



Sovereign Rating Methodology



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1. Scope

This document describes the methodology developed by EthiFinance Ratings for rating sovereign governments, as well as long and/or short-term debt instruments issued by them.

We consider a sovereign government as a state that administers its own resources and has the capability to take its own decisions in fiscal, monetary, and political matters.

The rating assigned by EthiFinance Ratings measures the ability and willingness of sovereign issuers to meet their financial obligations with private creditors in full and on time.

We consider a sovereign government is in default if one of the following assumptions occurs:

- If upon maturity date of any financial instrument (direct or issued by a sub-sovereign and/or a decentralized body but guaranteed by the sovereign government), it does not pay the principal and/or accrued interest/coupon payments.
- If the refinancing/restructuring of any financial instrument occurs under worse conditions than the ones maintained up to that moment.

The scope of this methodology excludes decentralized bodies, instrumental agencies, and government related entities (GREs). It also does not include obligations with other governments or supranational entities (such as the European Central Bank or the International Monetary Fund). However, we consider the relations between them.

2. Methodology Summary

In summary, the methodology consists of two pillars:

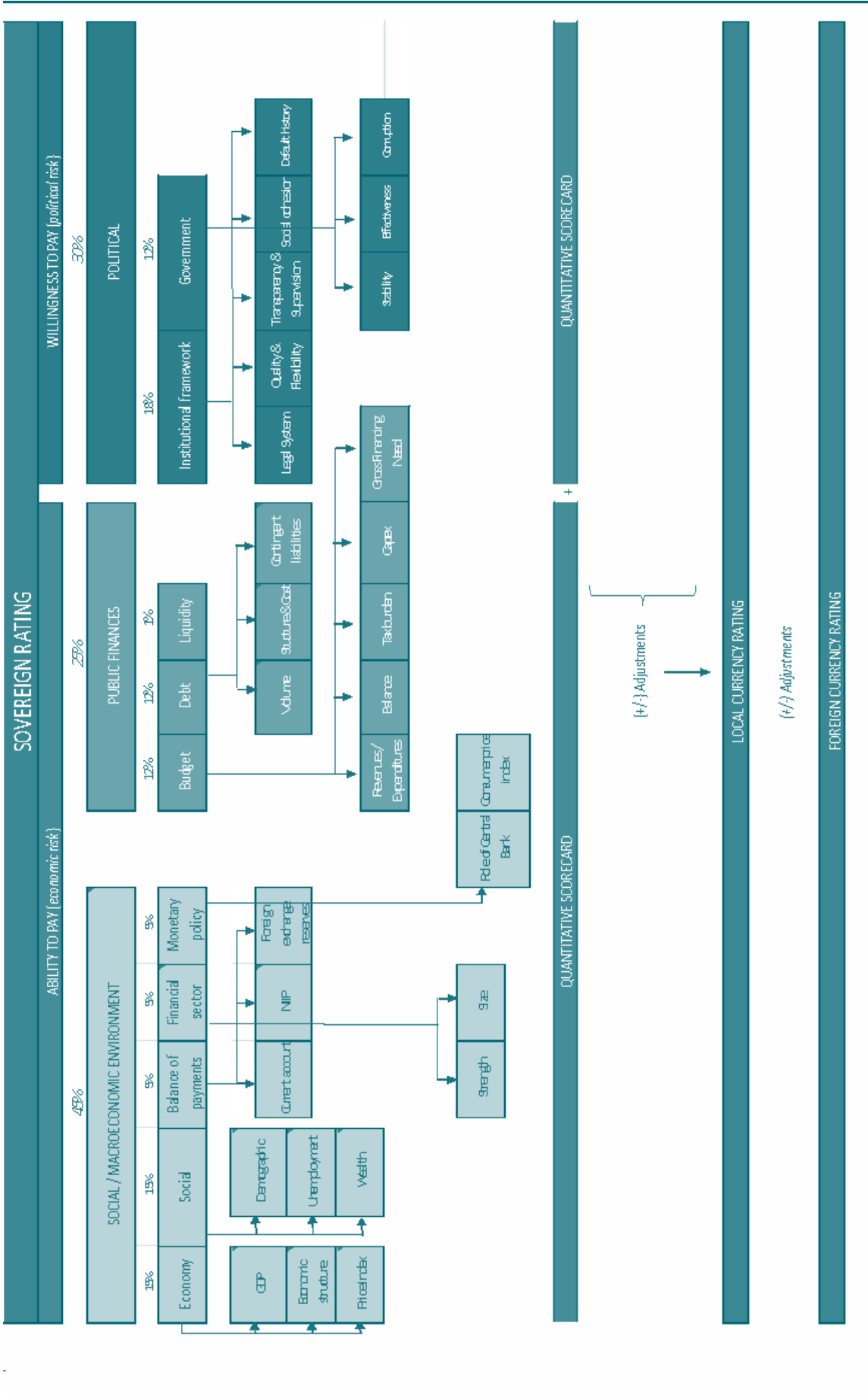
- **Quantitative Scorecard:** reflects our opinion about the ability of the sovereign government to fulfil its financial obligations (economic risk). For this, we evaluate the macroeconomic (economy, balance of payments, financial sector and monetary policy) and social environment (wealth, demography and unemployment) as well as the intrinsic financial situation (budget deficit or surplus, debt and liquidity) of the sovereign government.
- **Qualitative Scorecard:** reflects our opinion about the willingness of the sovereign government to fulfil its financial obligations (political risk). To this end, we evaluate the institutional framework and the government's stability.

Both pillars provide a preliminary score (PS) which could be adjusted (up or down) considering forecasts, geopolitical risks and other factors as, for example, high liquidity or excessive debt.

The factors included in each pillar are evaluated on a ten-point scale where 1 point is the best score and 10 points the worst. In addition, factors are weighted according to their importance.

Although we distinguish between local and foreign currency ratings, in general both are similar. Exceptions only apply in cases where capital mobility is limited and/or access to external resources is also limited.

The established sovereign rating procedure is summarized as follows:



3. Source of Data

Macroeconomic, social, financial, political and any other information that we consider necessary is used for the issuance of the rating.

For unsolicited ratings we use public information from national statistics sources and from other national and international organisms of recognized prestige (World Bank, OCDE, International Monetary Fund, Eurostat and Bank for International Settlements, among others), as well as any information published by sovereign governments, converted to Euros.

We consider this information is accurate, therefore Ethifinance Ratings does not perform a prior audit of the data used.

