



# Market Study Report on the Dynamics of Competition in the Indian Mining Sector with a Focus on Iron Ore

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In its endeavour to ensure fair markets, the Competition Commission of India periodically undertakes various market studies to ensure that the concerned market is operating without any hindrances to competition. As a part of this endeavour, the Commission has initiated a study on the mining sector with a focus on iron ore to examine whether any competition concerns exist in the Indian iron ore market. Major findings and recommendations from this study are discussed here.

## 1. Summary and Findings of the Study

Competition issues in the mineral sector are unique due to sector-specific features such as natural resource characteristics, state intervention in operation and control over minerals, resource generation potential, welfare implications, and more importantly, the environmental hazards created due to over exploitation of nature. Mineral resources have been pivotal in the development and progress of human societies, facilitating industrial advancements and modern living conditions. Given their non-renewable nature and limited availability, countries blessed with abundant mineral wealth possess a natural advantage. However, the rising demand for minerals like iron ore is driven by the growing infrastructure and developmental needs of emerging economies. India possesses abundant and valuable mineral resources, which provide a significant competitive advantage for the country's industrial growth, offering cost-effective inputs for production. Mining activity accounts for roughly 2.3 percent of India's GDP in 2022-23. Iron ore holds a dominant position, accounting for 79 percent of the total mineral value produced in the country. Such advantageous resources play a vital role in fostering the development of basic and heavy industries, and infrastructure, forming the backbone of the country's industrial development.

Mining activities throughout the world involve huge start-up costs and investments with longer turnover times. This is the reason why mining activities are largely dominated by a few big players, giving rise to an oligopolistic structure. In such a context, effective regulation becomes crucial to ensure the judicious and efficient use of minerals, ensuring their availability to industries at reasonable prices. The main objective of this study is to examine whether the mineral sector, especially the iron ore market, is operating smoothly. The specific objectives of the study are to examine the structure, extent, and dynamics of market competition in the sector; to identify the value chains and the competition issues across value chains; and, to unravel any regulatory issues affecting market competition in the sector. The study has also made a detailed assessment of the output growth, trade, and competitiveness in the sector. The report consists of seven chapters, and the major highlights of the report are discussed here.

The second chapter of the report provides a detailed overview of the mining and iron ore sector in India. India is the fourth largest producer of iron ore globally, trailing Australia, Brazil, and China. The country exhibits self-sufficiency in mineral endowment and production, with iron ore being entirely domestically sourced. Iron ore constitutes around two percent of India's export basket, whereas its import basket share is almost nil. The Revealed Comparative Advantage (RCA) analysis undertaken to examine export competitiveness shows that Australia, Brazil, and India have been able to maintain their competitiveness in iron ore products. In the case of India, RCA has been declining till 2015, and thereafter improved performance is visible. Products like pellets and other related items were not competitive until 2013, but this trend has reversed since then. This suggests that India's value addition in the form of pellets is increasingly becoming export competitive.

Public sector companies account for approximately 39 percent of iron ore mining, with the remaining 61 percent being undertaken by the private sector. However, the distribution of mining leases witnessed a significant decline after the implementation of the MMDR Amendments Act, in 2015. The data shows that smaller miners, in terms of land area, have a higher number of mining leases, while the larger players dominate in terms of the total allocated area. Additionally, there has been a gradual increase in the presence of captive mines in the iron ore sector, indicating that large-scale

producers are gaining control over critical raw material requirements. This is also helping them derive vertical integration in production as well as control fluctuations in raw material prices. The effective tax rates and the royalty payments in India are much higher than in most mineral-rich countries, namely Brazil, Australia, Canada, Chile, and South Africa.

The third chapter provides a detailed analysis of the mining laws in India, including the state-level regulations, the interaction between mining laws and competition law, and the international experience. Mining, being a strategically significant sector, has seen a shift in its development approach over the years. Initially, the public sector played a central role, but in the 1990s, there was a realisation of the need for private and foreign investment, leading to policy changes. Recently, some major reforms were introduced in the sector. One aimed at enhancing transparency in ore block allocation, while the other removed the distinction between captive and merchant mines. The presence of captive mines created competition concerns as it led to a differential cost structure in the sector. An analysis of the various provisions in the recent mining laws and their impact on competition outcomes found that the MMDR Amendment, 2021 appears to be supportive of the competition policy objectives. However, improvements are required, especially in terms of smoothening interstate regulations, and ease of obtaining multiple permissions within a shorter time period. State governments like Odisha have been reserving their mining resources for their own consumption. It is observed that though the licensing processes have been liberalised, there are still extensive compliance requirements that small players must adhere to through multiple hierarchies, which creates a chilling effect on small players.

