

# Research Report on Steel Tubes & Pipes Industry

September 2023

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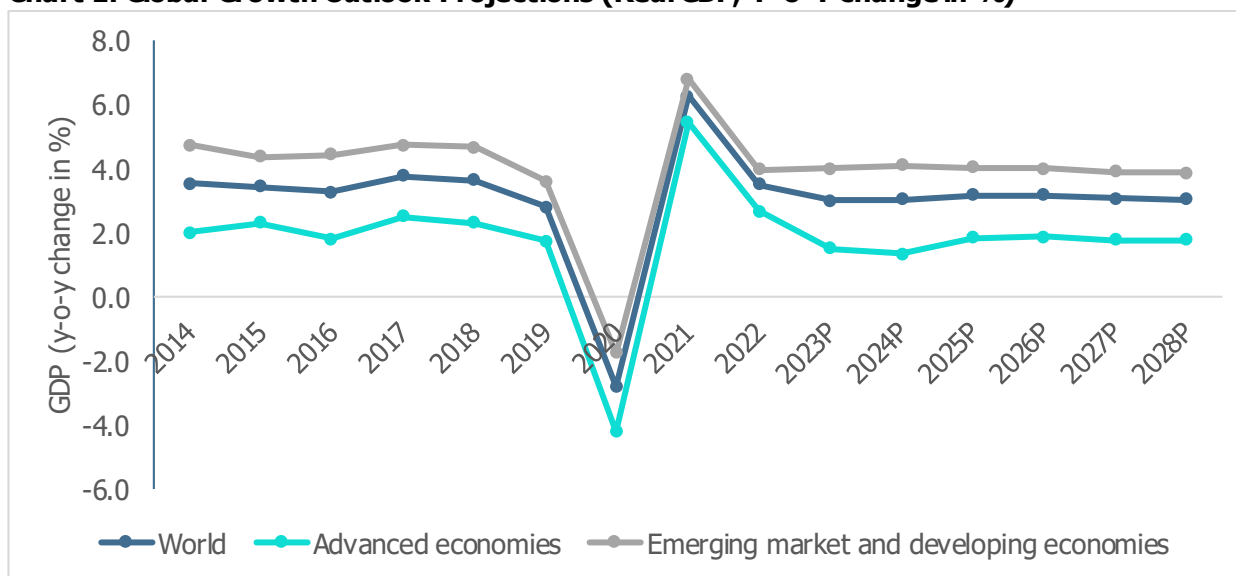
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## 1. Economic Outlook

### 1.1 Global economy outlook

As per the International Monetary Fund (IMF)'s World Economic Outlook growth projections released in July 2023, the global economic growth for CY22<sup>2</sup> stood at 3.5% on a year-on-year (y-o-y) basis, down from 6.3% in CY21 due to disruptions resulting from the Russia-Ukraine conflict and higher-than-expected inflation worldwide. On the other hand, the global economic growth for CY23 is projected to slow down further to 3.0%, attributed to compressing global financial conditions, expectant steeper interest rate hikes by major central banks to fight inflation, and spill-over effects from the Russia-Ukraine conflict, with gas supplies from Russia to Europe expected to remain tightened. Whereas growth in CY24 is projected to remain broadly stable at 3.0%, with notable shifts across regions. For the next 5 years, the IMF projects world economic growth in the range of 3.0%-3.2% on a y-o-y basis.

**Chart 1: Global Growth Outlook Projections (Real GDP, Y-o-Y change in %)**



Notes: E- Estimated, P-Projection;

Source: IMF – World Economic Outlook, July 2023 and April 2023

### Advanced Economies Group

The major advanced economies registered GDP growth of 2.7% in CY22, down from 5.4% in CY21, which is further projected to decline to 1.5% in CY23. This forecast of low growth reflects increased central bank interest rates to fight inflation and the impact of the Russia-Ukraine war. About 93% of advanced economies are projected to witness declined GDP growth in CY23. In addition, this is further expected to decline to 1.4% in CY24.

One of the major countries from this group is the **United States**. The United States registered GDP growth of 2.1% in CY22 compared to 5.9% in CY21. Whereas, growth for CY23 and CY24 is projected at 1.8% and 1.0%, respectively. This is reflective of declining real disposable incomes and savings impacting consumer demand with higher interest rates taking a toll on spending.

<sup>2</sup> CY- Calendar Year

Further, the **Euro Area** registered GDP growth of 3.5% in CY22 compared to 5.3% in CY21. However, the boost from the reopening of the economy after the pandemic appears to be fading. For CY23 and CY24, the growth is projected at 0.9% and 1.5%, respectively. The accelerated pace of rate increases by the Bank of England and the European Central Bank has tightened the financial conditions, resulting in the cooling of demands in the housing sector and beyond.

### Emerging market and developing economies group

For the emerging market and developing economies group, GDP growth stood at 4.0% in CY22, compared to 6.8% in CY21. This growth is further projected at 4.0% in CY23 and 4.1% in CY24. The anticipated improvement in GDP growth in CY24 is attributed to the anticipation of gradual recovery. Whereas about 61% of economies, expected to progress rapidly in CY23, project stable growth. While the remaining economies, including the low-income countries, are expected to progress slower.

Further, in **China**, growth is expected to pick up to 5.2% with the full reopening in CY23 and subsequently moderate in CY24 to 4.5%. Whereas, India's GDP projections for CY23 and CY24 stand at 6.1% and 6.3%, respectively, with resilient domestic demands despite external headwinds.

**Table 1: GDP growth trend comparison - India v/s Other Emerging and Developing Economies (Real GDP, Y-o-Y change in %)**

|              | Real GDP (Y-o-Y change in %) |      |      |      |      |       |       |       |       |       |       |
|--------------|------------------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|
|              | 2018                         | 2019 | 2020 | 2021 | 2022 | 2023E | 2024P | 2025P | 2026P | 2027P | 2028P |
| India        | 6.5                          | 3.9  | -5.8 | 9.1  | 7.2  | 6.1   | 6.3   | 6.2   | 6.1   | 6.0   | 6.0   |
| China        | 6.8                          | 6.0  | 2.2  | 8.4  | 3.0  | 5.2   | 4.5   | 4.1   | 4.0   | 3.6   | 3.4   |
| Indonesia    | 5.2                          | 5.0  | -2.1 | 3.7  | 5.3  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Saudi Arabia | 2.8                          | 0.8  | -4.3 | 3.9  | 8.7  | 1.9   | 2.8   | 3.0   | 3.0   | 3.0   | 3.0   |
| Brazil       | 1.8                          | 1.2  | -3.3 | 5.0  | 2.9  | 2.1   | 1.2   | 1.9   | 2.0   | 2.0   | 2.0   |

E- Estimated, P- Projections; Source: IMF, World Economic Outlook Database (July 2023 and April 2023)

The **Indonesian** economy is expected to register growth of 5% both in CY23 and CY24 with a strong recovery in domestic demands, a healthy export performance, policy measures, and normalization in commodity prices. In CY22, **Saudi Arabia** was the fastest-growing economy in this peer set with 8.7% growth. The growth is accredited to robust oil production, non-oil private investments encompassing wholesale and retail trade, construction and transport, and surging private consumption. Saudi Arabia is expected to grow at 1.9% and 2.8% in CY23 and CY24, respectively. On the other hand, **Brazil** is expected to project a moderate economic growth of 2.1% in CY23 due to headwinds of inflation. However, recovery is expected in the medium term with a sound financial system, large cash buffers with the public sector, and adequate international reserves.

Despite the turmoil in the last 2-3 years, India bears good tidings to become a USD 5 trillion economy by CY27. According to the IMF dataset on Gross Domestic Product (GDP) at current prices, the GDP has been estimated to be at USD 3.4 trillion for CY22 and is projected to reach USD 5.2 trillion by CY27. India's expected GDP growth rate for coming years is almost double compared to the world economy.

Besides, India stands out as the fastest-growing economy among the major economies. The country is expected to grow at more than 6% in the period of CY24-CY28, outshining China's growth rate. Accordingly, the Indian economy is paving its way towards becoming the largest economy globally. Currently, it is the third-largest economy globally in terms of Purchasing Power Parity (PPP) with a ~7% share in the global economy, with China [~18%] on the top followed by the United States [~15%].

Purchasing Power Parity is an economic performance indicator denoting the relative price of an average basket of goods and services that a household needs for livelihood in each country. Despite COVID-19’s impact, high inflationary and interest rates globally, and the geopolitical tensions in Europe, India has been a major contributor to world economic growth.

## 1.2 Indian Economy Outlook

### 1.2.1 GDP growth and Outlook

#### Resilience to external shocks remains critical for near-term outlook

India’s GDP grew by 9.1% in FY22 and stood at Rs. 149.3 trillion despite the pandemic and geopolitical Russia-Ukraine spillovers. In Q1FY23, India recorded 13.2% y-o-y growth in GDP, largely attributed to improved performance by the agriculture and services sectors. Following this double-digit growth, Q2FY23 witnessed 6.3% y-o-y growth, while Q3FY23 registered 4.5% y-o-y growth. The slowdown during Q2FY23 and Q3FY23 compared to Q1FY23 can be attributed to the normalization of the base and a contraction in the manufacturing sector’s output.

Subsequently, Q4FY23 registered broad-based improvement across sectors compared to Q3FY23 with a growth of 6.1% y-o-y. The investments, as announced in the Union Budget 2022-23 on boosting public infrastructure through enhanced capital expenditure, have augmented growth and encouraged private investment through large multiplier effects in FY23. Supported by fixed investment and higher net exports, GDP for full-year FY23 was valued at Rs. 160.1 trillion registering an increase of 7.2% y-o-y.

Furthermore, in Q1FY24, the economic growth accelerated to 7.8%. The manufacturing sector maintained an encouraging pace of growth, given the favourable demand conditions and lower input prices. The growth was supplemented by a supportive base alongside robust services and construction activities.

#### GDP growth outlook

- During FY24, strong agricultural and allied activity prospects are likely to boost rural demands. However, El Nino is being predicted in the current fiscal which may lead to deficit rainfall in the country and impact agricultural output. However, a rebound in contact-intensive sectors and discretionary spending is expected to support urban consumption.
- Strong credit growth, resilient financial markets, and the government’s continual push for capital spending and infrastructure are likely to create a compatible environment for investments.
- External demand is likely to remain subdued with a slowdown in global activities, thereby indicating adverse implications for exports. Additionally, heightened inflationary pressures and resultant policy tightening may pose a risk to the growth potential.

Taking all these factors into consideration, in August 2023, the RBI in its bi-monthly monetary policy meeting estimated a real GDP growth of 6.5% y-o-y for FY24.

**Table 2: RBI’s GDP Growth Outlook (Y-o-Y %)**

| FY24<br>(complete year) | Q1FY24 | Q2FY24 | Q3FY24 | Q4FY24 | Q1FY25 |
|-------------------------|--------|--------|--------|--------|--------|
| 6.5                     | 8.0    | 6.5    | 6.0    | 5.7    | 6.6%   |

Source: Reserve Bank of India



### 1.2.2 Gross Value Added (GVA)

Gross Value Added (GVA) is the measure of the value of goods and services produced in an economy. GVA gives a picture of the supply side whereas GDP represents consumption.

#### Industry and Services sector leading the recovery charge

- The gap between GDP and GVA growth turned positive in FY22 (after a gap of two years) due to robust tax collections. Of the three major sector heads, the service sector has been the fastest-growing sector in the last 5 years.
- The **agriculture sector** was holding growth momentum till FY18. In FY19, the acreage for the rabi crop was marginally lower than the previous year which affected the agricultural performance. Whereas FY20 witnessed growth on account of improved production. During the pandemic-impacted period of FY21, the agriculture sector was largely insulated as timely and proactive exemptions from COVID-induced lockdowns to the sector facilitated uninterrupted harvesting of rabi crops and sowing of kharif crops. However, supply chain disruptions impacted the flow of agricultural goods leading to high food inflation and adverse initial impact on some major agricultural exports. However, performance remained steady in FY22.

Further, in Q1FY23 and Q2FY23, the agriculture sector recorded a growth of 2.4% and 2.5%, respectively, on a y-o-y basis. Due to uneven rains in the financial year, the production of some major Kharif crops, such as rice and pulses, was adversely impacted thereby impacting the agriculture sector's output. In Q3FY23 and Q4FY23, the sector recorded a growth of 4.7% and 5.5%, respectively, on a y-o-y basis.

Overall, the agriculture sector performed well despite weather-related disruptions, such as uneven monsoon and unseasonal rainfall, impacting yields of some major crops and clocked a growth of 4% y-o-y in FY23, garnering Rs. 22.3 trillion. In Q1FY24, this sector expanded at a slower pace of 3.1% compared to a quarter ago. Going forward, rising bank credit to the sector and increased exports will be the drivers for the agriculture sector. However, a deficient rainfall may impact the reservoir level weighing on prospects of rabi sowing. A downside risk exists in case the intensity of El Nino is significantly strong.