With exceptions, most of data used is on an annual basis. In addition, we consider the past and projected evolution as we attempt to measure long-term credit quality, including the impacts of normal cycles in the economy (through the cycle analysis). For the projected evolution, we use our own and third-party forecasts (from national and international organisms). These forecasts are based on macroeconomic projections that, if not reached, could adversely affect the actual situation of the sovereign government.

For solicited ratings, we use the same information as well as confidential information provided by the rated sovereign that allows us a more exhaustive evaluation of any of the factors included in the scorecards.

In rare cases, if we did not have enough information, the sovereign government would not be rated.

4. Environmental, Social and Governance (ESG)

This methodology has been developed considering the environmental, social and governance (ESG) criteria and its effects on the sovereign governments' ability and willingness to meet their financial obligations.

We consider ESG criteria to have a strong influence on economic development, not only because of the direct effects of environmental, social and governance aspects, but also since governments could enact new regulations which could affect compliance with ESG criteria by other economic agents.

In this sense, the absence of regulation on the environmental aspect could lead to the depletion of a region's natural resources, with the consequent negative effects on future generations.

In addition, the existence of subsidies or any other type of support for certain activities that are not considered environmentally sustainable is a negative factor to be considered.

We are also concerned about natural disasters (earthquakes, floods, etc), due to the government's ability to foresee and manage them, as well as the negative effects on the population and the economy (namely industry, crop and infrastructure losses, to name a few).

Regarding the social criteria, we evaluate the presence of social stability due to its effects on economic development resulting from an adequate management of unemployment and wage policy. Likewise, the absence of social stability could lead to social conflicts that, in the worst-case scenario, could materialize in armed conflicts that would significantly damage the economy of a given country.

The governmental situation constitutes the third criterion considered, since we understand that an adequate political situation that enhances stability will positively influence economic development, in contrast to the existence of political struggles that cause instability in decision-making, increasing uncertainty and reducing the predictability of macroeconomic scenarios.

Moreover, we study the existing levels of corruption as it could be considered a symptom of the fragility of the legal system.

We have integrated all these aspects within the modules that constitute the Quantitative and Qualitative scorecard, with the possibility of applying certain modifiers that are described in chapter 5 of this methodology.

5. Description of the Methodology

For rating a sovereign government, we calculate a Preliminary Score (PS) which is adjusted according to a series of factors described in this chapter, using the following formula:

$$Rating = PS \mp Adjustments$$

Where,

- **PS = QS + QLS**

QS= Quantitative scorecard. We evaluate macroeconomic (economy, balance of payments, financial sector, and monetary policy) and social (wealth, demography and unemployment) factors that could potentially affect its creditworthiness, in addition to the intrinsic financial situation (budget, debt and liquidity) of the sovereign government.

QLS= Qualitative scorecard. We evaluate the institutional framework (including supervision mechanisms) and the government's stability.

- **Adjustments**: we consider forecasts, geopolitical risks and other factors such as a high liquidity or excessive debt.

5.1. Quantitative Scorecard

The Quantitative Scorecard is the result of the weighted sum of the evaluation of the macroeconomic, social and financial situation of the sovereign government.

The score assigned to each factor ranges between 1 point (best rating) and 10 points (worst rating), with the following procedure:

$$QS = \beta(\text{Social-Macroeconomic Environment}) + \rho(\text{Public Financial})$$

Where, β , ρ are defined as the relative weights of each factor.

5.1.1. Economy

We consider a dynamic and productive economy as a driver of employment and wealth, providing a solid source of income to the sovereign government, as well as a wide margin to deal with future stress situations.

We evaluate the historical, current and future perspectives of the economy through the Gross Domestic Product (GDP), an aggregate indicator that measures private consumption, investment, public spending and net exports.

In our analysis we also take into account the following aspects:

- Size**, we analyse the dimension of the economy in relation to the global GDP because we believe a large and diversified economy has more capacity to generate resources to meet its financial obligations compared to other small and less diversified economies.

In fact, smaller countries (even with high levels of wealth) may also have little capacity to face extraordinary events such as natural disasters or other contingencies.

However, we acknowledge that the benefits of being a large economy can also diminish in excessively large economies.

- b. **Diversification**, we believe that the existence of excessive concentration in any productive sector is a risk to economic development since these countries are more sensitive to external shocks that could exclusively affect a specific sector.

Thus, we assign a lower score to those sovereigns which present a high dependence on a sector of activity, while a higher score is attributed to highly diversified economies.

- c. **Evolution**, we believe that the ability of the sovereign to generate the necessary resources to finance spending programs, as well as to meet its financial obligations, is conditioned, among other aspects, by the evolution of the economy.

In fact, we consider that low growth forecasts amplify the challenges of debt repayment capacity and could render a high debt burden unsustainable.

We analyse potential growth rates because we consider that they are a good measure of economic growth that can be maintained without inflationary pressures or other economic imbalances. These rates are also considered in relation to the size of the country and its peers because it is observed that advanced economies grow at a slower rate than developing and emerging countries.

For this, we use data of the last economic cycle combining historical data and forecasts (our own or from national or international organisms of recognized prestige). We compare this information in relation to its peers.

Furthermore, we are interested in volatility (measured through the standard deviation) because higher volatility can be associated with a more uncertain or unstable economy, which in the end can result in triggering very high or very low growth rates.

- d. **Competitiveness**. We believe that the degree of competitiveness of an economy is a positive aspect that must be taken into account in assessing the economic situation of a sovereign, since we understand that the most competitive economies will tend to present sustained growth rates over time.

To measure it we use the Global Competitiveness Index published annually by the World Economic Forum. Among other aspects, it evaluates infrastructure, institutions, education, health, markets, technology and innovation, on a one to seven point scale, being one the lowest and seven the highest score.

- e. **Commodity dependence**, we believe the dependence on imports of energy products is another important aspect to assess economic performance, as it has been observed that those countries with a high volume of oil, coal and gas imports (whose main characteristic is to be highly volatile commodities) in relation to their energy consumption, are more sensitive to price fluctuations, which in the end could slow down economic growth and compromise their ability to meet their financial obligations.