The fourth chapter identifies the relevant products, including the horizontal and vertical line of products, and the geographical market in the sector. The vertical integration analysis based on Supply Use Table (SUT), which was previously Input Output Transaction, shows that the iron and steel sector is the primary consumer (95 percent) of iron ore in India, whereas intermediate goods' demand constitutes only 55 percent of the total value output in the sector. Based on state level analysis, it is clear that iron ore production is concentrated mainly in a few states, such as Odisha, Chhattisgarh, Karnataka, and Jharkhand. These are the major states producing various categories of iron ore (including magnetite and

hematite; lumps/fines/concentrates). Rajasthan is leading in concentrates. Goa had a significant presence in the past, but its position has considerably declined. In Odisha, out of the 163 reported iron ore leases, only 61 are currently operational, with 52 leases having lapsed, and eight temporarily discontinued. Notably, some companies in the state, like SAIL, OMC, Tata, and JSW, hold significant portions of the mining areas. In terms of installed capacity for pellets production and sintering, JSW plants hold a large share of the total capacity, followed by Tata.

The study examined the level of concentration in the Indian iron ore market using various economic indicators of market competition, such as HHI, concentration ratios, and changes in concentration levels. The findings indicate that the iron ore sector is highly concentrated, with a four-firm concentration ratio of 80 percent and an HHI of 2370, which is moderate but close to being highly concentrated. Although the concentration levels have decreased compared to the 1990s, they are still relatively high. Competition was also analysed across different categories of firms, including ownership and entry-based categories, as well as product categories. Changes in the levels of market shares and HHI also show that there has been a gradual decline in the values, both in terms of concentration ratios and HHI. This sector is dominated by public sector companies. The top two players, i.e. central government owned NMDC and state-owned OMC together account for 65 percent shares in the iron ore sector, followed by Amba River Coke, an OP Jindal group company, which is a relatively new entrant in the market. In recent years, there has been a noticeable increase in the presence of both business groups and standalone firms in the iron ore sector. OP Jindal and Aditya Birla are the top business groups in the sector. Market shares are predominantly held by firms that entered the sector before 1990 and during the 1990s. Additionally, the sector has witnessed a number of M&As. Iron ore production is highly concentrated in some states. Odisha alone accounts for more than half (53.82 percent) of the iron ore production, followed by Chhattisgarh (16.3 percent), Karnataka (15.9 percent), and Jharkhand (9.7 percent). The regional concentration of iron ore production also suggests a high level of concentration among a few companies at the regional level.

The fifth chapter of the study presents the findings of field interactions with stakeholders mainly from Odisha and Delhi. The objective of this

field interaction was to gain insights into the competition issues faced by them at the ground level if any. It was observed that in Indian mines, there is a higher presence of iron ore fines compared to lumps, leading to increased production costs. Regarding the quality of iron ore, high-grade ore with more than 62 percent Fe content is found predominantly in the states of Odisha and Chhattisgarh. One of the major issues raised during the field interaction in Odisha was related to the pricing of iron ore. Non-captive users can purchase iron ore through any of the following routes: (i) participating in the auction process of public sector companies like OMC, (ii) engaging in LTL with the OMC, or (iii) purchasing from private merchant mines. In each of these routes, the respondents highlighted various issues.

