Rating Methodology

5 November 2021

Banks

Industry-specific rating methodology

CCXAP publishes its updated rating methodology for banks.

Summary

This rating methodology replaces the Rating Methodology for Commercial Banks published in May 2016. In this update, we have (1) revised the framework of the rating methodology and the structure on how we assess a bank's rating; and (2) changed certain financial ratios and qualitative considerations. We believe that the update would improve our assessment of bank credit quality as well as provide more transparency in how we evaluate them.

This methodology applies to banks globally. These banks are usually financial institutions that are subject to regulations at the national level, hold banking licenses that allow them to receive deposits from individuals or corporations, and are eligible to provide credit services to their clients. Most of the entities rated under this methodology have the following characteristics: subject to strict regulatory oversight; being member of a payment system; having material deposit funding from the public; having access to central bank funding; and having the legal status as a bank.

We may also include the entities with bank-like characteristics, such as institutions that are not officially classified as banks by regulators but engage in borrowing and lending business as its core activities and have leveraged balance sheets. Conversely, we may consider applying other methodologies to some financial institutions that are technically banks under the local regulation but have characteristics that are closer to other sectors, such as finance companies, securities companies, or conglomerates. On the whole, we consider the institution's primary business activities, based on the size of its revenue or asset, that related to banking activities.

This methodology introduces the key determinants for rating banks and explains in detail our approach to assessing each key rating determinant. It also includes a discussion of the availability of external support as well as assumptions and limitations underlying the rating methodology.

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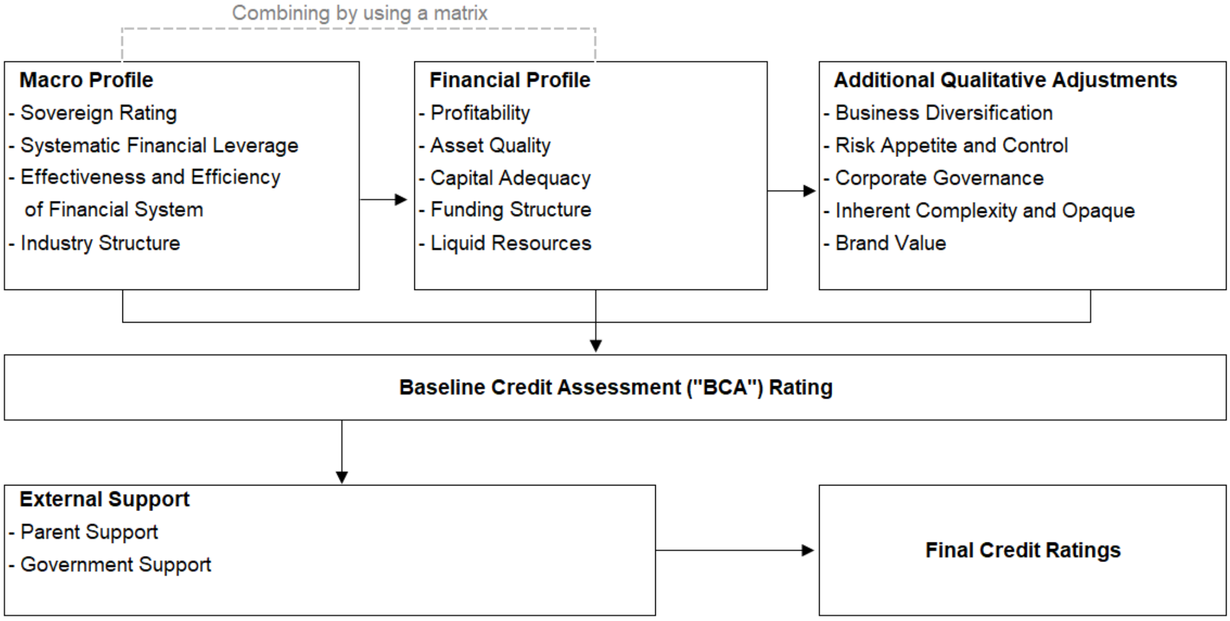
Introduction of Rating Methodology

Our analytical approach for banks follows the evaluation of the four pillars shown in Exhibit 1, including considerations of macro profile, financial profile, additional qualitative adjustments, and external support. We will combine a bank's macro profile and financial profile by using a matrix and considering additional qualitative adjustments to generate a Baseline Credit Assessment ("BCA"). After that, we will estimate the potential support from the parent company or the government to reach the final credit rating.

