ACRA

JULY 8, 2025

METHODOLOGY

METHODOLOGY FOR ASSIGNING CREDIT RATINGS TO SOVEREIGN ENTITIES UNDER THE INTERNATIONAL SCALE

1 SCOPE OF THE METHODOLOGY

The Methodology for Assigning Credit Ratings to Sovereign Entities under the International Scale of the Analytical Credit Rating Agency (hereinafter, ACRA or the Agency) determines the approaches to assigning credit ratings (credit estimates) to sovereign issuers (rated entities or sovereigns) using an international rating scale. A sovereign is a national government (central or federal) that has primary authority over fiscal policies[1] and exercises its economic policy through a framework of incentives for, and restrictions on, economic activity in the country.

ACRA assigns sovereign credit ratings to the public[2] debt[3] of governments owed to private[4] investors, which reflect the likelihood of default on such debt. Assessment of the willingness and capacity of a sovereign to repay debt to official creditors, in particular international creditors (hereinafter, the International Monetary Fund (IMF), the World Bank, etc.), other governments under bilateral agreements or the Paris Club are beyond the scope of this methodology. However, ACRA takes note of a sovereign's problems with regard to servicing these types of debts. If ACRA has enough information to make an informed judgement on the influence of the sovereign's debt restructuring or debt relief with official creditors and its implications regarding full and timely servicing of debt to private investors, it assesses the impact of factors leading to debt restructuring on the sovereign credit rating within the scope of this methodology.

This methodology can also be used to assign credit ratings to senior unsecured debt instruments of sovereigns. Senior unsecured debt issued by a sovereign usually bears the same rating as that of the sovereign.

This methodology shall be applied on an ongoing basis until a new version is approved by ACRA's Methodology Committee.

To keep this methodology up to date, ACRA may review and amend it ahead of schedule in the following cases:

- More than three deviations from this methodology in a quarter when performing rating actions;
- The need to review based on methodology application monitoring by ACRA's Methodology Group, including based on the results of checking the quality of the methodology in accordance with Bank of Russia Ordinance No. 6583-U[5];
- Non-compliance with Federal Law No. 222-FZ[6];
- Immediate review of the methodology requested by ACRA's Compliance and Internal Control Service.

ACRA reviews this methodology in accordance with its internal documents no later than one calendar year from the date of its latest review. This methodology may be amended based on the review.

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[1] Some limitations may be applied to those policies if the sovereign is a part of a union.

[2] Debt in relation to which information is publicly available.

[3] Including full unconditional and irrevocable guarantees.

[4] Including state-owned companies.

[5] Ordinance of the Bank of Russia No. 6583-U dated October 23, 2023 "On the requirements for the provisions specified in Part 7 of Article 12 of Federal Law No. 222-FZ, cases, frequency, timing of verification of the quality of the methodology by a credit rating agency, requirements for its implementation, and also the form, procedure, and timing of sending a report by the credit rating agency to the Bank of Russia based on the results of checking the quality of the methodology, the procedure for the Bank of Russia to evaluate the methodology of the credit rating agency for compliance with the law of the Russian Federation and regulations of the Bank of Russia".

[6] Federal Law No. 222-FZ dated July 13, 2015 "On the Activity of Credit Rating Agencies in the Russian Federation, on Amending Article 76.1 of the Federal Law 'On the Central Bank of the Russian Federation' and Recognizing Null and Void Certain Provisions of Legislative Acts of the Russian Federation".

Any deviation from this methodology is documented and disclosed by ACRA on its official website at www.acra-ratings.ru when publishing a credit rating or a credit rating outlook, stating the reason for the deviation.

If any errors are found in this methodology that have affected or may affect credit ratings and/or credit rating outlooks, ACRA will analyze and review it in accordance with ACRA's established procedures. Information about these actions, a new version of the methodology, as well as information about identified errors if they affect previously assigned credit ratings, is disclosed by ACRA on the official website.

If the proposed changes to this methodology are significant and affect or may affect existing credit ratings, ACRA will:

- Post information about the proposed changes on its official website at www.acra-ratings.ru, stating the reasons for, and implications of, such changes, including the effect on credit ratings assigned according to this methodology;
- Carry out an assessment of the need to review the credit ratings assigned according to this methodology within six months of the date of its amendment;
- Review credit ratings within six months of the assessment specified in the previous point, provided the need to review them is discovered based on the conducted assessment.

2 INFORMATION SOURCES

ACRA strives to use standardized and unified data for the rated entities, relying whenever possible on common sources of information for analyzing indicators and calculating indicators.

ACRA uses the following sources of information in its rating analysis:

- Information provided by the rated entity during or after the rating meeting in written and/or oral form;
- Data from public sources (IMF, World Bank; United Nations (hereinafter, the UN), Eurostat)[7];
- Internal information of the Agency (macroeconomic and industry forecasts of internal divisions, aggregated financial and operational indicators of various rating objects);
- Other sources of information, if the quality and comparability of the data are, in ACRA's opinion, sufficient for its use[8].

If the central government plays a dominating role in the general government (GG)[9] then ACRA may use data of the central government instead of the GG.

If there is not enough information to apply this methodology, ACRA refrains from assigning a credit rating. If ACRA identifies that there is not enough information to maintain the current credit rating, it withdraws the credit rating with no further action taken with respect to it.

The sufficiency of information is determined based on the possibility of performing rating analysis in accordance with ACRA's general rating process principles[10]. The main criteria of information sufficiency is as follows:

- Ability to perform quantitative and qualitative analysis of the creditworthiness of the rated entity;

[7] ACRA assumes that data provided by the rated entity and/or international organizations is accurate and reliable.

[8] In particular, data from national statistical agencies, publications in the media, publications made by various different ministries, services and agencies of the rated entity (press releases, investor presentations, etc.), and issue documentation for the rated entity's bonds.

[9] General government usually includes central, local and regional governments, as well as social insurance funds and other extra-budgetary funds.

[10] Set out in the Rating Action Procedures and General Principles of the Rating Process of ACRA (JSC).

- Ability to analyze external and internal risk factors that may affect the creditworthiness of the rated entity;
- Ability to perform comparative analysis against peers.

3 RATING ANALYSIS STRUCTURE

The general rating analysis structure is given in Figure 1 and includes four main stages. The detailed rating analysis structure is given in Appendix 1.

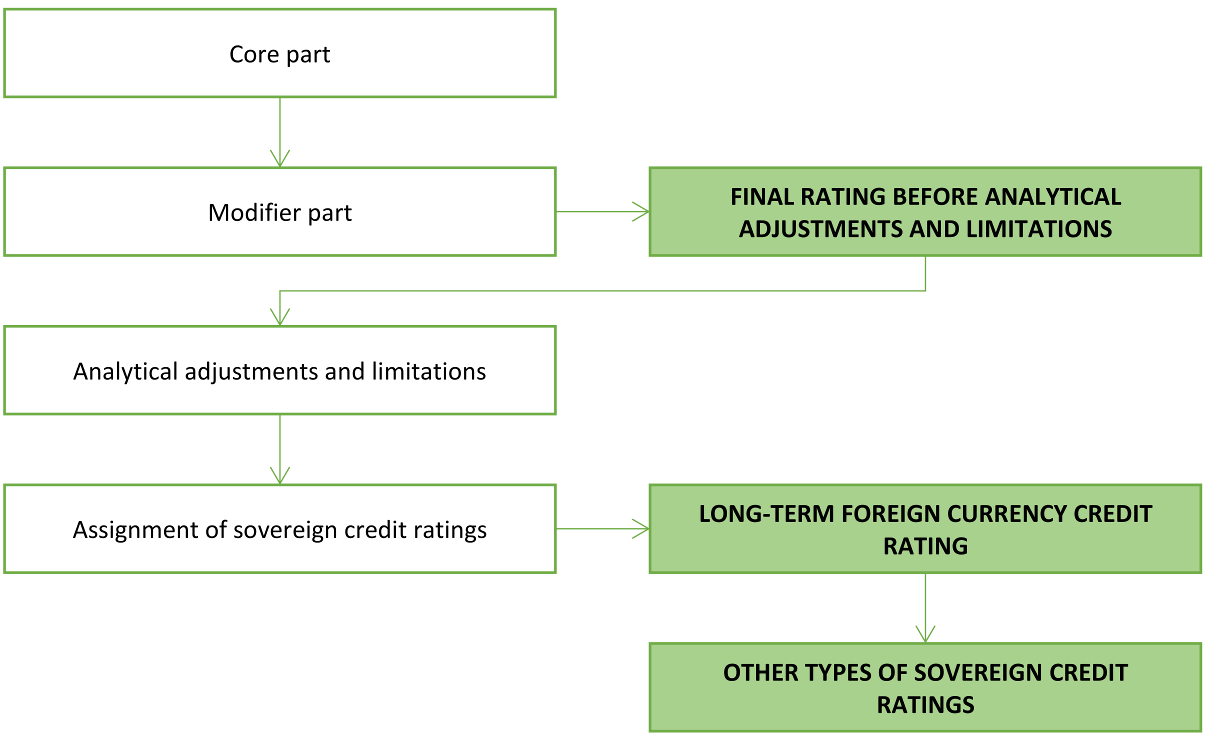
1) Core part. The result of the core part of the analysis is the assignment of Indicative Scores to blocks. The indicative score of each individual block is determined as the weighted sum of the scores of its factors, including adjustments. The factor score is assigned in points based on the correspondence of its value to the specified range.

2) Modifier part. The result of the modifier part of the analysis is the assignment of Final Scores to the blocks, as well as the assignment of the Final Score to the rated entity. The Final Score for each individual block is assigned by applying a certain set of qualitative modifiers to the indicative score of a given block. The Final Score is defined as the weighted sum of the Final Scores of the blocks and is translated into a 17-step rating scale to obtain the Final Rating before analytical adjustments and restrictions (hereinafter, also referred to as the Final Rating).

3) Analytical adjustments and limitations. At this stage, the following can be applied to the Final Rating before analytical adjustments and limitations: boundary value adjustments, adjustments for the risk of adverse events, and the limitations due to the history of defaults.

4) Assignment of sovereign credit ratings. A long-term foreign currency credit rating is assigned based on the Final Rating, subject to analytical adjustments and limitations. Other types of sovereign credit ratings (see Clause 3.4.1) are assigned based on a long-term foreign currency credit rating in accordance with this methodology.

FIGURE 1. GENERAL RATING ANALYSIS STRUCTURE



Source: ACRA

3.1. CORE PART

The core part of the rating analysis employs quantitative indicators that significantly limit the subjectivity of analytical assessment and ensure the transparency of calculations and the uniformity of the approach. Core scores are assigned to the following blocks: macroeconomic position, public finance, external position, institutional framework. Indicative scores are assigned based on the core scores by applying adjustments to them (see Appendix 2).

The indicative score for each block is formed on the basis of the weighted sum of the scores of the factors included in the block. The factor weights within the block reflect ACRA's opinion on the significance of each factor for the indicative score. The list of factors and their weights within the blocks are given in Table 1.

The scores are assigned to the factors based on the tables presented in Section 4, where the ranges of possible factor values correspond to a score from 1 to 17 (1 is the best score). The factor values are calculated by transforming the initial data (indicators) (see Appendix 3).

TABLE 1. LIST OF FACTORS AND THEIR WEIGHT IN THE BLOCKS

BLOCK	FACTOR WEIGHT	FACTOR
Macroeconomic position	35%	Income level
	10%	Economic growth
	35%	Size of economy
	20%	Inflation
Public finance	10%	Fiscal balance
	60%	Public debt burden
	30%	External public debt
External position	10%	Current account
	15%	Import cover
	15%	Investment position
	35%	Export diversification
	25%	Exchange rate volatility
Institutional framework	15%	Political stability
	15%	Government effectiveness
	70%	Human capital quality

Source: ACRA

3.2. MODIFIER PART

The modifier part of the rating analysis involves assigning Final Scores to the blocks and a Final Score to the rated entity as the weighted sum of the Final Scores of the blocks. The Final Scores of the blocks are formed on the basis of Indicative Scores of the blocks and modifiers, the use of which allows, among other things, to take into account the qualitative characteristics, as well as the results of a comparative analysis of the rated entity and a peer group of comparable rating objects.

A Final Rating prior to analytical adjustments and limitations is assigned using a 17-step rating scale (from AAA to CCC/C), taking into account how the Final Score of the rated entity corresponds to the score range indicated in Table 2.

TABLE 2. CORRESPONDENCE OF THE SCALE AND SCORE RANGE

FINAL RATING PRIOR TO ANALYTICAL ADJUSTMENTS AND LIMITATIONS	SCORE RANGE
AAA	<3.30
AA+	[3.30; 4.08)
AA	[4.08; 4.86)
AA-	[4.86; 5.64)
A+	[5.64; 6.42)
A	[6.42; 7.20)
A-	[7.20; 7.98)
BBB+	[7.98; 8.76)
BBB	[8.76; 9.54)
BBB-	[9.54; 10.32)
BB+	[10.32; 11.10)
BB	[11.10; 11.88)
BB-	[11.88; 12.66)
B+	[12.66; 13.44)
B	[13.44; 14.22)
B-	[14.22; 15.00)
CCC/C	≥15.00

Source: ACRA

The Final Score of the rating entity is calculated by multiplying the Final Scores of the blocks by their final weights, which reflect ACRA's opinion on the importance of each block for assessing the creditworthiness of a sovereign.

