December 2017

Rating Methodology for Mining Industry

Summary

This rating methodology adopted by China Chengxin (Asia Pacific) Credit Ratings Company Limited ("CCXAP") is applicable to mining companies and companies with similar business nature of mining companies. CCXAP defines mining companies as upstream companies engaged in the mining, extracting, smelting and refining of coal, ferrous metal, non-ferrous metal and precious metal. This rating methodology is not applicable to downstream companies engaged in the value-added processing such as packaging and manufacturing of purchased raw materials. This rating methodology introduces the key determinants for rating mining companies. CCXAP assigns credit ratings to them using its rating scale.

Introduction of Rating Methodology

The key rating determinants for the assessment of a mining company are divided into qualitative determinants and quantitative determinants. The rating methodology provides a summarized guidance for the important factors used in assigning ratings, but it does not include every aspects of rating consideration. As a result, the mapped rating may not match the final rating of each company.

In this rating methodology, there are five rating factors comprising 10 sub-factors as follow:

Rating Factors	Sub-factors
Business Profile	Reserve Position and Quality
	Operational Volatility and Cost
	Market Position and Diversification
Scale	Total Revenue
Profitability and Efficiency	EBIT/Revenue
	Return on Assets
Financial Policy	Total Debt/Total Capital
	Total Debt/EBITDA
Financial Strength	EBIT/Interest
	(CFO-Dividend)/Total Debt

Key Rating Determinants

Rating factors and sub-factors are discussed in details in this section, including their rationale, measurement and how they will affect the rating.

1. Business Profile

A mining company may start its operations by extracting raw materials on self-owned mines. Thus, the reserve and supply of raw material can significantly influence a mining company. Given the volatile commodity prices, market position and diversification are the important indicators to evaluate a mining company’s competitiveness. The factor of business profile captures the non-financial aspects of the company.

(1) Reserve Position and Quality

CCXAP starts the analysis from evaluating the reserve position and quality of the company. Within a resource intensive industry, position and quality of reserve determines the longevity of the Company’s production and operation profile. Mining companies with larger proven and existing reserves, as well as longer residual lives have abundant resources for production, and are better protected by fluctuations in the price of raw materials. Altitude and proximity to infrastructure are some of the variables that change with the reserve position and affect the companies’ operating and developing cost. Mining companies may be required to have permissions from the government before they start operating the mines while the permissions may comprise a number of restrictions, such as permitted exploitation time. Those restrictions are also taken into account while they may affect mining companies’ production profile.

The level of recoverable reserves, grade and mining conditions are some of the factors to determinate reserve quality while there are various reserve testing requirements in different countries and different minerals have different rating standards. Thus it is difficult to quantify the reserve quality and compare different minerals with each other’s. CCXAP believes those in line with higher standards of specific country and specific industry exhibit higher quality of reserve.

(2) Operational Volatility and Cost

The stability of raw materials supply and the ability to control cost is of great importance to the credit rating of a mining company. With an access to cheap, sustainable raw materials, mining companies tend to conduct better cost control and are able to expand across their product lines. Due to the scarce in exploitation of non-ferrous metals, a stable supply of specific raw materials is more crucial for non-ferrous metal companies. CCXAP measures the credit quality and scale of the suppliers as well as the average prices paid to suppliers to measure the raw materials supply stability. The stability of profit generation is vital, especially under volatile commodity prices, so the cost position and cost structure of mining companies is also examined.

(3) Market Position and Diversification

Mining companies’ performance can be seriously influenced by the change of economy. In the recession of economy, companies’ performance can be significantly affected while companies with a leading market position and strong competitive advantages are more likely to survive since they are difficult to be replaced in a highly concentrated market.

While mining companies are exposed to volatile prices, those with greater operational diversity will be less vulnerable to economic cycles and demand fluctuations. CCXAP considers product diversification and geographic diversification of the company. In assessing product diversification, the number of different types of minerals the company possess and the percentage of revenues from each operating segment are taken into account. Geographic diversification lowers the influence of strikes, equipment failures, pit wall slides and other operational risks for the company. Also, less reliant of a specific region can weaken the effect of the region’s economy downturn which may lower the risk. In the evaluation of diversification, CCXAP considers the companies’ diversification strategy as a whole instead of only considering the diversification in the number of segments and regions.

2. Scale

Coal, metals and other resources are typically controlled by the government, and companies need official approval to start mining activities. Large mining companies make greater contributions to the local economy, and may enjoy favorable terms in acquiring resources. Within a cyclical industry, large mining companies show competitive advantage in adjusting supply to fit market demand, and typically have strong access to diversified financing channels. In the evaluation of the scale factor, CCXAP reviews total revenue of the company.

(1) Total Revenue

CCXAP considers revenue in measuring the scale of the company. Mining companies that generate larger revenue tend to have stronger track of performance, and typically have the market share and resources to operate in various markets. Sustainable revenue growth also reflects strong market demands for the company’s products. Conversely, companies generating smaller revenue exhibit lower market share and weaker scale and capacity.

3. Profitability and Efficiency

Given that mining industry faces severe price sensitivity, mining companies have limited pricing power and are vulnerable to demand fluctuation. The ability of cost control and operating efficiency are important considerations for the credit rating of mining companies. In the evaluation of profitability and efficiency, CCXAP uses EBIT/Revenue and Return on Assets.

