



**LSI FINANCIAL SERVICES  
PRIVATE LIMITED**

# THE INDIAN STEEL SECTOR

A Macroeconomic Overview and Way Forward

Jul

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# OUR PROFILE

Established in 1997, LSI Financial Services began with a vision to provide services relating to Corporate Finance Advisory, Project Finance Advisory, Techno-economic Feasibility Study, Asset & Equity Valuation, Project Management Consultancy and other peripheral services. With a team of more than 150 professionals, LSI has empowered more than two hundred major corporate houses across all the sectors in India with an array of financial solutions. Today, LSI is present across the major cities of the country.

The company in addition to its focus on Debt Syndication, Issue Management (as a Category I Merchant Banker), PE advisory, Financial Restructuring Advisory and M&A Advisory, lays stress on creating knowledge pools on topics related to the economy. We have gathered significant knowledge and take pride in our ability to tackle the challenging assignments across varied sectors, in the areas of sourcing funds, be it in the form of debt or equity and also for our expertise in advising in the M&A space. Our two-decade-old understanding of the needs of the clients in debt, equity and M&A allows us to customize the financial solutions to such requirements. LSI has a set of a highly motivated team of experts that shapes its mantra of "Creating value, partners in growth." into reality.

We, at LSI Financial Services, take pride in being client-centric and look forward to continuing our services to aid the economy by enabling optimal financial solutions in the domestic and international arena.

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# India's Steel Sector

## at a Glance



### Second Largest Steel Producer

- Between April 2020 to February 2021, India's cumulative crude steel production stood at 92.78 metric tonnes (MT).
- During this period, the cumulative finished steel production was at around 85.60 MT.
- Crude steel production grew at a CAGR of 4.85% between FY16 and FY20 with the country's total output reaching 108.50 MT in FY20.
- India surpassed Japan and took 2nd position in the top ten global steel producers in 2019. It also overtook the USA to become the second-largest steel consumer in the same year.



### Strong Growth Opportunities

- Demand for steel from different sectors will drive this industry.
- Consumption of steel via India's infrastructure segment is expected to increase to 11% by FY26.
- The demand for steel from the automotive sector is expected to increase due to an upsurge in the demand for automobiles.
- The smart cities' affordable housing and industrial corridors are a few of the government initiatives to boost the steel industry.
- About 158 lakh metric tonnes (MT) of steel is likely to be consumed in the construction of houses as sanctioned under the Pradhan Mantri Awas Yojana (Urban).



### Competitive Advantage

- As of 2019, India is the world's second-largest crude steel producer with a production of 111.2 MT.
- Viability in terms of low-cost labour and the presence of abundant iron ore has made India, a globally competitive space.
- India is home to the fifth-largest reserve of iron ore.



## Investment Sentiments

- To achieve the steel capacity build-up of 300 MTPA by 2030, India would need to invest 156.08 US\$ billion between 2030-31.
- The industry is witnessing the consolidation of players, which has led to investment by entities from other sectors. The ongoing consolidation also provides an opportunity for global players to enter the Indian market.



## Policy Support

- The National Steel Policy, 2017 was implemented to encourage the industry to reach global standards.
- The Steel Scrap Policy was introduced to reduce imports.
- Export duty of 30% was levied on iron ore to ensure supply to domestic steel producers.
- Import duty on most of the steel items was raised twice. Both the times by 2.5% each. Anti-dumping duty and safeguard duties were imposed on iron and steel items.



## Megatrends

- The pandemic will bring an immense transformation in the society offering additional challenges to the steel sector. These shall be in terms of structural changes in the sectors that mobilize steel and increased environmental pressure.
- Steel shall be a part of the solution as it encounters new opportunities in terms of investments to be made for the low carbon society.
- Automation and digitization will set new rules for the industry in the upcoming days.





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## Chapter 1

# Global Steel Sector Scenario

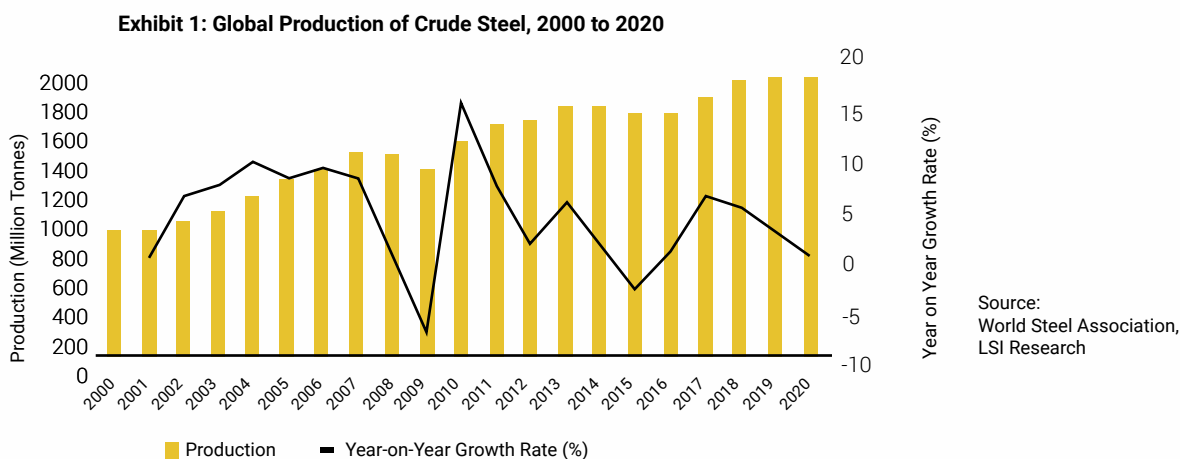


As a renewable material that can be recycled over without losing its chemical properties, steel is fundamental to a successful circular economy. From transport systems, infrastructure and housing, to manufacturing, agriculture and energy. The industry is continuing to expand its offer of advanced high-strength steel which reduces the weight of applications and encourages circular economy practices. Steel consumption significantly depends on the overall performance of the economy (GDP) and more specifically on investments made in infrastructures like railways, ports, roadways, airports and housing.

At a global level, 3.6% growth in the GDP for around three decades was associated with a 3% growth in steel consumption. The GDP of India grew by 6.6% between 1990 and 2018. Steel consumption grew by 6% during this period.

The steel industry is the heart of the global economy, also forming the core for a sustainable modern society. Despite the adversities caused by the pandemic, the global steel industry saw a slight growth in steel demand by the end of 2020. Steel consumption expanded in China while the rest of the world saw a reduction.

### Global Production of Crude Steel



Global crude steel production reached 1,878.0 million tonnes (MT) for the year 2020. An increase of 0.21% in comparison to 2019. The 64 countries which report to the World Steel Association recorded 174.4 MT of crude steel production in May 2021. A 16.5% increase in comparison to May 2020. The global market is projected to register a CAGR of around 4% between the years 2021-2026.

With the onset of COVID-19, the construction and transportation industry has experienced a huge decline. The outbreak caused by the pandemic is likely to create an impact on the construction industry. These consequences can be both short-lived or long-term. Furthermore, this would likely affect the demand for crude steel. The shutdown of automotive manufacturing facilities highly reduced the production of vehicles in 2020, which drastically reduced the demand for crude steel.

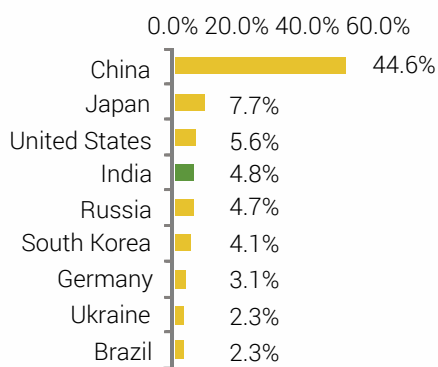


Consumption of the same declined in automotive components production as well as frame manufacturing.

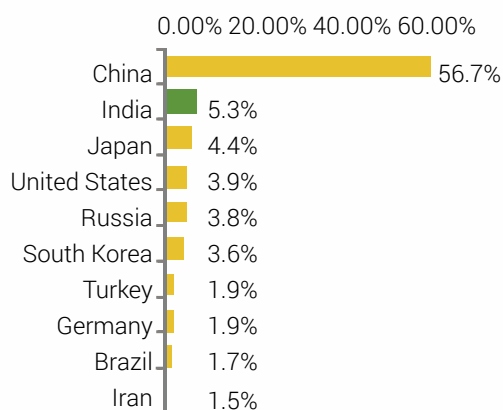
### Crude Steel Production by Countries and Region

China happens to be the largest producer of steel globally. On comparing the decade performance of the top steel producers, China is noted to have improved its share in global steel production remarkably. The top steel-producing countries are China, Japan, India, and the United States with China holding the largest share for crude steel production in the global market.

**Exhibit 2a: Share of Top 10 Crude Steel Producing Countries in Overall Production, 2010**



**Exhibit 2b: Share of Top 10 Crude Steel Producing Countries in Overall Production, 2020**



Source: World Steel Association, LSI Research

In the past two decades, China has succeeded in conquering the global stainless steel market. In 2004, the world's top 10 steel producers included only a single Chinese company, Shanghai Baosteel while the other firms were American, European, Indian, and South Korean. Back then, only 25.8% of the world's steel was made in China. By 2020 (the latest year with data available), seven of the world's largest steel companies were Chinese, a few of which were government-owned. China accounted for 56.7% of steel production globally. India has improved its position in the production line up from 5th largest in 2010 to 2nd largest in 2020. However, the share in the total global production is approximately 1/10th of that of China.

**Exhibit 3: Top 10 Steel Producing Companies, 2020**

Rank	Company	Country	Production (Million tonnes)
1	China Baowu Group	China	115.29
2	ArcelorMittal	Luxembourg	78.46
3	HBIS Group	China	43.76
4	Shagang Group	China	41.59
5	Nippon Steel Corporation	Japan	41.58
6	POSCO	South Korea	40.58
7	Ansteel Group	China	38.19
8	Jianlong Group	China	36.47
9	Shougang Group	China	34.00
10	Shandong Steel Group	China	31.11

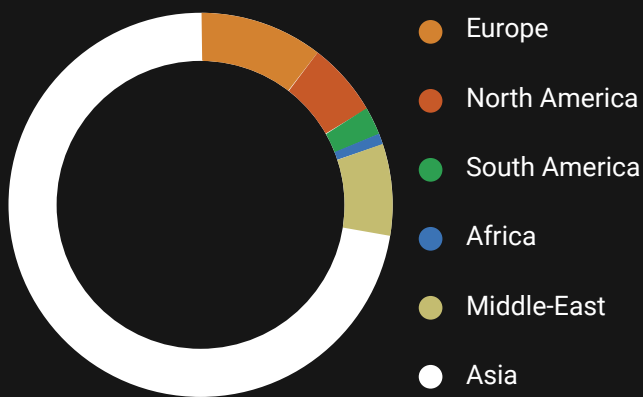
Source: World Steel Association, LSI Research



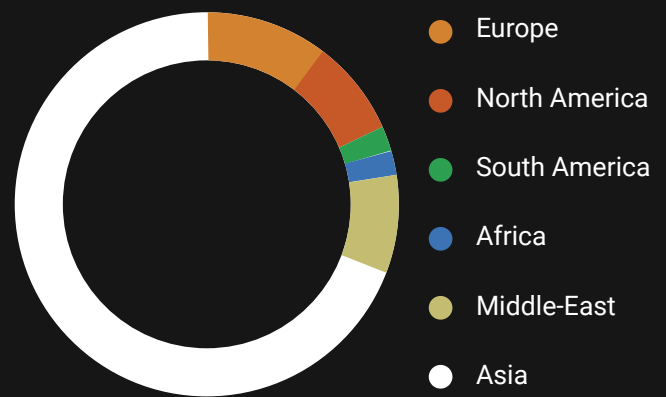


Asia-Pacific dominates the global share in both production and consumption of steel. Countries such as China and India contribute to the global market across the globe being one of the largest in terms of consumption. China, India and Japan being the top three producers globally. This pushes Asia-Pacific to be the highest crude steel-producing region. With the support of the government, Chinese steel companies are making the US and Europeans dependent on their steel markets.

**Exhibit 4a: Regional Share in Crude Steel Production, 2020**



**Exhibit 4b: Regional Share in Crude Steel Usage, 2020**



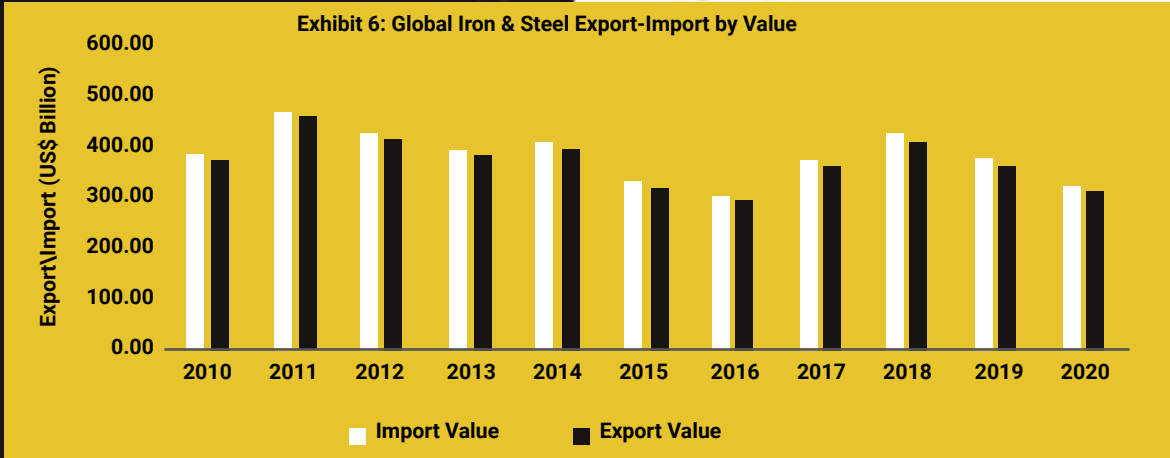
Source: World Steel Association, LSI Research

On a regional basis, the production figures of May 2021 are better than that of May 2020. Also, the period of Jan-May 2021 fared well than Jan-May 2020.

**Exhibit 5: Regional Production of Crude Steel**

Region	May 2021 Production (Mt)	% Change May 21/20	Jan-May 2021 (Mt)	% Change Jan-May 21/20
Africa	1.3	65.1	6.5	24.4
Asia and Oceania	128.4	11.7	616.5	14.9
CIS	9.1	14.8	44.3	8.4
EU (27)	13.5	32.7	64.4	15.3
Europe, Other	4.2	36.9	20.9	17.3
Middle-East	3.7	16.8	17.8	8.1
North America	10.1	47.7	48.4	11.3
South America	3.9	49.7	18.7	24.1
Total 64 countries	174.4	16.5	837.5	14.5

Source: World Steel Association, LSI Research



**Exhibit 8: Export and Import Share in Global Value of Major Exporter and Importer**

Rank	Country	Export Value (US\$ Billion)	Share in Global Export Value (%)	Rank	Country	Import Value (US\$ Billion)	Share in Global Import Value (%)
1	China	33.41	10.32	1	China	37	11.01
2	Japan	22.79	7.04	2	Germany	22	6.55
3	Germany	22.13	6.83	3	United States	19	5.62
4	South Korea	19.74	6.1	4	Turkey	15	4.52
5	Russia	16.01	4.94	5	Italy	15	4.45
6	Belgium	13.70	4.23	6	South Korea	11	3.32
7	United States	12.27	3.79	7	Vietnam	10	2.93
8	Italy	11.07	3.42	8	France	10	2.88
9	Indonesia	10.85	3.35	9	Belgium	10	2.88
10	France	10.76	3.32	10	Thailand	9	2.79



The global export-import scenario of the iron and steel sector indicated that the export and import value stood at US\$ 324 billion and US\$ 334 billion respectively in 2020. China tops the list again as a top exporter as well as an importer in 2020. The share of the top 10 major exporters in the total global exports value is approximately 53%. The rest 47% collectively belongs to the other 208 exporters globally as of 2020.

During the first four months of 2021, the global steel industry has produced 663 MT of crude steel which is around 14% more than last year. China had rolled out 375 MT of crude steel during this period that exceeds last year's level by 16%.

Production growth of a critical commodity signifies a positive outlook for the metal sector. It is reported that both the US and EU are passing through some supply shortages as both these markets have restricted their steel imports. The former with the help of additional duties on import of steel and aluminium (25 and 10%, respectively) under Section 232, of the U.S. Trade Act, while EU by imposing tariff-cum-quota system against the traditional import sources of South Korea, Japan and Turkey.

China is presenting a curious scenario. In an effort to curb air pollution and carbon dioxide emissions, the Chinese Government is limiting its steel production. Although the production growth in the first four months of 2021 does not indicate that the industry is falling for the government's line of thinking, the domestic demand is showing a rising trend (Rising inventory accumulation by traders and construction companies, more capital spending by industrial companies and more residential construction by households). The crude steel production in India during April 2021, was significantly higher when compared to last year. In 2020, the country went knee-deep during the pandemic with a total lockdown. Thus, the monthly growth needed to be sustained throughout the year and not be a once-in-a-year type.

It depends on the intensity of the third and fourth waves of COVID-19 that would influence the domestic demand. The export services in steel must be strengthened in the coming months with the above changes in Chinese policies. This would surely make the export offers go higher. It is the right time for steel exporters from India to expand their export basket. Outreach many other spaces hitherto unexplored and improve quality. An upgrade in the product range in order to establish an export-oriented steel industry.

We look forward to demands being normalized in 2021, owing to the steady progress of vaccines and responsible global society.



## Chapter 2

# Indian Steel Sector

## -Market Overview

With the emergence of economies driven by industrialisation, at the beginning of the twentieth century, countries with sound steel industries benefited from a first-mover advantage. India became independent during the mid-twentieth century while aiming to become self-reliant under its newly adopted model of a mixed economy. To achieve this goal, the primary (raw materials), secondary (manufacturing) and tertiary (services) sectors had to be developed simultaneously. As raw material and intermediate product, steel was the common link between all three sectors.

