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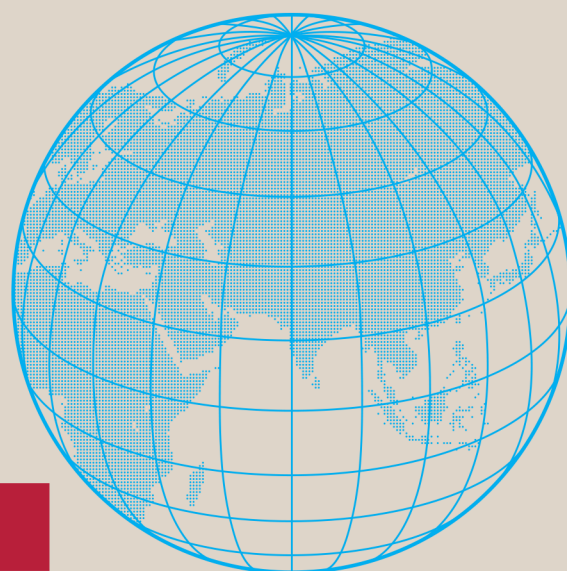
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Competitive Steel, Competitive India

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CSEP RESEARCH

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Competitive Steel, Competitive India

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Abbreviations

AIDC	Agriculture Infrastructure and Development Cess
ASEAN	Association of Southeast Asian Nations
ASP	Average Sale Price
CIF	Cost, Insurance, and Freight
CIL	Coal India Limited
EBITDA	Earnings Before Interest, Tax, Depreciation, and Amortisation
FCFS	First-Come, First-Served
FOB	Free on Board
FRED	Federal Reserve Economic Data
FY	Financial Year
GDP	Gross Domestic Product
GoI	Government of India
HRC	Hot-Rolled Coil
HS	Harmonised System
IGST	Integrated Goods and Services Tax
MFN	Most Favoured Nation
MMT	Million Metric Tonnes
MSME	Micro, Small, and Medium Enterprise
NMDC	National Mineral Development Corporation
NOC	No Objection Certificate
OGP	Obvious Geological Potential
OMC	Odisha Mining Corporation
PLI	Production Linked Incentive
QCO	Quality Control Order
SAIL	Steel Authority of India Limited
SIMS	Steel Import Monitoring System
TERI	The Energy and Resources Institute
WTO	World Trade Organization

Executive Summary

Steel is a core input for industrial economies and underpins a wide range of downstream sectors, including construction, automobiles, capital goods, shipbuilding, and infrastructure. Hence, steel prices and their availability strongly influence a country's economic growth. The history of the Indian steel industry began in 1912, when Tata Steel (formerly TISCO) started operations in Jamshedpur. During the British Raj, the company supplied the government during both World Wars, helping it secure tariff protection. By the late 1930s, Tata Steel had reduced costs and improved efficiency, and these tariffs were eventually removed in 1947. However, the trajectory of this successful private industry shifted with the New Industrial Policy of 1956, which reserved the steel sector solely for the government until the economic reforms of the 1990s.

Over the last couple of decades, India's steel output has risen sharply. From producing less than 5% of global steel and ranking ninth in 2000, India became the world's second-largest steel producer by 2025, accounting for nearly 9% of global output, behind only China, which produced 960 million metric tonnes of steel. Indian steel is riding high on robust domestic demand caused by rapid economic growth. This growth has also been accompanied by handsome profits—the steel industry recorded average profitability (earnings before interest, tax, depreciation, and amortisation [EBITDA] over sales) of 15% which is 3–4% higher than the rest of Indian manufacturing (2000–2025) and the biggest global steel firms (2015–2024). High growth and profitability can emanate either when the industry is efficient or when it is protected. This raises a fundamental question—how do we know if the Indian steel sector's laurels are due to competitive strengths or because of protection? And how to improve its competitiveness further? This study attempts to answer these pivotal questions. Below are some key findings from our analysis:

Iron-ore prices are controlled for the steel industry: India has kept iron ore prices significantly cheaper for steel manufacturers by imposing a 30% export duty (of the selling price) on iron ore since 2011. This results in a significantly lower domestic ore price (around 30–40% lower than global prices). India can keep ore prices low because it is self-sufficient in iron ore, and most of the iron ore (98%) is used only in steel-making. The lower ore price reflects the undervaluation of domestic resources purely to benefit the steel industry. Since the bulk of iron ore is produced by the public sector, and steel is largely owned by the private sector, this benefit transfer is from the public to the private sector.

Steel products have tariff and non-tariff protection: The output of the steel industry and its price are protected through high tariffs at around 7.5% (plus an 11.5% safeguard duty) and non-tariff barriers in the form of Quality Control Orders (QCOs) on 228 steel products (of which it stands suspended on 59 products as of September 2026). The comparable tariff rate in the Association of Southeast Asian Nations (ASEAN) and China hovers between 3% and 4%. As a result, domestic steel is priced not only higher than in China but is also around 6% more expensive than in a high-

cost country like Japan. Notably, the price is higher despite lower production costs in India. A direct comparison of the major cost heads—viz, wages and salaries, finance cost, logistics, and coking coal—between Japan’s biggest steel producer and India’s biggest private sector steel manufacturer shows that the per-tonne cost for the Indian steel manufacturer is lower by almost 20–40%. Higher steel prices have a detrimental impact on downstream industries and, consequently, on the overall economy. In the construction sector, for example, steel typically accounts for around 15% of total project costs. In the automobile sector, steel and steel-related products constitute roughly 5% of the raw material cost of a four-wheel vehicle.

Profitability of the steel sector is compromised under free market conditions:

What would happen to the industry’s profitability if this policy largesse is withdrawn, *ceteris paribus*? We create two independent scenarios to test this. First, the price of domestic steel drops by 6% almost equating it with Japanese levels. Second, export duties on iron ore are removed, and steel players buy all their iron ore requirement at global prices to reflect its true cost. Under both scenarios (considered independently), the industry loses much of its profitability. In the first scenario, the profitability of the largest private sector steel firm reduces by 25% and in the second scenario, it reduces by 70%. Meanwhile, the profitability of the largest public sector firm and the fastest-growing private firm drops by 40%–50% in the first scenario and becomes negative in the second. Steel industry’s high profitability is because of its ability to sell at a higher price in the domestic market. Thus, the steel industry owes much of its sheen to a favourable policy architecture, which has resulted in a high-price industry.

Policy Recommendations for a More Efficient Steel Sector

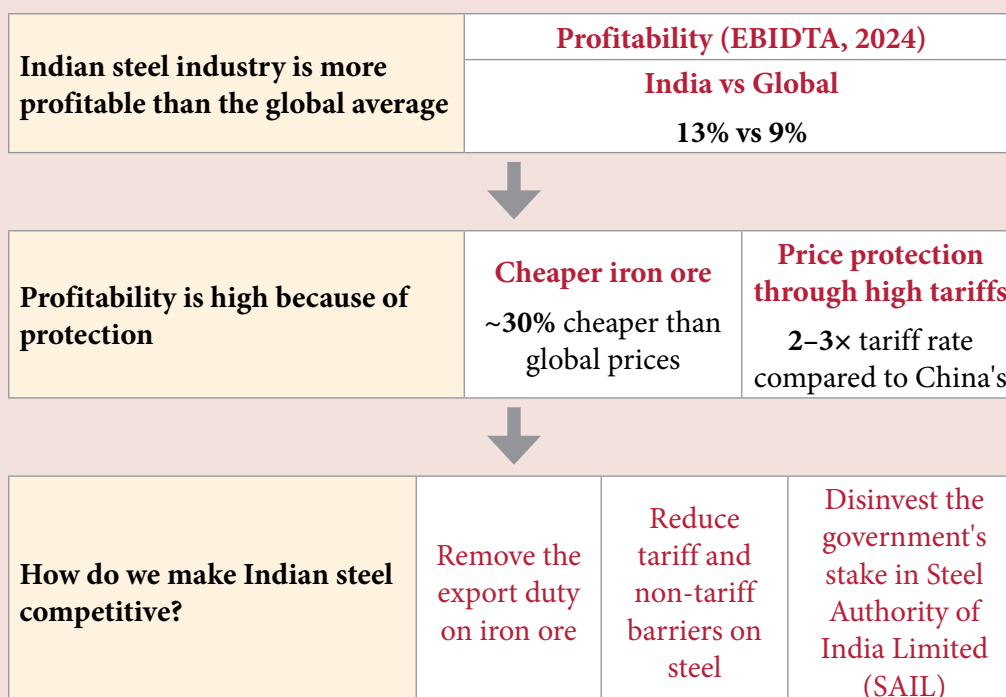
Continuing this current paradigm is inefficient. While maintaining protection can accelerate capacity addition in the short term, it weakens incentives for efficiency improvements, entrenches higher costs, and undermines steel-intensive industries that are critical for jobs, exports, and manufacturing growth. India needs a holistic reform package to make the steel industry globally competitive. Below are some key recommendations based on our analysis:

- **Reduce tariffs and non-tariff barriers on steel:** Implement a calibrated 5–10-year roadmap to lower duties in the sector to ASEAN-equivalent levels, and use anti-dumping measures only sparingly if evidence of unfair trade emerges. Implement the recommendations of the high-level committee on non-financial reforms to remove QCOs on a large number of steel products immediately.
- **Disinvest the government’s stake in Steel Authority of India Limited (SAIL):** Begin a phased disinvestment in SAIL. Given the predominance of the private sector in the steel industry, there is no reason the Government of India should be actively managing a steel firm. At the same time, the state must retain strategic minority holding. This will improve efficiency, governance, and fiscal outcomes without compromising strategic oversight.

