

## Steel: Long and Flat products

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In the first nine months of FY19, the steel industry witnessed an upward movement in production, consumption and prices on a y-o-y basis. Finished steel production and consumption increased by 6.6% and 7.9%, respectively, during April-December 2018 on account of higher demand from user industries like infrastructure and construction, automobiles among others. Steel production had grown by 2.9% and consumption had increased by 7.5% during April-December 2017 on y-o-y basis.

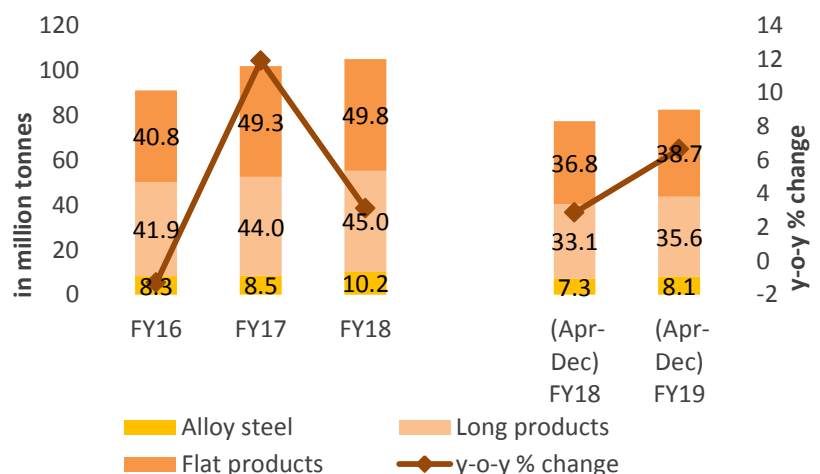
While a rise in domestic demand augured well for steel prices in India, the average growth in domestic prices during the period April-December 2018 was also backed by a y-o-y rise in international steel prices during the initial few months of FY19. The domestic steel prices were up by 18%-33% during the first nine months of FY19.

The international steel prices that remained buoyant in the first few months of FY19 started slowing down from August 2018 onwards due to demand concerns for steel in China. This factor is expected to bring some moderation in international steel prices during FY20 as well which is likely to influence steel prices in India. Nevertheless, an expected growth in domestic steel demand during the year will prevent any sharp fall in domestic steel prices.

### Finished steel production

The total finished steel output accelerated and increased by 6.6% to 82.4 million tonnes during the first nine months of FY19 compared with the corresponding period a year ago.

**Chart 1: Trend in finished steel production**



Source: CMIE

The growth in output is backed by a rise in demand from user industries like construction, infrastructure, and automobiles among others. The steel output had grown by 2.9% y-o-y during the period April-December 2017.

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 above chart that among these product segments, flat steel products accounted for the largest share in each of the years except for FY16. The flat steel products accounted for 47%-48.5% of the total steel production during FY17 to YTD FY19 followed by long steel products and alloy steel which contributed in the range of 42.9%-43.2% and 8.3%-9.8%, respectively, in total steel output.

**Table 1: Category-wise Production of Long and Flat Products (in '000 tonnes)**

	FY16	FY17	FY18	(Apr-Dec) FY19
Bars & Rods	33,512	34,951	35,530	28,253
Steel Structural	7,460	7,985	8,225	6,340
Railway Material	937	1,076	1,255	983
<b>Long products</b>	<b>41,909</b>	<b>44,012</b>	<b>45,010</b>	<b>35,576</b>
GP/GC Sheets	7,183	7,742	7,644	6,891
HR Coils	19,451	24,117	23,931	18,222
CR Sheets/Coils	5,870	8,562	7,800	5,466
Pipes	2,163	2,083	2,164	1,619
Electrical Sheets	148	680	261	224
Tin Plates	331	340	428	340
HR Sheets	1,516	1,096	2,373	1,816
Plates	4,140	4,708	5,169	4,104
<b>Flat products</b>	<b>40,802</b>	<b>49,328</b>	<b>49,770</b>	<b>38,682</b>
<b>Alloy steel</b>	<b>8,261</b>	<b>8,451</b>	<b>10,198</b>	<b>8,111</b>

Source: CMIE

### What are long and flat products?

#### Long products

Long products are generally available in straight length/cut length barring wire rods which are normally available in irregularly wound coils. These finished steel products are normally produced by hot rolling/forging of bloom/billets/pencil ingots into usable shapes or sizes.