Apart from being a product of the primary sector, steel is probably the most extensively used input in manufacturing. Due to its high corrosion resistance, steel finds wide usage in many complex industries dealing with various reactive/non-reactive elements. Immense strength, low weight, durability and ductility at a low cost make steel the most valuable raw material for the manufacturing sector.

### Relation between GDP Growth and Steel Production Growth

Exhibit 9: GDP Growth vs. Steel Production Growth, India, 2000-2019



Source: IMF, World Steel Association, LSI GDP Growth (%) Research

It can be deduced from the above chart that the GDP growth rate is more or less positively correlated with the growth rate of steel production in an economy. Steel has contributed immensely to India's economic growth. This is evident from the similar growth patterns of India's GDP and steel production in the country, which also highlights the economy's dependence on steel. The spike in steel production in 2005 can be explained by the fact that India for the very first time entered the bracket of the top 10 steel producers globally. The year on year (yoy) growth rate of steel production shot up to 28.7% in 2005. In 2020, India has become the second largest steel producer in the world, producing over 80 million tonnes of crude steel yearly.

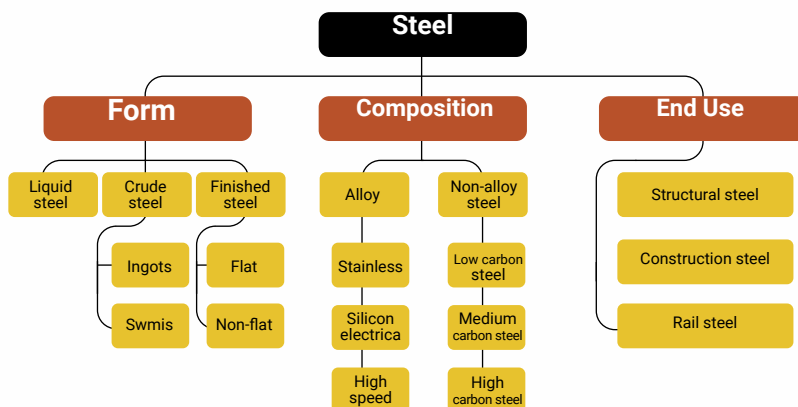




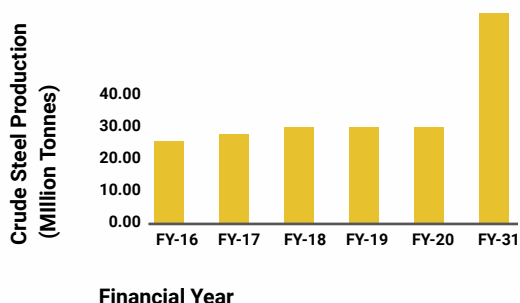
## Evolution of Indian Steel Sector

- 1875: Bengal Iron and Steel Company in Barakar
- 1907: Establishment of Tata Iron & Steel Company (TISCO)
- 1937: Establishment of Steel Corporation
- 1954: Setting up of Hindustan Steel Pvt. Ltd.
- 1962: Completion of Durgapur, Bhilai and Rourkela steel plants
- 1973: New model for managing the steel industry presented to the Parliament, setting up of SAIL
- 1991: The government of India, liberalises the steel sector by removing iron and steel industries from the reserve list
- 2005: India becomes one of the top 10 steel producers in the world
- 2018: India becomes the world's second-largest producer of crude steel
- 2020: Between April 2020 and January 2021, India's cumulative production of crude steel stood at 87.21 MT and finished steel at 76.04 MT.

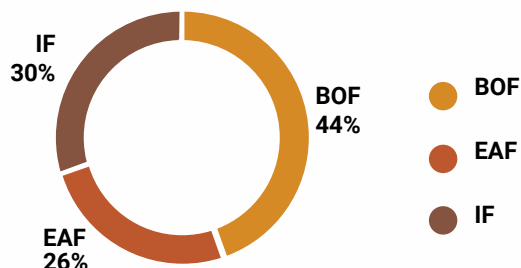
**Exhibit 10: Structure of the Steel Sector**



**Exhibit 11a: Crude Steel Production Capacity (in million tonnes), India, FY-16 to FY-31**



**Exhibit 11b: Crude Steel Production Capacity in FY19 – By Route, India**



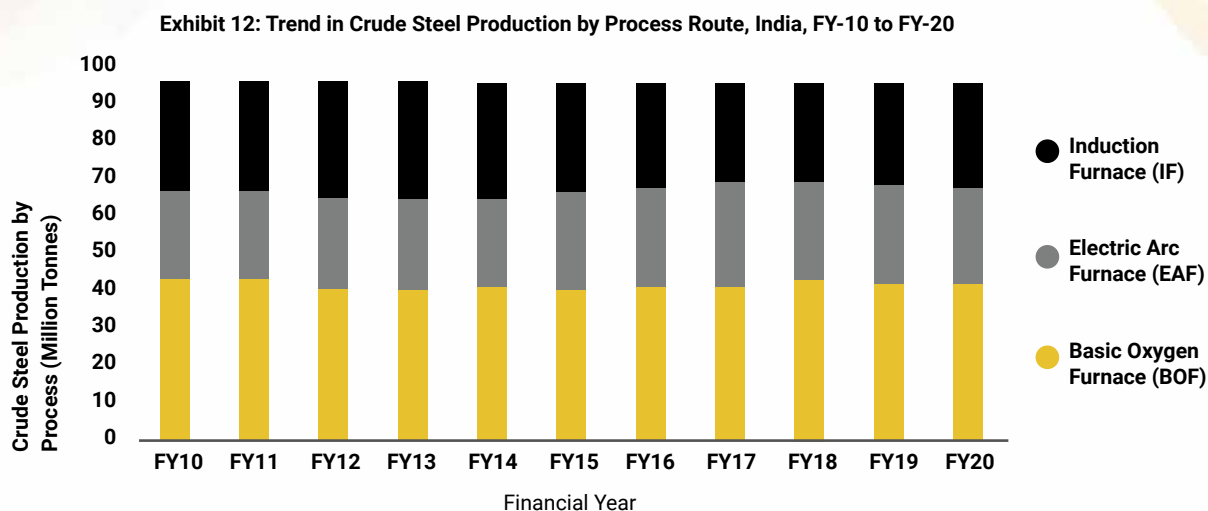
Source: JPC India Steel, Ministry of Steel, LSI Research

Source: JPC India Steel, Ministry of Steel, LSI Research

India's steel production capacity has expanded rapidly over the past few years, growing at a CAGR of 3.93% from 122 MT in FY16 to 142 MT in FY20. The National Steel Policy 2017, has envisaged achieving up to 300 MT of production capacity by 2030-31.



Blast Furnace (BF) - Blast Oxygen Furnace (BOF) route is expected to contribute close to 44% of the capacity, while the remaining 56% come from Electric Arc Furnace (EAF) & Induction Furnace (IF) routes.

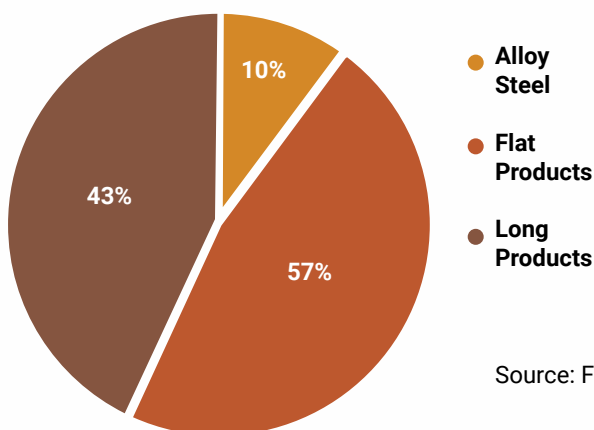


Source: JPC India Steel, Ministry of Steel, LSI Research

In India, six steel companies together account for 60% of the total crude production. These are Steel Authority of India (SAIL), Rashtriya Ispat Nigam Limited (RINL), Tata Steel (TSL), Essar Steel Ltd (ESL) (now acquired by ArcelorMittal), JSW Steel & Power (JSPL) and JSW Steel Ltd. The share of Integrated Steel Producers in total steel production is 45% and that of secondary steel producers is 55%. Integrated steel producers have strong forward and backward linkages and use iron ore to make steel using the BF-BOF route.

Finished steel production is divided into two broad categories - Long and Flat Products. In addition to these two prime segments, finished steel output also includes alloy steel. It can be observed from the below chart that among these product segments, flat steel products account for the largest share. Flat products on average are expensive compared to long products.

**Exhibi 13: Share of Long, Flat and Alloy Steel, India, FY-19**



Source: FICCI

**Long Products:** Long products are generally available in straight length/ cut length barring wire rods which are normally available in regularly wound coils. These finished steel products are normally produced by hot rolling/forging of bloom/billets/pencil ingots into usable shapes or sizes. This segment includes products like bars & rods, steel structural and railway materials. Long products are generally used for construction, mechanical engineering and energy.

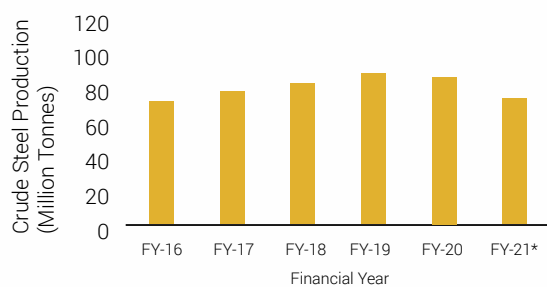
These are finished steel products that are produced from slabs/thin slabs in rolling mills using flat rolls. Supplied in hot rolled (HR), cold rolled (CR) or in a coated condition depending upon the requirement. This product segment involves galvanised plain/galvanised corrugated (GP/GC) sheets, hot rolled (HR) coils/ sheets, cold rolled (CR) sheets/coils, pipes, electrical sheets, tin plates and plates.

Flat products are generally used for automotive and truck wheel frames and body parts, heavy machinery, pipes and tubes, construction, packaging and appliances.

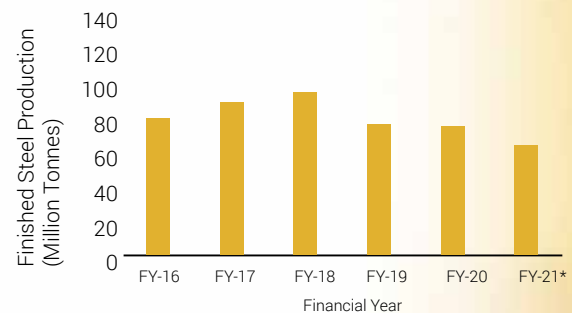
Expansion of production capacity to 300 MT will translate into additional investment of Rs.10 lakh crores by 2030-31.

In the third quarter of FY21, the total steel output of Jindal Steel and Power Ltd., JSW Steel Ltd., SAIL and Tata Steel India stood at 14.95 MT, a 6% YoY increase. Steel companies are looking to restart expansion projects on the back of the surging steel process with capacity addition of 29 MT.

**Exhibit 14a: Total Crude Steel Production (million tonnes), India, FY16 - FY21**



**Exhibit 14b: Total Finished Steel Production (million tonnes), India, FY16 - FY21**



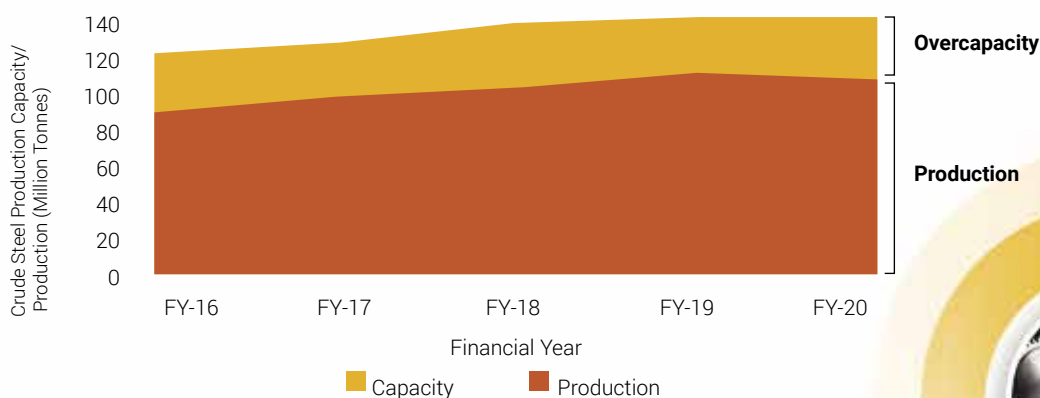
\* Denotes forecast. Source: JPC India Steel, Ministry of Steel, LSI Research

The steel sector contributes over 2% to India's GDP. It also employs 500,000 people directly and 2.50 million indirectly. From April 2020 to February 2021, India's cumulative production of crude steel stood at 92.78 MT. Between April 2020 and February 2021, India's cumulative production of finished steel stood at 85.60 MT.

To support MSMEs, the government has reduced customs duty on stainless steel to 7.5%. In FY20, crude steel production and finished steel production stood at 108.50 MT and 101.03 MT, respectively. The steel manufacturing output of India is expected to increase to 128.6 MT by 2021, accelerating the country's share of global steel production from 5.9% in 2018 to 7.7% by 2021.

On comparing the production capacity with the actual production figures of the steel sector, it is observed that India has been running with an overcapacity over years.

**Exhibit 15: Crude Steel Production Capacity and Actual Production (in million tonnes), India, FY-19 to FY20**



Source: JPC India Steel, Ministry of Steel, LSI Research

Tracing the history of the sector in regard to this will be interesting. After delicensing of the Indian iron and steel industry and as a result of the steps taken for the creation of additional capacity in the private sector. Steelmaking capacity in India has increased steadily from 34 MT in the year 2000 to 128 MT in 2018. India's crude steel production had registered growth in all but one year between 1990 to 2019. The entry of private players led to an acceleration in steel production from 1990 onwards. During 1990-99 steel production growth averaged around 10%. India's crude steel production dropped 4% in 1998 impacted by the Asian currency crisis and the collapse of Soviet Union. However, soon came out of it with the government's help.

The sector continued to expand at a relatively rapid pace in the early 2000s. The government announced India's first National Steel Policy in 2005 to guide the future development and growth of the sector. The policy projected that India's domestic steel production would grow in line with GDP to reach 100 million tonnes by 2019-20. However, India surpassed this target much earlier in 2017.

From 2010 onwards, the capacity utilisation level which hovered around 85-88% during 2005-2010, due to strong growth in domestic demand, started to drop. It fell from 88% in 2010 to 78% in 2013. India had turned into a net importer of steel during this period due to a huge rise in imports from China, South Korea and Japan. Capacity utilisation levels again started increasing from the year 2016. Minimum Import Price (MIP) was introduced on steel products during this time. This helped in curbing imports and India turned into a net exporter of steel during 2016-18. Capacity addition remained above 80% in the last few years.

On the back of sustained domestic demand, India's steel industry witnessed robust growth in the last 10–12 years. Since 2008, production has gone up by 75% while domestic steel demand has grown by around 80%. Steelmaking capacity has also increased in tandem, and the growth has been fairly organic. The National Steel Policy in 2017, which envisions the growth trajectory of the Indian steel industry till 2030–31, broadly has the following contours:

- Steelmaking capacity is expected to reach 300 million tonnes per annum (MTPA) by 2030–31.
- Crude steel production is expected to reach 255 MT by 2030–31, at 85% capacity utilisation.
- Production of finished steel to reach 230 million tonnes, assuming a yield loss of 10% for conversion of crude steel to finished steel – that is, a conversion ratio of 90%.
- With 24 million tonnes of net exports, consumption is expected to reach 206 million tonnes by 2030–31.
- As a result, per capita steel consumption is anticipated to rise to 160 kg.
- An additional investment of Rs. 10 lakh crore is envisaged.

While the National Steel Policy, 2017, is a vision document for the Indian government, it emphasises the growth potential of the Indian Steel Industry. As per data from the Joint Plant Committee, by the end of 2018–19, India produced 110.9 MT of crude steel and 101.04 in 2019-20. In order to reach 255 MT of crude steel production by 2030–31, production needs to grow at a CAGR of about 7.2%. However, the pandemic had its own effect on the overall economy and the steel sector.



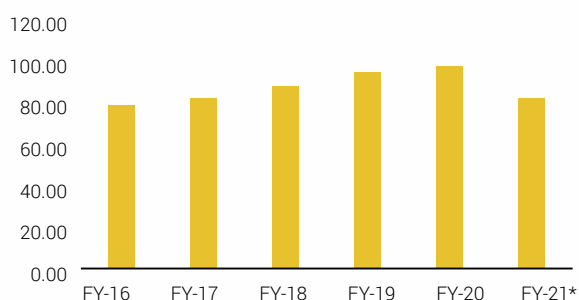


**Exhibit 16: Indian Steel Market Round Up**

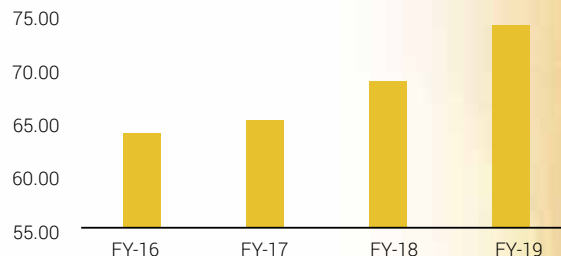
	April-February 2020-21* (MT)	April-February 2019-20 (MT)	% Change
Crude Steel Production	92.782	101.042	-8.2
Hot Metal Production	62.295	66.925	-6.9
Pig Iron Production	4.357	5.164	-15.6
Sponge Iron Production	30.866	34.637	-10.9
<b>Total Finished Steel (alloy/stainless + non-alloy)</b>			
Production	85.604	95.421	-10.3
Import	4.252	6.392	-33.5
Export	9.492	7.783	22.0
Consumption	84.693	93.959	-9.9

\*Denotes provisional. Source: JPC India Steel

**Exhibit 17a: Consumption of Finished Steel (in million tonnes) FY16 to FY21**



**Exhibit 17b: Per Capita Consumption of Steel (in kg), FY16 to FY19**



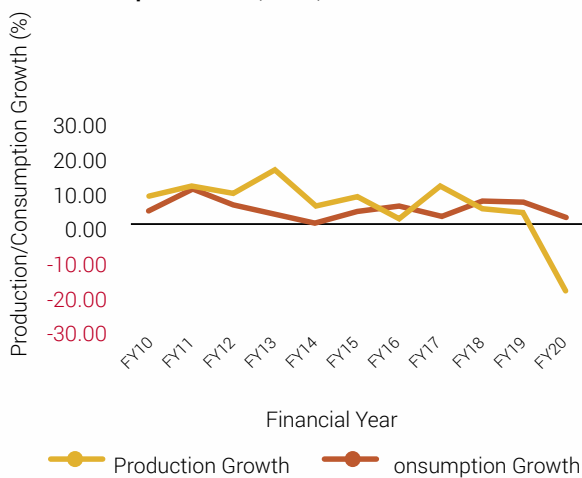
Source: JPC India Steel, Ministry of Steel, LSI Research

- Consumption of finished steel in India increased from 8.55 MT in February 2020 to 9.13 MT in February 2021.
- India's finished steel consumption grew at a CAGR of 5.2% between FY16-FY20 to reach 100 MT.
- In April 2021, India's finished steel consumption stood at 6.78 MT. The National Steel Policy aims to increase per capita steel consumption to 160 kgs by 2030-31.
- It is expected that consumption per capita would increase, supported by rapid growth in the industrial sector and rising infra expenditure projects in railways, roadways, etc.
- The government has a fixed objective of increasing rural consumption of steel from the current 19.6 kg/per capita to 38 kg/per capita by 2030-31.

