24-D-1561
February 3, 2025

Revisions of Rating Methodology by Sector "Machinery"

Japan Credit Rating Agency, Ltd. (JCR) hereby announces that it has revised rating methodology by sector "Machinery."

The revisions do not alter the framework, concept, treatment, or other details of the methodology. Descriptions in the methodology have been revised to reflect recent trends and other factors in the explanation of industry characteristics that form the backgrounds of the methodology, or to make the explanation of the concept easier to understand. Therefore, there is no impact on individual ratings.

The revised rating methodology will be posted on the page of “Rating Methodologies: Corporates” (https://www.jcr.co.jp/en/rrinfo/meth_corp/) of JCR’s website.

Takeshi Rikawa, Yusaku Hokakubo

Japan Credit Rating Agency, Ltd.
Jiji Press Building, 5-15-8 Ginza, Chuo-ku, Tokyo 104-0061, Japan
Tel. +81 3 3544 7013, Fax. +81 3 3544 7026

Last Updated: February 3, 2025

Rating Methodology by Sector

Machinery

Machinery covers a wide range of areas, including general machinery, electrical machinery, transportation machinery, and precision machinery, but this rating methodology is applied only to general machinery (hereinafter referred to as "machinery").

1. Business base

Demand for machinery is generally influenced by trends in private-sector capital investment, and in many cases there is intense price competition, especially for general-purpose machinery. In addition to analyzing product competitiveness, which is the source of earnings and cash flow, JCR also evaluates factors such as efforts for mitigating earnings volatility, financial resilience in the face of deteriorating business performance.

(1) Characteristics of industry

(i) Market overview

Machinery means industrial machinery that is used in production activities at factories and other business sites, as well as machinery and appliances that are embedded in various machines. The former includes machine tools, construction machinery, and agricultural machinery, while the latter includes prime mover and power transmission equipment. Capital goods such as machine tools are strongly affected by private-sector capital investment. On the other hand, while machinery parts such as power transmission equipment are affected by the production volume and equipment operating status of users, demand fluctuations are smaller than for capital goods.

Machinery covers a wide range of areas, and while some manufactures specialize in specific fields, others develop their business in a diversified way through derivation and application of basic technology or through acquisitions. Most machinery is based on technologies that have been developed in the past, and improvements and applications have been made to make it more advanced. In recent years, there have also been new demands for machinery due to rise in environmental awareness and progress of automation. Electric vehicles and industrial robots are typical examples. Depending on how manufacturers respond to these changes, they can present new business opportunities, but it is also necessary to note the risk of being replaced or eliminated.

Demand for machinery has expanded significantly since the second half of the twentieth century, in line with the industrialization of Japan, Europe and the United States. Until now, demand has been centered on developed countries, but in the future, demand is expected to increase as it is joined by demand from emerging countries, which will be experiencing economic growth.

(ii) Competition situation

The competitive landscape varies noticeably depending on the type of machinery. Some manufacturers enjoy overwhelming dominance in niche markets, while others face intensifying competition with entry of new competitors. In general, established manufacturers in Japan, Europe, the United States, and other developed countries enjoy a strong hold on high value-added machinery, while Asian manufacturers have been expanding production of economical machinery with lower quality.

At present, manufacturers in developed countries have a competitive edge in product quality, such as precision and durability, and they maintain their competitive advantage in high value-added products. In addition, in emerging markets, markets for mid-zone machinery in terms of quality and price have been growing. As price competition is fierce in these markets, machinery manufacturers have been taking steps such as cutting costs and developing products with specific quality. However, in these volume zones, speed at which Asian manufacturers are catching up in terms of knowledge and know-how is also fast, so caution is needed.

(iii) Cost structure

As cost structure varies depending on the machinery handled, it is essential to analyze machinery manufacturers individually. In recent years, in addition to the rise in variable costs such as raw materials and outsourcing costs, fixed costs are also on the rise, as machinery manufacturers are investing for enhancement of production capacity and are proactively securing human resources to improve competitiveness and develop markets in emerging countries.

Against the backdrop of the need to maintain and improve competitiveness and develop emerging markets, it is thought that fixed costs will continue to rise, as machinery manufacturers will need to aggressively implement R&D and capital investment. In addition, raw material prices and labor costs are also appear to be on the increase. In this situation, manufacturers are focusing on raising sales prices through the provision of high added value and reducing costs through measures such as improving production efficiency.

