Iron ore industry

August 31, 2018 I Industry Research

Contact:

Madan Sabnavis
Chief Economist
madan.sabnavis@careratings.com
+91-22- 6754 3489

Vahishta M. Unwalla
Research Analyst
vahishta.unwalla@careratings.com
+91-22-6754 3607

Guided by:
Hitesh M. Avachat
Senior manager- corporate ratings
hitesh.avachat@careratings.com
+91-22-6754 3510

Mradul Mishra (Media Contact)
mradul.mishra@careratings.com
+91-22-6754 3515

Overview

India has produced a total of ~210 million tonnes of iron ore in FY18, witnessing a 9% growth Y-o-Y.

In India, the main deposits of iron ore are located in the states of Odisha, Jharkhand, Chhattisgarh, Karnataka and Goa, with Odisha contributing ~50% of India's total production.

With iron ore produced in more than 50 nations, Australia, Brazil, China, India and Russia are the largest producers. Australia and Brazil cumulatively contribute ~60% to the world's iron ore production.

Indian exports of iron ore stood at 24.1mn tonnes and imports were 8.7mn tonnes in FY18.

Indian tax rates which are amongst the highest globally, along with minimal spends on exploration are the biggest challenges faced by the industry.

Outlook

- Production of iron ore is expected to grow by 2-5% in FY19, with a stable demand from infrastructure and the automobile industries in the country. Domestic demand is expected to be met with the large iron ore inventory piled up at the mines pit-head, in addition to new production during the year.

- Exports of Indian iron ore pellets is expected to reach about 10mn tonnes in FY19, with greater demand from China, seeing its preference shift from Indian iron ore fines to pellets, due to pressures of controlling pollution emissions.

- Domestic iron ore prices are expected to hover between Rs.3,000-3,500 for lumps and Rs.2,600-2,900 for fines, in FY19.

Mining sector

Minerals constitute the back bone of economic growth of any nation and India has been endowed with mineral resources. Mining is the extraction (removal) of minerals and metals from the earth and is considered one of the core sectors that drive growth in every economy, providing raw materials to a host of basic industries such as steel, power, automobiles, construction, etc. The importance of this sector to a country's growth is often underestimated, as without the mining sector, many industries, especially manufacturing can get negatively impacted.

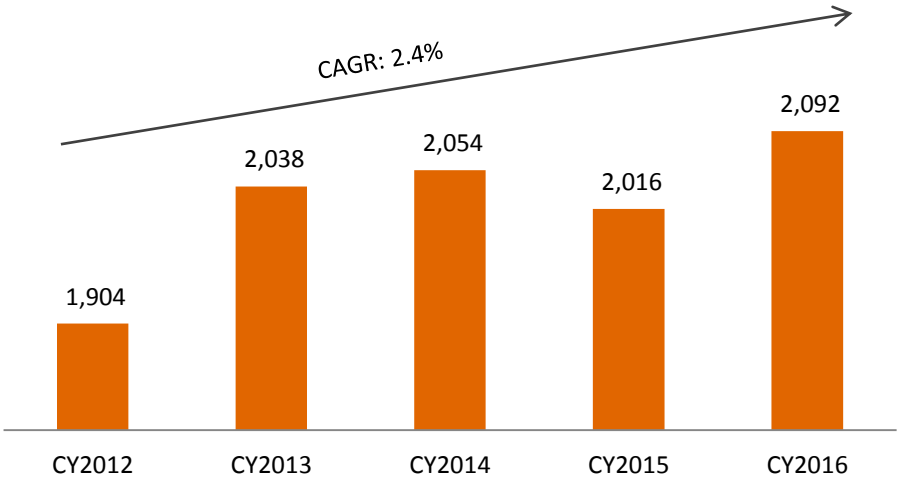
At the same time, the environmental and social impact of mining are quite harsh, as it leads to land erosion, formation of sinkholes, loss of biodiversity, etc. that have serious negative health effects on mine workers and nearby residential areas, with risks of respiratory damage through high levels of dust and other chemicals emitted in the environment. Social impact includes community dislocation, amenity loss, etc.

