) **Economic Growth and Volatility -** Healthy GDP growth not only helps augment the size of the economy but also contributes to fiscal strength through widening tax potential and stimulating consumption. We look at average real GDP growth for the recent 5-year period along with an estimate for average growth in the next five years to analyse the growth trajectory of a sovereign.

Additionally, stability in growth is another important aspect as it leads to the predictable economic environment which enhances the economy's credibility and boosts growth potential. On the other hand, a large fluctuation in economic growth could strain the public finances, especially in periods of economic downturn. This in turn could also lead to accumulation of public debt. To measure the economic volatility in growth, we look at the standard deviation of real GDP growth over the last 10-year period.

d) **Fixed Capital Investment** – Fixed Capital Investment is an indicator of future supply-side capacity. It plays a key role in propelling the economic growth cycle through enhancing productivity over the medium to long term. Hence, for sustained high economic growth, asset creation is important. To measure this aspect, we look at the latest gross fixed capital formation (GFCF) as a percentage of GDP.

e) **Trade Diversity** – Trade diversification is an important factor that helps in assessing an economy's resilience. Economies with more diversified trade baskets are relatively more resilient to shocks and have a higher potential to adapt to changing circumstances. On the other hand, a more concentrated trade basket is prone to sector-specific volatility. For example, a trade basket concentrated in agricultural items will be susceptible to weather-related fluctuations whereas, a commodity concentrated trade basket will be exposed to sudden price shocks. The same holds true if an economy has a high dependence on a select few trade partners. A slowdown in any of the major trade partners could potentially have negative spillovers on the performance of the economy. To quantify trade diversification, we look at three indicators: market concentration index (World Bank), export product concentration index (UNCTAD) and import product concentration index (UNCTAD).

f) **Environmental Sustainability** – Environment sustainability is becoming increasingly critical in determining a sovereign's future economic prospects. Countries prioritising environmentally friendly policies are better prepared to address climate related challenges and limit any potential economic and fiscal impact. It also facilitates better access to capital flows by attracting environmentally friendly investments. To capture this aspect, we consider the share of renewable energy consumption in total energy consumption, CO_2 emissions in metric tons per capita and CO_2 emissions in metric tons per million dollars of GDP in our credit analysis of sovereigns.

Secondary Adjustments to the Economic Structure & Resilience Assessment
Some of the secondary factors we look at are sectoral concentration, global competitiveness, ease of doing business, labour productivity, demographic profile, and climate risk. For instance, adjustments may be made when an economy is highly exposed to sectors which are susceptible to commodity price fluctuations or adverse weather events. Similarly, we may also consider adjustments if we believe an economy to be highly diversified for its size to truly capture its economic resilience and relevance.

We also assess aspects such as infrastructural capacity and business environment to better understand ease of doing business and the growth potential of the economy. Exposure to climate risks and natural disasters could also have a bearing on the growth potential in the longer term. Consequently, climate-related risks are also integrated into our sovereign credit analysis.

We also analyse the demographic profile of an economy to assess if it enjoys a demographic dividend or is faced with an ageing population and potential labour shortages. We also consider other social considerations such as income inequality, skill gaps and productivity as these factors have a significant impact on the economic strength of any economy.

2. Fiscal Strength

Healthy and well-managed public finances are important enablers of the creditworthiness of a sovereign. Stable revenue, low fiscal deficit, and effective debt management enhance debt-bearing capacity and enable governments to allocate resources toward quality expenditure. Also, a comfortable government balance provides fiscal space for the governments to support the economy during periods of crisis or financial shocks. On the other hand, high levels of government debt and debt servicing constrain the productive expenditure of the government, weighing on the overall economic growth prospects and stakeholder's confidence.