- **Remove the export duty on iron ore:** Abolish the 30% export duty on high-grade iron ore to unlock value creation and increase its export revenues. This will also expose domestic steelmakers to global ore prices, improving efficiency. This was the case before 2007; we need to return to that regime.
- **Overhaul the mining policy to incentivise exploration:** The removal of the export duty on iron ore will result in sizeable exports of the ore, which will encourage further exploration of the resource. However, this will run into bottlenecks under the current auction-based mining regime, which separates the rights of exploration from those of extraction. That is, those who discover new mines do not have the right to sell the mining rights (Chadha et al., 2023). They receive revenue in the form of a share of the auction premium owed to the state government only when the mine is auctioned and operationalised (Chadha et al., 2023). Given this incentive structure, exploration has virtually stopped in the country. Explorers should be allowed to monetise their discoveries by transferring or selling discovered blocks to mining companies. This will accelerate new mine development, boost mining's contribution to Gross Domestic Product (GDP), and attract long-term investment.

Competitive steel is a necessary condition for competitive manufacturing. A calibrated shift toward openness and efficiency would serve India's broader growth objectives far better.

Figure ES-1: Snapshot of Key Findings



Source: Authors' analysis.

Note: EBITDA = earnings before interest, tax, depreciation, and amortisation.

1. Motivation for the Study

Steel is a foundational input for modern industrial economies and forms the material base for a wide range of downstream industries and applications. Sectors such as construction, automobiles, capital goods, shipbuilding, and infrastructure, among others, are all steel-intensive, making the price and availability of steel a critical determinant for a country's growth. In construction, for example, steel typically accounts for around 15% of total project costs (Construction Analytics, 2018). In automobiles, steel and steel-related products constitute roughly 5% of the raw material cost of a four-wheeled vehicle (Maruti Suzuki, 2025). High steel prices, thus, raise costs for the downstream industries and weaken competitiveness (Preethan & Gopalakrishnan, 2026, forthcoming). Given its criticality, the latest National Steel Policy¹ envisions “to create a technologically advanced and globally competitive steel industry that promotes economic growth” (Ministry of Steel, 2017a, p. 22).²

India needs to accelerate annual real GDP growth to >8% if it is to meet its Viksit Bharat aspiration. Faster growth is contingent on improving the competitiveness of the Indian economy. This raises a fundamental question—how do we know if the Indian steel sector is globally competitive or not? And how to improve its competitiveness further? The competitiveness of the steel sector is defined as the ability of the steel producers to supply products of international quality at competitive prices without relying on policy support in the form of tariffs on output, input price subsidies, or any other form of support. That is precisely what we attempt in this paper. The study assesses the competitiveness of the domestic steel industry through the pricing, cost structures, profitability, and the role of policy-driven benefits in the form of tariff and non-tariff interventions.³

2. India's Steel Industry Has Expanded Rapidly

Over the last two decades, India's steel manufacturing has expanded rapidly. From producing less than 5% of global steel output and ranking ninth globally in the year 2000, India has become the world's second-largest steel producer, accounting for nearly 9% of global steel output by 2026 (World Steel Association, n.d.). India's crude steel production has expanded from 28 million tonnes in financial year (FY) 2002 to 152 million tonnes in FY 2025, which is used to make finished steel products (Ministry of Steel, n.d.). About 75–80% of the former goes into the production of the latter (Ministry of Steel, 2026). These are used to create structural components,

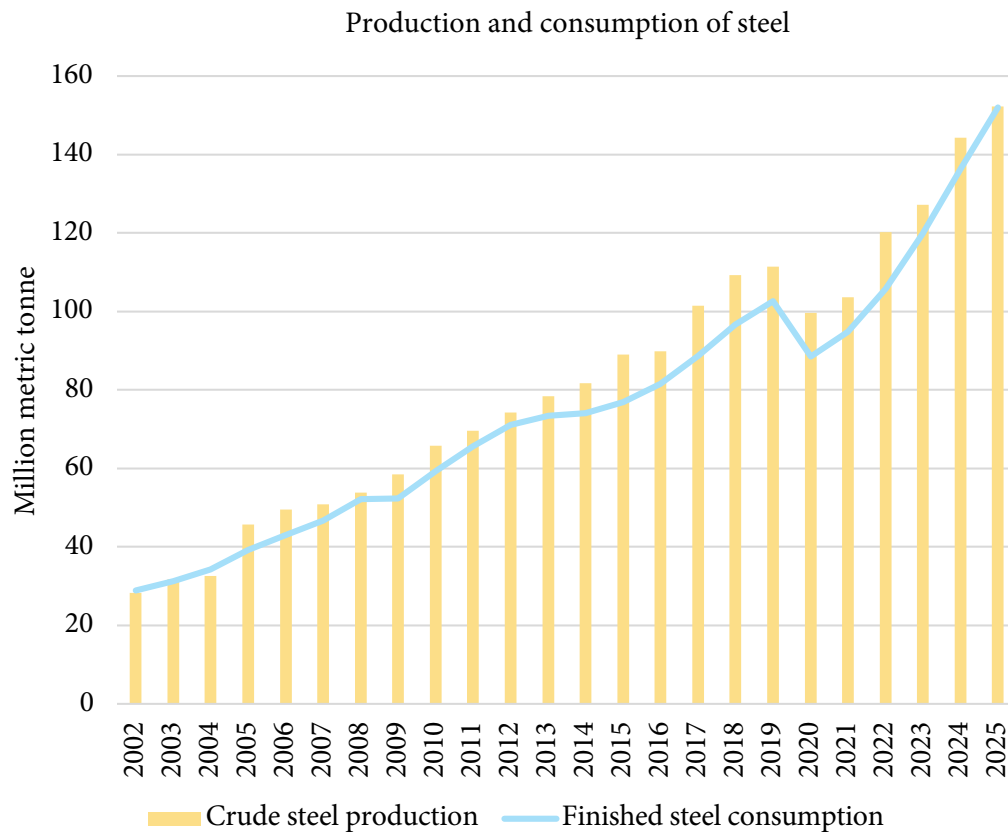
¹ Safeguard duty has been implemented due to sudden increase in steel imports that threatens to cause serious injury to the domestic steel industry” (Directorate General of Foreign Trade, 2025). Based on the latest available data for 2023, duties imposed by China and South Korea are 4.5% and less than 1%, respectively (World Bank, n.d.).

² Draft National Steel Policy 2025 is being created, but is not available in the public domain.

³ This is one of a series of sectoral studies that we intend to undertake, with a view to understanding the competitiveness (or lack thereof) of key sectors of the economy, which is quintessential to our Viksit Bharat aspiration.

such as beams and pipes, for construction and infrastructure activities.⁴ The growth is underpinned by robust domestic demand, which grew at an annual rate of 7.5% between 2002 and 2025 (World Steel Association, n.d.), consistent with India's impressive GDP growth during this period. Since India is likely to have robust economic growth for the foreseeable future, its steel demand will continue to grow at a rapid clip.

Figure 1: India's Steel Industry Growth Is Led by Robust Domestic Demand



Source: Ministry of Steel (n.d.); World Steel Association (n.d.).

2.1 India Inc. Has Led the Growth in Steel Manufacturing

Large domestic private steel manufacturers have led India's steel industry's growth. The top three firms (in terms of sales in 2025) account for 35–40% of domestic output since 2000 (Centre for Monitoring Indian Economy Private Limited, n.d.). Concentration is driven by the inherent economies of scale in steel manufacturing. This level is not abnormally high in India; the top three firms also account for a similar share of steel production in China.

⁴ The breakdown of steel across categories is mentioned in Appendix A.

Table 1: Top Three Firms in India Account for 35–40% of the Steel Industry Sales

	Share of major companies in India's total steel market sale (%)					
Company name	2000	2005	2010	2015	2020	2025
Tata Steel Ltd.	11	11	9	9	9	13
JSW Steel Ltd.	1	5	6	9	9	12
Steel Authority of India Ltd.	30	22	15	10	9	10
Jinadal Steel Ltd	1	2	3	3	4	5
ArcelorMittal Nippon Steel India Pvt. Ltd.	4	4	4	3	4	5
Jindal Stainless Ltd.		2	2	1	2	4
JSW Steel Coated Products Ltd.				2	2	3
Bhushan Power & Steel Ltd.	1	1	1	2	0	2
Polycab India Ltd.	0	1	1	1	1	2
Rasthriya Ispat Nigam Ltd.	6	6	4	2	2	2
Jindal Saw Ltd.	1	2	2	1	1	2

Source: Centre for Monitoring Indian Economy Private Limited (n.d.); companies' standalone financial statements (n.d.).

Note: These are arranged from highest to lowest share in 2025. There are 1,431 firms listed in Prowess as steel firms. The abovementioned firms are those with the highest market shares.