We have developed the following matrix score to assign the score of this module:

Economic Environment			SCORE									
Subfactor	%	Ratio	1	2	3	4	5	6	7	8	9	10
Size	20%	$\frac{GDP_{National}}{GDP_{Global}}$	≥10%	≥7%	≥5%	≥4%	≥3%	≥2%	≥1.5%	≥1%	≥0.5%	≤0.5%
Diversification	1%	$\frac{Sector}{GDP}$	≤25%	≤27%	≤30%	≤33%	≤35%	≤37%	≤40%	≤42%	≤45%	≥45%
Evolution	43%	$\Delta GDP_{National}$	≥5%	≥4%	≥3.5%	≥3%	≥2.5%	≥2%	≥1.5%	≥1%	≥0%	≤0%
	10%	$\frac{Volatility}{(GDP\ growth)_{Nat}}$	≤1%	≤1.5%	≤2%	≤2.5%	≤3%	≤3.5%	≤4%	≤4.5%	≤5%	≥5%
Competitiveness	25%	Global Competitive Index (Rank)	10	20	30	40	50	55	60	65	70	≥70
Commodity dependence	1%	$\frac{Energy\ Import}{Energy\ Consumption}$	<10% (or negative)	≤20%	≤30%	≤40%	≤55%	≤70%	≤80%	≤90%	≤95%	≥95%

5.1.2. Social Environment

We evaluate the social environment of a country because we consider that those factors determine the strength, tax collection capacity and expenditure needs that the sovereign government must face to guarantee the provision of public services to their citizens, as well as to meet its financial obligations.

In our analysis we take into consideration the following aspects:

- First, we analyse the national wealth through **GDP per capita** (GDPpc) which is measured as the GDP (defined in the previous section) over the number of inhabitants.

We believe that the GDPpc is a good indicator of national wealth because it allows us to measure the tax collection capacity as well as the level of social benefits that could be demanded by citizens.

We consider that a high GDPpc guarantees a greater margin of tax collection than a reduced GDPpc. In fact, we understand that the wealthier a territory is, the lower the demands for social assistance.

We evaluate the GDPpc from a historical perspective and in relation to its peers because we want to know the degree of inequality between different economies. We consider that inequality negatively affects the economic growth of a territory.

- Secondly, we analyse **demographic evolution** because we understand that rapid demographic growth may require larger infrastructures to ensure access to public services which could increase investments and, in the end, consume financial resources.

On the contrary, a vegetative growth could affect economic development negatively, due to lower productivity (because in the final years of their careers the productivity increase stagnates or even decreases), and the increase in social expenses, besides causing structural changes in

the economy. Therefore, we value positively those countries that have a sustained population growth rate over time.

We consider the population pyramid because aging populations are more likely to require higher social spending than more balanced population pyramids. Similarly, the evolution of the child population is also relevant since its rapid growth may lead to an increase in spending needs on education and health care.

To analyse the population pyramid we consider the proportion of dependent population (people below 16 years old and over 65 years old) in relation to total population, considering that the lower the ratio is, the better the situation for the sovereign.

- c. The **labour market** constitutes the third subfactor within the evaluation of the social environment. We consider that economies with high unemployment rates could see limited their tax collection capacity due to lower disposable income of citizens, who will also need greater social assistance.

For the analysis we use the unemployment rate (when available) of a given territory. We consider the current situation and the evolution, with special attention to the performance of its peers.

- d. **Happiness index**, although we consider that GDPpc is a good indicator of a country's wealth, a high GDPpc is not always synonymous with greater welfare, since welfare depends on a larger number of factors not included in this indicator.

For this reason, we are interested in determining the degree of well-being of a society, since we understand that a high degree of well-being positively affects both economic efficiency and the distribution of income.

For its measurement we resort to the Happiness Index published annually by the United Nations which takes into consideration income, healthy life expectancy, social support, freedom, trust and generosity.

We have developed the following matrix score to assign the score of this module:

Social Environment			Score									
Subfactor	%	Ratio	1	2	3	4	5	6	7	8	9	10
Wealth	60%	$\frac{GDP_{pc}}{Average\ GDP_{pc}}$	≥120%	≥110%	≥100%	≥95%	≥90%	≥85%	≥80%	≥75%	≥70%	≤70%
	30%	Unemployment rate	≤3%	≤5%	≤7%	≤10%	≤12%	≤15%	≤17%	≤20%	≤25%	≥25%
Unemployment	7%	Δ Unemployment	≤-5%	≤-4%	≤-3%	≤-2%	≤-1%	≤1%	≤3%	≤5%	≤7%	≥7%
Demographic	1%	Age distribution	≤30%	≤31.5%	≤33%	≤34.5%	≤35%	≤36.5%	≤38%	≤39.5%	≤41%	≥41%
	1%	Population growth	≥2.75%	≥2.50%	≥2.25%	≥2%	≥1.75%	≥1.25%	≥1%	≥0.5%	≥0.25%	≤0.25% Or extremely high increase.
Happiness	1%	Happiness index (Score)	≥7	≥6.8	≥6.5	≥6	≥5.5	≥5	≥4.5	≥4	≥3.5	≤3.5

(*) The indicated weights are illustrative and may be adjusted considering the economic and social reality of the sovereign government.

5.1.3. External Economic Risks

We evaluate the economic and financial interactions with the rest of the world, since history has shown that some sovereign debt crises have been motivated by balance of payments imbalances, such as Russia in 1988 or Asian countries in the early 1990s.

Although deficits in the current account balance are usually covered by surpluses in the capital account, or even with currency devaluations that allow domestic exports to gain competitiveness, its behaviour is considered as an early indicator of economic crises in the sense that economies highly dependent on imports require external financing to enable their performance.

To evaluate the external behaviour of an economy we will use, among others, the following indicators:

- Current account balance (% GDP):** measures the transactions of goods and services (imports and exports) with the rest of the world, as well as transfers from emigrants, and capital or labour income.

We are interested in determining the existence of surpluses, since we understand that an economy with a surplus is less dependent on external financing and, therefore, is more isolated to external shocks that may limit its financing capacity.

In the case of the existence of a current account deficit (imports are higher than exports), we are interested in evaluating not only its level on GDP (high levels are considered as predecessors of economic crises), but we also monitor the behaviour of foreign investments in order to determine the existence of an equilibrium in the balance of payments.

- b. **Net International Investment Position (% GDP):** measures the difference in the stocks of external financial assets and external financial liabilities of an economy at a given moment in time, and therefore, we consider this metric as an adequate indicator for measuring the international financial integration of a country.

These balances are the result of past transactions with foreign countries at market prices and current exchange rates, in addition to other elements such as accounting reversals or reclassifications at a given time.

We value favourably an economy that presents a positive net international investment position because it means that the volume of financial assets exceeds external financial liabilities, reflecting a lower dependence on external financing.

On the contrary, those countries with a negative international investment position are more dependent on external financing.

- c. **Currency reserves (in months):** we consider that those economies highly dependent on imports but with a wide volume of foreign exchange reserves, are less sensitive to sudden interruptions in international capital flows than those economies with a lower volume of international reserves, since they can avoid situations of financial fragility that prevent them from covering the imbalances in the current account.

