

The Indian Steel Industry: Key Reforms for a Brighter Future

Executive Summary

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Executive Summary

1. High Long-term Potential of the Indian Steel Industry

- Steel is everywhere in life. No major country has become rich without a significant steel industry, even when it is not endowed with key raw materials such as coal and iron ore. If India is to become a high-income country, the steel industry must play its role.
- To assess the role of the steel industry in the Indian growth story, we focus on the ‘peaking level’ of steel production. Developed India will require steel capacity of at least 700 million tonnes and steel consumption of at least 600 million tonnes by the year 2050. These numbers are, of course, subject to a wide range of variation. But the central theme of the report and the policy recommendations remain valid for a wide band of possible outcomes.
- The expansion potential of 600 million tonnes of steel use even with plus or minus 20 per cent will be unmatched by any other country. India will be the place to be in for producers of steel machinery and suppliers of raw materials at the margin. India is the new China in steel-making.
- For India, it will be a great opportunity to leapfrog to the latest and best global practices in steel. This calls for a basic change from the mentality of a poor developing country to that of a resurgent country. India will have the luxury of prevention, while others are struggling with the cure.
- But nothing is pre-ordained either for the national economy or for the steel industry. We have to work for it. As discussed in the report, it is not clear if we are doing a good job of it at present.

2. Current Distress of the Steel Industry

- During the five golden years of growth in India, 2003–07, the steel industry also had stellar performance and if that performance can be replicated during 2015–50, our aspirational goals will be realised.
- However, for the past three years, the economy as well as the steel sector is in the doldrums. Over the past three years (2010–11 to 2013–14), the profits of steel producers have declined by more than 46 per cent in nominal terms. Medium and small companies in steel have been experiencing huge losses in recent years.
- According to RBI data, many steel companies are experiencing debt service difficulties and are resorting to debt restructuring with a growing incidence of non-performing assets (NPAs).
- Many companies in the secondary sector are experiencing an increasing excess capacity and are on the verge of collapse unless special financial assistance is provided.

- There have been several high-profile exits from CAPEX plans involving companies such as Posco, ArcelorMittal and JSW indicating, among other things, their downbeat assessment of the prospects of their investments in India.
- Under the circumstances, there is no chance of the steel sector meeting the 12th Plan targets or of achieving the target of 300 million tonnes capacity by 2025 as envisaged by the Steel Policy 2012. Stabilisation rather than expansion is the issue in the steel industry today.
- Our diagnosis is that the poor performance of the steel industry is due to a combination of demand-side and supply-side problems. We identify as many as 11 roadblocks to be removed before we can reach our aspirational goals on steel.
- The remedies required are ‘transformational’ types, not tinkering types and go beyond the mandate of the Steel Ministry. It is NITI Aayog that is the right venue for consensus building on Steel Policy, with support from the Ministry of Steel and other ministries as well as think tanks in the country.

3. Demand-side Issues

Diagnosis

- Slow GDP growth, despite some ‘mystifying’ accounting.
- Growth led by trade, hotels, finance and government consumption where steel-intensity is low.
- Slow growth in fixed investment, mining and manufacturing.
- Low elasticity of demand for steel with respect to GDP.
- Low steel-intensity in construction.

The Way Forward

- Push physical infrastructure through public investment. Revise PPP as necessary.
- Major push for the construction sector and for increasing steel-intensity in construction.
- Redefine the concept of fiscal prudence. Focus on public savings and not on fiscal deficit.
- Reduce interest rates.
- Dramatically improve ease of doing business, defined not in terms of ranking by the World Bank but in terms of moving towards catching up with the best, such as Singapore.

4. Competitiveness and Trade

Diagnosis

- Slowdown in demand for steel in India is taking place in an unfavourable external environment. As per the OECD Steel Committee, there is a huge excess capacity globally, unsurpassed in a decade.