- The **industrial sector** projected a CAGR of 4.7% for the period FY16 to FY19. From March 2020 onwards, the nationwide lockdown due to the pandemic significantly impacted industrial activities. In FY20 and FY21, this sector felt turbulence due to the pandemic and recorded a decline of 1.4% and 0.9%, respectively, on a y-o-y basis. With the opening up of the economy and resumption of industrial activities, it registered 11.6% y-o-y growth in FY22, albeit on a lower base.

The industrial output in Q1FY23 jumped 9.4% on a y-o-y basis. However, in the subsequent quarter, the sector witnessed a sharp contraction of 0.5% due to lower output across the mining, manufacturing, and construction sectors. This was mainly because of the poor performance of the manufacturing sector, which was marred by high input costs. In Q3FY23, the sector grew modestly by 2.3% y-o-y. The growth picked up in Q4FY23 to 6.3% y-o-y owing to a rebound in manufacturing activities and healthy growth in the construction sector. Overall, the industrial sector is estimated to be valued at Rs. 45.2 trillion registering 4.4% growth in FY23.

The industrial sector grew by 5.5% in Q1FY24. The industrial growth was mainly supported by sustained momentum in the manufacturing and construction sectors. Within manufacturing (as captured by IIP numbers), industries such as pharma, non-metallic mineral products, rubber, plastic, metals, etc., witnessed higher production growth during the quarter.

- The **services sector** recorded a CAGR of 7.1% for the period FY16 to FY20, which was led by trade, hotels, transport, communication, and services related to broadcasting, finance, real estate, and professional services. This sector was the hardest hit by the pandemic and registered an 8.2% y-o-y decline in FY21. The easing of restrictions aided a fast rebound in this sector, with 8.8% y-o-y growth witnessed in FY22.

In Q1FY23 and Q2FY23, this sector registered a y-o-y growth of 16.3% and 9.4%, respectively, on a lower base and supported by a revival in contact-intensive industries. Further, the services sector continued to witness buoyant demand and recorded a growth of 6.1% y-o-y in Q3FY23. Supported by robust discretionary demands, Q4FY23 registered 6.9% growth largely driven

by the trade, hotel, and transportation industries. Overall, benefitting from the pent-up demand, the service sector was valued at Rs. 20.6 trillion and registered growth of 9.5% y-o-y in FY23.

Whereas in Q1FY24, the services sector growth jumped to 10.3%. Within services, there was a broad-based improvement in growth across different sub-sectors. However, the sharpest jump was seen in financial, real estate, and professional services. Trade, hotels, and transport sub-sectors expanded at a healthy pace gaining from strength in discretionary demand. Accordingly, steady growth in various service sector indicators like air passenger traffic, port cargo traffic, GST collections, and retail credit are expected to support the services sector.

**Table 3: Sectoral Growth (Y-o-Y % Growth) - at Constant Prices**

| At constant Prices                                      | FY18       | FY19       | FY20 (3RE)  | FY21 (2RE)  | FY22 (1RE)  | FY23 (PE)  | Q1FY23      | Q1FY24      |
|---|------------|------------|-------------|-------------|-------------|------------|-------------|-------------|
| <b>Agriculture, Forestry &amp; Fishing</b>              | <b>6.6</b> | <b>2.1</b> | <b>6.2</b>  | <b>4.1</b>  | <b>3.5</b>  | <b>4</b>   | <b>2.4</b>  | <b>3.5</b>  |
| <b>Industry</b>   | <b>5.9</b> | <b>5.3</b> | <b>-1.4</b> | <b>-0.9</b> | <b>11.6</b> | <b>4.4</b> | <b>9.4</b>  | <b>5.5</b>  |
| Mining & Quarrying                                      | -5.6       | -0.8       | -3          | -8.6        | 7.1         | 4.6        | 9.5         | 5.8         |
| Manufacturing   | 7.5        | 5.4        | -3          | 2.9         | 11.1        | 1.3        | 6.1         | 4.7         |
| Electricity, Gas, Water Supply & Other Utility Services | 10.6       | 7.9        | 2.3         | -4.3        | 9.9         | 9          | 14.9        | 2.9         |
| Construction  | 5.2        | 6.5        | 1.6         | -5.7        | 14.8        | 10         | 16          | 7.9         |
| <b>Services</b>   | <b>6.3</b> | <b>7.2</b> | <b>6.4</b>  | <b>-8.2</b> | <b>8.8</b>  | <b>9.5</b> | <b>9.4</b>  | <b>10.3</b> |
| Trade, Hotels, Transport, Communication & Broadcasting  | 10.3       | 7.2        | 6           | -19.7       | 13.8        | 14         | 25.7        | 9.2         |
| Financial, Real Estate & Professional Services          | 1.8        | 7          | 6.8         | 2.1         | 4.7         | 7.1        | 8.5         | 12.2        |
| Public Administration, Defence and Other Services       | 8.3        | 7.5        | 6.6         | -7.6        | 9.7         | 7.2        | 21.3        | 7.9         |
| <b>GVA at Basic Price</b>                               | <b>6.2</b> | <b>5.8</b> | <b>3.9</b>  | <b>-4.2</b> | <b>8.8</b>  | <b>7</b>   | <b>11.9</b> | <b>7.8</b>  |

Note: 3RE – Third Revised Estimate, 2RE – Second Revised Estimates, 1RE – First Revised Estimates, PE – Provisional Estimate;  
Source: MOSPI

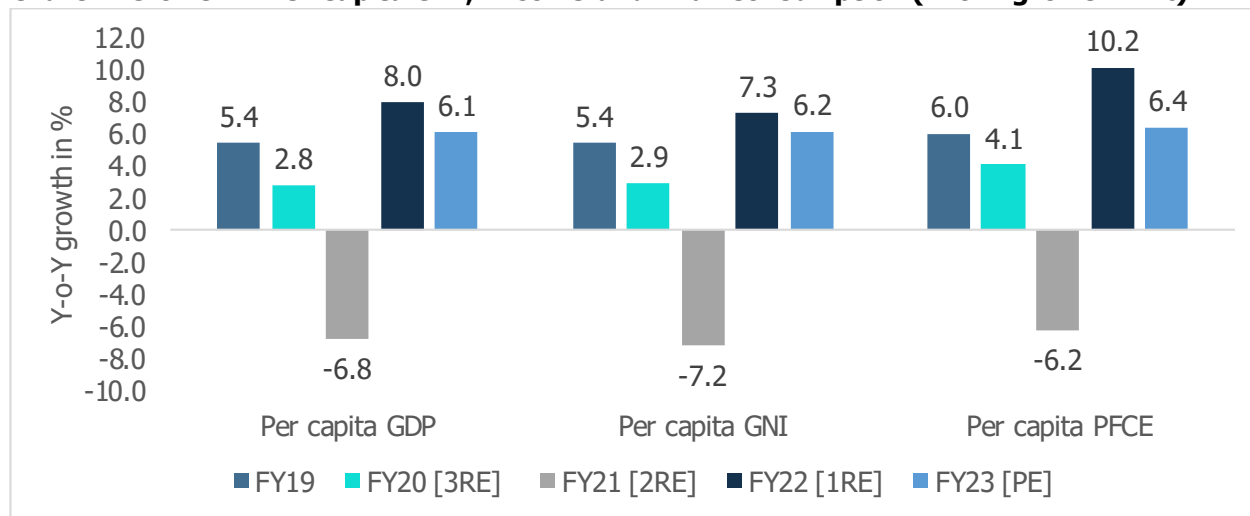
### Per capita GDP, Per Capita GNI and Per Capita PFCE

India has a population of about 1.3 billion with a young demographic profile. The advantages associated with this demographic dividend are better economic growth, rapid industrialization and urbanization.

Gross Domestic Product (GDP) per capita is a measure of a country's economic output per person. FY21 witnessed significant de-growth due to the pandemic. However, in FY22 the economy paved its way towards recovery and the per capita GDP grew by 8.0%. This growth was moderated to 6.1% due to the correction of base effect in FY23. The Gross

national income (GNI) also increased by 7.3% in FY22 and 6.2% in FY23. The per capita private final consumption expenditure (PFCE), which represents consumer spending, increased by 10.2% in FY22 and 6.4% in FY23.

**Chart 2: Growth in Per Capita GDP, Income and Final Consumption (Y-o-Y growth in %)**

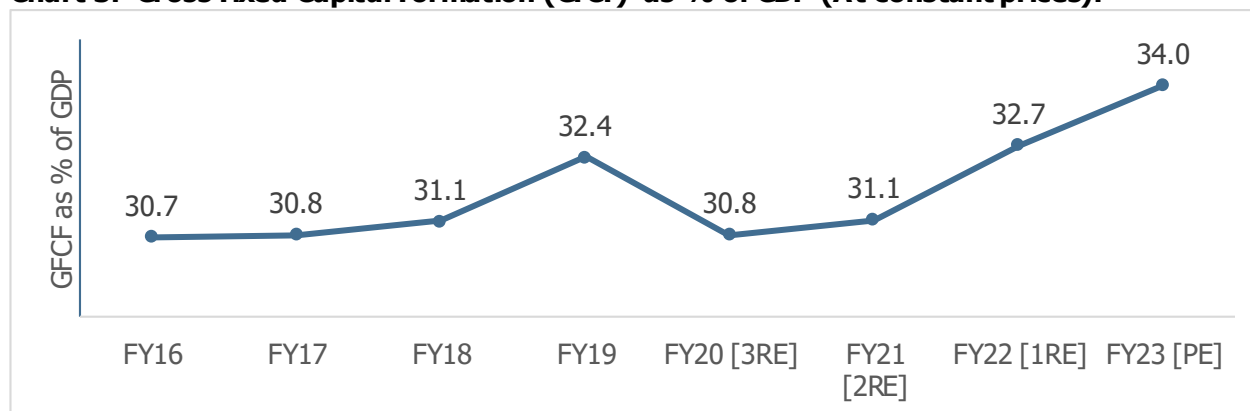


Note: 3RE – Third Revised Estimate, 2RE – Second Revised Estimates, 1RE – First Revised Estimates, PE – Provisional Estimate; Source: MOSPI

**1.2.3 Investment trend in infrastructure**

Gross Fixed Capital Formation (GFCF), which is a measure of the net increase in physical assets, witnessed an improvement in FY22. As a proportion of GDP, it is estimated to be at 32.7%, which is the second-highest level in 7 years (since FY15). In FY23, the ratio of investment (GFCE) to GDP climbed up to its highest in the last decade at 34%, as per the advanced estimate released by the Ministry of Statistics and Programme Implementation (MOSPI).

**Chart 3: Gross Fixed Capital Formation (GFCF) as % of GDP (At constant prices):**



PE: Provisional Estimates, RE: Revised Estimate; Source: MOSPI

Overall, the support of public investment in infrastructure is likely to gain traction due to initiatives such as Atmanirbhar Bharat, Make in India, and Production-linked Incentive (PLI) scheme announced across various sectors.

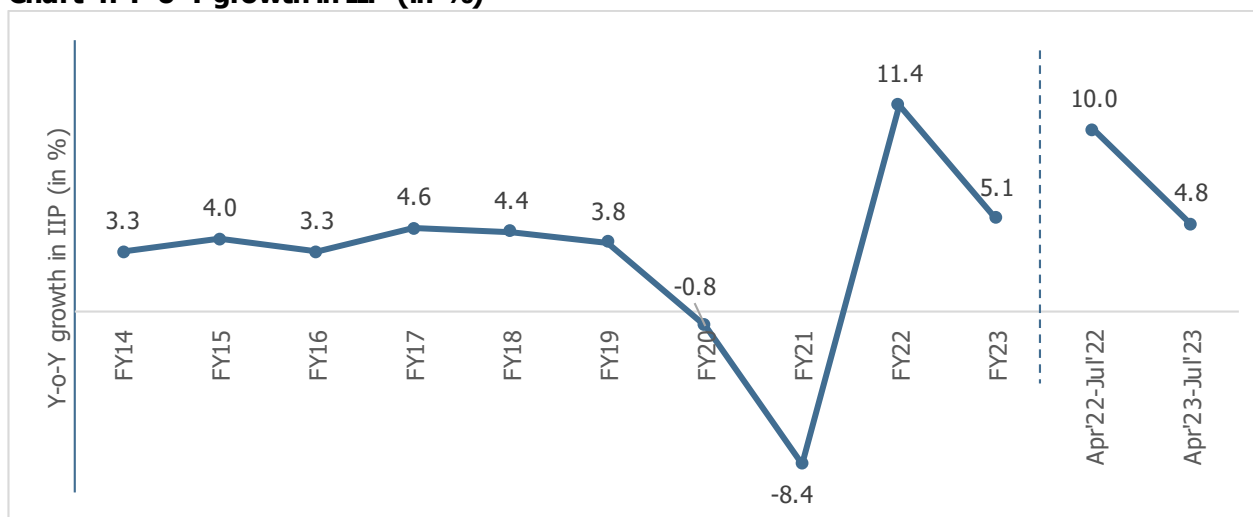
### 1.2.4 Industrial Growth

#### Improved Core and Capital Goods Sectors helped IIP Growth Momentum

The Index of Industrial Production (IIP) is an index to track manufacturing activity in an economy. On a cumulative basis, IIP grew by 11.4% y-o-y in FY22 post declining by 0.8% y-o-y and 8.4% y-o-y, respectively, in FY20 and FY21. This high growth was mainly backed by a low base of FY21. FY22 IIP was higher by 2.0% when compared with the pre-pandemic level of FY20, indicating that while economic recovery was underway, it was still at very nascent stages.