This ostensible stability in the combined share of these top firms hides a couple of important aspects. First, there has been a marked increase in the private sector share over time. JSW Steel's market share rose from 1% in 2000 to 12% in 2025, while the share of SAIL, the historically dominant public sector manufacturer, declined from 30% to 10%. Second, all the top three steel producers have captive mining operations of iron ore to varying degrees, highlighting the importance of captive mining for profitability in the industry. That is, the steelmaking firms own (iron ore) mines, a key ingredient for steel manufacturing. For example, Tata Steel and SAIL meet all of their iron ore requirements internally, while others like JSW operate mines to meet around 40% of their iron ore requirement internally and buy the rest from the domestic market.⁵ Since there is typically a 40–50% mark-up in the

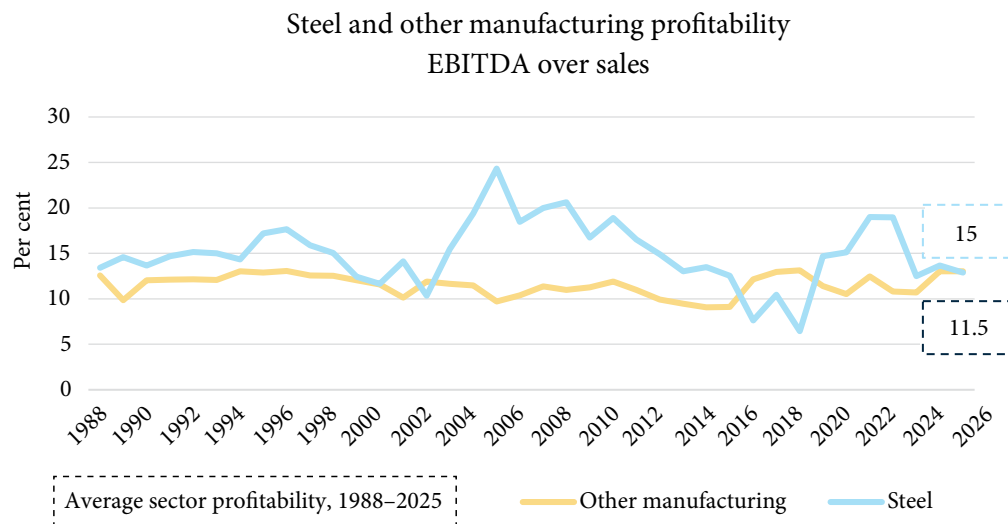
⁵ It is a global practice for steel firms to have captive iron ore mines. Please see Appendix E for this share for some of the biggest steelmakers globally.

cost of iron ore to a miner versus its price in the market,⁶ captive mining provides a significant cost advantage to steel manufacturers, while also giving them control over the availability of this critical resource.

2.2 Indian Steel Manufacturers Generate Above-Average Profits

Over the last 37 years, on average, the profitability (EBITDA over sales) of the Indian steel industry has been higher than the average for other manufacturing. For example, between 1988 and 2024, steel firms made a profit of 15% on average, while manufacturing, in general (without steel), made a profit of 11.5% during this period. Furthermore, the profitability of the top three steel firms was 21% during this period. It is this combination of higher profitability and growing demand underpinned by economic growth that attracted private players to enter and dominate steel manufacturing, as we saw in the previous section.

Figure 2: Steel Manufacturing Is More Profitable in India



Source: Centre for Monitoring Indian Economy Private Limited (n.d.).

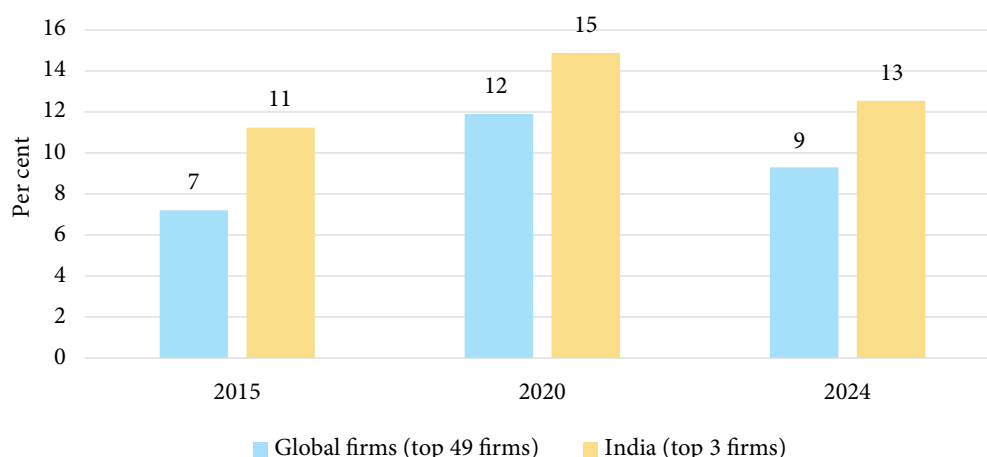
Note: Other manufacturing includes all manufacturing apart from steel. In the Prowess database, we consider all the firms with NIC code mentioning steel manufacturing. Standalone statements were used for all firms. EBITDA = earnings before interest, tax, depreciation, and amortisation; NIC = National Industrial Classification Code.

⁶ Iron ore mining operations of Rio Tinto and BHP (the two biggest global iron ore miners) have an EBITDA-to-sales ratio of about 60%. National Mineral Development Corporation (NMDC), the biggest Indian iron ore miner, had profitability of more than 60% prior to 2017 and currently has profitability of 40%.

In addition to earning higher profits than other type of manufacturing, Indian steel manufacturers are 3–4 percentage points more profitable than their global counterparts (Centre for Monitoring Indian Economy Private Limited, n.d.).

Figure 3: Indian Steel Firms Are More Profitable Than Their Global Counterparts

EBITDA margins: India vs global counterparts (%)



Source: Centre for Monitoring Indian Economy Private Limited (n.d.); MarketScreener (n.d.); World Steel Association (n.d.).

Note: EBITDA is used as the metric of profitability. Consolidated statements have been used. Weighted averages for the top 49 companies by steel production have been used to compute global profitability values. Companies used include Baowu Group, ArcelorMittal, Nippon Steel Corporation, HBIS Group, and others. Weighted averages for Indian firms have been calculated using profitability data for Tata Steel, JSW Steel, and SAIL. Formula used: $\Sigma((EBITDA / \text{total revenue}))$.

EBITDA = earnings before interest, tax, depreciation, and amortisation.

This high profitability of the industry could be largely due to efficiency or due to protection and/or subsidies. If it is due to the former, our steel industry is competitive. We now turn to answering this pivotal question for India's steel manufacturing: what explains the high profitability of the Indian steel industry?

3. Domestic Policy Favours Steel Manufacturing

The steep increase in output and higher profitability are a result of low input prices (of iron ore) coupled with higher final steel prices that the industry charges in the domestic market. Restrictions on the export of iron ore (2007 onwards)—one of the primary raw materials for steel manufacturing (more than 98% of India's iron ore goes to steel production)—have ensured that the steel industry receives iron ore at a 30–40% lower price than global competitors. On the output front, a combination of tariff and non-tariff barriers protects the domestic steel industry from foreign competition, enabling producers to charge higher prices for their products (like hot

rolled coil steel)⁷ compared not just to leaders like China, but also to a high-cost country like Japan. This combination of measures creates conditions conducive for the industry to make high profits.

3.1 Iron Ore Costs Are Kept Low for Steel Manufacturers

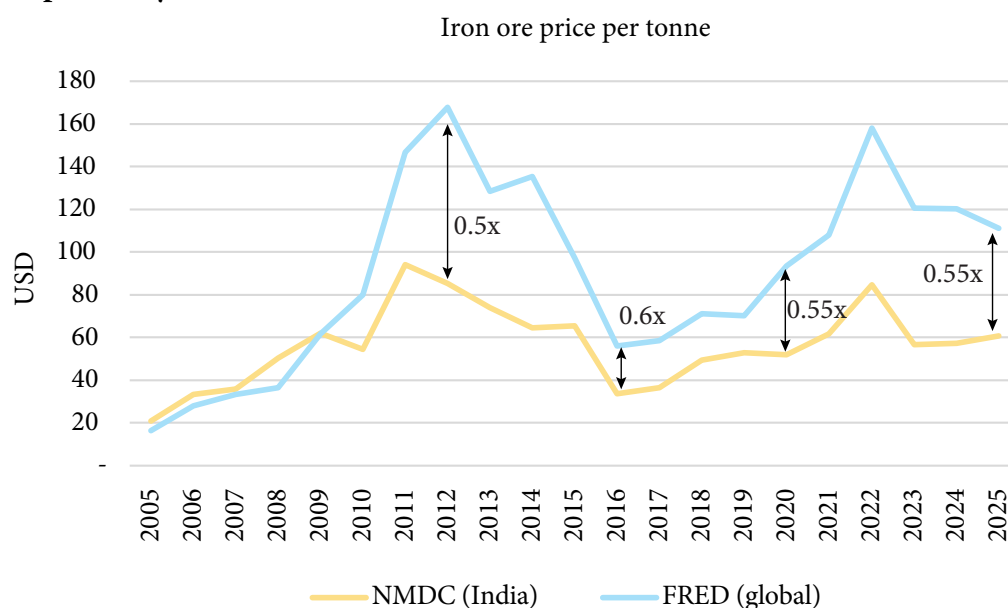
Iron ore is one of the primary raw materials for steel. Approximately 98% of India's total iron ore production is used for steelmaking (American Iron and Steel Institute, 2025), and expenditure on iron ore accounts for approximately 20% of the total cost for steelmaking (Tata Steel, 2025; SAIL, 2025; JSW, 2025). Since the 1990s, India has been a net exporter of iron ore, which increased to about 60% of all domestically mined iron ore by 2005 (Indian Bureau of Mines, n.d.). This is because India is 100% self-sufficient in iron ore and accounts for 10% of global production (Indian Bureau of Mines, n.d.) (Appendix G).

