Banking Industry

Credit Rating Methods and Models

（PJFM-JR-YH-2024-V1.0）

安融(香港)信用評級有限公司
ANRONG(HONG KONG)CREDIT RATINGS COMPANY LIMITED

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This document is translated from the Rating Methodology for Sovereign published on November 28, 2024. In case of any discrepancies or inconsistencies between the English and Chinese versions, the English version shall prevail.

Rating Methodology

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I. Overview

AnRong (Hong Kong) Credit Rating Co., Ltd. (ARHK) has formulated the "Banking Credit Rating Methods and Models (PJFM-JR-YH-2024-V1.0)" (referred to as "this methodology and model") in order to enhance the consistency, accuracy, and stability of rating methodologies, models, and rating results, in accordance with relevant laws, regulations, and the provisions of ARHK's rating business-related management systems.

This Methods and Models determines the rating benchmark for the rated entity by incorporating sovereign risk adjustment factors. The rating benchmark, combined with the entity's own adjustment factors, results in the BCA (Bank Credit Assessment) grade for the rated entity. The BCA grade is then combined with external support to obtain the final credit rating for the rated entity. Specifically, first, ARHK constructs a "Regional Strength and Industry Risk" dimension by fully considering the macroeconomic and regional strengths as well as industry risks in the banking sector. It also constructs an "Operation and Financial Risk" dimension by fully considering the bank's corporate strength, operational risk, capital adequacy, corporate financial risk, and profitability. The "Pre-SRAF Rating Grade" for the rated entity is obtained through a two-dimensional matrix mapping of "Regional Strength and Industry Risk" and "Operation and Financial Risk". The rating benchmark for the rated entity is determined by incorporating sovereign risk adjustment factors, and then the BCA grade for the rated entity is obtained by considering its own adjustment factors. Finally, the credit rating (model result grade) for the rated entity is determined by considering external support.

In terms of grade symbols, BCA grades are represented by a sequence of symbols ranging from "aaa" to "c". Except for "aaa" and grades below "cc" (inclusive), each credit grade can be fine-tuned with "+" or "-" symbols to indicate a slightly higher or lower credit level than the base grade. The final credit grade symbols correspond to a sequence from "AAA" to "C". Similarly, except for "AAA" and grades below "CC" (inclusive), each credit grade can be fine-tuned with "+" or "-" symbols.

This Methods and Models becomes effective from the date of announcement.

II. Scope of Application

ARHK defines the criteria for rated entities in the banking sector as follows:

(1) The rated entity's primary business scope is banking credit operations.

(2) The rated entity's income or profits are mainly derived from banking credit operations.

(3) If the above two conditions are not met, but upon comprehensive examination of the rated entity's business model, asset structure, income and profit structure, it is determined that the rated entity clearly exhibits the operating characteristics of the banking sector, it will also be considered a bank.

III. Basic Assumptions

1. Assumption of Stability in Debt Repayment Environment

ARHK assumes that the macroeconomic environment, industry competition environment, regulatory environment, legal environment, and financial market environment will not undergo unexpected changes, or face irresistible factors such as natural disasters or wars.

2. Assumption of Operational Stability

ARHK assumes that the rated entity is in a stable and continuous operational state, with consistent operational and financial data, and that historical data can serve as a basis for predicting future operations. In the foreseeable future, there will be no significant changes in the rated entity's ability to continue operations due to the macroeconomic environment, industry competition environment, regulatory environment, legal environment, and financial market environment. There will be no sudden operational changes or major unforeseen changes that have not been disclosed in advance. These changes include, but are not limited to, sudden changes in the nature of the rated entity, mergers and acquisitions, debt restructuring, significant asset changes, major regulatory penalties, defaults, bankruptcy reorganizations, and other significant negative events.

3. Assumption of Data Authenticity

ARHK Rating assumes that the data obtained from public authoritative channels and provided by the rated entity (including but not limited to data compiled by the rated entity, data issued by third-party intermediary institutions entrusted by the rating object, and data issued by other regulatory-recognized professional institutions for the rating object) are true, legal, complete, and effective, with no malicious embellishment or forgery, and no significant misleading statements.

4. Assumption of No Difference in Debt Repayment Willingness

ARHK Rating assumes that the rated entity has the same willingness to repay its similar debts and has not established a repayment order arrangement for similar debts.

IV. Characteristics of Credit Risk

ARHK Rating believes that the credit risks of the banking sector mainly include the following aspects:

1. Concentration Risk

The concentration risk of banks mainly includes risks related to business industry concentration, customer concentration, and regional coverage concentration. Specifically, when a bank's business is excessively concentrated in one or a few industries, if these industries experience economic fluctuations or adverse factors, the bank may face significant credit risks. Similarly, if a bank's customer concentration is too high, i.e., most loans or funds are concentrated in a few large or related customers, once these customers default or encounter operational issues, the bank may suffer significant losses. Furthermore, regional coverage concentration is also an important aspect of concentration risk. If a bank's business is overly dependent on one region or a few regions, the economic environment, policy changes, or natural disasters in these regions may have a significant impact on the bank's business.