One of the significant challenges faced in participating in the auction is the high base prices set for iron ore auctions. OMC has emerged as the major supplier for non-captive use of iron ore in Odisha. During field interactions, it was revealed that the high prices were causing losses and closures of smaller steel producers. As per the Odisha Gazette (2023), OMC follows an LTL policy with selected buyer plants, with 80 percent of the iron ore being sold through this arrangement, leaving only the remaining 20 percent open for auction. This distribution strategy raises concerns from a competition regulation perspective, as OMC allocates iron ore supply to specific segments of buyers who meet prescribed eligibility conditions. Under the LTL policy, firms are obligated to purchase a minimum quantity of iron ore, leading to situations where they have to buy regardless of prices and quality to meet the quota. Moreover, the allocation of 80 percent of iron ore through LTL makes the auction less preferable, as the auction prices are used to set the LTL price. Another issue is that the same auction is applicable to various types of iron ore buyers, including integrated plants, pellet manufacturers, sponge iron, pig iron, etc., creating problems as bid price hikes affect all firms equally. Respondents from Karnataka pointed out that the entry fee for participating in auctions is very high. In Odisha, there is no shortage of iron ore, but in Karnataka, a shortage is reported. Iron ore availability in Chhattisgarh is also not satisfactory. From a regulatory perspective, Odisha has a more favourable environment with good infrastructure and an efficient administrative setup. However, processing time can be further reduced through digitalisation, and improvements in transportation to

establish better connectivity between all mining sites and companies, which is applicable to other states as well.

A cost decomposition analysis of the steel sector was undertaken to examine whether raw material (which includes iron ore) is a significant component of the cost of production. The findings reveal that the raw material component accounts for 73 percent of the total expenses in the sector. This proportion has been steadily increasing over the past seven years, while the tax component has been declining during the same period. In the mineral sector, a common phenomenon is that a few large players tend to collaborate, acquire a significant share of mines, and manipulate prices to generate substantial profits. This concentration of ownership allows these players to exercise critical control over mineral resources, enabling them to extract rents in addition to regular profits. As a result, owning mines becomes a source of significant economic advantage, allowing them to recover their initial investment costs. However, the high prices of minerals can negatively impact industries that heavily rely on them as raw materials. In many cases, it becomes challenging to transfer the increased costs of inputs to the final output prices. This is mainly due to the fact that industries closer to the end user usually have a larger number of suppliers compared to the initial stages of the production value chain. As a result, when the prices of inputs like iron ore rise, they cannot be fully passed on to the prices of steel, and this price increase gets constrained as we move further along the value chain. Hence the asymmetry in sharing the burden of higher prices is somewhat structural because of the nature of the market and the varying number of players in subsequent stages of production.

The study also assessed the profitability of the steel industry and observed that it incurred losses in the initial two years of the reference period (2016-17 and 2017-18). However, there has been an improvement in the profitability trend in subsequent years. Mega and large firms account for approximately 96 percent of the total market, and among them, mega firms show higher profitability compared to other ownership categories. In contrast to the iron ore sector, where public sector companies hold a significant market share, steel production is largely dominated by business groups with over 51 percent market share, followed by standalone private firms. Business group-owned firms are found to be more profitable than

other entities in the sector. The public sector's presence in the steel industry is relatively limited, accounting for approximately 13 percent of the market. It is to be recalled that several steel plants are integrated and have captive mines, with the majority of such mines being affiliated with top players and business groups. This presence of captive mines seems to contribute to their profitability. On the other side, smaller plants tend to face losses, while medium-sized firms show relatively lower profitability. As a result, the existence of captive mines creates a favourable market condition for larger plants, shielding them from significant price fluctuations.

Next, the study examined the cost and profitability of OMC and NMDC, the major iron ore suppliers in India. OMC is a major supplier in Odisha whereas NMDC is the top supplier in Chhattisgarh and Karnataka. Both companies generate significant revenue from iron ore sales, resulting in a remarkable financial performance with high profits. However, a significant portion of OMC's expenditure goes towards paying royalties to the government. Despite increasing revenue from iron ore and royalties, the high prices of iron ore are adversely impacting the profitability of user industries such as pellets, sponge iron, and steel. The study analysed the growth rates of quantity and inflation adjusted sales revenue of OMC and found that the growth in the value of sales has outpaced the growth in the quantity sold, indicating a significant increase in the prices of iron ore. The study has further analysed the financial performance of a number of user companies with available data and revealed that they have been facing losses in recent years. It is observed that their expenditure on raw material purchases, particularly iron ore, is increasing. These findings are further substantiated by the insights gathered from field interactions. Among the various companies, pellet manufacturers appear to be more vulnerable, while sponge iron plants also exhibit lower profitability.

