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Rating Methodology

Sovereign and Public Sector Entities

I. Sovereign

JCR updated sovereign parts of the "Sovereign and Public Sector Entities (February 10, 2009)" rating methodology. This update is not intended to review the current methodology itself, but to describe it more in details. Therefore, it does not give rise to change in any one of the individual sovereign ratings which have so far been issued.

1. Sovereign Credit Rating

An issuer rating of the sovereign shows the government's ability and willingness to fulfill its debt obligations by grading in the rating scale. A sovereign borrower is usually the government or the central bank, although it could vary depending on the legal norm defined by each country. Major difference between the sovereign and the corporate is that the former has the power to levy taxes and the right of issuing currency. It does not abide by the bankruptcy laws and could not disappear like the latter, either. All of which are attributable to the fact that the government has sovereignty of a country. An individual bond rating may be different from the issuer rating as the bond could have degrees of certainty in the repayment depending on its signed contracts, and could default selectively. Rating symbols for sovereigns is used according to JCR's "Types of Credit Ratings and Definitions of Rating Symbols".

2. Local Currency Rating and Foreign Currency Rating

A sovereign debtor has the power to levy taxes that can allow it to ensure financial sources for fulfilling its debt obligations and the right of issuing currency. For the payment of foreign currency debts, the debtor needs to convert its local currency to a foreign currency or to procure a foreign currency in the markets. The payment of local currency debts is hence less constrained. Considering such difference, JCR may assign different ratings to the local currency rating and the foreign currency rating. In normal cases, the former is higher than the latter. The following factors are taken into account for notching the difference: financial and monetary conditions of the sovereign that can affect effectuality in the use of power to levy taxes and the right of issuing currency; degree of development of the domestic financial markets; level of foreign exchange reserves; and monetary union or adoption of a pegged exchange rate regime, which could abate constraints on foreign currencies.

3. Outline of Rating Process and Evaluation Factors

It is important to have a framework of systematic rating process for an increased objectivity and

accuracy of the sovereign rating. For this purpose, JCR uses its "Sovereign Evaluation System" which covers the steps of quantitative and qualitative evaluations.

In assessing a sovereign's ability and willingness to fulfill its debt obligations, following seven factors are considered. (1) soundness of the government's **fiscal base** is extremely important because this directly affects its debt payment capacity. (2) the country's **external position** is considered critical for the nation's debt payment capacity concerning its external debts including those at the private sector. (3) a solid **economic base** ensures growth and thereby sustainable expansion of tax and other sources of funding for the government. (4) the sustainable economic growth in turn largely depends on the stability of **social and political bases**. (5) **financial system** assumes a vital role that supplies necessary capital for economic growth into the future. (6) implementation of appropriate **economic policies** is essential for an increased stability and sustainable growth of the economy. The sovereign's willingness to fulfill debt obligations, together with its environmental conditions, is also examined in light of the past experiences. (7) **international relations** are assessed in view of whether the nation's economic activities have an international environment in which they can sustain their ways. It should be noted that these evaluation factors are overwrapping and interrelated each other and their relative degrees of relevance can vary by the country and the period of time.

[JCR mainly considers seven factors for ratings]

(1)	Fiscal base
	Trends in the fiscal balance
	Conditions of the government debt
	Debt payment schedule
(2)	External position
	Conditions of external debt
	Trends in the balance of payments
	Impacts of the currency system
(3)	Economic base
	Fundamentals of economic development
	Economic achievements
	Growth potential
(4)	Social and political bases
	Political and social stability
	State of governance
(5)	Financial system
	Framework of financial regulations and supervision
	Lenders financial conditions and trends of asset values
	International financial conditions
(6)	Economic policies
	Policy recognition
	Policy effectiveness
	Policy sustainability
(7)	International relations
	Political, Economic, and security stability

(1) Fiscal Base

Fiscal base has a significant impact on a government's capacity to fulfill its debt obligations. A nation's fiscal base is analyzed from stand point of its soundness and sustainability by assessing trends in the fiscal balance, terms and conditions of the government debt, and debt payment schedule. In making an analysis of the fiscal base, JCR uses best available data with respect to the general government, which includes local governments and social security funds in addition to the central government.

