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Comprehensive Creditworthiness Assessment of Rio Tinto

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Abstract

This report examines Rio Tinto's creditworthiness in relation to their request for an AU$1 million, three-year loan from the bank. In my capacity as the lending officer assigned to review this loan application, I will use four credit analysis techniques to determine the risks involved in giving the company credit and anticipate how to respond if business operations deteriorate or are unable to repay. A summary of the company's financial situation, an analysis of its ability to repay debt, an appraisal of its business practices and industry prospects, and any relevant qualitative aspects influencing creditworthiness will all be included in the report. Informed choices about the loan application will be made through a thorough examination to minimize potential risks and guarantee the bank's interests are protected.

Keywords: Rio Tinto, credit analysis techniques, loan, bank

1. Introduction

Rio Tinto is seeking AU$1 million from a bank over three years. This study looks at how creditworthy Rio Tinto is. As the lending officer in charge of reviewing this loan application, I will use four types of credit analysis to figure out the risks of lending money to this company and plan what to do if their business operations go down or they can't pay back the loan.

2. Company Portfolio

Rio Tinto employs 57,000 people worldwide and works in 35 countries, utilizing their combined efforts to create innovative solutions that satisfy the world's material needs. Their diverse portfolio includes essential commodities such as copper, aluminum, and iron ore, which are important for both societal and economic development and for meeting the goal of reaching net-zero carbon emissions. Rio Tinto is still dedicated to assisting the global energy transformation, and it is now conducting exploration operations for eight commodities in eighteen countries. In order to improve operational safety, efficiency, and environmental sustainability, the company welcomes technological breakthroughs such as automation and artificial intelligence, drawing on its more than 150 years of industry experience.

3. Method 1: Five Cs

3.1 Character

Rio Tinto Group is a global organization headquartered in the United Kingdom and Australia. It is the second largest firm in the world in the metals and mining industry, with BHP being the only company larger. According to Yahoo Finance, as of 19/5/2024, the market capitalization of BHP is AUD 232.682B, and the market value of RIO is AUD 220.16B. In terms of company managers, according to ABC News in 2021, Sue (2021) mentioned that Rio destroyed two 46,000-year-old caves in the Pilbara region against the wishes of the traditional owners, the Puutu Kunti Kurrama and Pinikura (PKKP), and then Chairman Simon Thompson and non-executive director Michael L'Estrange were compelled to depart from the firm prior to the 2022 shareholder meeting. Sue

(2021) also mentioned that Indigenous people and investors remain dissatisfied with the outcome, despite the fact that two senior executives tendered their resignations in response to this incident. This incident has the potential to impact Rio Tinto's reputation and public support. In terms of credit rating, Rio Tinto has a better credit rating, according to Rio Tinto's official website, its credit rating is A. About Rio Tinto's efficiency ratio, I calculated credit given, credit given, and stock turnover based on the annual report data from Rio Tinto's official website and compared it with companies in the same industry. Since Rio Tinto's annual report range is from January to December, in order to ensure the fairness of the comparison, I selected -Wheaton Precious Metals Corp., a company in the same industry with the same annual report range, instead of the company with the largest market capitalization in the industry. All data for Wheaton Precious Metals Corp. is from their annual report on their own website. Rio Tinto's credit given, and credit taken from 2020 to 2023, the annual data is consistently greater than that of WPM.L Company. Rio Tinto's average collection period has maintained a consistent duration of approximately 12 days from 2021 to 2023, whereas WPM.L Company's average collection period has remained steady at roughly 3 days. Rio Tinto has an average payment term of 130-140 days, while WPM.L Company has an average payment period of 9-11 days between 2021 and 2023. One possible explanation for this phenomenon could be that Rio Tinto's larger size, greater volume of traded items, or longer transportation distance may contribute to a longer average payment time. However, in terms of inventory turnover, Rio Tinto's turnover times are significantly smaller than WPM.L Company, and its turnover days are significantly larger than WPM.L Company. So, Rio Tinto's inventory management is not good enough, It has a lengthier backlog of inventory compared to other companies in the same industry.

