Basic Methodologies for R&I's Credit Rating

(This report is an English translation of the original report in Japanese.)

Chapter 1 Overview of Rating Methodologies

1. Assessment for Issuer Rating

Upon assigning a credit rating on individual obligations, R&I evaluates the possibility of the issuer defaulting or otherwise failing (default risk analysis), then evaluates (recovery risk analysis) the likelihood of recovery after default (probability of losses in the event of default) and incorporates the outcome in the rating. Default risk analysis forms the base of the assessment since it determines the issuer's ability to pay completely all its financial obligations. This credit rating is known as the **Issuer Rating**.

In default risk analysis, R&I analyzes both business risk and financial risk. Refer to "Chapter 2, Analytical Approach to Issuer Rating" for details.

1-1 Business risks

Even if financial indicators are excellent at a given point in time, whether a company can maintain the soundness of its businesses in the future depends on the conditions under which the company is placed and its future development. It is important to carry out a thorough analysis of the business risk of a company to determine the current condition of the company and how this will change in the future.

Business risk refers to the uncertainty in projecting cash flows generated by the company's operations and the value of its assets. Business risk is judged based largely on (1) recognition of macro conditions such as economics and finance, (2) characteristics of the industry to which the company belongs and (3) the company's position in the industry and its characteristics. Risks (1) and (2), before considering the individual company's condition, pertain to the industry risk. Business risk is industry risks plus factors of the individual company.

Business risks assessment is centered on qualitative evaluations but also includes quantitative evaluations including variations to earnings and value of the company's assets.

1-2. Financial risks

Financial risk is the risk associated with financing and repayment. Even when business risk is at similar levels, the capability to repay debts would be different from one with negligible amount of debts and the one with large amount of debts. Assessment of financial risk is centered on quantitative analysis, or more precisely "financial analysis," but it also includes qualitative analysis such as financial policy, distribution of debt repayment dates and the relationship between the company and financial institutions.

Financial indicators considered crucial to the analysis vary from industry to industry.

1-3. Relationship between business risk and financial risk

The financial indicators required to obtain an A-level rating differ from company to company. It is difficult to foresee the future earnings and financial standing of a company with high business risk, and there is also the possibility of the company's earnings, cash flows and asset value fluctuating significantly. Such companies, therefore, need to have a financial profile that is sound enough to withstand such fluctuations, especially downward fluctuations. On the other hand, it is easy for a company with small business risk to come up with a future outlook for its earnings and financials, and its earnings and assets will be considered not susceptible to significant fluctuations. Therefore, financial indicators required for such company do not have to be as good as those for a company with large business risks to obtain an A-level rating. The required financial indicators for a certain level of rating differ from the size of the business risk. In light of these observations, the business and financial risks are closely related in default risk analysis.

2. Assessment of Individual Long-term Issue Ratings: Framework of Recovery Risk Analysis

Recovery risk analysis examines the likelihood of recovery after default (probability of losses in the event of default). Specifically, details of assets are taken into account to understand the condition of the resources covering the concerned obligations after the default as well as the creditors' position in debt collection. In case of secured debt, adequacy of the collateral assets compared with the concerned debts, the liquidity of the collateral assets, the degree to which disposal of the collateral will be subject to legal constraints and the period of time until the debt recovery is completed are important upon judgment. When examining the position of creditors, emphasis is placed on the contract details of individual obligations, such as whether it has subordinated clauses, and in the case of unsecured bonds, change of security status clauses and scope of negative pledge clauses.

If the recovery risk of the concerned debt is high and there was a difference with the recovery risk of other debts by the same issuer, R&I examines whether that fact should be reflected in the credit rating. Basically, the extent of recovery risk depends on the level of the Issuer Rating. A debt, which needs to be cautiously monitored for recovery risk, is assigned a rating lower than the Issuer Rating depending on the degree of risk (this is called a notch down and is done to differentiate the ratings). On the other hand, in case of debts with strong collateral such as government bonds and bank deposits, R&I considers assigning a higher rating than the Issuer Rating (this is called notch up).

However, there are cases when a debt, which was not assigned a differential credit rating reflecting the recovery risk at the time of issue, newly becomes subject to it in the future. For example, if the Issuer Rating changes in the future and R&I judges that the possibility of default has become higher, the importance of recovery risk of the concerned debt could become greater. At the same time, when the weight of secured debts that have priority over the concerned debt increases, the recovery risk may be reflected in the rating of the concerned debt even if the Issuer

Rating remains unchanged.

When the status of the creditors of the concerned debt is clearly subordinated to creditors of other debts by the issuer, such as in the case of subordinated bonds, R&I differentiates the ratings of the concerned bond and the Issuer Rating.

3. Short-Term Ratings

3-1 Short-Term Ratings

A Short-term Rating is R&I's opinion regarding an issuer's certainty to repay its short-term financial obligations as agreed. Short-term Ratings are assigned to short-term programmes such as commercial paper, an issuer's ability to pay its short-term financial obligations, and short-term individual obligations.