Exhibit 1: Overview of CCXAP's approach to bank rating assessment



Source: CCXAP research

This rating methodology provides a guideline that summarizes the important factors used in assigning ratings, but does not include an exhaustive description of all factors that CCXAP may use in its rating considerations. Thus, the mapped rating may not match the final rating of each rated entity.

Baseline Credit Assessment

Baseline credit assessment ("BCA") represents the probability that a bank will fail in the absence of external support from the government or the parent company. It mainly consists of three components: (1) macro profile, (2) financial profile, and (3) additional qualitative adjustments. This section discusses rating factors and sub-factors in detail, including their rationale and measurement standards and how they will affect ratings. The assessment is based on our forward-looking expectations and the historical results of the rated entities.

1. Macro Profile

The business performance of a bank is highly correlated with the operating and economic environment in which the bank operates. We believe that bank failures are often related to macro factors such as economic depression or financial crisis, rather than idiosyncratic factors. Our goal is to capture the system-wide factors that will affect the propensity of a bank in this assessment. We start with sovereign rating to gain a broad understanding of the fundamentals of a country's economic strength, fiscal strength, and governance. Then we combine the sovereign rating with bank related factors to come up with a macro profile for the bank. The bank related factors include systematic financial leverage, the effectiveness and efficiency of the financial system, and industry structure.

(1) Sovereign Rating

We use the sovereign rating of the country where the bank operates as a starting point for assessing its macro profile. For multinational banks with significant business exposures in different countries, we may use pro-rata approach to absorb their multinational exposures. In this sub-factor, we mainly follow the principles of our established methodology on sovereignty rating, which include:

- **Fundamental Strength.** Perform a set of calculations and adjustments on the economic and fiscal data of a country or region to understand their respective strengths. They include various economic variables, such as GDP growth and price stability, fiscal debt burden, and the reference to the external sector.
- **Institutional Strength**. Assess the efficiency and political stability of the government, including assessing the level of development of its regulatory framework and infrastructure.
- **Event Risk.** Study the possibility of unexpected events that could weaken the fundamental and institutional strength of a country or region.

(2) Systematic Financial Leverage

We use the ratio of domestic credit to private sector/GDP and changes in domestic credit to private sector/GDP to evaluate the systematic financial leverage of a country or region. High level of debt or fast expansion in credit may cause credit quality problems. The higher the outstanding debts relative to the national income may indicate that it is more difficult for the borrower to repay its debt. Meanwhile, the rapid growth of private sector credit may indicate greater risk-taking economic or credit activities, which often happen ahead of a crisis. We usually use data published by the World Bank or other accountable sources for calculations.

(3) Effectiveness and Efficiency of Financial System

In evaluating the effectiveness and efficiency of the financial system, we focus on four aspects, including (a) the national regulatory framework, (b) the protection of creditors, (c) the level of financial development, and (d) the historical stability of the financial system. A bank that operates in a country with good protection for creditors, high degree of financial development, clear and consistent regulatory framework, and a stable financial system will receive a higher score in the sub-factors. We may downgrade a country with a record of significant financial system failures.

(4) Industry Structure

The banking industry of different countries may have different structural characteristics that affect the operating environment of a bank. These may include the balance of lending demand and supply, available financing resources, the role of the banking industry in the country, financial innovation, and the development of the non-bank financing sector. For instance, we may make downward adjustment when a market has fierce competition for the lending business (such as the compressing of interest spread or having a large number of banks in operation). In addition, we tend to make downward adjustments to the rapid development of a country's non-bank financing system. This may indicate an increasing risk level of the industry as they are mostly linked with higher appetite for risk.

2. Financial Profile

Banks engage in risk-taking activities and the intrinsic value of a bank is its ability to undertake and mitigate the resulting risks. Thus, the financial profile of a bank is a useful indicator of its performance. We evaluate a bank's financial profile through two core aspects: solvency (profitability, asset quality, capital adequacy) and liquidity (funding structure, liquid resources).

(1) Profitability

Profitability is a key indicator of a bank's ability to generate capital, absorb losses, and recover from shock events. A bank with weak profitability or persistent losses is not as capable of absorbing asset risks as a bank with strong profitability. In general, banks with strong long-term profitability are more resilient during a financial crisis. CCXAP typically uses the ratio of pre-provision operating profit/average risk-weighted assets to evaluate the profitability of banks. We also consider the stability of bank profitability. Even for a bank with high profitability, if its profitability fluctuates sharply, we may negatively adjust its sub-factor scores.