2. Policy Risk

Policy risk primarily involves the risks faced by banks in international operations due to changes in national policies, laws and regulations, or international political and economic situations. The main types of policy risk include political risk, economic risk, social risk, and legal and regulatory risk.

(1) Political Risk

Political risk refers to the risk that a bank cannot repatriate its assets, such as loans, from a specific country due to political restrictions, resulting in losses. This includes risks related to political power, political stability, policy changes, and external relations. For example, certain countries may pose threats to the asset security of foreign banks operating within their borders due to political instability, sudden policy changes, or tense international relations.

(2) Economic Risk

Economic risk refers to the risk that a bank cannot repatriate its assets, such as loans, from a specific country due to direct or indirect economic constraints, resulting in losses. Economic factors such as exchange rate fluctuations, inflation, and economic recessions may lead to decreased investment returns or asset depreciation for foreign banks operating in that country.

(3) Social Risk

Social risk refers to the risk that a bank cannot repatriate its loans from a specific country due to social instability caused by economic or non-economic factors, resulting in losses. Social factors such as social unrest, terrorist attacks, and natural disasters may pose threats to the operational and asset security of banks in that country.

(4) Legal and Regulatory Risk

Legal and regulatory risk refers to the risks faced by banks in international operations due to differences in national laws and regulations, changes in regulatory policies, or legal proceedings. For example, different countries have different regulatory requirements for foreign banks in terms of access conditions, business scope, and capital adequacy, which may lead to compliance risks for banks in cross-border operations.

3. Default Risk

Default risk refers to the risk of economic loss due to a counterparty's failure to fulfill obligations stipulated in a contract, i.e., the possibility that the credit receiver's inability to repay principal and interest leads to a deviation between the expected and actual returns for the credit provider. It is a primary type of financial risk. For banks, default risk primarily arises from borrowers' failure to repay bank loans in a timely and full manner due to various reasons, potentially causing losses to the bank. Default risk management is embodied in aspects such as the bank's internal credit rating system, credit policies and standards, division and management of credit authorities, monitoring and early warning of loan risks, and disposal of non-performing loans.

4. Market Risk

Market risk in the banking sector refers to the potential for financial asset price fluctuations due to changes in financial market conditions, leading to losses on the bank's assets in the international market. The main types of market risk include interest rate risk, exchange rate risk, and price risk.

(1) Interest Rate Risk

Interest rate risk refers to the impact on a bank's financial position due to changes in market interest rates. When market interest rates rise, the value of the bank's fixed-income assets declines, affecting the bank's profitability and capital adequacy. For international banking, interest rate levels may vary significantly across different countries and regions, making interest rate risk in international operations more complex.

(2) Exchange Rate Risk

Exchange rate risk refers to changes in the value of a bank's assets and liabilities denominated in foreign currencies due to exchange rate fluctuations. This risk is unique to international operations, as banks often engage in cross-currency transactions in the international market. When exchange rates fluctuate significantly, banks may face the risk of asset depreciation or increased liabilities, impacting their financial position and operating performance.

(3) Price Risk

Price risk primarily refers to potential losses on a bank's on- and off-balance sheet positions due to market price changes. In the banking sector, this risk is concentrated in the securities and foreign exchange markets. Securities market prices fluctuate with the market, causing changes in the combined market value of securities held by banks. Exchange rate movements in the foreign exchange market create uncertainty for the bank's foreign exchange exposures held in spot or forward forms, leading to gains or losses.

5. Liquidity Risk

Liquidity risk refers to the risk that, despite being solvent, a bank cannot obtain sufficient funds in a timely manner or at a reasonable cost to meet asset growth or pay maturing debts. For banks, mismatches in asset and liability maturities and changes in the economic environment are the main sources of liquidity risk. As intermediaries between depositors and borrowers, banks hold only a small portion of liquid assets for payment needs relative to their total liabilities, exposing them to "bank run" risks where numerous creditors demand redemption simultaneously. Liquidity risk management is embodied in aspects such as asset-liability management, cash flow management, and stress testing.

6. Operational Risk

Operational risk refers to potential losses or risks arising from internal system flaws, information system failures, employee misconduct, and external events. Based on frequency and loss magnitude, it can be categorized into internal fraud risk, external fraud risk, risks from employment contracts and working conditions, risks from customers, products, or business practices, tangible asset loss risk, business interruption and system failure risk, and risks from the design, execution, delivery, and transaction process management. Operational risk management is embodied in aspects such as bank management systems, processes, tools, systems, capital measurement, and the frequency and response capabilities to operational risk events.

V. Rating Methodology and Model Framework

"Regional Strength and Industry Risk" reflects the operating environment, operating conditions, development space, and risks of the banking sector. "Operating and Financial Risk" reflects a bank's ability to manage its functions, assets, and financing environment, as well as associated risks.

The rating methodology and model development path for the banking sector by ARHK are as follows:

Step 1: Establish an evaluation indicator system, defining the names, meanings, scoring, and weighting of evaluation indicators.

