

## Rating Methodology by Sector

### Pulp and Paper

#### 1. Business base

Pulp and paper products are highly dependent on domestic demand due to constraint of transportation cost. Business environment is severe in the domestic market where demand for paper mainly printing and information paper has been declining. In these circumstances, major paper manufacturers have been seeking opportunities in overseas markets with high growth potential and focusing on businesses other than pulp and paper for growth. JCR sees that higher efficiency in the domestic market through revisions to the production system and developments in growth strategies such as business expansion in the overseas markets will lead to an expansion of gaps among companies in business bases, earnings and financial structure.

##### (1) Characteristics of the industry

###### (i) Market overview

Pulp and paper products are broadly divided into paper and paperboard, both of which are highly dependent on domestic demand. Domestic demand for mainstay paper products—namely printing and information paper—has been declining due to factors such as an increase in thinner products, a reduction in advertising spending, a slowdown of the publishing industry, and a shift to electronic media. Meanwhile, linerboard and corrugated medium, a key paperboard product that is used primarily as a packaging material in the distribution of processed foods, fruit, vegetables, and other products, is less susceptible to cost cutting, and demand for this product is increasing for e-commerce. Despite an increase also in thinner linerboard and corrugated medium products, domestic demand has been comparatively strong based on a relatively low ratio of imports and the absence of practical substitutes.

The domestic market for paper distribution has a hierarchical structure consisting of paper manufacturers, agencies (primary wholesalers), and wholesalers (secondary wholesaler). Although direct sales from paper manufacturers to large-scale consumers is the most common approach for some products such as newspaper, the overall mainstream channel is distribution from agencies to consumers through wholesalers or from agencies to consumers.

###### (ii) Competitive situation

Paper and paperboard is a typical process industry that can be largely benefitted from economies of scale. The three largest manufacturers producing paper and paperboard highly dominate the market as the share exceeds 50% in each product. Oversupply has been continuing for the printing and

information paper due to large scale capital investments made in the past and a trend of domestic demand toward shrinkage; therefore, price competition may occur easily in order to maintain the utilization of production capacity. In a situation where the yen is appreciating, competition may become intensified due to low-priced imported paper readily available in the market. A reduction in production capacity and reviewing sales strategies are in progress centering on large paper manufacturers; however, risk of falling into excessive competition should be noted where the reduction in demand occurs in a size that exceeds the effects of above-mentioned activities.

Meanwhile, the value added component of linerboard and corrugated medium among the key paperboard products is lower than that of paper, and sales areas are limited by distribution costs to the extent that can be covered by the producing centers. The domestic market, therefore, can be divided into sectors based on factory locations, and competition with imports is also limited. The reorganization of linerboard and corrugated medium manufacturers and progress in the vertical integration of major linerboard and corrugated medium manufacturers through inclusion of downstream paperboard businesses have enabled companies to escape from the past excessive competition.

Companies in the paper distribution market have also merged, in response to the intensified competition, into three large agencies selling the products of multiple large paper manufacturers and having strength in broad product lines. In addition, some large paper manufacturers have been strengthening their direct agencies, and agencies affiliated with general trading companies are maintaining a certain degree of influence.

### (iii) Cost structure (profit structure)

Pulp and paper is an industry which is highly influenced by market conditions and the ratio of the cost of raw materials and fuel to total manufacturing cost is relatively high. The profit structure is hence susceptible to the effect of market conditions and fluctuations in the prices of raw materials and fuel. While promoting a short-term increase in profit from raw materials and fuel, which are mostly imported, the stronger yen facilitates the inflow of foreign printing and information paper, which may place downward pressure on the market conditions. This also reduces the profitability of exports of printing paper and other paper products. As price competition can easily occur in paper against the background of oversupply, the critical issue is whether the industry can realize appropriate price pass-through when raw material and fuel prices rise, in order to secure stability of profit.

With much of the raw materials being wastepaper, paperboard is susceptible to changes in the price of wastepaper. The structure nevertheless facilitates price pass-through in the mainstay linerboard and corrugated medium, led by leading linerboard and corrugated medium manufacturers, because of the limited competition from imports and progress in vertical integration.