During FY23, the industrial output recorded a growth of 5.1% y-o-y supported by a favourable base and a rebound in economic activities. During April 2023 and May 2023, IIP grew by 4.2% y-o-y and 5.3% y-o-y growth, respectively. This growth in April and May 2023 was aided by encouraging performance of the mining and manufacturing sectors. However, in June 2023, the industrial output slowed to 3.7% mainly due to moderation in the manufacturing sector’s output. This industrial growth rebounded to 5.7% in July 2023 with improvement in the manufacturing segment.

**Chart 4: Y-o-Y growth in IIP (in %)**



Source: MOSPI

The rebound in industrial activity in July 2023 is encouraging. The healthy momentum recorded in the infrastructure and construction sector is likely to continue aided by the Government’s focus on this segment. The consumption demand is likely to see an improvement in the upcoming festive season. However, the elevated food inflation and monsoon-related vagaries could pose a risk to consumption demand. Over a longer period of time, the unfolding of the domestic demand scenario remains critical for industrial activity. External demand is likely to remain weak and that will continue to cast a shadow on export-dependent sectors.

### 1.2.5 Consumer Price Index

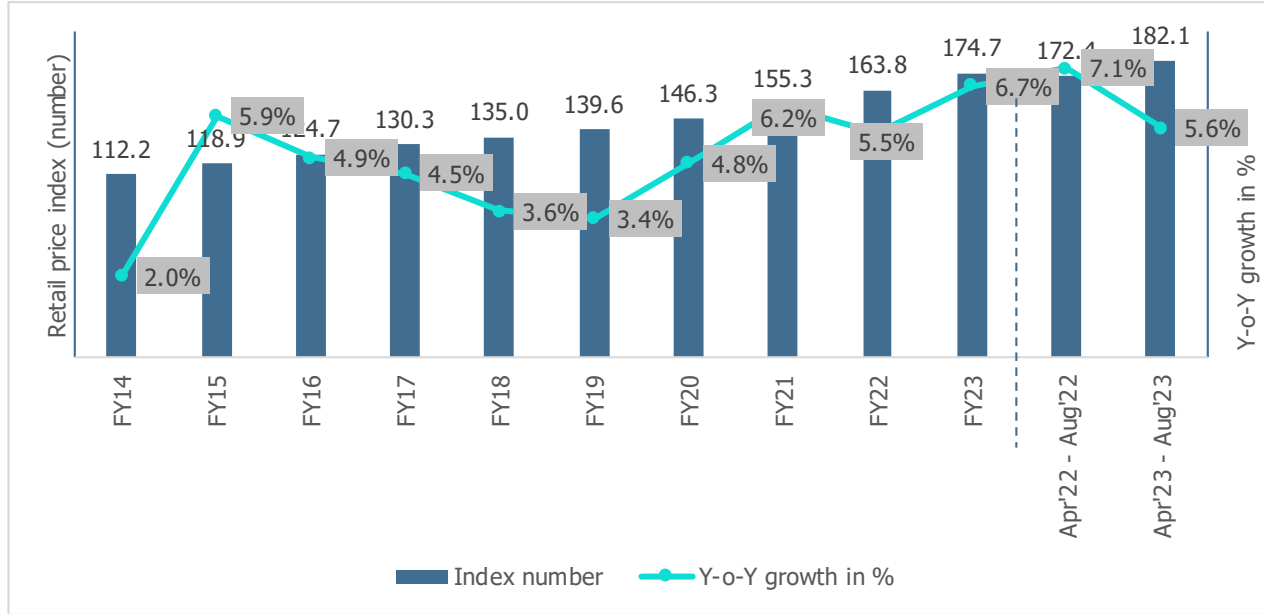
India’s consumer price index (CPI), which tracks retail price inflation, stood at an average of 5.5% in FY22 which was within RBI’s targeted tolerance band of 6%. However, consumer inflation started to upswing from October 2021 onwards and reached a tolerance level of 6% in January 2022. Following this, CPI reached 6.9% in March 2022.

CPI remained elevated at an average of 6.7% in FY23, above the RBI’s tolerance level. However, there was some respite toward the end of the fiscal wherein the retail inflation stood at 5.7% in March 2023, tracing back to the RBI’s tolerance band. Apart from a favorable base effect, the relief in retail inflation came from a moderation in food inflation.

In the current fiscal FY24, the CPI moderated for two consecutive months to 4.7% in April 2023 and 4.3% in May 2023. This trend snapped in June 2023 with CPI rising to 4.9% and 7.4% in July 2023 largely due to increased food inflation. The CPI

has breached the RBI’s target range for the first time since February 2023. This marks the highest reading observed since the peak in April 2022 at 7.8%. The notable surge in vegetable prices and elevated inflation in other food categories such as cereals, pulses, spices, and milk have driven this increase. Further, the contribution of food and beverage to the overall inflation has risen significantly to 65%, surpassing their weight in the CPI basket. This was further moderated in August 2023 to 6.8% mainly due to government’s active intervention.

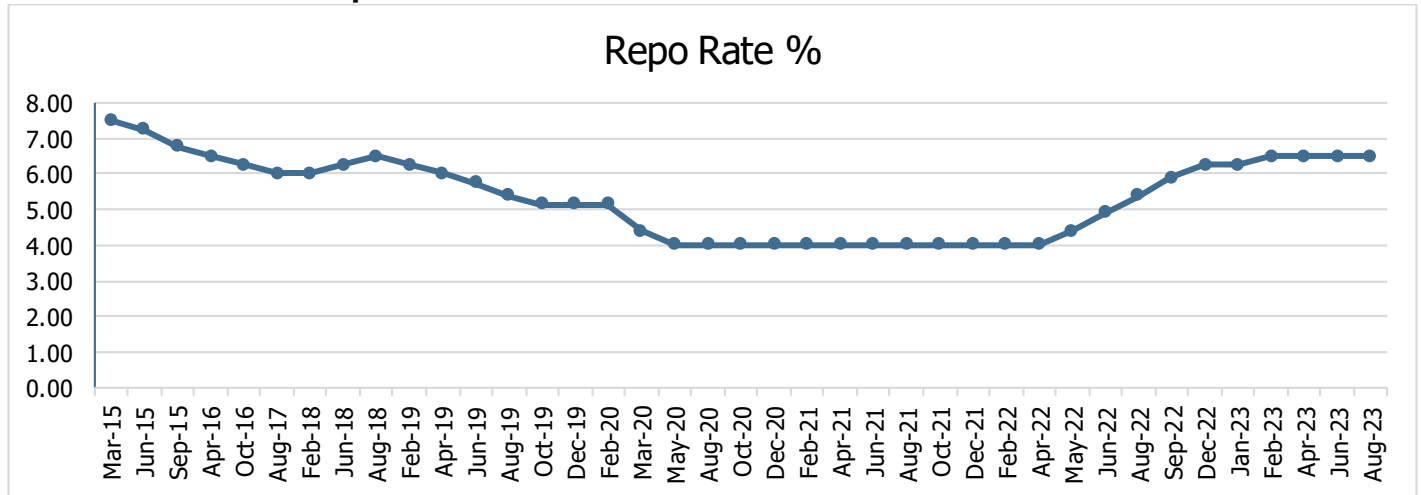
**Chart 5: Retail Price Inflation in terms of index and Y-o-Y Growth in % (Base: 2011-12=100)**



Source: MOSPI

The CPI is primarily factored in by RBI while preparing their bi-monthly monetary policy. The RBI has increased the repo rates with the rise in inflation in the past year from 4% in April 2022 to 6.5% in January 2023.

**Chart 6: RBI historical Repo Rate**



Source: RBI

However, with the inflation easing over the last few months, RBI has kept the repo rate unchanged at 6.5% in the last three meetings of the Monetary Policy Committee. At the bi-monthly meeting held in August 2023, RBI projected inflation at 5.4% for FY24 with inflation during Q2FY24 at 6.2%, Q3FY24 at 5.7%, Q4FY24 at 5.2% and Q1FY25 at 5.2%

In a meeting held in August 2023, RBI also maintained the liquidity adjustment facility (LAF) corridor by adjusting the standing deposit facility (SDF) rate of 6.25% as the floor and the marginal standing facility (MSF) at the upper end of the band at 6.75%.

Further, the central bank continued to remain focused on the withdrawal of its accommodative stance. With domestic economic activities gaining traction, RBI has shifted gears to prioritize controlling inflation. While RBI has paused on the policy rate front, it has also strongly reiterated its commitment to bringing down inflation close to its medium-term target of 4%. Given the uncertain global environment and lingering risks to inflation, the Central Bank has kept the window open for further monetary policy tightening in the future, if required.

### 1.2.6 Key Demographic drivers for Economic Growth

The trajectory of economic growth of India and private consumption is driven by socio-economic factors such as demographics and urbanization.

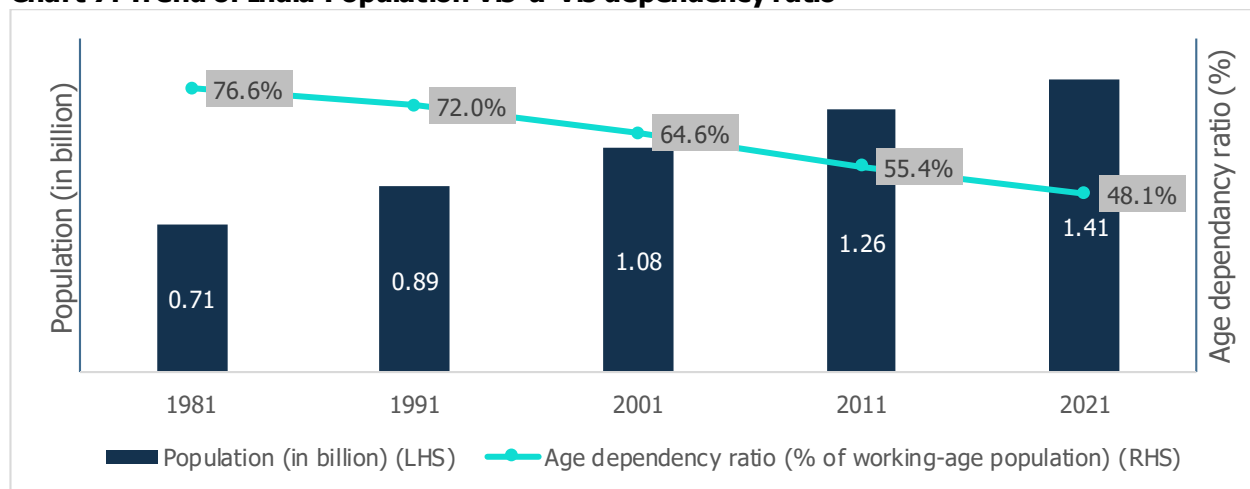
Some of the key demographic drivers are as under:

- Growing Population and Declining Dependency Ratio:**

With 1.41 billion people, India is the second-most populous country in the world, with the population witnessing significant growth in the past few decades.

Age Dependency Ratio is the ratio of dependents to the working age population, i.e., 15 to 64 years, wherein dependents are population younger than 15 and older than 64. This ratio has been on a declining trend. It was as high as 76.6% in 1981, which has reduced to 48.1% in 2021. Declining dependency means the country has an improving share of working-age population generating income, which is a good sign for the economy.