The final weights of the blocks are determined based on their base weights, given in Table 3, as well as the multiplier that is applied to the weight of the Institutional framework block depending on the GDP of the rated entity per capita in purchasing power in accordance with Formulas 1 and 2.

$$w_{inst}^{final} = w_{inst}^{base} k, \tag{1}$$

$$w_j^{final} = w_j^{base} \left(1 - \frac{w_{inst}^{final} - w_{inst}^{base}}{\sum_{j=1}^{3} w_j^{base}}\right), \tag{2}$$

where w_{inst}^{final} — final weight of the Institutional framework block; w_{inst}^{base} — base weight of the Institutional framework block; w_j^{final} — final weights of other blocks; w_j^{base} — base weights of other blocks; k – weighting factor.

The weighting factor k is determined as follows:

– If the rated entity's GDP per capita on a PPP basis exceeds 80,000 international dollars[11] in 2019 prices[12], then the weighting factor is set at the minimum value of 0.6;

– If the rated entity's GDP per capita on a PPP basis is lower than 20,000 international dollars in 2019 prices, then the weighting factor is set at the maximum value of 1.0;

– If the rated entity's GDP per capita on a PPP basis is between 20,000 and 80,000 international dollars in 2019 prices, then the value for the weighting factor is set in proportion to the relative proximity to the upper limit of the range.

TABLE 3. BASE WEIGHTS OF BLOCKS FOR CALCULATION OF THE FINAL SCORE OF THE RATED ENTITY

BLOCK	WEIGHT
Macroeconomic position	25%
Public finance	25%
External position	25%
Institutional framework	25%

Source: ACRA

The Final Score of each block is formed as the sum of the indicative score of the block and the calculated values of all the modifiers (with the opposite sign for this block) given to the scale step in Table 2[13]. The Final Score of the block is limited to the range [-1, 22]. The list of applied modifiers and sub-modifiers, as well as the procedure for their calculation, are given in Appendix 4.

3.3. ANALYTICAL ADJUSTMENTS AND LIMITATIONS

The analytical adjustments and limitations listed below are accounted for by successively applying them to the Final Rating prior to analytical adjustments and limitations.

3.3.1. Adjustments for boundary values and data uncertainty

Boundary value adjustments can be made when the Final Score of the blocks approaches the border of the range of scores used to assign the Final Rating in accordance with Table 2.

Adjustments due to data uncertainty can be made when a material change in retrospective statistical data used in the assignment of the credit rating has been carried out by the source of the data, or if such a review takes place during the rating process, or there is another kind of high uncertainty about the quality of the input data (for example, macroeconomic forecasts).

The application of these adjustments cannot change the Final Rating by more than one notch.

3.3.2. Adjustments for the risk of adverse events

ACRA takes into account the possibility of adverse events that could lead to a sharp decrease in the creditworthiness of the rated entity. Examples of such events are:

– Significant deterioration of the economic situation due to a recession, accompanied by a banking crisis and the inaccessibility of internal and external sources of refinancing;

[11] The international dollar is a notional monetary unit, the value of which is calculated by dividing the currency unit of the respective country by the estimated purchasing power parity (PPP) that the US dollar had within the United States at a specified time. Usually the 1990 or 2000 indicator is used as a benchmark. This approach is based on the concept of the relationship between PPP of currencies and international average prices for consumer goods. This way of comparing the GDP per capita of different countries is more adequate than calculating based on exchange rates.

[12] Hereinafter, discounting is carried out with a ratio of 1.04 to the power of the number of years that have passed since 2019.

[13] The final sum of modifiers is multiplied by 0.78 to apply the sum of modifiers to the scale.

- Low probability events that have serious negative consequences: natural disasters, military conflict or civil disorder, epidemics and pandemics;
- Higher likelihood of the realization of a very significant volume of contingent liabilities;
- Hyperinflation and forced conversion of foreign currency assets and banking sector liabilities into local currency instruments.

This list is not exhaustive. ACRA analyzes each event from the point of view of its impact on the Final Rating on an individual basis, since the degree of impact of these events may vary significantly.

Adverse event risk usually has an exclusively decreasing effect on the Final Rating, however, the Agency takes into account neutralizing factors that may mitigate this negative impact. The extent of the adjustment (number of notches) for adverse event risk is determined expertly. However, this adjustment cannot worsen the Final Rating by more than three notches.

3.3.3. Default history limitations

The Final Rating may be limited if the rated entity has defaulted in the past 30 years. The extent to which this influences the Final Rating depends on how much time has passed since the default (see Table 4).

TABLE 4. FINAL RATING AND HISTORY OF DEFAULT

NUMBER OF YEARS SINCE LAST DEFAULT	LIMITED FINAL RATING	
	ONE DEFAULT IN THE PAST 30 YEARS	MORE THAN ONE DEFAULT IN THE PAST 30 YEARS
1	CCC	CCC
2	B-	CCC
3	B	B-
4	B+	B-
5	BB-	B
6	BB	B
7	BB+	B+
8	BBB-	B+
9	BBB	BB-
10	BBB+	BB-
11	A-	BB
12	A	BB
13	A+	BB+
14	AA-	BB+
15	AA	BBB-

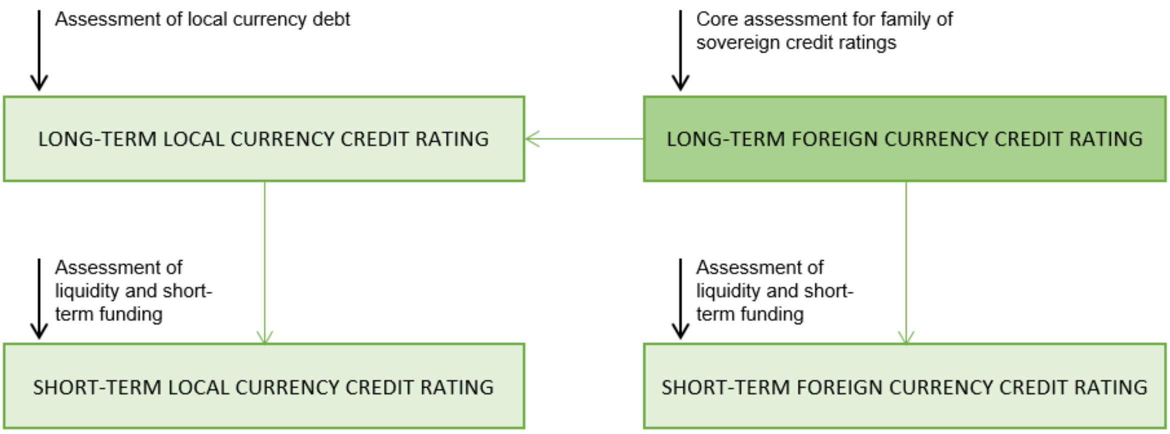
Source: ACRA

3.4. ASSIGNING SOVEREIGN CREDIT RATINGS

3.4.1. Types of sovereign credit ratings

There are two main types of sovereign credit rating, they are distinguished by: (1) currency of debt — ratings in foreign and local currencies; (2) maturity of debt — long-term and short-term ratings. The differences in these types of sovereign credit rating lead to differences in the analytical approaches used to assign them, see Figure 2. A long-term foreign currency credit rating serves as the basis for rating assessment, while other types of sovereign credit ratings are essentially derived from it.

FIGURE 2. ANALYTICAL DIFFERENCES BY TYPE OF SOVEREIGN ISSUER CREDIT RATING



Source: ACRA

ACRA revises all the types of sovereign credit ratings assigned to a rated entity and its issues in accordance with the Calendar of Sovereign Credit Rating Revisions and Publications, but no later than 182 days since the last revision.

The idealized probabilities of default for the international credit rating scale over various time horizons are provided in the Key Concepts Used by the Analytical Credit Rating Agency within the Scope of its Rating Activities.

ACRA assigns outlooks on long-term sovereign credit ratings that are valid for the next 12–18 months. The credit rating outlook reflects trends in terms of the development of the rating, but does not assume that the rating will definitely change.

3.4.2. Long-term foreign currency credit ratings

Long-term foreign currency credit ratings are set at the level of the Final Rating, taking into account analytical adjustments and limitations, in all cases except the ones listed below.

If the Final Rating, taking into account analytical adjustments and limitations, is set at CCC/C, then the core score is the rating CCC. However, it is possible to assign the ratings CC and C if there are additional arguments in favor of this action based on the results of the rating committee meeting.

If a sovereign default occurs, ACRA assigns a credit rating to the defaulted issuer that takes into account the following factors. If the sovereign announces debt restructuring, then ACRA assigns a C credit rating until restructuring is complete. When restructuring is complete, ACRA assigns a D credit rating to the sovereign if the bulk of sovereign debt will be restructured. If only a small part of debt is restructured, then an SD sovereign credit rating is assigned.

ACRA defines a sovereign default as a default to private creditors in accordance with the Key Concepts Used by the Analytical Credit Rating Agency within the Scope of its Rating Activities[14]. In addition,

[14] Debt depreciation as a result of high inflation, according to ACRA's definition, is not a sovereign default.

unless otherwise is contemplated by the Key Concepts Used by the Analytical Credit Rating Agency within the Scope of its Rating Activities, ACRA considers the following to be sovereign default events:

- Failure to fulfill or improper fulfillment of obligations under the unambiguous, irrevocable and unconditional guarantee of the sovereign issuer, indicated in the terms of such a guarantee;
- Any sovereign-initiated material changes to the original terms of financial obligations, for instance an extension of maturities, reduced principal, coupon or interest, a change in currency denomination, a change from cash pay to pay-in-kind or other forms of non-cash payment.

3.4.3. Local and foreign currency credit ratings

Local and foreign currency ratings allow a sovereign's capacity and willingness to pay in local currency and foreign currency to be assessed.

For most countries, ACRA assigns equal long-term credit ratings in foreign and local currency due to the increasing openness of countries' capital accounts and the larger share of non-residents investing in sovereign local currency obligations. In particular, sovereigns who are members of a monetary union or countries whose economies have a high share of foreign currency have no distinction between their local currency and foreign currency credit ratings.

ACRA can assign a local currency rating to a sovereign that is higher than the foreign currency rating (usually, no more than one or two notches higher) under the following conditions:

- Previous preferential treatment of local currency debt;
- Exceptionally strong public finance fundamentals combined with a weak external position;
- Deep and diversified local capital market;
- Low and controlled inflation coupled with a free floating currency;
- Low share of foreign currency debt in the public debt of the rated entity.

In exceptional cases, ACRA may set a local currency credit rating at a lower level than a foreign currency credit rating. The criteria for making such a decision is the small size of the economy, combined with an underdeveloped and shallow domestic capital market, which forces the sovereign to resort to external borrowing and makes it largely dependent on the external market. This dependence considerably limits the sovereign's desire to restructure its debt and may lead to delays in servicing and repaying it.

3.4.4. Long-term and short-term credit ratings

Long-term credit ratings reflect ACRA's opinion on the creditworthiness of a sovereign's obligations with maturities beyond a 12-month period. Short-term credit ratings reflect ACRA's opinion on the creditworthiness of the sovereign issuer terms of servicing its debt obligations with a maturity of no more than one year.

The short-term credit rating is assigned based on the long-term credit rating and liquidity position of the sovereign in accordance with Table 5.

The capacity of a sovereign to service short-term obligations (such as commercial paper and/or its equivalents) depends on its access to liquidity and short-term funding. If ACRA has the opportunity to choose between two short-term credit ratings corresponding to one long-term credit rating, a higher short-term credit rating will be assigned to a sovereign with a larger liquidity cushion and unlimited access to a diversified and deep capital market.

TABLE 5. MAPPING FROM LONG-TERM TO SHORT-TERM CREDIT RATINGS

LONG-TERM CREDIT RATING	SHORT-TERM CREDIT RATING
AAA	S1+

AA+	S1+
AA	S1+
AA-	S1+, S1
A+	S1
A	S1
A-	S1, S2
BBB+	S2
BBB	S2, S3
BBB-	S3
BB+	B
BB	B
BB-	B
B+	B
B	B
B-	B
CCC	C
CC	C
C	C
SD/D	D

Source: ACRA

3.5. ADDITIONAL RATING ANALYSIS ELEMENTS

The rating analysis of a sovereign usually contains additional elements. Carrying out the assessments described in this section is not a mandatory condition for assigning sovereign credit ratings.

The **indicative rating of a block** reflects the level of the indicative score assigned to a particular block under the 17-step rating scale (lowercase letters are used for designation). The indicative rating of a block is assigned based on the correspondence of the indicative score of the block with the score range indicated in Table 2.

The **final rating of a block** reflects the level of the final score assigned to a particular block under the 17-step rating scale (lowercase letters are used for designation). The final rating of a block is assigned based on the correspondence of the final score of the block with the score range indicated in Table 2.

The **indicative rating** of a rated entity reflects the level of the indicative score assigned to the rated entity on the 17-step rating scale. The indicative rating indicates the creditworthiness of the rated entity, the conclusion on which was formed without the use of modifiers. The indicative rating of the rated entity is assigned based on the correspondence of the weighted sum of indicative core block scores with the score range specified in Table 2.

4. DETAILED DESCRIPTION OF CORE AND MODIFIER PARTS

This section provides a detailed description of the blocks used in the rating analysis, a description of the factors (and the procedure for assessing them), adjustments, and block modifiers. Additional information is given in Appendices 2–4.