In our model, the fiscal strength is assessed at the general government (GG) level. General government consists of all the layers of the government (including central/ federal, state, and local governments). A sovereign's Fiscal Strength assessment is based on the following primary and secondary factors:

Fiscal Strength		
Primary Factors	**Indicators**	**Secondary Factors**
Gross General Government (GG) Debt Level	Gross GG Debt to GDP	• Orientation Towards Fiscal Reform and Implementation • Overall Government Balance • Contingent Liabilities including Exposure to SOE (State Owned Enterprises) Debt • Reserve Currency Status • Funding from Official Creditors • Share of GG Debt in Foreign Currency • Exposure to Inflation-Indexed Bonds • Government's Revenue Dependence on Commodity Price Cycle • Default History
Trends in Gross GG Debt	Change in Gross GG Debt to GDP	
Gross GG Debt Composition	Gross GG Externally Held Debt to Total Gross GG Debt	
Debt Affordability	Interest Payments as a % of Revenue	
Quality of Government Expenditure	(Pension + Salaries + Subsidies + Net Social Benefits) as a % of Total Expenditure	

a) **Gross GG Debt Level:** The assessment of the government's debt level is important to understand its financial health and fiscal management. Generally, a low level of government debt is advantageous for economies as it leads to improved fiscal flexibility. On the other hand, a high government debt level is an indication of elevated leverage and weak fiscal discipline. It contributes to fiscal distress and dampens the growth prospects of an economy. To capture the quantum of general government debt relative to the economy's size, we look at the average gross GG debt as a percentage of GDP over the last 5-year and future 5-year periods.

b) **Trends in Gross GG Debt:** To gauge the government's commitment to fiscal consolidation in the medium-long run and to ascertain if the government's debt level is sustainable, the assessment of the debt trajectory becomes crucial. It is also an indicator of the government's fiscal effectiveness which is associated with stable or decreasing debt levels over time. We assess the historical change in gross GG debt as a percentage of GDP over the latest five-year period as well as the expected change in gross GG debt as a percentage of GDP in the next 5-year period to capture this aspect.

c) **Gross GG Debt Composition:** The financing of general government debt should be an important consideration in the fiscal strength assessment. Government debt which is financed by domestic creditors poses relatively less risk from a debt servicing perspective. Therefore, we look at the latest share of gross GG external debt (by creditors) in total gross GG debt as one of the primary factors in our assessment of the fiscal pillar.

d) **Debt Affordability:** The government's debt burden together with the interest cost and revenue base available to finance the interest payments determine the debt affordability of a sovereign. The high cost of debt requires the diversion of funds from productive expenditure toward interest payments weighing on the overall economic growth potential. We consider the average GG interest payments as a percentage of revenue over the latest 5-year period to evaluate the government's debt affordability relative to its revenue base.

e) **Quality of Government Expenditure:** For sustainable growth, quality spending towards infrastructure creation, education and healthcare is important. It not only boosts economic productivity but also leads to improved social outcomes. Economies with high social risk in terms of heightened income inequality, unemployment and an ageing population are particularly faced with a higher government spending requirement towards social protection measures and subsidies. This could erode fiscal strength and constrain the government's capacity for productive investments. As these expenditures are largely committed in nature, it could also lead to higher borrowing requirement especially if the economy's revenue base is narrow. To measure this aspect, we look at the average share of pensions, salaries, net social benefits and subsidies in total government expenditure over the latest 5-year period.

Secondary Adjustments to the Fiscal Strength Assessment

Some of the secondary factors we look at are the government's orientation towards fiscal reforms and its implementation, fiscal management and transparency in reporting of government accounts. Another important aspect that we look at is the government's exposure to contingent liabilities, including debt of State-owned enterprises (SOEs) or any other hidden debt to determine the fiscal vulnerabilities.

We may also apply adjustments for economies with reserve currency status or with a high share of concessional long term government debt. While we include externally held (by creditors) GG debt in our assessment, we also look at the amount of government debt denominated in foreign currency and debt maturity profile. The government's foreign currency debt increases the vulnerabilities arising from financial shocks and currency depreciation.

In addition, we also factor the government's exposure to inflation-indexed bonds and its revenue dependence on a particular sector into the model through secondary adjustments. The evaluation of a sovereign's default history also becomes important as it is reflective of the past track record of the economy to withstand shocks and gives an indication of the effectiveness of policy response to the crisis. It is also indicative of the sovereign's willingness to pay and debt repayment culture. We also assess sovereigns that are relatively more vulnerable to interest rate risks, as it could have a bearing on their overall fiscal health.