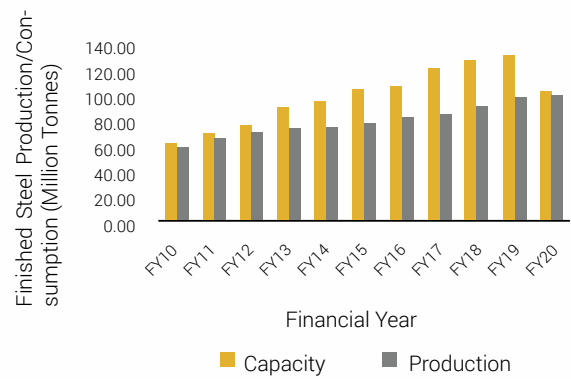


- The consumption growth of finished steel has outpaced the production growth in the last years with CAGR of production between FY-16 and FY-20 at -0.43% and consumption at 2.07%.
- At 84.693 MT, consumption of total finished steel declined by 9.9% in April-February 2020-21. The contribution of the non-alloy steel segment stood at 79.156 MT (93% share, down by 9.7%), while the rest was the contribution of the alloy steel segment (including stainless steel).
- In the non-alloy, non-flat segment, in volume terms, a major contributor to consumption of total finished steel was bars and rods (35.368 MT down by 4.9%). The growth in the non-alloy, the flat segment was led by hot rolled coil (32.844 MT down by 13%) during this period.

**Exhibit 18a: Finished Steel Production vs. Finished Steel Consumption Growth, India, FY-10 to FY-20**



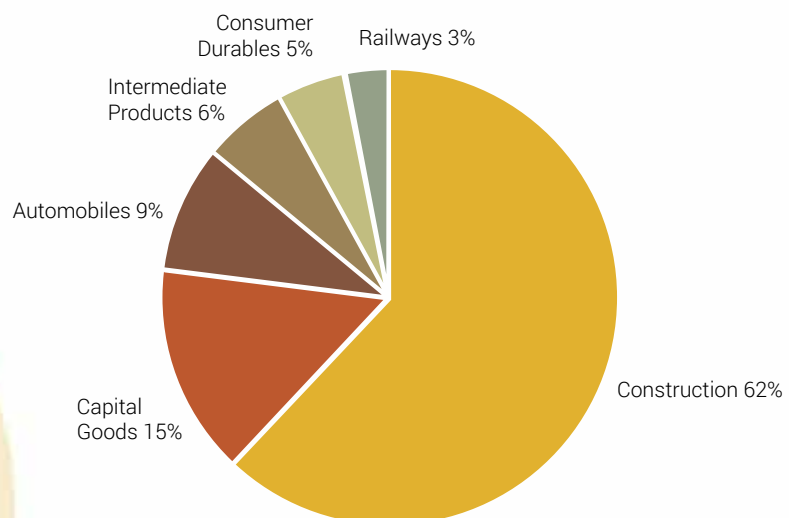
**Exhibit 18b: Finished Steel Production vs. Finished Steel Consumption, India, FY-10 to FY-20**



Source: JPC India Steel, Ministry of Steel, LSI Research

India's demand for steel is driven by end-use industries such as construction, capital goods, automobiles, intermediate products, consumer durables, and railways. The impact of the pandemic and the prospects for each end-use sector are different, and given the share in demand for individual sectors, the overall impact on steel demand could vary.

**Exhibit 19: Share of Steel Consumption of Major Steel Consuming Industries, India, FY-21**





**Exhibit 20: Overview of Major Steel Consuming Industries**

End User Industry	Description	Steel Product Types	Prospects
Construction	<ul style="list-style-type: none"> <li>Residential, commercial and industrial</li> <li>Transport Networks</li> <li>Utilities</li> </ul>	<ul style="list-style-type: none"> <li>Commodity items such as rebars, H-beams, Pipes, Sheep piles and coated sheets</li> </ul>	<p><b>Strong:</b> Logistics infrastructure (highway construction, industrial corridors, freight corridors), Affordable housing and power transmission</p>
Capital Goods	<ul style="list-style-type: none"> <li>Rotating equipment.</li> <li>Static equipment.</li> <li>Electrical equipment such as transformers, electric motor and cables.</li> </ul>	<ul style="list-style-type: none"> <li>Steel plates, pipes, bars, sheets, speciality and highly functional steel.</li> </ul>	<p><b>Strong:</b> Dependent on economic growth and secondary sectors such as constructions, heavy &amp; light industries and government spending</p>
Automobiles	<ul style="list-style-type: none"> <li>Primarily driven by automotive sales of cars, trucks, buses and two-wheelers.</li> </ul>	<ul style="list-style-type: none"> <li>Surface treated sheets.</li> <li>Advanced highstrength galvanized &amp; coated steels.</li> <li>Speciality steel with high tenacity, mechanical strength &amp; wear resistant.</li> <li>Steel plates, pipes, bars &amp; sheets.</li> </ul>	<p><b>Weak:</b> Short term issues around regulations, affordability, financing, industrial activity and COVID induced lockdowns. Moderate to strong Over the next three to seven years</p>
Intermediate Products		<ul style="list-style-type: none"> <li>Gear Boxes, bearing, pipes, drums &amp; barrels.</li> </ul>	<p><b>Weak:</b> Closely linked to the auto, oil and gas sectors packaging (drums and barrels)</p>
Consumer durables	<ul style="list-style-type: none"> <li>Wagons and coaches.</li> <li>Track infrastructure.</li> </ul>	<ul style="list-style-type: none"> <li>Sheet Metals.</li> <li>Special property steel, such as corrosion resistant for tracks.</li> </ul>	<p><b>Strong:</b> Large planned investments on track electrification, dedicated freight corridors and high speed rail</p>
Railways	<ul style="list-style-type: none"> <li>Wagons and coaches</li> <li>Track infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Sheet Metals</li> <li>Special property steel, such as corrosion resistant for tracks</li> </ul>	<p><b>Strong:</b> Large planned investments on track electrification, dedicated freight corridors and high speed rail</p>

The **construction industry** is the largest user of steel. It accounts for 60% of demand. Steel consumption in construction is expected to reach 138 MT by 2030–2031. The key demand drivers include industrial, residential and commercial construction, mega ports, affordable housing, urban development, highway construction, and industrial corridors.

**Railways** are looking forward to an investment of 12 to 15 trillion under the national infrastructure pipeline. Key demand drivers are rising passenger and freight traffic, network electrification, revamping of rail infrastructure, and programs such as dedicated freight corridors, mass rapid transit system, and the diamond quadrilateral network of high-speed rail.

**Capital goods** account for about 15% of India's steel demand and are expected to reach 50 MT of steel consumption by 2030–2031. Key demand drivers include ageing equipment that requires replacement, massive power capacity additions in the future, domestically manufactured Iron & Steel Products (DMI&SP) Policy, the aerospace and defence sector, and the electrical equipment market. However, this is a leading import area because of low investments in technology and talent.

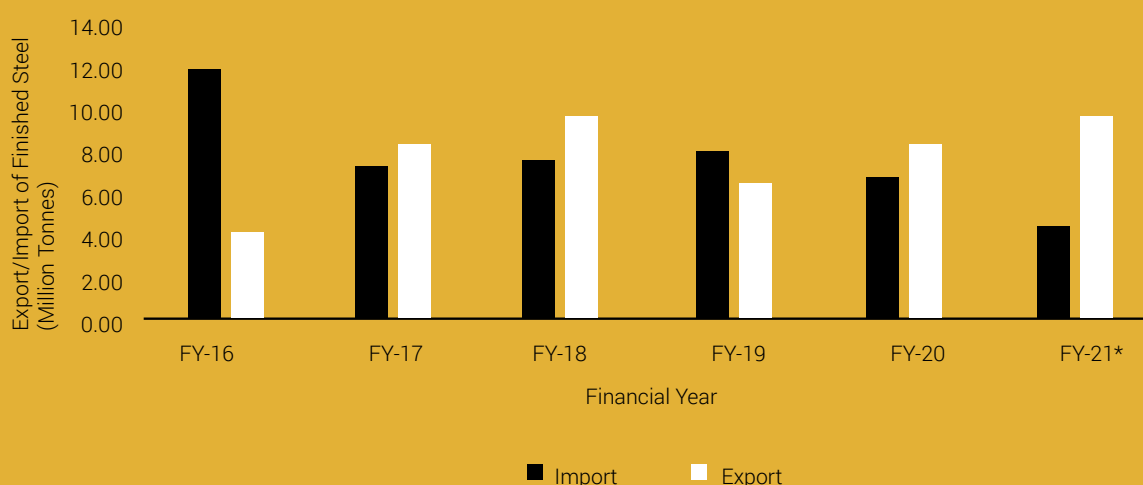
The **automotive sector** is a key source of steel consumption. However, the domestic steel industry does not have the capability to manufacture automotive-grade steel, resulting in high imports for this consumer sector.

Shutdowns in major consumption industries have resulted in the contraction of steel demand, leading to lower utilization levels. The operational challenges have been exacerbated by logistical and labour constraints due to COVID-19.

For a demand revival in the steel industry, sustained government intervention is needed in the form of a push for infrastructure. Revival of the infrastructure sector, including residential, commercial and industrial construction, transport networks (roads, railways, and others), and utilities will increase the demand. Thanks to direct consumption that give an indirect push to steel demand in the capital goods sector.

## Export and import of Finished Steel

**Exhibit 21: Finished Steel Export and Import (in Million Tonnes), FY16 to FY21**



\* Denotes provisional. Source: JPC India Steel





## EXIMP Update from April to February 2020-21

- Overall exports of total finished steel (9.492 MT) were up by 22.0%.
- Volume-wise, non-alloy HRC (5.968 MT, up by 33.0%) was the most exported item (68% share in total non-alloy).
- China (22% share) was the largest export market (2.053 MT) for India.
- Overall imports of total finished steel (4.252 MT) were down by 33.5%.
- In terms of volume, non-alloy HR coil/strip (0.743 MT, down by 52.5%) was the most imported item (26% share in total non-alloy).
- Korea (1.739 MT) was the largest import market for India.
- India was a net exporter of total finished steel.

India's story of transition from a net importer of finished steel to a net exporter would be an interesting mention. From 1990 to 1998, India was a net importer of finished steel as domestic demand outpaced the supply. Between 1998-2007, India turned into a net exporter of steel as domestic steel production growth accelerated by 9% during this period after growing by 5% in 1990-98. Improvement in technology and capacity additions helped to increase steel production during this period. India's steelmaking capacity doubled to 60 MT in 2007, when compared to its capacity in 2000.

After remaining a net steel exporter for nine years, steel imports increased between 2007-2013 even though India had sufficient domestic availability of steel. This is because of a surge in imports from China. The global steel market was going through a golden period due to a boom in the Chinese economy. It began experiencing a situation of overcapacity as demand from China moderated. China which had the highest steelmaking capacity in the world began dumping its excess production into the world market, mainly India. Steel imports from China remained below 400,000 tonnes increased sharply to 1500 tonnes in 2006-07 and to more than 2000 tonnes over the upcoming years. Imports from China peaked in 2015-16 to 4700 tonnes. China was dumping its products lower than the production cost which was making domestic steel uncompetitive.

Apart from the above, India had signed Free Trade Agreements (FTAs) with South Korea and Japan under CEPA (Comprehensive Economic Partnership Agreement) in 2010 and 2012 respectively. Due to the FTA, there has been a steady increase in the share of duty-free imports from these two countries. South Korea's share in total imports grew from 15% in 2009-10 when the FTA was signed to 35% in 2018-19. Japan's share in total imports grew 13% in 2011-12 to 14% in 2018-19. In 2018-19, imports from China fell by 21% but this was negated by increased imports from South Korea, Vietnam and Indonesia.

In March 2018, the USA imposed 25% and 10% import duty on foreign-made steel and aluminium, respectively. The imposition of import duty diverted steel exports from South Korea to India. The USA had imported about 10% of its steel requirements from South Korea in 2017.

## Steps taken by government to curb imports:

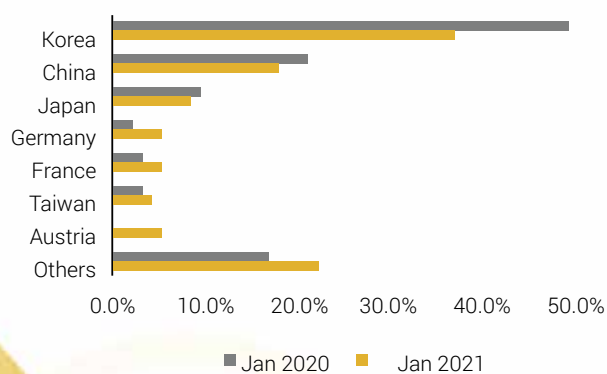
In view of the increased imports from China, a slew of measures was taken by the Government to check the same:

1. Imposition of a 20% safeguard duty (minus any existing anti-dumping duty) in September 2015, till September 2016, following which it will be reduced to 18% till March 2017, then brought down to 15% till September 2017, and eventually to 10% by March 2018.
2. In December 2015, an anti-dumping duty in the range of 5.3%-57.4% was levied on imports of cold rolled flat products of stainless steel citing continued dumping of the subject goods.
3. The Directorate General of Foreign Trade came out with a Minimum Import Price (MIP) in February 2016 on 173 steel products, providing the much needed relief to the industry. The government imposed MIP on a large spectrum of steel products ranging between USD 341 and USD 362 on semi-finished steel, between USD 445 and USD 500 for hot rolled products, USD 560 for cold rolled products and up to USD 752 on some coated or treated products.
4. An anti-dumping duty of USD 474-557 per tonne was imposed on 'hot-rolled flat products of alloy or non-alloy steel' import from China, Japan, South Korea, Russia, Brazil and Indonesia.

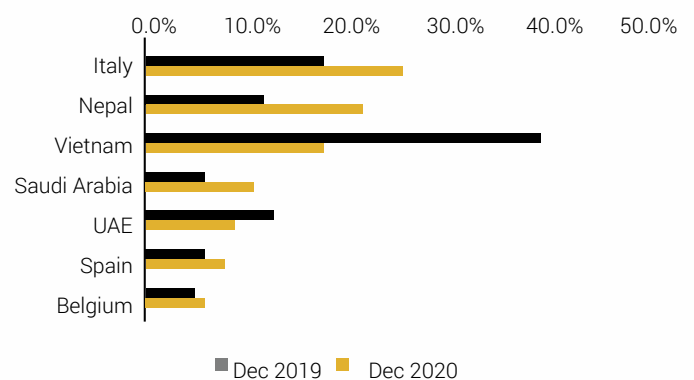
These measures arrested the rise in imports to a large extent. Steel imports from China which had peaked in 2015 and fell by 49% in 2016-17. They have since been on a downward trajectory. Steel imports from China have fallen in the last three years.

The government discontinued with the extension of Minimum Import Price (MIP) on steel imports in February 2017 but had given extension to MIP on nineteen colour-coated steel products. The government later discontinued it in January 2018. The steel minister said that the protectionist measures like MIP and anti-dumping duty cannot continue indefinitely.

**Exhibit 22a: Import Destinations of Finished Steel, India: Jan'21 vs Jan'20**



**Exhibit 22b: Export Destination of Finished Steel, India, Dec'20 vs Dec'19**



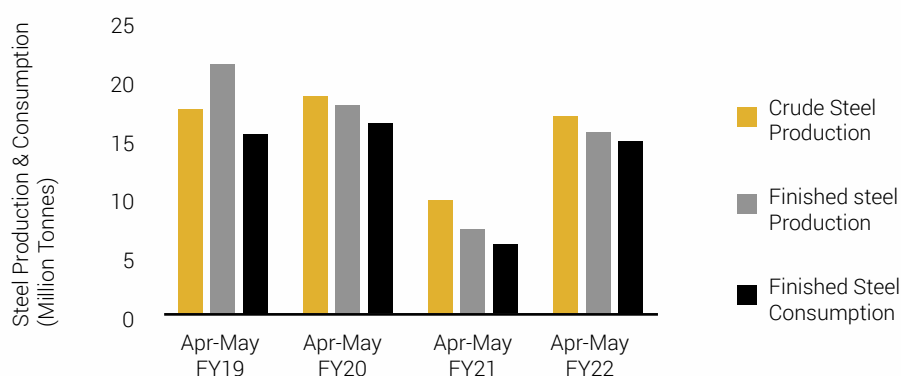
Source: JPC India Steel

Italy is the largest destination for Indian steel exports followed by Nepal. Around 10% of the exports go to oil-producing countries in the Middle-East due to lower shipping costs owing to the relative proximity of India to this region. India mainly exports steel pipes suitable for oil and gas pipelines to the Middle East countries. Exports to Italy, Nepal and Vietnam grew exponentially in the last 30 years. However, those to the USA, once a major export destination, dropped significantly. This is because of the protectionist measures in the US.