Iron ore: Global perspective

Iron ore is one of the crucial raw materials for making steel. Iron ore is mined in about 50 countries globally, with Australia and Brazil topping the chart and cumulatively producing ~60% of the world's production. Other leading iron ore producing nations include China, India, Russia, South Africa, etc.

Chart 1 shows a world production trend of iron ore from CY2011-16, registering a CAGR of ~2.4% over the period.

Chart 1: World production of iron ore, iron ore concentrates, and iron ore agglomerates (mn tonnes)

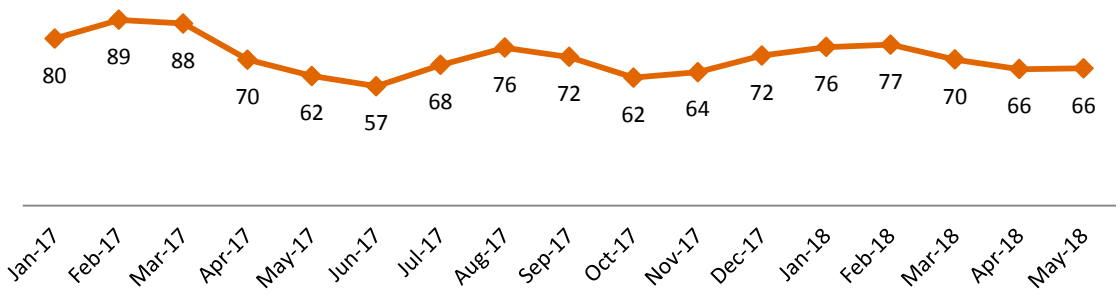


Source: World Steel Association

International prices trend

The initial months of CY2017 saw a surge in iron ore prices, with Chinese steel factories stocking up iron ore to ensure they had sufficient supplies to restart production immediately after the Chinese new year holiday period. In addition to this, monsoons in Australia during the same period, acted as catalysts for increase in iron ore prices, due to flooding in Australian mines and infrastructure disruptions, as a result of which there was reduction in overall supply of iron ore. China's on-going initiatives of cutting steel production for eliminating over capacity and reducing air pollution, had led to a slide in iron ore prices.

Chart 2: Iron ore (any origin) fines, spot price, c.f.r. China, 62% Fe in USD/dmtu*



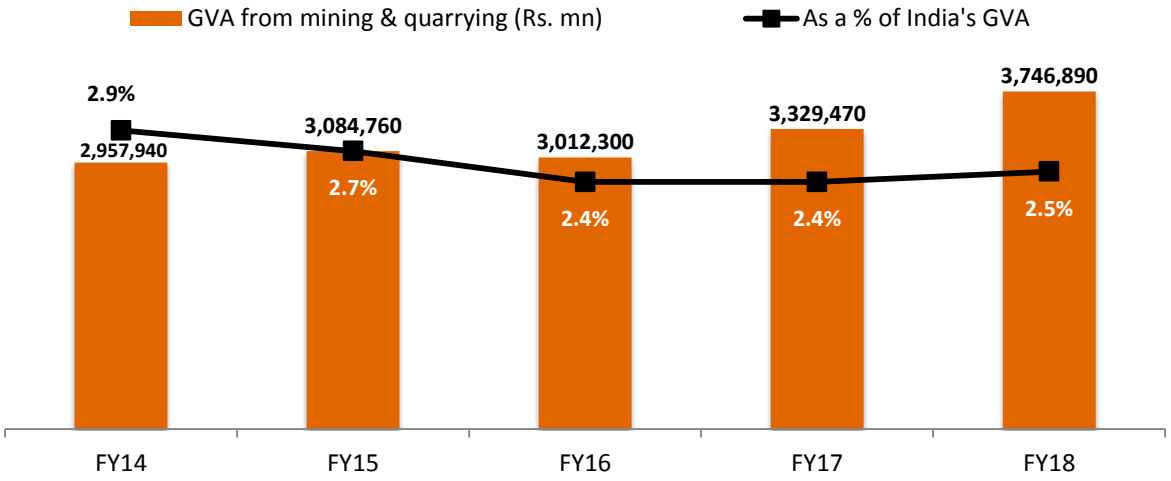
* dry metric ton unit *(dmtu) is the internationally agreed-upon unit of measure for iron ore pricing. dmtu has the same mass value as a metric tonne, but the material has been dried to decrease the moisture level.*
All prices are monthly averages
Source: World Bank