In conclusion, the study emphasises that iron ore resources are non-renewable and valuable public assets and should be managed and utilised efficiently under stringent government oversight. The central position of public sector companies in mineral production and the generation of revenue from these operations can contribute to the welfare of the nation. However, it is essential to ensure that this approach does not adversely impact any section of the business. It is seen that the relatively small players in the market are more affected by the rising raw material costs



and the consequent temporary shutdown of operations. Large integrated steel plants with captive mines are less affected as they are not dependent on market-determined iron ore prices. On the other side, non-captive producers, which are relatively small firms, face challenges due to the high iron ore prices, affecting downstream industries. In addition, the process of base price fixation should be transparent and considerate of the interests of both large and small producers within the industry. Imposing quantity constraints by allocating a significant portion of iron ore to firms within the home state should be carefully examined to avoid creating shortages in other regions. Since natural resources like iron ore are not evenly distributed across the country, their allocation should not be limited to any particular region.

## **2. Policy Recommendations Based on the Study**

Before delving into the recommendations, it is to be noted that the iron ore and its vertically linked steel manufacturing sector are regulated by multiple government agencies through several legislations, including state level interventions. In addition, as part of the industrial development strategy and to foster long-term competitiveness, greater incentives were granted to some players in the vertically related sectors, such as steel. The presence of captive mines is one such example. Conversely, the essence of competition regulation in India has been to guarantee fair market operations and establish a level playing field for all firms to operate smoothly. Further, the National Steel Policy aims to create a technologically advanced and globally competitive steel industry, fostering self-sufficiency in steel production and contributing to overall economic growth. Hence, there are multiple policies and stakeholders with varying business objectives. However, the utmost priority should be given to the economic development of the nation by establishing a globally competitive manufacturing sector. And, most importantly, it is critical to acknowledge that iron ore is a non-renewable national asset that needs to be protected for future generations. In light of these considerations, the study puts forth the following major recommendations from a competition policy perspective.



## 2.1 Captive Mines are Creating Differential Market Conditions

The allocation of captive mines to some players creates entry barriers in the iron ore and steel sector as entry and successful operation become costly for new firms. It is to be noted that as per the Competition Act, of 2002, the presence of entry barriers, including regulatory barriers, is a pivotal consideration in the assessment of competition. Vertical integration and the forward contract or implicit quota for minimum purchase quantities are common strategies adopted in various markets to ensure a consistent supply of inputs and stabilise price fluctuations from the supply side, while for sellers it is about ensuring the sale of their output. This sort of vertical integration is implemented through captive mines, by which the steel manufacturers can eschew the unusual fluctuations in both the supply of inputs and prices. For smaller players, this is not possible as they have to rely on outside suppliers.

The study observed that the presence of differential pricing of iron ore for different end users is likely to create competition concerns. For example, in a scenario where a company with a captive mine competes against a similarly sized non-captive firm, the latter may encounter difficulties in competing since it is subject to the market price for iron ore. The best example here is the losses faced by Rashtriya Ispat Nigam Ltd (RINL) due to the absence of a captive mine (Rao, 2021). It is needless to say the non-captive users are relatively small firms, while the captive users are large and integrated plants. Vertical integration through captive mines allows larger firms to obtain a steady supply of raw materials at a consistent price, ensuring uninterrupted operations. However, smaller firms face higher price volatility of minerals, significantly impacting their profitability. In 2020-21, captive mines accounted for around 41 percent of the total production (and 20 percent of the total number of mines), whereas non-captive production accounted for 59 percent (80 percent of the total number of mines). It indicates that a significantly larger portion of the industry is not benefitting from captive mines.