4.1. MACROECONOMIC POSITION

This block assesses the sovereign's ability to sustain viable long-term economic growth based on solid and sustainable economic potential, as well as a diversified, competitive economic structure and commitment demonstrated by the authorities to pursue adequate monetary and structural policies. Sustainable long-term growth is key to a sovereign's ability to generate revenue in order to service its debt over the medium-terms and demonstrate its resilience to various shocks.

4.1.1. Description and assessment of factors

ACRA uses the following factors in this block: (1) income level; (2) economic growth; (3) size of economy; (4) inflation. Each factor is graded based on the range its value belongs to as indicated in Table 6. Factors are assessed based on indicators according to the approach presented in Appendix 3.

1) Income level

A country's income level is measured using GDP per capita calculated based on the market exchange rate of the local currency to the US dollar. If the economic structure is well diversified and is not limited to a narrow range of commodities, higher GDP per capita is usually associated with higher economic and financial wealth. This suggests a broader potential tax base that the sovereign can employ to service its debt, as well as tolerance to a higher level of public debt.

2) Economic growth

Economic growth is measured by comparing the sovereign's average economic growth over a 10-year period (seven years leading up to the calculation year, the calculation year, and the two following years) with the weighted average growth demonstrated by the peer group of countries that the sovereign belongs to over the same 10-year period. The weights linearly increase compared to the calculation year (from 1.9% for the indicator seven years ago to 15.4% for the calculation year; for the next two years, weights of the calculation year are used). For the peer group comparison ACRA uses two groups of countries to calculate this indicator based on the IMF's classification: emerging market and developed market countries.

Economic stagnation or depleting revenue sources, accompanied by already high public debt, make it difficult for sovereigns to continue servicing their debt fully and promptly, which eventually may result in a default. Prolonged economic downturns and extended recoveries are usually observed in small-sized economies or bigger countries with weak economic diversification that manifests itself via strong dependence on commodity exports, a narrow range of economic activities, or shallow domestic capital markets stemming from low savings rates.

3) Size of economy

Small economies (even those with a high level of welfare) are more sensitive to external shocks than large economies that possess a large internal market and are highly diversified. The size of an economy is defined as nominal GDP expressed in US dollars.

4) Inflation

ACRA uses the average annual growth rate of the consumer price index for five years (two years preceding the calculation year, the calculation year, and the two following years) to assesses the inflation growth factor.

Prolonged periods of extremely high inflation and fluctuations in inflation distort the relative level of prices in the economy, adversely affect the purchasing power of economic agents, and in the event of hyperinflation, undermine confidence in the local currency and disrupt money circulation. This has a negative impact on economic growth and, consequently, lowers a sovereign's ability to service its debt.

Deflation (a prolonged period of declining prices) is just as harmful, since it leads to a slowdown in the growth rate of nominal budget revenues and negatively affects the ability of a sovereign to service its debt, since its real value begins to grow over time, and real interest rates rise due to closeness of nominal rates to zero. Together with the complicated adjustment of relative prices, this limits economic growth. If the inflation indicator value is 0.5% or less, the assessment of this factor is assigned at 3 points.

TABLE 6. ASSESSMENT OF MACROECONOMIC POSITION BLOCK FACTORS

FACTOR SCORE	INCOME LEVEL, USD PER CAPITA	ECONOMIC GROWTH	SIZE OF ECONOMY, USD BLN	INFLATION
1	≥40,000	≥1.50%	≥1,500	≤3%
2	[32,000; 40,000)	[1.27%; 1.50%)	[1,241.67; 1,500)	(3%; 4%]
3	[24,000; 32,000)	[1.03%; 1.27%)	[983.33; 1,241.67)	(4%; 5%]
4	[16,000; 24,000)	[0.80%; 1.03%)	[725; 983.33)	(5%; 6%]
5	[14,000; 16,000)	[0.57%; 0.80%)	[600; 725)	(6%; 7%]
6	[12,000; 14,000)	[0.33%; 0.57%)	[475; 600)	(7%; 8%]
7	[10,000; 12,000)	[0.10%; 0.33%)	[350; 475)	(8%; 9%]
8	[8,783.33; 10,000)	[-0.02%; 0.10%)	[291.67; 350)	(9%; 10%]
9	[7,566.67; 8,783.33)	[-0.13%; -0.02%)	[233.33; 291.67)	(10%; 11%]
10	[6,350; 7,566.67)	[-0.25%; -0.13%)	[175; 233.33)	(11%; 12%]
11	[5,066.67; 6,350)	[-0.48%; -0.25%)	[131.67; 175)	(12%; 13%]
12	[3,783.33; 5,066.67)	[-0.72%; -0.48%)	[88.33; 131.67)	(13%; 14%]
13	[2,500; 3,783.33)	[-0.95%; -0.72%)	[45; 88.33)	(14%; 15%]
14	[2,200; 2,500)	[-1.30%; -0.95%)	[33.33; 45)	(15%; 16%]
15	[1,900; 2,200)	[-1.65%; -1.30%)	[21.67; 33.33)	(16%; 17%]
16	[1,600; 1,900)	[-2.00%; -1.65%)	[10; 21.67)	(17%; 18%]
17	<1,600	<-2%	<10	>18%

Source: ACRA

4.1.2. Description of adjustments

Adjustments are not applied to this block.

4.1.3. Description of modifiers

ACRA uses the following modifiers: (1) potential economic growth; (2) quality and sustainability of economic growth; (3) efficacy of structural economic policy and recent structural reforms; (4) efficacy of monetary policy. Modifiers are calculated in accordance with the approach presented in Appendix 4.

1) Potential economic growth

A country's economic growth trends observed in the past give an idea of possible economic growth in the future, and the ability of a sovereign to service its debt in the long term (sovereign debt usually has long maturities) is determined by the economic potential of the issuer and the expected growth rates of its economy.

ACRA analyzes the growth prospects of a country's economy and assesses the possibility of positive growth being achieved in the future. The rates of economic growth demonstrated in the past may turn out to be unattainable in the future, which will lead to a slowdown in the economy. On the contrary, thanks to effective policies to stimulate economic growth, a previously observed negative trend may change.

2) Quality and sustainability of economic growth

When assessing the volatility of the GDP growth of a sovereign, ACRA compares the coefficient of variation of its GDP growth rate over a ten-year historical period with a similar indicator of world GDP. At the same time, ACRA takes into account the fact that the historical volatility of the indicator does not always indicate its possible performance in the future. High volatility in GDP reduces the predictability of budget revenues, and also indicates a potential imbalance in the economy, which could impair the ability of a sovereign to repay its debt on time and in full. The quality of economic growth is characterized by the following criteria.

Sustainability. Stable economic growth allows a country to better weather periods of unfavorable economic conditions and recover faster compared to other countries with similar-sized economics.

Sensitivity to internal and external shocks. Sensitivity to external shocks may stem from excessive dependence of a sovereign's economy on a particular industry or economic activity. Lack of diversification (oversized proportion of a particular industry or commodity in a country's economy and/or strong dependence on a trading partner in terms of total exports) creates GDP and budget revenue volatility. This is especially strong when market conditions for a trade partner, certain activity or commodity deteriorate. ACRA associates sensitivity to internal shocks with high dependence of economic growth on lending. The Agency tries to identify early signs that point to the development of financial bubbles, assessing the level and affordability of private debt, trajectory of housing prices, affordability of housing, trajectory of equity prices, and the real exchange rate.

Size and foreign currency content of the banking system. Financial imbalances are amplified when the banking sector constitutes a significant part of the sovereign's economy. ACRA measures the influence of this factor based on the ratio of banking sector assets to GDP. High dependence of the banking system of foreign currency (proportion of foreign currency denominated deposits/loans in total) could signal not only weakening confidence in local currency, but also higher attractiveness of foreign currency. Should the local currency depreciate, banks could face increased volumes of non-performing loans with adverse consequences for their balance sheets and ultimately may negatively impact the sovereign's budget. A large share of non-residents in banking liabilities may also be a factor of instability in the banking system should a revaluation of risks take place.

Environmental risks. Risks related to climate change may lead to environmental and natural disasters. For example, flooding or hurricanes can disrupt a sizeable part of the economy in small countries. This usually has a simultaneous impact on both the income and spending parts of the budget and may lead to increased social unrest, irreversible changes to government priorities and, in particular, to decreased willingness on the part of the sovereign to service its public debt.

Savings rate and investment. Vulnerability can also arise from insufficient levels of savings in the economy as this increases the dependence of different sectors on external sources of liquidity and leads to adverse consequences for the whole economy when funding becomes too expensive or dries up. Conversely, countries with high levels of savings are better positioned to generate economic growth thanks to a bigger pool of available investments. Their problems, however, could arise from misallocation of capital. ACRA also analyzes the allocation of investments by areas of economic activity. The propensity of a sovereign to innovate, which is assessed using the share of R&D expenditures in GDP or, for example, the

World Bank's competitiveness indexes — allows one to hope for certain "dividends" for the economy in the future.

Demographic and labor resources. Rigidity in the labor market, which presents itself in institutional barriers preventing efficient reallocation of labor across economic activities, could hamper economic growth and weaken a country's ability to adapt to new economic conditions. An inflexible labor market is usually associated with a high unemployment rate with a significant portion of structural unemployment and informal employment. Demographic changes related to an aging population and diminishment of the labor force may limit economic growth. In this situation, maintaining high rates of economic growth requires a boost in labor productivity, which can be achieved through more efficient use of labor, adequate allocation of investment and the use of innovations, as well as through the government's reliance on institutions that can maintain high labor productivity.

ACRA takes into account the influence of long-term, but time-limited factors of economic growth. In particular, these include the receipt and use by countries of Central and Eastern Europe of funds from structural funds of the European Union, the format and beneficiaries of which are currently undergoing significant change. The status of a sovereign issuer as a global or regional superpower is also taken into account by ACRA, as it allows the country's companies to have more power in the market and take advantage of the network effect to expand sales markets.

3) Efficacy of structural economic policy and recent structural reforms

A country's structural imbalances may be alleviated by an effective and coordinated set of economic policies. The opposite is also true; the unaddressed or poorly addressed structural weaknesses of a country's economy amplify negative effects on the economy, especially in adverse conditions.

In this block, a country's policy framework is assessed from the point of view of the credibility and flexibility of structural economic policy. ACRA evaluates the effectiveness of economic policy for the realization and expansion of the country's economic potential, and the experience of implementing industrial policy.

In addition, the ability of the authorities to support economic growth by coordinating monetary and fiscal policies (an especially important factor for countries in economic unions) is analyzed. Fiscal policy elements are analyzed in the Public Finance block.

4) Efficacy of monetary policy

ACRA examines the credibility of the monetary policy undertaken by a national central bank by assessing its track record in achieving its targets. For example, one of the key indicators of a central bank's effectiveness is price stability, which can be measured by the length of low inflation periods if the central bank is committed to an inflation-targeting regime. The goal of this assessment is to draw a conclusion of the possibility of achievement of future targets.

The independence of the central bank in using a variety of monetary policy instruments and in timing its policy actions is an important consideration in the evaluation. Legally guaranteed independence of the central bank from political interference in its activities and the persistent implementation of this principle in practice is optimal for this assessment. A further consideration is the ability of the central bank to act as a last-resort lender, i.e., being able to provide liquidity to the domestic banking sector when sources of funding are in short supply. At the same time, prolonged use of this type of funding indicates structural problems in the banking sector and/or inability to use various monetary policy instruments.

ACRA acknowledges that a shallow and poorly diversified domestic financial system and capital markets with weak transmission mechanisms of credit could put constraints on a central bank's efforts to achieve its goals. Another constraint could come from a rigid exchange rate regime preventing a central bank from controlling the domestic policy rates. An imperative to maintain a local currency exchange rate at a certain level could be at odds with a central bank's other goals, especially if in managing the exchange rate regime political agenda issues prevail over macroeconomic logic. A fixed exchange rate or the existence of a currency band presupposes that a central bank has a large volume of international reserves. In times of crisis, the rigidity of the exchange rate can lead to a rapid decline in international reserves due to the increased demand for foreign currency and the outflow of foreign investors from the country. ACRA's approach to analyzing monetary policy in a currency union like the Eurozone, or economies with a high level of foreign currency, differs from the approach taken to countries that independently determine monetary policy. The reason is the limited control that a sovereign exercises over its monetary and exchange rate policies. In those cases, ACRA focuses on the adequacy of fiscal and structural economic policies, i.e., their ability to facilitate measures aimed at improving the competiveness and flexibility of the economy as opposed to using exchange rate adjustments as a tool to improve competiveness.

4.2. PUBLIC FINANCE

This block assesses a sovereign government's ability to balance its books and maintain at a safe level.

4.2.1. Description and assessment of factors

ACRA uses the following factors in this block: (1) fiscal balance; (2) debt burden; (3) external public debt. Each factor is graded based on the range its value belongs to as indicated in Table 8. Factors are assessed based on indicators according to the approach presented in Appendix 3.

1) Fiscal balance

Fiscal balance is assessed based on the average ratio of the size of the GG balance to GDP over a three-year period (one year leading up to the calculation year, the calculation year, and the following year). The contribution of each year to the total calculation is the same, which is achieved by assigning equal weights to each separately taken year over the three-year period. Persistent budget deficits, which last longer than the countercyclical fiscal policy justifies, point to structural issues and/or the lack of political will to tackle them. Structural weaknesses could gradually lead to the accumulation of unsustainable public debt, which is hard to service fully and timely.