Mining industry: India

India is self-sufficient in minerals production, producing a total of ~98 types of minerals. The country is 3rd largest coal producer, 3rd largest steel producer, 4th largest iron-ore producer, 6th largest zinc producer and many more. Mining is also identified as one of the core sectors by the Indian government, for "Make in India" scheme.

The value of output of mining and quarrying sector in FY17 at current prices stood at Rs.5,645,300mn, where iron ore industry's contribution was 12% or Rs.679,090mn. The Gross Value Added (GVA) accrued from mining and quarrying sector at 2011- 12 prices for FY18 at current prices, was Rs.3,746,890 mn and the sector contributed ~2.5% to India's GVA.

Chart 3: GVA from mining and quarrying



Source: CMIE

Full bodied development in the mining sector is fuelled by sustained growth in the automotive and infrastructure sectors, which in turn leads to a demand for power and steel in the country.

Production

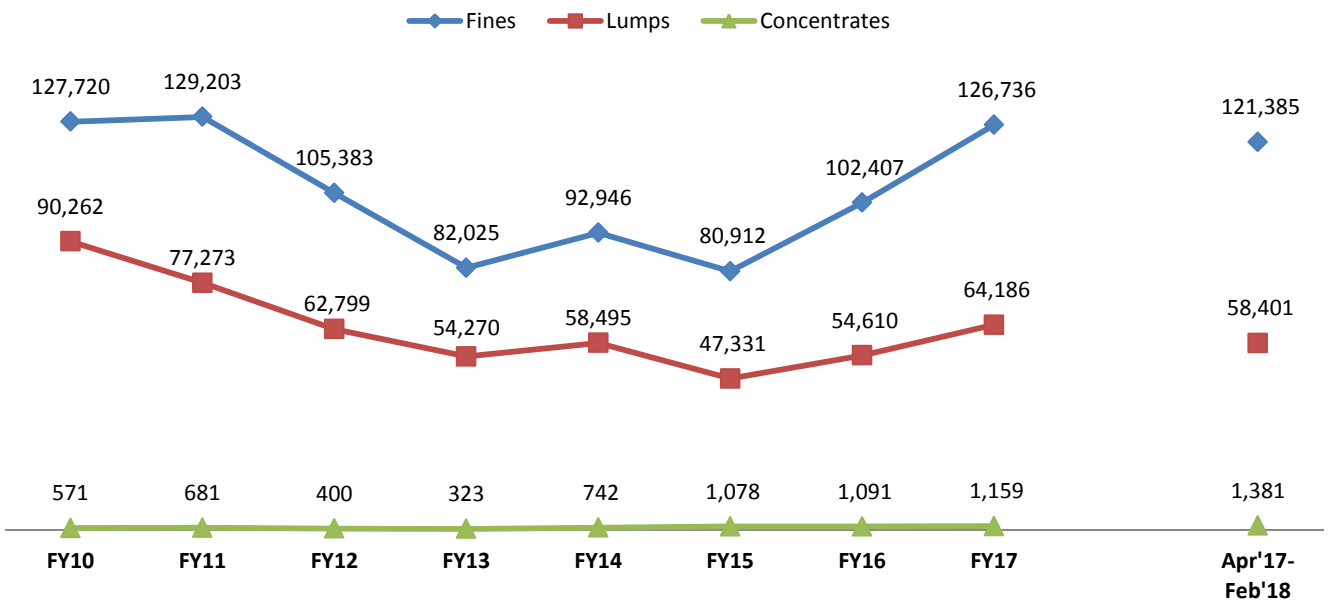
a) In varieties

There are broadly 3 varieties of iron ores produced in India: fines, lumps and concentrates. Out of these, ~66% of the total production is in the form of fines, followed by ~33% in lumps and a small proportion of ~1% in concentrates.

Iron-ore mining ban showed a drastic ~40% fall in production from 218mn tonnes in FY10 to 136mn tonnes in FY13, due to which the steel and mining companies operating in Karnataka and Goa bore the burden of the mining ban.