However, by the beginning of 2007, the policy stance shifted significantly. The government imposed export duties on iron ore—initially an export duty of ₹300 per tonne on export of iron ore fines rising to 30% (of selling price) by 2011—with the explicit objective of discouraging iron ore exports to ensure availability of the ore for steelmaking in the country. “To improve the availability of iron ore to the domestic steel industry at an affordable price, the Government has increased the export duty on iron ore from 20% ad valorem to 30% ad valorem on all grades of iron ore (except pellets) with effect from 30.12.2011” (Ministry of Steel, 2012, para. 2; Ministry of Steel, 2007). Currently, iron ore with an iron content of less than 58% has nil export duty, while iron ore with an iron content of more than 58% has 30% export duty (Ministry of Finance, 2022).

Following these interventions, domestic iron ore prices diverged significantly from global benchmarks. While Indian and global iron ore prices exhibit similar trends over time, there is a persistent gap in absolute levels between the two, with domestic prices at around 60% of global prices (2010–2025), following the imposition of the export duty. It is worth noting that, unlike other minerals, iron ore prices in India are not indexed to global benchmarks. “Prices of iron ore are fixed by the individual companies based on commercial prudence and general market situation” (Ministry of Steel, 2012, para. 1). Every month, the National Mineral Development Corporation (NMDC) publishes the Average Sale Price (ASP) of iron ore by grade as shown in Appendix C.

⁷ Appendix B provides a timeline of all major policies related to the steel sector.

Figure 4: Indian Iron Ore Prices Are Lower Than Global Prices Due to the Export Duty



Source: International Monetary Fund (n.d.); National Mineral Development Corporation (n.d.).

Note: Global prices are based on China's cost, insurance, and freight (CIF) value of lumps >63.5% Fe. CIF prices include the cost of goods, insurance, and freight. NMDC is the biggest iron ore merchant producer in India. We refer to its iron ore revenues divided by the total volume of iron ore sold. Since 2010, NMDC's iron ore prices have been on average 40% lower than FRED prices.

FY = financial year; NMDC = National Mineral Development Corporation; FRED = Federal Reserve Economic Data.

Around 60% of India's iron ore production is concentrated in four companies, three of which—NMDC, Odisha Mining Corporation (OMC), and SAIL—are state-owned, while Tata Steel is the principal private sector producer, which uses the ore for its own manufacturing of steel. A lower domestic iron-ore price compared to international prices acts as a value transfer from the iron ore to the steel industry. And since the bulk of iron ore is produced by the public sector, and steel is largely owned by the private sector, this transfer is from the public to the private sector.

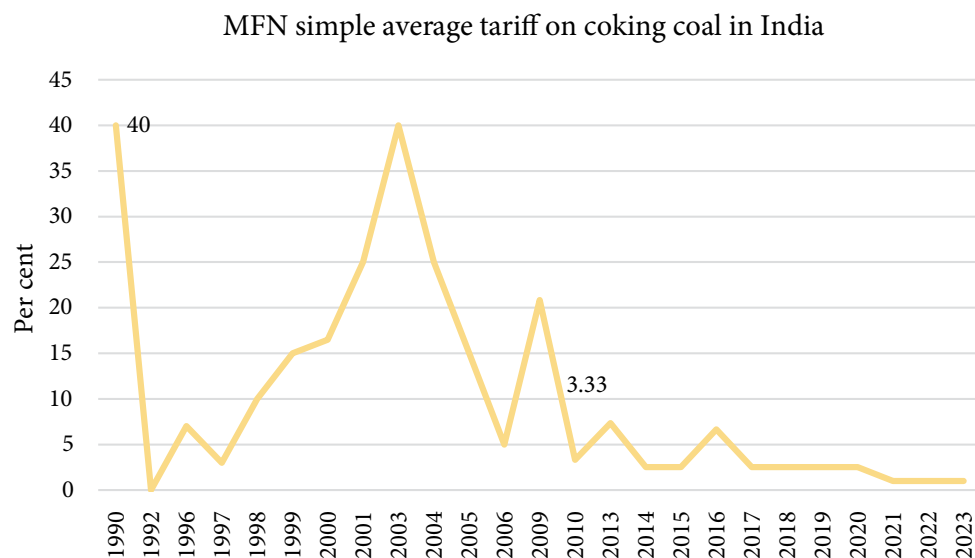
3.2 Minimal Tariffs on Coking Coal

Coking coal is as important a raw material as iron ore for the steel sector. Contrary to self-sufficiency in iron ore, "Indian steel industry fulfils ~70% of its coking coal requirements through imports" (Ministry of Coal, 2021, p. 7). Given the high import dependence, the basic customs duties on the same have been kept minimal at under 3%⁸ since 2009 and 1% as of 2023 (World Bank, n.d.). The Ministry of

⁸ This includes the effective customs rate of 1%, Agriculture Infrastructure and Development Cess (AIDC) of 1.5%, and the social welfare charge (10% of the base customs rate) of 0.25%. This does not include Integrated Goods and Services Tax (IGST) of 5% since that is creditable by the firms.

Steel's National Steel Policy 2017, which focuses on making the sector globally competitive, advocates for “suitable fiscal measures in coking coal to support the rising requirement in the steel sector” as well as aims to hold special auctions of coking coal mines to make the supply readily available for the steel firms. It adds, “deliberations will be held with Ministry of Coal to persuade Coal India Limited (CIL) to create special coal linkage e-auction window for steel players to ensure supply of coal to steel sector. Ministry of Steel will also facilitate periodic auction of coking coal blocks as it will encourage the steel industry to develop its own dedicated coking coal mines” (Ministry of Steel, 2017a).

Figure 5: Coking Coal Tariffs Have Been Kept at Negligible Levels



Source: World Bank (n.d.).

Note: Refer to the six-digit harmonised system (HS) code 270119, which is the “other coal” category. Coking coal is a sub-part of it.

MFN = most favoured nation.

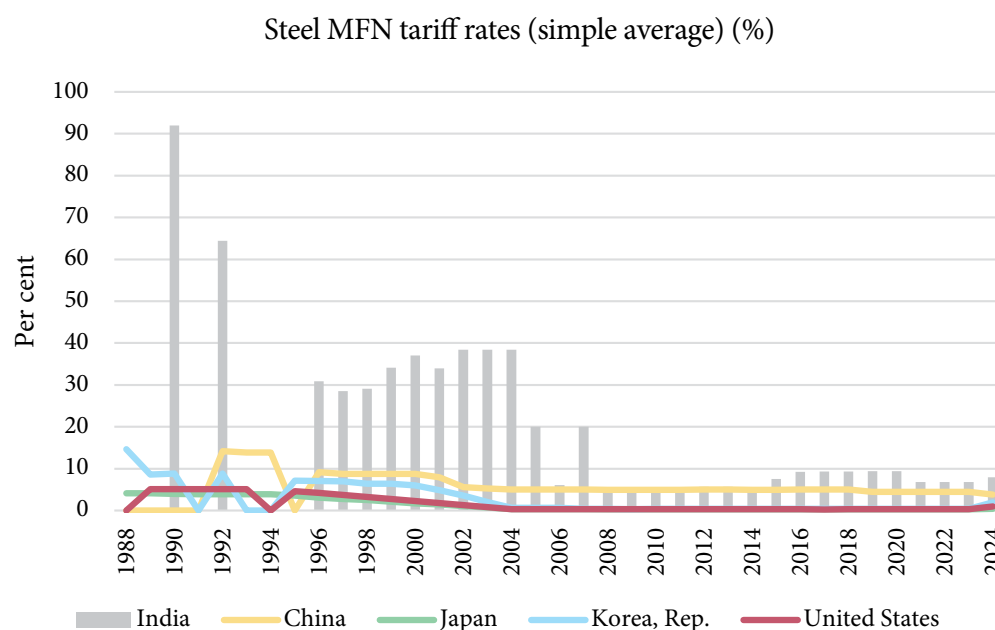
Thus, domestic prices of coking coal are kept at global levels by keeping negligible tariffs, while iron ore prices are kept significantly lower through the policy of export duty at 30%. Let us now turn to the tariffs and non-tariff barriers protecting the steel industry.

3.3 Significant Tariff and Non-Tariff Barriers

Since the 1990s, India undertook significant liberalisation of its economy, including the steel sector, reducing tariffs on steel imports from approximately 93% in 1990 to less than 10% by 2008. This was accompanied by dismantling licensing requirements and opening the industry to foreign and private investment. This marked a decisive shift towards integration with global markets. Despite the steep reduction, Indian tariffs (7.5%) are still higher than those of

major steel-producing countries such as China (around 4.5%) and Japan and South Korea (less than 1%). More recently, however, there are signs of increased protectionism. In April 2025, the government introduced a 12% safeguard duty on certain non-alloy and alloy steel flat product imports, over and above the existing tariffs. As stated in the Directorate General of Foreign Trade notification (2025), safeguard duties have been implemented due to a sudden increase in steel imports that threatens to cause serious injury to the domestic steel industry.⁹

Figure 6: Though India Reduced Tariffs on Steel, They are Still Higher Than Peers



Source: World Bank (n.d.).

Note: Values mentioned are the simple average tariff rate on Harmonized System (HS) codes 7204 to 7229. MFN = most favoured nation.