(2) Asset Quality

Banks operating under high leverage will inherently generate great asset risks, and a small deterioration in asset value will have a great impact on the solvency of banks. At the same time, banks hold sizable risky assets. Once a major adverse change in the credit environment occurs, the quality of a bank's asset may deteriorate rapidly, which may in turn cause large losses to the bank. We typically use the ratio of problem loans/gross loans to assess a bank's asset quality. A growing or high problem loan ratio is a sign of deterioration in asset quality, which may lead to potential credit losses as well as capital pressures. Potential reasons for the higher ratio of problem loans include (a) depressed economic activities, which reduces the borrower's ability to repay debt; (b) deterioration in the value of loan collateral; (c) changes in social attitudes towards loan payments or the legal framework. In addition to the problem loan ratio, we also consider factors that affect the bank's overall asset quality, such as loan growth, credit concentration, problem loan coverage, loan-loss performance records, reliability of problem loan recognition, non-lending business risks, and the impact of market risks.

(3) Capital Adequacy

Capital is a very important factor for banks to maintain their operations and the confidence of creditors. Capital also ensures that the bank has enough funds to absorb operating losses while still honoring withdrawals. In general, regulators will set a minimum level of capital adequacy for banks in order to obtain central bank funding, access to capital markets and business licenses. We use the capital adequacy ratio (common equity to risk-weighted assets) to evaluate the capital adequacy of banks. A higher capital adequacy ratio not only provide banks with more capital buffers, but also provide financial flexibility to explore new business opportunities. The calculation of the capital adequacy ratio will be done according to CCXAP's own adjustments. We may also take into consideration a number of other factors in adjusting a bank's sub-factor score.

- **Regulatory Requirement.** We may assign a lower score than the indicated score in this sub-factor if a bank's capital adequacy ratio is lower than the minimum regulatory requirement.
- **Quality of Capital.** We may adjust downward or upward the sub-factor score for lower or higher quality capital. For example, we will assess the ability of some unrealized assets to withstand losses.
- **Access to capital.** We may consider the ability of a bank to access fresh capital in times of need. Banks with strong ability to raise capital is likely to receive a higher score. A privately held bank normally has a lower score than a listed bank due to its limited access to fresh capital.
- **Recognition of risk-weighted assets.** Different banks or banking systems may have different standards for the recognition of risk-weighted assets. We may adjust the sub-factor score to reflect the quality of the recognition.

(4) Funding Structure

By studying the funding structure of a bank, we can evaluate its ability to withstand short-term funding risks and its resilience to periodic difficulties. The funding structure of a bank always contains a large number of unreliable or unstable funding sources, such as funds from risk-sensitive counterparties or the issuance of short-term commercial papers, which are more susceptible to refinancing pressure in a difficult market environment. The reliance on unstable market funding suggests a higher tendency for external support when the market is extremely volatile. In general, retail deposits are more reliable than wholesale funds, such as interbank funding, bonds, commercial papers, as wholesale funds are more sensitive to credit conditions. We use the market fund/total assets ratio to measure a bank's less reliable funds. A bank with high market fund/total assets ratio indicates reliance on less stable funds. Other considerations include the quality of wholesale funding and deposits, matching of assets and liabilities, and market access.

(5) Liquid Resources

Liquidity is an essential factor for the survival of banks. Liquid resources typically include high-quality liquid assets that can be readily sold or pledged for cash, such as cash with central bank, financial institution receivables, trading securities, and government securities held to maturity. We use the liquidity ratio (measured by liquid assets/total assets) to evaluate a bank's liquidity position. A higher liquidity ratio means that a bank has more available resources to meet its short-term obligations. We may make upward or downward adjustments on a bank if we believe the ratio understates or overstates its liquidity. For example, banks with large amounts of encumbered assets may limit their liquidity value and result in lower overall liquidity. Conversely, banks that mainly hold high-quality assets, such as high-rating government bonds or money market funds, can easily convert them to cash without discount, enhancing its overall liquidity. We may also take into account other regulatory ratios, such as liquidity coverage ratio ("LCR"), when these ratios become available. In addition, we may lower a bank's sub-factor score for material restrictions in intra-group transfer, such as when subsidiaries and parent companies are subject to different regulatory standards, as these restrictions may reduce their overall ability to maintain liquidity and funding.