The assessment of foreign exchange reserves is done in relation to the volume of imports. It is accepted that they should cover at least three months of imports to be considered minimally acceptable, mainly in those countries without a currency that is considered a reserve currency.

- d. **Importance of currency,** as a measure of the liquidity of a currency. We understand that a sovereign with a currency which is widely used in international transactions will present greater liquidity than those governments with a currency that is only used in local transactions.

To measure the importance of the currency, we use data from the Bank for International Settlements that measures the volume of foreign currency in international transactions, understanding that the greater the use of the currency, the greater the liquidity and, therefore, the better the external position of the sovereign.

We have developed the following matrix score to assign the score of this module:

External Economic Risks			SCORE									
Subfactor	%	Ratio	1	2	3	4	5	6	7	8	9	10
Current account balance	55%	$\frac{\text{Current Account Balance}}{\text{GDP}}$	≥0%	≥-1%	≥-3%	≥-4%	≥-6%	≥8%	≥-10%	≥-11%	≥-12%	≤-12%
NIIP	45%	$\frac{\text{Net International Investment}}{\text{GDP}}$	≥50%	≥40%	≥30%	≥10%	≥0%	≥-25%	≥50%	≥75%	≥100%	≤100%
Currency reserves (in months)	1%	$\frac{\text{Foreign Currency Reserves}}{\text{Imports}}$	≥12	≥9	≥6	≥4	≥3	≥2	≥1	≥0.7	≥0.5	≤0.5
Importance of currency	4%	Global Foreign Exchange turnover (%)	≥40%	≥30%	≥20%	≥15%	≥10%	≥5%	≥3%	≥1%	≥0.5%	≤0.5%

5.1.4. Banking Sector Risks

We evaluate the underlying risk of the banking sector because we believe that financial crises constitute one of the main mechanisms that amplify economic crises, both due to credit restriction (that in the end could lead to a period of deflation) and the high amount of resources that are necessary to rescue problematic financial institutions.

The economic crisis of 2008 has shown that sovereign governments could be forced to allocate tax revenues to recapitalize unsound financial institutions and/or fulfil guaranteed obligations issued by banks that, in the end, could threaten governments' ability to pay their financial obligations.

We believe that a country with a stable financial system, moderate asset size in relation to GDP, good levels of profitability and liquidity, and adequate credit quality, could face lower risks than those countries with vulnerable financial systems. A good financial system has, in the end, positive effects on the country's economic performance.

To evaluate the risk underlining the banking sector, we take into account, among others, the following indicators:

- Size:** we understand that the contingent liabilities that the sovereign government would face from its banking sector could be greater in a large financial system than in a country with a smaller banking system.

For this, we measure the importance of the banking system through the ratio of banks' total assets to GDP, understanding that the lower the ratio is, the higher the score in this factor.

- Quality,** there is evidence that one of the main factors that explain banking crises is the credit portfolio quality, measured through the ratio of non-performing loans to gross loans, because it is directly related to banks' capitalization.

We believe that the existence of a large volume of non-performing loans could trigger a bank's decapitalization that, in the end, could increase the risk of assistance from the sovereign government.

- c. **Profitability** is directly related to bank capitalization, in the sense that the lower profitability, the lower a bank's capacity to cover the deterioration of its credit investment portfolio in case of necessity, which in the end could trigger decapitalization and require assistance from the sovereign government.

To measure profitability, we use the Return on Assets ratio (ROA), calculated as the sectorial consolidated result to total assets. We consider that the higher the ratio, the lower the risk of assistance.

- d. **Liquidity**, we believe that liquidity risk affects the solvency of a financial institution because those entities that are not capable of obtaining financial resources from the market or liquidate illiquid assets at a reasonable price could face losses in profitability that, in the end, result in the decapitalization of the bank.

This could lead to a situation of loss of confidence, an example being the nationalization of several British banks.

To measure liquidity risk, we use the Loan-to-Deposit ratio, understanding that the smaller the gap (i.e. the lower the ratio), the lower the liquidity risk, ensuring the stability of the financial sector and reducing the risk of assistance by the sovereign.

To rate financial sector risks, we have developed the following matrix score:

Financial Sector (financial risks)			SCORE									
Subfactor	%	Ratio	1	2	3	4	5	6	7	8	9	10
Size	5%	$\frac{\text{Total Assets}}{\text{GDP}}$	≤40%	≤55%	≤70%	≤85%	≤100%	≤110%	≤120%	≤130%	≤140%	≥140%
Quality	60%	$\frac{\text{Non – performing loans}}{\text{Gross loans}}$	≤0.2%	≤1%	≤2%	≤3%	≤4%	≤5%	≤6%	≤7%	≤8%	≥8%
Profitability	20%	$\frac{\text{Return}}{\text{Total Assets}}$	≥3.2%	≥3%	≥2,5%	≥2%	≥1.5%	≥1%	≥0,5%	≥0.3%	≥0.2%	≤0.2%
Liquidity	15%	$\frac{\text{Total Loans}}{\text{Total Deposits}}$	≤50%	≤55%	≤70%	≤85%	≤100%	≤115%	≤120%	≤140%	≤160%	≥160%

5.1.5. Monetary Policy Banking Sector Risks

We evaluate the adequacy of the monetary policy in regards to fulfilling the objective of price stability, since we believe that prolonged periods of high inflation are inversely related to the economic growth rate, as occurred in Germany in the early 1920s or in United States and Great Britain in the mid-1970s.

Therefore, we consider that a sound and solvent monetary policy that guarantees price stability has positive effects on economic growth, the exchange rate, the level of employment and social cohesion.

To make our assessment, we analyse the institutional framework in which monetary policy operates to identify the factors that affect pricing mechanisms, as well as the credibility of the objective of price stability and the degree of independence of the central bank from political interference.

In this sense we understand that the credibility of the central bank is a key element to maintain the financial and economic stability of a country.

To evaluate a country's monetary policy, we consider the following indicators:

- a. **Consumer Price Index** through interannual variation rate of the historical series. It measures the effectiveness of monetary policy during an economic cycle. We believe that high levels of inflation negatively affect the efficient allocation of resources, slowing down investments and, in the end, slowing economic growth.

In this sense, we consider that inflationary periods tend to be precursors of economic and political instability, favouring capital flight, currency crises and the deterioration of the balance of payments, so we assign higher scores in this factor to those sovereigns with inflation levels too high or in a deflation situation (it has been proven that deflation periods are also related with increases in unemployment and economic recession).