For the fiscal balance, trends in the balance itself and the government revenue and expenditure structure are evaluated. The assessment starts with analyzing trends in the fiscal balance in the past by comparing them to GDP in the same period and then checks whether the government has been conducting financial management with discipline. It is assumed highly likely that a country with deteriorated fiscal balance could manage to find appropriate measures to recover its fiscal soundness in the future if the country has a track record in maintaining a fiscal discipline under the changing economic environment. In the revenue structure, the tax bases including direct and indirect taxes are at primary focus of analysis. Cases where a country heavily relies on certain natural resources or specific industries require especial attention in light of the stability of revenue. For the expenditure structure, JCR firstly grasps whether the expenditure size is appropriate relative to the revenue size and then assesses the expenditure structure, in which major points of focus are cost of social security, subsidy, public investment, interest expense, etc. The point is whether the fiscal discipline is not compromised, and whether the expenditure structure does not induce fiscal rigidity. It should be noted that the reduction in public investment has an impact on the long-term competitiveness and growth potential by way of impairment in the social capital formation.

For the government debt, its size relative to GDP is firstly assessed in the historical records. As a rule, a government's debt is an accumulation of the past fiscal deficits, and deemed desirable if it is small. Its bearable size, however, could differ, depending on the possible margin for revenue expansion as well as the level of interest rates. JCR also checks whether the government debt is not incontrollable in size and/or not uncontainable in structure. The government debt is examined secondly by breakdown in terms of currency composition and duration, etc. In addition, JCR examines contingent and potential liabilities of the government, if identified as such, which could arise from financial institutions or state-owned enterprises of significant presence, as well as the nation's pension and social security systems. The debt in foreign currency always requires attention to its risk in which the burden of the debt changes by the exchange rate fluctuations.

The debt payment schedule is analyzed in terms of balance between the debt and the available revenue which includes tax, non-tax revenue and proceeds from the government bond issues. Debt payment accompanies higher financing risks than otherwise if there is a concentration in debt service and maturity, and/or a major dependence on the foreign investors. It is from these perspectives that the

analysis of the domestic bond markets, which covers market size, liquidity, interest rate level, composition of investors, etc., is deemed important.

(2) External Position

The external position of a national economy has a significant importance to know the sovereign debtor's capacity to fulfill its external debt obligations and therefore deserve scrutiny against historical records of the nation's international balance of payments.

The external position is analyzed from the standpoint of its stability and sustainability by looking into a comprehensive picture about the general conditions of external debt, trends in the balance of payments and the impact of the currency system. Under circumstances where the external position deteriorates, there might arise needs for the government to support or assume the payment of certain debts of the private sector in order to contain the problem before it spreads to the entire macro economy. The analysis is therefore applied to the gross external debt including that of the private sector.

General conditions of the external debt are analyzed from its composition by periods, borrowers and lenders, and historical changes thereof, as well as by comparison with the size of the economy. Also important are the balance of assets and liabilities, and their categorizations and historical changes, as found in the official statistics on international investment position. A special attention is paid at the foreign exchange reserve, since it is the nation's ultimate countable assets for international payment of the debt. Its level of adequacy is judged country by country, and the amount is desired to be greater if a given country owes greater to short-term capital inflows and/or portfolio investment which are deemed riskier of capital flight than long-term and direct investments. JCR also gives consideration as an avenue of credit enhancement to certain international arrangements, such as currency swap agreements for a contingent supply of foreign exchanges and the empowerment of the European Central Bank in euro zone member countries.

The international balance of payments consists of current account, capital account and financial account. For the current account, JCR grasps trends in the balance of its individual items and conducts structural analysis. A purpose of such analysis is to assess the nation's capacity to acquire foreign currencies and the stability of such capacity, for which its export competitiveness is a good indicator. The export of goods and services can, by the way, indicate a sustainable level of external borrowing if it is analyzed in comparison with the amounts of external debt balance and annual debt payment. Since the current account balance equals national savings minus investment, it is also important to grasp its historical trend from the standpoint of international flow of funds. Key points in checking the capital and the financial accounts include their size relative to the current account and the nation's economy, presence and degree of regulatory constraints against capital flows and foreign exchange transactions, as well as transactional breakdown of the financial account and the stability of each component or the room for improvement thereof. It is particularly important for the countries of current account deficit

to establish by such analysis how their financing is sustainable.