This product segment includes products like bars & rods, steel structurals and railway materials. Long products are generally used for construction, mechanical engineering and energy.

#### Flat products

These are finished steel products that are produced from slabs/thin slabs in rolling mills using flat rolls. These are supplied in Hot Rolled (HR), Cold Rolled (CR) or in 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.

Source: Ministry of Steel

### Structure of steel industry in India

The steel companies in India manufacture steel using Blast Furnace-Blast Oxygen Furnace (BF-BOF), Electric Arc Furnace (EAF) and IF (Induction Furnace) process. As per the National Steel Policy 2017, of the total capacity of 125 million tonnes of steel as on 1<sup>st</sup> January 2017, 50 million tonnes (40%) of steel capacity operates through BF-BOF route, 36 million tonnes (29%) of capacity works through EAF route and 38 million tonnes (31%) of capacity uses IF route for steel production.

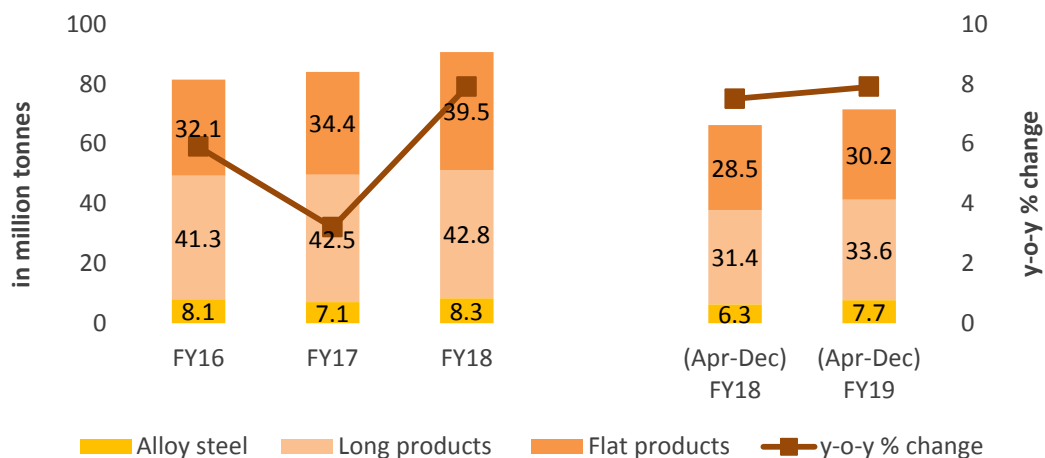
Almost all of the large players use BF-BOF route to produce steel as these players maintain end to end operations where they have an access to captive mines from where they can procure raw materials. This route mainly depends on iron ore and coking coal to manufacture steel. The small players on the other hand primarily depend on EAF-IF route which uses sponge iron, melting scrap and non-coking coal for steel production. The BF-BOF route is more appropriate for large players as it involves huge investment cost, large area and high capacity compared with EAF-IF route which is relatively suitable for small players.

The large steel companies produce a significant portion of flat steel products and the small steel players manufactures a notable portion of long steel products. The flat product segment accounted for about 71%-73% (in terms of quantity) of the total finished steel sold by the top two Indian steel companies during FY18 while long steel products accounted for around 23%-27% of the total steel sold by these companies.

### Consumption of long and flat products

Finished steel consumption in India grew at a faster pace of 7.9% during April-December 2018 compared with the corresponding period a year ago when the consumption increased by 7.5% y-o-y to 66.2 million tonnes.