### Status 2021

India's crude and finished steel production, as well as consumption of finished steel during May 2021, was significantly higher than the corresponding month of last year. This was due to the low base effect but was lower than those during earlier years.

**Exhibit 23: Steel Production & Consumption, India, FY19 - FY22**



Steel Production/Consumption	May 2021	Change from May 2020	Change from May 2019
Crude Steel Production	8.5	36%	-11%
Finished Steel Production	7.8	5.5%	-9%
Finished Steel Consumption	-	52%	-17%

On a month-on-month basis, steel production showed marginal improvement after falling sharply in April 2021. Due to regional lockdowns and diversion of oxygen for medical purposes. Crude steel production was higher by 2.7% m-o-m in May 2021, after falling by 17.2% m-o-m in April 2021. Finished steel production also increased by 2% m-o-m after declining by 21.6% in April 2021. Consumption of finished steel continued to report m-o-m fall for the fifth consecutive month ended May 2021.



On a cumulative basis, steel production and consumption saw exponential growth during Apr-May FY22 vs the corresponding period of the previous year as can be seen in Exhibit 21. This was mainly a low base effect as steel production and consumption had fallen significantly by 48-60% during Apr-May FY21 due to the nationwide lockdown. This had brought most business and industrial activities, barring few essential ones, to a complete halt.

The crude steel capacity utilisation rate had fallen below 30% during this period. The removal of restrictions led to a rebound in domestic steel demand during the second half of FY21. However, the resurgence of coronavirus seems to have faltered the recovery during the first two months of FY22. Diversion of oxygen for treatment of covid patients by steel mills have slowed down steel production and therefore production continues to remain lower than that in the corresponding period of FY19 or FY20. Besides, the imposition of localised lockdowns also hit demand from several user industries such as automobiles and consumer durables. While domestic demand weakened due to the localised lockdown demand from the export market remained robust. Export of finished steel jumped 30% in May 2021 over the previous month. Share of export in total finished steel production increased up to 15% from 11% in the preceding month. Exports to Italy, Turkey, Spain, Hong Kong and Nepal from India has risen sharply in recent months due to a sharp rise in international steel prices.

Domestic steel prices continue to remain at least at 15-20% discount to the international steel prices. This coupled with a fall in domestic demand gave impetus to exports from India. The localised lockdown has also slowed down construction activities. To offset the slowdown in domestic demand steel companies, have increased exports during the month.

### **What to expect?**

Domestic demand for steel had picked up pace in the second half of FY21 however the second wave of coronavirus has mildly hit demand from certain sectors. Domestic demand is expected to be low in the Q1 FY22 however in Q2 demand is expected to return with unlocking of restrictions. Capacity utilisation rate of user industries will start to improve as more people get vaccinated and return to work in the coming months thereby pushing steel demand. Steel producers are likely to cover up the lost production in the subsequent months and therefore the annual crude steel output is forecasted to grow by 9-11% in FY22.

Domestic steel prices continue to remain at a sharp discount to international steel prices which indicates there is room for further price hike.

The pandemic has accelerated some key trends, which will bring about shifts in steel demand. The steel industry will see exciting opportunities from rapid developments through digitisation and automation, infrastructure initiatives, reorganisation of urban centres and energy transformation.





## Chapter 3

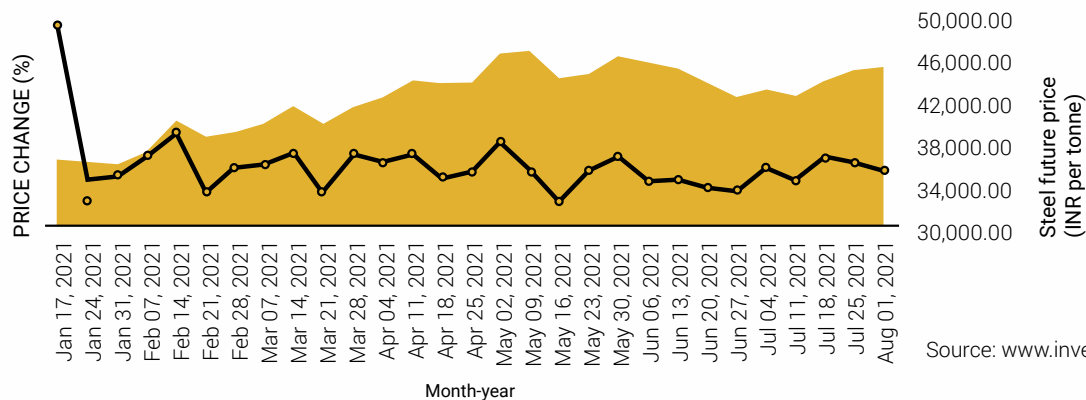
# The Recent Dynamics of Steel Prices in India



The global iron and steel sector has been witnessing a price surge at a good pace for the last year. This price buoyancy is due to the reduced availability of raw materials in the international market following the largest steel-making nation China's decision to gradually reduce production from the current level catering to environmental protection.

The steel price escalation in India started in the second half of 2020-21 and has continued unabated, except for a slight dip in February. In June, the wholesale price of hot rolled coils (HRC) shot up by Rs. 3000 to touch Rs. 69,000 per tonne in Mumbai. Cold rolled coils (CRC) registered an Rs. 5000 increase to sell at Rs. 86,000 per tonne in Mumbai's wholesale markets. Now, compare these to the prices in June 2020, when HRC cost INR 35,900 per tonne and CRC sold for Rs. 41,700 per tonne in Mumbai. Both HRC and CRC are flat steel used in industries such as automobile, construction, transport, capital goods and shipbuilding. An increase in steel prices – there have been several since mid-2020 – affects prices of vehicles, consumer goods as well as construction costs.

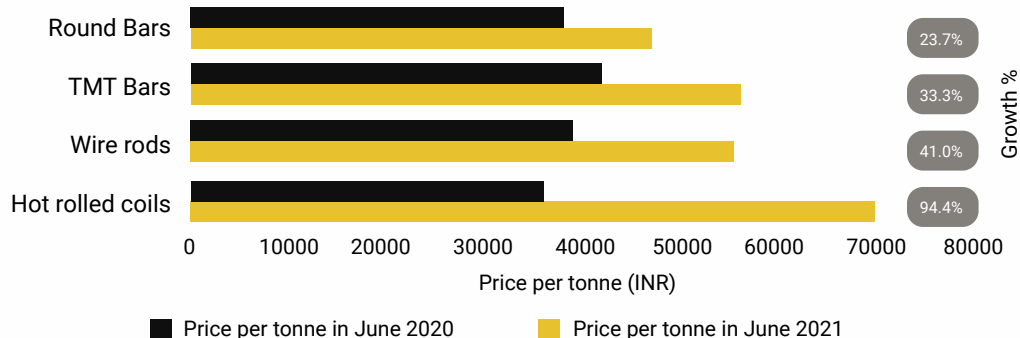
**Exhibit 24: Price of Steel Futures, India, Jan 2021 - August 2021**



Source: www.investing.com, LSI Research

Despite prices of the alloy reaching multi-year highs, there is room for further growth. This is because domestic steel is sold at a 20-25% discount in comparison to international steel rates and is also 15-20% cheaper than imported steel.

**Exhibit 25: Steel Prices by Products, India, 2020 vs 2021**



Source: <https://www.cogoport.com/blogs/soaring-steel-prices-in-india-their-impact-on-production-exports-profits>, LSI Research

## Reasons behind soaring steel prices

When it comes to the rise in prices, Indian steelmakers take a cue from their global counterparts. In the U.S., HRC prices went up from USD 550 per tonne in September 2020, to USD 1500 per tonne in May 2021. In Europe, HRC hit USD 1050 per tonne in May 2021, doubling from USD 500 per tonne in September 2020. Around the same period, HRC prices doubled in Germany and Brazil. Following are the factors that drove the steel prices in India and abroad.

**Strong demand:** The price rebound started with the global steel demand picking up shortly after the first wave of COVID-19 in 2020, as countries prioritised infrastructure development. The US, Europe, China, and India were among regions that saw strong demand for steel. But with production just picking up and supply tight, there was a supply-demand gap.

**China's recovery:** Another factor that immediately drove steel prices north was China's quick exit from the lockdown and return to economic activities last year. The country produces 55% of the world's steel.

**Iron ore shortage and price spike:** The growth in steel demand and prices put stress on iron ore supply. Last year, prices of the raw material jumped to 140% and are now at a 10-year high. In India, iron ore touched INR 6,560 per tonne in April 2021, a 156% jump from INR 2,560 a year ago. With prices soaring, India's iron ore exports grew 66% between January 2021 and April 2021, with 90% of the shipments bound for China (the world's largest importer of the mineral). The record prices and export growth led to a raw material shortage in India, resulting in a fall in steel production.

**The other China factor:** International steel prices have also been influenced by some decisions taken by China in the recent months:

- The first decision was to cut its steel output to reduce carbon emissions. As part of this plan, China introduced production curbs in Tangshan, a highly polluted steel city. This immediately pushed up the prices of steel in China. Chinese production of crude steel hit an all-time high in April 2021, despite the curbs. The decision still managed to contribute to the rise in global steel prices.
- Anticipating a fall in production as a result of the curbs, China announced plans to reduce steel exports and focus on feeding domestic demand. On May 1, China removed VAT rebates on the export of 146 steel products (including HRC) and increased export duty on other steel items.
- At the same time, the country is encouraging steel imports and has eliminated import duty on raw materials, including pig iron, crude steel and recycled steel.

## Impact on production

India produced 7.9 MT of steel in April, down from 10 MT in March and 9.1 MT in February and the lowest level since June 2020. Integrated producers Tata Steel, JSW Steel, JSPL, SAIL, and Rashtriya Ispat Nigam Limited (RINL) accounted for 5.2 MT, a 14% drop from March. The secondary steelmakers produced 2.8 MT, a sharp fall of 30%. Production of finished steel also fell to 7 MT in April from 9.1 MT in March.

Steelemakers have blamed the drop in production on rising prices of steel and raw materials and on aggressive iron ore exports. In December 2020, the Indian Steel Association, representing the steel industry and counting most of the country's major steel firms among its members, demanded a six-month ban on iron ore exports. Big manufacturers are largely insulated from the raw material pinch as they have their own captive mines. But smaller players have had to slash their production levels on account of the crunch.

Besides soaring steel prices and the iron ore supply shortage, there are other factors responsible for the fall in India's steel production. They are:

New restrictions after a deadly second wave of COVID-19, in April, caused a workforce displacement.



Diversion of the steel industry's captive oxygen plants from steelmaking to the production of liquid medical oxygen. This was done to cover up the drastic shortage of oxygen caused by the pandemic, in the country.

Besides soaring steel prices and the iron ore supply shortage there are other factors responsible for the fall in India's steel production. They are:

- Fresh restrictions after a deadly second wave of Covid-19, starting in April
- The workforce displacement it caused
- Diversion of the steel industry's captive oxygen plants from steelmaking to the production of liquid medical oxygen, to make up for a drastic shortage of oxygen in the country amid soaring coronavirus infections

### **Impact on profits**

India's primary steelmakers have had huge profits from the global price surge by marking up their products. These companies are expected to use their high-profit margins to reduce their debt by 15% or Rs. 35,000 crore between 2020-21 and 2021-22, according to a report by a credit rating agency, Crisil. Tata Steel, for example, is reported to have repaid INR 30,000 crore of its debt in 2020-21. Its EBITDA (earnings before interest, taxes, depreciation, and amortisation) jumped to Rs. 27,828 per tonne in January-March from Rs. 12,573 per tonne in the same period last year.

However, it is not the same story for the steel MSMEs, which have suffered losses. Some have even had to halt operations. Price hikes in the range of 20% to 100% for various steel inputs acted as a big blow to the industry. According to experts, the price hikes made no sense when demand for steel raw material fell during the pandemic. The Indian Pipe Manufacturers' Association said volatile steel prices in the past eight months had brought many plants to closure. Many more were on the verge of shutting down. The industry body has written to Union Steel Minister, Dharmendra Pradhan along with a copy of the same, marked to the Prime Minister's Office. This has been submitted, seeking a temporary ban on steel exports and government intervention to regulate steel prices in the country.

### **Impact on exports**

India's steel exports touched record levels in 2020-21 despite a gradual production. Between April 2020 and March 2021, finished steel exports rose from 29.1% to 10.785 MT while semi-finished steel exports grew at an impressive 133% to hit 6.6 MT. According to the Joint Plant Committee, the last time steel exports touched such a high record was between 2017-18 when the export volume stood at 11.614 MT. stood at 11.614 MT.

With the lockdown being reimplemented in the first half of 2021, the domestic demand for steel consequently plunged. Companies focused largely on exports, mainly across Europe and China. A 26% y-o-y growth in finished steel exports between January and March has been attributed to strong demand from Europe. Meanwhile, China's withdrawal of export rebates and its pledge to reduce steel output has encouraged Indian steelmakers to produce extensively for foreign markets. Even SAIL, which usually depends on domestic demand, has begun exports to China.

Exports to China and South Asia are dominated by semi-finished steel products. However, not all the steel exporters were part of this success story. A sharp decline in export trends for value-added steel products was seen and blamed on the lack of raw material at affordable rates.

**Exhibit 26: Uses of some Steel Products**

Steel Products	Uses
Hot rolled coils	Frames of trucks, car seats
Cold rolled coils	Home appliances, metal furniture
TMT Bars	Buildings, bridges, flyovers
Wire rods	Wires, metalware
Round bars	Machine components, fasteners

**What the steel industry wants from the government**

To tide over the crisis, both in the short and long run, Indian steelmakers have made the following demands from the government:

- Supply of steel and related raw materials at affordable rates to steel plants, on the lines of the state support provided by China to its steel industry.
- Government regulation on steel prices.
- A temporary ban on steel exports to address the alloy shortage at home.
- A six-month ban on iron ore exports to cover the shortage of raw materials.
- The Federation of Indian Mineral Industries demanded the withdrawal of import duty to make the domestic steel industry more competitive.





### **What the government has done**

To provide relief to steel MSMEs and other sectors dependent on steel, the government aims to increase imports of steel at more affordable prices. To this end, it announced the withdrawal (part or full) of certain protections provided to the steel industry. The announcements made during February's Union Budget were as follows:

- Basic customs duty on imports of semi-flat steel (used to build equipment, ships, bridges) reduced to 7.5% from 12.5%.
- Basic customs duty on imports of longs (used to build rails, wire rods) was also reduced to 7.5% from 10% earlier.
- Import duty exemption of iron and steel scrap till 31st March, 2022.
- Anti-dumping duty and countervailing duty on some steel products withdrawn till 30th September 2021

### **How will these measure be helpful?**

Some experts are of the view that the government's measures might not make much of a difference as India sources 70% of its steel from countries with which it has free trade agreements with. This means the imports already attract zero duty. India does not import longs, and hence the duty reduction announced by the government is irrelevant.

From its budget announcements, the government seems to be willing to help steelmakers gain access to imported steel at lower rates to make up for the domestic shortfall. But, will these measures look contradictory, especially in the face of the Atmanirbhar Bharat (Self-reliant India) Mission which discourages imports.

Aside from this, as of October 2020, the government has expanded the list of importers of iron and steel products. Importers must register themselves with the Steel Import Monitoring System. Earlier, the registration was mandatory for 300 steel and iron imports. The list has now been extended to cover an additional 530. The registration requires the payment of a fee, which means the import price rises. This adds to the woes of the importer, rather than easing the same.

### **The price trajectory in 2021 and beyond**

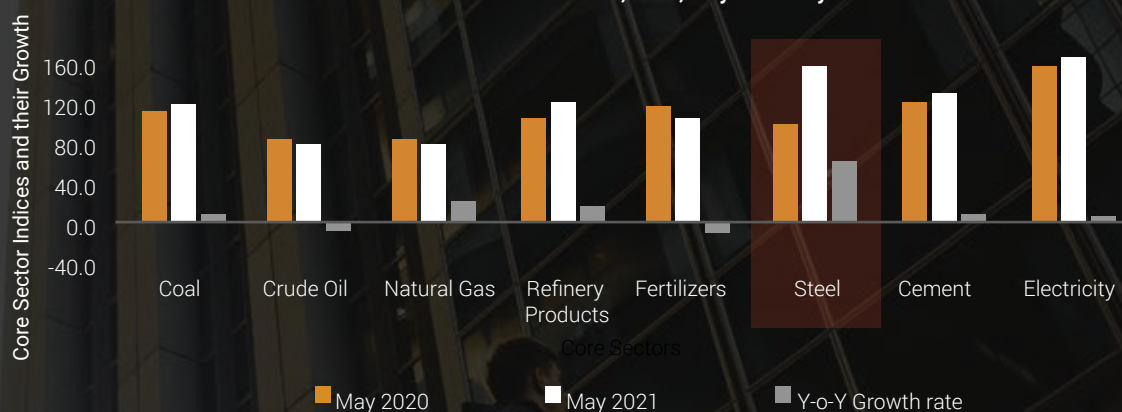
The hike in steel prices is predicted to be on the rise this year as well. According to industry experts, it might take two years for prices to reduce. Reason being that India (like many other countries) has announced a stimulus package to cater to the economic crisis caused by the pandemic. This is expected to drive steel demand in the foreseeable future and advance the prices. In such a scenario, the disruptions in India's steel industry, particularly its MSME units, could last for a while. It is imperative that the sector requires government aid to move through the crisis.

## Chapter 4

# Trends, Drivers, Opportunities & Challenges

The catastrophic year 2020 after creating one of the greatest challenges of the century came to an end reversing the hopelessness with optimism. The feel-good period, however, was short-lived as the second wave of the pandemic ravaged some parts of the country and spread rapidly throughout the country. Speed in vaccination covering the vulnerable sections, while maintaining all possible and mandatory precautions against the disease remains the only solution left to fight the menace.

Exhibit 27: Core Sector Performance, India, May20 vs May21



The Indian steel industry like its global counterparts belongs to one of those core sectors that is looking forward to steady growth from 2021 onwards. In the figure below, among the eight core sector, steel has shown the highest growth, year over year when core sector performances of May 2020 was compared to May 2021.