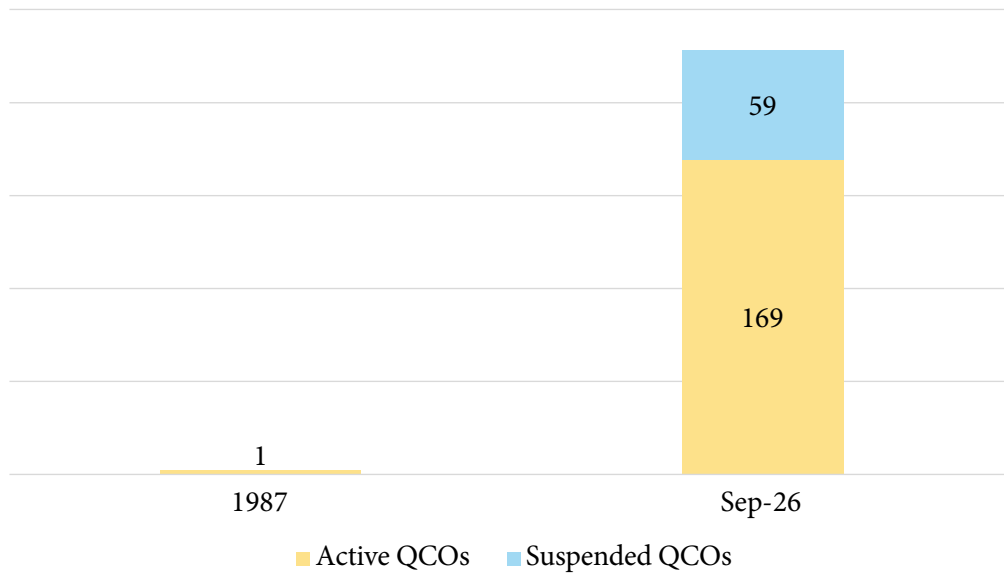
The trend towards greater protection is equally pronounced in the proliferation of non-tariff measures. Anti-dumping duties were introduced from 2007 onward, with five measures currently in force as of April 2026 (World Trade Organization [WTO], n.d.). At the same time, QCOs, originally introduced in 1987, have expanded sharply—covering 228 steel products, of which 59 are suspended as of September 2026 (Bureau of Indian Standards, 2026; NITI Aayog, 2025). While intended to improve the quality of both domestic and imported products, these measures have largely resulted in reducing competition in the industry. The share of imports of steel products on which QCOs are applicable as a ratio of total steel

⁹ The duty will be implemented in a phased manner across three years, commencing from the date the provisional safeguard duty was first imposed. The applicable rate is twelve percent ad valorem from 21 April 2025 to 20 April 2026, followed by eleven and a half percent for the second year, and eleven percent for the third year, concluding on 20 April 2028 (Directorate General of Foreign Trade, 2025).

imports was around 30% in 2025, suggesting limited effectiveness in reducing import dependence. “Stakeholders note that QCOs are increasingly being used to address price differences between Indian and foreign products, rather than being strictly applied for legitimate quality concerns” (Prabhakar, 2025a, p. 6). This creates bottlenecks for downstream industries dependent on specialised steel and non-standard dimensions (NITI Aayog, 2025). In addition, the introduction of the “melt and pour” rule in 2017, which mandates preference for domestically produced steel in government procurement, further underscores the increasing reliance on non-tariff protection (Ministry of Steel, 2017b).

Figure 7: Steep Increase in the Quality Control Orders on Steel

Number of steel products on which QCOs have been implemented

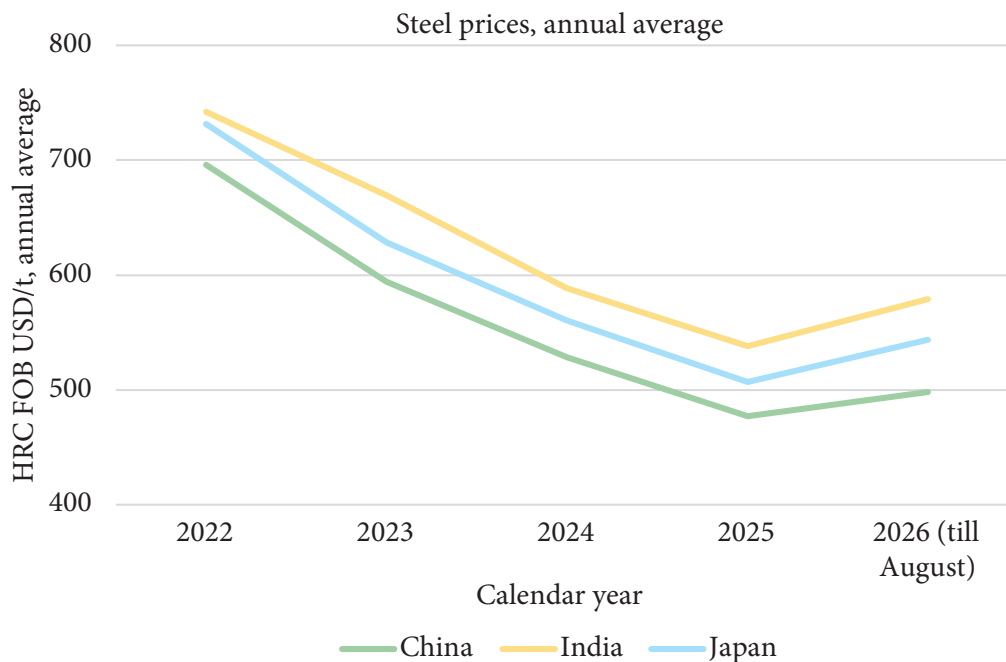


Source: Bureau of Indian Standards (2026); Ministry of Steel (2020, 2024b).

Note: QCO = quality control order.

3.4 This Policy Milieu Lets Steelmakers Charge Higher Prices

Since their market is protected (through tariff and non-tariff barriers as seen earlier), domestic prices of steel are higher than global prices, enabling higher profits. A recent report by the High-Level Committee on Non-Financial Regulatory Reforms reported that “Indian steel prices remain 15–30% above Chinese levels, largely due to input-duty structures and QCO-linked sourcing rigidity. For manufacturers, particularly MSMEs and exporters, these differentials translate directly into reduced cost competitiveness” (NITI Aayog, 2025). Figure 8 shows Indian hot-rolled coil (HRC) steel prices relative to Japanese and Chinese prices. It is worth noting that, not only relative to China, Indian steel is also more expensive than in a developed (and a high-cost) country like Japan.

Figure 8: Indian Steel Is More Expensive

Source: Authors' illustration using data from Kallanish Commodities.

Note: FOB price is the value of goods at the point they are loaded onto the ship at the exporting port. Information collected and used in the assessment of prices by Kallanish may include information about transactions, offers, bids, and (when and where available) futures prices. Priority is given to repeatable transaction values. A repeatable transaction value consists of a reported transaction of a volume that can be confirmed by more than one independent source and repeated by other market participants. Data are till August 2026.

HRC = hot-rolled coil; FOB = free-on-board.

Box 1: India Is Competitive in Steel Manufacturing

In terms of broad cost structure, Indian steel firms have a lower cost per tonne of steel produced, given the low cost of iron ore, coupled with affordable labour. The table below compares the cost structure of the biggest Japanese steel producer with that of the most profitable Indian steel producer. As one would assume, financing costs in India are higher than those in Japan. Interestingly, there is only a minor difference in freight cost, consistent with India's logistics cost coming down over the last few years from 13–14% to 7–8% of GDP (Press Information Bureau, 2025). Since both countries are import-dependent on coal, we assume the same cost for it. The major difference comes from the iron ore cost, which is kept low in India as a matter of state policy, giving domestic producers a major advantage (even at the market price of iron ore and lower labour cost, the cost structure is comparable across the two countries).

Table 2: India's Cost for Steel Making is Lower Than Japan's

Cost Per Tonne of Steel Produced, Financial Year 2025 (USD)				
	Japan	India	Source	Description
Labour cost—wages and salaries <i>(includes employee benefits)</i>	183.0	43.0	Annual reports.	Values as mentioned in the respective annual reports. Labour cost is divided by total tonnes of steel produced.
Finance cost	7.5	22.7	Annual reports.	Values as mentioned in the respective annual reports. Finance costs include the following line items: <i>interest payments, debentures, bank borrowings, and lease obligations</i> . Finance cost is divided by total tonne of steel produced.
Logistics cost	38.1	41.3	Annual reports.	Values as mentioned in the respective annual reports. Logistics costs include the following line items: <i>transportation- and storage-related expenses</i> . Logistics cost is divided by total tonnes of steel produced.
Iron ore	160	74.5	For Japan, we take Rio Tinto's declared prices since Rio Tinto is one of their main providers. For India, we take the cost of iron in steel-making as reported by the largest public sector steel firm.	In Japan, 1.6 tonnes of iron ore are used to make 1 tonne of steel. In India, 1.86 tonnes of iron ore are used.
Coking coal	240	240	International Energy Agency.	Both countries import coking coal and hence face the same price. In both countries, 0.8 tonnes of coking coal is used to make 1 tonne of steel.
Estimated steel cost / tonne (sum of major heads)	628.6	430.7		

Note: The data have been sourced from the annual reports of the respective firms for FY25. The above-mentioned costs are equivalent to 60% and 70% of total expenditure for the Japanese and the Indian steel manufacturers, respectively. The cost structure of other Indian firms can differ depending on efficiency.