India has produced a total of ~210 million tonnes of iron ore in FY18, witnessing a 9% growth Y-o-Y. One of the factors contributing to this growth is the increase in permissible limit of annual production in Karnataka mines. It is estimated that the total potential for iron ore mining is 50-60 mt a year. With the Supreme Court's cap, only 30 mt p.a. could be mined earlier, which was enhanced to 35 mt p.a. in Dec-17. This has acted positively, especially for steel companies operating in south India, as they earlier spent heavily on logistics to transport iron ore from eastern states. Additionally, the state benefitted with jobs creation and increase in revenue.

Chart 5: Production of varieties of iron ore in India ('000 tonnes)



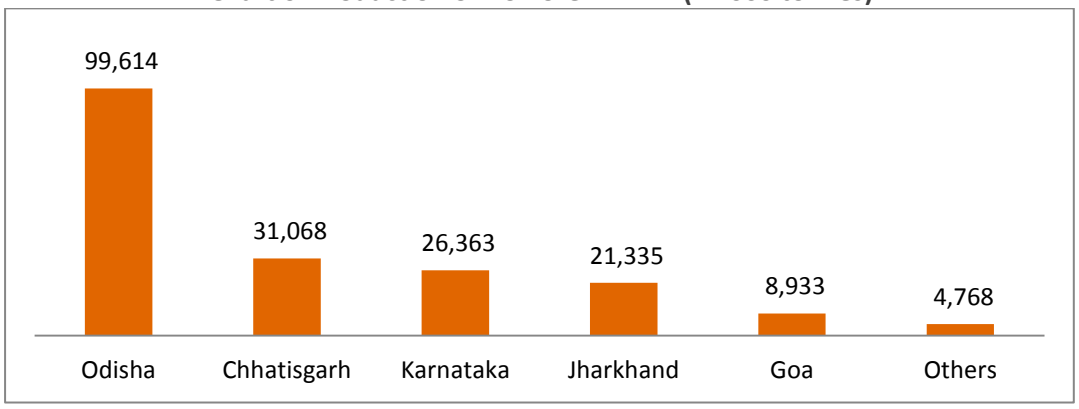
Source: CMIE, Statistical profile of minerals FY17 by Indian Bureau of Mines

The country's largest iron ore producers: National Mineral Development Corporation (NMDC) and Steel Authority of India (SAIL) had a finished iron ore production capacity of 43mn tonnes and 37mn tonnes respectively, in FY18. The total iron ore production of NMDC and SAIL stood at 35.5mn tonnes and 27mn tonnes in FY18, with a contribution of ~17% and ~13%, or cumulatively 1/3rd of India's total production during the year.

b) State wise production

The total iron ore production in India in FY17 stood at ~192mn tonnes. Odisha solely contributes a mighty ~50% of India's total production, with Chhattisgarh, Karnataka, Jharkhand and Goa contributing another ~45%.