In the following sections, we will explore what will be the leading demand generating factors for the steel sector in 2021 and beyond. Let us start by looking at the notable trends amidst the ongoing pandemic.

### Notable trends in the Indian steel industry

#### Growing investment

- In March 2021, ArcelorMittal Steel signed a Rs. 50,000 crore deal with the Odisha government to set up a steel plant in the state.
- Most of the companies in the industry are undertaking modernisation and expansion of plants to be more cost-efficient. E.g. SAIL has undertaken steps for the modernisation and expansion of six of its plants.
- The Ministry of Steel plans to invest USD 70 million in the eastern region of the country through accelerated development of the sector.

- The production capacity of SAIL is expected to increase from 13 MTPA to 50 MTPA in 2025 with a total investment of US\$ 24.88 billion.
- On July 02, 2020, ArcelorMittal Group announced plans to invest Rs. 20,000 crore (USD 2.84 billion) in Gujarat.
- Between April 2000 and September 2020, Indian metallurgical industries attracted FDI of USD 14.24 billion.

### Strategic alliances

- In May 2021, JSW Steel signed a Memorandum of Understanding (MoU) to conduct a feasibility study with its strategic alliance partner JFE Steel Corporation to establish a Grain Oriented Electrical Steel Sheet Manufacturing and Sales Joint-Venture Company in India.
- In March 2021, JSW Steel completed its takeover of debt-ridden Bhushan Power and Steel Ltd. This boosted its overall output to 21.5 MTPA. JSW Steel has a capacity of 18 MTPA. This can go beyond 26 MTPA with the addition of BPSL and double capacity at its Dolvi Steel Mill of up to 10 MTPA.
- In December 2020, National Mineral Development Corporation Ltd. signed an MoU with Mineral Exploration Corporation Ltd. To collaborate and conduct exploration in mutually agreed projects for iron ore, gold, coal, diamond and other minerals in various states.

### Entry of international companies

- Attracted by the growth potential of the Indian steel industry, several global steel players have been planning to enter the Indian market.
- In February 2020, GFG Alliance acquired Adhunik Metaliks and its arm, Zion Steel, for Rs.425 crores (USD 60.81 million), marking its entry into the Indian steel market.
- CarVal Investors, the investment arm of US-based agri group Cargill, has offered around Rs. 2000 crore (USD 277.20 million) along with Asset Reconstruction Company (India) Ltd. for the purchase of Uttam Value Steels and Uttam Galva Metallics.

### Increased emphasis on technological innovations

- In the wake of the pandemic, Tata Steel has geo-fenced its plant premises to track the movement of employees and manage any infected COVID cases, if any.
- Companies employing coal gasification and trying gas-based direct-reduced iron (DRI) production. Other alternative technologies such as Hismelt, Finex and ITmk3 are being adopted to produce hot metal.
- Provisional World Steel Report indicates that the global DRI output stood at 15.31 MT from January to February 2021, up by 0.9% over the same period last year, driven by India (6.4 MT, 42% share) at the number one spot.
- The Ministry of Steel has issued the necessary direction to the steel companies to frame a strategy for taking up more research and development (R&D) projects by spending at least 1% of their sales turnover to facilitate technological innovations in the steel sector.
- The ministry has also established a task force to identify the need for technology development and R&D.
- The ministry has adopted energy efficiency improvement projects for mills operating with obsolete technologies.
- In January 2021, the Ministry of Steel signed a Memorandum of Cooperation with the Ministry of Economy, Trade and Industry.
- The government of Japan is reported to boost the steel sector through joint activities under the framework of the India–Japan Steel Dialogue.
- In February 2021, Tata Steel BSL collaborated with FarEye, a software logistics firm, to improve its digital transformation process.



## Vehicle Scrappage Policy to reduce steel prices

- India is spreading its wings further to foray into another highly potential, yet untapped metal industry.
- The recently announced 'Vehicle Scrappage Policy' intends to declutter the country of its huge automobile and white goods waste through recycling.
- This proposed policy seeks to phase out unfit vehicles to reduce vehicular pollution, meet climate commitments, improve road safety and fuel efficiency, formalise the vehicle scrapping industry and recover low-cost materials for the automotive, steel and electronics industries.
- Primarily, this new policy aims to boost new vehicles sales, which will stimulate the economy. Automobile manufacturers and the allied industry would benefit from this policy.
- With the scrapping of old vehicles, raw materials such as plastic, copper, aluminium, steel and rubber will be recycled. This will bring down the pricing components and help the industry become more cost-competitive.

## Steel plants as heroes tackling India's oxygen scarcity

- In April 2021, India faced a severe shortage of oxygen cylinders for COVID patients.
- It was only a year ago that the central government, for the first time, permitted manufacturers of industrial oxygen to produce and sell gas for medical use. This decision proved to be a lifesaver amidst the pandemic.
- As per the data by the Ministry of Steel, 28 oxygen units are located in major public and private sector steel plants. These have been supplying around 1500 metric tonnes of medical oxygen per day (MTPD) across the country.
- Some steel plants are also filling oxygen cylinders and supplying to the states and hospitals.


## Growth Drivers

- The primary aspect that drove growth in the sector would be the growing demand for steel which directs the government to support with appropriate policies. This finally leads to increased investment. The following figure shows the relation between these growth drivers.

**Exhibit 28: Drivers bringing in growth environment in the Steel Sector**

Growing Demand	Policy Support	Increasing investment
Growing demand in the construction industry	100% FDI in the steel sector	Rising investment from domestic and foreign players
Growing demand in the automotive sector As per the Union Budget 2019-20, the government's push to infrastructure sector will increase the demand for steel	The Government released the National Steel Policy 2017 and laid down a broad strategy for encouraging long term growth for the Indian steel industry by 2030-31	Increasing number of MoUs signed to boost investment in steel
Rising demand for consumer durables and capital goods	Government has also promoted policy which provides a minimum value addition of 15% in notified steel products covered under preferential procurement	Foreign investment of nearly USD 40 billion committed in the steel sector
		Between April 2000 and March 2020 Indian metallurgical industries attracted FOI of USD 13.4 billion.





Capital goods, consumer durables and automotive were other aspects that drove steel growth further. Between 2018-25, the appliance and consumer electronics (ACE) sector will expand at a CAGR of 9.91%, contributing to this very steel industry growth.

Growth in automobile production is also expected to augment the rise in steel production. Automobile production in India stood at 26.35 million units in FY20.

Gross Value Added (GVA) of the construction industry grew by 4.4% in FY20 and is expected to be backed by higher expenditure from the Government, post strong growth in the current fiscal year.

Since the construction industry is a major consumer of steel, expansion across this industry will translate into the growth of the steel sector even more.

### **Exhibit 29: Policy support aiding growth in the steel sector**

#### **Steel Clusters**

- In September 2020, the Ministry of Steel prepared a draft framework policy for the development of steel clusters in the country.
- The aforementioned policy is aimed at facilitating and establishing greenfield steel clusters, along with the development and expansion of the existing steel clusters.

#### **R&D and innovation**

- The scheme for the promotion of R&D in the iron and steel sector has been continued under the 14th Finance Commission (FY20). Under the scheme, 26 projects have been approved with financial assistance of Rs.161 crore (USD 24.98 million) from the Ministry of Steel.
- Ministry of Steel is setting up an industry-driven institutional mechanism - Steel Research & Technology Mission of India (SRTMI) - with an initial corpus of USD 30.89 million. The institute will facilitate joint collaborative research projects within the sector.
- In December 2020, the Minister for Petroleum Natural Gas and Steel, Mr. Dharmendra Pradhan, appealed to the scientific community to Innovate for India (I4I) and create competitive advantages to make India Aatmanirbhar.

#### **Foreign Direct Investment (FDI)**

- 100% FDI through the automatic route is allowed in the Indian steel sector.

#### **Duty drawback benefits**

- In October 2020, the Directorate General of Foreign Trade announced that steel manufacturers in the country can avail duty drawback benefits on steel supplied through their service centres, distributors, dealers and stockyards.



### Rise in export duty

- The government hiked the export duty on iron ore to 50% ad valorem on all kinds of iron ore (except pellets).

### Push due to Make in India initiative

- The Make in India initiative and the policy decisions under it are expected to expand the country's steel production capacity and resolve issues related to the mining industry.

### Reduction in custom duty on plants and equipment

- The government has reduced the basic custom duty on the plants and equipment required for initial set up or expansion of iron ore pellets plants and iron ore beneficiation plants from 7.5/5% to 2.5% .
- Customs duty on imported flat rolled stainless steel products has been increased to 15% from 7.5%.
- Basic customs duty on steel grade dolomite and steel grade limestone is being reduced from 5% to 2.5%. Basic customs duty is being reduced from 10% to 5% on forged steel rings used in the manufacture of bearings of wind-operated electricity generators.

### Production-linked Incentive (PLI) Scheme

- In November 2020, Union Cabinet approved the production-linked incentive (PLI) scheme in 10 key sectors (including electronics and white goods) to boost India's manufacturing capabilities and exports and promote the Atmanirbhar Bharat initiative.
- India is a net exporter of finished steel and has the potential to become a frontrunner in certain grades of steel. A PLI scheme in speciality steel will help in enhancing manufacturing capabilities for value-added steel, leading to an increase in total exports.
- The Ministry of Steel, GOI approved a financial outlay of Rs. 6322 crores over a period of five years under PLI scheme for the speciality steel industry.

**Exhibit 30: Opportunities for Steel Sector**

Automotive	Capital Goods	Power	Airports
<p>The automotive industry is forecasted to reach USD 260 - 300 billion by 2026.</p> <p>The industry accounts for 10% of the demand for steel in India.</p> <p>With increasing capacity addition of the auto industry, demand for steel from this sector is expected to be robust.</p>	<p>The capital good sector accounts for 11% of the total steel consumption. It is expected to increase to 14-15% by 2025-26. This sector has the potential to increase in tonnage and market share</p> <p>Corporate India's capex is expected to grow and generate greater demand for steel.</p>	<p>The government has envisaged capacity addition of 58,384 MW from conventional sources between 2017-22. Also, the government is targeting to achieve 175 GW of renewable power generation capacity by 2022.</p> <p>This will lead to enhancement in both transmission and distribution capabilities thereby raising steel demand from the sector.</p>	<p>More and more modern and private airports are expected to be set up.</p> <p>With rising passenger traffic, the development of tier II city airports will generate sustainable steel consumption growth.</p> <p>Estimated steel consumption in constructing airports is likely to grow more than 20% over the next few years.</p>



Railways	Oil and Gas	Infrastructure	Rural India
<p>The dedicated rail freight corridor (DRFC) network expansion would be enhanced in the future.</p> <p>Introduction of trains and metro trains will increase steel usage.</p> <p>Gauge conversion, setting up of new rail lines and electrification would drive the demand for steel.</p> <p>The Indian Railways is planning to produce over 11 lakh tonnes of steel from SAIL for track renewal and laying new lines across the country.</p>	<p>Rural India is expected to reach per capita consumption of 12-14 kgs of finished steel by 2022.</p> <p>Policies like Pradhan Mantri Awas Yojana and Pradhan Mantri Gram Sadak Yojana are driving increased demand for steel in rural India.</p> <p>In FY-19, per capita consumption of steel in rural India was estimated to be between 10-15 kgs.</p>	<p>The infrastructure sector accounts for 9% of steel consumption and is expected to increase to 11% by 2025-26.</p> <p>Due to rising investment in infrastructure, the demand for steel products would increase in the future.</p> <p>70% of the country's infrastructure is yet to come up. Hence steel has significant potential in terms of an upsurge in demand.</p> <p>The Ministry of Finance is planning to set up a stress fund for various infra-related sectors</p>	<p>Rural India is expected to reach per capita consumption of 12-14 kgs of finished steel by 2022.</p> <p>Policies like Pradhan Mantri Awas Yojana and Pradhan Mantri Gram Sadak Yojana are driving growing demand for steel in rural India.</p> <p>In FY-19 per capita consumption of steel in rural India was estimated to be between 10-15 kgs.</p>

### Challenges faced by the Steel Sector

The growth trajectory of the steel industry has its own set of challenges. Five major challenges for the growth prospects are discussed below. The Indian steel industry is often regarded as non-competitive globally.

In 2016, World Steel Dynamics ranked India second in terms of cost of conversion of iron ore to steel, after Ukraine. Indian mills were found to be more cost-efficient in converting iron ore to steel than their counterparts in China, Japan or Korea. Most Indian integrated steel producers ranked within the top 35 steel mills. However, this result is contradicted in a report by the National Institution for Transforming India (NITI Aayog). The report explains a USD 80–100 cost difference as shown in the table below:

**Exhibit 31: Expenses incurred by Indian companies to produce steel**

Expense Heads	Expenses per tonnage (in USD)
Logistics and infrastructure	25–30
Power	8–12
Import duty on coal	5–7
Clean Energy Cess	2–4
Taxes and duties on iron ore	8–12
Finance	30–35
Total cost disadvantage	80–100

Source: NITI Aayog



## Finance

Steel is a capital-intensive sector. Nearly Rs. 7000 crore is required to set up 1 tonne of steelmaking capacity through the greenfield route. Naturally, the cost of financing any expansion or new steel capacity is usually through borrowed capital. In India, the cost of finance is extremely high compared to that in developed countries such as China, Japan and Korea. This adds about USD 30–35 to the final cost of steel.

Moreover, steel demand is cyclical. So, during a downturn, the return on investments gets eroded. Between 2004 – 2011, steel demand increased at a fast pace. This prompted most steelmakers to expand the existing capacities. However, the Indian steel industry faced a severe downturn between 2014 and 2016. This eventually resulted in many steelmakers facing bankruptcy proceedings in 2018. The industry, in fact, is yet to resolve all the bankruptcy issues. Today, financial institutions have become wary of lending to this sector. Therefore, a large share of the challenges that the steel industry has faced since 2014 can be traced to the extremely high finance costs or cost of borrowed capital. Additionally, the pandemic has induced more troubles to the sector as discussed in sections above leading to closure of smaller steel firms.

Although India's Reserve Bank has been lowering the repo rate continuously, the cost of capital in India still remains significantly high. Indian steelmakers continue to face a relative disadvantage vis-à-vis their competitors from the developed countries.

## Logistics

For most Indian steel makers, managing logistics requirements is arduous, challenging and costly. The primary raw material for steel making is iron ore, besides coal or coking coal. Both are bulk minerals, including steel. So, whether it is the transportation of raw materials for steelmaking to the mills or that of finished steel to demand centres, transportation of bulk materials is always arduous.

Moreover, most Indian steel plants are located inland, unlike in China, Japan or Korea, where they are located close to the sea. This increases the challenge of managing logistics requirements for most steel plants in India.

Railways are naturally the preferred mode of transportation for steelmakers. More than 80% of the total logistics requirements of the steel industry are met through the railway networks, as the sea routes can be partially leveraged for only three steel plants.

Moreover, transportation through roadways for bulk materials is not economically viable. The railways face huge infrastructure constraints, which makes managing logistics challenging for the Indian steelmakers. Moreover, the overwhelming dependence of the Indian Railways on revenue from freight traffic, especially from bulk commodities, has been well documented for a long time now. In other words, the freight cost of moving materials through the railways, both raw materials and finished steel, is artificially much higher as passenger traffic is subsidised from freight earnings by the Indian Railways.

NITI Aayog estimates a relative cost disadvantage for Indian steelmakers at USD 20–25 per tonne of finished steel. The study estimates that the freight cost from Jamshedpur to Mumbai can be as high as USD 50 per tonne in comparison with USD 34 per tonne from Rotterdam to Mumbai.

For every one tonne of steel produced, roughly three tonnes of raw material needs to be transported. So, as India doubles its steel production in the next 10 years, the logistics requirement of the domestic steel industry will be unmanageable unless steps are taken to increase and improve the physical infrastructure, especially by the Indian Railways, on an urgent basis. Shortage of railway rakes has already started plaguing the steel industry.

The National Steel Policy, 2017, envisages that by 2030–31, India will export 24 million tonnes of steel annually and imports will be nil. These objectives will remain on paper unless there is freight cost rationalisation. This would reduce the cost or price of steel and make Indian steel more competitive globally. The following steps can help:



- Lowering the freight class for iron ore to 145, uniform with the freight class for coal and limestone.
- Inclusion of iron ore, coal and coke in Long Term Tariff Contract (LTTC) Policy.
- No long-term policy on freight structure for short lead traffic to a distance of 100 km.
- Removal of route rationalisation policy (Charging of iron ore and Limestone by a longer route).
- Abolition of long-term policy on freight structure for short lead traffic up to a distance of 100 km.

In conclusion, infrastructure bottlenecks, especially in railway connectivity, is another external challenge that can outweigh future growth considerations. Unless there is a significant effort by the Indian Railways to rationalise costs as well as to improve railway connectivity, capacity additions will remain limited.

### Tax, duties and cess

While the government has recently lowered corporate tax rates to 25%, there are certain non-creditable taxes, duties and cesses, specifically paid by the steel sector. This reduces the competitiveness of Indian steel products in the global market.

NITI Aayog estimates that Indian steelmakers pay an additional amount, varying between USD 15 to USD 23 by way of taxes, duties and cesses compared to their global peers. The estimate of the figure is found to be around USD 35–40, as given below:

**Exhibit 32: Taxes paid by Indian steel makers**

Input	Type of tax	Amount (Rs. per MT)
Iron ore	Royalty, Clean Energy Cess, District Mineral Foundation, National Mineral Exploration Trust and a few others	1,100.00
Electricity	Electricity duty	500.00
Freight	Taxes on fuel	500.00
Customs duty	Customs duty on imports of raw materials	650.00
Total		2,750.00

Abolition of these taxes, cesses and duties or making them creditable would only increase India's competitiveness. This, in turn, adds value to both upstream and downstream steel production and steel consumption units. The National Steel Policy has laid down certain goals. For these to be realised, Indian steel needs to be globally competitive. Otherwise, India might never be able to increase steel exports beyond a certain limit and will continue to be threatened by cheaper imports. To prevent this, the government needs to ensure that the additional burden of USD 80–100 that Indian steelmakers are saddled with, is removed. Removal of non-creditable taxes, duties and cesses is the easiest to attain. Otherwise, we foresee this to be a big challenge in the future.