3. Additional Qualitative Adjustments

We will evaluate a number of qualitative adjustments based on the combination of a bank's macro and financial profiles to capture other relevant financial ratios and other considerations that have not been fully reflected in the previous analysis, such as business diversification, risk appetite and control, corporate governance, inherent complexity, opacity and brand value.

(1) Business Diversification

Business diversification can enhance the stability of a bank's earnings and protect it from unexpected shocks. A bank with a broader business or geographic coverage is less affected by regional financial distress or economic downturn. Conversely, a bank with only one line of business or several operations is more vulnerable to unexpected changes because it does not have other sources of income to absorb the fallback. We typically assess a bank's various lines of businesses and the correlation between them. However, if a bank aggressively expands to non-core businesses or rapidly increases in risky product lines, we may lower the bank's sub-factor score as this may increase the volatility of its earnings.

(2) Risk Appetite and Control

We evaluate a bank's overall risk appetite and control through its management behavior and development strategy. We may notch down a bank based on aggressive risk attitudes, such as loosening credit assessment policy, providing unreasonably high incentives for financial performance, and encouraging short-term risk-taking behavior. For a newly established bank, we may lower its score for insufficient record on risk management and control.

(3) Corporate Governance

CCXAP considers corporate governance, internal control, management quality, policies and procedures, organizational structure, ownership structure and related transactions. A heavy emphasis is placed on the quality of management and the board of directors to ensure that the bank operates properly in the interest of its stakeholders. It also includes the output of its corporate governance, such as the quality of operational and financial information provided and overall information transparency. In most cases, we may notch down a bank on poor corporate governance, but rarely notch up for good corporate governance.

(4) Inherent Complexity and Opaque

Higher-than-average opacity or complexity of a bank may increase its overall risk profile because it brings additional management challenges, increases the risk of strategic and business errors, and increases operational risk. A bank with complex legal structure and organizational complexity tend to be more opaque because public disclosures necessarily provide a simplified view of operations. Evidence of complexity includes a large number off-balance sheet risk exposures, participation in capital market activities, complex legal and ownership structures, numerous business lines across different regions, and sizable derivative holdings. If we believe that the bank’s opacity and complexity are damaging to its creditworthiness, we may downgrade the rated entity.

(5) Brand Value

The banking industry is fundamentally an industry of trust. A bank with a good brand name will enable it to sustain a certain level of market share and earnings stability because it usually has high customer loyalty and strong distribution capabilities. We not only assess a bank’s brand power, but also its ability to convert its brand power into long-term financial results. We may notch up for a bank with outstanding brand value, and we may notch down for a bank with a notorious brand name.

External Support

In terms of external support, CCXAP considers both parent company support and government support that a bank would receive to decrease the likelihood of default.

Parent Support

It represents support from its parent company. We assess both the willingness and the ability of its parent to provide support. The parent company may provide necessary support for its banking subsidiary for its own interest. Normally, we expect the parent company is very likely to support its banking subsidiaries because of reputational reasons. In some cases, failure of a bank may have a devastating impact on the parent company as the parent company has close business and financial links with the banking subsidiary.

Willingness of Support

- **Shareholding structure.** A bank that is directly and wholly owned by its parent is more likely to obtain support.

- **Strategic Position.** A bank that has important strategic position in its parent company is more likely to receive support. Normally, a large banking subsidiary is more important than a small one. Other considerations include the expected holding time of the ban's subsidiary and the investment value for its parent. We generally consider a bank to have stronger strategic position when it shares the same logo and brand name with its parent, which will carry high reputation risk if the parent allows its subsidiary to default.
- **Financial and Operational Relatedness.** If a bank has very close financial and operational connections with its parent company, we expect support will be more likely because a failure of the bank could lead to failure of its parent company. For example, the failure of the banking subsidiary may result in disruption of the parent's daily operations or loss of a large number of inter-company customers. In addition, it may create a bad perception to the market towards the creditworthiness of the parent company.
- **Regulation.** A bank is more likely to be supported when its parent is compelled or highly encouraged to do so.