2) Debt burden

A key test of debt sustainability is to what extent the sovereign is able to service its debt. The tolerance to a certain level of debt varies among sovereigns and is untimely determined by debt tenure and funding cost; the longer the debt maturity and the lower the funding cost, the higher the debt capacity level.

Countries with deep and diversified domestic capital markets are better positioned to withstand higher levels of debt. In addition, they have a lower cost of funding and longer debt repayment periods. Largely uninterrupted access to the capital market allows these sovereigns to refinance their obligations at any time and under comfortable terms. By contrast, high and rising levels of debt service stemming from shorter maturities and higher funding costs constrain a sovereign's ability to manage public finances. It compromises not only its solvency, but also the capacity to support the economy during downturns by implementing a countercyclical fiscal policy.

Debt burden is assessed using the sub-factors GG Gross Debt and Interest Payments. At the same time, for more developed countries, more weight is given to the cost of servicing public debt, and for less developed countries — to the size of public debt. The Debt Burden factor is calculated using formula 3:

$$b_{debt\_factor} = b_{debt}(1 - f) + b_{int}f, \tag{3}$$

where b_{debt} is an assessment of the sub-factor GG Gross Debt; b_{int} is an assessment of the sub-factor Interest Payments; and f is a weighting factor.

The weighting factor *f* is determined as follows:

– If the rated entity's GDP per capita on a PPP basis exceeds 80,000 international dollars in 2019 prices, then the factor is set at 0.9;
– If the rated entity's GDP per capita on a PPP basis is lower than 20,000 international dollars in 2019 prices, then the weighting factor is set at 0.1;
– If the rated entity's GDP per capita on a PPP basis is between 20,000 and 80,000 international dollars in 2019 prices, then the value for the weighting factor is set in proportion to the relative proximity to the boundaries of the range of its changes.

ACRA takes into account the fact that some countries borrow on non-market (concessional debt) terms, thanks to which the ratio of their interest expenses to revenues compare favorably with countries borrowing on market terms[15]. Therefore, to offset the low cost of borrowing, for the first group of countries an adjustment is made to the Interest Payment sub-factor according to Table 7 and Appendix 2.

TABLE 7. ADJUSTMENT OF THE INTEREST PAYMENTS SUB-FACTOR BY THE SIZE OF NON-MARKET PUBLIC DEBT

ADJUSTMENT VALUE	1	2	3	4	5
Share of public debt with non-market conditions, %	[10; 20)	[20; 30)	[30; 40)	[40; 50)	≥50

Source: ACRA

3) External public debt

External public debt is measured using the ratio of external GG debt (debt held by non-residents) to GDP.

External debt reflects a government's reliance on external investors, which might impede its market access in the case of adverse conditions. This indicator is more relevant to developing economies constrained by the insufficient depth and breadth of their domestic markets as a potential source of funding. The high and increasing levels of external debt in developed economies could signal investors' flight to quality, especially with domestic currencies enjoying the status of global reserve currencies. However, it is ACRA's opinion that even sovereigns whose currencies enjoy reserve status cannot allow their public debt to grow indefinitely as this may pose risks to debt sustainability.

TABLE 8. ASSESSMENT OF PUBLIC FINANCE BLOCK FACTORS

FACTOR SCORE	FISCAL BALANCE	DEBT BURDEN		EXTERNAL PUBLIC DEBT
		GROSS DEBT	INTEREST PAYMENTS	
1	≥2.00%	≤80%	≤3%	≤10%
2	[1.53%; 2.00%)	(80%; 90%]	(3%; 3.33%]	(10%; 11.33%]
3	[1.07%; 1.53%)	(90%; 100%]	(3.33%; 3.67%]	(11.33%; 12.67%]
4	[0.60%; 1.07%)	(100%; 110%]	(3.67%; 4%]	(12.67%; 14%]
5	[0.13%; 0.60%)	(110%; 124%]	(4%; 4.67%]	(14%; 15.67%]

[15] An example is Greece, whose debt portfolio is predominantly made up of obligations to the ESM (European Stabilization Mechanism) and the EFSF (European Financial Stability Facility), EU institutions that provide financial support under beneficial terms to Eurozone countries that are in a state of financial crisis.

6	[-0.33%; 0.13%)	(124%; 138%]	(4.67%; 5.33%]	(15.67%; 17.33%]
7	[-0.80%; -0.33%)	(138%; 152%]	(5.33%; 6%]	(17.33%; 19%]
8	[-1.27%; -0.80%)	(152%; 171.33%]	(6%; 6.67%]	(19%; 21.33%]
9	[-1.73%; -1.27%)	(171.33%; 190.67%]	(6.67%; 7.33%]	(21.33%; 23.67%]
10	[-2.20%; -1.73%)	(190.67%; 210%]	(7.33%; 8%]	(23.67%; 26%]
11	[-2.67%; -2.20%)	(210%; 236.67%]	(8%; 9%]	(26%; 29.33%]
12	[-3.13%; -2.67%)	(236.67%; 263.33%]	(9%; 10%]	(29.33%; 32.67%]
13	[-3.60%; -3.13%)	(263.33%; 290%]	(10%; 11%]	(32.67%; 36%]
14	[-4.07%; -3.60%)	(290%; 326.67%]	(11%; 12.33%]	(36%; 40.67%]
15	[-4.53%; -4.07%)	(326.67%; 363.33%]	(12.33%; 13.67%]	(40.67%; 45.33%]
16	[-5.00%; -4.53%)	(363.33%; 400%]	(13.67%; 15%]	(45.33%; 50%]
17	<-5%	>400%	>15%	>50%

Source: ACRA

4.2.2. Description of adjustments

ACRA makes both positive and negative adjustments to the score assigned to the block, taking into account the following criteria: (1) size of foreign currency public debt relative to GDP; (2) share of government liabilities of the rated entity in international reserves held by world central banks; (3) gross debt of the GG relative to GDP. The calculation procedure and the effect of adjustments on the Final Rating are given in Appendix 2.

1) Size of foreign currency public debt relative to GDP

This adjustment reflects the level of foreign exchange risk. A high proportion of foreign currency debt exposes a sovereign to sizable changes in its debt burden should the local currency depreciate. The application of this adjustment has a negative impact on the Final Rating.

TABLE 9. ADJUSTMENT FOR THE LEVEL OF FOREIGN CURRENCY PUBLIC DEBT RELATIVE TO GDP

ADJUSTMENT VALUE	1	2	3	4	5
Foreign currency public debt, % of GDP	[10; 20)	[20; 30)	[30; 40)	[40; 50)	≥50

Source: ACRA

2) Share of government liabilities of the rated entity in international reserves held by world central banks

This adjustment is applied to lower the negative impact of the external debt indicator for sovereign issuers whose assets are used by other states as high-quality assets during crises. The application of this adjustment has a positive impact on the Final Rating.

TABLE 10. ADJUSTMENT FOR THE SHARE OF PUBLIC DEBT IN THE RESERVES OF THE WORLD'S CENTRAL BANKS

ADJUSTMENT VALUE	1	2	3	4	5	6	7	8	9	10

Ratio of the government debt of a sovereign issuer in the reserves of other countries to the total volume of debt in reserves, %	[5,10)	[10,15)	[15,20)	[20,25)	[25,30)	[30,35)	[35,40)	[40,45)	[45,50)	>=50

Source: ACRA

3) GG gross debt relative to GDP

This adjustment is used if debt relative to GDP exceeds 90% and thereby takes into account the difficulties that could arise for an issuer if this threshold is crossed. The application of this adjustment has a negative impact on the Final Rating.

TABLE 11. ADJUSTMENT FOR EXCEEDING THE THRESHOLD OF PUBLIC DEBT RELATIVE TO GDP

ADJUSTMENT VALUE	1	2	3	4	5
Consolidated government debt, % of GDP	[90; 100)	[100; 110)	[110; 120)	[120; 130)	≥140

Source: ACRA

4.2.3. Description of modifiers

ACRA uses the following modifiers in this block: (1) contingent liabilities and the risk of their materialization; (2) fiscal policy framework and fiscal flexibility; (3) sovereign wealth funds; (4) debt sustainability and access to markets and funding sources. Modifiers are calculated in accordance with the approach presented in Appendix 4.

1) Contingent liabilities and the risk of their materialization

The materialization of a wide range of contingent liabilities may significantly increase a sovereign's debt burden. The assessment of the impact that contingent liabilities could have on the sovereign's creditworthiness is based on the size of these liabilities and the likelihood of their materialization. The accounting of contingent liabilities is complicated by insufficient or contradictory information about them in many countries, and therefore the Agency positively assesses transparent disclosure by a sovereign of information about its contingent liabilities. Special focus is placed on a government's track record of providing support to financial and/or non-financial organizations during crises. ACRA identifies three groups of contingent liabilities.

Potential liabilities associated the national banking sector. A systemic banking crisis may lead to sharp growth in sovereign debt. Conversely, sovereign insolvencies may cause banking crises. Unlike any other sector, the banking sector represents a special contingent claim on national governments because of an immensely important intermediary function between the savings and investments of governments, households, and companies.

ACRA assesses the quality of a country's banking sector oversight by the capacity to curb systemic risks and enhance the financial sector's ability to resist shocks and minimize contagion risks. ACRA carefully examines past banking crises, their causes, and the authorities' reaction to them in terms of the timing and adequacy of the measures taken.

A sovereign supporting the sector via fiscal authorities can take different forms ranging from direct recapitalization to the separation of a distressed bank into "good" and "bad" banks with the latter typically included in public sector debt or explicit guarantees. The size and timing of support depends on the credibility and capacity of the central bank to act as a last-resort lender, the propensity of a sovereign[16] to provide direct support without compromising its own solvency, and its assessment of the damage to macroeconomic stability that the failure of a large systemically important bank can bring.

Potential liabilities related to non-financial public sector companies. In some cases, governments try to achieve certain social or political goals through these companies, which could adversely affect their profitability and/or debt position, especially in periods of economic downturn. The deterioration of their financial health could prompt a sovereign to support them. ACRA pays attention to the evidence of "soft budget" constraints in the country whereby the behavior of economic agents is marked by the expectations that the government will cover their losses.

Explicit sovereign guarantees on debt issued by other entities. ACRA views unequivocal and unconditional guarantees issued by a sovereign as a very strong obligation that should be included in the sovereign's debt burden, taking into account the creditworthiness of the companies. Unfunded pension obligations and public-private partnerships (PPP) are also taken into account when considering this modifier.

2) Fiscal policy framework and fiscal flexibility

The assessment of fiscal flexibility is based on analyzing the rigidity of budget revenue and expenditures. Revenue flexibility assumes a government's ability to raise extra revenue through higher tax rates, the expansion of the tax base, or the sale of assets. The government's expenditure flexibility is determined by the proportion of mandatory to non-mandatory expenditure, i.e., politically sensitive operating expenditure such as salaries, entitlements, or subsidies vs. the rest. An important aspect of revenue analysis is its volatility, since sharp fluctuations in revenue, especially with minimal savings, can limit the funds available to service debt. An inflexible budget leaves little room to maneuver in economic downturns or external shocks.

Constitutional, political, and demographic constraints, e.g., expenses related to aging as well as the government's record on austerity measures, should be taken into account while assessing the potential extent of fiscal consolidation.

ACRA assesses the strength and stability of fiscal rules and adherence to them. Fiscal policy is considered to be efficient if it mitigates structural imbalances in revenue and expenditures and manages the debt burden over a business cycle with positive implications for debt servicing capacity.

3) Sovereign wealth funds

ACRA pays special attention to the size of a sovereign's liquid assets, including the size of sovereign wealth funds. The government's liquid assets, including in foreign currency, if not allocated for other purposes, can ensure a good cushion to maintain fiscal sustainability in countries that have limited domestic capital markets or face high costs when raising capital from abroad.

4) Debt sustainability and access to markets and funding sources

ACRA analyzes the composition of public debt by maturity, coupon type, currency, type of debt (market vs. non-market), and so on. Low refinancing risk is characterized by the presence of long-term debt attracted at lower rates. ACRA also analyzes peaks in the public debt repayment schedule, which could increase refinancing risks.

A positive factor for the budget, especially for managing the cost of borrowing, can be programs to buy out the public debt by national central banks, if, as a result, the central bank retains independent decision-making, the government does not use these operations to sustainably increase spending, and this does not affect inflation.

[16] Bank resolution regulations adopted in a number of countries demonstrate the reduced appetite of a sovereign to provide direct support to the banking sector.

ACRA's debt sustainability analysis focuses on the trajectory of GG gross debt and the debt service burden over the medium-term. The Agency starts with the budget balance forecast, and also makes assumptions about expenditures not yet included in the calculation of the budget balance (for example, expenditures associated with an aging population), and makes a conclusions regarding the trajectory of public debt. If the government intends to run budget deficits in coming years, it is reasonable to anticipate growth in public debt. A downward trend can be expected if its budget is in surpluses. At this stage, ACRA makes assumptions about the potential size of contingent liabilities and timing of their materialization (when this can be established).

The Agency takes into account the fact that countries with a nominally fast-growing public debt are not necessarily losing debt sustainability as higher debts may be accompanied by high GDP growth and persistently high inflation. As a result, real debt burden does not always grow.

