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Rating Methodology by Sector

Petroleum

1. Business base

The petroleum business is broadly divided into oil exploration and production, oil refining and sales, and petrochemistry. Here we describe primarily the oil refining and sales business, touching on petrochemistry and oil exploration and production as appropriate.

As a decline, even in the medium term, in domestic demand for petroleum products is inevitable, refiner-marketers are faced with the problem of reducing their refining capacity and strengthening the competitiveness of their refineries. The success of their growth strategy will have significant implications for their earnings power in the future and is likely to increase inter-company disparities in the medium term. JCR will consequently monitor the progress of each company's growth strategy and the impact on their financial standing.

(1) Characteristics of the industry

(i) Market overview

Oil refining and sales companies refine crude oil and produce and sell petroleum products. Petroleum products include fuels such as gasoline, jet fuel, kerosene, diesel fuel, and fuel oil, as well as products used as chemical raw materials such as naphtha. Although Japan's reliance on petroleum has been declining since the oil crisis, petroleum is still the primary source of energy. Domestic demand for petroleum products will inevitably decrease even in the medium term with progress in fuel conversion associated with the growing popularity of fuel-efficient vehicles such as eco-cars and efforts to reduce greenhouse gases.

Japan has basically maintained a system of local refining for local consumption, in which imported crude oil is refined within Japan to supply petroleum products, which are highly dependent on domestic demand. However, the export ratio is rising, the result of efforts by refiner-marketers to increase the export of diesel oil to improve the balance between supply and demand in response to the excess domestic refining capacity created by lower domestic demand for petroleum products. While overseas demand for petroleum products should rise, led by needs in emerging countries, these new export markets are themselves simultaneously planning to increase their refining capacity, which suggests difficulties in finding a medium-term solution through higher exports. In these circumstances, several refiner-marketers have begun to seriously reduce their refining capacity.

In the past, the petroleum sector was a typically regulated industry, but the abolition of the Provisional Measures Law on the Importation of Specific Petroleum Refined Products in April 1996 effectively liberalized the import of petroleum products. The Act on the Quality Control of Gasoline and Other Fuels, however, prohibits the sale of products that fail to meet certain quality standards, and numerous regulations such as the duty of private-sector storage are still imposed on oil refiners and importers. Tariffs on crude oil and petroleum and coal tax on petroleum products are imposed at the import stage, and the gasoline tax, diesel oil delivery tax, aviation fuel tax, and other duties are imposed at the product stage.

The distribution channels of petroleum products can be broadly divided into direct sales, in which refiner-marketers sell products directly to "consumers," and authorized dealer sales, in which products are sold through authorized dealers having a sales contract with a refiner-marketer and their affiliated outlets. Petroleum products such as fuel oil and naphtha for the industrial sector and jet fuel are sold in bulk and the buyers and their locations are limited, resulting in a high ratio of direct sales. In contrast, products such as gasoline and diesel oil for private cars and consumer kerosene are sold in small lots to general consumers in broad areas, resulting in a high percentage of authorized dealer sales led by service stations.

(ii) Competitive situation

In the aspect of supply, large refiner-marketer groups account for the majority of domestic refining capacity. At the distribution stage, too, service stations affiliated with the refiner-marketers comprise more than 70% of all service stations in Japan. A surplus in domestic refining capacity and too many service stations, however, continue to cause excessive sales competition, and the ability of refiner-marketers to control prices is relatively weak. In particular, petroleum products are co-products: with certain exceptions production is hard adjust and there is little scope for differentiation. Easing the supply and demand imbalance, therefore, can lead to a worsening of the conditions in the petroleum product market.

Even so, refiner-marketers are basing their production on domestic supply and demand, learning lessons from the past, and some are attempting to improve the conditions of the petroleum product market by, for instance, revising their brand-licensing fees. The use of the "market-linked method," in which invoice prices (wholesale prices of refiner-marketers) are determined in conjunction with the market price of each product, has become common, and the fairness and transparency of the invoice price system have increased and competitive conditions have become more standardized.

Despite the harsh business environment, competition is still orderly and this should help ensure a reasonable margin in the oil refining and sales business in the short term. In the medium run, the improved supply-demand balance associated with the reduction in refining capacity is likely to support the margins. Meanwhile, disparities in efforts to cut refining capacity and develop growth businesses may expand gaps in competitiveness.

At the distribution stage, while the number of service stations affiliated with refiner-marketers continues to decrease, large petroleum distributors such as "super dealers" hold the line on service station numbers to maintain a certain presence. In response to the reduced domestic market, however, some large petroleum distributors are beginning to modify their strategies of scale.

(iii) Cost structure (profit structure)

While the crude oil price is determined in the international market, prices of petroleum products are basically determined by a mechanism that reflects domestic supply and demand. Earnings from the oil refining and sales business of refiner-marketers are basically the margins that result from subtracting the cost of crude oil from invoice prices, which is characterized by the fact that it is a manufacturing yet a margin business. Because of this, an increase in the crude oil price tends to reduce profitability.