3-1-1. Major Rating targets

[Commercial paper programmes]

Commercial paper (CP) is an established method of short-term fund procurement. CPs usually have a shorter period from issue through redemption compared with corporate bonds and it is a fund procurement mechanism where importance is attached to flexibility in issuance. R&I, therefore, gives credit ratings to the "issue limit" (of the programme) the issuer sets in advance and not to each individual CP as and when they are issued.

Unlike CPs that are issued by corporates or financial institutions, R&I may give a credit rating to individual in structured finance products issued by SPCs by investigating the agreement each time they are issued.

[Short-term debts]

A credit rating is given regarding the issuer's ability to repay short-term financial obligations. The key points that are assessed are mostly the same as those applied when assessing CP programmes.

3-1-2. Basic relationship with Issuer Rating

Although Short-term Rating differs from Issuer Rating in both symbol and definition, the two share the same aspect of assessing the certainty in meeting payment obligations. For example, individual CPs are redeemed in a short period of time but the issue limit itself continues to be effective in the future and maintained for in the medium- to long-term. Therefore, it cannot be decoupled from a medium- to long-term assessment. Short-term Ratings are also assessed based on the issuer's fundamental creditworthiness (Issuer Rating).

3-1-3. Short-term factors also considered

While long-term creditworthiness is the basis for assessing a Short-term Rating, short-term factors are also thoroughly considered to assess whether short-term financial obligations are met

in accordance with the agreement. Specifically, short-term factors, such as cash flow characteristics, liquidity lever and its features, and fund-raising capacity in the short-run. The weight of these factors becomes greater in the assessment of a Short-term Rating compared with that of an Issuer Rating.

3-2. Key points in assessment of CP programmes

(1) CP issue limit and use of funds

The factors that are assessed first are the size of the issue amount the issuer plans to issue, as well as the frequency and purpose for issuing the CP. When the limit is high, R&I examines these factors focusing on the amount of CP the issuer is specifically planning to issue to cover actual requirements such as working capital and the reason for setting an issue limit exceeding the level of actual fund requirements. At the same time, R&I confirms the fundamental financial policy and future fund procurement plans, and examines the impact the size of the issue limit being set will have on the issuer's financial profile.

(2) Cash flow conditions

Based on monthly statements on cash flow statements and cash position of trading settlements, terms and conditions and other information, R&I will review the characteristics of funds inflows and outflows during the fiscal year and conduct a review of the issuer's plans to control the actual cash flows. R&I confirms the differences in the timing of payment proceeds and payments, the amounts each time and seasonal cash needs for items such as bonuses, dividends and corporation taxes, and closely examines short-term fund requirements during the fiscal year.

Understanding the level of liquidity such as cash and deposits during the period is also important. When excess cash is generated, R&I studies the issuer's fund management policy and details of actual management. By doing so, it reviews how much the issuer's liquidity, which is the resource for redeeming CPs, would change during the period and the type of assets under which they are managed.

(3) Relationship with financial institutions, etc.

R&I investigates the strength of the issuer's relationships with financial institutions, including personnel relationships. Furthermore, R&I will assess the size of funds it can procure from financial institutions in order to redeem CPs. For example, the credit line amount agreed to with financial institutions and borrowing status during the period.

3-3 Status of liquidity enhancement

In the past, when R&I was requested to assign a rating to CP programme, R&I used to specify the ratio of the amount of funds required as a backup line against the outstanding issue. A backup line agreement is signed to obtain loans from banks to redeem CPs when they mature in case the issuer faces a problem in refinancing due to uncertainties in the financial market. However, R&I no longer specifies the required ratio, as there are fewer companies actually

entering into backup line agreements.

Needless to say, whether or not the issuer is well prepared for a contingency is a crucial assessment factor. In addition to cash and savings and highly liquid short-term securities, R&I makes a judgment based on the extent of the commitment line and the issuer's overdraft limit. These flexible fund procurement lines based on agreements with banks are called alternative liquidity sources, which also includes backup line agreements. It is common practice for companies planning to issue CPs to secure ample liquidity. When R&I issues a news release on rating of a CP programme, it usually adds comments such as “the issuer secures adequate liquidity” and “the issuer needs to take measures to ensure alternative liquidity upon issuance of CPs” where necessary.

Chapter 2 Analytical Approach to Issuer Rating

Analysis of default risk, the basis for the Issuer Rating, is mainly composed of business risk analysis and financial risk analysis. The following explains analytical approach to Issuer Rating from these two aspects.

1. Issuer Rating

1-1 Framework for determining Issuer Rating

Business risk refers to the uncertainty in projecting the cash flows generated by the company's operations and value of assets. For example, how difficult it is to project profit-earning opportunities and actual earnings changes due to factors such as whether the market in which the issuer is carrying out its business activities is growing or shrinking, or whether the number of competitors is high or low. Whether a product is in the growth phase or matured phase of its life cycle also affects the level of difficulty in assessing the cash flow outlook. In business risk analysis, R&I judges whether the company has a certain level of competitiveness and market position, and whether it has management resources that continue to generate a stable cash flow, including management's will and ability to act. On the other hand, in financial risk analysis, R&I mainly analyses and assesses 1) whether the size of cash flows is sufficient for enabling smooth repayment of liabilities, 2) the company's capacity for investment to generate or increase stable cash flows, 3) its capacity to procure external funds and sufficiency of the liquidity so that it would not affect its financing, and 4) the adequacy of its buffer for risks associated with its assets or business. It is based primarily on analysis of financial indicators.