ACRA also assesses the sovereign's capacity to service its debt under various scenarios relevant to said sovereign. The Agency analyzes debt burden and debt service sensitivity to various assumptions on GG primary balances, interest payments, GDP growth, exchange rate, and other variables. Its comparison with the sovereign's liquid assets shows how long the sovereign can remain current on its obligations in the case of prohibitively high funding costs or loss of access to capital markets.

When assessing access to markets and funding sources, ACRA pays special attention to the development of the domestic capital market, taking into account the structure of investors (pension and other funds, asset management companies), as well as sustainability of the domestic capital market to shocks. When analyzing dependence on external economic factors, ACRA assesses the ability of a sovereign to maintain access to external markets and looks at the risk of losing market access not only for the state, but also for its economic sectors, taking into account similar events in the past.

Access to concessional and multilateral funding sources is an advantage, provided the government is willing to attract economic policy-related financing from the IMF or other international financial institutions in times of economic stress. At the same time, emergency support from international organizations indicates a deterioration in the risk profile of the sovereign.

4.3. EXTERNAL POSITION

This analytical block is used to assess a sovereign's resiliency to external shocks. Overreliance on external funding (from non-residents), even if it is denominated in the local currency, could trigger a sovereign default, even for developed countries. ACRA evaluates external funding in the context of the whole economy, taking into account the fact that the sovereign and the private sector are interrelated and the banking sector may act as a conduit of external shocks into the domestic economy under global market stress. The link between the sovereign and broader public sector also plays a role in this context.

4.3.1. Description and assessment of factors

ACRA uses the following factors in this block: (1) current account; (2) import cover; (3) international investment position; (4) export diversification; (5) currency volatility. Each factor is graded based on the range its value belongs to as indicated in Table 12. Factors are assessed based on indicators according to the approach presented in Appendix 3.

1) Current account

The factor value is measured as the ratio of the average value of the current account (CA) over three years (year preceding the calculation year, the calculation year, and the following year) to GDP. The contribution of each year to the total is the same, which is ensured by assigning equal weights to each year in the three-year period. Relatively large and persistent CA deficits indicate a buildup of liabilities towards non-residents, whereas CA surpluses point to the fact that the country is accumulating foreign assets. Current account deficits are less important for high-income countries in the short to medium terms, especially ones with sizable external assets, but may pose a significant risk for emerging market countries with less cross-border equity. A CA deficit for a country in a monetary union can serve as a medium-term indicator of a country's overall competiveness.

2) Import cover

This factor measures the number of months a country's international reserves are sufficient to cover imports in the case of a sudden cutoff from foreign currency inflows. The higher the factor value, the more comfortable investors are with the country's ability to withstand external shocks. It is a meaningful medium-term factor for emerging market countries that have pegged currency exchange rates or are in the process of switching to free-floating currency regimes. However, it is less important for countries with free-floating currency regimes. This factor is even less meaningful for developed countries, especially those with reserve currency status.

Impact of reserve currency status on the score of the Import Cover factor. Countries whose local currency has reserve status are assigned the maximum score regardless of the value of the indicator due to the tendency of investors to view assets denominated in such currencies (especially sovereign debt) as safe under unfavorable market conditions. At the same time, ACRA considers the applicability of the reserve status of these currencies, taking into account the current trends in the world market. Use of a currency that has reserve status may serve as a reason to assign a score of 1 to the Import Cover factor.

3) International investment position

Net international investment position (excluding GG and central bank) shows the difference between a country's external assets and external liabilities in relation to GDP, taking into account both debt investments and equity investments. High negative values of this factor may signal possible stress for the balance of payments.

The private sector of a country is a creditor to the outside world if the factor value is positive; a negative value shows that the private sector acts as a borrower, which increases its vulnerability to external shocks and increases the likelihood of the need for state support.

4) Export diversification

This factor helps to assess the extent to which the structure of merchandise exports of a particular country deviates from that of the world. The closer to the world's structure, the more diversified exports of a country are, which, other things being equal, signals a lower probability of external shocks.

5) Currency volatility

Countries with highly volatile local currencies are prone to more external shocks, which could negatively affect sovereign creditworthiness. The Currency Volatility factor is measured as a variance coefficient of the average nominal effective currency exchange rate[17] over a 10-year period. If data is not available for this indicator, ACRA calculates the indicator internally or uses the exchange rate of the local currency to the US dollar.

TABLE 12. ASSESSMENT OF EXTERNAL POSITION BLOCK FACTORS

FACTOR SCORE	CURRENT ACCOUNT	IMPORT COVERAGE	INTERNATIONAL INVESTMENT POSITION	EXPORT DIVERSIFICATION	CURRENCY VOLATILITY
1	≥5%	≥12.18	≥50%	≤0.30	≤3%
2	[4.2%; 5%)	[11.19; 12.18)	[41.67%; 50%)	(0.30; 0.33]	(3%; 5%]

[17] Nominal effective currency exchange rate is calculated as the average ratio of a local currency exchange rate to the currencies of countries that are the main trade partners, which is weighted in accordance with the share of each partner in the total trade volume.

3	[3.4%; 4.2%)	[10.20; 11.19)	[33.33%; 41.67%)	(0.33; 0.36]	(5%; 7%]
4	[2.6%; 3.4%)	[9.21; 10.20)	[25%; 33.33%)	(0.36; 0.39]	(7%; 9%]
5	[1.8%; 2.6%)	[8.46; 9.21)	[16.67%; 25%)	(0.39; 0.42]	(9%; 9.67%]
6	[1%; 1.8%)	[7.71; 8.46)	[8.33%; 16.67%)	(0.42; 0.45]	(9.67%; 10.33%]
7	[0.2%; 1%)	[6.96; 7.71)	[0%; 8.33%)	(0.45; 0.48]	(10.33%; 11%]
8	[-0.6%; 0.2%)	[6.39; 6.96)	[-8.33%; 0%)	(0.48; 0.51]	(11%; 11.67%]
9	[-1.4%; -0.6%)	[5.83; 6.39)	[-16.67%; -8.33%)	(0.51; 0.54]	(11.67%; 12.33%]
10	[-2.2%; -1.4%)	[5.26; 5.8)	[-25%; -16.67%)	(0.54; 0.57]	(12.33%; 13%]
11	[-3%; -2.2%)	[4.83; 5.26)	[-33.33%; -25%)	(0.57; 0.60]	(13%; 14%]
12	[-3.8%; -3%)	[4.40; 4.83)	[-41.67%; -33.33%)	(0.60; 0.63]	(14%; 15%]
13	[-4.6%; -3.8%)	[3.97; 4.40)	[-50%; -41.67%)	(0.63; 0.66]	(15%; 16%]
14	[-5.4%; -4.6%)	[3.65; 3.97)	[-58.33%; -50%)	(0.66; 0.69]	(16%; 19%]
15	[-6.2%; -5.4%)	[3.32; 3.65)	[-66.67%; -58.33%)	(0.69; 0.72]	(19%; 22%]
16	[-7%; -6.2%)	[3.00; 3.32)	[-75%; -66.67%)	(0.72; 0.75]	(22%; 25%]
17	<-7%	<3	<-75%	>0.75	>25%

Source: ACRA

4.3.2. Description of adjustments

No adjustments are applicable to the External Position block.

4.3.3. Description of modifiers

In this block, ACRA uses the following modifiers: (1) balance of payments vulnerability; (2) external debt sustainability; (3) currency regime stability. Modifiers are calculated in accordance with the approach presented in Appendix 4.

1) Balance of payments vulnerability

ACRA assesses the mid-term CA trajectory by analyzing its vulnerabilities and the fundamental factors driving its balance (e.g., saving/investment patterns in the economy). The high volatility of CA receipts, which includes merchandise, service exports, and primary plus secondary revenue, is negative for the country's ability to generate stable external revenue.

Overreliance on a single commodity or service (oil, soybeans, tourism, etc.) or a single donor country for remittances may expose a sovereign to sharp downturns in commodity markets, trade partners, or donor countries. Structural vulnerability of imports comes from dependence on a particular import, for instance fuel.

Countries with a market pricing of national currencies are better positioned to adjust to external pressures stemming from swings in commodity prices or the economic fortunes of key donors or trade partners. These countries are more prepared to keep their CA swings at bay.

The CA outlook depends on national savings and investment balances. If a country's savings ratio is far above investments in its own economy, it exports capital and is likely, other things being equal, to keep its CA in surplus.

The opposite is also true; a CA deficit country is likely to have its domestic investment far above domestic savings, thus importing capital to finance this investment.

ACRA also analyzes the nature of capital flows that finance the country's CA deficit. If investments from non-residents are mostly foreign direct investments (FDIs) and equity inflows, the leverage is less onerous, since these types of external investments are often associated with a boost in a country's productive capacity rather than consumption. Conversely, a much higher proportion of external portfolio investments, especially those short-term in nature, is more volatile than FDIs and a sudden stop in external portfolio investments due to a change in investor sentiment can precipitate a currency impairment and potentially a recession.

2) External debt sustainability

External debt sustainability is measured as the ratio of external assets to liabilities for the economy of a sovereign rated entity as a whole and its government in particular. ACRA reviews liquid external assets and short-term liabilities, as well as liabilities broken down by economic sector. Concentration of liabilities in more sustainable economic sectors that show a high level of intra-firm debt, for example, in the public or corporate sector, as well ability to mobilize assets in various sectors, are positive for the ability to service external debt.

ACRA uses an external liquidity ratio to measure the ability of an economy to withstand a temporary loss of investor confidence and the capacity to continue servicing external debt using its own sources. The country's international reserves are compared to its external financing needs, including short-term external debt (original maturity short-term debt and a current year principal of long-term debt) and deposits of non-residents in domestic banks. An important indicator of external sustainability is the ratio of income from the export of goods and services to the volume of external debt repayments for the year under review. This demonstrates the ability of the economy to ensure the flow of currency into the country to service debt.

A closer look at the composition of the sovereign's assets and liabilities makes it possible to estimate the government's exposure to external risk, in particular foreign currency risk. ACRA measures sovereign net foreign assets by comparing the international reserves and foreign-currency denominated (or indexed) assets of the government, i.e., the foreign currency part of sovereign/reserve funds, and GG and central bank foreign currency denominated (or indexed) debt. Similar to the economy of a rated entity, a sovereign in a net creditor position has a greater level of external flexibility than a sovereign in a net debtor position. The foreign currency structure of assets and liabilities is more relevant for developing countries than developed ones.

3) Currency regime stability

The external shock resiliency of highly indebted countries with managed or pegged exchange rate regimes strongly depends on the ability to maintain stability in said exchange rate regimes. The stability of pegged exchange rate regimes is determined by the adequacy of international reserves. Using significant amounts of reserves to support a local currency decreases the adequacy of international reserves and, as a consequence, impairs the ability to maintain the exchange rate regime.

4.4. INSTITUTIONAL FRAMEWORK

This analytical block is designed to assess a government's willingness to mobilize resources to fund debt payments and its efficiency in doing so. The assessment also takes into account the risk that the capacity to pay could be interrupted by political instability, civil unrest, or involvement in external conflict.

4.4.1. Description and assessment of indicators

In this block, ACRA uses the following factors: (1) political stability; (2) government benevolence and effectiveness; (3) human capital quality. Each factor is graded based on the range its value belongs to as indicated in Table 13. Factors are assessed based on indicators according to the approach presented in Appendix 3.

1) Political stability

Political stability includes Voice and Accountability, Political System Sustainability, and Absence of Violence.

2) Government benevolence and effectiveness

This factor includes Rule of Law, Control of Corruption, Government Effectiveness, and Regulatory Quality. This group of indicators reflects the market participants' perceptions of various aspects of public governance.

3) Human capital quality

ACRA examines the socioeconomic capacity to service debt in the medium term using the Human Capital Quality that includes education quality (including the education sub-index from the Human Development Index[18]), as well as the adult mortality rate and life expectancy at birth.

ACRA uses the above factors in view of the following reasons:

– The country's institutional features, which range from political instability to weak budget management and public governance, are related to the ability and willingness to repay debt.
– Public governance indexes are currently the most comprehensive indicators of institutional factors that are compiled in a unified approach; they cover a very wide range of countries and are published on an annual basis.

TABLE 13. ASSESSMENT OF INSTITUTIONAL FRAMEWORK BLOCK FACTORS

FACTOR SCORE	POLITICAL STABILITY	PUBLIC GOVERNANCE QUALITY	HUMAN CAPITAL QUALITY
1	≥130	≥180	≥315
2	[115; 130)	[162.67; 180)	[303.67; 315)
3	[100; 115)	[145.33; 162.67)	[292.33; 303.67)
4	[85; 100)	[128; 145.33)	[281; 292.33)
5	[70; 85)	[110.67; 128)	[269.67; 281)
6	[55; 70)	[93.33; 110.67)	[258.33; 269.67)
7	[40; 55)	[76; 93.33)	[247; 258.33)
8	[25; 40)	[58.67; 76)	[235.67; 247)
9	[10; 25)	[41.33; 58.67)	[224.33; 235.67)
10	[-5; 10)	[24; 41.33)	[213; 224.33)
11	[-20; -5)	[6.67; 24)	[201.67; 213)
12	[-35; -20)	[-10.67; 6.67)	[190.33; 201.67)
13	[-50; -35)	[-28; -10.67)	[179; 190.33)
14	[-65; -50)	[-45.33; -28)	[167.67; 179)
15	[-80; -65)	[-62.67; -45.33)	[156.33; 167.67)
16	[-95; -80)	[-80; -62.67)	[145; 156.33)

[18] As estimated by the UN.