In this regard, it is not possible to withdraw already operational captive mines before the completion of their tenure. Doing so could disrupt the synergies and efficient production, as these firms represent Indian steel in the global market. With the MMDR Amendment of 2021 eliminating the distinction between captive and merchant mines, these firms are now

permitted to sell up to 50 percent of the surplus iron ore in the market. This will boost the supply of iron ore in the market. However, when a captive mine sells its surplus input to other entities, it is crucial to monitor the prices charged to ensure that it does not result in high costs for the buyer firm, especially if the buyer competes with a captive mine owned firm in the steel market. Further, it may be argued that the absence of captive mines may increase steel prices, as these firms have to depend on the market for their iron ore requirement. Those with captive mines also participate in the auction process and procure iron ore through the LTL route. It was also argued by some stakeholders that captive mines are not being utilised optimally. In this regard, the ideal situation would be a more equitable distribution of iron ore mines in the future, based on an appropriate criterion, with the caveat that any surplus should be sold in the open market at a fair price. Hence, to compensate for those without captive mines, preferential treatment should be granted to these entities when allocating iron ore through LTL by OMC in Odisha.

## **2.2 Iron Ore Sales Auction: Need for a Single e-Auction Process for All Iron Ore Mines in Odisha**

OMC's pricing and distribution of iron ore and its involvement in the auction process raise multiple competition concerns. This may have implications in terms of the provisions of Sections 4(2)(a) (i) and (ii) of the Competition Act, 2002, which need to be examined further. Currently, OMC is the single major supplier of iron ore in Odisha, especially for the non-captive segment of users. It was found that private mines often wait for the OMC's auction process, and then establish their prices at a higher level than what was determined by OMC in its auction process. As a result, competition elements are further diluted in a naturally concentrated iron ore market. To address this concern, a potential solution could be to introduce a single e-auction process for all iron ore producers including merchant miners in the state. This approach will ensure competitive neutrality by including private and public companies, promote greater competition, and also control high prices charged, if any, by private miners. To ensure the effective implementation of the auction process, it may be advisable to exclude merchant mines of very small size by setting a threshold size for eligibility. Apart from merchant miners, captive mines are also permitted to sell approximately 50 percent of their production

in an open market. Including this quantity in the e-auction process can further enhance the supply of iron ore, thereby strengthening the auction system. Furthermore, the frequency of iron ore auction processes should be increased to address the current bottleneck in availability, as firms currently have to wait for approximately one month between auctions. The auctions could be held weekly or bi-weekly, as per the business requirements of the firms.

### 2.3 Pricing of Iron Ore in Odisha

The determination of base prices for iron ore by OMC during the auction process has emerged as a significant issue based on field interactions, which raises competition concerns based on the anticompetitive provisions in the Competition Act. Specifically, the competition concerns raised may be based on Sections 4(2)(a)(i) and 4(2)(a)(ii) of the Competition Act, 2002 as mentioned earlier. If prices are solely determined by market forces, it eliminates any possibility of complaints or disputes. Whereas the auction prices for iron ore are partially regulated through the base price fixation, which, according to most of the respondents, is very high, leading to losses for them. Most often, the base price is also the selling price. On the other side, the profitability indicators of iron ore producing firms are more favourable compared to those of steel plants, especially the smaller sized plants. Besides, some of these firms are experiencing losses, further confirming the field observation that many pellet producers temporarily ceased operations. It is to be noted that the prices of end products are market determined.

The soaring prices of raw materials, specifically iron ore, significantly impact small sponge iron industries and pellet-producing enterprises. It is important to note that the processing of minerals increases their usability and quality. Hence, processing activities would increase the use of minerals and help reduce imports. However, if iron ore prices rise excessively, it renders many processing industries, especially smaller ones, economically unviable.

Permitting such practices would be detrimental to the sustainable operation of end-user industries. It is imperative to establish transparency in determining the base price and develop a suitable mechanism for base price fixation, preferably utilising a price index. This approach would

help moderate mineral prices, making them affordable for user industries. Such measures are crucial since an escalation in steel prices could trigger cascading effects, leading to an inflationary spiral for the entire economy.

For those without captive mines and ineligible for LTL, the auction route becomes a necessity. Hence, it is obvious that the relatively small firms will participate in the auction process. And, the price determined through the auction route is likely to be higher than that of the LTL route. An alternative option for these firms is to rely on private miners. To ensure transparency in the process, the base price calculation should be publicly displayed on the relevant website at regular intervals. Furthermore, the industry's perspectives should be taken into consideration while determining the amount, which can be collected timely through market surveys before a specified date, a few days prior to each auction.