### Raw materials:

Although India has abundant reserves of iron ore and coal, it has negligible reserves of coking coal. The National Steel Policy envisages that India will reach 300 MT of steelmaking capacity. 68% of this would be through the blast furnace route, which requires coking coal. This translates to about 200 MT of steel being produced using coking coal, which means an annual consumption of about 180 MT.

India fulfils the majority of its coking coal requirements through imports from Australia. But due to vagaries in weather, there have been huge fluctuations in coking coal supply as well as coking coal prices.

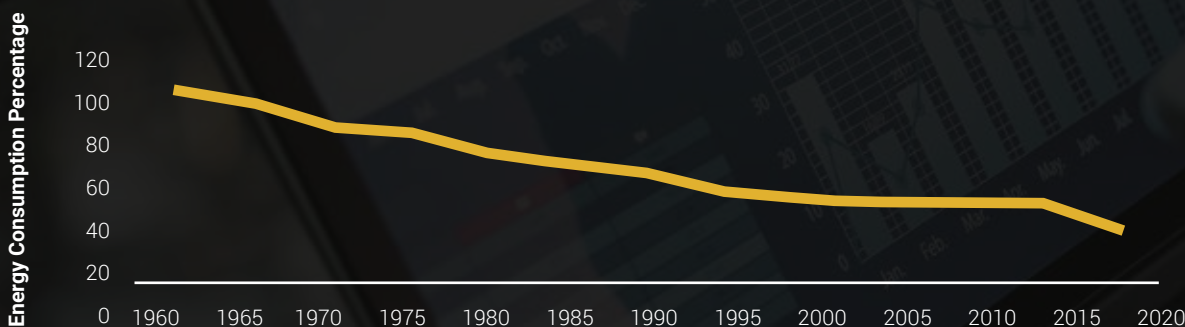
Jharia field  
estimated

with an estimated reserve of approximately 12 billion tonnes. The coal mines in Jharia have had to deal with fires and issues related to subsistence right from the time mining operations commenced around the early 1900s. Moreover, the entire town of Jharia is located on coalfields with close to 100,000 residents. The development of Jharia coalfields will not only secure the coal requirement of the steel industry but also act as a major incentive for investment. It will also lead to the overall development of the region. The National Steel Policy, 2017, envisages that only 65% of India's coking coal requirements will be met through imports by 2030–31. If India is to consume 180 MT of coking coal annually, it means that around 60–65 million tonnes will be provided by domestic sources. This poses a serious challenge to the growth aspirations of the Indian steel industry unless the Jharia fields are developed.

### Environment and energy consumption:

Increasing environmental concerns are taking the centre stage. The Indian steel industry is not immune to this trend. The steel industry is energy-intensive and is the second-biggest consumer of energy globally. This leads to a higher carbon footprint and also affects the immediate environment. Using energy-efficient methods to produce steel will not only reduce production costs but also improve competitiveness. This can be achieved through highly developed energy management systems and the usage of latest technologies in steel production. As per the World Steel Association, improvements in energy efficiency have led to a reduction of about 60% in the energy required to produce a tonne of crude steel since 1960, as highlighted in the figure below.

Exhibit 33: Energy consumption per tonne of crude steel production, Global, 1960-2020



Source: Worldsteel.org

Slurry and other solid wastes and emissions like GHGs are by-products of the steel manufacturing process resulting in environmental pollution. As per the World Steel Association, in 2017, on average, 1.83 tonnes of CO<sub>2</sub> were emitted for every tonne of steel produced, equivalent to around 7–9% of direct emissions from the global use of fossil fuel. In India, the figures are marginally higher.

Water management is a crucial step and challenge in steel manufacturing, especially in areas where the availability of pure water is decreasing. Thus, reusing it becomes important, commanding desalination and cooling of water to avoid damaging vital equipment like rolling mills. Desalination requires large amounts of energy (for crystallisation), which produces a low-quality salt that has no commercial use and is costly to dispose off.

Going ahead, if the Indian steel industry is to fulfil its growth aspirations, it will have to continuously upgrade to energy-efficient technologies and invest in procedures that help reduce the carbon footprint. The Indian government has already released draft environment guidelines which are quite stringent and may become sterner in future. This means that many inefficient and small steel producers would not find it feasible to produce steel while complying with the increasingly strict environmental norms. This may jeopardise the goals laid out in the National Steel Policy, 2017.

## Chapter 5

# Competitive Analysis of the Steel Sector



Analysing the competitive landscape of the steel industry would be interesting once we discuss the nuances of the types of steel available and the steelmaking process.

Steel is the common name for a family of iron alloys that are easily malleable after the molten stage. It is commonly made from iron ore, coal, and limestone. When these raw materials are put into the blast furnace, the result is a 'pig iron' which has a composition of iron, carbon, manganese, sulphur, phosphorus, and silicon. As pig iron is hard and brittle, steelmakers must refine the material by purifying it and then adding other elements to strengthen the material. The steel is next deoxidized by a carbon and oxygen reaction. A strongly deoxidized steel is called killed while the lesser degrees of deoxidized steel are called semi-killed, capped and rimmed.

Steel can either be cast directly to shape, or into ingots which are reheated and hot worked into a wrought shape by forging, extrusion, rolling, and other processes. Wrought steel is the most common engineering material used, and comes in a variety of forms with different finishes and properties. It is used in every aspect of our lives in cars and construction products, refrigerators, and washing machines, cargo ships, and surgical scalpels.

### **Different grades of steel**

The steel grade is determined by the quantum of carbon and other elements such as manganese, phosphorous, sulphur, silicon, nickel, titanium, copper, chromium, and aluminium. These elements determine the steel properties, such as its hardenability, corrosion resistance, strength, formability, weldability or ductility. The elements influence the properties of steel and its acceptability is predicated on the final application. Steel can be classified based on composition into five broad groups viz carbon steel, alloy steel, stainless steel, tool steel and galvanized steel.

#### **Carbon Steel**

Accounts for 90% of manufactured steel and is categorised based on carbon content ranging from low (less than 0.3%) to high (greater than 0.6%).

#### **Alloy Steel**

Manganese, phosphorus, sulphur, silicon, nickel, titanium, copper, chromium, and aluminium are alloyed with steel to manipulate its properties for use in high demanding environment such as pipelines, auto parts, transformers, power generators and electric motors.

#### **Stainless Steel**

Contains between 10-20% chromium as the main alloying element is valued for its high corrosion resistance and is used in food processing equipment, kitchen utensils, piping, knives, cutting tools, as well as dental and surgical equipment.

#### **Tool Steels**

Contains tungsten, molybdenum, cobalt and vanadium in varying quantities to increase heat resistance and durability, making them ideal for cutting and drilling equipment.

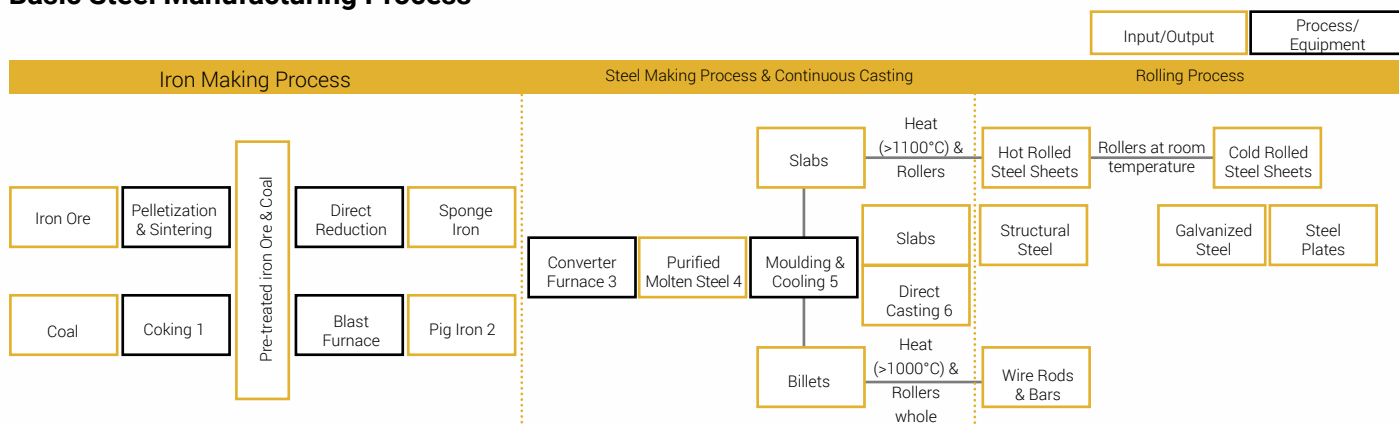
#### **Galvanized Steel**

Coated with zinc to prevent corrosion and protect the steel from scratches, dents and damage thereby making it resistant to elements.





## Basic Steel Manufacturing Process

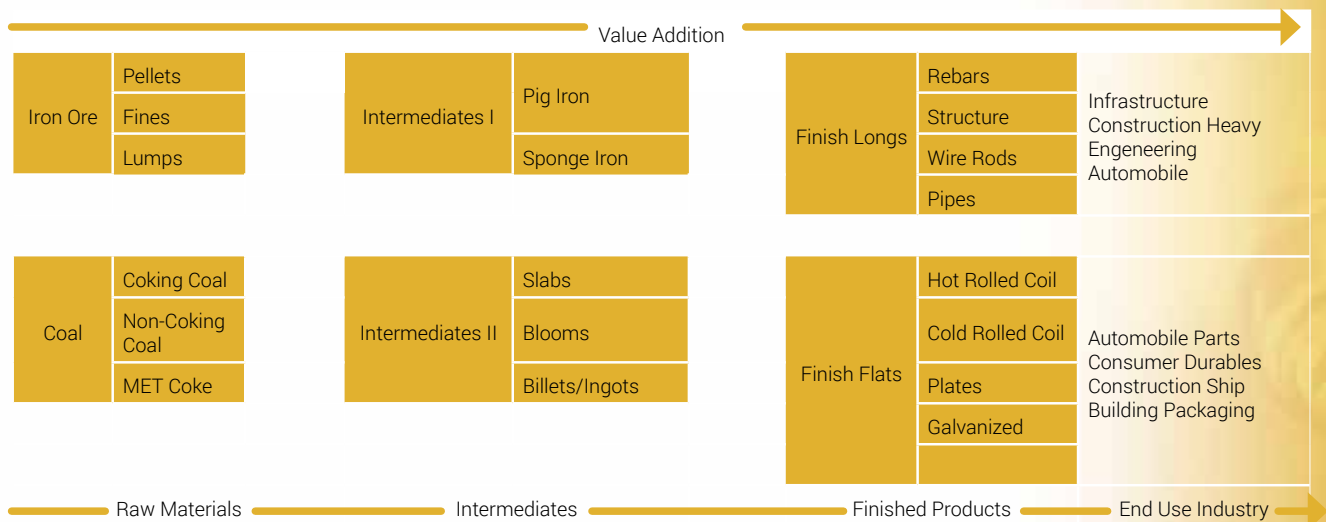


### Notes:

1. Iron ore and coke are extracted in impure powdered form from mines. Pelletization, sintering and coking are methods of pre-treating the raw materials for the manufacturing of steel.
2. Sponge iron, also known as direct reduced iron (DRI), is produced from iron ore lumps, pellets, and fines through the reduction method. Manufacturing of sponge iron requires significantly less energy as compared to the manufacturing of pig iron through the blast furnace method. Sponge iron can be compressed into highly dense hot briquetted iron, making it easy for transportation. The iron output looks porous. Hence, the nomenclature. There are two grades of pig iron basic and foundry which primarily differ based on silicon content.
3. Converter Furnace can either be an Induction Furnace (IF), Electric Arc Furnace (EAF), Basic Oxygen Furnace (BOF) or Blast Furnace (BF). Pure oxygen is used to burn off impurities such as carbon, phosphorous and sulphur, in the molten iron in the BOF process of manufacturing. An EAF can also use scrap steel as an input for manufacturing steel.
4. The temperature and substance composition of the purified molten steel is adjusted through the introduction and reduction of elements depending on the properties required for the final steel product.
5. A semi-finished steel product is formed on cooling the purified molten steel which is further processed to make the final steel product. The semi-finished steel product can be in the form of slabs (wide and flat bars), bloom (rectangular cross-section, wide and thick bars), and billets (square cross-section, thin bars). Ingots are also a semi-finished steel product that is melted and used in forging and extrusion.
6. Direct Casting is when liquid metal is directly cast into specialised shapes.
7. To manufacture stainless steel, further processing (addition of chromium and other elements) is required to modify the properties of the steel output.



## The Steel Industry Value Chain



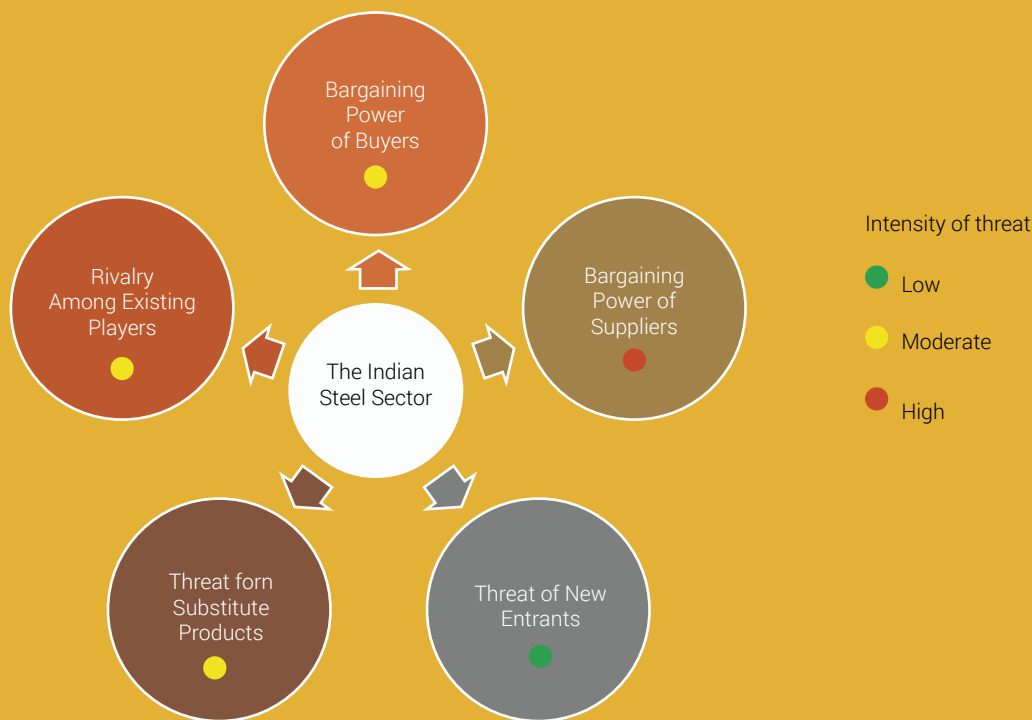
Steel can also be classified based on shapes and applications. Flat Products include plates, sheets, coils, and strips. These materials are mainly used in automotive parts, appliances, packaging, shipbuilding, and construction. Non-flats include bars, and rods, rails, wires, angles, pipes, and shapes and sections. These products are commonly used in the automotive and construction sectors.

The steel industry in India is classified based on the nature of the manufacturing companies into integrated steel producers and secondary producers. Integrated steel producers are companies that are present throughout the steel value chain starting from the extraction of iron ore to the manufacturing and marketing of finished steel. The integrated steel producers account for 43% of steel production in India. The largest integrated steel players in India include Steel Authority of India Ltd. (SAIL), Rashtriya Ispat Nigam Limited (Vizag Steel), Tata Steel, JSW Steel Power, JSW Steel. Other major players include Jindal Stainless Steel and ArcelorMittal.