FACTOR SCORE	POLITICAL STABILITY	PUBLIC GOVERNANCE QUALITY	HUMAN CAPITAL QUALITY
17	<-95	<-80	<145

Source: ACRA

4.4.2. Description of adjustments

No adjustments are applicable to the Institutional Framework block.

4.4.3. Description of modifiers

In this block, ACRA uses the following modifiers: (1) inability to pay public debt; (2) political instability and recent political decisions; (3) involvement in geopolitical conflicts, exposure to geopolitical risks. Modifiers are calculated in accordance with the approach presented in Appendix 4.

1) Inability to pay

The perceived willingness and ability to repay public debt has to be taken into account because unlike private entities, governments are not subject to bankruptcy laws or enforcement procedures. There are situations when a government can pay, however for different reasons[19] decides that it is easier to default.

2) Political instability and recent political decisions

World governance indices are generally updated with a lag.[20] ACRA compensates for this lag by examining recent political events and key political decisions that could impact sovereign creditworthiness, ranging from the frequency of changes in government to orderly transfer of power. ACRA makes no judgement as to the type of government in place as long as debt repayment is not impaired by political structure. ACRA believes that an authoritarian government with high legal certainty and a low level of corruption can be creditworthy, despite lacking political liberties and civil rights. By contrast, a highly democratic government can experience difficulty exercising political will to instill fiscal order and repay its obligations on time.

3) Involvement in geopolitical conflicts, exposure to geopolitical risks

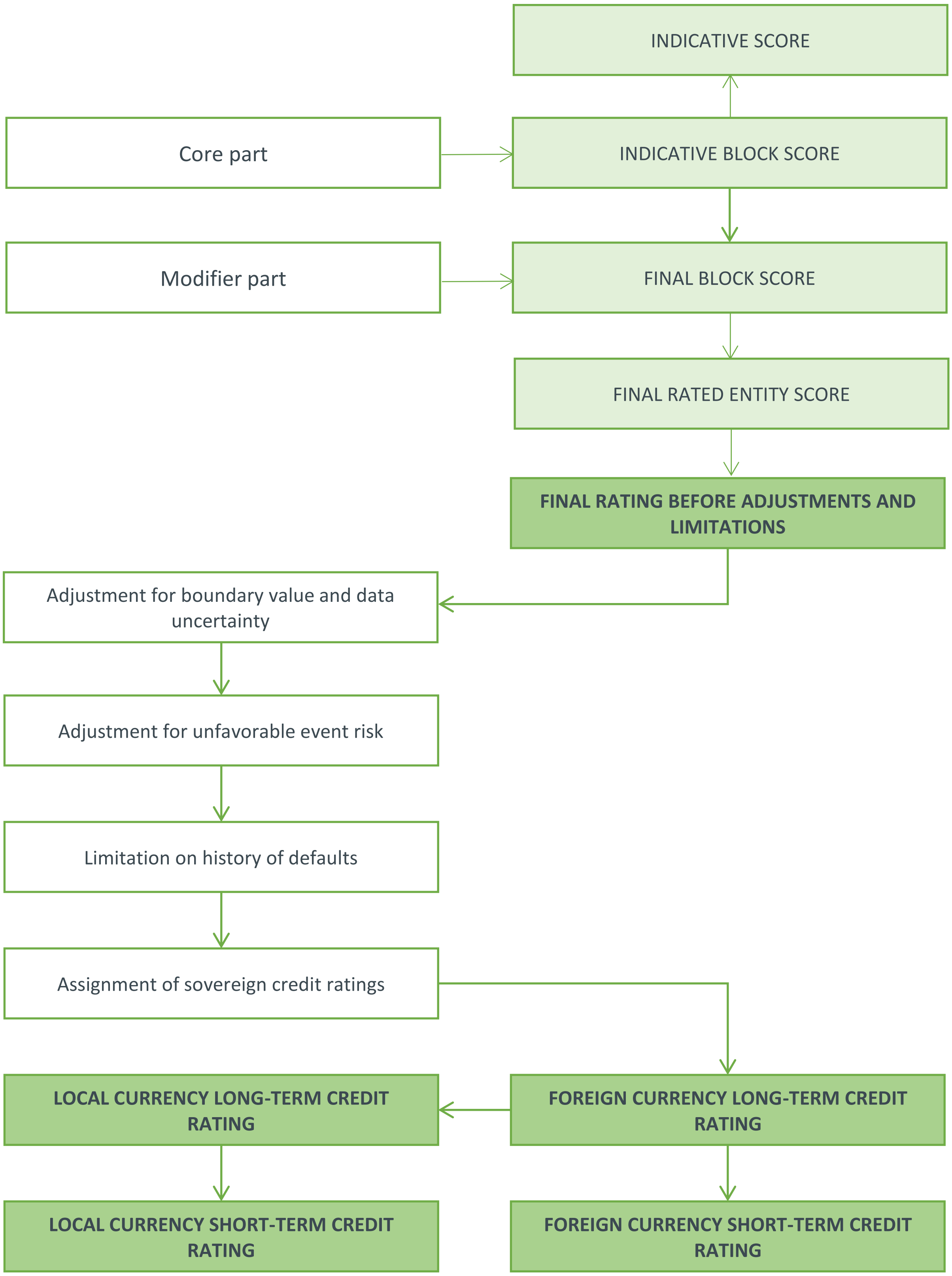
Exposure to geopolitical risks and/or involvement in geopolitical conflicts could put a government's capacity and willingness to pay at risk. ACRA takes into account the geopolitical risks that can disrupt economic activity and have a detrimental effect on investment flows and business and consumer confidence.

[19] For example, a new government refuses to repay a debt incurred by the preceding government, or a government decides not to pay to bondholders in view of a court judgement in favor of recalcitrant creditors.

[20] Some of the factors are based on data that is two to three years old.

APPENDIX 1. DETAILED RATING ANALYSIS STRUCTURE

FIGURE 3. DETAILED RATING ANALYSIS STRUCTURE



Source: ACRA

APPENDIX 2. CORE PART ADJUSTMENTS

This appendix describes adjustments applicable to the core part scores. These adjustments may be applied to different objects (factors and blocks). The direct effect of an adjustment on core part scores is to decrease or increase the block score by the amount of the adjustment multiplied by 0.78 (except for the Concessional Debt adjustment, since it also includes the weight of the sub-factor to which this adjustment is applied). The amount of the adjustment depends on the indicators described in the relevant sections of the methodology and is restricted by border values for the Final Rating (in notches) set in Table 14.

TABLE 14. CORE PART ADJUSTMENTS

ADJUSTMENT	OBJECT OF ADJUSTMENT	APPLICATION OF ADJUSTMENT	MAXIMUM EFFECT ON THE FINAL RATING[21]
Concessional government debt	Block: Public Finance, sub-factor: Interest Payments	Increase in the ratio of concessional public debt to GDP is negative for the factor score	+1
GG gross debt in foreign currency	Block: Public Finance	Increase in the ratio of debt in a foreign currency to GDP is negative for the block score	+1
Public debt in global international reserves	Block: Public Finance	Increase in the share of public debt held by central banks of third countries in their international reserves is positive for the block score	-2
GG gross debt	Block: Public Finance	Increase in the ratio of GG gross debt to GDP is negative for the block score	+1

Source: ACRA

[21] A negative value means better Final Rating.

APPENDIX 3. CORE PART INDICATORS

Tables in this appendix describe indicators included in the core part.

TABLE 15. MACROECONOMIC POSITION BLOCK INDICATORS

FACTOR	INDICATORS	RATIONALE	UOM, TRANSFORMATION AND INFORMATION SOURCES
Income level	GDP expressed in USD using the market exchange rate of local currency divided by the country's population. This figure allows for more flexible cross-country comparability. On the other hand, this variable is rather volatile for countries with unstable currency.	The higher the GDP per capita, the broader the potential tax base that the sovereign can employ to service its debt. Higher GDP per capita is associated with higher economic and financial wealth.	UoM: USD. Data for the year for which the rating is determined (t0). The value of the indicator is discounted by 1.04^(number of years since 2019). 4% is the average growth of world GDP per capita in PPP from 1996 to 2019. Sources: World Bank, national sources
Economic growth	Real GDP change is the annual percentage change of a country's GDP in constant prices. This indicator captures the fundamental change in domestic economic output and excludes inflation to prevent distortion of the economic picture.	A country's creditworthiness depends on its ability to generate long-term economic growth and display GDP growth at least on par with countries with a similar income level.	The factor is measured as an average change in real GDP over ten years against an average change in real GDP in the countries with comparable incomes: – If the GDP per capita on PPP exceeds 40,000 international dollars, then the average real GDP volatility for developed countries is used for comparison; – If the GDP per capita (PPP) is less than 20,000 international dollars, then the average real GDP volatility for developing countries is used for comparison; – If the GDP per capita on PPP is within 20,000–40,000 international dollars, then the average real GDP volatility for developed countries and developing countries is used for comparison, in proportion to the GDP per capita on PPP of the rated sovereign. Averages are calculated using the linearly growing (up to

			the relevant year) weights, so that the weight for the relevant year is the largest. Weights for subsequent years are equal to the weight for the relevant year. The values 40,000 and 20,000 are indexed annually by 4% (average growth of world GDP per capita in PPP from 1996 to 2019). The base year is 2019. Data for seven years preceding the relevant year, the relevant year, and two subsequent years are used [t-7; t+2][22]. Sources: IMF, national sources
Size of economy	Nominal GDP in USD is used to determine the size of economy.	The smaller the economy (even with high wellbeing), the more susceptible it is to external shocks; and vice versa: the larger the economy, the more diversified its internal market is and the less susceptible the country is to external shocks.	The indicator is measured as the ratio of nominal GDP in the national currency to the annual average market exchange rate of the national currency against USD. Value for the relevant year is used (t0). The value of the indicator is discounted by 1.04^(number of years since 2019). 4% is the average growth of world GDP per capita in PPP from 1996 to 2019. Sources: IMF, national sources
Inflation	Inflation is measured by the change in the annual average consumer price index (CPI). CPI is based on a consumption basket of goods and services used for the idealized household within the country.	CPI is used since it is the best reflection of the impact of price volatility on the end consumption of households that are the end consumers of goods and services. In addition, CPI excludes real estate prices (price growth may give rise to bubbles in asset markets). Long periods of excessive and volatile inflation distort relative prices in the economy having a detrimental effect on economic growth and therefore, undermining the sovereign's ability to service its debt. Deflation, i.e., a prolonged period of falling prices, is equally harmful for economic growth, adversely affecting consumer and	The factor is measured as the average CPI growth rate over the last five years. Values for two years preceding the relevant year, the relevant year, and two subsequent years are used [t-2; t+2]. Target (the best for the score) level is the range 0.5%–3.0%. Equal weights for the period are applied. Sources: IMF, national sources

[22] Hereinafter, t-n is an actual value of variable for the n^{th} year respective the relevant year (t0), t+n is a forecasted value of variable for the n^{th} year respective the relevant year (t0).

		business confidence.	

Source: ACRA

TABLE 16. PUBLIC FINANCE BLOCK INDICATORS

FACTOR	INDICATORS	RATIONALE	UOM, TRANSFORMATION AND INFORMATION SOURCES
Fiscal balance	Three-year average ratio of general government (GG) balance to nominal GDP, % of GDP. GG balance is the difference between its revenue and expenditure, including interest payments on existing debt stock.	A persistent GG deficit may indicate a sovereign's constrained capacity to service its debt using its own resources, increasing reliance on the market to refinance its debt, and a rising debt burden.	The factor is measured as a ratio of average GG balance to GDP for three years. Values for the year preceding the relevant year, the relevant year, and the subsequent year are used [t-1; t+1]. Equal weights for the period are applied. Sources: IMF, World Bank, Eurostat, national sources
Debt burden	**Gross GG debt** Outstanding gross debt of the GG, including central, local and regional governance bodies, social security funds, and other off-budgetary funds, is compared to the revenues of the GG in the same definition. In case of high likelihood that state guarantees may be claimed, they are included in the indicator as well. In cases when a central bank issues debt obligations for purposes other than monetary, such obligations are included in the gross debt of the GG. **Interest payments** Interest payments include all payments on GG debt regardless of its currency, residency, and maturity, and are compared to total government revenue.	GG debt to revenue as a percentage is a more accurate ratio for assessing a government's creditworthiness than the commonly used GG debt to GDP ratio. This indicator provides a debt burden assessment relative to a government's existing revenue stream. A government may have a relatively low GG debt-to-GDP ratio but a high GG debt-to-revenue ratio, which indicates little room for maneuver to solve fiscal problems in the case of adverse conditions. Central bank's debt is included in the cases when its volume and GDP share are high enough and have been growing over many years. This indicates a structural non-cyclical trend. This debt includes internal and external liabilities, excluding intergovernmental guarantees. An important indicator of how expensive it is for the government to finance its	The factor is measured as a weighted sum of the sub-factor Gross GG Debt and adjusted sub-factor Interest Payments. The adjustment is made for the share of debt raised under concessional rates in the gross GG debt. The higher the share the higher the debt service costs may be if the budget is funded on market terms. Weights are determined as follows: – For countries where GDP per capita (PPP) exceeds 80,000 international dollars (in 2019 prices), the weight of debt respective revenues is 10%, and the weight of adjusted interest payments respective debt is 90%. – For countries with GDP per capita (PPP) of less than 20,000 international dollars (in 2019 prices), the weight of debt respective revenues is 90%, and weight of adjusted interest payments respective debt is 10%. For other countries, weights are proportional to GDP per capita (PPP).