## 2.4 Need for an End Product Based Auction System in Odisha

It is observed that the same auction process for various products, ranging from steel to pellets, is raising concerns among both large and small plants. It is said that small plants occasionally present higher bids for a smaller quantity of iron ore. Once they present their bid, the rate becomes applicable to all plants, which adversely affects the larger plants, as they have to purchase larger quantities at the same rate.<sup>1</sup> Small plants might be offering higher bids due to limited alternative options for raw material procurement. In this regard, a separate auction for different categories of end users may be implemented, which will be beneficial for both sets of firms. An alternative suggestion may be to allocate a specific number of mines to smaller producers (like pellets, sponge iron, and pig iron) at a lower cost.

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<sup>1</sup>To illustrate, consider a base price of Rs 100/tonne. If a small player offers Rs 10/- and buys 50 tonnes, the total amount is  $110 \times 50 = 5500/-$  (against the pre-price-hike situation of  $(100 \times 50) = 5000$ ). Hence, the net increase would be Rs. 500/- (i.e. 5500-5000) for the small player.

If this price applicable to large player buying 5000 tonne:  $(110 \times 5000 = 550000/-)$  -total amount required against the pre-hike situation:  $100 \times 5000 = 500000/-$ . Here the net increase is Rs. 50000/- (i.e., 550000-500000). So, the small companies pay Rs.500 extra, while the large pay Rs. 50000 extra.

## 2.5 Long-term Linkage Policy of Odisha Government through OMC

Presently, only 20 percent of OMC's sales occur through the auction process, with the remaining 80 percent being sold through the LTL route<sup>2</sup>. This initiative by the Odisha government aims to ensure an uninterrupted supply of raw materials to the downstream sectors. Though limiting supply in any manner is against competition regulation, such long-term contract has certain advantages like: (i) less uncertainty about market demand, preventing unsold stock from accumulating, and (ii) firms have a guaranteed supply of materials, and enabling them to adjust production accordingly. However, restricting 80 percent of production within a single state, despite being one of the top producers of iron ore in India, raises concerns about the fair functioning of the market, especially considering that a significant portion of the reserves is concentrated in only a few states in the country. In any case, firms from other states will purchase OMC's iron ore only if it is cost-competitive for them, considering the transport cost involved.

The ideal policy here is to safeguard the advantages of long-term contracts while correcting the issues that may arise from them. In this context, efforts should focus on maintaining the LTL quantity within the mid-range rather than the upper limit, in the spirit of equity, and trading the rest through the auction route. Otherwise, no discrimination should be made between firms registered in Odisha and those from other regions while implementing the LTL scheme. From the point of view of competition regulation, limiting the bidding process also restricts competition. The price decided for LTL is also influenced by the auction price; hence, the proposed price index for base price fixation may also be applied here. Also, the minimum purchase requirement as part of this agreement should be contingent on whether OMC supplied the required grade and quality of iron ore needed by the firm. Otherwise, firms will be forced to make additional purchases solely to fulfil the quota. The LTL should give priority to firms without captive mines. As previously suggested, integrating merchant miners and surplus from captive mines into the auction system along with OMC supply would effectively mitigate concerns about high price fixation. This measure will foster greater competition for OMC. The

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<sup>2</sup>Surplus quantity in LTL may be adjusted in auction route.

LTL policy needs to be further reviewed specifically from the point of abuse of dominance provisions in the Competition Act.

## **2.6 Iron Ore Block Auctions and Future Competition**

Ensuring a transparent mechanism for allocating mineral blocks is crucial. Respondents generally agreed that the auction process implemented after MMDR Amendment 2015 has brought transparency. However, the presence of top players has intensified in the process. It is observed that the iron ore blocks auctioned after 2015 are dominated by some private companies like JSW,<sup>3</sup> accounting for nearly 47 percent of the total quantity of the reserves auctioned from 2015. Therefore, it is imperative to avoid the concentration of critical iron ore reserves in only a few firms or business groups, given that these contracts span an initial 50-year period, which holds significant implications for the economy. To safeguard the finite and non-renewable nature of iron ore mines, it is essential to impose a suitable maximum limit on the ownership of these mines in terms of the number of reserves held by a steel producer at a given time. This measure becomes necessary as the auction process typically awards the mines to the highest bidder, and preserving these resources for future generations is of utmost importance. Due to the ability of top firms to submit exceedingly high bid prices, it is crucial to impose limitations on their participation in the auction process. Otherwise, the ownership control of iron ore mines may impact future competition in the iron ore and steel sector.