Step 2: Determine the grades for "Regional Strength and Industry Risk" and "Operating and Financial Risk."

Step 3: Based on the grades from the two dimensions, determine the Pre-SRAF rating grade for the rated entity using a two-dimensional matrix.

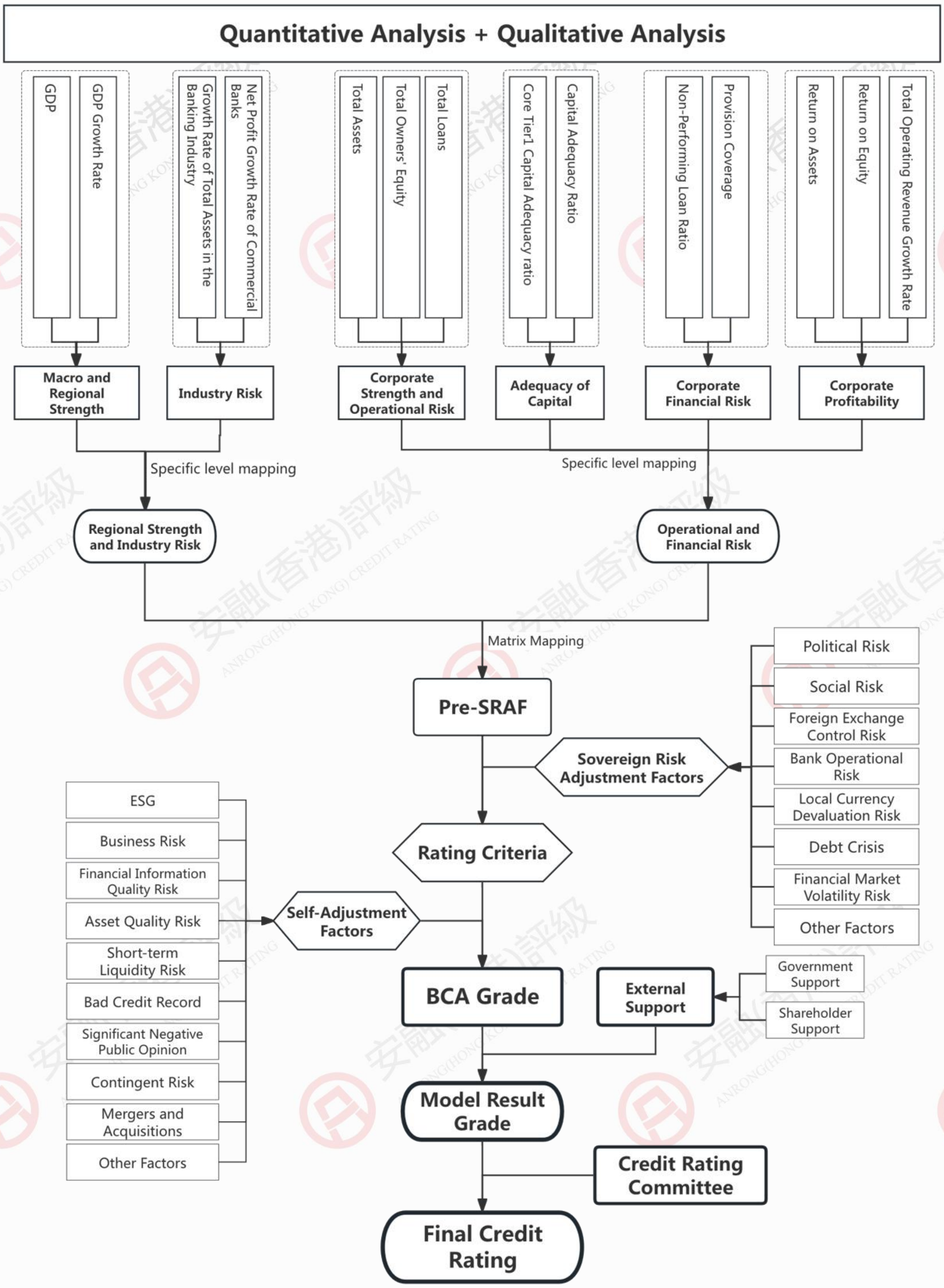
Step 4: Determine the rating benchmark for the rated entity by incorporating sovereign risk adjustment factors.

Step 5: Derive the BCA grade for the rated entity by considering its specific adjustment factors.

Step 6: Consider external support to obtain the rated entity's credit rating (Model Result Grade).

Considering that the "three-tier, nine-grade system" is widely used in the rating industry both domestically and internationally, where "three-tier" refers to A, B, and C, and "nine-grade" refers to "AAA", "AA", "A", "BBB", "BB", "B"; "CCC", "CC", "C", and considering that the difference in default probabilities among "CCC", "CC", and "C" is not significant, mainly reflected in differences in loss given default (LGD) which is not the focus of ARHK's assessments and forecasts, ARHK combines "CCC", "CC", and "C" into one grade when setting evaluation indicators and grades. Except for external support indicators and dimensions, which are set to three grades, all other indicators and dimensions are set to seven grades. Additionally, the symbol "D" (determined by the Credit Rating Committee) is used to indicate that the rated entity is unable to fulfill its obligations, and default is confirmed.