3. External Position & Linkages

Sound external sector fundamentals are critical to determine a sovereign's access to foreign funding, trade competitiveness, and external liquidity. In a largely interconnected global landscape, the external sector can become a source of risks emerging from global trade tensions, financial contagion, and geopolitical conflicts. Hence, strong external indicators such as a comfortable current account position, healthy capital inflows, sustainable external debt, adequate foreign exchange reserves, etc. become increasingly important cushions to act as offsets.

A sovereign's External Position & Linkages assessment is based on the following primary and secondary factors:

External Position & Linkages		
Primary Factors	**Indicators**	**Secondary Factors**
Current Account Position	Current Account Balance as a % of GDP	• Reserve Currency Status • Actively Traded Currency Status • Presence of Offshore Financial Centre • Ease of Access to External Funding • Net International Investment Position • Remittances Inflows • Exposure to Commodity Price Cycles
Foreign Direct Investment	Foreign Direct Investments, Net Inflows as a % of GDP	
Exposure to Volatile Capital Flows	Outstanding FII Position as a % of GDP	
Adequacy of Foreign Currency Reserves	Total Reserves in Months of Imports	
External Debt Profile	Externally Held Debt as a % of GDP, Short-Term External Debt as a % of Total External Debt	

a) **Current Account Position:** One of the most important metrics in the assessment of a sovereign's external risk is its current account balance which provides a record of all transactions involving the exports and imports of goods and services, payments of income, and current transfers between residents of a country and non-residents. The current account balance can also be looked at as the difference between an economy's domestic savings and investments. A surplus in the current account provides a valuable buffer against external shocks. On the other hand, a high level of current account deficit can lead to external stress.

We look at the average current account balance as a percentage of GDP over the past 5-year and future 5-year periods.

b) **Foreign Direct Investment (FDI):** FDI flows help in financing the current account deficit and is a critical indicator in the assessment of external strength. A robust FDI inflow reflects degree of global confidence in the country's competitiveness, economic prospects, and policies. Non-debt investments in the form of FDI are relatively stable in nature and hence are seen to be a preferred source of investment finance. We use average FDI inflows as a percentage of GDP over the past 5-year in our model to capture this aspect.

c) **Exposure to Volatile Capital Flows:** Foreign capital flows lead to enhanced access to funds for investments and greater integration into the global financial system. However, high exposure to volatile capital flows could harm financial stability and hamper long-term growth prospects. The risk of sudden capital flight due to unfavourable global/domestic events could pressurise liquidity and trigger a financial crisis. To capture this aspect, we look at the outstanding foreign institutional investment (FII) position as a percentage of GDP.

d) **Adequacy of Foreign Currency Reserves:** Another important indicator for evaluating external risks is the level of foreign exchange reserves, which serve as a hedge against the balance of payment crisis or other unanticipated external shocks. Central Banks hold forex reserves for multiple reasons such as to preserve financial stability, cushion against exchange rate fluctuations, meet external debt obligations etc. To assess the adequacy of forex reserves, we look at the import cover which measures the imports (in a number of months) that can be financed by the existing level of forex reserves.

e) **External Debt Profile:** In addition to foreign investments, external debt is also an important source of financing development projects or meeting other funding requirements. However, high debt accumulation can create external stress and increase the vulnerability of an economy. An important indicator in this regard is the economy's total external debt as a percentage of GDP. We look at the average external debt to GDP ratio over the latest 5-year period.

   In addition to the quantum of external debt, another important aspect is the maturity structure of external debt. A greater proportion of short-term external debt in total external debt increases the threat of rollover risk contributing to external stress. We consider the share of short-term external debt in total external debt to capture this aspect.

Secondary Adjustments to the External Position & Linkages Assessment

We may also consider some secondary adjustments for a comprehensive assessment of the external risk. For example, a sovereign's reserve currency status or an actively traded currency status could limit external vulnerability. Further, to factor in the presence of a large financial centre, we make appropriate adjustments to the relevant indicators. We also assess other determinants of external risk such as ease of access to external funding, net international investment position, remittances inflows, and trade exposure to commodity price cycles/ weather-related risks.