3.2 Capacity

First, Rio Tinto is very competitive in the industry. Based on the financial statement data provided on Rio Tinto's official website, it is visible that the company's total assets experienced substantial growth from 20 to 2021, declined in 2022, and subsequently reached a new peak in 2023. The current overall trend is favorable. In 2021, total revenue experienced a significant rise, amounting to an increase of 18,884 million US dollars compared to 2020. However, in both 2022 and 2023, total revenue declined, with the fall being greater in 2022 than in 2023. This is similar to peer companies' overall revenue trends, which indicates that the industry environment is likely having an effect. About Liquidity ratio, Rio Tinto's current ratio is satisfactory, between 1.5-2 in four years. Rio Tinto's quick ratio has been greater than 1 in the past 4 years, which shows that it can meet current liabilities out of quick ratio alone. Therefore, from the liquidity ratio's perspective, Rio Tinto's capacity to fulfill its short-term obligations is considered satisfactory. In profitability ratio, the EBIT is projected to experience a substantial increase of 69% in 2021, but then fall back to a level similar to 2020 in 2022, and continued to fall in 2022, with a value lower than that of 2020. According to financial report data disclosed through the official website, although the revenue in 2022 and 2023 has decreased compared with 2021, the main reason is that R&D expenses and administrative expenses have increased quickly, resulting in a decrease in operating income in 2022 and 2023. Between 2020 and 2023, the trends of growth and decline in Rio Tinto's profits and sales are closely related. While the proportion of retained profit to sales has decreased in 2021, it is expected to exhibit an upward trend in 2022 and 2023, ultimately reaching a level of 71% in 2023. This company possesses the financial resources to fully repay the loan amounting to AU$1 million. The fluctuations in gross margin and net margin over the previous four years align with changes in income. The gross margin was maintained a steady level of approximately 60% in both 2022 and 2023, representing a notable 10% increase compared with comparable companies within the same industry. It is possible that the mining technology is more advanced, and the cost of the mining process is lower. Rio Tinto's net margin is nearly half that of companies in the same industry. Over the past two years, it has consistently maintained 20%. This suggests that there is potential for Rio Tinto to enhance sales efficiency and decrease administrative expenses. For ROA and ROE ratio, their numerical change trends are similar to others. In the past four years, they are generally higher than the company in the same industry, which means that Rio Tinto has higher asset utilization and operating capabilities, but it is also accompanied by higher risks. Therefore, Rio Tinto's ability to generate profits from its resources is nothing to worry about, but it is important to note that an increase in overhead expenses affects profits. In the leverage ratio, the interest coverage ratio is decreasing annually. By 2023, the company's earnings will have a coverage ratio of 7 for interest expenses. To sum up, I think that Rio Tinto has no issues with its capacity to repay its debts without delay.

3.3 Capital

In capital, from the aspect of leverage ratio, the Debt to Equity Ratio of Rio Tinto value has maintained a steady level of 0.2 from 2020 to 2023, which is below 0.3. So, this corporation has minimal overall debt relative to its equity. The mean amount of cash and cash equivalents as of December 31 during the previous four years is US$9,909, which is sufficient to fully repay a loan of 1 million AU dollars within a period of 3 years. Therefore, in aspect of capital, Rio Tinto has enough assets for this loan.

3.4 Collateral

In Collaterals, based on the financial report data for 2023 found on Rio Tinto's official website, Rio Tinto owns a number of smelters, refineries, and facilities for remelting and casting within the Group. These facilities include those for Aluminum, Minerals, and Copper. Using Copper as an example, the yearly production of refined copper amounts to 335,000 tons. According to the market index, the market price of copper is 16.78 AU$ per kilogram. Consequently, the annual value of the output is 5621.3 million AU$ per year (16.78*1000*335000). So, the collateral is enough for the loan of AU$1 million for 3 years.