**Chart 2: Trend in finished steel consumption**



Source: CMIE

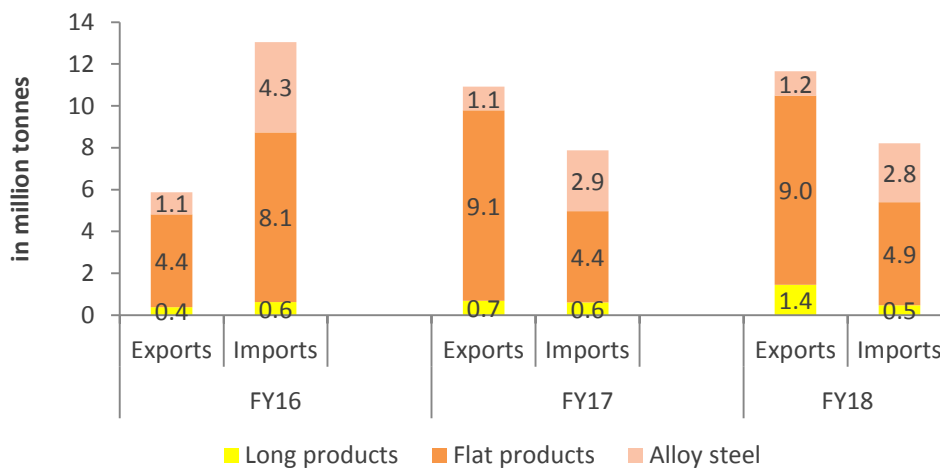
The long steel products dominated the total finished steel consumption in India as can be seen from the above chart. This product segment accounted for 47%-51% of the total consumption during the period FY16 to YTD FY19 followed by flat products with a share of 39%-44% and alloy steel with a contribution of 8%-11%. **The commanding share of long products marks the importance of construction and infrastructure in India.**

During the period FY16 to FY18, total consumption of finished steel grew by a CAGR of 5.5% to 90.6 million tonnes which was primarily pushed up by a growth in flat steel consumption that rose at a CAGR of 10.9%. On the other hand consumption of long steel and alloy steel increased by a subdued CAGR of 1.9% and 1.5%, respectively, during the period. The situation however is different for the current financial year when consumption of these products is compared on a y-o-y basis.

During April-December 2018 of FY19, consumption growth of long steel products accelerated to 7% y-o-y compared with a marginal growth of 0.9% reported by this segment during the first nine months of FY18. Similarly, an acceleration was witnessed in the consumption of alloy steel as it rose by 21.6% during April-December 2018 compared with the corresponding period a year ago when its consumption increased by 18.5%. In contrast, consumption growth of flat steel decelerated to 5.9% in the initial nine months of FY19 in comparison to 13.3% increase registered by this segment during April-December 2017 of FY18.

It can be seen from Chart 2 above that long steel products account for a larger share compared to flat steel products when it comes to consumption. Despite this, flat steel products leads finished steel production. This is because flat steel products account for a major share in India’s steel exports. The dominance of flat steel products in trade is primarily on account of its easy access to ship or transport compared to long steel products which are bulky that makes them difficult to shift or transfer. From Chart 3 below it can be observed that flat steel products have a major share in India’s total finished steel exports and imports as well followed by alloy steel.

**Chart 3: Share of long and flat steel products and alloy steel in India’s finished steel export-imports (in million tonnes)**



Source: CMIE

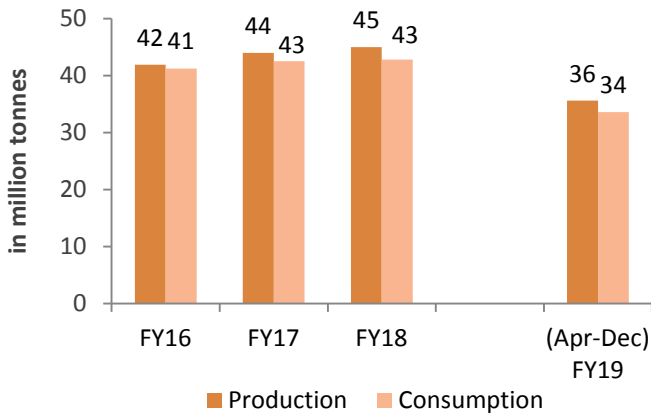
Some of the prime reasons that push India towards imports in spite of being producing steel in sufficient quantity are availability of cheap steel in global markets, insufficiency in domestic production of high value added steel products, special and high grades of steel like electrical and auto grade. In case of automobiles, high grade steel that accounts for about 10% of the steel used in production of automobiles is imported as it meets safety standards. In addition to this, quality and consistency issues with domestically produced high grade steel also leads to imports of this high grade variety of steel.

The significant share of flat steel products in trade is also witnessed globally. As per Global Steel Report September 2018 by US Department of Commerce, flat products accounted for 50% of global steel exports and 51% of global steel imports in 2017 followed by long steel products that accounted for 23% each in global exports as well as imports.