**Chart 7: Trend of India Population vis-à-vis dependency ratio**

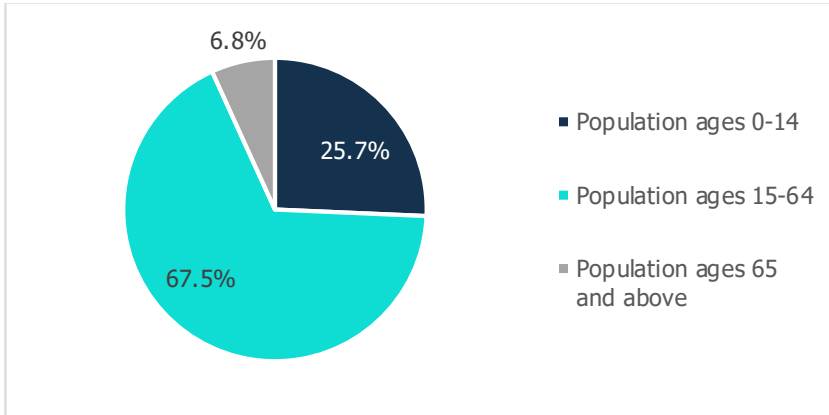


Source: World Bank Database

• **Young Population:**

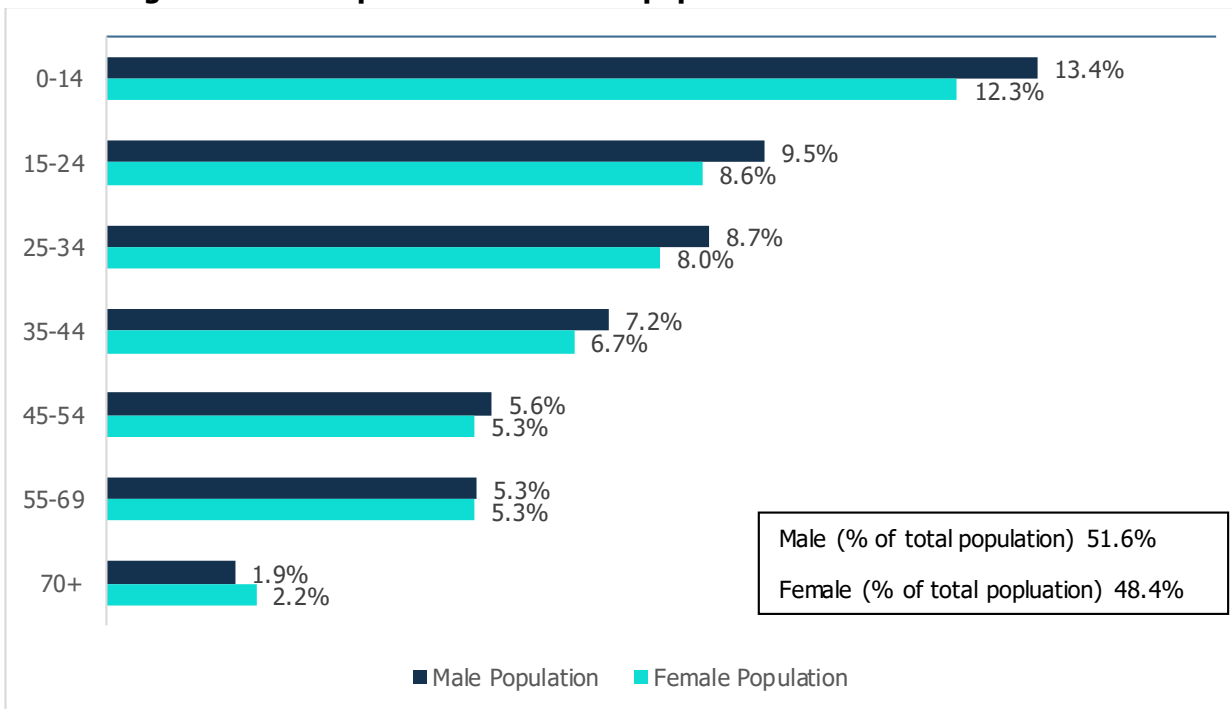
With an average age of 29, India has one of the youngest populations globally. With vast resources of young citizens entering the workforce every year, it is expected to create a 'demographic dividend'. India is home to a fifth of the world's youth demographic and this population advantage will play a critical role in economic growth.

**Chart 8: Age-wise break up of Indian population**



Source: World Bank Database

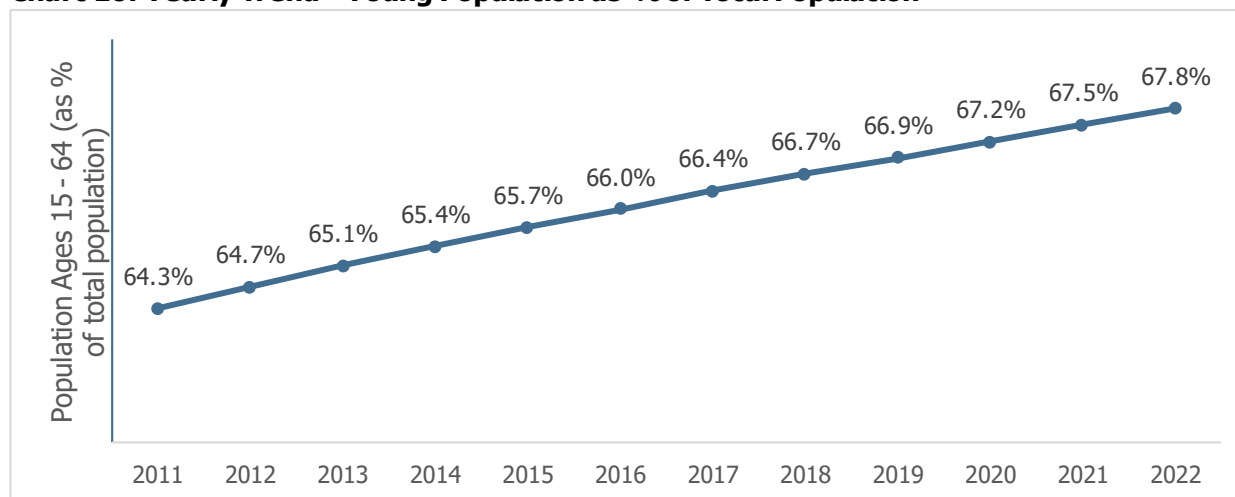
**Chart 9: Age-wise break up of male and female population**



Source: World Bank Database

With the rise in number of working women, increasing proportion of working population and younger age group amongst the urban population in India, the consumer demand is expected to grow in the future. The increasing focus on education among the youth will lead to a decline in dependency ratio and enhanced lifestyles. This, in turn would enhance consumer spending.

**Chart 10: Yearly Trend - Young Population as % of Total Population**



Source: World Bank database

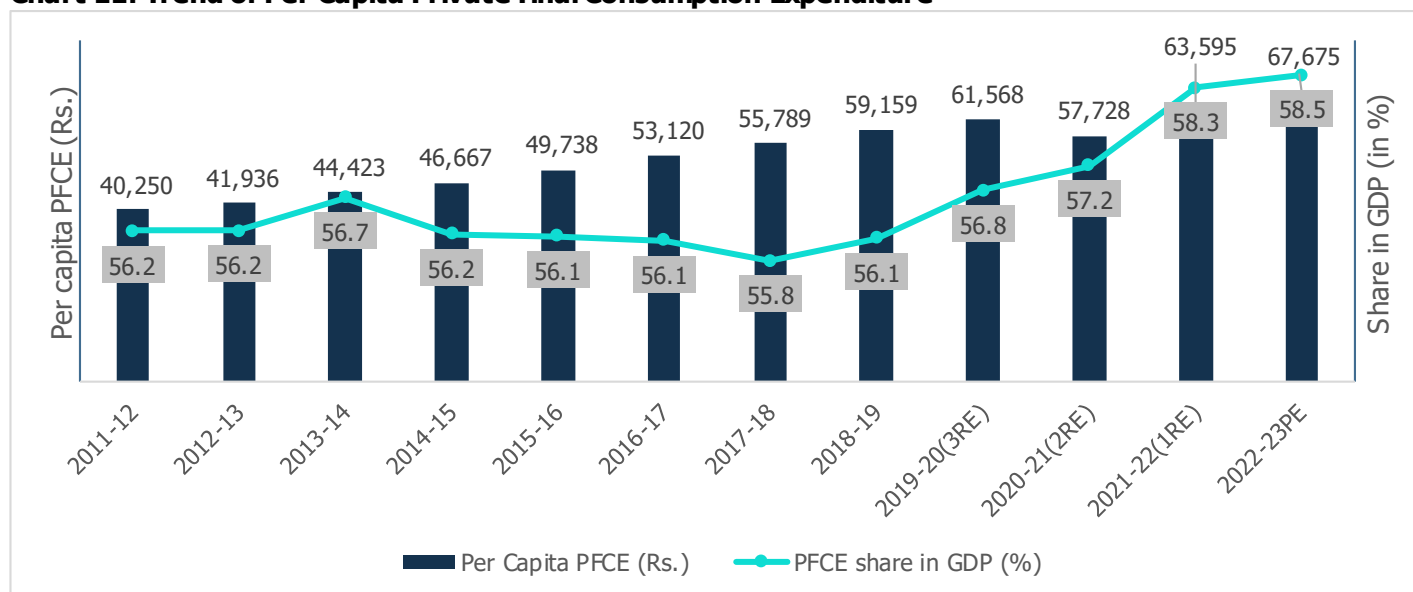
**• Growing Middle-Class**

According to the estimate of People Research on India’s Consumer Economy (PRICE), the share of the middle class with an annual household income of Rs. 5-30 lakh, more than doubled from 14% in FY05 to 31% in FY21. It is projected to rise to 63% by FY47.

**• Consumer Spending**

There has been a gradual change in consumer spending behaviour. Private Final Consumption Expenditure (PFCE) which is measure of consumer spending has showcased growth in the past decade. Following chart depicts the trend of per capita PFCE:

**Chart 11: Trend of Per Capita Private Final Consumption Expenditure**



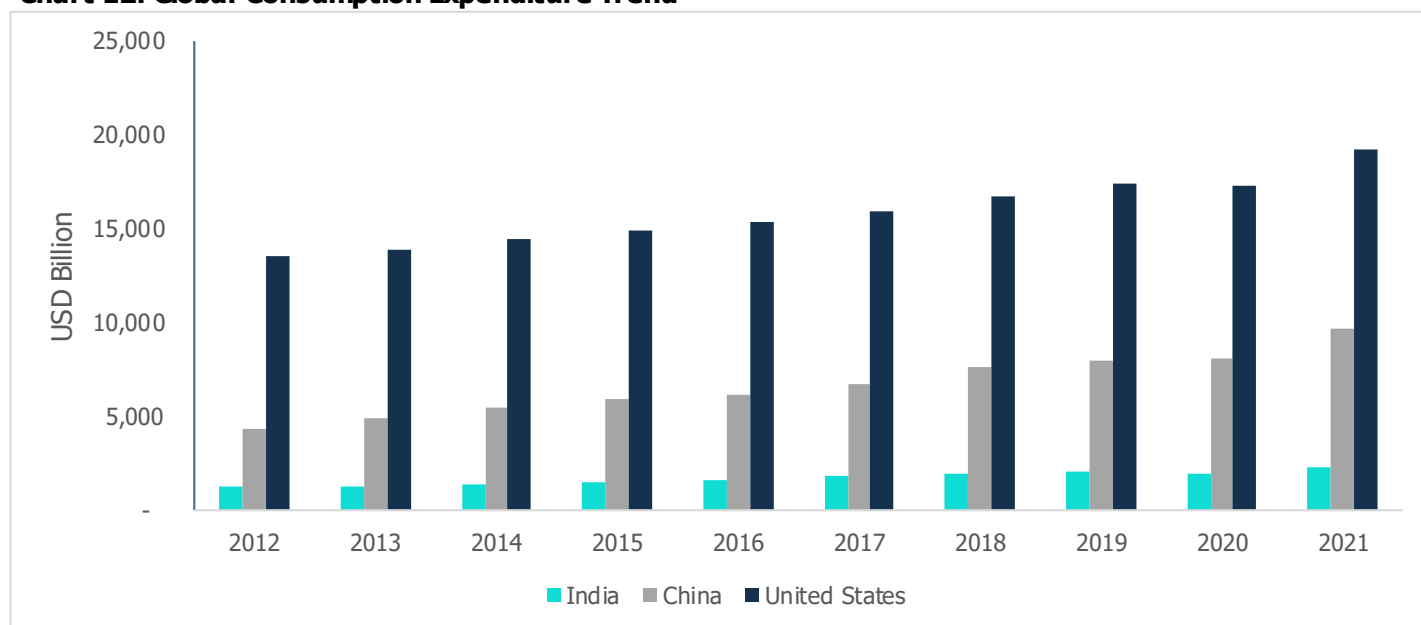
Note: 3RE – Third Revised Estimate, 2RE – Second Revised Estimates, 1RE – First Revised Estimates, PE –Provisional Estimate;  
Source: MOSPI



The consumption pattern trend is also gradually moving towards higher spend on branded products and purchase from organised retail. This includes discretionary spending on food and beverages, apparel, accessories, jewellery, luxury products, consumer durables and across other discretionary categories.

When compared to the other global economies like China and United States, consumption expenditure by China accounted for about 14% of total consumption expenditure of the world in 2021, while, United States accounted for about 28% and India about 3%. The world’s total consumption expenditures were valued at USD 69,472 billion in the year 2021.