4. Indian Steel Industry May Lose Sheen Under Competitive Conditions

So far, we have learnt that India's steel industry has expanded rapidly over the last couple of decades and makes handsome profits. Thus, while prima facie the industry is doing well, it is also true that it has been operating in a protected environment in terms of high import tariffs and access to key inputs like iron ore at cheaper rates. Thus, one simple way to assess the industry's competitiveness would be to check how its profitability would change if there were no import tariffs and the steel manufacturers were buying iron ore at global prices.

We analyse the competitiveness of the Indian steel industry by analysing the change to the top-line (revenues) and bottom-line (costs) of the key firms if India lifted tariff protection and export restrictions on iron ore, respectively. Since it is about understanding the industry's competitiveness, we need to pick a few firms that represent the industry.¹⁰ We consider three of the biggest integrated steel manufacturers to run these simulations. Let us call them A, B, and C. Firm A is the biggest private sector player and a 100% captive miner. Firm B is the fastest-growing private sector player and has partial captive mining. Firm C is the biggest public sector player and is also a 100% captive miner. Detailed methodology for both scenarios is mentioned in Appendix D.

4.1 Scenario 1—Price Equalisation to Global Levels

In this scenario, we assess the industry's profitability if it sells steel at 6% lower levels than the current ones (FY 2025). In Figure 8, we saw that Indian steel prices are roughly 6% higher than Japanese prices. Domestic producers can charge these higher prices because of the tariff protection. What happens to the industry's profitability if the government decides to eliminate tariffs? Domestic prices will decline. We assume that they decline by 6% to equalise with Japanese levels.¹¹

For this simulation, we assume that the quantity of steel produced and the cost structure remain the same for our illustrative firms, and only the steel price declines by 6%. Since the price at which each firm sells steel is not publicly available, we impute it by dividing total revenue from steel sales by the total quantity of steel sold for each of the three firms. We reduce this estimated price by 6%. For our cohort of companies, where initial profitability ranges from 21% for Firm A to 11.5% for Firm C, the profitability of Firm A drops by 25%, while the profitability of the other two firms drop by 40–50%. Clearly, the industry

¹⁰ It does not matter who these firms actually are. Economic agents are rational and respond to incentives, irrespective of who they are.

¹¹ Elimination of tariffs would also mean Chinese firms being able to export to the Indian market, potentially depressing the prices further, since their prices are 15% lower. We are not considering those potential complications in this scenario.

profitability comes under tremendous pressure if prices decline by 6%, other things remaining constant.¹²

4.2 Scenario 2—Buying Iron Ore at Global Prices

The second scenario tests the input advantage the steel industry is receiving in terms of cheap iron ore and its impact on its profitability. This requires that the Government of India (GoI) remove restrictions on iron ore exports, which will imply equalisation of domestic prices with global prices (the latter are 30–40% higher as we saw earlier). Higher input prices will negatively impact the steel firms' profitability, other things remaining constant. For this simulation, we need to know three things for each firm. How much iron ore are they consuming to make steel? How much are they spending on iron ore currently? What would be their cost if they bought the iron at global prices? The first is available from their annual financial statements and industry estimates, and the third is also easy to calculate since we know the global iron ore prices from sources like FRED. Calculating the current cost per tonne of iron ore is tricky, since it varies by firm depending upon whether they are captive miners or not and also on their mining efficiency.

Thus, calculating the present cost of iron ore requires us to know what share of the iron ore requirement is bought by the steel manufacturers from the (domestic) market, and how much is sourced through captive mines. Captive mining is an established industry practice (as seen above), arguably for two reasons: (a) iron is a key raw material for steel, and hence the steel firms operate mines to secure a reliable supply of iron ore, and (b) mined iron ore is significantly cheaper than buying it from the market.¹³ Firms A and C in our cohort meet all their iron ore requirements through captive mining, whereas Firm B procures around 60% of its iron ore by buying domestically, while the rest is through captive mining. The cost of domestically procured iron ore is straightforward since the prices of the same are published by NMDC. This leaves us with estimating the cost of captive iron ore. It has two components—royalty fee and the cost of extraction. The former is again available from the financial statements. To estimate the cost of captive mining production, for simplicity, we assume it to be the same as SAIL's¹⁴ cost of extraction per tonne of iron ore (excluding royalty rates). We multiply this by the iron ore procured captively. This gives us the total cost of iron ore used by our firms under the current regime.

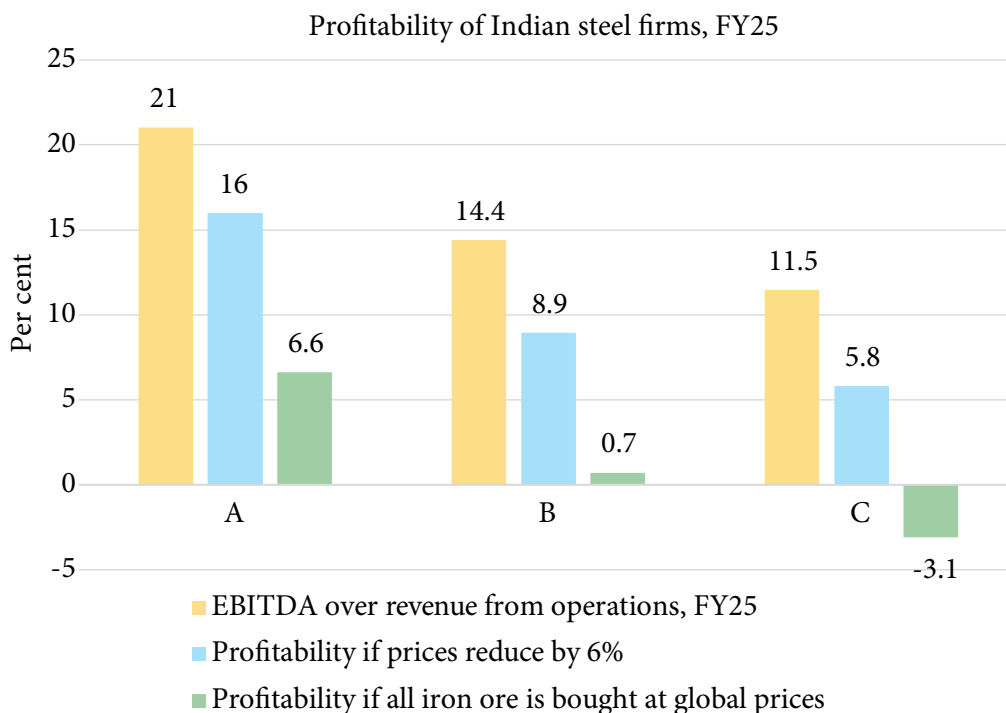
¹² The scenario numbers are not to be interpreted as a prediction about the future, should prices go down by 6%. If indeed it were to happen, firms will find ways to reduce costs to maintain profits. After all, Japanese manufacturers are making profits even at these lower prices. They basically capture the level of inefficiency in the system.

¹³ The profitability of the biggest mining companies Rio Tinto and BHP is around 50%, indicating a significant difference between their mining costs and sales prices. Please see our forthcoming working paper "Indian iron ore mining takes a backseat for the steel sector" for more details.

¹⁴ SAIL is the only captive mining firm which reports its iron ore cost. We assume iron ore cost of extraction remain same for all captive miners.

Assuming that when export duty is removed, all iron ore requirements of domestic firms would be met by buying in the global market gives us the hypothetical true cost of iron. We subtract the estimated current cost of iron and add the hypothetical cost (when they buy at global prices) to arrive at the resultant profitability. Under this scenario, Firm A's profitability becomes one-third while Firm B makes less than 1% profit and Firm C becomes loss-making. Practitioners might question this assumption. Since it is industry practice to own captive mines (Appendix E), how reasonable is it to assume that our steel manufacturers will buy all of their iron ore at global prices in the event of removal of export duties? Firms A and C will retain the base case profitability since they source all iron through captive mines (at least for the time being), while Firm B, which keeps on procuring a 40% share of iron ore through captive mines and begins buying its remaining requirement at global prices, will have profitability of 4%. Thus, in the short run, the profitability of the 100% captive miners is not impacted, since they do not need to buy the expensive iron ore. However, since the ore is now much more valuable, over time, we expect them to calculate the real profit from steel making (after incorporating the revenue loss from simply exporting iron ore at global prices) much like we are doing, since that is the true test of profitability. The irrefutable point is that the Indian steel industry faces significant margin pressure if it begins to buy iron ore at global prices.

Figure 9: Indian Steel Firms Will Come Under Pressure If They Operate Without Protection



Source: Source: Authors' analysis using data from annual reports of respective firms.

Note: The methodology is mentioned in Appendix D.

FY = financial year.

Taken together, these simulations demonstrate that the current profitability of India's steel sector relies heavily on import tariffs and cheap inputs. Current policy interventions designed to support steel producers have curtailed competition in iron ore markets and consequently shifted higher costs onto downstream industries, which are ultimately passed on to consumers (Preethan & Gopalakrishnan, in press).

5. Recommendations

The Indian steel industry is at an inflexion point. On the one hand, it is experiencing tailwinds led by ongoing and planned infrastructure and manufacturing expansion in the country. On the other hand, the preceding analyses have shown that the industry has become used to operating in a protected environment, which is suboptimal for the overall economy. In light of this, a few recommendations become obvious for putting the industry on the path to global competitiveness. Not only will it help the steel industry, but through the cascading impact, it will also help the economy grow faster.