Large variations in earnings caused by changes in the conditions in the crude oil market are another characteristic of this industry. Earnings increase with a rise in the crude oil price based on inventory valuations, and decrease with lower crude oil price based likewise on inventory valuations. Further, the adoption of the Accounting Standards for Inventory Valuation has exacerbated the effect of changes in crude oil market conditions on earnings. Because earnings that include the effect of inventory valuation do not necessarily reflect the true figures, earnings excluding the effect of inventory valuation are commonly calculated for analysis.

At the distribution stage, the margin after subtracting the purchase price (invoice price) from the sales price of petroleum products becomes the income source. The purchase price varies slightly depending on the transaction size, which forces small dealers into intense competition.

(2) Important factors in market position and competitiveness

(i) Market position

In the oil refining and sales business, economies of scale can be achieved at each oil refinery and market share affects the company's control of the market, which suggests the market position is a relatively strong determinant of a company's competitiveness. If further changes are made to joint barter trade, in which refiner-marketers provide petroleum products among themselves, the extent of the sales area that can be covered by the companies' own oil refineries must also be observed.

Market positions are important also for large petroleum distributors, determining the adequacy of their distribution networks including petroleum terminals and the bargaining power with respect to refiner-marketers.

(ii) Medium-term progress in refining capacity reduction

The ministerial ordinance on the Sophisticated Methods of Energy Supply Structures introduced in July 2010 requires that oil refiners increase the ratio of heavy oil cracker installation. The only means of achieving an increased ratio of heavy oil cracker installation is to either increase the processing capacity of heavy oil crackers as the numerator or to decrease the processing capacity of atmospheric distillation, the denominator. The former, however, would not only inflate the amount of investment; it would also increase the production of white oil and other petroleum products. The latter, therefore, is expected to be the most common approach.

Therefore, in addition to the refining capacity reduction already commenced by several refiner-marketers, another stage of refining capacity reduction in the medium term is likely to occur, and this is expected to support the earnings of the oil refining and sales business through an improved balance between supply and demand. The number of service stations will be reduced at the same time, and this should boost the end-market conditions. JCR also monitors whether industrial reorganization will increase in the medium term as a result of progress in reducing refining capacity.

(iii) Competitiveness of oil refineries

With large, state-of-the-art oil refineries being built one after another in China and other parts of Asia, domestic oil refineries must also increase their competitiveness. To determine the competitiveness of oil refineries, JCR focuses not only on the size of devices such as atmospheric distillation, but capacity for cracking heavy oil, energy efficiency, and the sourcing capabilities of crude oil.

Competition with overseas products is more direct for petrochemical products. A decline in the competitiveness of domestic basic chemicals is inevitable for as long as the Middle East enjoys high cost competitiveness in ethylene derivatives and China is increasing its production capacity in basic petrochemicals. Given these circumstances, JCR monitors progress in strengthening alliances in an industrial complex, including integration with oil refining.

(iv) Growth strategy and business portfolio

With a medium- and long-term decrease in domestic demand for petroleum products inevitable, the business structure based on oil refining and sales is not likely to facilitate continuous growth. Large refiner-marketers, therefore, are taking steps to develop and strengthen businesses where growth can be expected. Strategies vary, such as whether to target existing businesses such as oil exploration and production or launch new businesses.

The success of these growth strategies will have significant implications for the earnings strength of refiner-marketers in the future and is likely to increase disparities within the industry in the medium term. In particular, if business risk is increased by resource businesses such as the oil exploration and production and the shift to a new business, financial system must be strengthened while covering the new investment with the cash flow of existing businesses. JCR will perform its rating assessments by comprehensively examining the business portfolio, including new businesses in addition to oil refining and sales, oil exploration and production, petrochemistry, and other operations.

2. Financial base

(1) Business size

As indicators of business size, JCR focuses on net sales, production and sales volumes, market share, and the size of oil refineries that may create economies of scale.

Key financial indicators:

- Net sales
- Production and sales volumes
- Market share

(2) Earnings strength

Since oil refining and sales are a margin business, JCR focuses on the margin level instead of profitability. And because inventory valuation associated with changes in the conditions of crude oil market has a substantial effect, JCR surveys basic earnings that exclude the effect of inventory valuation.

Margins are also important for large petroleum distributors.

Key financial indicators:

- Operating income (excluding the effect of inventory)
- Ordinary income (excluding the effect of inventory)

(3) Cash flow

The oil refining and sales business is a process industry and the burden of depreciation is relatively heavy, which makes it important to assess the ability to create cash flow based on EBITDA and other indicators. EBITDA is also corrected to an amount that excludes the effect of inventory valuation before comparing it against net interest-bearing debt.

Key financial indicators:

- EBITDA (excluding the effect of inventory)
- Ratio of net interest-bearing debt to EBITDA (excluding the effect of inventory)

(4) Safety

The earnings of the oil refining and sales business is susceptible to changes in the conditions of the crude oil market, which is thus exposed to the risk of reducing equity capital along with a sharp decline in the crude oil price. To improve the ability to cope with this risk, a certain level of equity capital must be maintained. Yet, because total assets are also susceptible to fluctuations in the crude oil market, JCR focuses on the debt equity ratio rather than the equity ratio.

Key financial indicators:

- Shareholders' equity
- Debt equity ratio

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