Rating Methodology - Steel Companies

[In supersession of "Rating Methodology – Steel Companies" issued in June 2017]

Industry Overview

Steel is manufactured by de-oxidizing and de-carbonizing iron ore at very high temperatures (around 1,100 degrees Celsius). On the basis of process route/technology adopted, companies engaged in steel manufacturing can be broadly categorised into primary steel producer and secondary steel producers.

Steel producers who begin production of Iron through Iron Ore are known as primary steel producers. Secondary steel producers include entities engaged in production of Iron through EAF (Electric Arc Furnace) and EIF (Electric Induction Furnace). Some of the secondary steel producers are merely engaged in conversion of one intermediate product to another product of higher value. For example, conversion of billets into TMT bars/wires.

Steel is manufactured mainly through three methods, the Blast Furnace (BF) route, the Electric Arc Furnace route and the Electric Induction Furnace route. In India, the BF route contributes 43% of the steel produced; EAF and Induction Furnace route contributes to 27-30% of production each.

Key raw materials used for steel manufacture are iron ore, coke/coking coal, fluxes like limestone and dolomite and ferro alloys. On an average, 1.6 metric tonnes (MT) of iron ore, 1.4 MT of coal and relatively smaller quantities of fluxes and ferro alloys are required to manufacture 1 MT of crude steel.

The BF route uses iron ore lumps (or derivatives of iron ore like sinter or pellets) and coke as key raw materials. Although less power-intensive than the EAF route, the BF route of steel manufacturers face the risk of limited control over a key raw material, mainly coking coal since coking coal of the required quality is available in limited quantities in India.

The EAF route is highly power-intensive and therefore cost inefficient in India given the high cost of power in India. Induction Furnaces use sponge iron or scrap and pig iron as the key raw materials. Since the size of induction furnaces are small, power requirement is less than that of an EAF and flexibility of manufacturing process is high. On the other hand, the quality of steel

produced is poorer than the other methods as very limited refining is accomplished in this process.

Steel products can be classified into long products and flat products. Long products like bars, wires and wire rods are primarily used by the construction industry. A variant of long products called structural steel products, e.g. angles and channels, are used for the infrastructure sector. Flat products, on the other hand, are mainly used in automobile, pipes and consumer durables industries. Examples of flat products are Hot Rolled Coils (HRC) and Cold Rolled Coils (CRC).

Steel is a global commodity due to standardisation and ease of transportation of the finished product. As a result, domestic prices of steel and steel products generally move in tandem with international prices.

Key characteristics of the industry

- Cyclicality: Steel is a cyclical industry, strongly correlated to economic cycles since its key users viz., construction, infrastructure, automobiles and capital goods are heavily dependent on the state of the economy. Apart from the cyclicality of the end-user industries, heavy capital investment and a gestation of period of 2-3 years for a new plant also contribute to the cyclicality of steel prices.
- Raw material sourcing: Steady supply of raw materials is important to the steel industry since steel manufacture is a continuous process. Most steel manufacturers tend to ink long-term agreements with their local suppliers wherever possible. Most Indian manufacturers are also currently trying to gain control over mines to ensure steady supply at stable prices.
- Working capital intensiveness: Manufacture of steel is also working capital -intensive process. The long working-capital cycle is primarily due to high inventory maintained by manufacturers both in terms of raw material and finished goods, owing to the continuous nature of the production process, the standardised nature of the finished products and the limited and geographically spread out supply of raw materials. Additionally, in a scenario where demand exceeds supply, rising prices of inventory -both raw material and finished goods as well as increased stocking of raw materials by steel manufacturers who do not have control over their raw material supply or prices, results in increased working capital requirements.
- Ability to pass on input costs to customers: Manufacturers of steel are invariably able to pass on the increase in cost of raw material to consumers in a normal market scenario due to the

importance of steel to many economic activities like construction, infrastructure sector, and manufacture of consumer durables and modes of transportation.

- Entry barriers: The capital-intensive nature of the steel industry coupled with the long gestation period (2 -3 years) acts as an entry barrier to small entrants. However, in India, to circumvent this problem, a number of players have set up induction furnaces which need less investment. However, these induction furnaces produce lower quality and quantity of steel.
- Availability of finance: The steel industry is both fixed capital and working capital intensive. Thus, availability of finance for expansion as well as running day-to-day operations in terms of inventory acquisition and holding and payment to creditors is critical. The raw material suppliers tend to dictate the payment terms as there is heavy dependence on the supply of raw materials.
- Regulated nature of raw material industries: Domestic mining industry is major supplier of iron ore to the steel industry. While domestic sources of thermal coal is available to an extent, there is limited supply of coking coal in India. Despite abundant availability of Iron Ore in India, the mining industry (in turn steel industry) faces significant regulatory risk on account of issues related to non-compliance to mining plan, environmental and forest degradation due to mining activity. Above factors leading to government regulation or cap on the quantum of iron ore mined. Such disruption in mining activity is likely to influence the prices significantly at least for short term.

Rating Methodology

CARE Ratings has a standard methodology for rating of companies belonging to the manufacturing sector. As per this methodology, CARE's rating process begins with the evaluation of the economy/industry in which the company operates, followed by the assessment of the business risk factors specific to the company. This is followed by an assessment of the financial and project-related risk factors as well as the quality of the management. This methodology is followed while analyzing all the industries that come under the purview of the manufacturing sector. However, considering the size and diversity of the sector, CARE Ratings has developed methodologies specific to various industries within the sector. These methodologies attempt to point out factors, over and above those mentioned in the broad methodology, which will be assessed while carrying out rating exercises of companies belonging to the particular industry.