Chart 6: Production of iron ore in FY17 (in '000 tonnes)



Others include: Andhra Pradesh, Madhya Pradesh, Maharashtra and Rajasthan
Source: CMIE

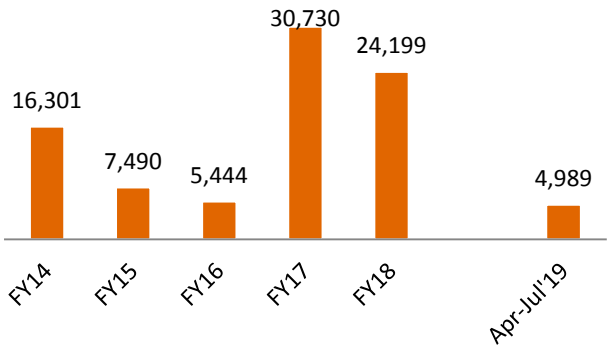
Sale of iron ore from Karnataka mines had fallen sharply the past few months, with domestic steel producers buying the commodity from Chhattisgarh and Odisha due to better quality at cheaper price, instead of sourcing low grade iron ore at a higher price from Karnataka, due to which there had been a pile-up of unsold stock of ~2.8mn tonnes of iron ore in Karnataka. To avoid further inventory build-up, companies had either stopped mining or reduced the utilisation. Due to a reduced demand in the state, prices remained low from April- June 2018.

Recently, NMDC hiked the prices of lumps and fines to Rs.3,350/tonne and Rs.2,960/tonne respectively, w.e.f. 22nd August, 2018, to reduce the price gaps between Chhattisgarh, Karnataka and Odisha. In July 2018, NMDC's total production was 8.39 million tonnes (MT) as against sales of 8.72 MT, with Chhattisgarh's sales at 7.08mn tonnes as against production of 5.50 MT and Karnataka's sales at 1.64 MT as against production of 2.89 MT.

Export-Import

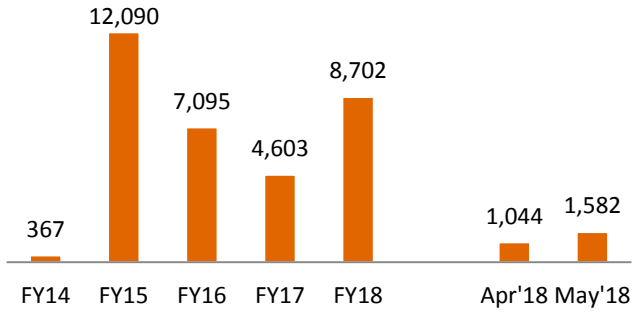
In FY18, India exported ~24.2mn tonnes of iron ore and concentrates and imported ~8.7mn tonnes, making India a net exporter. About 90% of the total domestic production of 210mn tonnes in FY18 was for domestic use, and just about 11% was cumulatively exported to countries like China, Japan, South Korea, Oman, Vietnam, Indonesia and Malaysia. We import iron ore mainly from Australia, South Africa, Brazil and Bahrain.

Chart 7: Indian exports of iron ore and concentrates ('000 tonnes)



Source: CMIE

Chart 8: Indian imports of iron ore ('000 tonnes)