- India is losing export competitiveness due to high relative unit cost of labour, capital, logistics and now even raw materials, partly due to a decline in international prices of iron ore and partly due to the new auction process in India that will push up costs of coal as well as iron ore.
- Increased vulnerability to imports due to huge excess capacity in export-aggressive China, dramatic devaluation of the Russian rouble and recent devaluation of the Chinese Yuan.
- There has been an import surge in most of the steel products. During 2014-15, steel imports to India surged to 10.0 million tons with 3.6 million coming from China alone. China has the potential to devastate the steel industry in India just it has done to several other sections of manufacturing.
- The government recognises the problem but the government machinery for remedial actions is slow.

The Way Forward

- Need to cut the costs of labour, capital and raw materials for export competitiveness.
- The government should keep an eagle eye on unfair trade practices and listen to noises from affected domestic industries.
- The government should take swift corrective actions, including technical instruments for the safeguard and quality control of imports. It should adopt East Asian strategic import substitution/protection combined with export promotion with exceptions where necessary. Encourage import substitution of steel-making machines to reduce cost over time. Take 'Make in India' seriously for steel, including publicity for the use of steel made in India. Restrict the export of iron ore through fiscal measures when appropriate.
- Continued integration with the world economy and in the region is necessary for sustained growth of the economy. The focus has to be on improving the competitiveness of the steel industry.

5. Financial Viability and Resilience

Diagnosis

- The steel industry requires huge long-term finance with the capacity to withstand cyclical volatility of profits. This should be provided by financial institutions with long-maturity debt and long-term bonds, preferably with pro-cyclical debt-service burden.
- With 1991 reforms, state ownership as well as support through development finance institutions (DFIs) declined and other sources of finance such as banks, External Commercial Borrowing (ECB) and capital markets took over. But these sources were not equipped for the long-term finance that the steel industry requires.

- Expansion was financed without ‘due diligence’ in granting and monitoring of loans. There was high and volatile debt-equity ratio and interest coverage ratio for many steel companies.
- Slow debt relief and bankruptcy mechanism. Poor record of effective restructuring through these procedures. Risks of disorderly loss of productive capacity and banking capital.

The Way Forward

- Improve procedures for debt restructuring of financially distressed companies.
- Develop long-term finance institutions backed by long-term savings such as pension funds and long-term bonds. Learn from East Asian practices. Consider infrastructure status for the steel industry.
- Strengthen due diligence for steel finance.
- Provide attractive joint venture packages to foreign investors.

6. Mineral Taxation

Diagnosis

- Royalty rates for iron ore increased recently to 15 per cent, whereas global standards are mostly in the range of 3–7 per cent.
- Further increase is proposed under MMDR (Mining and Minerals Development Regulations Act), 2015 with royalty to be paid to the District Mineral Foundation. The additional levy will be up to one-third of royalty for newly auctioned mines but could go up to 100 per cent of royalty for older mines.
- Frequent changes in royalty and taxation lead to uncertainties in mining, an activity that requires a long-term horizon.

The Way Forward

- Focus more on scale than on rate of taxation. Facilitate a quantum jump in mining output with lower tax rates, which will increase revenue yield. With the mining industry in turmoil, now is not the time to raise taxation on mines.
- Reduce frequency of changes in taxation on mining.

7. Land Acquisition

Diagnosis

- There has been a shift from draconian measures for land acquisition under the colonial era law of 1894 to the extreme complexity of LARR (Land Acquisition, Rehabilitation and Resettlement Act), 2013.

- With or without amendment to LARR, large-scale acquisition of land for steel will be difficult due to public resistance.

The Way Forward

- Build consensus on why transfer of some 5-10 per cent of agricultural land to non-agricultural use is essential for improving the lot of farmers that remain on the land and for jobs for their children in non-agricultural activities.
- Make better use of land under public ownership.
- There is a huge amount of underutilised land held by the steel majors, which can permit the addition of 100 million tonnes of capacity. So, there is no need for land acquisition for steel majors for the next 15 years. The expansion programme of SAIL is inadequate to fully utilise the land in its possession. Privatised steel mills and/ or use land under the public sector for expansion by steel majors such as POSCO, Mittal, Kobe, Tata or Jindal through joint ventures with them.
- Utilise the window of 15 years to provide education to the young and resettle the population from the hills with minerals and the villages to the existing mineral townships.

