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Corporate Rating Methodology

A credit rating reflects both the ability and willingness of a company to repay its debts, including principal and interest, within the specified time period. The credit rating assigned is the opinion of the credit rating agency regarding the credit risk of the entity based on both quantitative and qualitative assessments. The rating will try to cover the risks faced by the company over a full business cycle (rate “through the cycle”) not at a point in time. Therefore, it is necessary to have a projection of the company’s future operating performance over the next 3-5 years. However, the assigned rating might be changed when the business environment such as laws and regulations, business model, or capital structure shift substantially from the original expectations.

Corporate Rating Criteria

TRIS Rating has two main components in analyzing the corporate sector: 1) Business risk analysis, encompassing an analysis of the industry and the business itself, and 2) Financial risk analysis, primarily focusing on quantitative factors, such as major financial ratios, and qualitative aspects ranging from accounting practices to financial policy.

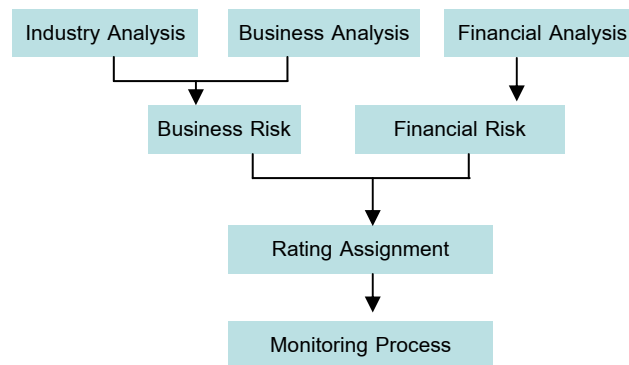
Both components of the analysis are critical to the process of assigning the rating. The assigned rating reflects the risk profile of the company from both perspectives. However, TRIS Rating has never relied on a fixed weighting system. The weight assigned to each risk factor, i.e. industry, business, and finance, might not necessarily be the same for all business sectors, since each business has its own strengths and weaknesses. Relying on a fixed weighting system constrains the ability to fully reflect certain critical strengths or weaknesses in the assigned rating.

The nature of business risk analysis is more qualitative than quantitative. The analysis includes departmental and management interviews as well as in depth analysis of various information and peer comparisons. The financial risk analysis includes analysis of the

financial statements and the forecasted financial performance. In general, financial ratios differ across industries. For example, the company that requires large initial investments but generates highly predictable revenue streams are allowed to have higher debt to equity ratios and might receive the same credit rating as the company which has lower financial leverage. Similarly, companies with strong business fundamentals are capable of taking higher financial risks than companies with risky business profiles.

Companies with similar business and long-term financial profiles might get different ratings due to other risk factors. Some companies might face short-term liquidity concerns or litigation risks that could negatively impact future operations or financial performance. For companies in different industry, the analysis must take into consideration industry-specific characteristics to determine the proper weighting of each factor. There may be risk factors that are somewhat subjective and, thus, demand careful evaluation by analysts and the rating committee. The two major risk factors, business risk and financial risk, encompass the following risk component analysis.

Chart 1: Credit Rating Process



1. Business Risk Assessment

A business risk analysis includes two categories, namely industry analysis and business analysis.

1.1. Industry Analysis

An industry analysis involves an assessment of risk factors in the industry. The analyst needs to have an in-depth understanding of the operating environment in which the firm operates in as these are factors that affect operations and competition for all firms within the same industry. Companies in the same industry will face the same industry risk. Risky industries are industries that have a high degree of competition, high elasticity of demand, several substitute products, huge investment requirements, long lead times to expand production capacity, or rapid technological changes. Conversely, industries that have stable demand, less competition, or high entry barriers are less risky. The industry analysis will cover the following aspects:

1.1.1. Industry Prospects

Industry prospects may depend on whether the industry is in the initial, growth, mature, or declining stage. A company that shows strong revenue growth may not always get a good

rating since it might be in the initial phase or its business might have experienced a rapid change due to the robust growth of the economy. Under such circumstances, the company's ability to maintain the growth is not yet proven. Companies in the technology sector are one example. Businesses generating stable and consistent revenue growth, e.g. utility and food companies, are regarded favorably.