		interest payments relative to its revenue. A rising burden of servicing existing debt stock may constrain other government spending, leading to less flexibility in fiscal policy.	– The values of 80,000 and 20,000 are indexed annually by 4% (the average growth of global GDP per capita on PPP from 1996 to 2019). The base year is 2019. Value for the relevant year is used (t0). Sources: IMF, Eurostat, national sources
External public debt	Gross outstanding debt of GG to non-residents, including non-resident holdings of GG bonds denominated in local currency.	A government’s overreliance on external investors, regardless of the currency of debt, might impede its market access in the case of adverse conditions.	The factor is measured as a share of GDP. Value for the relevant year is used (t0). Sources: IMF, World Bank, Eurostat, national sources

Source: ACRA

TABLE 17. EXTERNAL POSITION BLOCK INDICATORS

FACTOR	INDICATORS	RATIONALE	UOM, TRANSFORMATION AND INFORMATION SOURCES
Current account	The current account (CA) comprises balances of goods and services plus net primary revenue (dividends, interest, etc.) and net secondary revenue (remittances and foreign aid, etc.).	Relatively large and persistent CA deficits indicate a buildup of foreign debt. However, if the debt is financed by direct foreign investment and equity inflows, the debt burden is less onerous. Consistently negative CA funded through foreign debt poses concern even for the countries with reserves currencies. It is an even bigger risk for developing countries with limited cross-border equity. A sovereign saddled with foreign debt with limited foreign assets to counterbalance it might find it difficult to refinance its own debt.	The factor is measured as the ratio of average CA balances to GDP over three years. Values for the year preceding the relevant year, the relevant year, and the subsequent year are used [t-1; t+1]. Equal weights for the period are applied. Sources: IMF, World Bank, national sources

Import cover	Import cover is defined as the ratio of international reserves to monthly imports of goods and services, expressed in months.	This factor measures the number of months a country's international reserves are sufficient to cover imports if there is a sudden cut-off of foreign currency inflows. It is less important for countries with free-floating currency regimes. However, it is a meaningful indicator for emerging market countries that are in the process of switching to free-floating regimes. The higher the indicator, the more comfortable investors are regarding the country's ability to withstand external shocks.	An adjustment is made for countries with reserve currencies — they get the highest score. For the Reserves indicator, the value as of the end of the relevant year (t0) is applied; for the Imports indicator, the value of the next year (t+1) is applied. Sources: IMF, World Bank, national sources
International investment position	Net international investment position is the difference between the value of foreign assets and the market value of a country's liabilities. To avoid double counting, this indicator excludes the public sector, including the central bank.	This factor can indicate a growing imbalance in external assets and liabilities and, as a result, possible stress for the external position of a country.	The factor is measured as a share of GDP. Value for the relevant year is used (t0). Source: IMF, national sources
Export diversification	The more a country's merchandise exports structure deviates from that of the global indicators, the less diversified its economy is.	The diversification index helps to assess the extent to which the structure of merchandise exports of a particular country deviates from that of the world. The closer to the world structure, the more diversified a country's exports are. Other things being equal, the index signals strong resilience to external shocks.	The factor is measured as the modulus of the deviation of a country's trade structure relative to the world structure. The last available value of the index is applied. Source: UNCTAD
Currency volatility	The nominal effective exchange rate (NEER) is used, which is measured as the weighted average trade volume of the local currency to currencies of main trade partners. If this data is not available, ACRA calculates NEER itself or uses the national currency/USD exchange rate.	The higher the local currency volatility, the more disruption it can bring to the local economy with adverse consequences for sovereign creditworthiness.	The factor is measured as a variation coefficient of the weighted average nominal effective exchange rate over the last ten years [t-9, t0]. Weights grow linearly: from 1.8% for nine-year-old index to 18.2% for current-year index. Sources: IMF, BIS, national sources

Source: ACRA

TABLE 18. INSTITUTIONAL FRAMEWORK BLOCK INDICATORS

FACTOR	INDICATORS	RATIONALE	UOM, TRANSFORMATION AND INFORMATION SOURCES
Political stability	This is a complex factor comprising two indicators out of the World Governance Indicators (WGI) compiled by the World Bank: Voice and Accountability and Political Stability and Absence of Violence/Terrorism.	This factor helps signal coming crises by providing a relative evaluation of a country's institutional strength in terms of political stability and freedom of speech.	The factor is measured as an average of the mentioned WGI indicators. Last available indicators are used. Initial data used to calculate the indicators is cleared from political judgements made with regard to the rated entity by organizations that support sanctions. Sources: World Bank, ACRA
Government effectiveness	This is a complex factor comprising four indicators out of the World Governance Indicators (WGI) compiled by the World Bank: Control of Corruption, Rule of Law, Regulatory Quality, and Government Effectiveness.	This factor helps signal coming crises by providing a relative evaluation of a country's institutional strength in regard to corruption, property rights, quality of public services, and a government's ability to facilitate private sector development.	The factor is measured as an average of the mentioned WGI indicators. Last available indicators are used. Initial data used to calculate the indicators is cleared from political judgements made with regard to the rated entity by organizations that support sanctions. Sources: World Bank, ACRA
Human Capital Index	ACRA's factor comprising three indicators, which capture the quality of a country's human capital. These indicators include the education sub-index of the Human development index (UN), adult mortality rate, and life expectancy at birth.	This is a forward-looking factor. Its current level signals whether or not a country is improving its human capital, a driver of long-term economic growth.	The factor is measured in accordance with the formula (latest available data is used): $HCI = 100 * e^{1.3*educ} * e^{-0.001*AMR} * e^{0.4*(\frac{life-50}{120})}$, where educ is the education quality sub-index, AMR is the average adult mortality rate, and life is life expectancy. Sources: UN, World Bank, national sources

Source: ACRA

APPENDIX 4. MODIFIERS: DEFINITIONS

In this appendix, modifiers and their definitions are listed.

TABLE 19. MACROECONOMIC POSITION BLOCK MODIFIERS AND SUB-MODIFIERS

MODIFIER OR SUB-MODIFIER	DEFINITION	FROM	TO
Potential economic growth	Sum of scores	**-5**	**4**
Additional smoothening of cyclical GDP variations	The following is assessed positively: negative/positive output gap is large but, according to the analyst's expectations, it will disappear within one year. The following is assessed negatively: a positive output gap is large but, according to the analyst's expectations, it will disappear within one year.	-1	1
Inflation trend	The following is assessed positively: inflation is expected to get notably closer to the range of 0.5–3 pps or target levels on the five-year forecast horizon compared to the five-year window used in the indicative assessment. The following is assessed negatively: inflation is expected to get notably farther from the range of 0.5–3 pps or target levels on the five-year forecast horizon compared to the five-year window used in the indicative assessment.	-1	1
Long-term potential growth	The following is assessed positively: expected increase in the long-term economic potential growth on the ten-year horizon. The following is assessed negatively: expected decrease in the long-term economic potential growth on the ten-year horizon.	-2	2
GDP growth volatility	The following is assessed negatively: high historical volatility of real GDP if there is reason to believe that this instability is caused by the structure of the economy or political decisions. The following is also assessed negatively: increased frequency of recessions compared to the global average.	-1	0
Quality and sustainability of economic growth	Sum of scores	**-10**	**7**
Innovative potential	The following are assessed positively: high R&D investments, innovative industry focus, successful commercial use of inventions, developed venture investments market, developed scientific research, etc.	0	1
Competitiveness with peer countries	The following are assessed positively: workforce competitive in the global market, geographically or historically determined market power in any global foreign markets, and other factors that make it easier for a country to compete in global markets. The following are assessed negatively: barriers or institutional specifics complicating inclusion in global value chains.	-1	1

Investments	The volume of investments in fixed assets, which increases the production potential of the economy, is assessed. The outrunning/lagging behind the global average investment level is assessed positively/negatively. The investment structure is assessed through the potential return on investment, demand, and efficiency. Investments that do not contribute to strengthening the potential of the economy do not increase the score.	-2	2
Imperfect labor market	The following are assessed negatively: inflexible labor market, which creates insufficient jobs, makes it difficult to find the optimal employment structure; market institutions are inadequate to ensure economic growth, etc.	-1	0
Vulnerability to external shocks	The following are assessed negatively: low geographical diversification of foreign trade (provided that export dynamics can significantly affect economic growth); components of commodity exports and imports correlated in terms of prices and volumes (in case this is not reflected in other modifiers or the indicative part of the model, as well as in case this can significantly affect economic growth); undiversified incoming flow of direct or portfolio investments that increase the risks for a large industry; strong ties of the country’s economy with countries or regions, where the probability of the materialization of certain risks is high, etc.	-2	0
Vulnerability to internal shocks	Negatively assessed are internal sources of risk: imbalanced and fast growth of lending, vulnerability to environmental and climatic changes, unstable and non-diversified structure of the economy, etc.	-1	0
Demographic situation	Positively assessed are the prospects for materialization of the demographic dividend. Negatively assessed are: fast ageing of the population; economically active population trending to shrink on the 10-year forecast horizon; notable negative natural population growth (provided that historically, it is not compensated by migration inflow).	-1	1
Other	Positively or negatively assessed are other factors that make the assessed country different from other countries (for example: the country is a superpower or regional leader, investments and the economy are supported by an ally or supranational entity, dependence of the economy on a large partner, etc.), as well as events that change the quality of the economic growth but are not reflected in other sub-modifiers.	-2	2
Efficacy of structural economic policy and recent structural reforms	The following are assessed positively: successful experience in implementing industrial policy and attaining goals in changing the economy structure or important sectors, reforms aimed at economic development via technical progress and strengthening market positions of local manufacturers. The following are assessed negatively: inadequate target-setting, excessive government’s interference in market industries, experience of unsuccessful industrial policy, etc.	**-1**	**1**
Efficacy of monetary policy	Sum of scores	**-3**	**2**
Failure to attain goals	Failure to attain goals in inflation, currency exchange rate or other monetary policy goals is assessed negatively.	-1	0

Recent (temporary) policy measures	Decisions taken by the central bank have a delayed impact on the indicators of the core and modifier parts of the model. This sub-modifier is used in cases where the specific manifestation of an event remains difficult to predict, but the direction of its influence is clear. Changes that potentially increase the likelihood of achieving the central bank's goals, contribute to setting more achievable goals, strengthen the independence of the central bank, etc. are assessed positively. The opposite trends are assessed negatively.	-1	1
Central bank's experience	Extensive experience of the central bank's officials and heads and the independence are assessed positively. Insufficient experience of the central bank's officials and heads, lack of sufficient experience in conducting monetary policy under given conditions and with set goals, and the lack of independence from other branches of government are assessed negatively.	-1	1

Source: ACRA

TABLE 20. PUBLIC FINANCE BLOCK MODIFIERS AND SUB-MODIFIERS

MODIFIER OR SUB-MODIFIER	DEFINITION	FROM	TO
Sovereign funds	The availability of a dedicated pool of liquid funds on the government's balance sheet is assessed positively, as it increases the likelihood of unconditional repayment of public debt in various conditions, for instance, when external financial markets are unreachable. The value of the liquid part of sovereign funds is estimated in relation to the size of the economy and public debt, as well as taking into account the public debt's currencies and maturities.	**0**	**4**
Contingent liabilities and the risk of their materialization	Sum of scores	**-10**	**0**
Explicit	A significant amount of financial guarantees with a non-zero probability of trigger event can increase public debt and budget expenditures thus worsening the state of public finances. The probability of a trigger event is estimated taking into account historical data and the financial situation of beneficiaries. Particular attention is paid to previous cases of government assistance to financial and/or non-financial entities in crisis situations. The high probability of a trigger event and/or substantial volume of guarantees are assessed negatively.	-2	0
Implicit	Sum of scores	-8	0
Size of non-financial public sector	A large non-financial public sector is assessed negatively (in terms of assets, debt, share in the labor market, share of value added). The assessment further deteriorates with the high social importance of public sector enterprises and their poor financial condition — factors that increase the likelihood and scale of emergency support.	-2	0

Size of financial public sector	The size of the financial public sector significant relative to GDP is assessed negatively (in terms of assets, debt, share in the labor market, share of value added). The assessment further deteriorates with the high social significance of financial entities and their poor financial condition — factors that increase the likelihood and scale of emergency support.	-2	0
Banking sector risks	The banking sector, which systematically generates low profits, has poor average asset quality indicators, is characterized by high concentration, and faces occasional bank runs, is assessed negatively. A systemic banking crisis can lead to a sharp increase in the debt of a sovereign issuer, while the insolvency of sovereign issuers, in turn, can cause a banking crisis. Unlike all other industries, the obligations of the banking sector are in fact a special conditional obligation of the national government, since banks perform an extremely important function of intermediary between economic agents' savings and investments and ensure monetary circulation.	-3	0
Other risks	Other implicit government guarantees, with significant volume or probability of trigger events, are assessed negatively, as well as excessive opacity in the issuance and payment of government guarantees.	-1	0
Debt sustainability and access to market and funding sources	Sum of scores	**-8**	**6**
Coverage of public debt denominated in foreign currency	The low coverage of foreign currency denominated public debt by liquid foreign currency denominated government assets is assessed negatively.	-2	0
Coverage of short-term public debt denominated in foreign currency	The low coverage of short-term foreign currency denominated government debt and short-term debt service obligations with liquid foreign currency denominated government assets is assessed negatively.	-1	0
Maturity	The short duration and uneven repayment schedule of the debt are assessed negatively.	-1	0
External guarantees	External guarantees issued by a stable guarantor for a significant portion of the public debt are assessed positively.	0	2