On the contrary, we believe that the existence of a moderate and sustained level of inflation is positive for economic development, creating jobs, encouraging investment in fixed assets and boosting economies.

We are also interested in the volatility of this rate as a signal of price stability. We measure it through the standard deviation (the lower volatility, the lower score).

- b. **Dollarization ratio**, we believe that a sovereign government loses the capacity to face economic imbalances through monetary policy when it does not control the currency in which most of the transactions are made, because it is subjected to a foreign government's monetary policy.

In fact, the sovereign government loses the ability to use its central bank as a lender of last resort to provide liquidity support to its banking system.

To measure it, we use the dollarization ratio, calculated as foreign currency deposits to total deposits, understanding that the lower value, the less dollarized and the greater capacity to deal with its imbalances.

- c. **Exchange rate**, we analyse the exchange rate policy because exchange rates fluctuations have immediate effects on exports, price index and GDP.

Although fixed exchange rates provide stability in countries with open economies and prudent fiscal policies, we believe that it could be negative for those countries with different characteristics (mainly developing countries), favouring the existence of a black market that reflects the true value of the currency.

For this reason, we understand that a country with a flexible exchange rate and variable fluctuation is in better position than a country with a fixed exchange rate.

- d. **Role of Central Bank**. The independence of monetary authorities from political interference is a prerequisite for an effective monetary policy, favouring price stability and credibility, which in the end has favourable consequences over investment, production expectations and levels of employment. We also consider the central bank's ability to be a lender of last resort.

We finally evaluate a central bank's ability to meet monetary policy objectives by measuring the independence and the freedom to establish their governing bodies.

We have developed the following matrix score to assign the score of this module:

Monetary policy			SCORE									
Subfactor	%	Ratio	1	2	3	4	5	6	7	8	9	10
Price Index rate	60%	Price Index Rate (nine years average)	[1.3%-2%]	[1%-1.3%] & [2-2.5%]	[0.5%-1%] & [2.5%-3%]	[0%-0.5%] & [3%-3.5%]	[3.5%-5%]	[5%-7%]	[7%-9%]	[9%-11%]	[11%-15%]	>15% & < 0%
	10%	Price Index Rate (volatility)	≤1%	≤1.5%	≤2%	≤2.5%	≤3%	≤3.5%	≤4%	≤5%	≤6%	≤7%
Dollarization	10%	$\frac{\text{Foreign currency deposits}}{\text{Total deposits}}$	≤5%	≤7%	≤10%	≤15%	≤20%	≤30%	≤40%	≤45%	≤50%	≤55%
Exchange rate	10%		Flexible exchange rate and variable fluctuation			Flexible exchange rate and rigid fluctuation				Fixed exchange rate		
Role of central bank	10%		The central bank acts independently, its policies are credible, and it has the power to designate its governing bodies.			Central bank is independent. Governing bodies are designate by the sovereign. Reduced credibility.				The central bank is not independent of the government, which not only sets its governing bodies, but also establishes the policies it must follow, becoming a mere intermediary.		

(*) The indicated weights are illustrative and may be adjusted considering the economic and social reality of the sovereign government.

In the case of a sovereign government which is a member of a monetary union, we analyse it in the context of the monetary union and the situation of the sovereign government.

5.1.6. Financial Situation

The evaluation of the sovereign's financial situation, its flexibility to face budgetary imbalances and its financial autonomy, constitute the main components of the analysis of the intrinsic financial situation.

We consider that a government that has demonstrated excellent sustainability and adequacy of public finances, controlling budget imbalances and having access to sufficient sources of liquidity, will obtain a higher rating in this factor (i.e., a lower score).

To carry out this analysis we have established the following assessment structure:

5.1.6.1. Budget

We assess budget sustainability, i.e., the adequacy of revenues and expenses, because we consider that the existence of a fiscal surplus is essential to finance investments and to meet its financial obligations. In fact, it has been evidenced that many sovereign defaults are preceded by fiscal imbalances.

In the case of a fiscal deficit, we analyse its nature (cyclical or structural), the mechanism to resolve it and the legal consequences of such failure.

A fundamental aspect of our analysis is to measure fiscal pressure because it is directly related to the flexibility to adapt resources with spending needs. In advanced economies it has been observed that the higher fiscal pressure, the lower the rates of tax evasion. It is also considered a symptom of a strong economy (tax elasticity).

Likewise, we are interested in knowing the structure of expenses and their evolution in recent years, with special interest in its adequacy to the income structure, analysing its flexibility to face imbalances.

The investment policy is another aspect taken into account as investments could require financial resources that, if not available, could increase financial debt.

We are not only interested in knowing the historical evolution of investments, but also in which part of the electoral cycle does the sovereign government find itself, because the proximity of electoral periods is usually accompanied by increases in real investments.

Finally, we evaluate the flexibility of public finances to face imbalances that may arise from economic cycles, especially the sovereign government's ability to increase tax revenues and/or transfers received by supranational bodies to finance certain investments, as well as the government's ability to manage spending needs.

In this sense, we understand that a sovereign government that shows a high capacity to adjust its income and expenses could afford budget imbalances better than a sovereign government that maintains a higher rigidity.

We particularly take into consideration monetary unions (or any other type of unions) in which countries cede fiscal competences to a supranational, or those countries with a manifest dependence on international aid.

To assess the budgetary sustainability of a sovereign government, we use, among others, the following indicators:

- a. **Budget surplus or deficit** measures the capacity of the sovereign government to generate sufficient resources to finance current expenses, investments and meet financial obligations.

We analyse both the current situation and the historical evolution in the context of the macroeconomic and social situation in which the sovereign government is.

- b. **Operating expenses (growth)**. We determine the evolution of current expenses and their compliance with legal limits (spending rule, if any).

We believe that countries which follow Keynesian policies during economic crises could have difficulties to meet their financial obligations if they do not increase their operating revenues in the same proportion.

In fact, we consider a threat to the sovereign's financial situation a disproportionate increase in expenses, even in periods of economic growth that allow larger tax collection, due to the rigidity and the difficulties for its adaptation to economic cycles.

- c. **Tax burden (GDP%):** measured as tax income to GDP (also known as fiscal pressure).

In our opinion, fiscal pressure is related to the flexibility to adapt resources with spending needs. In advanced economies there is evidence that the higher fiscal pressure, the lower tax evasion. It is also considered a symptom of a strong economy (tax elasticity).