The following is a list of such additional factors, along with their analytical implications considered by CARE Ratings while arriving at the rating of the players that operate in the steel industry:

1. **Control over supply and cost of raw materials**

- **Backward linkages for raw material supply**

  Steel is generally manufactured in a continuous process to keep down the power costs. Uninterrupted supply of raw materials is, thus, imperative to continuous production processes. CARE considers companies which have control over supply of their raw material as more capable of being cost efficient. The control over supply could be either in the form of captive operational mines or long-term supply contracts with miners.

- **Control over raw material cost**

  Raw material constitutes around 70-75% of cost of sales of steel. Further, due to limited global availability of key raw materials like iron ore and coal, the raw material industry is supplier-dominated. Ability to control raw material costs is therefore a key determinant of profitability. Although most steel manufacturers are able to pass on the increases in raw material prices to their customers under normal market conditions, generally, the profitability of companies who have control over their raw material costs would be higher.

  CARE Ratings considers ownership of operational captive iron ore and coking coal mines, as a key strength. The adequacy of the reserves to meet the steel manufacturer's requirements is also assessed.

2. **Control over other input costs**

- **Freight**

  Due to the bulky nature of key raw materials, location of the steel plant is a key rating factor. Companies whose plants are close to the sources of raw material are likely to have an advantage in terms of freight cost, inventory holding period and therefore, working -capital cycle. Additionally, as some of the raw materials like coking coal or coke need to be imported due to their non-availability in India, manufacturers who are located near to the

ports or who have their private jetties have an advantage over others. This also applies to export -oriented companies like stainless steel manufacturers.

CARE Ratings views favourably those companies who are able to minimise their cost of transporting of raw materials.

- **Power**

  CARE Ratings views steel manufacturers who have captive power plants as superior to their peers on account of stable supply source & relatively lower cost, especially where the technology used is power -intensive. Steel manufacturers who are able to utilise captive fuel sources, for example, using waste heat gas recovery from its plants for power generation are viewed favourably as their power generation costs are likely to be lower. CARE Ratings considers ability to keep power costs down as a critical parameter of operating efficiency.

3. Technology

The technology used for manufacture of steel determines not only the quality of steel produced but also the cost of production. The more sophisticated the manufacturing process, the lower will be the cost of production and therefore, higher the profitability. CARE Ratings views use of sophisticated and proven technology as a rating strength.

4. Timing of expansion vis-à-vis demand-supply scenario

The demand-supply situation, although important for any cyclical commodity based industry, assumes more importance for steel due to the capital-intensive nature of the business coupled with the long gestation period for setting up a new plant. In case of a downturn, companies who have project-related debt repayment obligations could find it difficult to service debt as both estimated cash accruals and fund-raising ability would deteriorate. Companies who face a downturn immediately post expansion or during an expansion are likely to be more at risk.

CARE Ratings believes that timing of the expanded capacity coming on-stream is critical to the success of a steel manufacturer.

5. **Geographical and product diversification**

- **Geographical diversification**

  Steel being a global commodity, global competition plays a role in the profitability of steel manufacturers. Steel companies with a diversified market base can take advantage of regional demand-supply mismatches which will help mitigate their market risk. Geographical diversification also mitigates political and economic risks. Although steel is not a regulated industry, it tends to attract government attention in times of inflation, given its importance to the economy. A global presence helps to hedge against such regulations. CARE Ratings considers geographical diversification as a key credit strength for steel manufacturers. At the same time, given significant amount of capital investments made by the industry, its linkages to economy & banking sector, governments also assist their domestic steel industry through imposition of duties to thwart unjust competition from cheaper imports. CARE Ratings considers the implications of support provided to both foreign and domestic steel industry by respective governments.

- **Product diversification**

  Steel manufacturers who have progressed up the value chain by diversifying to value-added products while continuing to manufacture crude and intermediary products are considered favourably. Not only are such manufacturers able to command better prices on account of value-addition but they are also able to increase profitability due to their self-reliance with regard to the supply of crude and intermediary products. Further, such manufacturers would be in a better position to take advantage of differential demand conditions for different products by scaling up manufacture of any part of their product portfolio according to the demand conditions. A steel manufacturer with end-to-end control over the value chain who has progressed to manufacture of value-added products is considered to be superior to one who manufactures merely crude steel or intermediary products.

6. **Working capital management**

Due to the long working capital cycle of the steel industry, CARE Ratings believes efficient working capital management to be an important rating factor for steel manufacturers. CARE

Ratings favourably views companies who are able to efficiently manage their working capital costs.

7. Size

Size of the company is a significant rating factor for a steel company as the industry is fixed capital-intensive. Companies with a large capital base are considered better able to withstand downturns than others due to their stronger negotiation powers, their larger reserves and therefore greater financial flexibility. However, while size is an important rating factor, CARE Ratings views size of the company in conjunction with other factors like capital structure, size of ongoing expansions and the industry cycle during the rating process.

Conclusion

The rating outcome is ultimately an assessment of the fundamentals and the probabilities of change in the fundamentals. CARE analyses each of the above factors and their linkages to arrive at the overall assessment of credit quality, by taking into account the industry's cyclicality.

While the methodology encompasses comprehensive technical, financial, commercial, economic and management analysis, credit rating is an overall assessment of all aspects of the issuer.

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