The primary income source of agencies is their wholesale margins, where the risk of losses is low and profit stability is relatively high. Large agencies with a long history of business that, in some

cases, started as Japanese paper wholesalers, are also in the business of real estate leasing using their own well-located properties. JCR incorporates contributions from earnings sources other than paper wholesaling like these businesses into their ratings.

## (2) Important factors in market position and competitiveness

### (i) Market position

In the business of pulp and paper, economies of scale can be achieved at each factory and a market share affects the company's influence on the market, suggesting a relatively strong effect of a market position on the company's competitiveness.

Market positions are important also for large paper agencies for the adequacy of their sales and distribution networks and price bargaining power against large paper manufacturers.

### (ii) Industrial reorganization

The reorganization of large paper manufacturers has been mostly completed, but there are still movements for alliances by business segment. Management and business alliances may create synergies, including cost savings and streamlining, and benefits such as generation of room for reduction of production capacity, which might be difficult to achieve by a single company. JCR is paying attention to whether manufacturers can increase their competitive strength through realization of these synergies.

While the restructuring among large agencies is also complete for now, wholesalers are likely to be further reorganized to deal with the even harsher domestic business environment. JCR will pay attention to the extent of the effect of this trend on large agencies.

### (iii) Competitiveness of factories

In the midst of continued fierce competition in the paper market, an increase of cost competitiveness becomes important, especially for major factories. The competitiveness of paper manufacturing factories is assessed based on factory locations, capacity utilization ratio, energy composition, and other factors. It is necessary to keep capacity utilization at above a certain level through reduction of production capacity and expansion of exports in order to maintain and improve the competitive strength of factories over a medium term in the face of declining demand mainly for printing paper. The differences in these efforts are likely to result in varying levels of future cost competitiveness among companies.

Since significant medium-term growth in domestic demand for paperboard is unlikely, an increase of cost competitiveness through measures such as integration or disposal of facilities is an issue. The installation of new machines is an optional measure to resolve the obsolescence of facilities, but this often leads to increased production capacity. When installing new machines, therefore, attention must be paid to the effect on domestic demand and market conditions.

(iv) Growth strategy

Large paper manufacturers have been streamlining their pulp and paper businesses in the domestic market, where demand forecasts are bleak, through the integration and modification of production systems. At the same time, they are seeking opportunities in overseas markets with high growth potential and focusing on businesses other than pulp and paper to achieve growth.

For the rating decision, the key criterion is the ability of the companies to increase their earnings from overseas expansion and new businesses while maintaining a certain income and cash flow from their domestic pulp and paper business. Companies expanding their business overseas are also assessed based on the sector of their overseas business, the amount of invested capital, whether the expansion is primarily through local production, M&A, or other means, and other factors that change their business risk.

## 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 factories that may create economies of scale.

Key financial indicators:

- Net sales
- Production and sales volumes
- Market share

(2) Earnings strength

Since the profit structure is susceptible to the effects of market conditions and price fluctuations of raw materials and fuel, trends in raw material and fuel prices, the progress of price pass-through, and differences in business portfolios are taken into consideration in the assessment of earnings strength. For large agencies, JCR observes the trends in their margin levels, taking into account their power relationships with paper manufacturers and the progress of price pass-through.

Key financial indicators:

- Operating income
- Ordinary income
- Operating margin
- The ratio of ordinary profit to sales

(3) Cash flow

Being a process industry, the pulp and paper sector incurs relatively heavy depreciation expenses, which adds to the importance of the assessment of cash flow capacity based on operating cash flow,

EBITDA, and other criteria. JCR also evaluates the solvency of the companies through, for instance, a comparison of total cash flow and EBITDA against net interest-bearing debt.

Key financial indicators:

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

#### (4) Safety

Profits are very vulnerable to fluctuations in raw material and fuel prices and market conditions, and there is a risk of impairing equity capital due to a loss on disposal of equipment. To improve the ability to deal with this risk, a certain level of equity capital must be maintained.

In addition, an increase in overseas investment for future growth tends to create more business risks, which necessitates the establishment of a sound financial system.

Key financial indicators:

- Shareholders' equity
- Equity ratio
- Debt equity ratio

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