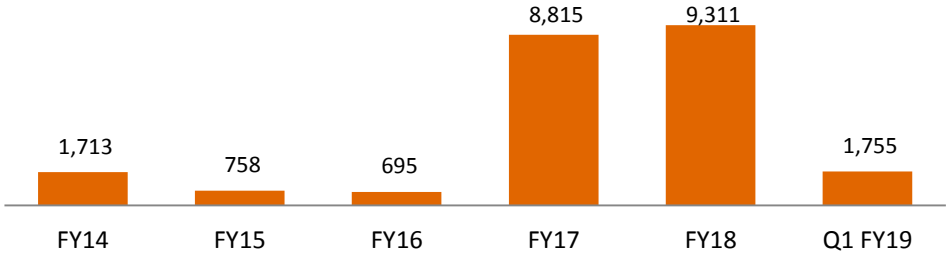


Source: CMIE

Iron ore pellets

It has been observed that iron-ore pellets are outstripping trade in high-grade iron-ore fines. Chinese steel mills prefer pellets over fines, as they are under pressure to cut polluting emissions and are seen to be cutting down volume bookings for high grade Indian iron-ore fines with high alumina content. While iron-ore fines exports attract a tax of 30%, iron-ore pellet exports attract a nil or minimal tax, is acting as a contributing element for local traders and manufacturers to push higher pellet volumes overseas.

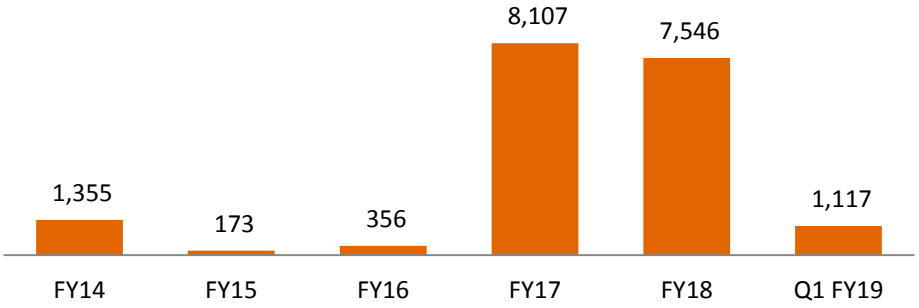
Chart 9: Indian exports of agglomerated iron ore pellets to all countries ('000 tons)



Source: Department of commerce

China is the principal iron ore pellets importer from India. Chart 10 shows the trend of Indian iron ore pellet exports to China over the past 5 years. In FY18, out of the total Indian iron pellets exports of 9,311,000 tonnes globally, China's share stood at 7,546,000 tonnes or 81%.

Chart 10: Indian exports of agglomerated iron ore pellets to China ('000 tons)



Source: Department of commerce

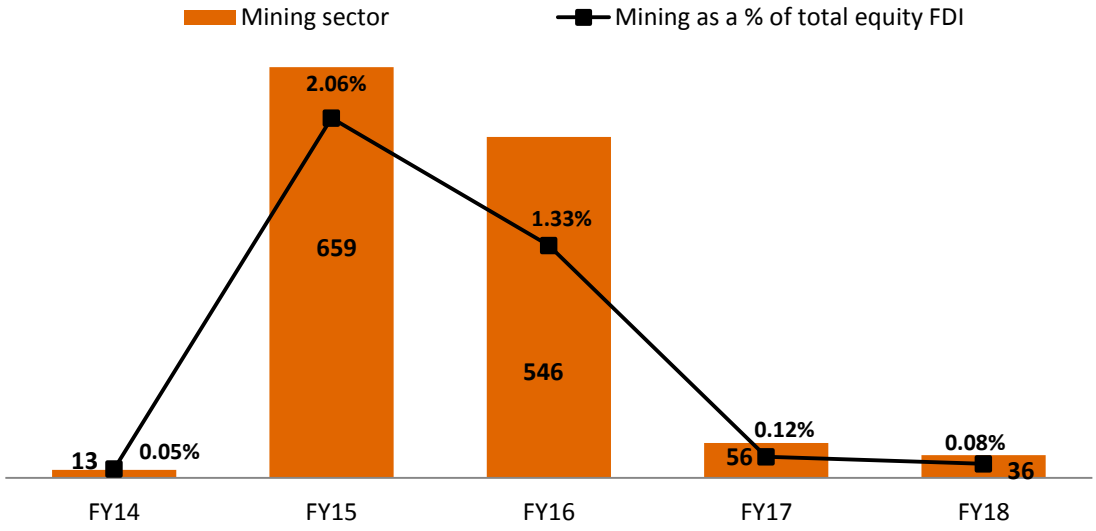
FDI equity inflows in India

FDI inflows to Indian mining sector have been permitted up to 100% under automatic route, except the atomic minerals such as diamonds and precious stones and fuel minerals.