Grade Meanings: Grades range from the lowest (Grade 1) to the highest (Grade 7, or Grade 3 if only three grades are used). Higher grades indicate a more positive assessment and forecast of the rated entity's debt repayment ability and willingness.



1. Pre-SRAF Rating Scale

ARHK's ratings analyze "Regional Strength and Industry Risk" primarily through two factors: macroeconomic and regional strength, and industry risk. For "Operations and Financial Risk," the analysis focuses on four factors: corporate strength and operating risk, capital adequacy, corporate financial risk, and corporate profitability. A total of fourteen indicators are set, each assigned a corresponding weight. Each indicator is divided into seven levels, and through level mapping, the final Pre-SRAF rating for the rated entity is determined using a two-dimensional matrix mapping table.

(1) Regional Strength and Industry Risk

First Level Indicator	Second Level Indicator	Third Level Indicator
Regional Strength and Industry Risk	Macro and regional forces	GDP
		GDP Growth Rate
	Industry Risk	Growth Rate of Total Assets of the Banking Industry
		Commercial Bank Net Profit Growth Rate

A. Macroeconomic and Regional Strength

The operational capacity and asset quality of a bank are closely correlated with the economic development of the region where its primary business activities are conducted. Factors such as regional economics, industrial structure, and local policies exert significant influences on the operations of local banks. A favorable regional economic environment is conducive to a bank's local operations, particularly for regional banks.

ARHK's ratings primarily assess a bank's macroeconomic and regional strength through two dimensions: GDP and GDP growth rate.

Generally, the GDP indicator refers to the GDP value of the bank's registration place or the primary region where its business activities are conducted. A higher value of this indicator suggests better regional economic development, stronger economic growth momentum, superior real economy and financial market development, and higher income levels for residents. Under such circumstances, the bank's operational performance tends to be better, and its credit risk is lower. Typically, ARHK assigns higher ratings to banks in regions with higher GDP.

The GDP growth rate is ‘a crucial factor to consider when assessing a bank's capital growth potential. A bank's capital increment and profitability are closely related to the economic growth of its operating region. Enterprises in regions with higher GDP growth rates are more active, and investment and financing activities are more frequent, providing stronger impetus for bank capital growth. Therefore, ARHK assigns higher ratings to banks in regions with higher GDP growth rates.

B. **Industry Risk**

Trends and risks in the banking industry can be analyzed through the overall scale and trends of assets and profits, credit asset quality, capital adequacy, and industry regulation. In this methodology model, ARHK primarily assesses the industry risk of the rated entity through the growth rate of total banking assets and the growth rate of net profit of commercial banks.

The growth rate of total banking assets reflects the overall asset operation and management level of the banking industry, as well as its overall competitive strength and development potential. A higher value of this indicator suggests more stable macroeconomics, better credit structure adjustment and optimization, stronger resilience against non-performing assets, and lower overall credit risk in the banking industry, indicating a stronger risk resilience for the banking sector. Therefore, ARHK assigns higher ratings to banking industries with higher total asset growth rates.

The growth rate of net profit of commercial banks is a crucial indicator reflecting the bank's profit growth level and operational growth capacity. A higher value of this indicator suggests stronger overall strength for the banking industry, broader fields and directions for future exploration, more sustained value creation capabilities, and lower overall credit risk in the banking industry. Therefore, ARHK assigns higher ratings to commercial banks with higher net profit growth rates.

ARHK's specific rating scale mapping standards for "Regional Strength and Industry Risk" are as follows:

Indicators	7	6	5	4	3	2	1
GDP（One hundred million yuan）	≥6000	[3000,6000)	[1000,3000)	[300,1000)	[100,300)	[50,100)	<50
GDP Growth rate（%）	≥7	[5,7)	[3,5)	[1,3)	[0,1)	[-1,0)	<-1
Growth rate of total assets in the banking sector（%）	≥17	[15,17)	[10,15)	[8,10)	[-5,8)	[-15,-5)	<-15
Growth rate of net profit for commercial banks（%）	≥15	[10,15)	[5,10)	[3,5)	[-2,3)	[-5,-2)	<-5

Note: When converting the GDP (in billions) indicator data from RMB to USD in the above table, all relevant indicator data should be divided by the foreign exchange conversion rate (USD/RMB = 7.0827) on December 29, 2023. This exchange rate is released by the China Foreign Exchange Trade System, authorized by the People's Bank of China (PBOC), and is the designated foreign exchange conversion rate by the State Administration of Foreign Exchange.