- Reduce tariffs and non-tariff barriers on steel:** We saw above that the tariffs on steel imports were brought down consistently from around 93% in the early 1990s to 5% in 2008. However, in recent times, it has increased to 7.5% (plus the 12% safeguard duty applicable temporarily since 2025). This needs to change. It is widely argued and generally observed that lower tariffs make domestic industry more competitive. There have been several such examples in India, like pharmaceuticals and auto components, where tariffs declined sharply, and instead of the industry shrinking, it grew faster than the GDP. Import tariffs on pharmaceuticals and automobile parts and components dropped from more than 50% in 2003 to approximately 10–15% post 2014. Despite the drop in tariffs, the share of India's exports of parts and accessories of motor vehicles in global exports of the same increased from 0.2% in 2003 to 1.5% in 2024. Similarly, the share of pharmaceuticals in global exports of the same increased from 0.7% to 2% during the same period (World Bank, n.d.). We should aim to reduce steel tariffs in a calibrated manner to equate to the ASEAN levels in the next 5–10 years. It is worth noting that the same was said in the 1991–1992 Union Budget speech, which announced a reduction in tariffs to increase exports and make domestic industries more competitive (Singh, 2017; Singh, 1991)—it is high time we met this long-pending goal. The recommendations of the high level committee on non-financial reforms to remove QCOs on a large number of steel products immediately should also be implemented.

There are concerns in some quarters regarding the role of China, which accounts for more than 50% of the global steel capacity, coupled with its dwindling demand. If the GoI has evidence of foul play by the Chinese, it always has the option of putting anti-dumping and countervailing duties on Chinese imports. However, these are extreme and selective tools that give protection

to the domestic industry against the foul play of some other country. Barring that, the duties must be lowered in general to let countries and companies compete freely to bring out the animal instincts that push competitiveness and growth.

- **Government disinvestment in the steel sector:** When India became independent in 1947, the state was given control of the core sectors and heavy industries, including steel. This is reflected in the setting up of SAIL, and it accounted for about a third of the Indian steel industry's output in the year 2000. However, the Indian economy embraced liberalisation in earnest starting in 1991, which led to the emergence and the expansion of private players in the industry, as seen in Table 1. Given the private sector's inherent dynamism and the declining role of the state in market-determined areas, SAIL's share of output has continuously declined over time, reaching 9–10% currently. The government should disinvest its stake in SAIL, while still allowing the government enough stake in this strategic sector. It will result in greater efficiency in the steel industry. The time to act is now. Delay will not only hold back the industry, but if SAIL's past performance continues, the government may not have much to disinvest in the medium term.
- **Remove the export duty on iron ore:** Presently, the iron ore industry's expansion and value creation are hampered by a 30% export duty on high-grade iron ore. The export duties must go away for the iron ore industry to prosper and claim its rightful share in the Indian economy, while also pushing the Indian steel industry to pay the global prices for using the precious iron ore. It was the case before 2007; we need to go back to that regime.
- **Mining policy overhaul to do justice to our rich geology:** Removal of export duty on iron ore will result in sizeable exports of the ore, which will encourage further exploration of the resource. However, this will run into bottlenecks under the current auction-based mining regime, which separates the rights of exploration from those of extraction. That is, those who find new mines do not have the right to sell the mining rights (Chadha et al., 2023). They will receive revenue, in the form of a share of the auction premium owed to the state government, only when the mine is auctioned and operationalised (Chadha et al., 2023). Given this incentive structure, exploration has virtually stopped in the country. We should allow the explorers to monetise the discovery of new mines (transfer or sell discovered blocks to the mining companies). This will accelerate new mine development, boost mining's contribution to GDP and attract long-term investment.

We need to learn from leading countries like Australia, where explorers are granted a statutory right to obtain a mining lease upon discovery. Since their specialisation is in exploration, after a successful discovery, they sell the rights to a mining company, whose specialisation is to extract the reserves. In this process, each type of firm plays a role suited to its comparative advantage. A comparison with Australia is instructive for understanding how our mining

industry has lagged. India is similar to Western Australia geologically (Geoscience Australia, 2023, 2025; Ministry of Mines, 2025, 2026). However, the performance of the mining sector across the two countries could not be more different. Both India and Australia had around a 5% mining share of GDP in 2000. While Australia's share increased to 15% over the next 20 years, India's slid consistently to reach 2%. Even though our pre-2015 regime provided preferential rights to discoverers, it did not guarantee conversion to a mining lease, leaving explorers exposed to administrative discretion and uncertainty. Consequently, in India, only 22% of deep-seated minerals in Obvious Geological Potential (OGP) areas have been mapped. A rule-based first-come, first-served (FCFS) system with assured conversion rights would better align geological risk with reward and revitalise exploration investment. One of the preconditions for India's aspiration of becoming *Viksit* requires it to leverage the resources Mother Nature has bestowed on it.

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Appendices

Appendix A: India Majorly Produces Crude Steel

Table A-1: Broad Categories of Crude Steel Production

	Crude Steel	Finished Steel	Specialised Steel
Definition	The term is internationally used to mean the first solid steel product upon solidification of liquid steel. It comes in semi-finished form, which is to be used later.	Products obtained upon hot rolling/ forging of semi-finished steel. These cover two broad categories of products, namely Long Products and Flat Products.	Steel, in the production of which special care must be taken to attain the special/desired properties, such as cleanliness, surface qualities, and mechanical/ metallurgical properties.
End users	Intermediate industry (steel).	Construction and infrastructure; basic industrial use such as pipes and tubes.	Automobile, defence, and power.
India's production (million tonnes)	152	118	7.9

Source: Press Information Bureau of India (2021); Ministry of Steel (2025b, 2026a, 2026b).

Note: The estimate of specialised steel produced in India varies from 7.9 MMT to 18 MMT.
MMT = million metric tonnes.

Appendix B: Major Policies Impacting the Steel Sector

Table A–2: Timeline of Major Policy Changes in the Steel Sector

Year	Tariff Changes	Non-Tariff Changes	Source
1991		Automatic approval of foreign equity investment up to 51% in steel. De-licensing of the sector.	New Industrial Policy, Government of India (1991)
1991		De-licensing of the sector.	New Industrial Policy, Government of India (1991)
2007	Tariff cuts from 93% in 1990 to 7% in 2007.		World Bank (n.d.)
2007		The first anti-dumping duty on steel was imposed.	World Bank (n.d.)
2017		The government introduced the “melt and pour” rule, requiring government agencies to give preference to domestically produced steel in government projects.	Ministry of Steel (2017b)
2025	Additional 12% duty applied on non-alloy and alloy steel flat products, over and above the existing 7% tariff.		Ministry of Steel (2025a)
2026		Applicable QCOs increased from 1 in 1987 to 228, with 59 suspended as of September 2026.	Bureau of Indian Standards (2026); Ministry of Steel (2020, 2024b)

Note: QCO = quality control order.

Appendix C: Photograph of the Monthly Announcement of Iron Ore Prices by the National Mineral Development Corporation



एन एम डी सी लिमिटेड
NMDC Limited
 (भारत सरकार का उद्यम) (A GOVT. OF INDIA ENTERPRISE)
 पंजीकृत कार्यालय : 'खनिज भवन', 10-3-311/ए, कैसल हिल्स, मासाब टैंक, हैदराबाद - 500 028.
 Regd. Office : 'Khanij Bhavan' 10-3-311/A, Castle Hills, Masab Tank, Hyderabad - 500 028.
 नेम प्लान संख्या / Corporate Identity Number : L13100TG1958 GOI 001674

No. SEA2025050

22nd October 2025

BSE Limited Phiroze Jeejeebhoy Towers, Dalal Street, Mumbai - 400001 Scrip Code – 526371 <u>Through BSE Listing</u> <u>Centre</u>	National Stock Exchange of India Limited Exchange Plaza, C 1, Block G, Bandra Kurla Complex, Bandra (East), Mumbai - 400051 Scrip Code – NMDC <u>Through NEAPS</u>	The Calcutta Stock Exchange Limited 7, Lyons Range, Murgighata, Dalhousie, Kolkata - 700001 Scrip Code – 24131 <u>Through Listing Compliances</u> <u>CSE India</u>
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Dear Sir / Madam,

Sub: Prices of Iron Ore w.e.f. 22nd October 2025 Reg.

Ref: Regulation 30 of the Securities & Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015.

Kindly note that the prices of Iron Ore w.e.f. 22nd October 2025 has been fixed as under: -

Baila Lump (65.5%, 10-10mm) – ₹ 5,550/- Per Ton.
 Baila Fines (64%, 10 mm) ₹ 4,750/- Per Ton.

Note: The above FOR prices are inclusive of Royalty, DMF, NMET and exclusive of Cess, Forest Permit Fee, Transit fee, GST, Environmental Cess and Other Taxes.

Please take note of the above information.

The above information is also available on the Company's website on following link
<https://www.nmdc.co.in/investors/financial-details/prices-of-iron-ore>

Yours faithfully,
 for NMDC Limited

PRAVIN SHEKHAR
 Digitally signed by PRAVIN SHEKHAR
 Date: 2025.10.22 07:34:15 +05'30'

Source: National Mineral Development Corporation (2025).