Chart 4 shows a jump in FDI equity inflow in the mining sector from USD 13mn in FY14 to USD 659mn in FY15. Thereafter, we see a gradual decline in equity FDI inflow in the mining sector from FY15 to FY18. In FY15, FDI equity inflow in this sector stood at USD 659mn, which was ~2.06% of the total equity FDI inflow to India. In FY18, the inflow fell to USD 36mn, which formed less than 1% of the total FDI equity inflow in the country.

India's exploration expenditure is almost insignificant in comparison to other nations, even though India stands among the leaders in being rich in a variety of minerals. Limited focus by Indian government on exploration of minerals, with high taxation rates, as high as 64% , amongst the highest globally, are one of the factors leading to a fall in FDI inflow in this sector in India.

Chart 4: FDI equity inflows in Indian mining sector (USD mn)



Source: CMIE

Five principal Indian iron ore mines in FY17

The following mines contributed 50.58mn tonnes or 26% to all India iron ore production in FY17:

Table 1: Main Indian iron ore mines in FY17

Name of mine	Location of mine	Name & address of mine owner
Jajang	Odisha	Rungta mines Ltd., West Bengal
Balda block	Odisha	Serajjudin & Co.., West Bengal
Baildila iron ore mine, deposit no.14, Kirandul complex	Chhattisgarh	National Mineral Development Corp. Ltd, Hyderabad
Joda east	Odisha	Tata Steel Ltd., Mumbai
Bailadila iron ore mine (deposit no. 5)	Chhattisgarh	National Mineral Development Corp. Ltd., Hyderabad