- d. **Capital expenditures to total expenditures:** measures the proportion of expenses that are originated by capital investments. We are interested in knowing the current situation and the historical evolution, as well as the resources used to finance them.
- e. **Gross financing needs:** defined as the sum of fiscal deficits and short-term debt maturities, relative to GDP. We understand that a sovereign government with a low proportion of financing needs is in a better position to meet its financial obligations as the resources available to cover its spending obligations are higher.

We have developed the following matrix score to assign the score of this module:

Financial situation			SCORE									
Subfactor	%	Ratio	1	2	3	4	5	6	7	8	9	10
Budget	60%	Budget surplus or deficit (%GDP)	≥5%	≥4%	≥3%	≥0%	≥-3%	≥3.5%	≥-4%	≥-4.5%	≥-5.5%	≤-5.5%
	15%	$\frac{\text{Operating expenses}_t}{\text{Operating expenses}_{t-1}}$	≤2%	≤2.5%	≤3%	≤3.5%	≤4%	≤4.5%	≤5%	≤5.5%	≤6%	≥6%
	10%	$\frac{\text{Fiscal income}}{\text{GDP}}$	≥40%	≥35%	≥30%	≥28%	≥25%	≥23%	≥20%	≥15%	≥10%	≤10%
	10%	$\frac{\text{Capital expenditure}}{\text{Total expenses}}$	≤4%	≤4.5%	≤5%	≤5.5%	≤6%	≤7%	≤8%	≤9%	≤10%	≥10%
	5%	$\frac{\text{Budget deficit} + \text{debt maturities (ST)}}{\text{GDP}}$	≤3%	≤5%	≤7%	≤8%	≤9%	≤10%	≤11%	≤12%	≤13%	≥13%

5.1.7. Debt & Liquidity

For the assessment of indebtedness, we take into consideration both sustainability (fundamentally volume, evolution and structure) and its capacity to assume new debt.

Specifically, we use the volume of gross/net debt without considering the financial assets that the government or central bank could use for the balance of payment purposes. To evaluate the capacity of the sovereign government to service its debt we consider the volume (as a percentage of GDP) and the debt cost (as a percentage of current revenues), as well as the foreseeable behaviour that it would present in a scenario of interest rate increases.

Likewise, we are concerned about the structure of the debt, basically if there is a concentration of short-term maturities because we understand that those sovereign governments with high concentration could require new financing whose viability will depend on the ability of the sovereign government to access to capital markets (market risk) or banks.

Another factor is the identification of contingent liabilities that do not form part of the consolidated financial situation of the sovereign government because they could deteriorate sovereign government's financial situation as well as strain liquidity.

For this purpose, we consider the debt of dependent entities, independent entities that have been guaranteed by the sovereign government and those companies with majority participation of the sovereign government (whether or not they have been guaranteed) if we understand that they could constitute a risk for the sovereign.

Regarding the assessment of liquidity, we focused on identifying the available liquid assets (as a % of GDP) that could be used by the sovereign government to stabilize economic cycles and also, when possible, release cash flow to service its debt.

In this sense, we consider the historical and future perspectives, identifying those stress scenarios that could strain the liquidity of the sovereign government.

To assess debt and liquidity we use, among others, the following ratios (when their calculation is possible). The weight of each ratio within the rating of this subfactor is set by the analyst according to the context in which the sovereign government operates:

- a. **Debt (% GDP).** We measure the sustainability of the debt in relation to the GDP. We believe that a sovereign government with a reduced debt ratio maintains a more sustainable debt. We also analyse the debt evolution (historical data and forecasts). We use gross debt to GDP or, when available, net debt to GDP.
- b. **Debt to Primary Balance.** Measures the sustainability of the debt in relation to the available resources to service its debt. When it is possible, we consider contingent liabilities (from dependent bodies and debt not guaranteed by the sovereign government but corresponding to GREs in which the sovereign government exercises control), since we understand that in case of stress it would be the sovereign government which ultimately would have to face the debt. We believe that the lower the ratio, the greater the sustainability of the total debt of the sovereign government.
- c. **Interests to Operating revenues** this ratio allows us to measure the quantity of resources that the government needs to cover its financial costs, understanding that the lower the ratio, the higher the financial flexibility to meet its financial obligations.
- d. **Debt maturity profile.** We are interested in knowing the distribution of maturities of the debt in order to determine the degree of debt concentration in the short-term, since we understand that a sovereign government that maintains a structure of highly concentrated maturities will present a higher probability of refinancing than a sovereign government with a more homogeneous distribution of maturities.
- e. **Foreign currency debt (% total debt).** Those sovereigns with a high volume of debt in foreign currency are exposed to greater risk of debt sustainability due to the volatility of exchange rates, which is ultimately a symptom of a shallow domestic capital market (also called original sin) because the government is not able to borrow long-term in its own currency.

- f. **Debt issues (% total debt).** We evaluate the ability of the sovereign government to obtain funds from the capital markets, even in situations of stress, since we value the existence of a liquid market of sovereign debt very positively.
- g. **Liquid assets (% GDP).** These assets mitigate the effects of economic cycles on fiscal performance. They can be withdrawn without affecting the monetary policy, whether they are deposited with the central bank or a commercial bank.

We have developed the following matrix score to assign the score of this module:

Financial situation			SCORE									
Subfactor	%	Ratio	1	2	3	4	5	6	7	8	9	10
Debt & Liquidity	30%	$\frac{\text{Gross / Net Debt}}{\text{GDP}}$	≤25%	≤30%	≤40%	≤50%	≤60%	≤70%	≤80%	≤90%	≤100%	≥100%
	15%	Gross Debt growth	≤1%	≤2%	≤3%	≤4%	≤5%	≤6%	≤7%	≤8%	≤9%	≥9%
	5%	$\frac{\text{Gross Debt}}{\text{Gross Operating Balance}}$	≤25%	≤30%	≤40%	≤50%	≤60%	≤80%	≤100%	≤120%	≤140%	≥140% (or negative)
	15%	$\frac{\text{Interest}}{\text{Operating revenues}}$	≤2%	≤3%	≤4%	≤5%	≤6%	≤7%	≤8%	≤9%	≤10%	10%
	2%	$\frac{\text{Current debt}}{\text{Total debt}}$	≤1%	≤2%	≤3%	≤5%	≤7%	≤9%	≤10%	≤12%	≤14%	≥14%
	13%	$\frac{\text{Foreign currency government debt}}{\text{Total government debt}}$	≤2%	≤4%	≤6%	≤7%	≤8%	≤9%	≤10%	≤11%	≤12%	≥12%
	20%	$\frac{\text{Debt issues}}{\text{Total government debt}}$	≥≤90%	≥≤87%	≥≤85%	≥≤82%	≥≤80%	≥≤75%	≥≤70%	≥≤60%	≥≤50%	≥≤50%
	100%	$\frac{\text{Liquid financial assets}}{\text{GDP}}$	≥≤20%	≥≤18%	≥≤15%	≥≤12%	≥≤10%	≥≤8%	≥≤6%	≥≤4%	≥≤2%	≥≤2%

(*) The indicated weights are illustrative and may be adjusted considering the economic and social reality of the sovereign government.