1.1.2. Degree of Competition

The intensity of competition depends on several factors, including the number of competitors, the demand-supply situation, and product differentiation. Firms in some industries, e.g. cement, petrochemicals, or steel, compete on a regional or global level and their products are difficult to differentiate, making competition intense especially when there is excess supply. Price cutting due to excess supply is common in these industries. Meanwhile industries that have several small operators, e.g. property development, although compete locally, still have a high degree of competition. A business in the energy sector or utility sector, or businesses that require governmental licenses will face a lower degree of competition. These businesses require huge capital investments and/or have few competitors due to the limited number of licenses. These factors are major entry barriers.

The degree of competition also depends on how difficult it is for new players to enter the market. Competition will be high for industries that have relatively low barriers to entry, since newcomers can enter the market easily. In contrast, industries that require firms to make large capital investments, utilize advanced technology or have wide network coverage, will be partially protected from new entrants as the barriers to entry are high. Some type of businesses are vulnerable to threats from substitute products, as the ability of producers to raise product prices or to transfer increased costs to customers is limited because customers can move to buy substitute products if they offer lower prices.

1.1.3. Laws and Regulatory Framework

Changes in laws and regulations have a direct impact on company performance. For example, regulations that limit on factory emission will potentially raise operating costs. In some cases, a firm may be shut down if it cannot improve its production process to meet the stricter requirements. The reduction of import tariffs will negatively impact domestic producers, especially high cost producers.

In addition, legal or regulatory uncertainty can hinder industry growth. The telecom and banking industries are two industries that are currently undergoing regulatory changes.

1.2. Business Analysis

Business analysis evaluates the operational risks associated with management policies and business performance. The information required includes past operating performance, departmental interviews, a site visit, and interviews with management. The analysis will include the following factors:

1.2.1. Business Strategy and Management Capability

- Management Quality and Transparency

Management plays a crucial role in the success or failure of the company since all business and financial policies are the prerogative of the management team. To evaluate the management team's capabilities, the analyst will focus on the team's track record, past successes and failures, vision, credibility, and managerial style in terms of transparency, teamwork, and delegation of authority.

Even though the analysis is largely subjective, certain objective measurements are also taken into consideration by looking at the past success, growth rate, ability to cope with past crises, team continuity, and the financial status of the company.

In the final phase, after all information has been gathered and analyzed, and department interviews and site visits have been conducted, TRIS Rating will meet with top management. The management interview will cover industry prospects, the business plan, corporate strategy, and financial management. The assessment of management quality will be based on the interview, past successes or failures of the company, and the track record of the management team. TRIS Rating also asks for audit committee reports and interviews the audit committee to help determine the transparency of company's management.

- Organization Structure

The organizational structure has a significant impact on the rating. A good organizational structure should have a systematic working process and a good internal auditing system. In general, teamwork, good coordination among departments, a system of checks-and-balances, and a succession plan are prerequisite elements for the company to run smoothly.

A company that has just transformed from a family run company to a public company and run by a professional management team, requires extra scrutiny. Red flags are raised when management turnover is high or an organization's structure is frequently changed. In addition, the analyst will focus on whether any group of shareholders can control or exert pressure over the management team.

- Track Record

Normally, a start-up company will not get a good rating because it does not have a proven track record. It takes time to prove the capability of the company's management and the market acceptance of the company's products or services. Though growth may be strong in the initial phase, the company still needs time to prove that its growth is sustainable.

1.2.2. Ownership/Group Supports

TRIS Rating will analyze the ability of both the company and the whole group of companies to meet their obligations. The financial performance of the company will be impacted by the relationships among affiliated firms in the same group. Normally, companies within the same group will have inter-company transactions, e.g. inter-company borrowings, purchase agreements, or guarantee agreements that are provided to, or received from, related parties.