4. Monetary & Financial Stability

Monetary & Financial Stability is crucial for economic growth. Credible monetary policy helps in attaining low and stable inflation which fosters business confidence and contributes to financial stability. Conversely, prolonged episodes of high inflation undermine monetary policy credibility, erode purchasing power and discourage investment. In this regard, a flexible exchange rate regime allows the Central Bank to conduct independent monetary policy and manage inflation efficiently. Another important aspect is the variety of monetary policy tools at the disposal of the Central Bank and the flexibility to use them in responding to unforeseen domestic and external shocks.

Monetary stability and financial stability reinforce each other. Broadly, under financial stability we assess stability in asset prices, well-functioning financial institutions, and efficient interest rate transmission. A stable and deep financial system contributes to economic productivity through efficient allocation of economic resources and eliminates financial stress. It also enhances the government's ability to raise funds domestically.

A sovereign's Monetary & Financial Stability assessment is based on the following primary and secondary factors:

<table>
<tr><th colspan="3">Monetary & Financial Stability</th></tr>
<tr><th>Primary Factors</th><th>Indicators</th><th>Secondary Factors</th></tr>
<tr><td>Exchange Rate Regime</td><td>Free Floating, Floating, Managed Crawl-Like Arrangement, Managed - Stabilised Arrangement, Fixed - Conventional Peg, Fixed - Hard Peg etc.</td><td rowspan="4">• Inflation Volatility
• Sustainability of Credit Growth
• Banking Sector Contingent Liabilities
• Banking Capital Adequacy Ratio
• Risk of Bubble in Equity and Real Estate Market
• Total Domestic Savings as a Percentage of GDP</td></tr>
<tr><td>Inflation Management</td><td>CPI Inflation</td></tr>
<tr><td>Health of Banking and Financial Sector</td><td>Bank Non-Performing Loans to Gross Loans</td></tr>
<tr><td>Depth of Banking and Financial Markets</td><td>Stock Market Capitalisation to GDP, Private Debt (Loans and Debt Securities) as a % of GDP</td></tr>
</table>

a) **Exchange Rate Regime:** The monetary policy is closely linked with the exchange rate regime in the economy. Exchange rate regime that typically follows a flexible or managed float currency is associated with higher independence of the monetary policy as against a fixed/crawling peg like exchange rate arrangement. Thus, sovereigns with a flexible exchange rate have greater monetary policy autonomy. A targeted level of exchange rate erodes the Central Bank's independence in the conduct of monetary policy.

b) **Inflation Management:** A low, stable and predictable inflation provides a conducive environment for economic growth, and helps in well-informed economic decision making and reduces inefficiencies. It leads to lower production costs and credit costs which in turn steers investment activity, while also supporting consumption growth in the economy. While low inflation is beneficial for an economy, a level below 0 per cent (termed deflation) could be reflective of weakness in the economy. Deflation could be associated with low demand and weak consumer confidence which could eventually discourage private investment too. Hence, the effectiveness of monetary policy in keeping inflation in the desired range (low and stable) is a critical factor for measuring an economy's health and stability. In our model, we look at a 5-year average of historical and projected CPI inflation.

c) **Health of Banking and Financial Sector:** Healthy asset quality and adequate capital buffers are the key elements for a strong financial system. The worsening asset quality of the banking system measured in terms of the high proportion of non-performing loans to gross loans undermines the stability and soundness of the financial system. This adversely impacts the credit availability in an economy weighing on the performance of the real economy. The systemic banking stress could also stress government finances through the buildup of public debt required for potential bank bailouts. We look at a 5-year average of bank's non-performing loans to gross loans as an indicator for assessing banking sector health.

d) **Depth of Banking and Financial Markets:** Well-functioning and developed financial markets are the cornerstone of financial stability. Financial market development leads to enhanced resilience through improved fund-raising mechanisms and risk management. As a measure of financial market development, we look at a 5-year average of stock market capitalisation as a percentage of GDP. We also consider the total stock of loans and debt securities with households and nonfinancial corporations, measured using a 5-year average of private debt as a percentage of GDP.