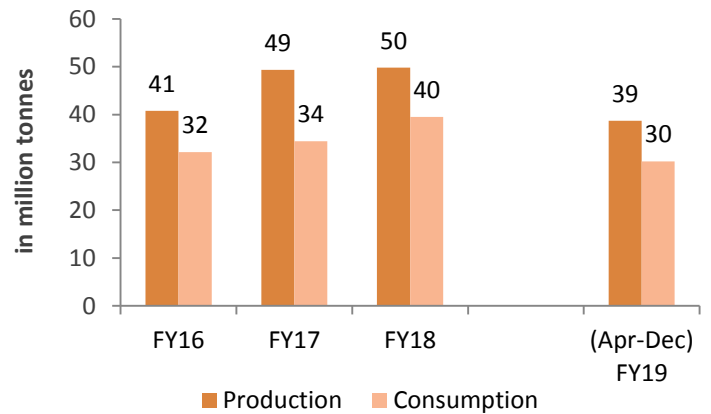
**Trend in long and flat steel production and consumption**

The flat steel products are produced far more in excess to consumption compared to long steel products that are produced a little more than its consumption. This pattern can be witnessed in the Charts 4 and 5 below.

**Chart 4: Production and consumption trend of long steel products (in million tonnes)**



**Chart 5: Production and consumption trend of flat steel products (in million tonnes)**



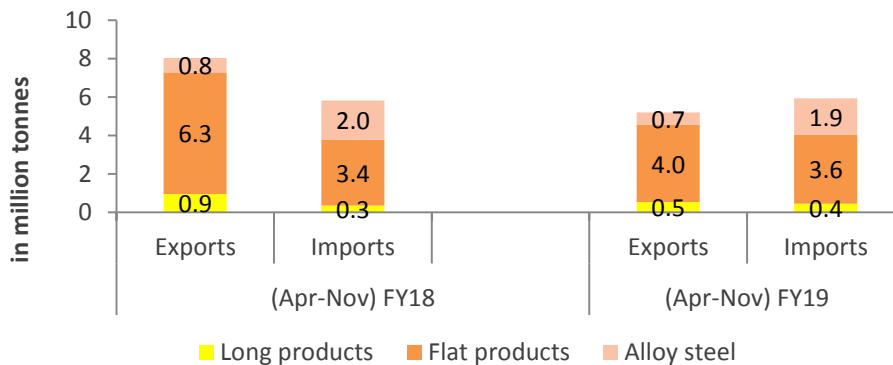
Source: CMIE

For the period mentioned above, it can be observed that long steel production exceeded consumption only in the range of 0.7 million tonnes-2.2 million tonnes while flat steel production surpassed consumption by about 8.5 million tonnes-14.9 million tonnes. The higher share of flat steel products in exports from India is one of the major reasons for this trend.

**India turns net importer of finished steel**

In the last two years FY17 and FY18, India was a net exporter of steel (refer Chart 3). The scenario however changed in the first eight months of the current financial year (refer Chart 6 below). India’s finished steel imports surpassed exports by 0.7 million tonnes during April-November 2018.

**Chart 6: Finished steel imports-exports during Apr-Nov FY19 (in million tonnes)**



Source: CMIE

During this period, finished steel exports declined by a sharp 35.3% to 5.2 million tonnes while imports increased by 2.2% to 5.9 million tonnes on a y-o-y basis.

Higher imports from South Korea led the rise in total steel imports by India. In March 2018, 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. USA had imported about 10% of its steel requirements from South Korea in 2017.

**Table 2: Product-wise imports and exports of finished steel (in '000 tonnes)**

	Exports		Imports	
	(Apr-Nov)FY18	(Apr-Nov)FY19	(Apr-Nov)FY18	(Apr-Nov)FY19
Hot Rolled Coils	3,098	2,061	1,728	1,582
Galvanised Sheets	1,332	817	997	995
Cold Rolled Coils	932	422	284	396
Steel pipes & tubes	962	711	430	609
Plates	2	4	1	0
<b>Flat products</b>	<b>6,326</b>	<b>4,014</b>	<b>3,439</b>	<b>3,583</b>
Wires	50	27	112	132
Bars & Rods	753	404	164	215
Structurals	86	89	44	46
Railway materials	59	11	19	55
<b>Long products</b>	<b>948</b>	<b>530</b>	<b>338</b>	<b>448</b>
Stainless steel	488	489	340	344
Other alloy	269	166	1,686	1,559
<b>Alloy steel</b>	<b>756</b>	<b>655</b>	<b>2,026</b>	<b>1903</b>

Source: CMIE

From the above table it can be seen that HRC, galvanised sheets and other alloy are the major products among the different varieties of steel that are exported as well as imported. **While India on an average exported around 9% of domestic production, the country met around 10.9% of the domestic consumption from imports during the last five years. The average is calculated based on the trade data between FY14 to YTD FY19.**

### Trend in prices of steel products

During the period April-December 2018, the prices of finished steel products increased in the range of 18%-33% on a y-o-y basis backed by an increase in demand. Consumption of steel grew by 7.9% to 71.6 million tonnes during the period compared to the corresponding period a year ago.