Weak subsidiaries with strong support from a healthy parent company will be able to get a higher rating than companies with similar characteristics that do not receive the support of a parent company. In order to obtain a higher rating, TRIS Rating normally requires concrete evidence of strong support, such as a shareholder support agreement or guarantee agreements provided by the parent company to its subsidiaries.

In contrast, a strong subsidiary might not get a rating different from its weak parent since there is a possibility that the parent might transfer assets out of the subsidiary or transfer burdens to the subsidiary. However, strong loan covenants covering dividend payments or asset transfers might help protect the subsidiary from intervention by the parent company.

The extent of the parent/subsidiary relationship can be determined by percentage of ownership, strategic importance of the subsidiary, revenues or assets contributed by the subsidiary, investment amount in the subsidiary, support provided to the subsidiary during a crisis, or subsidiary's brand sharing with its parent company. A company that is controlled by a group of shareholders, but which has a complex business structure (e.g. cross-shareholdings, high leverage or unreasonable investments), would be viewed unfavorably in terms of the rating.

1.2.3. Business Diversification

Diversification can lower business risk. A company can be diversified via business segments, products, geographic diversity of production base, or geographic and income diversity of the customer base. To be meaningful, such diversification must create benefits for the company. The benefits from diversification are low if the products are highly correlated. Companies with a variety of products should have lower credit risk than

companies that rely on a single product. Offering a number of products helps diversify revenue sources and gives more pricing flexibility.

To determine the diversification of the customer base, TRIS Rating will focus on the portion of revenue contribution from the largest 10-20 customers and the reliability of the major customers, as well as the impact of losing a major customer or if a major customer's financial position deteriorates. Reliance on one or a few customers implies lower negotiating power for the company being rated.

In order for diversification to be beneficial, it is crucial that firms must be capable of managing more than one business at the same time and, at times, competing in new business ventures without weakening their existing business lines. In many cases, operators have diversified into unfamiliar or unrelated businesses and later found themselves unable to compete, resulting in divestments.

1.2.4. Competitive Position

Several factors that impact a company's competitive position include:

- Production Facility

A site visit is a major step in TRIS Rating's rating process. The condition, location, and working environment of the production facility will be reflected in the company's production cost and its employees' satisfaction. In addition, a company in the fast changing technology industry is expected to consistently upgrade production lines to stay ahead of the curve.

Plant location is an important factor for some industries. For example, auto parts suppliers should be located near automaker and pulp and paper producers should be located near raw material sources to save transportation costs. Companies having plants in various locations benefit from reduced transportation costs and are protected from single site risk.

- Raw Materials

Having a sufficient inventory of raw material supply is an important factor for smooth operations, especially for scarce resources, such as minerals, oil, and forests. Secured sources of supply or long-term purchasing agreements helps to reduce the risk of shortages.

Raw material price volatility is also important. Frequent price changes will impact profitability, especially when increased costs cannot be passed on to end users. However, to mitigate this risk, the company may be able to manage cost volatility by buying forward contracts.

- Size

Size often correlates with the degree of competitiveness if management is capable to leverage its size. Normally, large companies will have competitive edges in terms of bargaining power, production costs, diversification of products, and distribution channels.

However, smaller in size does not always translate to lower in rating. A smaller company might have a competitive advantage over larger companies in terms of product differentiation, niche marketing, or superior technology. In addition, a small company might have more management flexibility and might be able to foster closer relationships with clients. However, small companies' financial profile normally face more severe impact during contractions in market size or the loss of a few major customers. In general, large companies that have substantial credit lines with financial institutions, will have more negotiating power than smaller companies.

- **Market Share**

A company with a larger market share has the upper hand over its peers in terms of greater negotiating power with suppliers and distributors and the ability to set prices. The evaluation will compare the market share figures of all players in the industry. A company has no competitive advantage if the market has only 3-4 players, each holding a relatively equal market share. In a market in which the company is a clear leader (i.e. market share is at least 20% and the competitor is made up of small players), the company is considered to have a strong market position and a high competitive edge as it can dominate the market and, to a certain extent, set the market price.