Secondary Adjustments to the Monetary & Financial Stability Assessment

We may also look at several secondary factors for the assessment of Monetary & Financial Stability. For example, deviation in inflation from its target for a prolonged duration or high inflation volatility could undermine monetary and financial stability. Further, while credit is necessary to support economic growth, rapid and unsustainable credit growth could lead to systemic financial failures. Excessive credit growth relative to the size of the economy is one of the main reasons for banking crisis. Similarly, very high stock market capitalisation relative to GDP may also warrant caution. We also assess banking sector health by looking at capital adequacy ratio, banking sector contingent liabilities and/ or any other structural or recent issues which could hamper banking sector stability. We also factor past track record of managing economic/financial crises as an indication of the effectiveness of policy responses into our analysis. Additionally, we also assess the stability of real estate and equity markets, domestic savings etc. for our assessment.

5. Institutions & Quality of Governance

Institutions are the building blocks of any economy. The strength of institutions and the government's effective policymaking contribute to overall economic stability. In an uncertain world, policy predictability has become increasingly important.

Strong institutions also make an economy less vulnerable to various shocks (economic, financial, and political) as they enable the government to formulate and implement effective policies targeted at mitigating the impact of these shocks.

A sovereign's Institutions and Quality of Governance assessment is qualitative and is based on the following primary and secondary factors:

Institutions & Quality of Governance		
Primary Factors	**Indicators**	**Secondary Factors**
Accountability and Political Stability	Percentile Rank*	• Transparency of Government Accounts and other economic data • Geopolitical Risks • Geographical Risks • Capability to Manage Crisis
Regulatory Quality and Government Effectiveness	Percentile Rank*	
Rule of Law and Control of Corruption	Percentile Rank*	

*WGI percentile rank ranging from 0 (lowest) to 100 (highest) among all countries worldwide; WGI – Worldwide Governance Indicators, World Bank

Given that this is a subjective assessment, we start with WGI and appropriately factor in the feedback from the stakeholders and our understanding to arrive at the factor level assessment.

WGI captures the following dimensions:

a) **Accountability and Political Stability:** Voice and accountability are important dimensions of governance which empower people by giving them freedom of expression and encouraging their participation in society as responsible citizens. Increased accountability could also contribute to abating corruption and lowering instances of conflict while fostering inclusive development.

Political stability forms the foundation of policy predictability and fosters confidence in the economy. It also leads to improved international relations and enhances the ease of doing business. On the other hand, political instability in the form of social conflicts/crimes could undermine competitiveness impacting earning potential. The nature of power and track record of smooth transition in power are equally important aspects that are considered.

b) **Regulatory Quality and Government Effectiveness:** An efficient regulatory system helps the government formulate new rules and improve the existing ones to cater to the intended objective efficiently in a constantly evolving economic and social environment.

Good regulatory policies and delivery also aid government effectiveness by improving the quality of public services and enhancing the credibility of the government's commitment toward economic progress.

c) **Rule of Law and Control of Corruption:** The foundation of political stability is the rule of law. It ensures unbiased enforcement of contracts and demonstrates the extent of citizen's respect and confidence in the rules of society.

Corruption in the form of the use of power for personal gains and interests not only erodes the public's confidence in the government's institutions but can also impact the effectiveness of reforms. It could also lead to tax evasion, having implications for the government's revenue generation.

Secondary Adjustments to the Institutions & Quality of Governance Assessment

It is also important to assess the potential risk stemming from geopolitical conflicts, cross-border tensions, threats of war, etc. For any sovereign, these challenges could undermine the national security having implications on the overall economic performance eventually straining public finances.

Capacity to effectively manage a crisis is also an important aspect to measure the effectiveness of government institutions.