Lastly, the nation's currency system is examined along with its precise features. The floating exchange rate system, which tends to give an automatic adjustment against certain macroeconomic imbalances, is less problematic than the fixed exchange rate system, including the pegged currency system. The latter requires especial attention because it not only causes friction in the macroeconomic imbalance adjustment but also may induce large amount of capital inflows and outflows if there is a significant gap in interest rates between the domestic and the foreign markets. In the case of countries of membership in a monetary union like the euro-zone, while the capital movement can be easily made across the region, being free from constraints of foreign exchanges, they might find it difficult to make an adjustment to the possible macroeconomic imbalance between the member countries. It is therefore important to understand both advantages and disadvantages case by case. A country which adopts an international currency has an advantageous position to ensure international capital. The United States enjoys this advantage to the full as the single most important key currency issuer.

(3) Economic Base

A strong economic base supports stability of the nation's public finance and banking, as well as politics and society itself, and increases effectiveness of market mechanism and economic policy. The economic base is analyzed to assess its stability and sustainability in view of the fundamentals of economic development, history of economic achievements and the growth potential.

The analysis of fundamentals of economic development covers the nation's territory, natural resources, demography and infrastructures, depending on relevance. Countries with affluent natural resources tend to have superior prospects of economic development. However, it is not a sufficient condition. Even if a country is blessed with natural resources, economic development could be hard if it fails in effective use of these resources. On the other hand, a country of little endowment can grow if it aspires for an open economy and succeeds in industrialization.

History of economic achievements can be measured firstly by GDP per capita as a typical indicator of economic success at a given time and then analysis of backgrounds for its evolution. GDP per capita, an indicator of the level of national's average income, can also suggest that the greater it is, the greater potential for tax increase and other sources of finance for the government. The historical analysis of its backgrounds covers the evolution of the nation's economic systems and the degree of market economy's development. While types of the economic system can vary by the country and the time, it is important to check how the market mechanism is actually functioning or not. Development of market economy allows efficient allocation of resources and thereby becomes instrumental for promotion of a long-term economic growth.

The growth potential is analyzed from economic structure and transition of economic growth rates in recent years. Structural characteristics are more emphasized than cyclical aspects. The economic structure is examined at its subcategories, i.e. industrial, import/export and employment

structures, and hence assessment is made how the structural change undergoes towards the higher productivity and the greater diversity free from dependency on a specific industry. Major issues on the industrial structure are the level of maturity and external competitiveness of key industries, as well as their systemic and regulatory backgrounds. Import/export structure is measured by major export and import products and counterparty countries, and prices. The degree of economic openness counts, as well. It is important to check whether a country's exports are concentrated on specific products or counterparties and thereby a small environmental change could jeopardize the whole economy. The employment structure is seen from the number of employees by industry, the labor force population and the number of the unemployed, etc. For the economic growth transition, the records of GDP growth rate is reviewed from the standpoint whether the growth can be recognized as sustainable without forming twists by inflation, asset price bubbles, external imbalance, etc. while giving consideration also to a potential growth rate. The review of GDP growth also requires a detailed structural analysis on the demand by components of recent years. Major concerns of such analysis are structural impediments against the growth, influence of foreign economies and effects from economic and financial policies.

(4) Social and Political Bases

The social and political bases give a country a foundation of economic activities and policy implementation, of which assessment is made by analyzing them from the standpoint of its stability and governance. The political and social stability is examined firstly by a review of historical changes in the political and social systems, and then the formation of the government's political base. The stability in the entire society comes to scrutiny thereafter, by looking into religion, ethnicity, political thoughts, and income gaps, etc. The possibility of a mutiny and civil war or an unpredictable overthrowing of the government is kept in mind, foreseeing chances, albeit rare, in which the legitimacy of a given sovereign debtor could be denied as a consequence of wars and revolutions. For the governance, the assessment is made by analyzing how the rule of the law is established, corruption is controlled, and the quality of public service is maintained. Administrative transparency and the independence of the judiciary, the central bank and the media are also important. Reference is made to relevant indicators in the official reports of the World Bank and other international organizations.