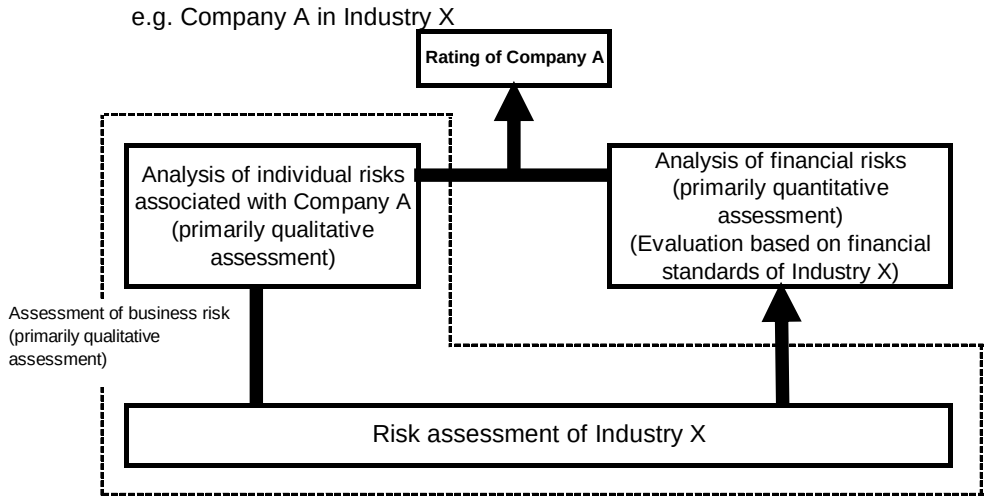
Business risk is made up of industry risks and company-specific business risks. First, typical risks associated with the industry to which the company belongs are assessed as industry risks. Even if they belong to the same industry, individual companies' business risks differ depending on their competitiveness in the industry and they are reflected mainly as qualitative factors in the assessment of company-specific business risks.

Indicators emphasized during financial risk analysis are determined according to the issuer's business characteristics. R&I sets standards of financial indicators for each rating zone and refers to those standards upon determining a rating. Financial standards are quantitative standards reflecting the business risks for each rating zone and they comprise of multiple indicators including profitability, size, capability to repay debts and financial profile. R&I analyzes how much the projected value of the financial indicators of individual companies subject to the analysis continue to outperform or underperform financial standards. Even if industry risks are high, it is still possible to mitigate the impact of the industry risks to a certain extent if the company's financials remain healthy. At the same time, even when the company fails to meet the standards set by financial indicators, it is possible that the strength of the individual company, which is a qualitative factor—how small the company-specific business risks is—makes up for the deficiency. The rating is decided based on a combination of factors that are industry risks, company-specific

business risks and financial indicators.

It is not always necessary that the company meets all of the standards. The importance (weight) of individual indicators differs from industry to industry. Upon assessment, R&I reflects the quantitative factors of financial indicators and qualitative factors depending on their importance. In analysis of individual companies, it determines the rating by analyzing business and financial risks including company-specific business risks.

Chart 1 Analytical Approach to Issuer Rating[1]



1-2 Economic cycle and business risks

Ratings by R&I reflects its opinion regarding the outlook over three to five years in the future. For this reason, R&I incorporates foreseeable economic fluctuations ranging from assumed outlook of macro economic environment to outlook of individual industries. These premises are also reflected in the assessment of business risks.

1-2-1 Economic cycle and financial standards

Financial standards set for each rating zone are established by factoring in the risk of an economic downswing. R&I assesses the company's ability to exceed these standards throughout a certain period of economic fluctuations. If, for instance, the company fails to meet financial standards, it is likely that R&I would leave its rating unchanged if the impact is of a temporary nature (a short-term impact) and the business is expected to recover from it in the near future. As a result, the actual default rate by rating tends to decline during a financial economic recovery and to rise in an economic slowdown.

[1] Business risks differ not only between industries but also within the same industry and therefore the required standard of resulting financial indicators differ from company to company. However, preparing the standards individually for each company does not serve the purpose of comparing between peers in an industry or between industries. Therefore, qualitative standards and financial standards are set for each industry.

When the company is underperforming financial standards, it is likely to lead to changes in the rating if R&I judges that the situation is caused by structural changes in the business environment and it is occurring beyond the scope that had been factored into the rating. It, however, is not a simple matter to determine if the change is structural or cyclical.

R&I draws up a credit scenario based on a certain awareness of the business environment when analyzing individual industries.