**Table 3: Trend in prices of long and flat products (in Rs. per tonne)**

	FY16	FY17	FY18	(Apr-Dec) FY19	y-o-y % change
<b>Flat products</b>					
GP sheets	49,003	51,158	59,118	68,074	18.1%
CR coils	41,114	44,279	50,936	62,072	26.9%
HR coils	36,299	39,546	46,614	55,859	25.3%
<b>Long products</b>					
TMT bars	34,383	33,193	39,935	48,941	28.4%
Angels	36,952	34,506	41,533	52,115	32.2%
Channels	37,135	34,857	41,558	51,701	30.3%

Source: CMIE

From the above table it can be seen that flat products on an average are expensive to long products. The smooth finish and even surface of flat products makes them expensive and this quality of flats makes them usable on outer parts of automobiles and appliances among others. The flat products are also applied in interiors of automobiles, machinery, equipment, etc. The long products generally do not require smooth and finished surface as they are mainly used for construction purposes.

#### **Why are galvanised products more expensive followed by cold rolled and hot rolled products?**

It can be observed from Table 3 that the galvanised products which include Galvanised Plains (GP) and Galvanised Corrugated (GC) products are more expensive followed by Cold Rolled (CR) and Hot Rolled (HR) products. The making of cold rolled products involves processing and cold rolling of hot rolled products which removes scales or contamination/impurities that provides a better surface finish to these products. This also aids in application of paints. The quality of cold rolled products makes them expensive to hot rolled products. The hot rolled products are generally used in the interiors of machinery, equipments while the cold rolled products are normally applied on the outer surface of automobiles, appliances.

The other type galvanised steel is a layered coating of zinc-iron alloy around steel which provides a protective cover to steel and prevents it from moisture and corrosion which makes them premium to hot rolled and cold rolled products. Galvanised steel finds its application in agricultural equipments, solar heating panels, electrical and light fittings, automotive etc.

#### **CARE Ratings' outlook**

- The Chinese economy is expected to see deceleration in its economic growth during the year 2019 primarily due to trade tensions with the US. In December 2018, the World Bank projected China's GDP growth at 6.5% for 2018 and 6.2% for 2019. A slower economic growth is expected to keep the demand for steel more or less stable which, in turn, is likely to result in moderation in steel prices in China. While steel demand in China may pick up on a sequential basis after the New Year begins in February 2019, this is unlikely to push up the prices on a yearly basis.

Nevertheless, the Chinese government may come up with stimulus measures during the year that can provide support to the prices.

- The steel prices in India will follow the trend in Chinese steel prices and they are likely to average lower by about 5% on a y-o-y basis during FY20 considering that the input cost remains stable. However, an increase in domestic consumption during FY20 is expected to restrict any sharp fall in domestic steel prices. This, in turn, is likely to encourage domestic steel producers to sell their products domestically during FY20 thus restraining major growth in steel exports from India on a y-o-y basis during the year. Therefore, an expected moderation in international steel prices and higher domestic steel consumption is expected to result in stable or marginal growth of around 2% in steel exports during FY20.
- The total finished steel production in India is likely to grow by 6%-8% during FY20 backed by a growth in demand from user industries like construction & infrastructure, automobiles, consumer durables among others.
- Domestic consumption of steel is expected to rise in the range of 5.5%-7.5% during FY20. We believe consumption of long steel products to grow at a faster pace compared to flat steel products during the year mainly on account of government's focus on India's infrastructure. For FY19, the revised capital expenditure by government was higher by 20.3% to Rs.3.2 lakh crore on a y-o-y basis and funds of Rs.3.4 lakh crore has been allocated by government towards capital expenditure for the year FY20.
- While majority of India's steel consumption will be fulfilled through domestic production, the country is expected to continue to rely on imports for meeting the needs of special and high grades of steel. Thus, it is likely that industry will proceed with an upward movement in imports during FY20 and imports are expected to increase by about 2.5-3.5% during the year.