## **2.7 Adoption of Green technologies, Beneficiation Process, and Sustainable Mining**

Accumulation of unused low-quality iron ore has been a concern in the past, necessitating the adoption of advanced technologies from countries like Japan and China to beneficiate it into high grades without compromising cost advantages. Respondents suggested that converting fines into pellets is an important option to minimise carbon emissions compared to other production methods. Some plants have refrained from adopting pelletisation due to existing investments in alternative facilities. In this regard, the government may introduce schemes like Production

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<sup>3</sup>JSW and Jindal together; calculations based on Ministry of Mines, Government of India.

Linked Incentives (PLI) for intermediary businesses, normally owned by relatively smaller players, to encourage the adoption of better technologies and thereby mitigate carbon emissions to a great extent. Furthermore, promoting the use of solar energy in all plants can help complement their energy requirements with green technology, thereby contributing to environmental sustainability.

It is important to promote sustainable mining through regulations to gradually phase out 'dirty' technologies over time. A well-defined regulatory framework should encourage the adoption of clean technology and provide incentives for the transformation of existing production processes into sustainable modes of mineral production. International practices to restore soil and forest cover, along with rebuilding ecological balance, are important for long-term sustainability. The Indian government has established a Clean Energy Fund to support the development and adoption of clean energy technologies in various sectors, including the iron ore sector. The fund provides financial support for research and development of clean energy technologies and helps in the deployment of renewable energy projects. Regulatory agencies need to devise legal frameworks and regulatory tools to gradually phase out old polluting technologies.

## 2.8 Ease of Implementing Regulations

A competitive environment fosters trust among all stakeholders, i.e., the government, miners, local communities, and others through openness, fairness, better regulation, responsiveness, and inclusive policy-making. It would be vital for the country to gain the trust of these stakeholders to achieve sustained growth in the mining sector. The reforms introduced through the 2021 Amendment in the mining laws are slated to benefit the iron ore sector; however, the actual implementation of these reforms at the ground level would be crucial. It is worth noting that some state governments have been protective of their mining resources, as evidenced by their reservations about iron ore mines for captive use. An assessment of the state governments' reservations of iron ore would be essential to optimise the utilisation of these resources.

Despite the liberalisation of licensing processes, the extensive compliance requirements and multiple hierarchies can be intimidating



for small players. This may create a chilling effect on new entrants, discouraging them from participating in the sector. To facilitate the exploration of scattered iron ore deposits by small miners, separate processes could be introduced. While the National Mineral Policy 2019 and its implementation through central legislation are commendable steps, further efforts are required to strengthen and enforce these policies at the state level to ensure effective implementation.

To avoid lengthy court battles, any disputes, which may arise, should be resolved through amicable mediation and arbitration especially considering that a significant portion of the reserves is concentrated in only a few states in the country. Regular reviews of the implemented reforms with inputs from stakeholders will enable timely interventions and improvements. Additionally, ensuring public reporting of resources is crucial to maintain transparency and provide valuable information to the public.

Embrace comprehensive digitalisation in handling various applications to enhance transparency. This will lead to faster processing times. Creating a business-friendly environment for firms will ensure proper implementation of regulations. Conducting joint inspections can save time and resources. Moreover, improved coordination between different districts and states is essential, given that inputs and production often take place in different regions.

## **2.9 Royalty and Royalty on Royalty**

The royalty rates in the Indian market are currently higher compared to international markets, leading to increased compliance costs for mining companies due to various additional fees. Introducing a uniform royalty rate could be advantageous, especially for small miners or new entrants. Additionally, some respondents have raised concerns about having to pay 'Royalty on Royalty' since the Average Sales Price (ASP) published by IBM includes the royalty component. At the time of dispatch, royalty payment is calculated based on the ASP (which already includes royalty). The auction process has further complicated the royalty regime. Kumar and Sinha (2020) find that the all-India weighted average premium for iron and manganese ore blocks comes to 101 percent, which leaves no margin to recover the cost of actual production, royalty and statutory

levies to be paid, etc. This skewness varies from state to state and needs to be addressed.