1-2-2 Difference in maturity of market and industry and industry risks

Risk differences in each industry are reflected in industry risk, which take into consideration market size, growth potential and competition. When there is a shakeout in the industry during market growth and diversification, and the industry structure completely splits, R&I pays more attention to the respective markets. Taking the printing industry as an example, there exist both small to medium-sized companies exclusively focused on traditional commercial printing and major general printing companies that offer a wide-range of products and services from industrial materials to electronics. The competitive environment for these two groups is obviously different. To begin with, the two groups are not competing on the same turf and their respective industrial risks differ in a strict sense. R&I analyses and assesses the printing industry's risks with primary focus on the companies in the latter group in the general printing industry. The land transportation industry is also divided into local movers that are more or less one-man businesses and major land transportation companies with nation-wide delivery network and distribution centers. The competition is intense in the former category with players coming in and withdrawing frequently whereas the latter market has been shaken out and has created oligopoly structure. A pyramid structure where the major companies are the principal contractors with small to medium-sized companies acting as sub contractors is already in place, and the competitive environment for the two groups are obviously different. R&I therefore is focusing on the major land transportation companies in assessing the industry risks.

Common to these industries are barriers to entry and the pyramid-like industrial structures. The low barriers encourage new entrants, resulting in intensified competition among small to medium-sized businesses. Companies that emerged from past competition victorious, expanded and acquired brand strength, have established positions as leading companies of the industry or similar positions. There is basically not much chance for companies jumping between these different levels, and R&I reflects such structures unique to different industries in industry risks.

2. Analysis of Business Risks (primarily qualitative factors)

2-1 Industry risks

2-1-1 Identifying the market subject to industry risk assessment

Industry risks in principle refers to the risk inherent to the industry in which the company belongs. It constitutes business risks and indicates factors that affect business and financial

fundamentals, such as variability in demand, business cycle, competitive status, changes in consumer taste, degree of technological innovation, size and frequency of required capital investments, and protection and regulation trends.

The basic premises in industry risk assessment include analysis of the macroeconomic environment as represented by the political situation, macro economy, financial system, adequacy of social infrastructure, trends in various regulations and industrial structure of the country where the company is located. The basic factors restricting business activities include trends in protection and regulation by the government, size and maturity of the economy and consumer trend.

Based on these premises, R&I identifies the market where the primary business base of the industry to which the company belongs lies. Companies in semiconductor, pharmaceutical and automobile industries compete globally without boundaries, while the markets for retail (local supermarkets) and railway industries, which rely on internal demand, are limited to the domestic market. In the case of the latter, R&I takes into account characteristics of the market and sets the domestic market for the subject of industry risks assessment. In the non-ferrous metal industry, mining rights and raw materials in the upstream of the business are located around the world, but is essentially limited to the domestic market. In this case, R&I recognizes the domestic market as the industry's primary market.

2-1-2 Factors that define industrial risks and their assessment

Industry risks are in principle assessed from the following aspects:

(a) Size, growth potential and volatility of the market

The size, growth potential and variability of the market are assessed. The market size indicates the size of the field in which the company conducts business activities and this is grasped using sales, total distribution value or size of assets. Even when the location of operations for individual companies is limited, as in the case of railroads, retail companies and regional banks, the market for the entire industry is subject to assessment. Opportunities for acquiring additional earnings increase if the market is growing, and earnings variation risk increases if volatility is high as the size of the market repeatedly shrinks or expands.

(b) Industry structure: Competitive environment

Competing companies and the competitive environment are assessed based on the standard of the entire industry. Next, R&I identifies competitive factors that are important for each industry based on the height of barriers to entry, the number of players (whether there are oligopolies or monopolies), intensity of price competition, and the degree of differences in marketing and sales capabilities. If the market has low barriers to entry, there are many participants and price competition is intense, then industry risks become greater. Typical examples include the retail

and apparel industries. The industry risks for industries such as electric power and railroad service are small as breaking into such industries is difficult due to significant investment required in infrastructure to provide an adequate level of services.

In terms of intense price competition, the competitive environment differs depending on whether the companies are competing even if they are prepared for deficits or competing in an orderly manner where they can ensure a reasonable level of profits.

(c) Continuity and stability of customers

R&I assesses the risk of the company losing customers in the future as the customer shifts to competitors. The main chekpoints are 1) whether it is actually possible for a customer to switch to competitors or to be replaced by other companies, 2) the existence of comparative advantage because of convenience, and 3) tangible and intangible costs associated with switching vendors. Consideration is also given to the ease in switching vendors after taking into account economic cost or whether loyalty can be maintained through tangible and intangible incentives, such as tactics and brand strength. The risks are low for electric power companies where customers in reality cannot switch to a competitor or for real estate leasing businesses in which tenants tend to remain in the same location (cost of switching to the company's competitors is high). At the same time, the risk is high for industries including the retail industry as it is hard to differentiate goods or services and customers are an unspecified number of general consumers, meaning the customer's cost of switching to another company is low. In particular, switching between brands happens quite often in daily goods as their price elasticity is high.

(d) Capital and inventory investment cycle

R&I assesses both "frequency of capital investment" and "certainty of investment recovery." Capital investment includes new investment, replacement of equipment due to technical innovation and facility upgrades, and additional investment in existing facilities to maintain and expand demand. When the frequency of investment is high, investment recovery risk in the same industry will also be high. Period for capital investment recovery is understood in terms of the time period in which the next investment becomes actually necessary and not the legal useful life. In terms of certainty of investment recovery, the evaluation is positive when frequency of investment is low and certainty of recovery is high even if time is required for the investment to be recovered.