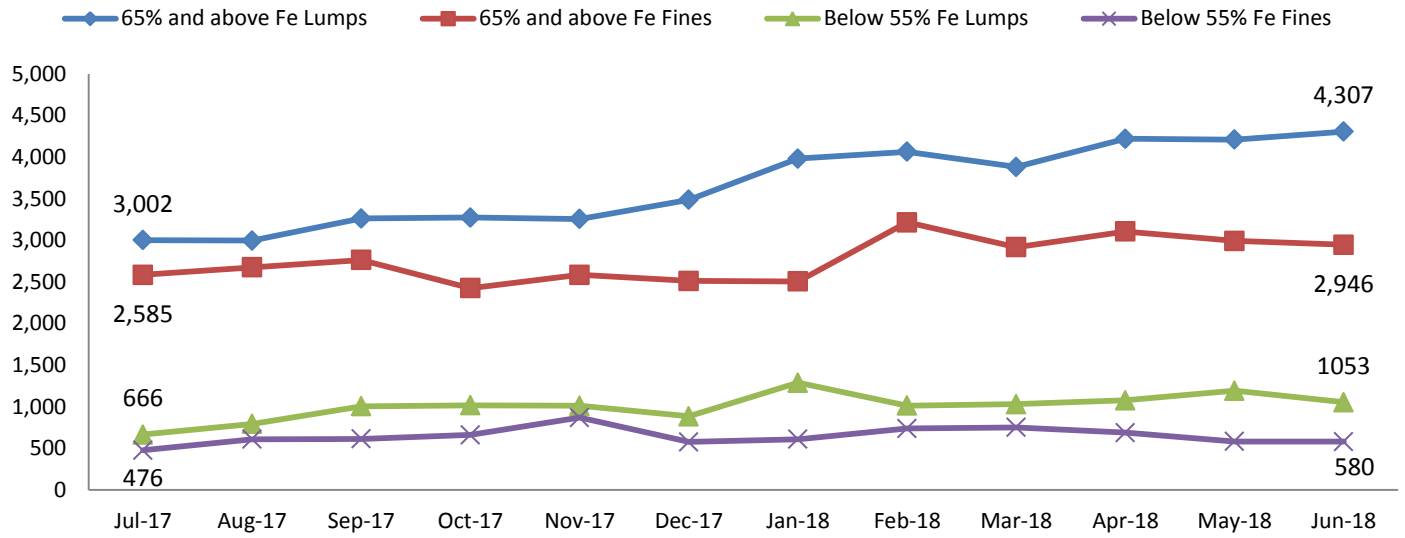
Source: Indian Bureau of Mines

Domestic price trend

Chart 11 shows a price trend of low and high content iron ore in India. A good steel demand in FY18 sustained high iron ore prices during the period.

Chart 11 shows a wide price gap between high and low content iron ore prices- gap grown to almost 3 times in the past 1 year. The price gap between high iron- content ore lumps and fines has more than tripled from May-17 to May-18, whereas the price gap between low iron-ore content lumps and fines has grown ~4 times in the same period. 65% and above Fe lumps prices leaped by ~34% in May-18 over May-17, whereas, 55% and below Fe lumps prices rose sharply by ~56% over the same period.

Chart 11: Domestic price trend (Rs./tonne)



Source: CMIE

WPI based inflation in the iron ore industry has raised by 45% in FY18, compared with a decline of 7% in FY17.

Challenges

A number of challenges have limited the overall investment in mining and exploration activities in India, as evident from the much lower than required FDI inflow in the mining sector – cumulatively Rs.1,26,37mn (0.61% of the total inflows) (excluding coal production) from April 2000 to March 2018. The challenges faced by the sector are as follows:

- Volatility in prices:
  Iron ore prices are volatile and fluctuate largely depending on the market forces of demand and supply. This makes it difficult for the mining companies to operate in a volatile environment.

- Low government spends:
  Government spending in the mining sector is very low, compared to other iron ore producing nations. There is a need for enhanced focus on exploration, so as to see a pickup in growth in this sector.

- Mining bans:
  Mining bans due to a variety of reasons including, non- compliance of rules, in states of Goa and Karnataka had brought about serious implications on various aspects including unemployment issues, reduced revenue source for the government, etc. in addition to loss of production leading to surge in prices of raw materials for end user industries. In Feb-18, the Supreme Court cancelled all the iron ore mining leases in Goa, with effect from mid-March 2018. In addition to this, muted e-auctions in Karnataka due to exorbitant prices of the low grade iron affected bidding.

- Resistance from locals:
  Getting hold of land from local communities for the purpose of mining is a tedious task. The industry faces multiple regulatory hurdles in relation to clearance of forest land (on which communities reside) for non-forest purposes, land acquisition and prospecting licences for iron ore. Such issues pose growth constraints affecting the supply of iron ore.

Outlook

- Production of iron ore is expected to grow by 2-5% in FY19, with a stable demand from infrastructure and the automobile industries in the country. Domestic demand is expected to be met with the huge iron ore inventory piled up at the mines pit-head, in addition to new production during the year.

- Exports of Indian iron ore pellets is expected to reach about 10mn tonnes in FY19, with greater demand from China, seeing its preference shift from Indian iron ore fines to pellets, due to pressures of controlling pollution emissions.

- Domestic iron ore prices are expected to hover between Rs.3,000-3,500 for lumps and Rs.2,600-2,900 for fines, in FY19.

CARE Ratings Limited (Formerly known as Credit Analysis & Research Ltd)
Corporate Office: 4th Floor, Godrej Coliseum, Somaiya Hospital Road, Off Eastern Express Highway, Sion (East), Mumbai - 400 022. CIN: L67190MH1993PLC071691
Tel: +91-22-6754 3456 I Fax: +91-22-6754 3457
E-mail: care@careratings.com I Website: www.careratings.com

Follow us on /company/CARE Ratings
/company/CARE Ratings