## **2.10 Infrastructure Development**

While Odisha possesses relatively better infrastructure, states like Karnataka must focus on developing their infrastructure. It is essential to establish effective road and rail connections between mines and processing plants to ensure that the sector operates seamlessly. However, the sector's competitiveness is hindered by the high transportation costs it incurs.

## **2.11 Iron ore is a National Wealth: Discourage Iron ore Export**

As the country transitions to Aatmanirbhar Bharat, India should prioritise the export of higher value-added products, such as finished steel. The export of iron ore should not be encouraged as it is not a renewable material. By discouraging such exports, we can enhance the domestic supply. It is crucial to bear in mind that excessive consumption of iron ore today might result in its depletion, affecting the resources available to future generations. The government has been changing the export duty structure for the iron ore sector from time to time to regulate the outward movement of the 'national wealth.' Starting from November 19, 2022, the Government of India removed the export duty imposed on low grade iron ore, pellets, and specified steel products, including pig iron. However, for high-grade lumps and fines containing more than 58 percent iron, a reduced export duty of 30 percent is applicable. Considering that iron ore is a non-renewable national resource and a vital raw material in various industries, strict control over its overexploitation is necessary. India should consider adopting the Chinese strategy of importing iron ore even though China is one of the leading global producers of iron ore, which has helped China to become the world's top manufacturer of steel. In order to address the problem of the accumulation of low grade iron ore, India should implement the most cutting-edge technologies to upgrade low grade iron ore to higher grades through beneficiation processes.

## **2.12 Association Activity**

There are active associations in this sector for both buyers and sellers. Seller associations primarily focus on merchant mines. The buyer power is constrained by quality considerations since the desired quality may

only be found in specific mines, and the location of these mines also influences the cost competitiveness. Certain associations within the industry have shown significant activity and have previously lodged cases with the Competition Commission of India, demonstrating their vigilance on competition-related matters. These associations may choose to conduct additional competition compliance awareness programmes for their members, aiming to educate them about what practices are deemed acceptable and unacceptable to ensure fair market operations.

### **2.13 Advocacy Initiatives and Self-Regulation**

From the field interaction, it is clear that the awareness of competition regulations is expanding among different stakeholders. It has also been observed that various training programmes should be organised, particularly for small-scale producers and various stakeholder associations. Such training sessions can help them recognize competition-related issues and increase their awareness of prohibited and permitted activities. Empowering stakeholders in this manner will enable them to confidently report any unfair practices they come across, thus strengthening their position as buyers or sellers. For sectors where firms are spread across the forest and remote areas, competition advocacy with associations is the best option, as these associations can engage the maximum number of participants for mutual benefits. Besides this, state governments should also be given adequate training on what comes under the purview of the Competition Commission of India. With the help of state level regulators, a list of various stakeholders in this sector can be compiled, which can be used for advocacy initiatives. Social media including WhatsApp may be effectively used to disseminate advocacy information to various stakeholders, providing a powerful means of communication and engagement. Creating awareness is the best option for promoting self-regulation. In this regard, the Commission is working on reaching out to various stakeholders in different markets for effective competition advocacy. And, this market study is part of that initiative.

### **2.14 Future Prospects of the Sector**

Being a finite non-renewable natural resource, the prospects of this sector highly depend on preserving the immeasurable natural resources for future generations. The demand for iron ore is derived from the demand

for steel, which is expected to increase due to the increasing demand for infrastructure, housing, aviation, automobile and so on. Our policies should focus on creating a globally competitive steel sector, which will have a multiplier effect on the economy. Providing an adequate quantity of iron ore within a reasonable timeframe is essential to achieve this goal. Iron ore exports outside India should not be encouraged to generate foreign exchange, as in the case in other sectors. In this process, it is also important to adopt the best technologies to beneficiate low-grade iron ore, without reducing the cost competitiveness.