Investments are not limited to facilities but include investment in inventory and research and development. The process industry requires maintenance and is based on the premise of long-term recovery, and it can be assessed relatively positively if its cash flows are stable. Assessment for semiconductors and semiconductor equipment manufacturing tends to be negative as their lifecycle is short and they require vast amounts of frequent investments, boosting the uncertainty

of investment recovery. Evaluation of video game software developers also tends to be negative, as the probability of developing a hit software is not always high when considering the required investment; meaning there is substantial uncertainty regarding investment recovery.

(e) Protection and regulations, and public interests

If the industry is protected by regulations and the situation is not expected to change, its evaluation would be high. From this standpoint, the current status of regulations and protections and their future direction are reviewed. The electric power industry is highly protected by legal frameworks and R&I's risk assessment is positive for such companies. R&I also evaluates comparatively positively the industries with a certain level of regulations such as the highly public railroad services and depository financial institutions to ensure stability in the financial system. On the other hand, R&I evaluates negatively the consumer credit industry in this respect as its business environment is becoming more severe due to the impact of revised money lending system and Installment Sales Act.

2-1-3 Industry risk grouping

The degree of industry risks affects a company's profitability levels and financial profile. When operating a business in a high-risk industry, it would not be worth the risk unless the margin is higher than that of running the business in a low-risk industry. In terms of financial profile also, if the industry's risk is high, a company needs to have a thick buffer to absorb any unforeseen losses. Consequently, in rating assessments, the higher the industry risks, the higher will be the requirements for profitability and the more conservative financial profile for securing the same level of rating as a lower risk industry[2].

R&I broadly classifies industry risks into five degrees: 1) low-risk industry, 2) comparatively low-risk industry, 3) medium-risk industry, 4) comparatively high-risk industry, and 5) high-risk industry. While it is difficult to have a uniform order of industry risks for all industries, the classification into groups enables identification of the magnitude of the relative industry risks between the groups.

Industry risks are low for industries such as railroad and electric power, which have substantial importance as social infrastructure and where entry regulations are substantively in place. The high public interests of depository financial institutions and life and casualty insurance and the protections and regulations in these industries also limit their industry risk. On the other hand, industry risks are deemed to be high in the semiconductor and semiconductor equipment industries, where, on top of fierce competition market volatility is very high and frequent capital

[2] The reason for evaluating industry risks utilizing the same set of factors outlined in (a) to (e) is to make clear observations, from a cross-industry and quantitative point of view. R&I seeks to translate qualitative operational risks into quantitative risks. However, given the difficulty and insignificance in ranking all industries by industry risks,.R&I has classified the degree of industry risk into five groups.

investment is a must. The highly competitive retail industry, where the consumer price elasticity for products is high, is another high-risk industry. By combining the degree of industry risks with the business models defined below, in most cases it is possible to compare the relative creditworthiness between industries using the same indices within the same business model.

The recognition of industry risks will change to reflect changes in the economic and business environment. R&I carries out regular reviews of industry risks from the perspectives described in above (a) to (e) above.

2-2. Classification according to business characteristics

In this section, the industries are categorized by business model. In order to make it easy to carry out inter-company or inter-industry comparisons, R&I has classified the industries into several models from a common vantage point. R&I takes into account factors such as whether to give importance to static analysis in the stock business or to dynamic analysis with focus on flow indices, or whether the industry is one with high capital intensity or one with high labor intensity. Since the emphasized financial indicators tend to be similar within the same business model, the combination with size of industry risks makes comparison between industries simpler. On the other hand, in inter-industry analysis where the business models differ, the quantitative indicators emphasized in analyzing financial risk also differ. For example, in basic materials and other manufacturing industries, when capital investment is recouped through cash flow, importance is given to the estimated years of redemption, which denotes the time needed for redeeming the debt, the scale indicators of profitability and equity capital, and financial profiles such as the composition of liabilities and equity capital. Whereas, in the case of the financial industry, importance is placed on risk resilience indicators, which examine the adequacy of the buffer for absorbing the various risks. This is because they tend to build their business assets on the back of a huge amount of funds procured externally to secure stable, long-term profits. When analyzing financial risks, even if financial indicators for comparable industries belonging to the same type of business model are examined, the significance of figures required for the same rating zone may be different. This is due to the likely impact of other factors such as the maturity level of the industry.

Based on their characteristics, R&I has broadly classified business models into different types. These include: (1) investment recovery, (2) asset management, (3) asset utilization, (4) asset turnover, (5) hybrid, and (6) labor intensive business models. The characteristics of these business models are as follows:

(1) Investment recovery business model

Typical process industries such as the manufacturing industry, which primarily place importance on the ability to recover capital investment from cash flow, fall into this model. R&I examines profit margins with respect to capital outlay (return on invested capital, or ROIC;

return on asset, or ROA), and whether the company is generating enough profit to satisfy required amount of investments and whether investments can be recovered in a certain period of time. Importance is given to factors such as duration of recovery of capital investments and repayment of debts (net debts to EBITDA) as well as the company's financial profile (equity ratio, net debt equity ratio)..