(2) Important factors in market position and competitiveness

(i) Market position

It is important to confirm market position, because a high market share backed by technological capabilities leads to maintenance of stable business relationships with users and securing of profitability. However, it does not guarantee an ability to negotiate prices with customers or a strength of profitability, and JCR also checks the trends in market share and the factors that shape market share. These factors include product development capabilities, production technologies, patents, and production and sales structures. Know-how, experience, and other expertise that are cultivated through the process of significant capital and time are outlaid are also considered factors that support a position in the market. JCR compares these factors with competitors, identifies the similarities and differences, and determines the degree of competitiveness of manufacturers. JCR believes that manufacturers who have earned the trust of customers through their long-standing performance and can build brand power and strong business relationships are considered to be able to maintain stable market shares.

(ii) Customer base

Demand for machinery changes depending on production activities and capital investment trend of customers. For this reason, JCR confirms the degree of dependence on major customers and specific customers. This is also an important point to judge an ability to control risks of demand fluctuations. While machinery manufacturers handle general-purpose products, they also sometimes handle custom-made products tailored for the requirements of specific customers. As customers value stable product supply and functionality, they often narrow down the number of manufacturers with whom they place orders. As a result, they tend to develop strong ties with certain manufacturers. Although these strong ties are basically considered a positive factor, it is necessary to pay attention to the management situation of the customers and other related issues. In cases where special relationships are identified, such as the strengthening capital relationships with the customers through investment, JCR also takes into account creditworthiness of the customers.

(iii) Business structure and sales region composition

JCR judges the ability of machinery manufacturers to respond to fluctuations in demand by confirming the degree of risk diversification from the perspective of business segments and regional segments. If the multiple businesses being handled have low demand correlation with each other, or if they are composed of sales regions with different economic conditions, etc., it is thought that the fluctuation in business performance in economic cycles will be mitigated to a certain extent, and this is evaluated positively. In addition, JCR also pays attention to the presence or absence of synergies among businesses and the management efficiency, and given the progress of shift of production bases overseas, JCR also pays attention to the diversification of production regions, taking into account risks such as exchange rate fluctuations and natural disasters.

2. Financial base

(1) Earnings strength

JCR focuses on the level of operating income and its trends. However, since the volatility of demand in the machinery business is large in general, it is difficult to judge each company's earnings strength based on results for a single fiscal year alone. Consequently, JCR also pays attention to total amount of operating income generated from a single cycle based on rise and fall in demand, and its trends. In addition, JCR focuses on operating income on sales as an indicator to measure competitiveness, and ROA as an evaluation of profitability commensurate with invested capital.

Moreover, to measure earnings strength in the face of an economic downturn, JCR examines the degree of resistance to economic slumps. JCR estimates the breakeven sales volume and forecasts the impact of demand fluctuations on operating income, etc. In addition, JCR looks at the ability to respond to an economic downturn by estimating changes in the cost structure over the medium-to long-term. There are products that require regular maintenance and parts replacement. Sales from such after-sales services tend to remain steady even during economic slowdowns, and the profitability is also relatively strong. JCR therefore confirms the degree of their contributions to sales and operating income.

Key financial indicators:

- Operating income
- Operating income on sales
- ROA

(2) Cash flow generation capability

JCR gives weight to the ability to generate operating cash flow that can serve as a source of capital investments and repayments for interest-bearing debt. When the economy is contracting, a decline in operating cash flow could be accelerated not only by a deterioration in earnings, but also by a delay in the collection of accounts receivables and an unexpected rise in inventory. JCR focuses on whether machinery manufacturers can increase the stability of their cash flow through initiatives such as reducing production lead times and controlling inventory. In addition, JCR believes that trend of free cash flow is also important in implementing a flexible financial strategy.

Moreover, to examine whether or not interest-bearing debts are reaching an unsustainable level as a result of capital investments, M&A and other corporate activities, and whether or not the capability to continue to make investments in the future is maintained, JCR takes into account the balance between EBITDA or operating cash flow and interest-bearing debt.

Key financial indicators:

- Operating cash flow
- Free cash flow
- EBITDA
- Ratio of interest-bearing debt to EBITDA

(3) Safety

As the machinery industry in general has volatile earnings and cash flow, machinery manufacturers are required to build a better financial base compared to other industries with more stable business performance. JCR particularly places importance on financial resilience in times of economic downturn, and pays close attention to the thickness of shareholders' equity and abundance of liquidity on hand that could act as a risk buffer, as well as to shareholders' equity ratio, debt equity ratio, and other indicators.

Key financial indicators:

- Shareholders' equity
- Liquidity on hand
- Equity ratio
- Debt equity ratio

Japan Credit Rating Agency, Ltd.
Jiji Press Building, 5-15-8 Ginza,
Chuo-ku, Tokyo 104-0061, Japan
Tel. +81 3 3544 7013, Fax. +81 3 3544 7026