## Peer Analysis

Tata Steel	31-Mar-2014	31-Mar-2015	31-Mar-2016	31-Mar-2017	31-Mar-2018	31-Mar-2019	31-Mar-2020	Trend
Total Equity	61.1	66.7	48.9	51.9	63.8	72.7	76.8	
Total Debt	23.9	23.9	29.8	27.9	25.2	26.7	39.2	
Total Operating Cost	41.7	41.8	42.7	53.3	60.5	70.6	60.4	
Net Revenue	41.7	41.8	42.7	53.3	60.5	70.6	60.4	
Operating Profit ( EBITDA )	12.8	10.0	7.6	11.9	15.8	20.6	14.9	
Profit for the Period	6.4	6.4	1.0	3.4	4.2	10.5	6.7	
Revenue Growth (%)	9.2	0.2	2.2	24.7	13.6	16.7	-14.4	
EBITDA Margin (%)	30.7	24.0	17.8	22.3	26.1	29.1	24.6	
Jindal Steel & Power	31-Mar-2014	31-Mar-2015	31-Mar-2016	31-Mar-2017	31-Mar-2018	31-Mar-2019	31-Mar-2020	Trend
Total Equity	13.06	12.51	23.07	21.77	22.79	22.55	23.71	
Total Debt	22.67	26.12	23.92	24.16	21.32	17.60	15.21	
Total Operating Cost	10.10	9.67	12.25	13.19	14.14	21.85	20.55	
Net Revenue	13.83	13.39	14.69	16.09	18.11	27.86	26.32	
Operating Profit ( EBITDA )	3.73	3.72	2.44	2.90	3.97	6.02	5.78	
Profit for the Period	1.29	-0.31	-1.42	-0.99	-0.36	-0.26	0.62	
Revenue Growth (%)	-7.60	-3.20	9.70	9.50	12.50	53.80	-5.50	
EBITDA Margin (%)	27.00	27.80	16.60	18.00	21.90	21.60	22.00	
SAIL	31-Mar-2014	31-Mar-2015	31-Mar-2016	31-Mar-2017	31-Mar-2018	31-Mar-2019	31-Mar-2020	Trend
Total Equity	42.7	43.5	39.2	36.0	35.7	38.2	39.8	
Total Debt	24.3	28.2	33.1	38.9	42.0	41.4	51.2	
Total Operating Cost	42.9	41.1	46.8	49.7	54.3	57.2	51.5	
Net Revenue	46.7	45.7	43.9	49.8	59.0	67.0	61.7	
Operating Profit ( EBITDA )	3.8	4.7	-2.9	0.0	4.6	9.7	10.2	
Profit for the Period	2.6	2.1	-4.0	-2.8	-0.5	2.2	2.0	
Revenue Growth (%)	5.0	-2.0	-4.1	13.4	18.5	13.6	-7.9	
EBITDA Margin (%)	22.3	26.1	29.1	24.6	33.6	0.0	0.0	
Rashtriya Ispat Nigam	31-Mar-2014	31-Mar-2015	31-Mar-2016	31-Mar-2017	31-Mar-2018	31-Mar-2019	31-Mar-2020	Trend
Total Equity	12.1	11.6	9.9	8.6	7.2	7.4	3.4	
Total Debt	4.9	7.5	10.4	13.9	15.8	19.0	21.1	
Total Operating Cost	11.2	8.8	11.2	12.9	14.5	19.0	17.7	
Net Revenue	12.0	9.3	10.2	12.4	14.6	20.5	15.9	
Operating Profit ( EBITDA )	0.8	0.5	-1.0	-0.5	0.1	1.5	-1.7	
Profit for the Period	2.6	2.1	-4.0	-2.8	-0.5	2.2	2.0	
Revenue Growth (%)	-0.7	-22.6	9.1	22.2	17.6	40.3	-22.3	
EBITDA Margin (%)	7.1	5.9	-9.9	-4.2	0.6	7.1	-10.9	
JSW Steel	31-Mar-2014	31-Mar-2015	31-Mar-2016	31-Mar-2017	31-Mar-2018	31-Mar-2019	31-Mar-2020	Trend
Total Equity	24.3	25.7	20.4	24.1	27.9	34.9	38.4	
Total Debt	25.0	25.8	32.2	33.2	31.7	33.0	46.1	
Total Operating Cost	36.5	37.2	34.5	45.4	54.0	58.7	51.7	
Net Revenue	45.3	46.1	40.9	56.9	67.7	77.2	64.3	
Operating Profit ( EBITDA )	8.8	8.9	6.4	11.5	13.7	18.5	12.5	
Profit for the Period	1.3	2.2	-3.5	3.6	4.6	8.1	5.3	
Revenue Growth (%)	27.6	1.7	-11.3	39.3	19.0	14.0	-16.8	
EBITDA Margin (%)	19.4	19.2	15.6	20.3	20.3	24.0	19.5	

## Porter's 5 Forces Analysis of the Steel Sector



### Bargaining power of buyers

The bargaining power of buyers in the steel industry is moderate, as the number of suppliers is few in number when compared to the number of consumers. Steel is used as a major raw material in many industries such as automobiles, oil and gas, shipping, consumer durables and power generation.

### Bargaining power of suppliers

The bargaining power of the suppliers is high iron ore is the most utilised raw material for steel. Iron ore reserves are mainly controlled by the government. Stringent rules and regulations and costs increase the power of suppliers. However, large integrated companies have their own mines to source key raw materials.

### Threat of new entrants

The threat of new entrants is low in the sector because of the high capital requirements for setting up new production units. New entrants have to achieve economies of scale in order to gain cost advantage which is a difficult task. Several regulatory clearances are also required, including environmental, land acquisition, etc.

### Threat from substitute products

There is a moderate threat from substitute products in the steel industry. Due to the changing demand pattern of the consumers, the increased use of aluminium can be observed. Many auto manufacturers are preferring aluminium over steel. Consumers are preferring plastic over steel items due to its weight. However, this usage of substitutes in some sectors does not possess a significant threat to steel.

### Rivalry among existing players

The steel industry is highly concentrated, with the top five players accounting for more than 70% of the market share. Price is generally market determined. Steel companies usually compete on the basis of production capacity, economies of scale, access to raw materials, etc. Hence the competitive rivalry is moderate in this sector.

## Consolidation in Indian steel industry

Steel companies had made huge investments in capacity addition, anticipating continued momentum in demand. However, as the global steel sector entered a low-price cycle, from 2013 onwards, steel companies were unable to pay the debts they had taken.

**Exhibit 34: Default steel companies as per RBI list**

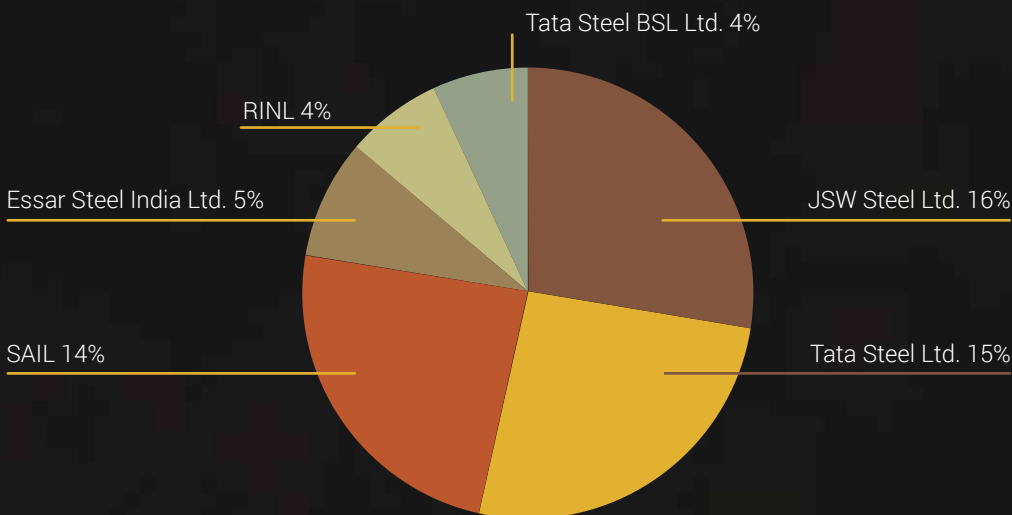
Company	Amount admitted (Rs. in Crores)
Bhushan Steel Ltd.	56,022
Bhushan Power & Steel Ltd.	47,158
Electrosteel Steels Ltd.	13,175
Essar Steel India Ltd.	49,473
Monnet Ispat & Energy Ltd.	11,015
Total	1,76,843

Source: IBC

These companies were easily picked up by the larger companies. This is because it is relatively cheaper to buy existing company assets than building a greenfield one which takes significant time and cost overruns.

The process of consolidation began with lenders approving Tata Steel as the most eligible bidder to take over Bhushan Steel Limited (BSL) for Rs.35,200 crores. Vedanta emerged as the highest bidder for the acquisition of Electrosteel Steels for Rs.5320 crores. JSW Steel emerged as the sole bidder for the acquisition of Monnet Ispat & Energy Ltd. (MIEL) for Rs.2870 crores and was also the bid winner for Bhushan Power and Steel at Rs.19,700 crores.

**Exhibit 35: Share of top 6 companies by revenue FY19**



Source: CMIE





The size of steel industry reduced from seventeen players to four – JSW Steel, Tata Steel, SAIL, and JSPL. JSW Steel and Tata Steel have emerged as the undisputed market leaders with the acquisition of MIEL and BSL, respectively. The following table shows the acquisition of the steel companies post the corporate insolvency resolution procedure and the recovery rate received by the creditors.

**Exhibit 36: Acquisition Status of Steel Companies under IBC**

SL. No.	Company Name	Admission Date	Resolution Approval Date	Initiated By	Claims of FC (Rs. in Crores)	Realisation of FCs (%)	Recovered Amount (Rs. in Crores)	Successful Resolution Applicant
1	Bhushan Steel Limited	26.07.2017	15.05.2018	FC	56022	63.49%	35,568	Bamnival Steel Ltd.
2	Essar Steel India Ltd.	02-08-2017	15-12-2019	FC	49473	82.91%	41,018	ArcelorMittal India Pvt. Ltd.
3	Bhushan Power & Steel Ltd.	26-07-2017	05-09-2019	FC	47158	41.03%	19349	JSW Ltd.
4	Electrosteel Steels Ltd.	21.07.2017	17.04.2018	FC	13175.14	40.38%	5320.12	Vedanta Ltd.
5	Monnet Ispat & Energy Ltd.	18-07-2017	24-07-2018	FC	11014.91	26.26%	2892.52	Consortium of JSW and AION Investments Pvt. Ltd.

The acquisitions of the steel companies under IBC have fared well till now. A rally in steel prices to an all-time high has resulted in a stellar showing for bankrupt steel assets that were among the earliest to be auctioned under the Insolvency and Bankruptcy Code (IBC) in 2018: Tata Steel BSL (formerly, Bhushan Steel) and JSW Ispat Special Products (formerly, Monnet Ispat & Energy) and Vedanta-owned ESL Steel. Tata Steel BSL has posted a profit of Rs. 913.19 crores in the 2020 December quarter. The highest since its acquisition by Tata Steel in 2018.

India's steel industry has endured disabilities in the form of high costs on logistics, energy and finance, and also as inequitable trade because of free trade agreements, and complicated compliance procedures, etc. All of this created a dent in its competition. The government should incorporate provisions to mitigate their impact.



# Chapter 6

## Digital Disruption and the Way Forward

When we consider the impact of digital disruption on organisations, steel companies tend to be overlooked. However, the entire industry needs an upgrade to achieve its true potential, especially considering the various challenges this industry faces.

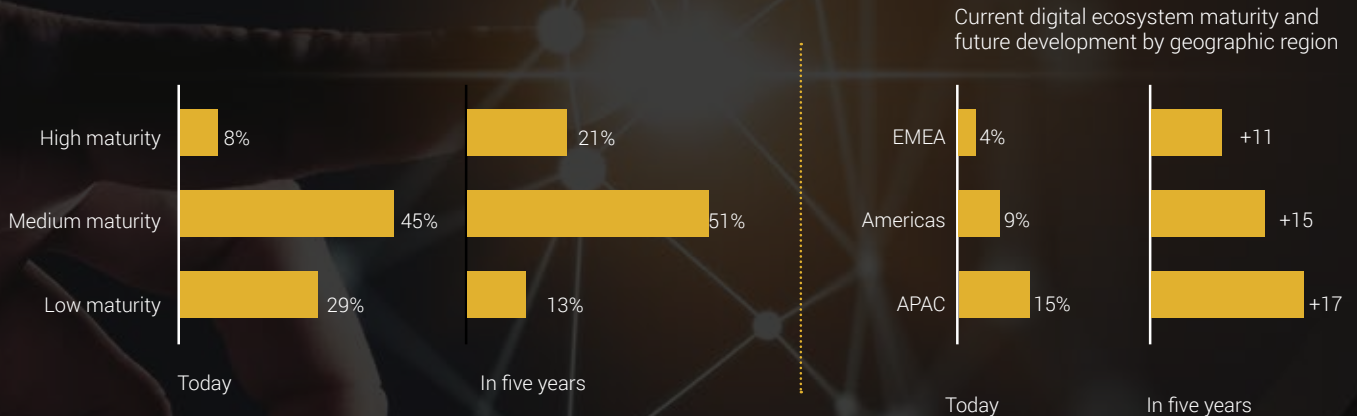
Continuous trade wars between the world's major economies and the steel vs aluminium debate in auto manufacturing are some of the many well-known threats that the steel industry needs to develop strategies for. Likewise, unexpected threats that arise through digital technologies and changing customer expectations, also merit consideration.

These new and possibly more disruptive improvements can challenge the traditional business models of steel companies. Digital disruption shall enable the steel industry to prepare itself for such unexpected challenges and become more competitive.

The advantages of the digitised value chain include seamless client interactions and a greater service level. A 2–4% improvement in EBITDA, and reductions in the inventory of ten days or more. Companies can benefit from emerging technologies like predictive analytics, IoT and data lakes through agile pilot tests and get positive results within a few weeks or months. What's more? Most organisations can start gaining a positive return of investment (ROI) in the initial years themselves. As per the Global Digital Operations, the study conducted by PwC and strategy companies all over the world is expecting an increase in their digital ecosystem maturity over the next five years.

### Progress towards facilitating digital ecosystem

To what extent have you made progress towards the implementation of digital ecosystems? And five years from now?



Source: PwC and Strategy & Global Digital Operations Study, 2018

Some of the challenges faced by steel companies that can be solved through emerging digital technologies are:

First, complex value chains pose a serious challenge to the metal and steel industry. Organisations must take steps to deal with the vast amount of interconnected assets, a varied client base, a large number of items with changing quality requirements and services, and complicated distribution channels with various margin implications.

Though utilisation of resources is recognised as a priority to determine incentives, it is not the sole factor influencing the business drivers that impact overall revenue, profit margin, working capital, or service levels. Plants and resources usually work in silos, instead of working together to meet a larger strategic goal. Inventory network administrators either lack or have little access to real-time data, making them incapable of foreseeing changes in the market. As a result, companies end up acting defensively, without having the capacity installed to minimise risk and leverage short-term opportunities, which ultimately leads to significant value losses



Metal and steel organisations have been struggling to overcome these challenges. However, the conventional operational improvement techniques have their own limitations. Digitisation can help in breaking through the human capacity bottleneck and developing extensive real-time performance systems in the overall supply chain of the steel industry. Thereby, resolving some of the challenges.

Variability across the steel industry - mainly in the procedures, production and supply chain, labour costs decreasing as the digital connectivity is embedded vertically and horizontally throughout companies. Thus, streamlining the procedures and yielding efficiencies. Also, as demand for customised services and products rises, digital manufacturing (including real-time data analytics, self-monitoring and remote control of equipment) will enable faster tailoring of the procedures and operations that are less dependent on human labour. Thus, cutting the costs of variability in conventional manufacturing.

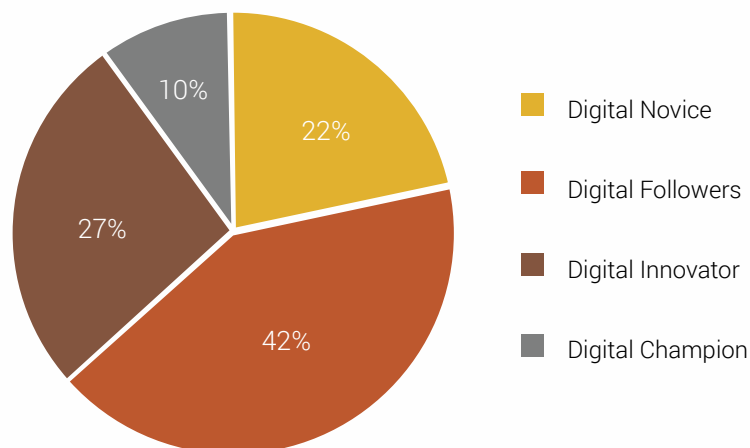
Of course, not all digital technologies will result in cost-cutting and revenue generation for all manufacturers to the same degree. Steel companies are digitising operations incrementally and looking to grab the low-hanging fruit with the highest ROI.

One of the leading American vehicle manufacturing companies have connected all of its industrial robots to a centralised cloud, which can back up programs and monitor performance and signals when there is an imminent need for repairs. This helps in preventing or reducing the idle time of any of the company's thousands of robots. Preventing downtime could lead to massive savings. A study conducted by Nielsen Research, estimated that any disruption to production at automotive factories costs an average of USD 22,000 per minute.

### **Harnessing the power of digital through emerging technologies across business**

Industry 4.0 encompasses end-to-end digitisation and data integration of the value chain offering digital products and services, operating connected physical and virtual assets, transforming and integrating all operations and internal activities, building partnerships, and optimising customer-facing activities. Mastering Industry 4.0 requires a deep understanding of collaboration, the commitment of top management and a clear strategy. Companies that fail to embrace this radical change will likely struggle to survive. Yet, only a few companies are poised to benefit from Industry 4.0 at this moment who are termed as the 'Digital Champions'.

Global Digital Operations Study 2018 categorises firms into digital novices, followers, innovators and champions based on their digital maturity levels.



**Exhibit 37: Distribution of Digital Maturity Levels**

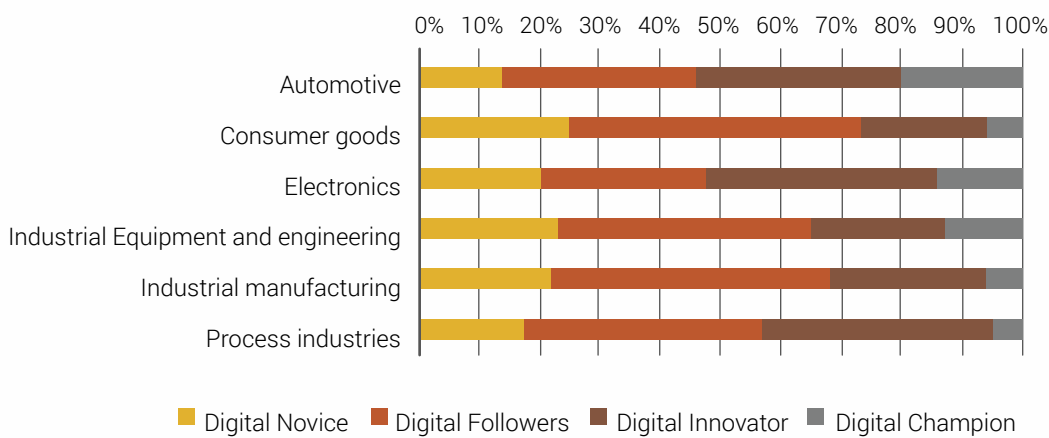




Among industries, automotive and electronics have the largest share of digital champions, at 20% and 14% respectively. Operations in auto companies have been optimised, automated, and connected for decades. Electronics manufacturers have been at the forefront of outsourced manufacturing, which requires connecting and managing disparate systems and partners across an extended value chain. Consumer goods, industrial manufacturing and process industries lag significantly behind.

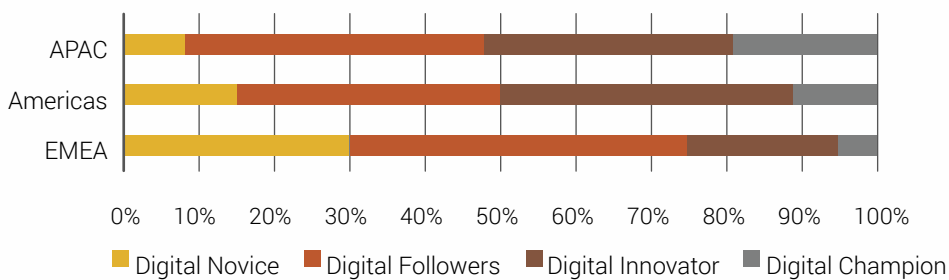
From a regional perspective, Asia-Pacific (APAC) companies are the most advanced. With 19% of the companies from that region in the digital champion category, followed by America, with 11%. European companies lag behind, with only 5% of companies in the digital champion segment.