(5) Financial system

A stable and efficient function of the financial system is vital for a sustainable economic growth and the maintenance of a sound public finance. As long as the financial system is sound, the economy gets a stable supply of funds necessary for the growth. The authorities are expected to maintain effective regulations and supervision over the system, so that it could be protected from chances of financial crisis preemptively. On the contrary, a fragile financial system can interfere with economic activities and even set off a crisis. It is for such importance that the financial system under crisis often

receives measures of public aids such as injection of public funds and debt guarantees. The analysis of a nation's financial system, therefore, is indispensable also from the perspective of the government's contingent liability. The analysis is focused on the banking sector as the centerpiece of a financial system.

For the assessment of stability in a financial system, it is necessary to examine its formation and characteristics, framework of financial regulations and supervision, lenders' financial conditions, the trends of asset values, and international financial conditions. The formation and characteristics of the financial system means types and sizes of participating financial institutions, institutional characteristics such as degree of market concentration, level of maturity at the money and the capital markets. The framework of financial regulation and supervision includes the one of macro prudence (a part of which is policy adjustment to relevant international frameworks such as Basel regulations). The lenders' financial condition is measured by soundness of assets, capital adequacy, funding structure, liquidity and profitability, etc. The trends of asset values is examined to check if there is no occurrence of asset bubbles in light of the conditions of lending and other supply of funds in the private sector and money supply, as well as interest rates. A hike of asset prices which is alien to the real economy can have a significant adverse impact on the financial system in the subsequent process of consolidation. In addition, in today's world where financial institutions have accumulated a gigantic volume of assets and the financial markets have been globalized, there is an increasing possibility in which one country's crisis spills over to other countries. So is the magnitude of damage in such cases. Accordingly, JCR tries to keep up with possible occurrence of management problems at large banks and of asset price consolidations, as well as consequential risk of their international spillover which might cause a declined liquidity across the border. It is desirable to employ statistics of an internationally recognized common standard to analyze such international issues of the financial system.

(6) Economic Policy

The economic policy is a way or a set of measures for the government and the central bank to cope with various policy objectives for the national economy. It is analyzed from the standpoint if it is effective and sustainable, starting with the policy recognition itself at relevant authorities.

The way of policy recognition at the government and the central bank makes the first issue for the analysis. A proper recognition of current policy challenges help establish a foundation to take appropriate policy measures to handle them. So is a strong commitment. The second comes the examination of respective policies in detail, checking if they are consistent to each other and if they are effective. The degree of their flexibility in policy implementation is also reviewed in the record. Finally, the sustainability of the policies is evaluated based on the records of their implementation, public support thereto, and international environment at the time, etc. The records of success to overcome economic and financial crises in the past give some credential to the authorities about

sustainability of their policies. If the administration changes, the predictability of policies still can sustain, provided they have public support on the back of an advanced political system. Uncertainty arises over the sustainability of policies, on the other hand, when there is a problem at the administration over succession or the concentration of power. It is also necessary to check fully whether the policies are justifiable in the given international environment.

(7) International Relations

International relations are examined if there is stability and if there is presence or degrees of credit enhancement from political, economic and security perspectives. From the political perspective, firstly, the country's existing positioning in the international society is assessed. It is important to check how the country is internationally recognized or if the country has established political relationships in some multilateral framework. From the economic perspective, assessment is made how the country has a ground on which it can conduct international trades and finance without restriction. From the security perspective, the country’s geopolitical situation is analyzed, in particular if there is any disadvantage in carrying out the economic activity, such as a risk of war. Meanwhile, regional integrations such as EU or NAFTA as well as international organizations are also taken into consideration, if the country has some arrangement with them, and depending on the actual conditions of such arrangement.

4. Country Ceiling

The rating on corporations usually cannot exceed the relevant sovereign rating with some exceptions. JCR calls this country ceiling. In the past sovereign debt crises, there were cases where the governments imposed limits on corporations’ access to foreign exchange transactions, when the governments had difficulty themselves in the procurement of foreign currencies for their own needs. While there are fewer examples of such restrictions in recent years for various reasons such as globalization of financial markets, there remains such risk. When the sovereign rating is downgraded, a rating on corporation, to which country ceiling is applied, will be downgraded as well, even if there is no change in the creditworthiness of its own. Exemptions include cases where the corporation has a stable earnings base in a foreign country or internationally recognized currencies, has strong ability to raise funds in the international capital market, has relatively small debts, or has sufficient liquidity.