8. Project Implementation

Diagnosis

- The Indian mining sector is facing serious problems because of enormous delays in the processing and grant of mineral concessions.
- While environmental, forestry and related clearances are major contributory factors; the primary problem is the non-transparent and discretionary nature of the mineral grant system.
- Before a Mining Lease can be executed or a steel plant set up, numerous clearances are required at the state and central levels under the Forest (Conservation) Act, 1980 (FCA), Environment (Protection) Act, 1986 (EP Act), Water (Prevention and Control of Pollution) Act, 1974, and the Air (Prevention and Control of Pollution) Act, 1981.
- While industry has been advocating a ‘single window’ approach to the grant of approvals, the state and central governments face practical problems in operationalising the system because the rigidity of the statutory framework forces procedures into departmental silos.
- Though the Indian Bureau of Mines seeks and obtains an Environmental Management Plan (EMP) as part of the Mining Plan and detailed procedures are given in the Mineral Conservation and Development Rules (MCDR), the EP Act requires the procedure to be duplicated in elaborate detail by another agency from the environment side.

The Way Forward

- The MMDR Act 1957, even after its amendment in 2015, is not adequate and reforms are needed to ensure quicker decisions on concession applications.

- Ensure quicker decisions on concession applications, by removing discretion and making FiT (with seamless assured transition) in the case of virgin areas, and auction in the case of known deposits, as the case may be, thus adopting two modes for grant of concessions instead of the current “auctions only” approach.
- Create an independent mining tribunal that can pass binding orders relating to grants or delays.
- Regulations must be based on standard principles that recognise the federal structure under the Constitution.
- The appropriate architecture for environmental (and forest) regulation in the mining sector is probably a central sectoral regulatory institution (like the IBM) that covers mining and related air, water and other environmental areas. This institution should work closely with the national environmental regulator to set standards, develop codes of practice, conduct R&D and special studies/ regional assessments/ environmental audits, provide training and capacity building and disseminate best practices and information.
- The regulatory framework must enable regional impact assessments and internalisation of suitable sustainable development sectoral practices to improve environmental sustainability consistent with sectoral objectives.
- For facilitating businesses in cases of multiple numbers of Public Consultations mandated under different statutes, a twin approach should be used to streamline each procedural stream and capacitate the departments and panchayats to deal professionally with these issues under the active support of the District Administration. Where multiple panchayats are involved, the single Block panchayat rather than the Gram Panchayat is the more appropriate level.

9. System of Mine Allocation

Diagnosis

- Reconnaissance and exploration though necessary prerequisites to mining are high-risk ventures and it is difficult to justify the use of scarce public resources in a wild goose chase which exploration often is.
- Unfortunately, exploration in itself is not a paying proposition and it is only the incentive of being allowed to be able to mine a mineral find that can incentivize the private sector to do exploration.
- If reconnaissance and exploration is to be incentivised, the person who does this work with his own funds at high risk must be assured of the mine if he finds minerals that are technically and economically extractable. If the mineral resources are yet to be discovered and future resource security is in question, it is important to incentivise exploration. That means allowing the exploration companies the incentive of being allowed to mine a resource if they find it. This is not compatible with an auction system at the mining stage.

- The best safeguard a country can have to get fair value for minerals is to use the instrument of royalty. Royalty, being predictable and transparent, is a better way of recovering a fair value without disincentivising either exploration or mining.
- If minerals are given out only through auction as the MMDR Act, 2015 provides, it will bring exploration activity in the country to a halt and is likely to be detrimental to a 'Make in India' initiative by preventing the discovery of industrial metals including base metals and technology metals. In the long run, it is likely to be detrimental to our national security.

The Way Forward

- Exploration needs to be incentivised. The new provision for 'auctions only' needs to be replaced with a system that encourages exploration with the promise of mining rights in case of success.
- Only fully prospected mineral deposits should be auctioned. Auctions should be based on sealed bids rather than online e-auctions, and the reserve price should be based on independent, credible third-party evaluations using the VALMIN Code or equivalent.
- Supplement the auction system with the 'first come, first served' (FCFS) system, which is used worldwide. The FCFS system yields less spectacular revenues, but the government needs to take a policy decision whether the goal is revenue maximisation or scientific development of the sector.
- There should be no restriction on the sale of unusable grades, and value addition for sale should be encouraged with royalty concessions if required.
- Transferability of concessions should be facilitated, not only for auctioned concessions but for all concessions, so as to promote consolidation, viability, backward integration by metal-making companies and efficiency, including new technology.
- Reservation for the public sector and exclusive preference for metal-makers in allocation/ auction should be replaced by a system that promotes a level playing field and a market for ore and ore products.