5.2. Qualitative Scorecard

The second part of our analysis is the Qualitative Scorecard, a module that evaluates the government's willingness to meet its financial obligations.

We analyse whether the institutional framework and the governmental situation meet the necessary conditions to maintain a scenario of economic prosperity (fundamentally sound public finances and their ability to respond to stress situations), as well as stability and institutional strength, especially considering that sovereign governments are not subject to bankruptcy or similar laws and can decide at their discretion whether or not to meet their financial obligations.

The assigned score for each factor ranges between 1 point (better rating) and 10 points (worse rating), with the following procedure:

$$QLS = \beta(\text{Institutional framework}) + \mu(\text{Government})$$

Where,

β, μ : defined as the relative weights of each factor.

5.2.1. Institutional Framework

We evaluate the strength and the stability of the institutional framework because they configure the performance and structure of the sovereign government, since we understand that situations of instability negatively affect the willingness to pay.

As a guide we use a series of indicators published by the World Bank, in combination with other qualitative aspects that we will develop throughout this section.

- a. **Rule of law.** Following the World Bank's definition, this indicator captures the perception of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. For its assessment we calculate percentiles and evaluate the position of the sovereign government in relation to its peers.
- b. **Regulatory quality.** Following the World Bank's definition, this indicator captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. For its assessment we calculate the percentiles and evaluate the position of the sovereign government in relation to its peers.
- c. **Voice & Accounting.** Following the World Bank's definition, this indicator captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and free media. For its assessment we calculate the percentiles and evaluate the position of the sovereign government in relation to its peers.

Moreover, we analyse the laws and regulations to understand the configuration of competences and financial resources, with special interest in the frequency and capacity to introduce reforms, because we understand that a sovereign government with a solid institutional framework has a stable income generation and predictable spending needs.

We are interested in its flexibility to adapt the income resources to stress situations, such as increases in tax rates or tax bases, because we understand that the greater flexibility, the greater capacity to generate enough resources to meet its financial obligations.

We are focused on the supervisory mechanisms, since we understand that the existence of strong control instruments by independent agents favour the assignment of better ratings than those sovereign governments in which there are no control mechanisms, or if they exist, they do not prove to be effective.

We assess the existence of early warning systems that allow continuous monitoring of the sovereign governments, as we understand that those procedures will not only anticipate situations of future instability, but also favour the early resolution of them.

We look at the operation and scope of the supervisory systems, especially in relation to the compliance with the objectives of budgetary stability (if any), limits of indebtedness (if any) such as the obligation to allocate debt to finance capital investments, compliance with assigned targets, and the applicable mechanisms for situations of non-compliance.

5.2.2. Government

We evaluate the governmental situation, essentially the capacity and adequacy of the sovereign government to resolve economic and political crises, to prepare and execute its budget program, the transparency in the publication of information, its investment policy, debt management, and even the existence of political or social conflicts that threaten the stability of the sovereign government.

In this sense we understand that those sovereign governments with a conservative ideology in terms of budget planning, which rules in majority or with sufficient agreements with the rest of parliamentary groups for the approval of budgets, with an investment policy according to the needs of the country, and transparent in the publication of information, will obtain better scores than those sovereign governments in which there is political instability, a reduced budget management capacity and lack of transparency in the publication of information.

We look at the parliamentary composition of the sovereign government, if there is a majority government or stable government agreements with the rest of the political parties, or if it is a minority government or has an unstable situation that could motivate a motion of censure.

To measure this aspect, we calculate it as the number of representatives who belong to the ruling party among the total number of representatives.

Likewise, we analyse its capacity to implement structural reforms and its effectiveness in complying with the budget plans, observing the deviations between the liquidated budget and the initial budget, understanding that the more adjusted it is, the greater the capacity of the government to execute the budget and, therefore, the higher the rating of the sovereign government in this section.

We review the degree of transparency as a measure of good practices, not only in relation to the publication of financial information from the sovereign government, but also from the set of entities dependent on the sovereign government that could require some type of financial support.

Finally, we review the history of debt defaults, since we understand that sovereign governments that have recorded defaults (or delays) throughout their history for reasons other than their economic solvency, are more willing to repeat breaches of their financial obligations.

To complement our analysis, we use the following indicators published by the World Bank as a guide:

- a. **Government Effectiveness.** Following the World Bank's definition, this indicator captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. For its assessment we calculate the percentiles and evaluate the position of the sovereign government in relation to its peers.
- b. **Level of corruption.** Following the World Bank's definition, this indicator captures endemic corruption in a country's public sector. For its assessment we calculate the percentiles and evaluate the position of the sovereign government in relation to its peers.
- c. **Political stability.** Following the World Bank's definition, this ratio measures the likelihood that the government will be destabilized by unconstitutional or violent means, including terrorism. For its assessment we calculate the percentiles and evaluate the position of the sovereign government in relation to its peers.

Regarding the other qualitative aspects that we take into account for the analysis of the qualitative block, we have included in the following table the most important ones:

Qualitative scorecard		SCORE		
Subfactor	Ratio	1-4	5-6	7-10
Institutional framework	Flexibility	The sovereign government shows very high/high flexibility to adapt the conditions of its resources in situations of stress. It does not show dependency on the resources transferred from supranational organizations for the financing of its budget.	The sovereign government shows moderate flexibility to adapt the conditions of its resources in situations of stress. It shows a moderate dependency on the resources transferred from supranational organizations for the financing of its budget.	The sovereign government shows low/very low flexibility to adapt the conditions of its resources in situations of stress. It shows a high dependency on the resources transferred from supranational organizations for the financing of its budget.
	Supervision	There are clearly defined supervisory mechanisms. The controls are effective and allow to know the degree of compliance with the assigned powers and the perceived resources. There are limits to budget imbalances and the debt capacity of the sovereign government. There is transparency in the publication of statistical information.	There are defined supervisory mechanisms, although they are not fully exercised by a unit and/or an entity independent of the sovereign government. The controls show some effectiveness, although there are aspects that are not evaluated by them. The limits to the budgetary imbalances and the debt capacity of the sovereign government are not legally defined or their definition is not precise and/or changes over time. Although there is transparency in the publication of statistical information, in several times the information was false.	There are no monitoring mechanisms, or if they exist, they are not clearly defined and/or exercised by a unit and/or an entity independent of the sovereign government. The controls are not effective. There are no limits to the budgetary imbalances and the debt capacity of the sovereign government, or if they exist, they are only recommendations whose fulfilment is subject to the will of the sovereign government. There is not transparency in the publication of statistical information. Usually, it is false.
	Social cohesion	The sovereign is in the higher percentiles of the rule of law, regulatory and voice and account ratios.	The sovereign is in moderate percentiles of the rule of law, regulatory and voice and account ratios.	The sovereign is in the lower percentiles of the rule of law, regulatory and voice and account ratios.