- **Cost Structure and the Ability to Control Costs**

Some products, such as oil, petrochemicals, petroleum products, cement, and sugar, are highly commoditized. Therefore, profits depend on the ability to control costs. Normally, large companies will benefit from economies of scale. However, the ability to control costs might also depend on the production technology.

2. Financial Risk Assessment

A financial risk analysis comprises of three elements:

2.1. Accounting quality

For the financial analysis, the analyst will focus mainly on information from the financial statements. TRIS Rating will rely on the audited and/or reviewed financial statements. Thus, the company's financial statements should be audited and/or reviewed by a certified public accountant who is on the SEC's approved list. The company's rating will be negatively impacted if the auditor expresses a no opinion on the financial statements. The company also has to provide clarification for off-balance sheet transactions, related-party transactions, or any significant restatements. The rating

will be adversely impacted if the company cannot provide clear reasons for these items because the reliability of the financial statements will be brought into question.

For the financial analysis, TRIS Rating will use the consolidated financial statements, rather than the company-only financial statements, to avoid the problems of transfer pricing or inter-company transactions. In addition, the consolidated statements will reflect the financial profile of the whole group.

In order to compare operating performance across companies, the analyst has to make certain adjustments to the financial statements, including:

- Extraordinary items or non-recurring items, e.g. gain (loss) from assets sold or gain (loss) from business restructuring. These items will be excluded from the operating profit calculation.
- Operating leases having similar characteristics as financial leases will be classified as financial leases. The analyst has to adjust the debt levels by calculating the present value of the minimum lease commitments reported in the notes to financial statements, as well as reclassify rent expense as interest and depreciation expenses.
- All guarantees and contingent liabilities that have a strong possibility of becoming real obligations in the future must be counted as debts.

2.2. Financial Policy Analysis

The financial risk analysis will include all aspects of the financial policies, including capital structure, debt structure, dividend policy, and reserves for bad debts or policies for writing off obsolete inventory. The financial policies must be in line with corporate philosophy and strategy. In addition, the management team must be committed to their stated policies.

For example, if the target debt to equity ratio is 1:1, the managers have to make their best efforts to meet the target ratio. If the company never attains the target ratio and has no plan or capability to reduce leverage to meet the target, this will indicate the policies of the management team were overly optimistic or were ill-conceived.

Whether the company pursues an aggressive or conservative financial policy cannot be determined solely from financial figures without considering the nature of the business. A business that requires a large initial investment is allowed to have a higher leverage ratio, given that its future revenue stream is certain and predictable.

2.3. Financial Ratio Analysis

The financial ratio analysis will cover ratios in four main categories: profitability, leverage, cash flow protection, and efficiency ratios.

2.3.1. Profitability

Strong profitability ratios reflect the company's strong fundamental and the ability to expand without overly relying on debt financing. A profitability ratio higher than competitors also implies a competitive advantage and the ability to control costs or adjust prices when needed.

Normally, the analyst will focus on the absolute profit, the profitability ratio, and the growth in profitability. A declining profitability ratio may imply either increasing competition or the declining popularity of the company's products.

Major profitability ratios include:

- Gross profit/Sales
- Net profit/Sales
- Operating profit/Sales
- Pretax return on permanent capital

2.3.2 Capital structure

A company's capital structure is also a factor to determine its financial strength. A company that relies on debt financing to expand will be riskier than one that uses equity or internal cash flow. In addition, the use of short-term funding to finance long-term investments might cause a liquidity problem. Though long-term debt provides greater repayment flexibility, long-term floating-rate debts expose the company to interest rate fluctuations.

The capital structure ratios include:

- Debt/Equity
- Long-term debt/Long-term capital
- Total debt/Capital

The debt analysis will focus mainly on the interest-bearing debts, excluding debts from commercial transactions. The ability to generate revenue and the certainty of the revenue stream will be the major factors used to determine the amount of borrowing.