Appendix D: Methodology for Profitability Scenarios

Scenario 1: Profit Reduction When Price Reduces by 6% Ceteris Paribus

- Estimated price of steel by firm = P = total revenue / total steel output
- Reduce the estimated price by 6% to make it comparable to the global benchmark.
 - Imputed price = $P' = P - (P \times 6\%)$
- Imputed revenue = $R = P' \times$ total steel shipped by the firm
- New profit = $R -$ total expenditure
 - Assume that total expenditure remains the same as in the original scenario.
- New profitability = new profit / R

Scenario 2: What Happens to Profitability If Steel Manufacturers Buy All Iron Ore from Global Markets?

- Steel produced = S (Firms' annual statements).
- 1.6 tonnes of iron ore are used to produce 1 tonne of steel (BHP, n.d.).
- Iron ore used = $X = 1.6 \times S$
- Global price of iron ore from FRED = Y
- If 100% of the required iron ore is bought at global prices, imputed expenditure on iron ore = $X \times Y$
- Original expenditure on iron ore by domestic manufacturers = total cost of iron ore bought from the domestic market + (total iron ore extraction cost + royalty cost for captive mining)
 - Iron ore produced through captive operations = x (Firms' annual statements).
 - Iron ore bought from the domestic market = $X - x$
 - Total cost of iron ore bought from the domestic market = $(X - x) \times$ NMDC's selling price for iron ore
 - NMDC's domestic selling price = NMDC's domestic revenue from iron ore operations / NMDC's total volume of iron ore sold in the domestic market (NMDC Annual Report, 2025).
 - Royalty costs are mentioned in steel firms' annual reports.
 - Iron ore extraction costs are not directly mentioned in the annual reports of private firms but are mentioned only in SAIL's annual report. Hence, we assume the cost of extraction by captive miners to be the same as SAIL's.
 - Total iron ore extraction cost = $x \times$ cost per tonne of iron ore excluding royalty
- Total new expenditure of the firm = $C =$ total expenditure – original expenditure on iron ore + imputed expenditure on iron ore
- New profitability = (total revenue – C) / total revenue

Appendix E: Captive Mining Is an Established Industry Practice in Steel Manufacturing

Table A–3: Iron Ore Self-Sufficiency of Steel Firms

	Firms	Global Rank in Steel Production, 2025	Steel Production, MMT, 2025	Self-Sufficiency in Iron Ore Ore (%)
International Steel Firms	Baowu	1	124.76	36
	Arcenol Mittal	2	63.43	72
	Ansteel	4	57.61	100
Indian Steel Firms	TATA	10	30.46	100
	JSW	11	30.28	43
	SAIL	18	19.44	100

Source: annual report and website of the firms. Global rank and steel production refers to global activities of the firms. Information is from World Steel. .

Note: MMT = million metric tonnes; SAIL = Steel Authority of India Limited.

Appendix F: Major Recent Steel Policies in India

The table below details the key policies that have had a significant impact on the steel sector.

Table A–4: Summary of Recent Policy Changes Related to the Steel Sector

Policy	Objective	Key Measures / Features	Release Year
Proposed Reforms in Steel Import Regulations	Make imports easier for downstream industries by removing regulatory burdens for QCOs and non-QCO steel products.	- Proposal to remove SIMS requirements. - Eliminate NOC requirement for import of non-QCO steel grades. - Aimed at easing imports of critical and speciality inputs. - Suggested suspension of QCOs for approximately 100 steel products. By April 2026, the QCOs for approximately 50 steel products will have been suspended by the Ministry of Steel.	2025

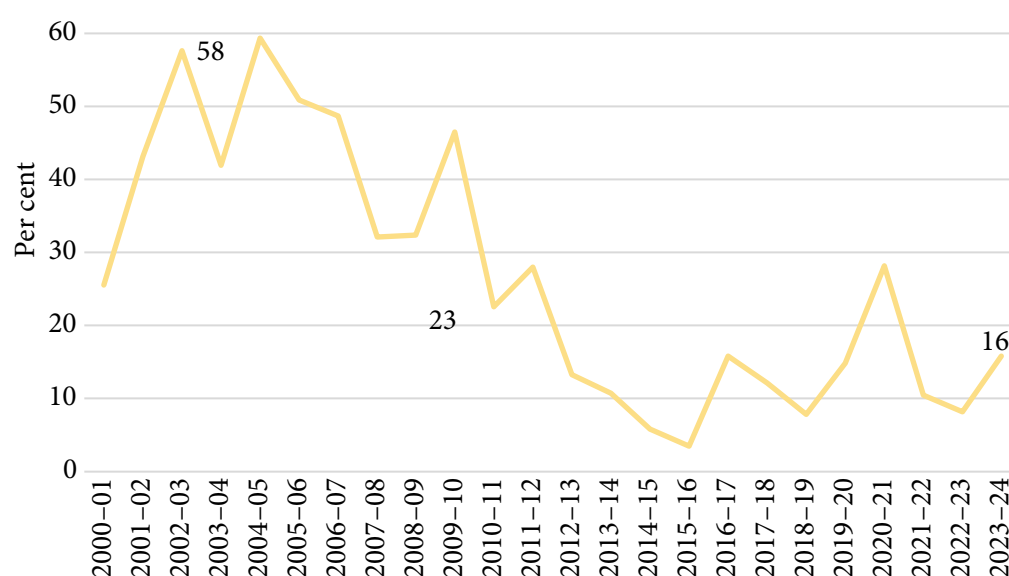
Policy	Objective	Key Measures / Features	Release Year
Greening the Steel Sector in India: Roadmap and Action Plan	Establish a long-term pathway for decarbonising the steel sector in line with India's net-zero 2070 target.	- Development of a green steel taxonomy and standards. ₹455 crore allocated for pilot projects, including green hydrogen-based steelmaking (till FY 2029–2030). - Focus on energy efficiency, renewable integration, and low-carbon technologies.	2024
Production Linked Incentive Scheme for Speciality Steel	Boost domestic manufacturing of high-value speciality steel and reduce import dependence.	- Financial incentives for production of coated/plated steel, alloy steel, and speciality grades. - Target sectors: automobiles, defence, and electrical equipment. - Encourage capacity expansion and technology upgradation.	2021

Source: NITI Aayog (2025); Ministry of Steel (2024a); Government of India (2021).

Note: FY = financial year; NOC = no objection certificate; QCO = quality control order; SIMS = steel import monitoring system.

Appendix G: India's Iron Ore Export-to-Production Ratio

Figure A-1: India Used to Export a Significant Share of Iron Ore Production



Source: Indian Bureau of Mines (n.d); Ministry of Mines (n.d).

About the authors

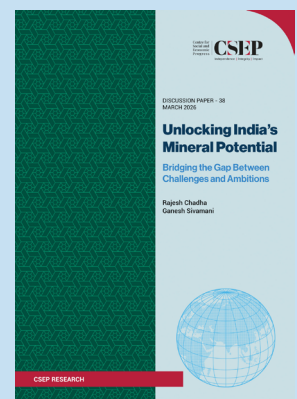
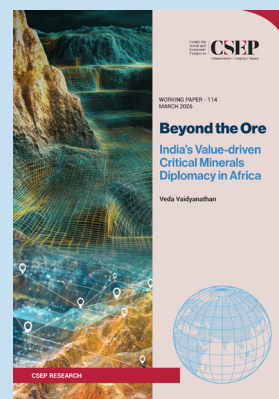
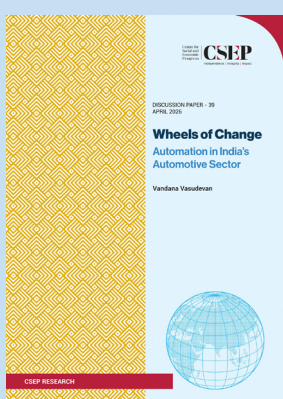
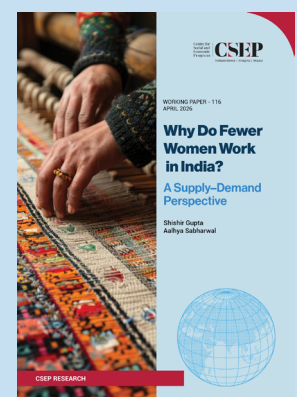
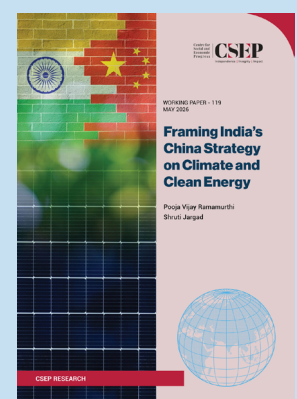
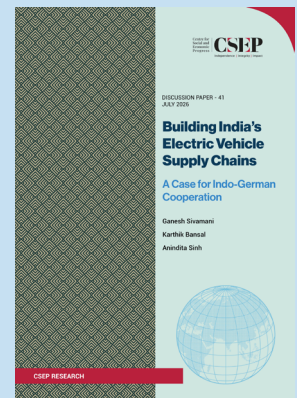
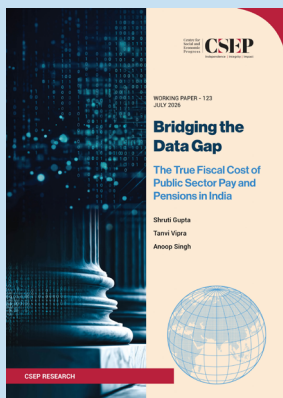


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