	Default history	The sovereign government has not showed situations of default.	The sovereign government has not recently showed situations of default, although in the past has showed any.	The sovereign government has recently showed situations of default.
Government	Political	<p>The sovereign government maintains a stable government situation, with a majority government or with sufficient agreements with the rest of the political forces that guarantee the approval and execution of its budget plans.</p> <p>The government team has experience in management, having demonstrated sustained budgetary compliance.</p> <p>Presents a credible investment plan and adjusted to the economic and social reality.</p> <p>The government has demonstrated a higher willingness to make structural changes.</p> <p>The sovereign is in the higher percentiles of the government effectiveness, corruption and political stability ratios.</p>	<p>The sovereign government maintains a stable government situation, although it does not govern in a majority.</p> <p>Although it has agreements with the rest of the political forces, these are specific agreements that affect certain measures, so there is a risk of budget extensions or non-compliance.</p> <p>The government team has experience in management, although there is volatility in budget compliance, there are exercises of instability.</p> <p>It presents an investment plan that does not fit the reality.</p> <p>The government has demonstrated a moderate willingness to make structural changes.</p> <p>The sovereign is in the moderate percentiles of the government effectiveness, corruption and political stability ratios.</p>	<p>The sovereign government maintains an unstable government situation.</p> <p>There are no government agreements with the rest of the political forces, so there is a risk that there will be a motion of censure that paralyzes compliance with the budget.</p> <p>The government team has little experience in management, and/or there is budgetary instability sustained over the last few years.</p> <p>The investment plan is not adjusted to the economic and social reality.</p> <p>The government has demonstrated a lower willingness to make structural changes.</p> <p>The sovereign is in the lower percentiles of the government effectiveness, corruption and political stability ratios.</p>

5.2.3. Adjustments

The Preliminary Score (PS), calculated as the sum of the Quantitative and Qualitative Scorecard (defined in the previous sections), can be adjusted up or down by one or two notches depending on forecasts, geopolitical risks and other adjustments.

5.2.3.1. Forecast

The assigned rating reflects our opinion on the ability and willingness of the sovereign government to meet its future financial obligations, hence we consider it necessary to adjust the PS based on the future forecasts in assigning the definitive rating.

In this sense, we consider that a sovereign government that has demonstrated a solid financial profile, with a positive economic and social environment, a stable institutional and political framework and favourable future forecasts, will obtain a higher rating than those sovereign governments in which, despite presenting a similar historical situation, future forecasts are unfavourable due to the existence of events that cannot be directly reflected in the Quantitative or Qualitative Scorecards, such as an earthquake that forces the sovereign to allocate most of its resources to new investments.

For this the analyst will take into account both our own forecasts, prepared from public information or obtained from meetings with the own sovereign governments in the case of solicited ratings, as the forecasts prepared by national and/or international organizations of recognized prestige.

5.2.3.2. Geopolitical Risks

We evaluate the existence of geopolitical events that may interfere in the economic development of a country and ultimately affect the ability to pay their financial obligations.

In this sense, we understand that those countries that are close to situations of war or any other type of armed conflict will experience declines in the volume of foreign investments that would cause the deterioration of the balance of payments and, ultimately, the public finances of the country.

The existence of geopolitical risks that in the opinion of the analyst may directly interfere in the economic development of a country are negatively valued when assigning the rating.

5.2.3.3. Other Adjustments

We also take into consideration those cases in which a sovereign government could present extraordinary situations, as a lack of liquidity or a level of indebtedness considerably above the maximum levels contemplated in the Quantitative Score, as well as institutional and/or governmental weakness that could lead to civil revolts that, in the end, lead to a civil war or similar events, as well as any other circumstance that in the analyst's opinion (and/or rating committee) could destabilize the economy of the sovereign.

5.2.4. Final Score

Once the Preliminary Score and the applicable adjustments have been determined, we propose a preliminary rating that will be reviewed by the corresponding Rating Committee. If approved, the preliminary rating becomes final.

This final rating could be amended considering the particular conditions of the debt issuance (if any).

5.2.5. Local & Foreign – Currency Ratings

Generally, we consider that the capacity and willingness to pay of the financial obligations by the sovereign government is similar in local currency as well as in foreign currency. In fact, in case of monetary unions both ratings are always similar.

However, we consider that the foreign currency rating can be lower to the local currency rating (up to two notches) when a sovereign government shows limited access to foreign currency (with a reduced international reserve ratio), the foreign exchange market is too illiquid and/or the history of defaults on foreign currency debt is higher than in local currency. While history has shown that the loss of creditworthiness is followed by a rapid deterioration of fundamentals.

Even if a sovereign meets the above conditions to present different ratings in local and foreign currency, if in the analyst's opinion (and/or the rating committee) this situation is likely to be resolved in the short-term, both ratings (in local and foreign currency) could be similar. Therefore, we consider that a local currency rating is very rare.

6. Rating

Once the quantitative and qualitative pillars and the relevant adjustments have been determined, the obtained qualification is mapped with the following rating table:

Definitive Score	Rating L/T
≤ 2	AAA
≤ 2.4	AA+
≤ 2.8	AA
≤ 3.2	AA-
≤ 3.6	A+
≤ 4	A
≤ 4.4	A-
≤ 4.8	BBB+
≤ 5.2	BBB
≤ 5.6	BBB-
≤ 6	BB+
≤ 6.4	BB
≤ 6.8	BB-
≤ 7.2	B+
≤ 7.6	B
≤ 8	B-
≤ 8.4	CCC+
≤ 8.8	CCC
≤ 9.2	CCC-
≤ 9.6	CC
≤ 9.8	C
≤ 10	D

This document updates the previous version while preserving its original methodological criteria; therefore, all existing ratings remain unchanged. In this version, the format has been updated and includes a higher level of detail.