. This business model includes the pharmaceutical industry which have a large proportion of investments in R&D and capital investment recovery, and producers of end user goods that require both flexible marketing expenses and cost structures, as well as profitability. This model also includes industries with capital and labor intensive businesses. They can be further classified according to their unique characteristics.

(2) Asset management

This is a business model that earns returns by accumulating operating assets using funds procured externally. The financial industry (depository financial institutions, consumer credit, business financing, life insurance, non-life insurance, etc.) falls under this category. Importance is given to ROA (which indicates whether appropriate profits are being generated from operating assets) and resilience indicators showing the amount of the risk measured under certain stress conditions that can be absorbed by equity capital, future profits and other buffers.

(3) Asset utilization

Real estate leasing business and department stores fall under this category. In this business model, R&I primarily envisages businesses that earn rental revenues over the long-term from real estate.

In addition to the amount of earnings and return on assets (ROA) as verified by competitiveness and brand strength based on the location and specifications of the property, indicators regarding debt redemption capabilities demonstrated by whether the company can repay debts with stable earnings are also important. In many cases, the method adopted by department stores takes the form of either consignment sales (renting space to apparel makers and wholesalers) or purchase upon sales. Therefore R&I evaluates department stores by taking into account their characteristics as retailers as well as their business model, which is similar to leasing operations.

(4) Asset turnover

This is the business model where adequate profits are earned by converting current assets such as stock or inventory. The model is a repetition of the cycle of procurement-processing-sales and back to procurement and the difference in price between procurement and sales becomes the profit. Businesses that fall under this category include retailers, wholesalers, real estate developers, and securities companies. Importance is given to whether the business is adding value to the procured raw materials and selling them within a certain period of time and whether an

adequate margin is maintained during that process. Also important are factors such as benchmarks for the turnover period of inventory assets, in addition to profitability indicators used to evaluate margin levels including the operating income margin and EBITDA margin, and the amount of profits.

(5) Hybrid

The hybrid business model combines features of the investment recovery, asset management and asset turnover business models. Two typical examples of businesses under this model are general trading firms, which are involved in businesses spread across a diverse spectrum such as trading and concession rights, in addition to general real estate companies involved in both leasing businesses (asset-utilization model) and real estate development businesses (asset-turnover model). Companies that are involved in operations with varying business types fall under this category.

In addition to profitability indicators that show whether appropriate profits are being secured, important factors include the profit scale, which indicates the investment capacity and risk resilience indicators that assess the adequacy of the buffer for tackling asset impairment risks. The status of risk management also informs an important perspective from the aspect of assessing whether the company is successful in balancing different businesses.

(6) Labor intensive

Service industries such as land transportation and broadcasting fall under this category. Also included in this business model are businesses with high workforce investment such as video game software developers. Profit margins and expense ratios are important indicators to identify whether the business has a profit and expense structure that enables steady periodic income. Differences in marketing capability and cost control ability are also crucial. The breakeven point ratio is also taken into account. Profit scale and equity ratio are important indicators in assessing respectively the value of the business base and financial resilience when periodic income worsens significantly under stress.

2-3 Assessment of company-specific business risks

2-3-1 Perspective for assessing company-specific business risks

While industry risks denotes the standard risk of the industry to which the concerned company belongs, company-specific business risks primarily indicates qualitative factors such as the company's business base, competitive status, technical and product development capabilities, and cost structure. This is another factor that comprises business risk along with the industry risks. Even if industry risks is high, the business risk can be decreased by offsetting industry risks with the company's market position, strength of its relationship with customers of good standing, superior technical and product development capacity, degree of dispersion of earnings sources,

flexibility in cost structure, expertise in risk management, and sufficiency of corporate governance.

R&I assesses company-specific business risks by separating them into the categories outlined below and then evaluating them.

2-3-2 Factors that define company-specific business risks and their assessment

a) Assessment of business base and competitiveness

・ Market position

This is one of the concrete indicators in assessing the utilization of the customer base. R&I examines a company's market share in relation to the company's main operating base. If the share is high, it demonstrates that the company has been able to attract many customers with its operating base. In a broad sense, this could be termed as a factor that makes up the evaluation of the customer base.

・ Brand strength

This indicator measures the company's strengths and weaknesses regarding its ability to attract customers. If a company has high brand strength and control over selling price, it will have high competitiveness and will be able to ensure stable profits. In cases where a company has customers attached to certain products or to the company image, price elasticity of demand will be low overall (the product sells even without discounts) and the company is deemed to have brand strength.

・ Customer base, selling power

This indicator measures the quality of the customer base and the size of its contribution to profits. R&I analyzes the diversification and the depth of the customer base, and the transaction. A company is assessed positively if it has strong relationships with good customers and has secured stable transactions over the long term. Conversely, even if the company has long-standing businesses with specific customers or is dependent on such customers, and these customers are primarily at a competitive disadvantage, the assessment will be low.