**Chart 12: Global Consumption Expenditure Trend**



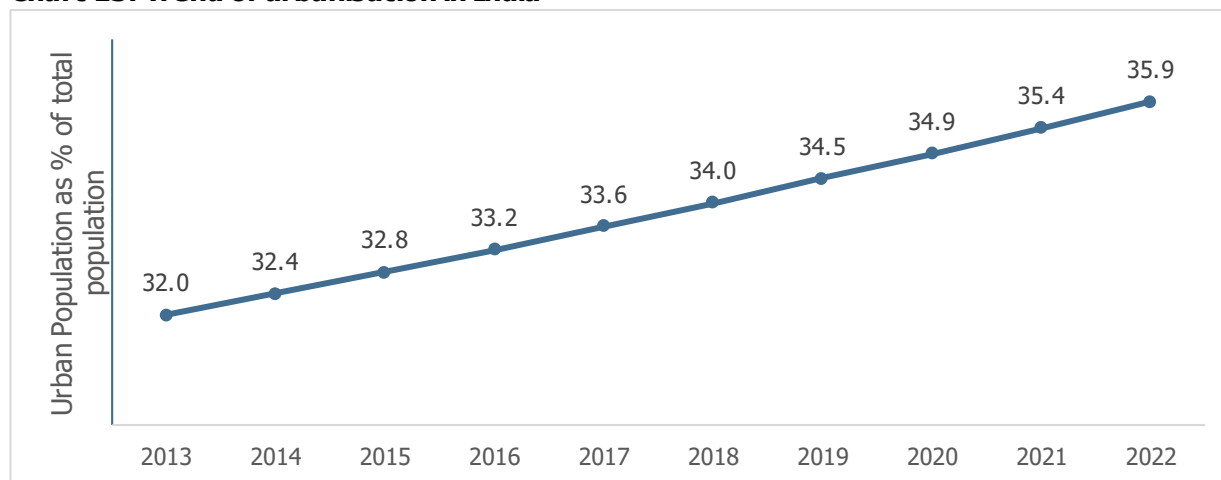
Source: World Bank Database

In the coming years, the private consumption in India is expected to be driven by revival in rural demand, the sustained buoyancy in services, especially contact-intensive sectors, and moderating inflationary pressures.

**• Urbanization**

Urbanization of India’s population is growing on a larger population base. The urban population in India is estimated to have increased from 403 million (31.6% of total population) in the year 2012 to 498 million (35.4% of total population) in the year 2021. People living in tier-2 and tier-3 cities have greater purchasing power parity, high internet penetration, and increasingly brand-conscious young population. Due the rapid urbanization, there have been changes in lifestyle and working styles which has led to shift in buying behavior pattern as well.

**Chart 13: Trend of urbanisation in India**



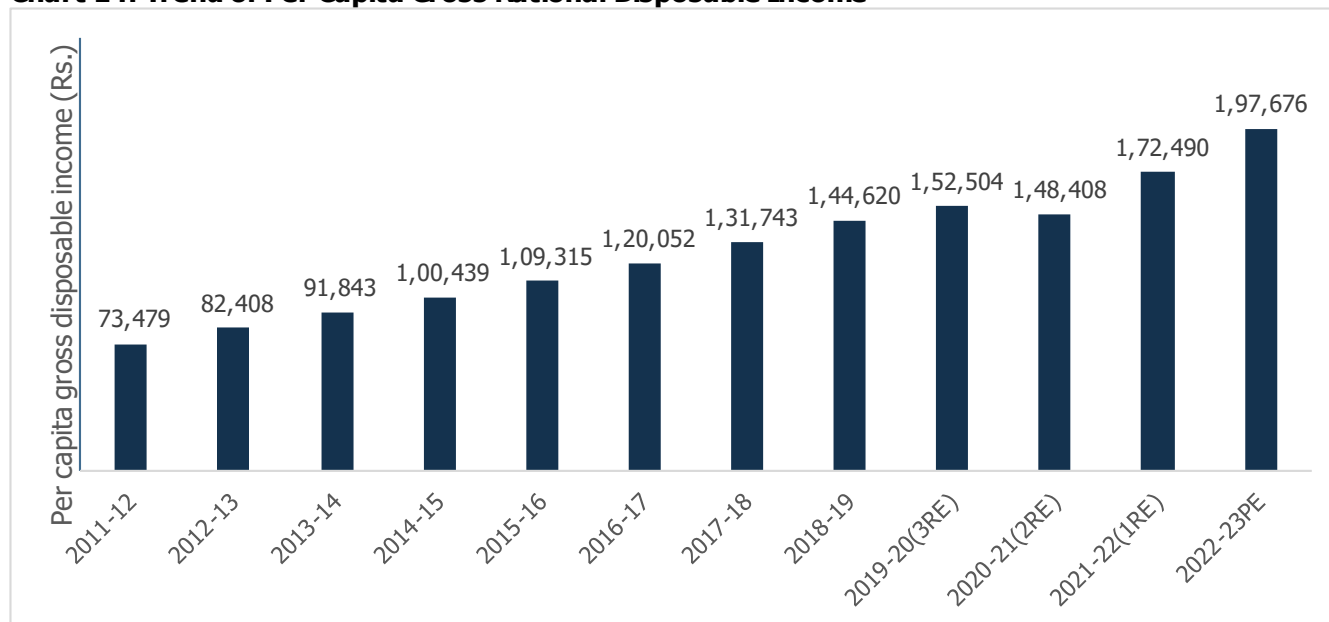
Source: World Bank Database

- **Increasing per capita disposable income**

Gross National Disposable Income (GNDI) is a measure of the income available to the nation for final consumption and gross savings. Between the period fiscal 2012 to fiscal 2023, per capita GNDI registered a CAGR of 9.4%. More disposable income drives more consumption, thereby driving economic growth.

The chart below depicts the trend of per capita GNDI in the past 12 years:

**Chart 14: Trend of Per Capita Gross National Disposable Income**



Note: 3RE – Third Revised Estimate, 2RE – Second Revised Estimates, 1RE – First Revised Estimates, PE –Provisional Estimate;  
Source: MOSPI

### 1.2.7 Concluding Remarks

The major headwinds to global economic growth are escalating geopolitical tensions, volatile global commodity prices, and a shortage of key inputs. Despite the global economic growth uncertainties, the Indian economy is relatively better placed in terms of GDP growth compared to other emerging economies. It is expected to grow at 6.3% in CY24 compared to the world GDP growth projection of 3%. The bright spots for the economy are continued healthy domestic demand, support from the government towards capital expenditure, moderating inflation, and improving business confidence.

Likewise, several high-frequency growth indicators including the purchasing managers index, auto sales, bank credit, and GST collections have shown improvement in FY23. Moreover, normalizing the employment situation after the opening up of the economy is expected to improve and provide support to consumption expenditure.

Further, in line with the latest India Meteorological Department (IMD) projection, the rainfall activity has been muted during June 1, 2023 to September 20, 2023, with cumulative rainfall falling back to a 7% deficit. Also, weak-to-moderate El Nino conditions are expected to lead to a prolonged dry spell. A drop-in yield due to irregular monsoon and a lower acreage can lead to a demand-supply mismatch, further increasing the inflationary pressures on the food basket. Going ahead, consumption demand is expected to pick up during the festive season, but the quantum of rise in demand will be dependent on the extent of the impact of the irregular monsoon.

At the same time, public investment is expected to exhibit healthy growth as the government has allocated a strong capital expenditure of about Rs. 10 lakh crores for FY24. The private sector's intent to invest is also showing improvement as per the data announced on new project investments. However, volatile commodity prices and economic uncertainties emanating from global turbulence may slow down the improvement in private CapEx and investment cycle.

Furthermore, the industry sector is expected to perform better among all sectors, as input costs are now moderating. With flagship programmes like 'Make in India' and the PLI schemes, the government is continuing to provide the necessary support to boost the industry sector. Similarly, the service sector is expected to see continued growth in FY24. However, some segments in the service sector, like information technology, are likely to be impacted by the slowdown in the US and European economies.

## 2 Global & Indian Steel Industry

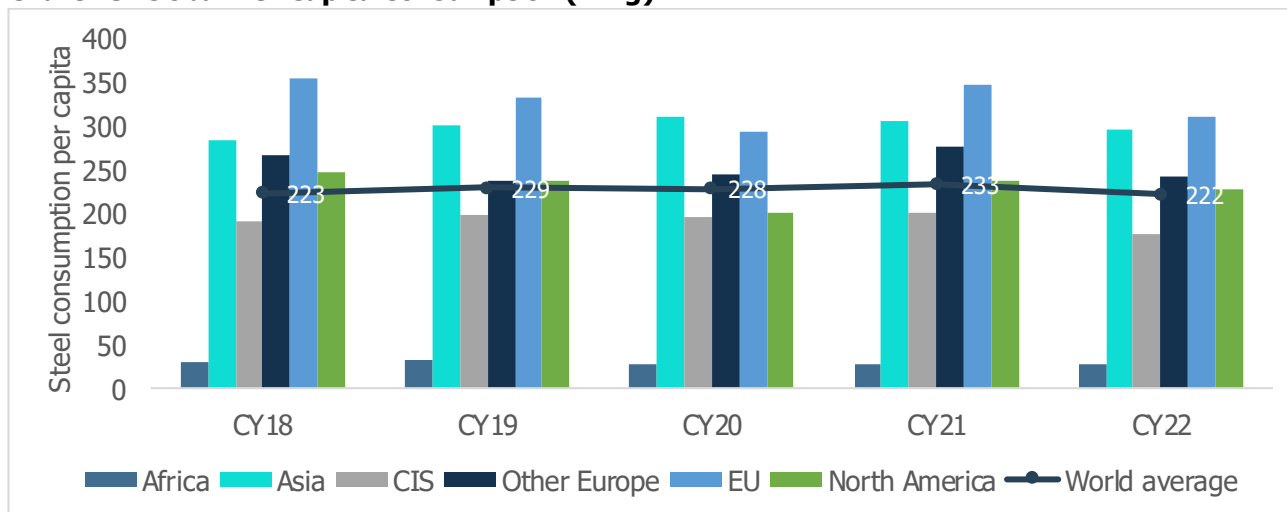
### 2.1 Global Steel

#### 2.1.1 Global Steel Production

Steel is a paramount material in the fields of construction and engineering, finding widespread applications in industries such as automotive, construction, consumer goods, infrastructure, mechanical and medical equipment, packaging, and utensils, among others. Its popularity stems from its abundant availability, cost-effectiveness, exceptional strength and durability, ductility, and recyclability. According to the World Steel Association, there are more than 3,500 different grades of steel produced worldwide, each possessing unique physical, chemical, and environmental properties to suit various applications.

The global per capita consumption of steel has been on the rise and has increased to 233 kg in 2021 from 223.2 kg in 2018. However, it decreased to 222 Kg in 2022 as the demand was affected by macroeconomic factors such as global slowdown and uncertainties due to Russia-Ukraine war. The per capita consumption of EU 27 (Europe Union) was the highest at 310.3 kg in CY22 driven by high consumption in Germany, Italy, and France followed by Asia (294.7 kg) and Other Europe – United Kingdom, Turkey, and Others (242.9 kg)

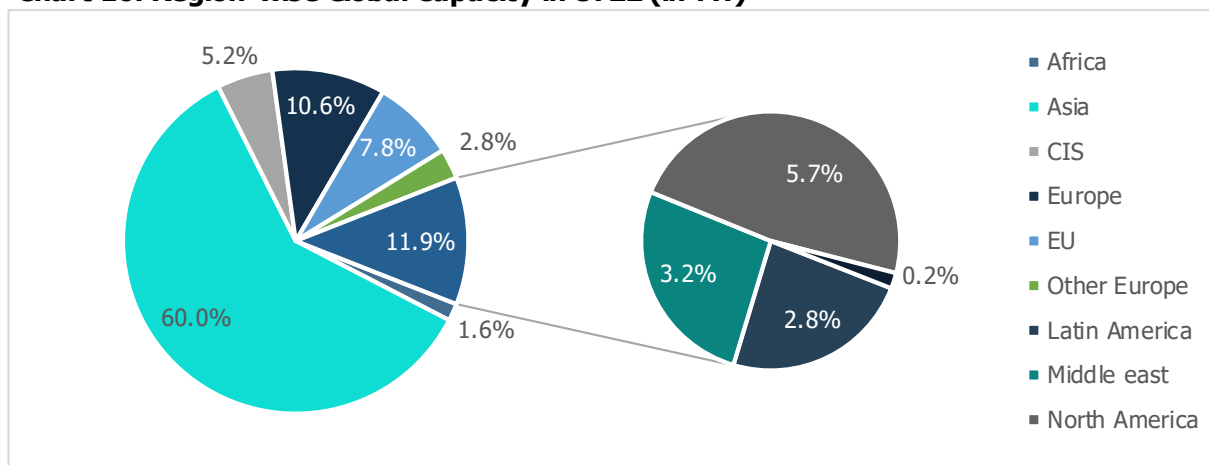
**Chart 15: Global Per Capita Consumption (in kg)**



Source: World Steel Association

The global steel production capacity reached 2,452.7 million tonne (MT) in CY22 from with Asia accounting for the largest share of 60%. China holds a dominant position in steelmaking capacity, production, and consumption, boasting the highest steel production capacity globally, followed by India and Japan. Additionally, the European Union, North America, Latin America, the Middle East, and Oceania also contribute significantly to the global steel production capacity.