(2) Operating and Financial Risks

Primary Indicator	Secondary Indicator,	Tertiary Indicator
Operational and Financial Risks	Corporate Strength and Operational Risk	Total Assets
		Owner's Equity
		Total Loans
	Capital Adequacy	Core Tier-1 Capital Adequacy Ratio
		Capital Adequacy Ratio
	Corporate Financial Risk	Non-Performing Loan (NPL) Ratio
		Provision Coverage Ratio
	Corporate Profitability	Net Profit Margin on Total Assets
		Return on Equity (ROE)
		Operating Revenue Growth Rate

A. **Corporate Strength and Operating Risk**

The strength and operating risk of a bank can be analyzed through its business scope, branch network, customer resources, economies of scale, risk control, and regional advantages. In this rating methodology model, ARHK assesses a bank's strength and operating risk based on indicators such as total assets, owner's equity, and total loans.

Total assets and owner's equity are important considerations for a bank's financial status. Banks with larger total assets and owner's equity have certain competitive advantages in operational stability, asset-liability management, and other aspects. Therefore, ARHK assigns higher ratings to banks with larger total assets and owner's equity.

Loans are the most important component of a bank's assets. Generally, for banks whose main business is deposits and loans, profit mainly comes from the interest margin between deposits and loans. The larger the total loans, the larger the asset size, and the stronger the bank's overall strength and lower credit risk. Therefore, ARHK assigns higher ratings to banks with larger total loans.

B. Capital Adequacy

Capital is an important buffer tool for the banking industry to absorb various risk losses. The evaluation criterion for a bank's capital adequacy is whether its capital level and asset quality are sufficient to withstand the bank's asset risks. Generally, a bank's capital adequacy can be measured through its capital strength, net core tier-1 capital, core tier-1 capital adequacy ratio, capital adequacy ratio, and risk-weighted assets. In this methodology model, ARHK primarily assesses a bank's capital adequacy based on its core tier-1 capital adequacy ratio and capital adequacy ratio.

The core tier-1 capital adequacy ratio and capital adequacy ratio measure the extent to which a bank's own capital covers its risk-weighted assets. Higher core tier-1 capital adequacy and capital adequacy ratios indicate better coverage of risk-weighted assets by the bank's capital. Therefore, ARHK assigns higher ratings to banks with higher core tier-1 capital adequacy and capital adequacy ratios.

C. **Corporate Financial Risk**

A bank's financial risk is mainly reflected in capital, asset quality, profitability, liquidity, business innovation, financial indicator growth, financial management, credit, and many other aspects. In this methodology model, ARHK primarily assesses a bank's financial risk based on indicators such as the non-performing loan (NPL) ratio and provision coverage ratio.

The NPL ratio is a core indicator reflecting the quality of a bank's loans and is used to assess loan quality. In China, for example, loans are classified based on risk into normal, special mention, substandard, doubtful, and loss categories, with the latter three collectively referred to as NPLs. The NPL ratio can reflect a bank's past risk management effectiveness, current risk management status, and future profitability to some extent. A higher NPL ratio implies a potentially larger proportion of loans that cannot be recovered. Therefore, ARHK assigns higher ratings to banks with lower NPL ratios.

The provision coverage ratio reflects a bank's ability to cover loan losses and guard against loan risks. A higher provision coverage ratio indicates that the bank is better prepared for asset quality deterioration, which is more conducive to ensuring effective coverage of liabilities by assets. Therefore, ARHK assigns higher ratings to banks with higher provision coverage ratios.

D. **Corporate Profitability**

A bank's profitability can be analyzed through its business diversification, customer size, return on assets, market share, and earnings. In this methodology model, ARHK primarily assesses a bank's profitability based on indicators such as net profit margin on total assets, return on equity (ROE), and revenue growth rate.

A higher net profit margin on total assets indicates that the bank has achieved good results in increasing income and conserving capital usage, reflecting better asset utilization. The higher this indicator, the stronger the profitability and the ability to maintain or enhance business expansion. Therefore, ARHK assigns higher ratings to banks with higher net profit margins on total assets.

ROE is an important indicator for evaluating a bank's profitability and reflects the bank's ability to accumulate internal capital. An improvement in ROE helps the bank mitigate risk losses. Therefore, ARHK assigns higher ratings to banks with higher ROEs.

The revenue growth rate is an important indicator reflecting a bank's growth status and development capability. A higher revenue growth rate indicates stronger business growth and risk management capabilities. Therefore, ARHK assigns higher ratings to banks with higher revenue growth rates.