10. Exploration for Resource Security

Diagnosis

- The Geological Survey of India (GSI) is in need of reform and is undergoing restructuring, which is behind schedule.
- The GSI needs to complete its geophysical and geochemical mapping expeditiously, so as to develop potential areas for prospecting for mineral wealth. It also needs to start a Mission for close-spaced, low-height national aeromagnetic surveys in a comprehensive and systematic manner for the country.
- To serve stakeholders who want detailed reconnaissance and regional survey information, the GSI portal should enable 1:50,000 scale geological, geophysical and geochemical

maps to be served on the Internet on the GIS platform in line with best international practice. The system should be capable of integrating third-party exploration data, as is the practice in Western Australia and the Canadian provinces.

- Large areas under lease are still awaiting detailed exploration and an even larger area covering the known mineralised areas having favourable geological conditions for the localisation of mineral prospects is yet to be regionally explored. A High-Technology Reconnaissance-cum-Exploration Licence concession (HTREL in the MMDR Bill 2011) needs to be operationalised by the government on an FCFS basis as advocated by the Hoda Committee in 2006.
- To ensure a steady stream of new discoveries and to be able to steadily augment the resource base, as is done in other mineral rich countries, the government needs to create a conducive base for reconnaissance and exploration, which can lead to the discovery of mineable mineral deposits.

The Way Forward

- Most of the resource estimates of iron ore deposits were made at least three decades ago. The resources need to be reassessed.
- *Exploration by deeper proving*: The assessments of potential reserves of iron ore are based on mining depth of 50 metres with a grid interval of more than 500 metres or so. But iron ore can be available at far greater depths. Steps should be taken to examine the availability of iron ore resources beyond the Banded Hematite Jasper/ Banded Hematite Quartz (BHJ/BHQ) formations.
- *Systematic exploration in leasehold areas*: In all leasehold areas of both the private and public sectors, most of the evaluated resources are in the “indicated” or “inferred” categories. Close-spaced deep drilling may be undertaken to estimate proved “reserve”/ “resource” of iron ore deposits. The Ministry of Mines issued instructions in 2010 to all lease holders to complete a detailed exploration of their entire lease within five years.
- *Exploration in forest areas*: Many of the iron ore deposits lie in forest areas. The total resource potential of such deposits, as in the Bailadila iron ore deposit in Chattisgarh and Ghatkuri iron ore deposit in Jharkhand, is not known. All such deposits have to be assessed for the quality of the resource, availability of alternatives, the possibility of less intrusive extraction, etc.
- *Re-assessment due to lowered cut-off*: Previously, resources and reserves were calculated based on 55 per cent Fe as the cut-off to produce a mineable ore, but recently the Indian Bureau of Mines (IBM) has lowered the threshold value of iron ore to +45 per cent Fe. This is likely to add substantially to resources and reserves.
- *Chrome*: Only about 26 per cent of the chrome ore resources are developed into reserves. Exploration of deep-seated ore bodies needs to be carried out on priority.

11. Skilled Manpower and R&D

Diagnosis

- The country needs an additional 43,000 engineers and 15,000 metallurgists in the industry by 2025. These numbers are not available.
- Geology, mining and metallurgy are losing their attraction for students. The migration of the skilled workforce from manufacturing to the service sector has aggravated the problem of a shortage of skilled workers.
- India produces 4.5 lakh engineering graduates every year of which only 50–55 per cent enters the job market because their skill set does not meet industry requirements.
- Inadequate women inclusion and empowerment in the steel sector. Global best practices include Chile, South Africa and Australia where women are now an integral part of the mining workforce.
- Low R&D investment by companies, at 0.3–0.5 per cent of turnover.