**Chart 16: Region-wise Global Capacity in CY22 (in MT)**



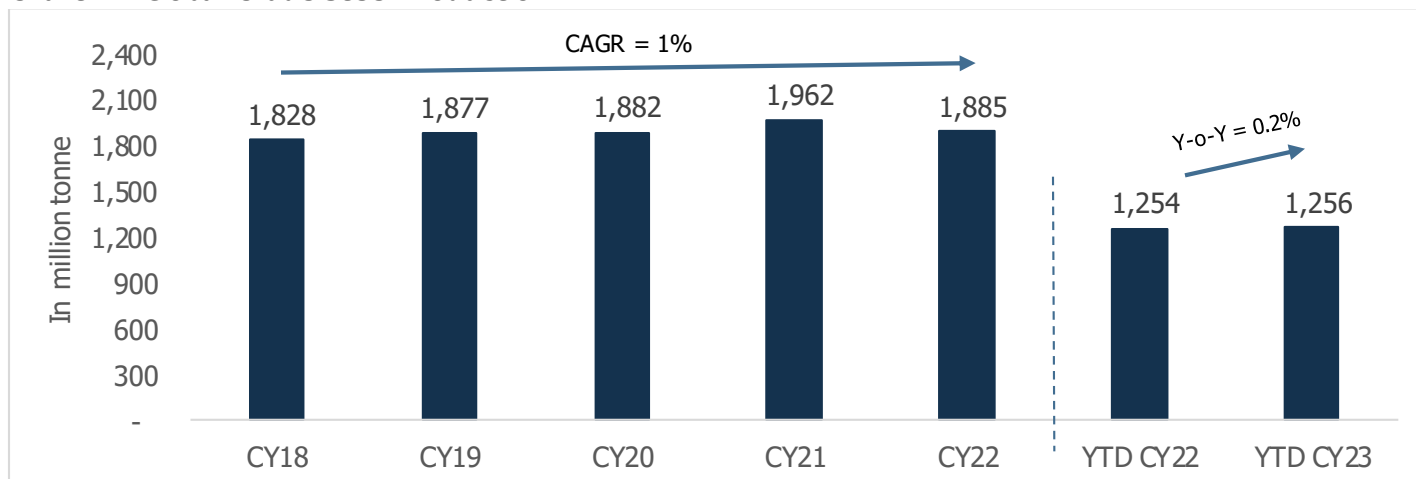
Source: Organisation for Economic Co-operation and Development (OECD)

### 2.1.2 Global Steel Production

Global crude steel production has grown at a 5-year CAGR of around 1% to 1,885 MT in CY22 from 1,828 MT in CY18. However, it declined by ~4% y-o-y in CY22 from 1,962 MT in CY21 due to a slowdown in China, monetary tightening in the United States and Europe, inflationary pressures which led to the rise in input costs and supply chain disruptions caused due to the Russia-Ukraine war.

During YTD CY23 (April 2023-August 2023), the production of global crude steel remained flat in corresponding to the same period in CY22.

**Chart 17: Global Crude Steel Production**



Source: World steel association

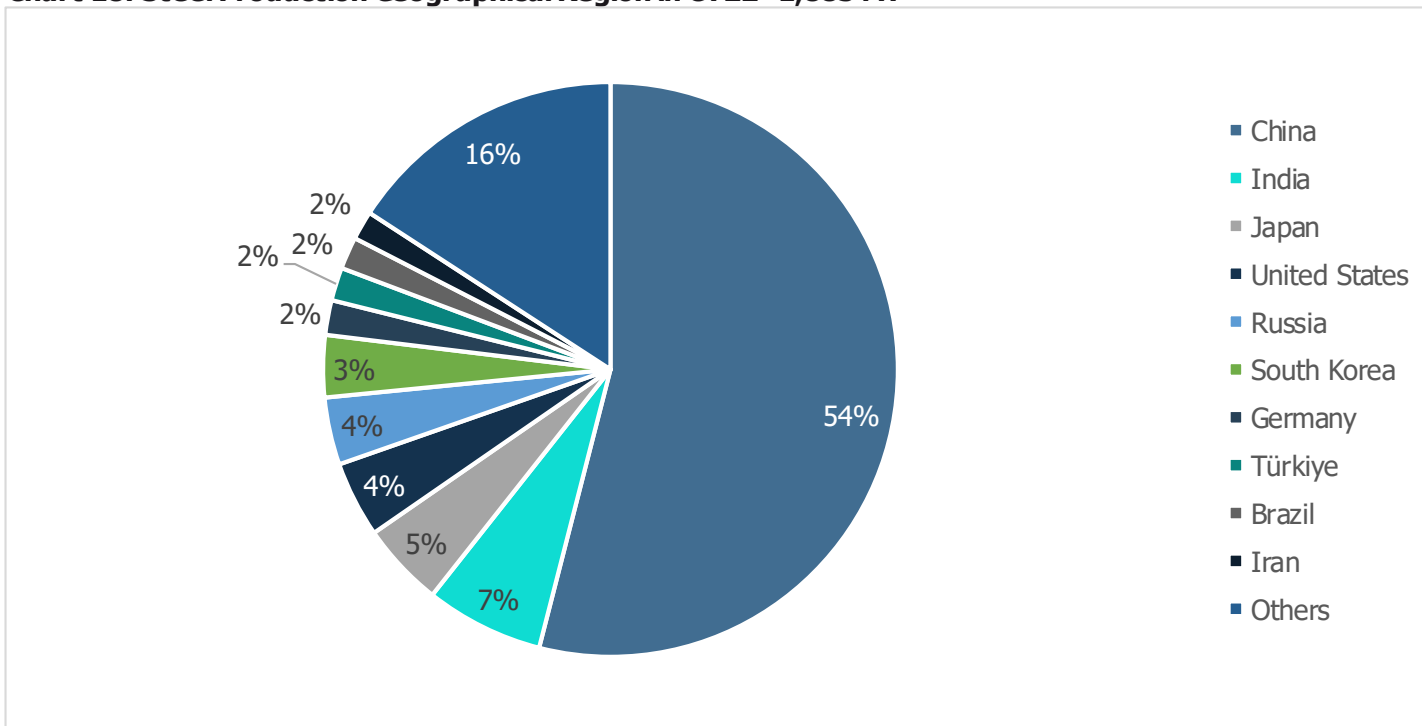
Note: YTD CY22 refers to the period from January 2022-August 2022

YTD CY23 refers to the period from January 2023-August 2023

China continued to be the largest crude steel producer in CY22 accounting for 54% share. However, Chinese production declined by 2% y-o-y to 1,018 MT in CY22 as compared to 1,035 MT in the previous year due to lockdowns and restrictions enforced in the country due to the outbreak of Covid-19 and a slowdown of its real estate market. China is also cutting down their production due to environmental concerns.

India was the second largest producer of crude steel in CY22 with a 7% share, followed by Japan with a 5% share. The USA and Russia accounted for a 4% share each in the total production during CY22.

**Chart 18: Steel Production Geographical Region in CY22- 1,885 MT**



Source: World Steel Association

### 2.1.3 Global Steel Consumption

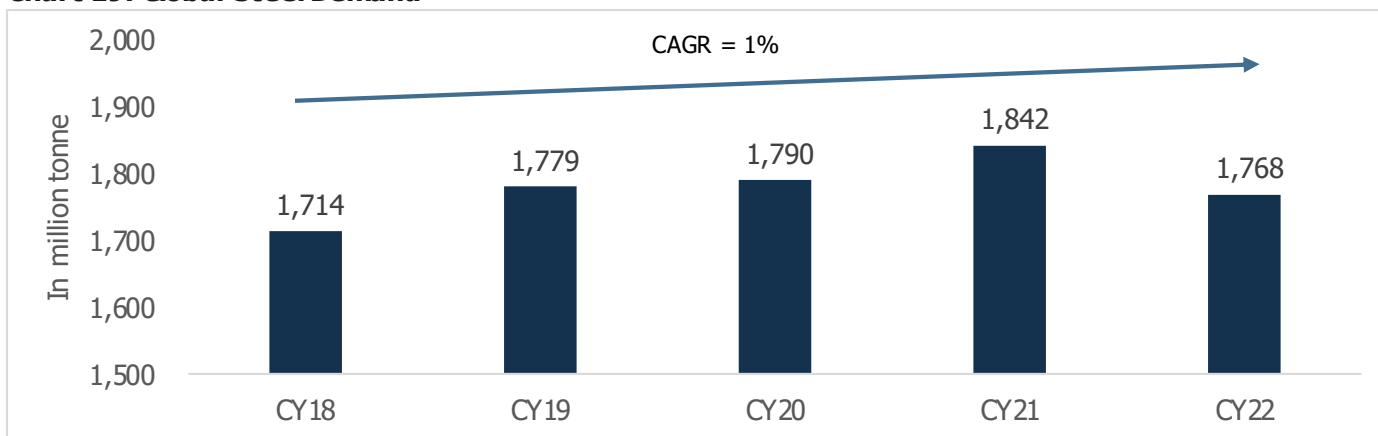
Steel is being used in industries like energy, construction, automotive, transportation, infrastructure, packaging, and machinery. There was a strong recovery in finished steel consumption post the Covid-19 pandemic. In developed economies like USA, Europe, Japan and South Korea, the demand was driven by automotive and durable goods sector.

The global finished steel consumption has increased at a CAGR of nearly 1% from 1,714 MT in CY18 to 1,768 MT in CY22. However, the global consumption of finished steel declined significantly in CY22, because global production was affected due to a slowdown in China, monetary tightening in the United States and Europe, inflationary pressures which led to the rise in input costs and supply chain disruptions caused due to the Russia-Ukraine war.

The finished steel consumption in China reduced on account of movement restrictions and lockdown in the country on account of Covid-19 pandemic, environmental concerns, and target to lower carbon emission. However, the support by Chinese Government is expected to aid in the recovery of demand with the resumption of construction and real estate activities.

The consumption of finished steel in India has been robust on account of increased investment in infrastructure and policy support by the Government. Despite the inflationary pressure and uncertainties around the global economy, India witnessed a healthy demand from auto, consumer durables, capital goods and real estate sectors.

Chart 19: Global Steel Demand



Source: World Steel Association

## 2.2 Domestic Steel

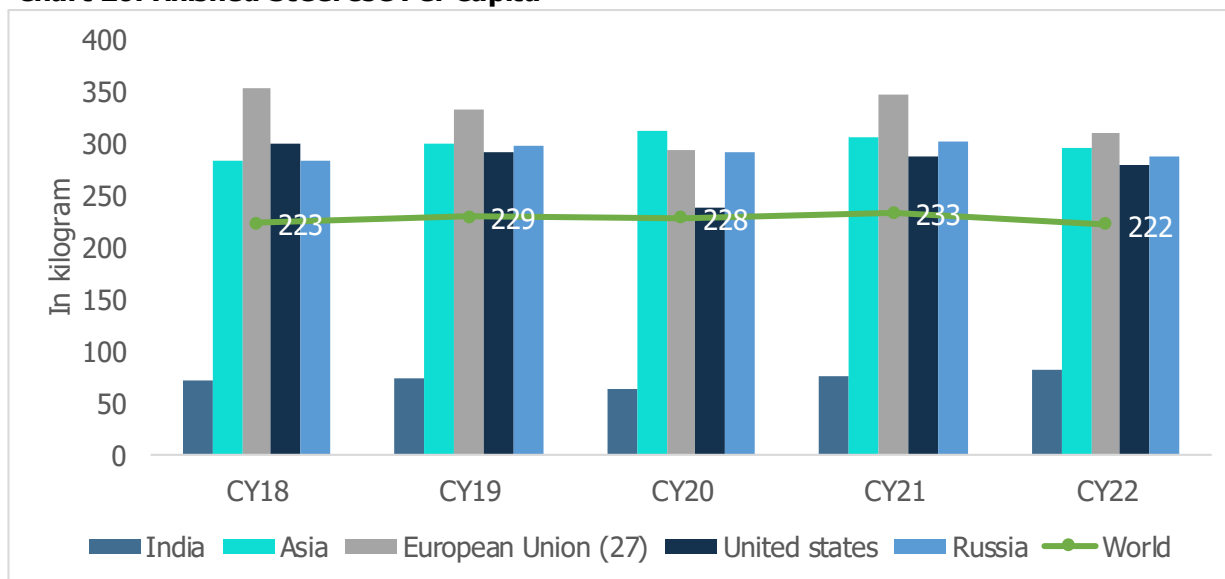
India is the second largest steel producer in the world with an installed capacity of 154.1 MT in FY22. It is also the second-largest consumer of finished steel<sup>3</sup> with a consumption of 120 MT in FY23. The Indian steel sector has been able to grow over the years due to domestic availability of raw materials such as iron ore and cost-effective labour. The industry has been driven by domestic steel demand from sectors such as construction, real estate, and automobiles, while the vast coastline has enabled exports and imports, making India one of the leading countries in the global steel industry.

The per capita finished steel consumption in India was 81.1 kg in CY22, which is significantly lower than the world average of 222 kg per capita. The National Steel Policy 2017 envisages that per capita steel consumption will increase to 158-160 kg by FY31. Further, steel has an output multiplier effect of 1.4x on GDP and an employment multiplier effect of 6.8x<sup>4</sup> in India. Thus, the steel industry has significant domestic potential and is expected to play a key role in the future economic growth of the country.