II. Public Sector Entities

1. Credit Rating Methodology

For the rating of government-affiliated institutions such as state-owned banks and enterprises, JCR gauges the strength of their relationship with the relevant government by reviewing if they have legal support, their importance in the government's industrial policy, etc., and judges to what extent the government's creditworthiness should be reflected in their ratings. At the same time, JCR analyzes and assesses the financial position and business risks of such entities to draw the judgment. As a result, ratings on public sector entities can be equal to or lower than those of the relevant government. This rating methodology is applied to foreign public sector entities.

2. Key factors in the evaluation

JCR measures the strength of relationship between the public entity and the relevant government from various angles, with attaching importance to the following five factors. Each factor has its own evaluation weight. Basically, JCR considers that factor (1) weighs most among the five factors below, but such weightings are not strictly fixed. When appropriate, JCR may change the weights depending on types and situations of the entities reviewed.

(1) Strength of legal protection including regulatory protection

If government protection of a public sector entity is stipulated under legislation including the law for its inception, that can be a positive factor in assessing the strength of its relationship with the government. Such protection may include, for example, (i) explicit guarantees by law, (ii) government support defined by law, and (iii) laws to provide budgetary support such as operational subsidies, official loans, and interest payment allowances for bond issues.

In addition, the existence of protective governmental regulations can also be a positive factor in evaluating the strength of the entity's relationship with the government. For example, the government can restrict new market entry with a licensing system to control competition in the domestic market. It is also necessary to foresee future of the government's regulatory moves. The forecast takes into consideration matters such as the regulatory authority's policy towards privatization, and the external environment and the existence of social or political organizations which may influence the authority's policies.

(2) Strength of government support other than the above-mentioned

It is also necessary to analyze the measures for credit enhancement by way of economic and regulatory supports by the government, which does not necessarily have clear legal grounds such as a founding law. Such supports may include: (i) explicit guarantees not based on any legislation, (ii) the government's will to support the entity to fulfill its liabilities in case it falls into a financial difficulty

and (iii) an indirect subsidy and assistance in a broad sense such as creation of a general economic and social environment that can contribute to enhancing the credit quality of the entity. With regard to the government supports other than explicit guarantees, it is important how the government sets up and maintains the overall regulatory, economic and political environment. In that case, it is necessary to analyze whether the government has capacity and will to create a business environment to the future managerial advantage of the entity.

(3) Strength of capital relationship

If the government intends to continue holding an equity stake in a public sector entity, that can be evaluated positively in assessing its relationship with the government as it may indicate the government's will to maintain its power to control the management of the entity. However, it should be noted that the government's equity holding does not necessarily mean it is fully responsible for the entity's obligation of debt payment. If the government holds more than 50% of the entity's shares, it is generally considered more likely than not to intervene in its management when it falls into a financial difficulty, as compared to the case where a government stake is less. This may not be the case all the time, however.

Also important is the purpose of government's equity holding. For example, if it is to prevent foreign companies from controlling the entity, it can be expected that the government will promote policies to protect the entity's market and keep its business environment secured. Furthermore, it is necessary to check if the government has plans to privatize the entity or change the shareholding ratio.

(4) Importance in the government's industrial policy

It is necessary to analyze the importance of a public sector entity in light of the government's national policies including energy policy, industrial policy, social security policy and defense policy. If the entity is given a greater importance, that can be positively evaluated, in assessing the strength of its relationship with the government or vice versa.

(5) Strength of personnel relationship with government

A public entity's strong personnel relationship with the government can be positively evaluated in assessing the strength of its relationship with the government. If the government participates in the management of the entity or it has the power to appoint management of the entity, it is necessary to check whether there is any legal ground for it.

In assigning the credit standing of a public sector entity, JCR judges the strength of its relationship with a government by analyzing and evaluating the above-mentioned five factors. However, it should be noted that the entity's strong relationship with the government can be a negative factor from the viewpoint of creditworthiness on the basis of its financial and operating performance. For example, a

high government equity stake can be an impediment to the entity's efforts to enhance its management efficiency and run its business in keeping with market principles. It can also lead to moral hazard. In addition, a regulation that restricts investment in the entity by foreign companies can be a negative factor in a long-term perspective as it may restrain its overseas fund raising. Therefore, a comprehensive evaluation based on all these factors is required in the final phase of the rating process for a government-affiliated entity.

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