ARHK's specific rating scale mapping standards for "Operating and Financial Risks" are as follows:

Indicators	7	6	5	4	3	2	1
Total Assets (in billion yuan)	≥20000	[5000,20000)	[2000,5000)	[500,2000)	[300,500)	[100,300)	<100
Owner's Equity (in billion yuan)	≥2000	[500,2000)	[200,500)	[50,200)	[10,50)	[5,10)	<5
Total Loans (in billion yuan)	≥4000	[1000,4000)	[100,1000)	[50,100)	[25,50)	[15,25)	<15
Core Tier-1 Capital Adequacy Ratio (%)	≥12	[11,12)	[10,11)	[9,10)	[8,9)	[5,8)	<5
Capital Adequacy Ratio （%）	≥18	[16,18)	[14,16)	[12,14)	[10,12)	[8,10)	<8
Non-Performing Loan (NPL) Ratio (%)	<0.8	[0.8,1)	[1,1.5)	[1.5,2.5)	[2.5,3.5)	[3.5,5)	≥5
Provision Coverage Ratio (%)	≥190	[180,190)	[150,180)	[130,150)	[115,130)	[100,115)	<100

Net Profit Margin on Total Assets (%)	≥1.2	[1,1.2)	[0.8,1)	[0.4,0.8)	[0.2,0.4)	[-1,0.2)	<-1
Return on Equity (ROE) (%)	≥12	[10,12)	[8,10)	[5,8)	[3,5)	[0,3)	<0
Operating Revenue Growth Rate (%)	≥10	[5,10)	[0,5)	[-5,0)	[-10,-5)	[-15,-10)	<-15

Note: When converting the indicators of total assets (in billions), owner's equity (in billions), and total loans (in billions) from RMB to USD in the above table, all relevant indicator data should be divided by the foreign exchange conversion rate on December 29, 2023 (USD/RMB = 7.0827). This exchange rate is published by the China Foreign Exchange Trade System authorized by the People's Bank of China (PBOC) and is the designated foreign currency conversion rate by the State Administration of Foreign Exchange.

(3) **Pre-SRAF Rating Grade Mapping**

Based on the assigned values and weights of the aforementioned indicators for macroeconomic and regional strength, as well as industry risk, the "Regional Strength and Industry Risk" mapping tier can be derived. Similarly, the "Operational and Financial Risk" mapping tier is obtained using the assigned values and weights of indicators for corporate strength and operational risk, capital adequacy, corporate financial risk, and corporate profitability.

By combining the mapping tiers of these two dimensions and utilizing the Pre-SRAF Rating Grade Two-Dimensional Matrix, ARHK can determine the bank's Pre-SRAF rating grade mapping within the two-dimensional matrix.

The Pre-SRAF Rating Grade Mapping is as follows:

Pre-SRAF Rating Grade		Regional Strength and Industry Risk						
		7	6	5	4	3	2	1
Operational and Financial Risks	7	aaa	aaa/aa+	aa+/aa	aa/aa-	aa-/a+	a+/a	a-/bbb+
	6	aaa/aa+	aa+/aa	aa/aa-	aa-/a+	a+/a	a-/bbb+	bbb/bbb-
	5	aa+/aa	aa/aa-	aa-/a+	a+/a	a/a-	bbb+/bbb	bbb-/bb+
	4	aa/aa-	aa-/a+	a+/a	a/a-	a-/bbb+	bbb/bbb-	bb+/bb
	3	aa-/a+	a+/a	a/a-	a-/bbb+	bbb/bbb-	bb+/bb	bb-/b+
	2	a/a-	a-/bbb+	bbb+/bbb	bbb/bbb-	bb+/bb	bb-/b+	b/b-
	1	a-/bbb+	bbb+/bbb	bbb/bbb-	bb+/bb	bb-/b+	b/b-	ccc 以下

2. **Sovereign Risk Adjustment Factors**

Sovereign risk adjustment factors are crucial considerations in international credit ratings for rated entities. ARHK employs "political risk," "social risk," "foreign exchange control risk," "bank operational risk," "local currency depreciation risk," "debt crisis," "financial market volatility risk," and "other factors" as sovereign risk adjustment factors to conduct international credit adjustments for banks, thereby establishing the international rating benchmark for the rated entity. Given the numerous factors influencing sovereign credit risk and their dynamic nature alongside changes in international relations, economy, and industry development, the sovereign credit risk adjustment items listed in this methodology may not cover all adjustment elements. Continuous accumulation, summarization, and optimization are needed in rating practices.

(1) Political Risk

If the rated entity faces significant domestic political and geopolitical risks, its credit rating may be lowered.

(2) Social Risk

If the rated entity encounters substantial social conflicts, ethnic conflicts, cultural or religious conflicts, its credit rating may be lowered.

(3) Foreign Exchange Control Risk

If the rated entity is exposed to significant risks of restricted capital flows, its credit rating may be lowered.

(4) Bank Operational Risk

If the rated entity faces significant risks of timely currency exchange, its credit rating may be lowered.

(5) Local Currency Depreciation Risk

If the rated entity is at high risk of local currency depreciation, its credit rating may be lowered.

(6) Debt Crisis

If the rated entity faces a significant international external debt crisis, its credit rating may be lowered.

(7) Financial Market Volatility Risk

If the rated entity is exposed to significant financial market volatility risks, its credit rating may be lowered.

(8) Other Factors

Other factors refer to all sovereign factors beyond the aforementioned that may affect a bank's debt-paying ability and willingness. ARHK will make appropriate adjustments to its credit rating based on specific circumstances.