3.5 Condition

In Conditions, the mining industry may face pressure to save energy and reduce emissions in the next few years, but Rio Tinto has begun to increase research and development efforts to use new technologies to mine and reduce carbon emissions.

Overall, in 5C method, bank can accept AU$1 million 3-year loan for Rio Tinto.

4. Method 2: Risk Premium Analysis

In the second method, I will use risk premium analysis. According to normal bank policy, all loans with a cumulative probability of default higher than 7% will be rejected. Rio Tinto's credit rating is A, assuming bond's rating and annual returns of A is 3.1%, 3.9% and 4.6% in 1-, 2- and 3-year, Government bond yield is 1.5%, 2.1% and 2.5% in 1, 2 and 3year, the result of all loans with a cumulative probability in three years are 1.55%, 3.43%, 5.9%, all smaller than 7%, so the loan should be accept.

5. Method 3: The Altman Z-Score

In the third method, Altman Z-score. According to 2023 annual report on Rio Tinto's office web, the data is on figure 1. Rio Tinto has relatively stable numbers from 2021 to 2023, with a Z-score higher than 2.99 for three consecutive years. The Z-score of 2023 is 3.19, so the bank can approve the loan.

Table 1. Financial Statement of Rio Tinto

Item	2023
Current assets	**21,510**
Total assets	**103,549**
Current liabilities	**12,743**
Total liabilities	**47,208**
Retained earnings	38,350
sales revenue	**54,041**
EBIT	**16,021**
market capitalization	120,810.00

6. Method 4: The KMV Model

In the fourth method, KMV model. At first step of this method, I calculated the market capitalization of Rio Tinto which is 91,926.11 million USD by using the current stock price from Yahoo and the reported number of shares from the company's official website. I downloaded the most recent four years of historical data for Rio Tinto stock from Yahoo Finance. From these numbers, I computed the monthly returns and subsequently determined the Volatility (0.0894) of these monthly returns. According to the annual report from Rio Tinto official website, I knew the book value liabilities is 47,208 million USD. Based on these data, according to the Accounting Identities, we can get the asset value is 139,134.11 million USD. According to the Black-Scholes Model, assuming asset of volatility equal to equity of volatility, so we can get the asset volatility is 0.0591. Then, according to the Model Values from Black-Scholes Formula, calculated the d1, d2 Equity Value and Equity Volatility. Next, using the solver function of the excel, adjust MV and asset volatility to make the assumed data consistent with the Model Values. After that, I got the Standard deviations of Assets, calculating the DD of Rio Tinto in three years is level 8, which means default frequency is 0.05%. Therefore, bank can accept the loan of Rio Tinto.

7. Approved the Loan One Year Ago

If the bank granted approval for the loan one year ago. Considering the current decline in the borrowing Rio Tinto's financial condition, and few of industry challenges. Including the impact of climate change, societal expectations, and environmental concerns. Additionally, there are easy to have scandals related to the health and safety of employees. Global trade wars and unstable international relations can have an impact on the extraction of resources and create uncertainty in demand, as well as pose a risk of product substitution. So, if bank want to hedge this increased credit risk, I have three ideas. First, the bank purchases a bundle consisting of an asset (either a fixed bond or FRN) and a puttable swap. The put option grants the investor the right to sell the asset swap bundle back to the bank at a defined strike spread. In this way, Banks receive investment goods that are more stable, whereas swap banks acquire debts that are riskier but offer higher yields. Then, bank has the ability to enter into an agreement to replace an asset swap package that relates to a less creditworthy reference with one that is tied to a more creditworthy reference. This means that bank has the option to transition to investment products that have reduced risks but also offer relatively lower returns. By undertaking so, the bank may eliminate any concerns over the timely repayment of loans. The counterparty has the opportunity to acquire products that entail comparatively greater risks but offer superior profits. Typically, bank will need to pay a substantial additional cost for this form of switch protection. Finally, the credit risk is associated with the swap provider, who acts as the insurance or guarantor and receives a compensation payment in the event of a credit event. But it is not an insurance, because the Swap is an over-the-counter (OTC) agreement and contracts can be established by a party that is not vulnerable to the underlying risk.