(1) EBIT/Revenue

CCXAP focuses on the EBIT margin of mining companies, which is calculated by EBIT to total revenue. Companies need to roughly match or exceed depreciation in order to sustain the development so EBIT margin is a reasonable proxy to understand companies’ profitability. Companies with higher EBIT margin tend to conduct better cost control and generate stronger operating cash flows. A decline in EBIT margins indicates increasing operating costs, lower pricing power or even loss-making projects.

(2) Return on Assets

In assessing profitability of a mining company, CCXAP also uses return on assets, which is calculated by dividing EBIT by average assets. This indicator confirms the company’s competitive position, and reflects its future growth capacity from the asset perspective.

4. Financial Policy

In the evaluation of financial policy, CCXAP reviews the financial indicators of debt leverage of the company. The leverage indicators reflect the company's financial flexibility and long-term viability. The financial policy is of importance for the industry as mining companies usually are unable to bear a high degree of financial leverage with the unstable profit and cash generation.

(1) Total Debt/Total Capital

In assessing the financial leverage of mining companies, CCXAP uses the total capitalization ratio, which is calculated by dividing total debt by total capital. Total debt refers to interest-bearing debt, including bonds, notes, short-term and long-term borrowings. Higher leverage exerts pressure on the company's ability to raise funds and repay debts. Mining projects usually take a long period to be completed, which are affected by external factors such as raw material prices and labor costs. Meanwhile, mining companies operate under the pressure of complicated financing environment. Therefore, it is particularly important for mining companies to have reasonable capital structure, optimal funding sources, and diversified debt maturities.

(2) Total Debt/EBITDA

CCXAP also focuses on the company's debt level relative to its expected profit to measure the company's ability to repay debt from its operating earnings. This indicator is calculated by dividing total debt by EBITDA. Even for companies with the same financial leverage, their repayment capability reveals different level of financial risk.

5. Financial Strength

In the evaluation of financial strength, CCXAP considers companies' ability to repay the interest and debt with their income and cash generated from operating activities.

(1) EBIT/Interest

This indicator is used to measure the company's ability to repay the interest of the interest-bearing debt and other fixed charges by its operating earnings. The indicator is calculated by dividing EBIT by the sum of interest expense and capitalized interest.

(2) (CFO-Dividend)/Total Debt

This is an indicator measuring the company's ability to repay its debt using cash flow from operating activities less dividends. This indicator reflects the company's vulnerability to liquidity risk and capability to maintain business operations.

Other Rating Considerations

Other than the factors and sub-factors discussed before, CCXAP gives consideration to safety, management policy, and corporate governance when assessing a company's overall credit strength.

Safety

The mine safety is vital to mining companies because the occurrence of mining accidents can cause heavy casualties among miners with significant losses of the companies. Therefore, CCXAP believes that a safety mining environment is a foundation of the company and should not be a factor to upgrade the rating. But CCXAP still considers this factor because the company's rating may be downgraded with an unsafe mining environment.

Corporate Governance

Corporate governance represents the system of rules, practices and processes by which the company is controlled and directed, and it is an important rating consideration. The company with strong corporate governance has fair and transparent sets of rules and controls in which all stakeholders have aligned incentives.

Management Policy

The management policy can significantly affect companies' credit profile. Through assessing feasibility and execution of companies' strategic plan and risk management, CCXAP analyses the companies' future performance. An effective long-term strategic plan and conservative risk management can improve companies' credit profile.

Event Risk

CCXAP will consider the possibility of unexpected events that could cause a sudden and sharp decline in the issuer's overall credit profile, including asset sales, spin-offs, capital restructuring program, change of major shareholders, mergers and acquisition and significant restructuring program.

Geopolitical Risk

Mining companies' assets locate in many countries as mineral resources spread over the world and their businesses operate globally. The different jurisdiction and regulation in different countries will affect the companies' operation model. Operating in the countries with strict mining regulation, immature and potential for changes in tax regulation may increase the geopolitical risk. In the evaluation of geopolitical risk, CCXAP considers the development and potential changes in regulation in the countries which the company operates in.

External Support

Support from companies' shareholders affects the company's future development and credit profile. CCXAP measures the willingness and degree of support by development strategy, market position, ownership structure, and the subsidiary's importance within the group. We also view that a company with strong shareholders may receive parental support of capital injection and other kinds of support.

Important Information

All information published in this document belongs to China Chengxin (Asia Pacific) Credit Ratings Company Limited (CCXAP) and is subject to change without prior notice by CCXAP. CCXAP considers the information contained in this document reliable. However, all information is provided on an "AS IS" and "AS AVAILABLE" basis and CCXAP does not guarantee the accuracy, adequacy, completeness or timeliness of any information included in this document. None of the information may be used, including without limitation reproducing, amending, sending, distributing, transferring, lending, translating, or adapting the information, for subsequent use without CCXAP's prior written permission.

CCXAP is not liable for any in whole or part caused by, resulting from or relating to any error (neglect or otherwise) or other circumstances or other circumstance or contingency within or outside the control of CCXAP's or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, interpretation, analysis, editing, transcription, publication, communication or delivery of any such information, or any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if CCXAP, or representatives thereof, are advised of the possibility of such damage, losses or expenses.

China Chengxin (Asia Pacific) Credit Ratings Company Limited

Address: Suites 805-808, 8/F, Jardine House,
1 Connaught Place, Central, Hong Kong

Website: www.ccxap.com

Email: info@ccxap.com

Tel: +852-2860 7111

Fax: +852-2868 0656