<sup>3</sup> Finished steel includes both long, flat products and specialty steel

<sup>4</sup> National Steel Policy 2017

**Chart 20: Finished Steel Use Per Capita**



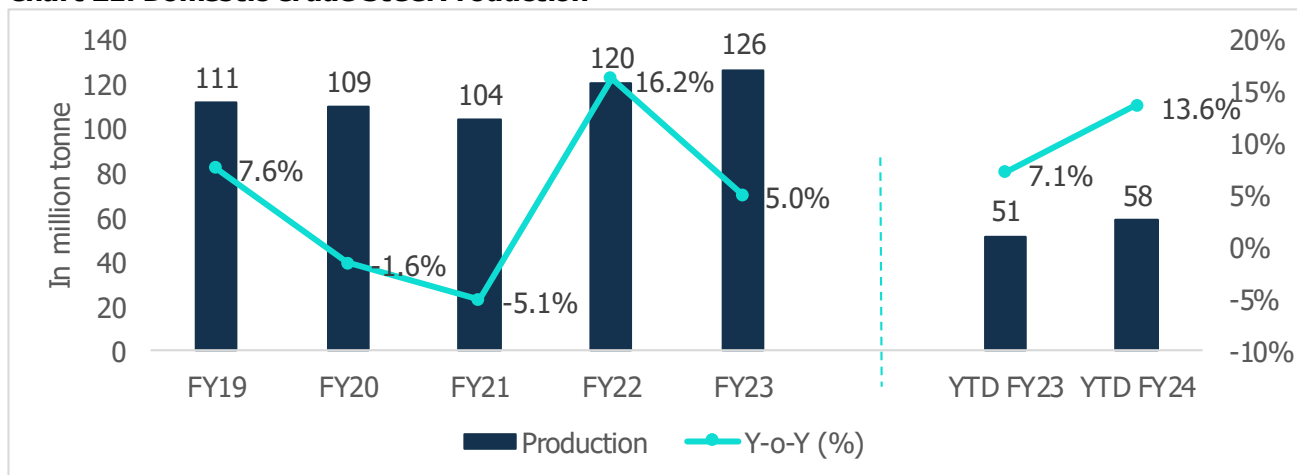
Source: World steel association

**2.2.1 Domestic Crude Steel Production**

Domestic crude steel production has grown at a CAGR of 3.3% in the past five years to reach 126 MT in FY23 from 111 MT in FY19. Large steel manufacturers’ capacity utilization has been in the range of 80% to 90% in FY23 and all players have announced expansion of crude steel capacities. The National Steel Policy 2017 envisages achieving 300 MT of production capacity from the current level of 153-157 MT to cater to the expected demand of 230 MT by FY31.

The crude steel production in India increased by 13.6% to 58 MT in YTD FY24 (April 2023-August 2023) from 51 MT in YTD FY23 (April 2022-August 2022).

**Chart 21: Domestic Crude Steel Production**



Source: CMIE

Note: YTD FY23 refers to the period from April 2022-August 2022

YTD FY24 refers to the period from April 2023-August 2023

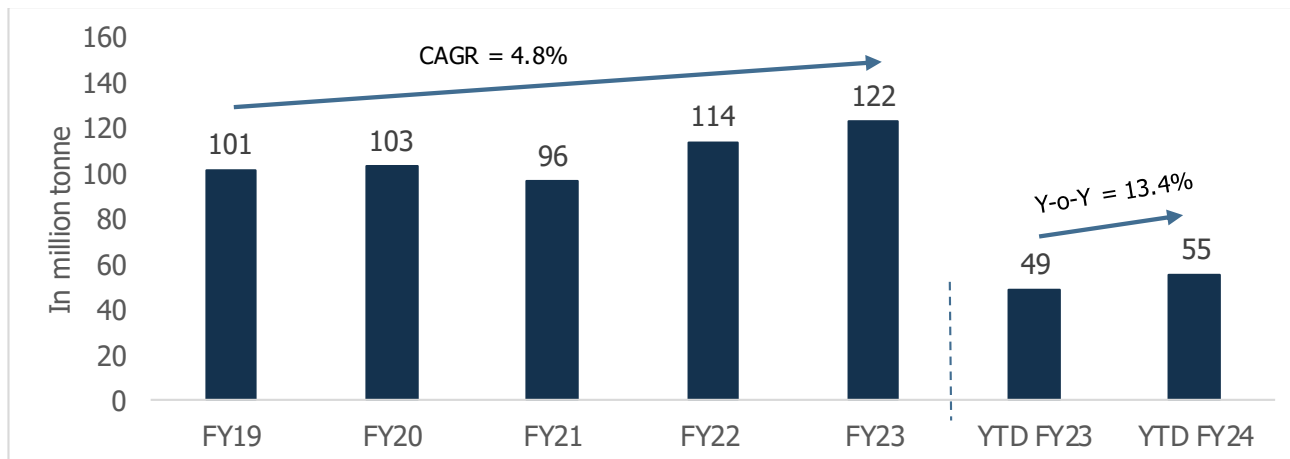


### 2.2.2 Domestic Finished Steel Production and Consumption

In the last 5 years, finished steel production has grown at a CAGR of 4.8% to 122 MT in FY23 from 101 MT in FY19. The growth in production has been backed by a rise in domestic steel consumption on account of growing economic activities in the country supported by an increase in infrastructure and construction spending by the government, a rise in automobile and consumer durable demand, among others.

During YTD FY24, the production of finished steel grew by 13.4% on a y-o-y basis backed by strong demand in domestic market.

**Chart 22: India's Finished Steel Production**



Source: CMIE

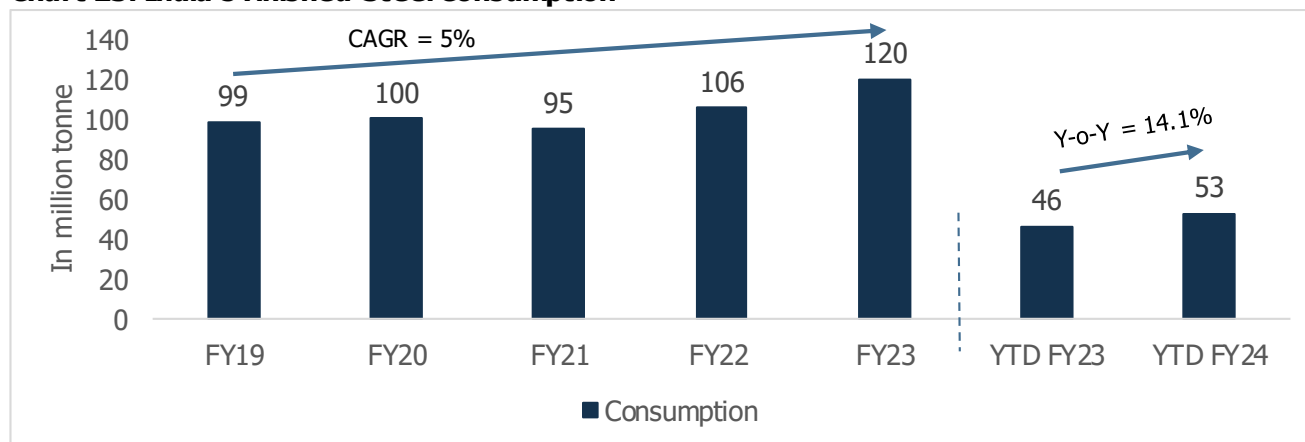
Note: YTD FY23 refers to the period from April 2022-August 2022

YTD FY24 refers to the period from April 2023-August 2023

Domestic finished steel consumption has increased at a CAGR of 5% to 120 MT in FY23 from 99 MT in FY19. After a steady increase in steel production, India observed a de-growth of 6.3% y-o-y in FY21 due to the outbreak of Covid-19 pandemic. The rebound in domestic demand from the impact of Covid-19 in previous financial years, continuous investment in infrastructure and policy support by the government, and pick-up in real estate construction during FY23 have led to an increase in consumption of finished steel to 120 MT, implying a y-o-y growth of 13.3%.

During YTD FY24, the consumption of finished steel reported a growth of 14.1% y-o-y on account of increased demand from infrastructure and real estate sectors, mainly due to pre-election year.

**Chart 23: India’s Finished Steel Consumption**



Source: CMIE

Note: YTD FY23 refers to the period from April 2022-August 2022

YTD FY24 refers to the period from April 2023-August 2023

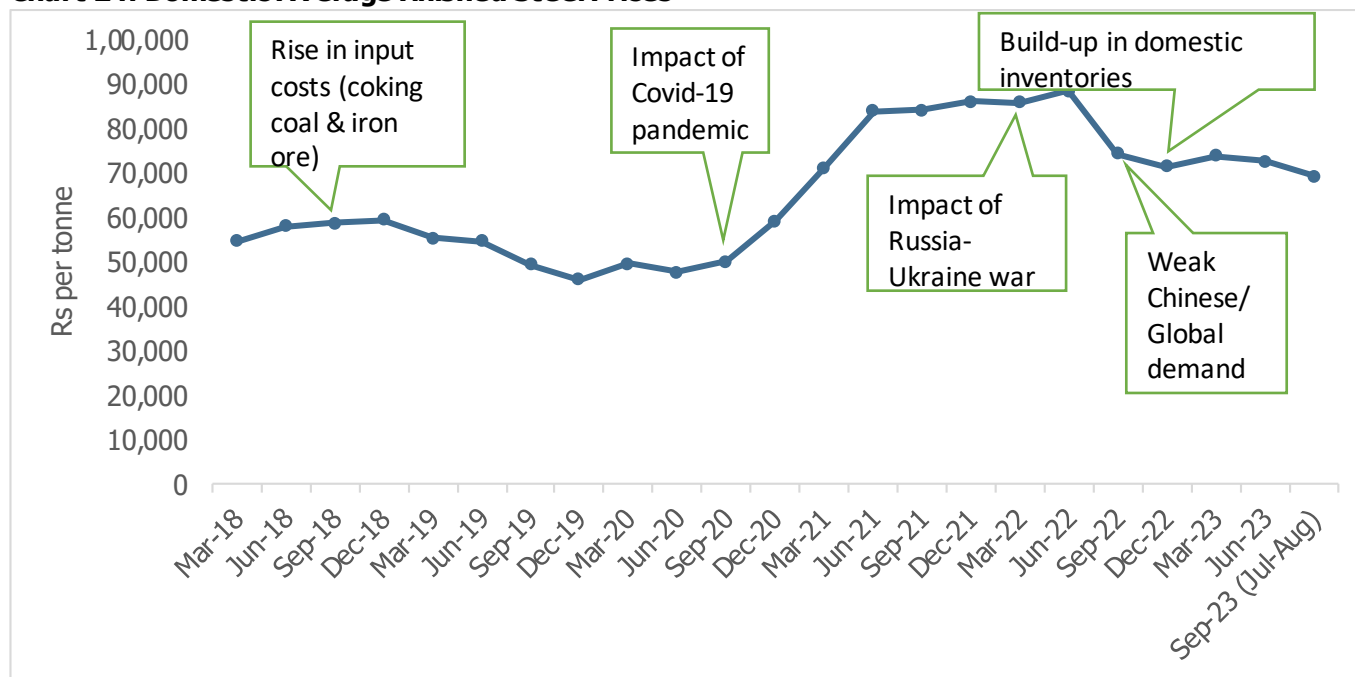
### 2.2.3 Price trends

#### Trend in Finished Steel Prices

Domestic steel prices have followed global prices directionally. Domestic steel prices remained range-bound between March 2018 to June 2019, however, they started declining thereafter as the economy was hit by the pandemic. During FY21, the average domestic finished steel prices peaked at Rs 71,157 per tonne as on March 2021. Since then, the prices increased throughout FY22 on account of a revival in domestic demand as economic activities began to pick-up after the easing of restrictions and lockdowns.

During FY22, prices were impacted by the geo-political war between Russia and Ukraine and stood at Rs 85,820 per tonne as of March 2022. The geopolitical crisis continued and the prices were further pushed to Rs. 88,498 per tonne in June 2022 quarter. The escalation in prices was also because of the rise in coking coal and iron ore prices globally. However, after a sharp rise, the prices declined by around 16% in quarter ending September 2022 as compared to the previous quarter. Furthermore, they fell to Rs 71,326 per tonne in December 2022. This decline was caused by the imposition of an export duty on a range of finished steel products from the period May 2022 to November 2022, leading to lower exports and an increase in domestic inventories. In addition to that, softening of iron ore and coking coal prices also affected the steel prices in the domestic market. Prices have remained fairly range bound between January 2023 and August 2023.