Factors that support the relationship with the customers include marketing strength, sales structure, and service systems (maintenance). Especially when assessing marketing strength, R&I compares the companies cost and effects in order to maintain and improve competitiveness, by examining the relationship between the expense ratio and sales growth, and the relationship between customer acquisition cost and the average recovery period.

b) Technical and product development skills

Assessment is made from the perspectives of new product development ability and the ability to respond to technological innovations. The number of patents, magnitude and details of investments in R&D, human resources acquisition, existence of comparative superiority with respect to competitors are taken into account. If the company has managed to respond well to

technological innovations and secure advanced technologies, it would be reflected in the assessment.

c) Ability to avoid risks by diversifying or concentrating earnings sources

Effect of diversification of earnings sources can be measured from the perspectives of product portfolio and regional (or bases) composition. Particularly, the stagnation of domestic demand-oriented companies reflecting the maturing domestic economy in recent years has become pronounced and more and more companies are pressed with the need to expand overseas where the markets are growing.

Diversification of earnings sources is not necessarily positive when management resources are limited. Even if the transactions are concentrated among several customers, as long as the relationship with good customers is strong, the company may be able to obtain a positive assessment to a certain degree.

R&I also takes into account the existence of money-losing operations and their degree of impact. Even if the company diversifies to gain earnings opportunities, there are cases where these businesses have been unprofitable and have become a drag on earnings. In such cases, this phenomenon will serve as an adverse factor for the evaluation. Investments outside core business will also be evaluated similarly if there is no proper balance between risk and returns.

d) Stability of raw materials procurement and adequacy of procurement base

In the case of the manufacturing industry, R&I primarily assesses the stability of the procurement of raw materials necessary for manufacturing products and also price negotiation capabilities. For the financial industry, where the resource for sales operations is funds, R&I assesses their financing ability by examining the adequacy and stability of the fund procurement base ability. R&I examines the manner in which a company responds to changes in the market for raw material market and changes in the financing environment to assess its level of preparedness as well as its ability to maintain stable procurement: other important factors include the relationship with major vendors and the diversification of vendors.

e) Flexibility of cost structure

Assessment is made as to whether fixed costs (including working capital and inventory investments) can be controlled by management, and how flexible the company's cost structure is in line with changes in the business environment. It is considered as the “margin” for cost reduction when faced with stressed conditions in the future. Operating capital and control of inventory investments are also key factors. If the company has been successful in shifting expenses to variable costs, this evaluation will be more positive.

f) Corporate governance and risk management

Evaluations are conducted within an establishment and operations framework with respect to whether corporate governance, compliance, and internal controls are established and are functioning properly, and whether risk management procedures are in place and working effectively. Its importance is greater in industries that are exposed to reputation risk and in asset management industries where the there is strong emphasis on risk management evaluations.

Quality of management is also an important factor. R&I assesses whether the company has been able to maintain its performance by taking appropriate actions when faced with contingencies and whether the vision associated with corporate strategy and its direction are adequate given the business environment and the situation in which the company is placed.

Among different management policies, financial policy is of particular importance. For example, upon implementing management decisions such as mergers and acquisitions, it is indispensable to examine and confirm how the company would carry out financing using liabilities or assets and how it would maintain its subsequent financial stability. As far as financial discipline is concerned, it is also necessary to confirm the company's stance regarding acquiring treasury stock.

With respect to risk management and corporate governance, R&I attach importance to interviews with top management as well as other managerial staff to survey the effectiveness of those measures. R&I place importance on interviews with top management as well as other managerial staff to examine the effectiveness of risk management and corporate governance. Past fluctuations in profits and the value of operating assets could also be used as parameters to verify the degree of business risks. Quantifying business risk will help in comparing and evaluating the scope of business risk across differing industries and businesses.

3. Financial Risk Analysis (mainly quantitative factors)

R&I assesses the level of strategic investment capacity and resilience against business risk based on the company's finances. This is primarily analyzed based on the company's the financial base (a quantitative factor).

3-1 Factors and perspectives in evaluation of financial risk

R&I focuses on financial indicators such as earnings capacity, cash flow size and investment capacity, debt redemption period, the quality and size of shareholders' equity or net assets, and financial profile (Equity capital ratio, dept-equity ratio). Examples of important financial indicators are listed below. Evaluation of these indicators is carried out from a long term perspective and not based on a specific point in time.

(1) Earnings capacity

R&I assesses whether the company has an earnings capacity that meets the invested capital and whether products are competitive and are securing adequate returns. This indicator is important in many businesses such as in the manufacturing industry.

Earning capacity is important as an indicator that describes a company's competitiveness, which mitigates industrial risks, and its resilience against economic downturns. Ensuring adequate profit margin and preparing a certain level of earnings strength leads to cash flow generation capability and stability. In addition to a high earnings capacity, stability is particularly important. Also, when focusing on the investment recovery business model, there are cases where EBITDA (earnings before interest, taxes, depreciation and amortization), is used to determine investment capacity after adjusting for interest rate, non-cash expenses and tax rate, etc.