The specific sovereign risk adjustment factors are as follows:

Primary Factors	Secondary Factors
Political Risk	Domestic Political Risk
	Geopolitical Risk
Social Risk	Social Conflicts
	Ethnic Conflicts
	Cultural or Religious Conflicts
Foreign Exchange Control Risk	Restricted Capital Flows
Bank Operational Risk	Operational Risk
Domestic Currency Depreciation Risk	Domestic Currency Depreciation Risk
Debt Crisis	Debt Crisis
Financial Market Volatility Risk	Financial Market Volatility Risk
Other Factors	Other Factors

3. **Rating Benchmark**

ARHK determines the rating benchmark for the rated entity based on the Pre-SRAF rating grade, combined with sovereign risk adjustment factors.

4. **Self-Adjustment Factors**

Self-adjustment involves supplementary analysis of individual characteristics of the bank being rated, based on the evaluation of common bank features. The evaluation result after individual characteristic adjustment is the basic credit rating that fully reflects the bank's own creditworthiness. It is important to note that only factors affecting the bank's credit risk and occurring exclusively in individual banks will be considered in the adjustment items. ARHK uses "ESG," "business risk," "financial information quality risk," "asset quality risk," "short-term liquidity risk," "adverse credit history," "significant negative public opinion," " contingent risks," "mergers and acquisitions," and "other factors" as self-adjustment factors. Given the numerous factors influencing credit risk and their dynamic nature alongside economic and industry development, the adjustment items listed in this methodology may not cover all adjustment elements. Continuous accumulation, summarization, and optimization are needed in rating practices.

(1) ESG

ESG stands for Environment, Social Responsibility, and Corporate Governance, which are important factors affecting the sustainable development potential of the rated entity. Poor performance in ESG by the rated entity may impact the stability of its production operations and financial performance, thereby increasing its credit risk. ARHK focuses on the negative impacts of ESG factors, and if the rated entity has relevant risk factors, its credit rating may be adjusted.

(2) Business Risk

If the rated entity has high business concentration, high customer concentration, very narrow regional coverage, an excessively high proportion of the single largest loan industry or single borrower; weak internal control supervision systems and risk management systems, significant violations by senior and middle management, an internal management system that cannot support business development, or the occurrence of relatively serious internal control and risk management incidents; poor business capital accounting capabilities, and severely insufficient capital planning and management capabilities; major or all businesses are at a standstill, which may affect its debt-paying ability, its credit rating may be lowered.

(3) Financial Information Quality Risk

Financial information is the basis for evaluating the rated entity's financial risk. When assessing financial risk, attention should be focused on whether the financial report audit conclusion is not a "clean opinion" (or similar situation in international audit reports); or at the parent company level, whether there are significant financial risks not reflected in the consolidated financial statements; whether the financial data is distorted. If negative, the credit rating may be lowered.

(4) Asset Quality Risk

If the rated entity has an excessively high deviation in asset quality, for example in China, if the ratio of loans overdue for more than 90 days to non-performing loan balance is too large; if there are asset sales, transfers, transfers, write-offs, and asset reorganizations that may have a significant negative impact on its debt-paying ability, with any one of them accounting for a large proportion of total assets; if it exempts others from debts exceeding a certain amount at one time, which may affect its debt-paying ability; if restricted assets (including but not limited to mortgages, pledges, seizures, or freezes) account for a large proportion of total assets and legal disputes have arisen, its credit rating may be lowered.

(5) Short-Term Liquidity Risk

If the rated entity is unable to obtain sufficient funds in the short term or obtain sufficient funds at a reasonable cost in a timely manner to cope with asset growth or pay maturing debts, its credit rating may be lowered.

(6) Adverse Credit History

If the rated entity has adverse credit records such as overdue debts or other dishonesty records, its credit rating may be lowered.

(7) Significant Negative Public Opinion

If the rated entity has significant negative public opinion and the impact has not yet been eliminated, its credit rating may be lowered.

(8) Contingent Risks

If the rated entity faces significant litigation risks or has a high risk of guarantees (joint and several liability guarantees) or guarantee compensations, its credit rating may be lowered.

(9) Mergers and Acquisitions

If the rated entity is undergoing major mergers and acquisitions, and the ratio of investment amount to total assets is large, its credit rating may be appropriately lowered.

(10) Other Factors

Other factors refer to factors beyond the aforementioned that may affect the bank's debt-paying ability and willingness. ARHK will make appropriate adjustments to its credit rating based on specific circumstances.

The specific self-adjustment factors are as follows:

Primary Factors	Secondary Factors
ESG	E
	S
	G
Business Risk	Concentration Risk
	Internal Control and Risk Management Level
	Capital Management Level
	Business Interruption Risk
Risk of Financial Information Quality	Financial Information Quality
Asset Quality Risk	Asset Quality Deviation
	Asset Volatility Risk
	Risk of Assuming Others' Debts
	Asset Restriction Status
Short-term Liquidity Risk	Short-term Credit Risk
Adverse Credit History (not to be adjusted repetitively with other factors)	Debt Default
	Other Credit Records
Significant Negative Public Opinion	Significant Public Opinion Risk
Contingent Risk	Litigation Risk
	Guarantee (Joint and Several Liability) Compensation Risk
Mergers and Acquisitions	Mergers and Acquisitions Risk
Other Factors	Other Factors

5. **BCA Rating**

Based on the rating benchmark, ARHK incorporates its own adjustment factors to determine the BCA rating of the rated entity.