Size of internal market	The large capacity and depth of the domestic financial market is assessed positively, which allows the government to borrow in national and foreign currencies at reasonable rates, regardless of the availability of external financial markets.	0	1
Instability of social support systems (pension, healthcare, etc.)	The structural imbalance of the pension system and other social support systems associated with long-term demographic trends or other causes, such as the influx of refugees, etc., is negatively assessed. Regardless of the type of the system, a negative and deteriorating balance sheet can lead to a decrease in the stability of public finances.	-1	0
Debt trend	The predictable long-term trend of public debt growth (% of GDP) is assessed negatively regardless of the reasons for the growth, such as a negative structural balance, permanent currency revaluation, acceptance of public sector debt obligations on the government's balance sheet, trigger events on guarantees, etc. The predictable long-term trend of public debt decline, regardless of the reasons for the decline, is assessed positively.	-2	2
Other	Other factors that distinguish a country from other countries are assessed negatively or positively, as well as events that change public debt structure, such as the replacement of bonds, the implementation of redemption programs, the issuance of atypical debt obligations, etc.	-1	1
Fiscal policy and budget flexibility	Sum of scores	**-5**	**4**
Budget rules and compliance	The presence of formalized budget rules is assessed positively, which help reducing the pro-cyclical nature of the state budget, control the size of public debt, exercise public control and reduce the impact of the political cycle on public finances. In addition, a sufficient track record of successful application of non-adjustable budget rules, as well as conservative budget rules are assessed positively.	0	1
Budget cyclicality	The pro-cyclical nature of state budget expenditures is assessed negatively, namely, a systemically negative budget impulse in the periods of economic crises and a positive impulse in the periods of rapid growth. A consistently positive fiscal impulse, regardless of the stage of the economic cycle, can also be assessed negatively if the state of public finances is already unstable.	-1	0
Rigidity of public expenses	A large proportion of difficult-to-reduce expenditures is assessed negatively, such as obligations subject to strict indexation, social expenditures, salaries of civil servants and poverty allowances, defense expenditures of warring countries. In some circumstances, the priority of such expenses may exceed the priority of public debt servicing expenses, which reduces the creditworthiness of the government.	-1	1

	A relatively low proportion of the above-mentioned types of expenses is assessed positively.		
Ability to increase revenues	The government's tight control over revenue sources and broad opportunities to mobilize financial resources by various methods, for example, by reducing existing tax benefits, using the liquidity of public sector companies, using funds that are not consolidated in budget reports, which are nevertheless under government control, etc. are assessed positively. Weak and declining control over tax bases and tax rates, as well as political traditions of populism and similar phenomena are assessed negatively.	-1	1
Revenue instability	The high historical volatility of budget revenues is assessed negatively if there is reason to believe that this instability is caused by the very structure of revenues, the specifics of tax bases, excessive dependence on commodity revenues, etc.	-1	0
Other	Other factors that distinguish the country from other countries are assessed negatively or positively, as well as events that change budget policy, such as the adoption of a new budget code, the creation of institutions for external control over public finances, etc.	-1	1

Source: ACRA

TABLE 21. EXTERNAL POSITION BLOCK MODIFIERS AND SUB-MODIFIERS

MODIFIER OR SUB-MODIFIER	DEFINITION	FROM	TO
Balance of payments vulnerabilities	Sum of scores	**-4**	**3**
Current account volatility	The historically high volatility of the current account balance is assessed negatively. The volatility is estimated in comparison with both the size of the economy and the average account size.	-1	0
Less stable components	A significant proportion of *a priori* volatile components in the current account is assessed negatively, even if recently they were not the source of the increased volatility. Examples are incoming retail transfers from abroad non-diversified by direction, inbound tourism non-diversified by structure, components of commodity exports and imports correlating with each other in terms of prices and volumes (if this is not taken into account in other modifiers or the indicative part of the model), etc.	-1	0
Financial account	The predominant components of the financial account are assessed. All other things being equal, the	-1	1

structure	predominance of direct investments is assessed positively, the predominance of portfolio investments is assessed negatively. The predominance of other components is assessed by experts in terms of their economic essence and the likelihood of their rapid change in the future. The structure of the financial account should be given greater importance when the values of the current account are significant and stably negative.		
Export diversification adjustment	The Export Diversification indicator used in the indicative part of the model, by definition, considers the trade structure closest to the global one to be the most diversified, which is a necessary simplification of a complex concept. In some cases, for example, in the case of countries with developed industries and exports of manufactured goods from different industries, this leads to an underestimation of real diversification. In such cases, the sub-modifier is used.	0	1
Other	Other factors that distinguish a country from other countries are assessed negatively or positively, as well as events that change the structure of balance of payments, such as changes in the currency structure of the current account, the country's membership in trading blocks and currency zones, etc.	-1	1
External debt stability	Sum of scores	**-3**	**3**
Share of foreign currencies (private sector)	The low share of private foreign debt denominated in foreign currency and/or its small size relative to the size of the economy is assessed positively. This structural feature reduces the likelihood of rapid fluctuations in the exchange rate in certain conditions.	0	1
Share of stable sectors	The high shares of government debt, central bank debt and intra-company external debt (in total external debt) are assessed positively. In certain circumstances, such a structural feature may reduce the value of cross-border currency flows and thus reduce the volatility of the exchange rate.	0	1
Coverage of currency and short-term external debt	Low coverage of short-term external debt, foreign currency external debt and short-term foreign currency external debt is assessed negatively. Coverage is calculated based on available information about the structure of assets held by the government and the central bank (in terms of liquidity and currency). Short-term assets are compared to the most liquid assets, foreign currency assets are compared to foreign currency assets, etc. Coverage makes it possible to supplement information on the overall sufficiency of international reserves with an assessment of the adequacy of their structure, as well as the structure of other liquid assets.	-2	0
Other	Other characteristics that distinguish a country from other countries are assessed negatively or positively, such as diversification of the structure of external debt, availability of non-financial liabilities, contingent external liabilities, etc.	-1	1
Currency regime stability	Sum of scores	**-3**	**2**

Projected dynamics of effective exchange rate	The predictable dynamics of the assessment of the Exchange Rate Volatility factor may be incorporated into the creditworthiness assessment. For instance, the change of the currency regime to a floating one, accompanied by the cease of linkage to a particular currency, in some cases adjusts the exchange rate and increases volatility and results in high historical volatility. At the same time, new shifts of such magnitude are much less likely in the floating exchange rate regime (another change of the regime from floating to some other is less probable to result in such volatility, and the volatility will not arise without a regime change), therefore, high historical volatility does not indicate a potential future volatility, which this sub-modifier allows assessing positively.	-2	2
Instability of currency linkage	The availability of additional information indicating the instability of the existing currency regime, which is not taken into account in the indicative part of the model (that is, in addition to insufficient foreign exchange reserves, the historical volatility of the exchange rate) is assessed negatively.	-1	0

Source: ACRA

TABLE 22. INSTITUTIONAL FRAMEWORK BLOCK MODIFIERS AND SUB-MODIFIERS

MODIFIER OR SUB-MODIFIER	DEFINITION	FROM	TO
Political instability and recent political decisions	Decisions taken by various branches of government or political events have a delayed impact on the indicators of the core and modifier parts of the model. In some cases, it is difficult to predict the specific effect of an event, but its direction is clear. In such cases, this modifier is used. In particular, the illegal change of power, the risk of unpredictable changes in the existing regime, civil conflict, public unrest, violence resulting from the political process, and other similar factors are assessed negatively. Decisions that strengthen the legitimacy and predictability of the political process and the stability of important public institutions, etc. are assessed positively.	**-3**	**3**
Involvement in geopolitical conflicts, exposure to geopolitical risks	The threat of conflicts or exposure to other geopolitical risks can lead to a deterioration of the business climate, a decrease in capital inflows, sanctions and counter-sanctions, economic slowdown and a decline in the priority of debt servicing costs. In addition, investors in government debt may lose the opportunity to receive payments as a result of certain politically motivated restrictions on capital flows. A military conflict in a significant part of the territory of the analyzed country is assessed most negatively.	**-10**	**0**
Unwillingness to pay	The sovereign issuer’s willingness to strictly comply with the debt repayment schedule and pay interest when due is assessed. In some situations, this choice is not an easy political decision. For example, public statements by officials or politicians about the possibility of forced restructuring of existing debt or the illegitimacy of debt claims are assessed negatively.	**-2**	**0**

Source: ACRA

APPENDIX 5. INFORMATION DISCLOSED IN ACCORDANCE WITH LEGAL REQUIREMENTS

This appendix contains information that is required to be included in the methodology in accordance with legal requirements.

Information disclosed in accordance with Clause 1.1.1 of the Bank of Russia's Ordinance No. 6583-U is contained in the text of the methodology.

Information disclosed in accordance with Clause 1.1.2 of the Bank of Russia's Ordinance No. 6583-U is contained in the text of the methodology. Quantitative factors used in the methodology cover over a half of the total weight of factors.

Information disclosed in accordance with Clause 1.1.3 of the Bank of Russia's Ordinance No. 6583-U is contained in the text of the methodology and the Key Concepts Used by the Analytical Credit Rating Agency within the Scope of Its Rating Activities.

Information disclosed in accordance with Clause 1.1.4 of the Bank of Russia's Ordinance No. 6583-U is contained in the Regulation on the Quality Control of Methodologies. The sample is a homogeneous group of observed subjects (over 30 subjects), the sampling depth is over five years prior to the sample formation date. Approaches to minimization of the effects of insufficient number of defaults (extended default flags), as well as methods for filling in empty values were used to form the sample (reweight algorithms).

Information disclosed in accordance with Clause 1.1.5 of the Bank of Russia's Ordinance No. 6583-U is contained in the Regulation on the Quality Control of Methodologies. Correlation analysis was used to identify the relationship of factors. The methodology contains factors that are statistically dependent on each other. The inclusion of these factors in the methodology is justified by the need to analyze the direct influence of the factors of the Institutional framework block on the creditworthiness of the rated entity along with their indirect influence through other factors, since such analysis provides additional information not taken into account in other factors. Reduced weights of such factors, as well as the transformation of factor weights (floating weights) are used as methods for eliminating multicollinearity. The rating model described in this methodology is not a classic multifactor regression, therefore, when selecting the factors used in the methodology, regression equations, parameters of these equations and the regression determination coefficient are not used. Indicators of separating and explanatory power are considered as other approaches applied to the selection of factors.

Information disclosed in accordance with Clause 1.1.6 of the Bank of Russia's Ordinance No. 6583-U: the methodology uses the following procedure for determining the standalone creditworthiness assessment (hereinafter, the SCA) of rated entities. The SCA level for non-default credit rating levels semantically (letter by letter) corresponds to the level of the assigned credit rating (ratings from AAA to C correspond to SCA levels from aaa to c), and for default categories the SCA is determined at the na level.

Information disclosed in accordance with Clause 1.1.7 of the Bank of Russia's Ordinance No. 6583-U: there are no external influence factors.

Information disclosed in accordance with Clause 1.2 of the Bank of Russia's Ordinance No. 6583-U is contained in the Key Concepts Used by the Analytical Credit Rating Agency within the Scope of Its Rating Activities.

Information disclosed in accordance with Clause 1.3.1 of the Bank of Russia's Ordinance No. 6583-U: ACRA ensures comparability of credit ratings of various types of rating objects by implementing uniform principles for rating actions, developing and checking the quality of the methodology for each type of rating object in accordance with Chapters 2 and 3 of the Bank of Russia Ordinance No. 6583-

U. Uniform principles for rating actions for each type of rating object are implemented by monitoring the correctness of the application of the process described in the Rating Actions Procedures and General Principles of the Rating Process of ACRA (JSC). Uniform principles for the development and quality control of methodologies are implemented through quality control of methodologies in accordance with the Regulation on the Quality Control of Methodologies.

Information disclosed in accordance with Clause 1.3.2 of the Bank of Russia's Ordinance No. 6583-U is contained in the text of the methodology and the Key Concepts Used by the Analytical Credit Rating Agency within the Scope of Its Rating Activities.

Information disclosed in accordance with Clause 1.3.3 of the Bank of Russia's Ordinance No. 6583-U: ACRA ensures comparability of credit ratings by applying uniform probabilities of default of rating objects for different types of rating objects within the framework of one scale. Information on reference probabilities of default and expected losses is provided in the Key Concepts Used by the Analytical Credit Rating Agency within the Scope of Its Rating Activities.

Information disclosed in accordance with Clause 1.4 of the Bank of Russia's Ordinance No. 6583-U is contained in the Key Concepts Used by the Analytical Credit Rating Agency within the Scope of Its Rating Activities and the Rating Actions Procedures and General Principles of the Rating Process of ACRA (JSC).

Information disclosed in accordance with Clause 1.5 of the Bank of Russia's Ordinance No. 6583-U is contained in the text of the methodology and the Regulation on the Quality Control of Methodologies.

Information disclosed in accordance with Clause 1.6 of the Bank of Russia's Ordinance No. 6583-U is contained in the text of the methodology and the Regulation on the Quality Control of Methodologies.

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