8. Approved the Loan One Year Ago

If Rio Tinto cannot pay back the loan as scheduled now. First, I would judge RioTinto to be in what kind of financial trouble right now, mild financial distress, moderate financial distress or severe financial distress. If it is mild financial distress, Rio Tinto only faces short-term cash flow shortages, it can repay the balance within 90 days. I am open to the possibility of changing or extending the repayment schedules. Additionally, I would recommend that Rio Tinto consider divesting certain mineral properties that it fully owns, as this may accelerate the resolution of its financial problems. Furthermore, if it is ascertained that the financial issue is a result of a temporary insufficiency of cash caused by a substantial transaction, and significant earnings can be attained once the deal is finalized, the option of short-term financial assistance can also be considered. Finally, banks can also Requesting equity capital injection. If it is moderate financial distress, Rio Tinto's cash flow problems coincide with its asset values declining. I propose initiating foreclosure proceedings on the mortgage of Rio Tinto and thereafter liquidating the mortgage in order to repay the Rio Tinto loan in a single, consolidated payment. If it is severe financial distress, Rio Tinto's missed payments and value of borrower assets less than loan amount. I must evaluate whether to liquidate the company or restructure the debt. If the need occurs for liquidation, I have to determine if I occupy a senior or junior position in the debt hierarchy, whether I am right to the full amount of debt owing, and whether the process of liquidation and payback is equitable for all debt holders. If the need occurs for restructure the debt of Rio Tinto, it is necessary to reorganize debts in order to ensure that all debt holders are treated fairly. If this is not done, the proposal to reschedule the debts will not succeed.

9. Conclusion

Banks have sufficient power to grant 3-year AU$1 million to Rio Tinto, but they must actively monitor the company and promptly implement appropriate steps to mitigate losses in the event of an industry catastrophe.

References

BHP GROUP FPO (BHP.AX) Stock Price, Quote, History & News, (2019). @Yahoofinanceau. https://au.finance.yahoo.com/quote/BHP.AX

Copper, (n.d.). Market Index. https://www.marketindex.com.au/copper

Debt Investors, (n.d.). www.riotinto.com. https://www.riotinto.com/en/invest/debt-investors

Dwyer, D., Kocagil, A., & Stein, R., (2004). MOODY'S KMV RISKCALC TM v3.1 MODEL NEXT-GENERATION TECHNOLOGY FOR PREDICTING PRIVATE FIRM CREDIT RISK OVERVIEW AUTHORS. https://www.moodys.com/sites/products/productattachments/riskcalc%203.1%20whitepaper.pdf

More Rio Tinto resignations to come following the destruction of Juukan Gorge caves, (2021, March 2). www.abc.net.au. https://www.abc.net.au/news/2021-03-03/rio-tinto-chairman-simon-thompson-resign-juukan-gorge-disaster/13210416

Rio Tinto Group (RIO) stock price, news, quote & history – Yahoo Finance, (n.d.). Au.finance.yahoo.com. https://au.finance.yahoo.com/quote/RIO

Rio Tinto Group (RIO.AX) stock price, news, quote & history – Yahoo Finance, (n.d.). Au.finance.yahoo.com. https://au.finance.yahoo.com/quote/rio.ax

Rio Tinto, (2023). Annual Report 2023. www.riotinto.com.

https://www.riotinto.com/en/invest/reports/annual-report

Wheaton Precious Metals Corp. (WPM.L) stock price, news, quote & history – Yahoo Finance, (n.d.). Au.finance.yahoo.com. Retrieved May 23, 2024, from https://au.finance.yahoo.com/quote/WPM.L

Wheaton Precious Metals Corp. Annual Report. www.wheatonpm.com. Wheaton Precious Metals Corp. – Investors – Financials (wheatonpm.com)