6. **External Support**

The adjustment factors for external support are as follows:

Primary Factors	Secondary Factors
Government Support	Government's Willingness to Support
	Historical Record of Government Support
Shareholder Support	Shareholders' Willingness to Support
	Shareholders' Ability to Support

If the rated entity can still obtain stable external support when facing a liquidity crisis that makes it difficult to fulfill its debt commitments, it will help stabilize the expectations of relevant parties, thereby reducing the likelihood of an actual liquidity crisis occurring to the rated entity. At the same time, specific rescue measures taken by external supporters when the rated entity experiences operational or liquidity crises will help improve the likelihood of repayment of maturing debts or reduce the default loss rate.

External support for banks typically comes from governments and shareholders. ARHK comprehensively considers the external support received by banks from both government support and shareholder support.

(1) Government Support

Regarding government support, ARHK assesses the level of government support received by the rated entity based on two dimensions: the government's willingness to support and its historical record of support. In evaluating the government's willingness to support, ARHK considers the following aspects: firstly, the proportion of shares held by the government and its representatives in the rated entity; secondly, the government's business support for the rated entity; and thirdly, the government's control over the rated entity.

The historical record of government support mainly considers the extent of government support received, whether it is general or special support.

The mapping of government support is as follows:

Government Support		Government's Willingness to Support		
		3	2	1
Historical Record of Government Support	3	3/2	2/1	1/0
	2	2/1	1/0	0
	1	1/0	0	0

(2) Shareholder Support

Shareholder support for a bank is primarily evaluated based on two dimensions: shareholder willingness to support and shareholder ability to support. By comprehensively assessing these two dimensions, the level of shareholder support received by the rated entity can be determined.

Regarding shareholder willingness to support, ARHK considers the following aspects: the proportion of shares held by shareholders in the rated entity; the position of the rated entity within the shareholder's business layout; the rated entity's contributions to the shareholder in terms of assets, revenue, and profits; legal relationships of joint and several guarantees with shareholders; and the impact of the rated entity's default on shareholders.

Shareholder ability to support is primarily evaluated based on the current financial strength of the shareholders and their historical record of providing support.

The mapping of shareholder support is as follows:

Shareholder Support		Shareholders' Willingness to Support		
		3	2	1
Shareholders' Ability to Support	3	3/2	2/1	1/0
	2	2/1	1/0	0
	1	1/0	0	0

7. Final Credit Rating

Based on the BCA rating of the rated entity, ARHK comprehensively considers external support to derive the credit rating of the rated entity (model result rating). The credit rating obtained through this methodological model serves as a reference credit rating for the rated entity, solely for the purpose of providing recommendations to analysts and serving as a reference for the Credit Rating Committee in assessing the credit rating. The final credit rating is determined by the Credit Rating Committee, and there may be differences between the final credit rating and the model rating.

VI. Limitations of This Method Model

1.ARHK's judgments on various rating factors for such companies are based on their historical operational performance. However, the impact of relevant factors and their future development on debt repayment ability may vary due to changes in the external environment. Therefore, this methodological model cannot guarantee accurate prediction of such companies' future actual default risk in their credit risk assessment.

2.This methodological model only enumerates the key rating factors that need to be examined when rating such companies, and does not cover all the factors that need to be considered when assessing the credit risk of such companies.

3.There is a human element involved in the selection of indicators in this methodological model. The factor weights in the rating model represent the relative importance of the rating factors assessed by humans. The rating model includes crucial qualitative assessment factors, which may result in the inability of this rating methodological model to comprehensively and accurately reflect credit risk. Meanwhile, when making their own judgments, members of the Credit Rating Committee may consider additional factors beyond the scope of the rating methodological model. Therefore, the assessment of the final credit rating always carries a subjective component. ARHK will review this methodological model regularly or irregularly and revise it as appropriate.

Appendix:

Formulas for Indicators

i. Core Tier 1 Capital Adequacy Ratio = (Net Core Tier 1 Capital / Risk-Weighted Assets) × 100%, calculated in accordance with relevant regulatory requirements.

ii. Capital Adequacy Ratio = ((Total Capital - Corresponding Capital Deductions) / Risk-Weighted Assets) × 100%

iii. Non-Performing Loan Ratio = ((Substandard Loans + Doubtful Loans + Loss Loans) / Total Loans) × 100%

iv. Provision Coverage Ratio = (Loan Loss Provisions / Non-Performing Loan Balance) × 100%

v. Return on Total Assets = (Net Profit × 2) / (Total Assets at the End of the Current Year + Total Assets at the End of the Previous Year) × 100%

vi. Return on Equity = (Net Profit × 2) / (Equity at the End of the Current Year + Equity at the End of the Previous Year) × 100%

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