E. Annexures

Annexure -1: CareEdge Global Rating Scale

Rating Symbol	Definition
CareEdge AAA	Denotes highest degree of safety regarding servicing of debt obligations.
CareEdge AA+	Denotes a high degree of safety regarding servicing of debt obligations.
CareEdge AA	
CareEdge AA-	
CareEdge A+	Denotes adequate degree of safety regarding servicing of debt obligations with low credit risk.
CareEdge A	
CareEdge A-	
CareEdge BBB+	Denotes a moderate degree of safety regarding servicing of debt obligations.
CareEdge BBB	
CareEdge BBB-	
CareEdge BB+	Denotes inadequate degree of safety regarding servicing of debt obligations.
CareEdge BB	
CareEdge BB-	
CareEdge B+	Denotes high vulnerability to default regarding servicing of debt obligations.
CareEdge B	
CareEdge B-	
CareEdge CCC+	Denotes very high vulnerability to default regarding servicing of debt obligations.
CareEdge CCC	
CareEdge CCC-	
CareEdge CC	Denotes imminent likelihood of default.
CareEdge C	
CareEdge D*	Denotes default.

*CareEdge SD rating indicates that the sovereign has defaulted on one of the instruments while honouring the debt services obligations of other instruments.

Annexure - 2: Definition of Default

CareEdge defines Sovereign default as the failure of a sovereign to honour any promised debt servicing obligations on time and in full. A sovereign is also considered to be in default if it enters into a debt exchange with its commercial financial creditors in a distress situation.

There are situations where a sovereign may restructure its debt leading to changes in terms of payments. CareEdge will assess the specific circumstances leading to the restructuring in assigning its ratings.

Annexure - 3: Foreign Currency and Local Currency Rating

A sovereign can borrow both in its currency (local currency) or a different currency (foreign currency). A sovereign has a stronger influence and access to local currency given its ability to formulate regulations and print money. Therefore, it has more flexibility to fund its local currency obligations.

CareEdge Sovereign Foreign Currency (FC) Rating is the assessment of a sovereign's ability and willingness to service its FC debt fully and in a timely manner. Likewise, CareEdge Sovereign Local Currency (LC) Rating is the assessment of a sovereign's ability and willingness to service its LC debt fully and in a timely manner. The underlying principles for the assessment of both FC rating and LC rating are the same. The key difference is the availability of reserves/funds in the FC or LC to meet the respective debt service obligations in a timely manner.

Annexure - 4: Indicator Definitions

Indicator	Definition
Nominal GDP, Current Prices (USD)	Gross Domestic Product is a measure of a country's overall economic activity. It represents the total value at current prices of final goods and services produced within a country during a specified period.
GDP Per Capita, PPP (Constant Prices), USD	GDP is expressed in constant international dollars per person. Data are derived by dividing constant price purchasing-power-parity (PPP) GDP by the total population.
Real GDP Growth	Annual percentages of constant price GDP are year-on-year changes; the base year is country specific.
Growth Volatility	Standard deviation of real GDP growth taken over a period of time.
Gross Fixed Capital Formation as a % of GDP	Gross fixed capital formation (GFCF) includes land improvements; plant, machinery, and equipment purchases; and the construction of roads, railways, and the like. Net acquisitions of valuables are also considered capital formation. Data are derived as a ratio of GDP.
Market Concentration Index	This index is a measure of the dispersion of trade value across an exporter's partners. This index ranges between zero to one. A country with trade (export or import) that is concentrated in very few markets will have an index value close to one, while a country with a perfectly diversified trade portfolio will have an index close to zero.
Export Product Concentration Index	This index measures, for each country, the degree of concentration of goods exported. It tells us if a large share of a country's exports is accounted for by a small number of commodities or if its exports are well distributed among many products.
Import Product Concentration Index	This index measures, for each country, the degree of concentration of imports of goods. It tells us if a large share of a country's imports relies on a small number of commodities or if imports are well distributed among many types of products.
Renewable Energy Consumption as a % of Total Energy Consumption	The share of renewable energy consumption in total energy consumption.
CO2 Emissions - Metric Tons Per Capita	Carbon dioxide emissions are those stemming from the burning of fossil fuels. This indicator shows the carbon dioxide emissions in metric tons per capita.
CO2 Emissions - Metric Tons Per Million Dollars of GDP	Carbon dioxide emissions are those stemming from the burning of fossil fuels. This indicator shows the carbon dioxide emissions in metric tons per million dollars of GDP.
Gross General Government (GG) Debt to GDP	Gross GG debt consists of all GG liabilities that require payment(s) of interest and/or principal by the debtor to the creditor at a date or dates in the future. This indicator reflects the gross general government debt relative to the GDP.
Interest Payments as a % of Revenue	Interest payments include interest payments on government debt, including long-term bonds, long-term loans, and other debt instruments to domestic and foreign residents. This indicator reflects the interest payments relative to the government revenue.
Gross GG Externally Held Debt to Total Gross GG Debt	Gross GG external debt, at any given time, is the outstanding amount of those actual current, and not contingent, liabilities that require payment(s) of principal and/or interest by the sovereign that are owed to external creditors. This indicator shows the gross general government external debt as a percentage of the total gross general government debt.
Change in Gross GG Debt to GDP	Difference in the ratio of gross general government debt to GDP between two reference periods.
(Pension + Salaries + Subsidies + Net Social Benefits) as a % of Total Expenditure	The share of expenditure incurred on pension, salaries, subsidies and net outgo towards social benefits in total expenditure.
Current Account Balance as a % of GDP	The current account is the record of all transactions in the balance of payments covering the exports and imports of goods and services, payments of income, and current transfers between residents of a country and non-residents. This indicator shows the ratio of the current account balance to GDP.
Foreign Direct Investment, Net Inflows as a % of GDP	Foreign direct investments are the net inflows of investment to acquire a lasting management interest (10 per cent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of