Off-balance sheet items must be considered carefully. For example, unconditionally guaranteed debts that a company provided to other parties will be counted as its own debt when calculating all leverage ratios. Debts of joint ventures must also be proportionately allocated to all partners if the JV is strategically important to the company.

For companies using securitization as a source of funding, the analyst has to determine whether the transaction qualifies as a true sale. A true sale means that the seller is no longer associated in any future risks or rewards from the underlying assets. If the company must be responsible for the performance of the securitized assets, the company must add a

portion of the securitized assets and debt obligation of the SPV back to its balance sheet. Liabilities contingent upon litigation must be estimated and counted as liabilities on the balance sheet.

2.3.3. Liquidity and Cash Flow Protection Ratios

Cash flow protection is one of the major factor used to evaluate credit risk. Cash flow, not accounting profit, is the actual fund that will be used to pay the debts on time.

Ratios measuring cash flow protection are:

- Current ratio
- Quick ratio
- Funds from operations/total debt (adjusted for off-balance sheet items)
- EBITDA interest coverage ratio

The assumption of a direct correlation between the ratio figures and financial risk can be misleading without taking into consideration the firm's position in the business cycle. Normally, a company in the growth stage might have some liquidity problems in the short run, but in the long run, might be expected to perform better. However, a company in the mature phase will have excess liquidity, but long-term cash generation will be constrained by flat growth. Therefore, the company's focus has to be balanced between growth and liquidity concerns.

The financial analysis will take into account the financial flexibility of the company. A company undertaking stringent loan covenants has higher risk from breaching the contracts. Financial flexibility also includes the ability of the company to access the capital markets. Companies that primarily rely on bank loans or short-term debt instruments will experience less flexibility than companies that can raise funds in the equity or debt markets. Normally, commercial paper, i.e. Bills of Exchange, are subject to investor confidence, which exposes the company to liquidity risk during an adverse environment. Support within groups of companies or has substantial investment in non-core marketable securities will also help enhance liquidity and financial flexibility.

2.3.4. Efficiency ratio

Efficiency ratios reflect the ability of the company to manage assets, especially its working capital. Deterioration of these ratios will signal potential problems. For example, a significant increase in inventory, compared with the cost of goods sold, might imply a slowdown in sales. Otherwise, the company might accumulate stock in anticipation of higher prices in the future, which would heighten the risk of prices moving in the opposite direction. A decline in accounts payable days might imply lower supplier confidence in the company's financial position. A mismatch in the management of accounts receivable and

accounts payable will result in higher ratio of short-term borrowing to finance working capital. Examples of efficiency ratios include but are not limited to:

- Asset turnover
- Accounts receivable days
- Days of inventory

3. Rating Assignment

After a thorough analysis of all the business and financial risks, the analyst then presents the results to the rating committee. The rating committee will consider all the risks, make recommendations, and assign the rating by majority vote.

4. Monitoring Process

Once the rating is assigned, TRIS Rating reviews the operating performance and financial profile of the entity, and conducts a full-scale review at least once a year to ensure that the rating reflects the credit quality of the company. A full review is warranted if there are any sudden or significant changes in the business or financial profile of the company during the reviewing cycle.

Differences between Company Rating and Issue Rating

Generally, the corporate rating will be equal to the rating of company's long-term bonds (bonds that have an initial maturity of more than one year). However, it is not unusual for the issue rating to be different from the corporate rating (or issuer rating) because differences in the debt structure and/or the priority of debt repayment will cause differences in the seniority of each issue. Debentures may receive a rating below the corporate rating if debentures are structured to be subordinated debentures. In contrast, senior secured debentures may get a higher rating than the company due to the higher recovery than other debts. The rating of senior guaranteed debentures is based on the rating of the guarantor, whose rating is usually higher than the issuer. For partially guaranteed debentures, the rating will lie between the rating of the company and the rating of the guarantor; though not proportionately as the default rate tends to rise quickly in the event of a declining credit rating of the issuer. A partially guaranteed rating of an issuer whose rating is far below the guarantor will be closer to the issuer's rating. In addition, the rating will also depend on the guaranteed portion.