Ability to Support

We typically use the parent's BCA rating as a starting point of the ability to provide support. In most cases, we segregate the considerations of support from parent company and government to avoid duplication. In addition, we will consider the relative size of the parent company's available resources to the bank to evaluate the ability to provide support.

Government Support

It represents either the support from local government or the central government. We assess both the willingness and the ability of a government or public body to provide support to a bank. In most cases, we can only estimate the likelihood of a government to provide support because certainty of support is very rare. We make our judgements based on multiple considerations including past government behaviors, bailout histories, existing political sentiment, public policy statements and existing regulation frameworks.

Willingness of Support

- **Market impact.** We first assess the market position of a bank. We expect that a bank with large market share to be more important to the national economy and the domestic financial system. A bank is "too big to fail" if its failure will create a disastrous impact on a country's financial system, which is typically followed by a government bailout when it fails. We typically notch up a bank if it is classified as a systemically important bank. However, some banks are relatively small in scale but its complexity within the local banking system may generate chain reaction on the whole system. We may notch upward for a bank that we expect to bring significant market impact if it fails to obligate.
- **Nature of business.** We assess the nature of a bank's business to estimate the intention of a government to provide support. We expect a private bank that serves the high-net-worth individual to be less likely to receive support than a public bank that undertakes social functions (such as deposit or lending to the disadvantaged).
- **Ownership.** We believe that government ownership will increase a bank's likelihood of receiving support. A bank that is wholly and directly owned by the government is more likely to be supported than a bank with indirect minority shareholding. We expect that the chance of allowing a publicly-owned bank to default to be relatively low as it will risk market participants to doubt on the creditworthiness of the government.
- **Public policy.** We consider the domestic public policy framework to evaluate the willingness of government support. We expect that the presence of an operational resolution regime means that it is less

likely for the government to rescue a failed bank by using government funding. The operational resolution regime provides mechanisms and guidelines for an orderly management of the distressed bank's affairs either by reconstructing it or by liquidating it without using public money. In some cases, government may also be restricted by law to provide direct support in order to avoid moral hazard problem. By contrast, some countries may have clear and consist supportive policies.

Ability to Support

We typically use the government's credit rating as a starting point of its ability to provide support. Other considerations include the relative size of the banking sector to the government resources and the existing financial stress of the banking system. For example, we may notch down the government support if the size of the banking sector exceeds the government resources significantly. However, we may notch up for a specific country with the financial support from multi-national organizations as the available resources can exceed that country level.

Assumptions and Limitations

The final ratings assigned are based on CCXAP's forward-looking opinions, which we assume any changes of the macro environment are aligned with our expectations, and do not incorporate any unanticipated changes, such as outbreak of war and destructive natural disaster.

CCXAP assumes that there is a strong correlation between the sovereign credit risk and the rated entity, while refinancing capability is the key driver of credit risk. The debt rating assigned is based on our view that legal priority of claims is the key factor affecting the ratings for different classes of debt issued by the same issuer. Also, we assume that the data used in the rating is true, legal and does not incorporate misleading statements.

The ratings incorporate our expectations of the rated entity's future performance, which are mainly deduced from the historical information via our forward-looking model. Under some circumstances, the expectations would incorporate confidential information. In addition, our expectations would consider the industrial trend, rival analysis, and other considerations. In any case, predication is subject to substantial uncertainty. Therefore, the mapped ratings may not match our final ratings. The ratings may include some qualitative factors. CCXAP would evaluate these factors in an objective and precise approach, but the assessment may be unavoidably affected by subjective view in some cases. Therefore, the weighting of rating considerations could be varied. Specifically, the variation in weighting would happen if the rated entity were in default or approaching to be in default.

Furthermore, the ratings rely on public information and information provided by the rated entity and underwriters. Despite the fact that CCXAP can ensure the integrity, truthiness, and completeness of the data, due to the delay of information, the ratings may on some occasions not reflect the rated entity's credit risk in a timely manner.

Apart from that, the ratings are decided by our rating committee and could be influenced by their empirical views which may not be incorporated in the rating methodology. As a result, the final ratings could be varied with the mapped rating from the methodology.

A credit rating is the analytical result of current credit worthiness and forward-looking opinion on the credit risk of a rated entity or a debt issue. Credit ratings issued by CCXAP are opinions on the current and relative future credit risk of the rated entities or debt issues, but do not address any other risks, including but not limited to liquidity risk, market price risk, and interest rate risk.

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