The Way Forward

- Introduce metallurgical engineering courses in a larger number of institutes and increase the number of seats. Introduce dedicated customised courses on iron and steel-making in engineering institutes.
- Enhance industry-student interaction, mentorship programmes and industrial online projects.
- Initiate collaborative R&D projects between academics, research institutes/laboratories and industry.
- Set up faculty development centres to impart training to the faculty of steel vocational institutes.
- Industry should upgrade in-house training facilities for employees and potential employees on various technical/ non-technical aspects, e.g., L&T and Maruti.
- Speedy allocation of funds by the government to increase the capacity of vocation education.
- Set up a Steel University in collaboration with industry.
- Introduce attractive salary packages, employee-centric incentives, safety measures, health benefits and insurance to steel mill personnel.
- Provide adequate inclusion of women in the workforce of steel plants.
- Recruit experts who have R&D aptitude and qualifications.
- Increase R&D investments to 1–2 per cent of turnover by companies.

12. Supply of Logistical Facilities

Diagnosis

- The production of one tonne of steel requires the transportation of more than 4 tonnes of materials. This requires an efficient and cost-effective transport system for a healthy steel industry, but transport infrastructure in India is distorted.
- Railway rates are extortionist and even charge more for the same ore over the same distance if it is meant for export, which misclassifies the movement as domestic.
- Roadways share in freight movement is nearly 55–60 per cent. National highways form just 2 per cent of the total road network but carry 40 per cent of the total road traffic. Roadways suffer from congestion and high transit times and emit more pollution. Road traffic is four times more expensive than waterways and is twice that of the railways.
- Railways share in freight movement is down to 36 per cent. Rail route km has increased by 3 per cent and track km by 6.6 per cent, while freight and passenger traffic has increased by 54 per cent. The problems are high transit times, lack of special wagons and oversaturation of trunk rail routes.
- Indian ports lack adequate road and railway connectivity, which leads to the slow movement of cargo. The turnaround time at Indian ports is high, at 2.5 to 6.5 days against international performance of 1 to 1.5 days.
- The share of water transport in domestic freight traffic is about 6 per cent compared to China (47 per cent), the US (12.4 per cent) and Japan (34 per cent).

The Way Forward

Tripling steel production by 2025 will require at least a tripling of transport facilities. This requires:

- Creating the necessary additional infrastructure (including railway electrification) and removing system bottlenecks in the existing rail, road and port sectors to reduce the turnaround time of railway wagons, trucks and ships.
- Investing in the construction of rail dedicated freight corridors and coastal freight corridors.
- Increasing water transport, both inland and marine.
- Increasing the depth at major ports to enable handling larger vessels.
- Improving rail and road links to ports, mines and industrial centres.
- Developing the skills of personnel in the logistics sector.

13. Managing Environment

Diagnosis

- Centre for Science and Environment (2012) gives a damning account of the performance of the steel industry in terms of its environmental performance. “Our final assessment: all is bad with the steel sector”.
- The CSE study, while valuable, is outdated and its assessment seems unbalanced. More recent studies suggest that significant improvement in environmental management is taking place in the steel industry, though much more remains to be done.
- Steel is potentially 100 per cent recyclable. The Life Cycle Approach (LCA) described by the World Steel Association shows the benign environmental potential of the steel industry.
- With upcoming constraints on greenhouse gas (GHG) emissions, the required expansion in the steel industry will not be possible unless the GHG intensity of steel production in India is reduced substantially below its present levels.
- A large amount of metallurgical waste is generated through blast furnace and steel melting shops; coke oven is one of the main sources of toxic water, though globally the best practice is zero untreated wastewater discharge.
- The monitoring and enforcement mechanism for environmental compliance is weak.

The Way Forward

- CO₂ emission levels must be brought down from the present 2.7 tonnes per tonne of steel to the global average of 1.8, particularly for new plants.
- Global standards for air and water pollution must be achieved, particularly for new plants.
- The monitoring and enforcement mechanism must be strengthened.
- The Indian steel industry should look into the Life Cycle Approach (LCA) because steel is 100 per cent recyclable.