**Exhibit 38: Level of digital maturity by industry**



Asian companies have the advantage of setting up robust digital operations from essentially a blank slate in terms of factory automation, workforce, and even organisational IT networks as a whole, that is, without having numerous complex legacy systems and facilities to upgrade, integrate or discard. In addition, Asian companies appear to be keener to try new business models and develop innovative products and services.

**Exhibit 39: Level of digital maturity by geographic region**

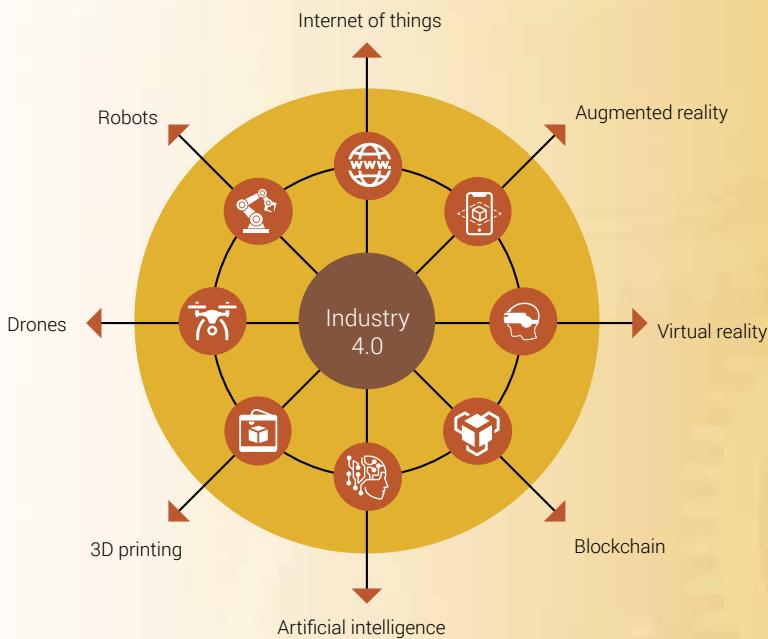


Organisations can conduct a small-scale pilot test focusing on a single business unit, geographic market or asset. The pilot can begin with a few advanced cases, demonstrating the benefits of the digital methodology and serving as a roadmap for setting up in-house arrangements.





Industry 4.0 refers to the collective usage of the following eight emerging technologies shown in the figure below



Industry 4.0 makes it feasible to collect and analyse data across machines, allowing faster, more flexible, compliant and more efficient business processes. Furthermore, enabling to produce superior quality goods at reduced costs. This, in turn, will increase productivity and promote economies of scale, encouraging industrial growth and transforming the workforce in the manufacturing industry – ultimately increasing the competitiveness of companies across regions. Some of the emerging technologies relevant to the manufacturing and steel industry are discussed below.



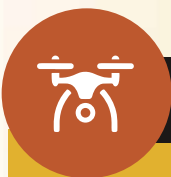
### Internet of things (IoT)

The utilisation of IoT sensors in steel-producing equipment enables condition-based maintenance alerts/cautions. There are numerous critical machine tools that are designed to work inside certain temperature and vibration ranges. IoT sensors can effectively monitor machines and send an alert when the equipment deviates from its standardised parameters. By guaranteeing the working environment for machinery, producers can conserve energy, reduce costs, eliminate machine downtime and increase operational effectiveness. An Indian steel manufacturing company in India has implemented an IoT framework at one of its plants, using a network of machines, advanced analytics and highly skilled IT professionals. The health and status of machines can be monitored remotely by registering mobile devices on the IoT cloud. This helps to monitor the health and status of machines and monitoring can be done remotely by registering mobile devices on the IoT cloud.



### Robots

With regard to Industry 4.0, the demands on material composition of steel have increased in terms of precision and accuracy. Bringing autonomous robots into the picture will allow precision and consistency. With such robots, labour costs will be reduced, and productivity can increase as the robots can work continuously around the clock without fatigue. Further, employee safety can be improved in highly hazardous environments, and insurance and injury leave costs can be reduced significantly. A hi-tech robotic welding line is being used by an Indian steel company at its automotive service centre to increase capacity. As the biggest, fastest and most efficient robotic welding line, it can weld more than a thousand car parts in an hour. As a result, the site can produce more sheets of special steel without any impact on the employment levels.



### Drones

Commercial drones are being used in steel manufacturing. These are extremely useful to inspect materials and devices without disturbing production. Such inspections will reduce downtime drastically and also reduce the time taken to detect a specific issue in more inaccessible environments like finishing mills and furnaces. Drones are also being employed to collect better quality data due to their ability to take images at close range.



## 3D Printing

3D printed steel is a material obtained by superimposing fine layers of steel, for which the base material is steel powder. The technology used in producing 3D printed steel is indirect metal printing. Some applications of 3D printing include: 3D models of steel structures can be printed. With this, design of objects can be easily improved without undertaking the complex manufacturing process.

The supply chain of the industry can be drastically optimised as parts can be produced on demand with the availability of printers and base material.

3D printers can be installed in steel industries to produce steel and related parts.

A Swedish multinational which produces metal powders owns a production hall where metal products are 3D printed.



## Artificial Intelligence

Applications of artificial intelligence involving predictive and preventive analytics can be used to avoid costs connected with supply chain failures. Steel companies need a better way to manage raw materials procurement. A big data tool which uses predictive analytics can be used to calculate raw material shortages and possible delays in delivery. Based on these calculations, the company can work out a supply-related emergency plan that allows it to avoid interruptions in production and excessive downtime costs. Data on unplanned downtime with respect to steel production can be tracked. An American steel manufacturing company has started using artificial intelligence for demand prediction, to manage sourcing and inventory, and to optimise production and outbound transportation.

As India works towards becoming a manufacturing powerhouse through policy initiatives like Make in India, the steel industry emerged as a major focus, given the dependence of an abundant amount of sectors on its output. India is currently the world's second largest producer of steel and is set to become the second-largest consumer of the same, as the industry contributes about 2% to the country's GDP. The industry has the potential to help India regain its positive trade balance in steel as well as to drive the country's export manufacturing capabilities. The decline in exports is a concern and calls for efforts from both the public and private sectors. There is an urgent need to boost the competitiveness of the steel industry. In order to achieve this, cost reduction across the supply chain, development of efficient logistics and reduction in financing costs are some of the measures required. A sound credit sector, a more reliable investment environment and a boost to infrastructure development will go a long way towards strengthening the industry.

Steel and metal manufacturing units are considered asset-intensive. The steel industry is going through an exciting transformation with the evolution of various emerging technologies such as robots, drones and IoT that provide businesses with valuable solutions. In addition to these automating processes, these technologies connect all units in a plant, allowing them to interact in real-time and enhancing the efficiency of the whole system. Sound asset performance and technology integration shall boost labour productivity. This will help in reducing costs and increasing profitability across the industry. However, the introduction of new technologies will entail the development of a new talent pool with the requisite skills and the upskilling of the existing workforce. Investment in education and training will be a key enabler in these areas. The digital disruption has just begun and is set to increase exponentially within the next TEN years. The adoption of emerging technologies is a critical factor for success in times to come. Though the steel industry in India and the rest of the world is encountering certain challenges, a push from the government and the adoption of emerging technologies will enable India to become a USD 5 trillion economy in five years along with achieving the goals outlined in the National Steel Policy, 2017.

## Chapter 7

# The Effect of Pandemic

## The Effect of Pandemic

India had built sights on a capacity of 180-190 million tons per annum (MTPA) by 2024–2025 and 300 MTPA by 2030. However, the lockdown brought economic activities to an abrupt halt and saw a weakened demand in the steel industry. Businesses are now navigating a hard time, and the industry's anticipated growth is under threat.

The pandemic and the associated lockdowns had their effects on the global as well as the Indian economy. The short-term impact channels can be divided into segments like supply shock, demand shock and confidence shock.

**Exhibit 40: Short term COVID-19 impact channels**

<b>SUPPLY SHOCK</b>	Containment measures Factory shut down and labour shortages Supply chain disruptions	<b>DEMAND SHOCK</b>	Confinement measure Freeze in consumption activities Unemployment paycut	<b>CONFIDENCE SHOCK</b>	Fear and uncertainty about the virus and its impact Financial market volatility Weak confidence
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Now the question is will these have a lasting impact or put in other words, how will the pandemic affect the economic and social megatrends? For this let us examine the pre-pandemic megatrends which are expected to regain acceleration in the post-pandemic era as well. The megatrends are categorized as International, Social/Political and Technology.

### International

- Backlash against globalization
- Shifting global power
- Weakening of global institutions
- Rising protectionism

### Social/Political

- Political polarization
- Rising inequality
- Ageing population
- Urbanization
- Rising climate change pressure

### Technology

- Digitisation
- Technology

The reaction to the pandemic will be a renewed focus on resilience, health and safety and government role. The categorizations remaining the same being behavioural changes, resilience building and domestic/international politics.

### Behavioural changes

- Increased tele-activities
- Shift in preferences
- Environmental awareness

### Resilience building

- Business: Supply chain resilience, automation
- Government: Safety and industrial policies
- Consumer: Higher savings

### Domestic/International politics

- Globalisation revisited
- New pattern of international relations
- State role of protector and last resort, nationalism

Coming to the steel industry it will be helpful to state the pre covid trends in order to understand that how those trends will be affected by the pandemic, if at all.

**Exhibit 41: Pre-COVID Trends in the Steel Industry**



The pandemic will hardly have any impact on the above-mentioned megatrends of the steel industry. However, there will be some long-term impacts that are induced from the uncertainty of the same. There will be long-term economic prospects, structural changes of steel-using sectors, policies and geopolitics. Some of the long-term economic uncertainties can include:

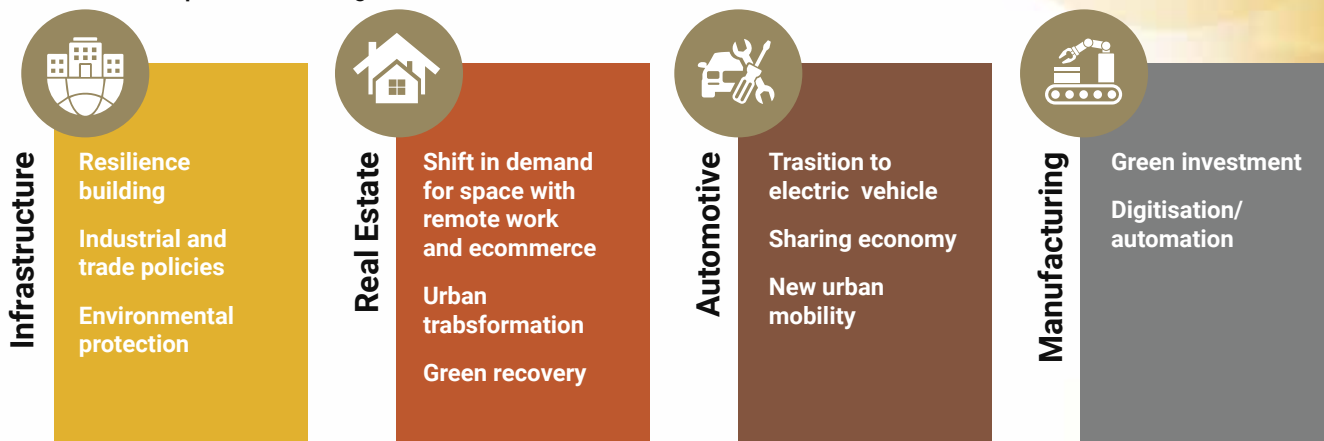
- The pandemic's impact on productivity: education, health, work arrangements and a wider adaptation of IT and ICT.
- Larger than expected economic damages caused by the pandemic.
- Rising inflationary pressure and tax burdens.
- Changes in social behaviour.
- Changes in the international relations.
- Climate change responses.





Besides the above there will also be some impact on the steel-using sectors. They are as follows:

**Exhibit 42: Impact on steel using sector**



Global steel demand has fared better during the pandemic when compared to the financial crisis. A healthy rebound is expected in 2021-22. The operational side also performed well.

The pandemic will bring a transformation to society, offering additional challenges to the steel industry, particularly, structural changes in the steel-using sectors and increased environmental pressure. Steel will be part of the solution and will also see new opportunities from new investments required for the low-carbon society.

It is now time to formulate a strategic response, activate the key drivers of growth, and mitigate the impact of a pandemic-induced slowdown.

### **Strategic Recommendations**


The Indian government can strengthen the steel industry by focusing on the following imperatives:

- Sustained government intervention in the form of a push for infrastructure. This includes residential, commercial, and industrial construction as well as transport networks, such as roadways, railways, and utilities.
- Recalibration of growth targets for the steel industry in addition to required investments in technical capabilities to fulfil the high value-added steel demand from capital goods and the automotive industry.
- A financial stimulus and alternative financing methods to make the financing options competitive to support the steel industry.
- A robust sourcing strategy for coking coal by accelerating the purchase of captive coking coal mines globally along with coking coal purchases from Mongolia and Russia via swap agreements improving the country's mining operations.
- Capacity expansions, closer to the ports and accelerated investments for decongestion of freight network on rail and roads.



- More import substitutions for products that are available in India by making domestic steel more price-competitive along with providing comprehensive data on domestic sources to importers and all end-user industries.
- Strengthening of steel quality control orders for higher coverage of imported grades and high-volume stock-keepings units (SKU) (defined as a combination of product and grades), a better understanding of imports to build domestic capabilities.
- Development of pilot initiatives to increase the use of alternate technologies for higher blast furnace productivity, reduced emissions, water conservation. Digitalisation to make domestic steel cost and quality competitive along with being global best-in-class.
- Industry-level digital infrastructure, strengthening of the steel import management systems portal for demand forecasting, data integration, and enhanced functionality for well-informed business and policy decisions.
- To achieve an expected demand of 230 MT in 2030-31. As per the National Steel Policy, steel demand will need to grow at a CAGR of around 7-7.5% during this period. This is achievable given India's low per capita income and increased spending on infrastructure.
- The government should seek not just growth in steel production, but also a qualitative improvement to enhance the global competitiveness of the domestic steel industry. India significantly depends on overseas supplies for value-added steel due to lower availability in the domestic market. India needs to increase its share of value-added steel products. As per the National Steel Policy, the government aims to reduce the import of steel to nil by 2030. This is only possible with an increase in the domestic production of value-added products as India imports these in large quantities.
- The government plans to increase the steel capacity to 300 MT by 2030-31. In order to achieve this, the government will have to focus on improving the availability of resources namely, infrastructure, raw material, finance, etc. In India land acquisition, infrastructure access and bottlenecks are some of the major problems the metals and mining sector face. Major steel players have shelved or abandoned projects primarily due to problems in acquiring land and delays in obtaining environmental and forest clearances. In 2005, Posco, the world's fourth-largest steelmaker, signed an MoU with the Odisha government to set up a 12 MT capacity steel project at USD 12 billion. This project had the potential to set Odisha on an increased growth trajectory making India a steel superpower. However, the project was abandoned 12 years later due to public resistance and regulatory hurdle. Therefore, in order to achieve the goal of creating a 300 MT steel capacity by 2030, as envisaged by the government in the National Steel Policy, the administration will have to focus on providing faster clearances and remove regulatory bottlenecks.
- Dependence on import of coking coal – a key raw material to make steel - While India has large reserves of high-quality iron ore, its reserves of coking coal is limited and mostly unsuitable for steelmaking. Therefore, Indian steelmakers import much of the coal required for producing steel. Australia is a major source of India's coking coal imports. Domestic coking coal has high ash content therefore India will have to import coking coal to meet its domestic requirements and cannot rule out imports of the mineral. The National Steel Policy, 2017, envisages that only 65% of India's coking coal requirements would be met through imports by 2030–31.



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- High taxes, logistic costs, raw material and energy costs as compared to the competition countries have restricted the growth of the Indian steel industry. As per a report by Niti Aayog, Indian steel companies have a cost disadvantage of USD 80-100 per tonne when compared to its counterparts. This is due to the taxes and duties levied. The cost of steel production in India is around USD 320-340 per tonne in comparison with USD 400 per tonne in China and Japan, while the global average is around USD 390 per tonne. However, the number of duties levied on the import of raw materials, high freight costs and taxes makes Indian steel uncompetitive in the global market. An import duty of 2.5% on coking coal and a coal cess of Rs 400 per tonne is levied. Argued by met coke and steel manufacturers that the combined effect of import duty and coal cess is more than the 5%. Import duty on met coke makes the domestic one unviable. The royalty on iron ore is at 15%. One of the highest in the world, while the global average is in a range of 3-7%. The government should improve efficiency parameters to bring down the cost of production.

**High finance costs:** The borrowing cost in India is significantly high compared to China. Indian manufacturers pay around 12-15% bank lending rates annually. The highest among the emerging market economies. Many steel companies faced bankruptcy proceedings in 2018 because of which the financial sector has become wary of lending to the steel sector. Getting access to finance at reasonable rates by steel companies, especially the secondary small-scale producers can be difficult. This is likely to pose a risk in fulfilling the vision outlined in the National Steel Policy to reach a 300 MT capacity by 2030-31.

Steel demand in India is expected to grow driven by various government-led initiatives in the housing and infrastructure sector, coupled with robust growth in automotive and capital goods segments. Also, the NSP is expected to encourage domestic production of steel and reduce imports. This is expected to benefit the domestic steel companies.

Lower exports from the world's second-largest steel producer are a cause of concern. The domestic steel industry has the potential to be a net exporter. This is possible if the government looks at rationalising the cost structure, develop efficient logistics and infrastructure, and make funding available at cheaper rates. As China enters a phase of moderate growth in steel demand, India is expected to have healthy domestic demand for steel given its low per capita steel consumption, low per capita income and scope for urbanisation.





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