Notching Up/Notching Down Criteria

1. Notching down criteria

Notching down criteria will be based on the sufficiency of the outstanding assets after deducting for portions used to cover the repayment of higher priority debts. Generally, if the secured debts to total assets is higher than 20%, the rating of unsecured bonds will be one notch lower than corporate rating for

investment grade and two notches lower for non-investment grade. However, a higher percentage of secured debts to total assets ratio is acceptable if the firms' assets have market reference prices and are highly liquid.

In some cases, a company is temporarily allowed to have a higher secured debts to total assets ratio if the company is in a capital restructuring process or has a plan to reduce the secured debt portion below 20% of total assets in the near term.

Debentures that have the potential to get a lower rating than the issuer's rating are as follows:

- Senior Unsecured Debentures, in case other debts carry collateral or have higher rankings.
- Subordinated Debentures, as specified in the loan covenants
- Debts of a holding company whose earnings are only dividends from subsidiaries. Under Thailand's legal framework, the subsidiaries' creditors will have priority claims over the subsidiaries' assets than the creditors of the parent company except when the parent's debts are guaranteed by its subsidiaries.

2. Notching up criteria

The rating of secured debts might be higher than a company rating if the collateral value, after discounting by an appropriate discount rate, is higher than the secured debts. The number of notches increased will depend on the expected recovery value, quality of collateral, expected time to receive money after liquidation, and the certainty of the recovery.

General Financial Ratios

Profitability ratios

Gross profit margin (%)	=	$\frac{\text{Gross profit}}{\text{Sales}}$
Net profit margin (%)	=	$\frac{\text{Net profit}}{\text{Sales}}$
Operating margin (%)	=	$\frac{\text{Operating income} + \text{depreciation} + \text{amortization}}{\text{Sales}}$
Pretax return of permanent capital (%)	=	$\frac{\text{Earning before interest and tax}}{\text{Permanent capital}}$

(Permanent capital = the average of the current portion of long-term loans due within 1 year + long-term debts + deferred taxes + minority interest + equity + short-term loans)

Return on assets (%)	=	$\frac{\text{Net profit}}{\text{Average total assets}}$
Return on equity (%)	=	$\frac{\text{Net profit}}{\text{Average total equity}}$

Capital structure

Debt to equity (times)	=	$\frac{\text{Total debts}}{\text{Total equity}}$
Long-term debts to long-term capital (%)	=	$\frac{\text{Long-term debts}}{\text{Long-term capital}}$
Total debts to capital (%)	=	$\frac{\text{Total debts}}{\text{Capital}}$

(Long-term capital = Long-term debts + minority interest + equity)

Capital = Long-term capital + short-term loans)

Liquidity ratios

Current ratio (times)	=	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$
Quick ratio (times)	=	$\frac{\text{Cash} + \text{Marketable securities} + \text{Related parties' accounts receivable} + \text{General accounts receivable}}{\text{Current Liabilities}}$

Cash Flow protection

Funds from operations to total debt (%)	=	$\frac{\text{Funds from operations}}{\text{Total debt}}$
Free cash flow from operations to total debt (%)	=	$\frac{\text{Free cash flow from operations}}{\text{Total debt}}$
EBIT interest coverage (times)	=	$\frac{\text{Earning before interest and tax}}{\text{Interest expenses}}$
Earnings before interest, tax, and rental expenses	=	$\frac{\text{Earnings before interest, tax, and rental expenses}}{\text{Interest + rental expenses}}$
EBITDA interest coverage	=	$\frac{\text{Earnings before interest, tax, depreciation, and amortization}}{\text{Interest expense}}$

Efficiency ratio

Total assets turnover (times)	=	$\frac{\text{Sales}}{\text{Average total assets}}$
Fixed assets turnover (times)	=	$\frac{\text{Sales}}{\text{Average fixed assets}}$
Days receivables (days)	=	$\frac{\text{Total account receivables}}{\text{Sales}} \times 365$
Days inventory (days)	=	$\frac{\text{Inventory}}{\text{Cost of good sold}} \times 365$

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