<Examples of indicators>

ROA, EBITDA/total assets, operating income margin, EBITDA margin

(2) Scale and investment capacity

In order to maintain and improve competitiveness, it is necessary for a company to make the capital investments and R&D required to respond to increasingly sophisticated customer requirements. It is necessary to have a certain level of investment capacity irrespective of the market environment.

If EBITDA is large each term, the company may be able to seek more significant investment deals. If its shareholders' equity is large, the company would be able to absorb larger risks—such as deteriorating income caused by falling demand in a recession or an impairment in operating assets—and support a significant operations. Furthermore, shareholders' equity and EBITDA can be used as indicators in assessing the company's capacity for strategic investments、such as M&As.

<Examples of indicators>

EBITDA, shareholders' equity, R&D investment

(3) Debt redemption period

It is used to evaluate the balance between gross/net debts and cash flow and whether the company is capable of repaying debts over a reasonable period.

<Examples of indicators>

Gross/net debt/EBITDA , gross/net debt/operating cash flow scale

(4) Financial profile

A company needs to have the capacity in its financial profile to facilitate smooth fund procurement for capital investment or operating capital from financial institutions even during economic slowdown. A company's financial profile is also an important indicator in assessing the adequacy of shareholders' equity, which acts as a buffer in times of deteriorating revenues or impaired assets. In many cases, especially in the manufacturing industry, where the operating

capital burden is high, net debt-equity ratio is given importance over simple shareholders' equity ratio.

<Examples of indicators>
Shareholders' equity ratio, net debt-equity ratio

(5) Indicators unique to business models

There are also unique indicators depending on the business model. In the financial industry, which belongs to the asset management business model, importance is given to risk resilience indicators to evaluate the adequacy of buffers for absorbing various risks. Businesses categorized in the investment recovery business model, such as in the pharmaceutical industry, where importance is attached to the capacity for R&D investment, R&I focuses on scale indicators including investment in R&D and surplus fund margins.

<Examples of indicators>
Risk resilience, R&D

6) Liquidity risks

Control of liquidity risks is critical for the asset management businesses model where a vast amount of funds are procured and operating assets are accumulated. Therefore, R&I assesses fund procurement stability and the means to ensure alternative liquidity in adverse situations. The non-bank industry, which has high refinancing risk, tends to have higher liquidity risks compared with depository financial institutions, which possess secure fund procurement mechanism, and it is important to conduct thorough research of the relationship with financial institutions, future fund procurement capacity and liquidity on hand. Even among banks, those procuring funds mainly from marketable external debts, etc. other than retail savings have high fund liquidity risk. Furthermore, the asset turnover business model, which emphasize flow that convert operating assets in a certain period, tend to be influenced by environmental changes in the short-term, compared to investment recovery businesses, such as in the manufacturing industry. Therefore, asset turnover are likely to have liquidity risks. To be sure, liquidity here refers to liquidity used in assessing a company's creditworthiness and it does not indicate an evaluation of liquidity risk for individual bonds.

3-2 Relationship between business risk analysis and financial risk analysis

.In financial risk analysis, R&I evaluates factors, such as 1) financial base as a result of accumulations and achievements, 2) risk resilience and impact on the cash flow generating capacity and financial stability, and 3) resilience in a stress scenario based on business risk evaluations..

Ultimately, R&I comprehensively determines the rating by combining the adequacy of financial indicators based on industry risks and assessment results of company-specific business risks. Business risk analysis and financial risk analysis are mutually related and their ratio differ from industry to industry. Rating ultimately is an overall judgment of these analyses and R&I does not simply comes up a weighted average.

4. Quantitative Factors and Qualitative Factors

Financial data considered in financial risk analysis such as profit-earning capacity, size and available investment capacity, debt redemption period, and financial structure, are quantitative factors. Factors considered in business risks such as industry risks and risks associated with individual companies, are qualitative factors. However, some factors in business risk analysis can be also be understood quantitatively. For example, a company's market share could be a standard for analyzing competitive strength, which is one factor when measuring the value of business base. Changes in profit-earning capacity and variable asset values are relevant. At the same time, some factors for financial risk analysis require qualitative judgments and these include financial operation policy and management policy concerning liquidity risks. As described above, qualitative and quantitative factors are closely linked to the analysis of business risks and financial risks. Financial data at the center of financial risk analyses need to be understood qualitatively in interviews regarding the company's financial projections and background, and deviation from actual performance. This helps in judging the feasibility of the company's plans. Conversely, qualitative factors for assessment of business risks may be understood visually by quantifying them as much as possible. For example banks, insurers and general trading companies for which risk control is highly important, R&I confirms their fundamental policies and frameworks through interviews. Then, R&I checks their effectiveness using materials for internal discussion when the company is under stress. When determining the rating, these factors are combined to reinforce the logic of the rating from both a qualitative and quantitative perspective.

[Relationship between analysis objects and qualitative and quantitative factors]

	Qualitative factors	Quantitative factors
Business risks	Industry risks	Profit fluctuation
	Risks associated with individual companies	Asset value fluctuation
Financial risks	Financial management policy	Financial data analysis
	Factors associated with liquidity risks	

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