Indicator	Definition
	earnings, other long-term capital, and short-term capital as shown in the balance of payments. This indicator shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors and is divided by GDP.
Outstanding Foreign Institutional Investment Position as a % of GDP	Foreign institutional/portfolio investment is defined as cross-border transactions and positions involving debt or equity securities, other than those included in direct investment or reserve assets. This indicator takes the stock of portfolio investments as a percentage of GDP.
Import Cover (Total Reserves in Months of Imports)	This indicator shows foreign exchange reserves expressed in terms of the number of months of imports of goods and services they could pay for.
Externally Held Debt as a % of GDP	Total external debt is debt owed to non-residents. It is the sum of public, publicly guaranteed, and private nonguaranteed long-term debt, use of IMF credit, and short-term debt. This indicator is taken as the total external debt as a percentage of GDP.
Short-Term External Debt as a % of Total Externally Held Debt	Short-term external debt is defined as debt that has a maturity of one year or less. This indicator is a percentage of the short-term external debt to total externally held debt.
Worldwide Governance Indicators	The World Bank’s Worldwide Governance Indicators (WGI) consist of six composite indicators of broad dimensions of governance: Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. These broadly capture governance perceptions as reported by survey respondents, nongovernmental organizations, commercial business information providers, and public sector organizations worldwide.
Exchange Rate Regime	For the exchange rate regime, we look at various arrangements including Free Floating, Floating, Managed Crawl-Like Arrangement, Managed - Stabilised Arrangement, Fixed - Conventional Peg, Fixed - Hard Peg etc.
CPI Inflation	The average consumer price index (CPI) is a measure of a country's average level of prices based on the cost of a typical basket of consumer goods and services in a given period. The rate of inflation is the per cent change in the average CPI.
Bank Non-Performing Loans to Gross Loans	The ratio of the bank’s nonperforming loans to total gross loans is the value of non-performing loans divided by the total value of the loan portfolio. Loans are classified as non-performing when payments of principal and interest are 90 days or more past due or when future payments are not expected to be received in full.
Stock Market Capitalisation to GDP	Total value of all listed shares in a stock market as a percentage of GDP.
Private Debt (Loans and Debt Securities) as a % of GDP	Total stock of loans and debt securities issued by households and nonfinancial corporations as a share of GDP.

Source: Multiple sources including International Monetary Fund, World Bank, United Nations Conference on Trade and Development, other multilateral organisations, Economic/Monetary Unions, country specific official sources including official statistics providers, Central Banks, National Treasury Departments etc., supported by CareEdge analysis. Note: The indicators have been identified on the basis of availability and comparability across economies. Appropriate adjustments are made to these indicators while analysing for our Sovereign Risk assessment.

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