Ratings criteria for the petrochemicals industry

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Executive Summary

Petrochemical products, comprising commodity product lines and bulk chemicals, are high-volume and low valued-added products used extensively in various end-user segments.

The Indian petrochemical industry may continue to report modest growth because, its overall capacity addition remains dependent on imports. Hence, profitability is likely to remain susceptible to the international prices of these products.

Globally, players integrated across oil exploration, production, and refining, dominate the petrochemical industry. Thus, the international petrochemicals industry is intensely competitive, mostly price based, in the absence of any significant product differentiation. Moreover, petrochemical products are prone to business cycles; their prices keep fluctuating as the raw material (naphtha) is a derivative of the highly volatile crude oil.

Scope

Though the broader criteria of manufacturing companies applies to entities in this sector, this note gives a brief insight into industry-specific risk factors, which impact the operations and financial flexibility of players in the petrochemicals industry.

Business Risk

Market position

The market is characterised by extreme cyclicality and limited product differentiation, resulting in price-based competition; moreover, domestic prices are determined by the corresponding rates prevailing in the international market. Each of these (and other related) factors will be examined to analyse the market position and its sustainability.

Cyclicality

The petrochemicals industry tends to make sizeable investment to set up more plants and expand capacity when product prices are exceptional. Additionally, the relatively high gestation period for setting up plants and uneven expansions, result in an over-capacity situation, especially during weak economic cycles. CRISIL considers this trait as a negative rating factor and analyses a company's performance through several such cycles.

1 The detailed criteria is on the CRISIL website under the “Criteria and Methodology” section – “Rating Criteria for Manufacturing and Services Sector Companies” and “CRISIL’s approach to Financial Ratios”

Demand - supply equation

CRISIL analyses the existing and emerging demand-supply situation in the industry, and its likely impact on product prices. Traditionally, India has been in deficit in this regard because a significant proportion of the total domestic demand is met via imports. While capacity additions have reduced dependence on imports in certain segments, the lag in the demand-supply situation is yet to be sorted efficiently.

Domestic demand is likely to rise over the medium term, aided by high population and healthy economic growth.

Price movements and tolling margin trends

The competition in the local industry is price based, driven by the absence of any significant product differentiation. The selling prices are highly volatile, owing to its dependency on the global supply-and-demand dynamics. CRISIL analyses such historic domestic and international price fluctuations for various products; price variation of upstream and downstream products is also examined.

Import duty and exchange rate as determinants of pricing

The domestic prices of various petrochemical products are linked to the landed cost of imports. CRISIL analyses the trend in import duties and its impact on a company's earnings, thereby predicting any reduction in import duties in the future.

The rupee-dollar exchange rate forms an important macro-economic variable, influencing the pricing of petroleum products. Devaluation of the rupee enhances the protection available to domestic producers, while its appreciation may reduce the realisation in the local market.

Product slate diversity and size

A diversified product mix (which may include polymers, fibres, and intermediates) helps a company combat the risks associated with the cyclic patterns of individual products with different end-user segments. A larger product portfolio also enhances the pricing power in the commoditised petrochemicals industry. Additionally, other parameters such as the ability to export and expand geographically should continue to support the business.

Operating efficiency

Capacity utilisation

The level of capacity utilisation (usually referred to as operating rates) is among the key determinants of a company's market position and profitability.

Economies of scale in manufacturing

The economies of scale, emanating from the large size of the manufacturing plant, significantly reduce operational costs. Low capital costs for large-scale plants also improve pricing ability. CRISIL believes it is becoming imperative for local players to match their manufacturing economies of scale with global standards, owing to the strong linkages between the domestic and global petrochemical markets.
Cost structure

In an industry characterised by pricing volatility, a low-cost structure enhances a company's market position, improves pricing ability, and helps achieve higher operating rates during a downturn. In this regard, CRISIL analyses a company’s access to (and cost of) feedstock, raw material sourcing ability, manufacturing capabilities, and the extent of vertical integration.

Security of feedstock

Feedstock rates form an important component of the total manufacturing costs in the petrochemicals industry. The integrated producers in India primarily use naphtha and natural gas as primary feedstock (for cracking), while the non-integrated players use basic building blocks or downstream products as feedstock (such as ethylene), depending on the product mix and level of integration.

The choice of feedstock usually depends on its availability, cost, and a company's downstream product mix. Natural gas prices are relatively stable compared with crude prices. Furthermore, natural gas prices are controlled by the government, and thus provide a competitive advantage to players with access to natural gas as feedstock. CRISIL examines a company's access to feedstock at competitive costs. The historical price trends of feedstock, and the sensitivity of a company's cost structure to any adverse price fluctuation is critical, and therefore analysed.

CRISIL also examines the company's access to port infrastructure, as it aids in sourcing the feedstock/raw materials.

Technology and plant efficiency

A commercially proven technology for producing basic petrochemical products is usually available from major international players (on licensing basis) and is not a major entry barrier. A technology is chosen based on its cost competence, product yields, and plant-efficiency levels.

Degree of vertical integration

CRISIL feels an advanced degree of integration helps a company to benefit from timing differences in cyclic patterns of various upstream/downstream product prices. Higher vertical integration can improve cost structure by allowing the company maintain higher-than-average operating rates during weak market conditions.

Financial Risk

To analyse the financial risk profile, CRISIL follows the principles detailed in the ‘Rating Criteria for Manufacturing and Services Sector Companies’ and ‘CRISIL’s Approach to Financial Ratios’.

Management risk

For this analysis CRISIL follows the standard measures elaborated in ‘Rating Criteria for Manufacturing and Services Sector Companies’.
Conclusion

Thus, in CRISIL’s opinion, the key success factors for the petrochemical sector include the presence of:

- Backward and forward integration of the operations
- Economies of scale in the manufacturing facility
- Efficient capacity utilisation
- Diversity in product portfolio
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