**Chart 24: Domestic Average Finished Steel Prices**

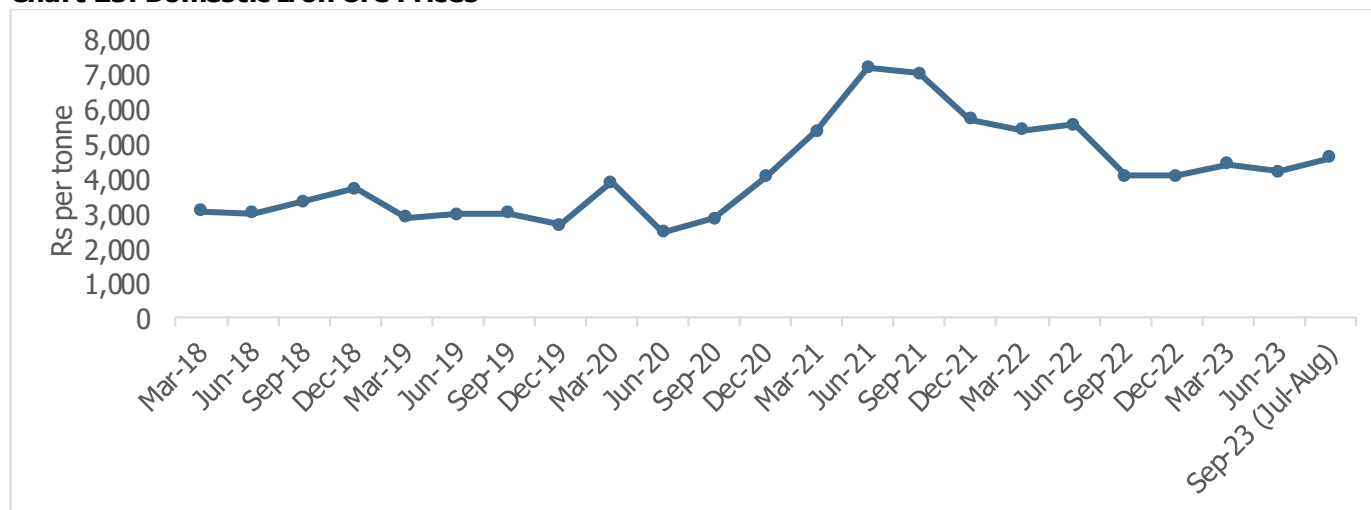


Source: CMIE

**Trend in Iron Ore Prices**

After the reduction in export duty on iron ore in November 2022, domestic prices began to rise. In January 2023, NMDC increased the prices for iron ore lumps and fines, which further boosted the prices. As of March 2023, iron ore prices stood at Rs. 4,383 per tonne, a growth rate of 8% as compared to December 2022. This rise in raw material prices resulted in higher domestic steel prices to Rs. 73,757 per tonne. However, the prices of iron ore observed a fall of 4.5% q-o-q in quarter ending June 2023 on account of weak global demand especially from China (the largest consumer of iron ore) as the recovery was slower than expected. As a result, the steel prices have declined by 1.6% q-o-q and 18% y-o-y in June 2023. However, the prices have been exhibiting an increasing trend during the quarter ending September 2023 (July 2023 - August 2023).

**Chart 25: Domestic Iron Ore Prices**



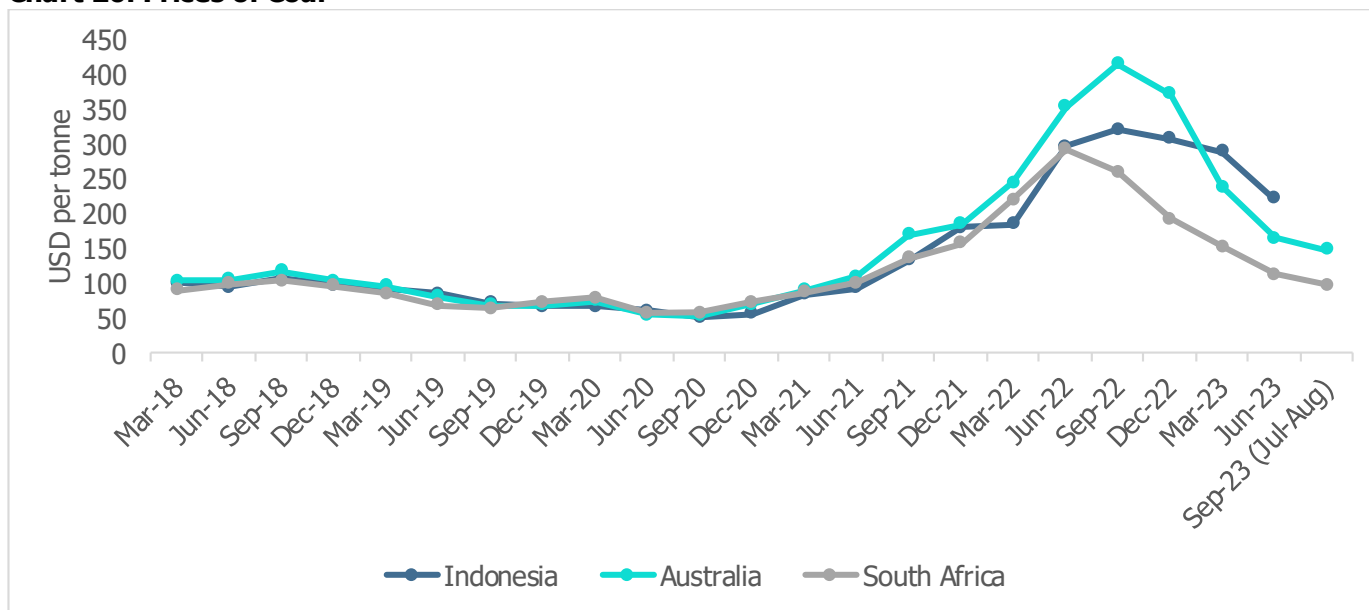
Source: CMIE

**Trend in Coking Coal Prices**

The international coal prices remained fairly range bound during March 2018 to September 2019. However, prices declined sharply and fell to USD 50 per tonne by August 2020 as coal demand was impacted due to Covid-19. The coal prices started rising in CY21 due to production cutbacks and supply disruptions. The coal prices also found tailwinds in the Russia-Ukraine war which commenced in February 2022, and resulted in the disruption of coal supplies to Europe.

During FY23, the average coal prices for Indonesian coal, South African coal and Australian coal were 108%, 72% and 99% higher, respectively, as compared to prices during the previous year. Coal prices have been softening since November 2022 as the increase in supplies from South Africa and Columbia has alleviated the demand crunch in European countries caused by the reduction of coal imports from Russia. These factors have led to a reduction in international coal prices. During YTD FY24 (April-August 2023), the average coal prices for South African coal and Australian coal were 65% and 61.3% lower, respectively, as compared to prices during the same time period in FY23. International coal prices of major global benchmarks are expected to be lower in FY24 compared to FY23, however, they will continue to be higher than pre-Covid years' averages as the global demand continues to remain high owing to increased demands, especially in China and India.

**Chart 26: Prices of Coal**



Source: World Bank, CMIE

## 2.2.4 Outlook

CareEdge Research estimates India's steel consumption growth rate to be healthy at 8-10% in FY24 led by improving activities in the construction sector along with sustained momentum in the real estate and automobile sectors is expected to boost the demand for steel products in the country.

As India has entered its pre-election year in 2023, the government is likely to increase investments both at the state and central levels and this is expected to augur well for the domestic steel demand.

Some of the key budgetary announcements which reflect the same are:

- An increase in allocation of capex towards infrastructure from Rs. 7.5 lakh crore to Rs. 10 lakh crore in Union Budget 2023-24
- The capital outlay of Rs. 2.4 lakh crore for Indian Railways
- 100 transport infrastructure projects
- Approval of Production Linked Incentive (PLI) Scheme for specialty steel
- Allocation towards PMAY scheme to be increased to Rs. 79,590 crore from Rs. 77,130 crore in previous budget
- Increase in allocation by Rs. 15,000 crore towards Jal Jeevan Mission

During FY23, exports witnessed a de-growth as compared to FY22. This was mainly because the government imposed export duty of 15% which made steel exports from India expensive and affected export demand. However, in November 2022, the government has withdrawn the export duty on steel products. Post removal, the exports have been rising sequentially and the full impact of the duty reversal is expected in FY24. However, exports may not reach the highs achieved in FY22 due to weak global demand and an increase in finished steel exports from China as observed from January to April 2023. Global steel prices are expected to be under pressure in the near term due to continued weakness in global steel demand and a decline in coking coal prices. Domestic prices are also expected to trend in line with global prices supported by healthy domestic demand.

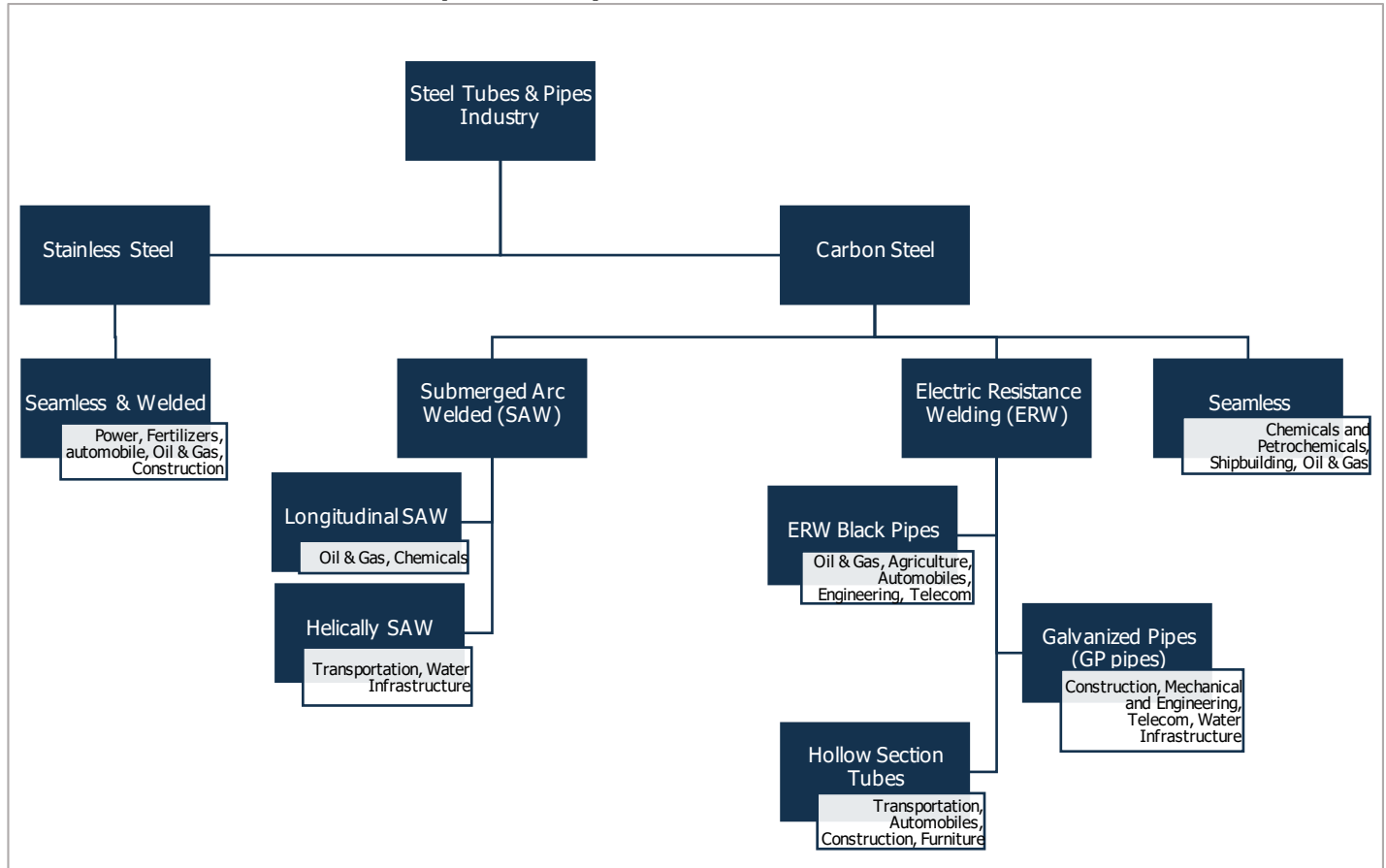
## 2.3 Indian Steel Pipes & Tubes

### 2.3.1 Overview and Trends in Industry

Steel tubes and pipes are cylindrical structures made of steel that are generally in hollow shape. However, different shapes, sizes and grades are used to cater the requirements of various industries.

India is one of the established manufacturers of steel pipes globally, which is one of the most important sub-industries of the Indian steel sector. Construction, Railways, Oil & gas, agriculture, real estate are some of the key consumers of steel pipes and tubes. Various types of steel tubes and pipes are given in the following chart.

**Chart 27: Indian Steel Tubes & Pipes industry**



Source: Industry sources

The usage of steel tubes and pipes is significant in construction activities and building infrastructure. These materials are used in the construction sector for creating structural elements such as columns, beams, and trusses in order to provide strength and support the formation of building. They are also used in water infrastructure such as water supply for drinking water, plumbing, drainage, and sewerage systems. Apart from this, they are also used by manufacturing sector including oil and gas pipelines, agricultural equipment, automobile components, electrical cable conduits etc.

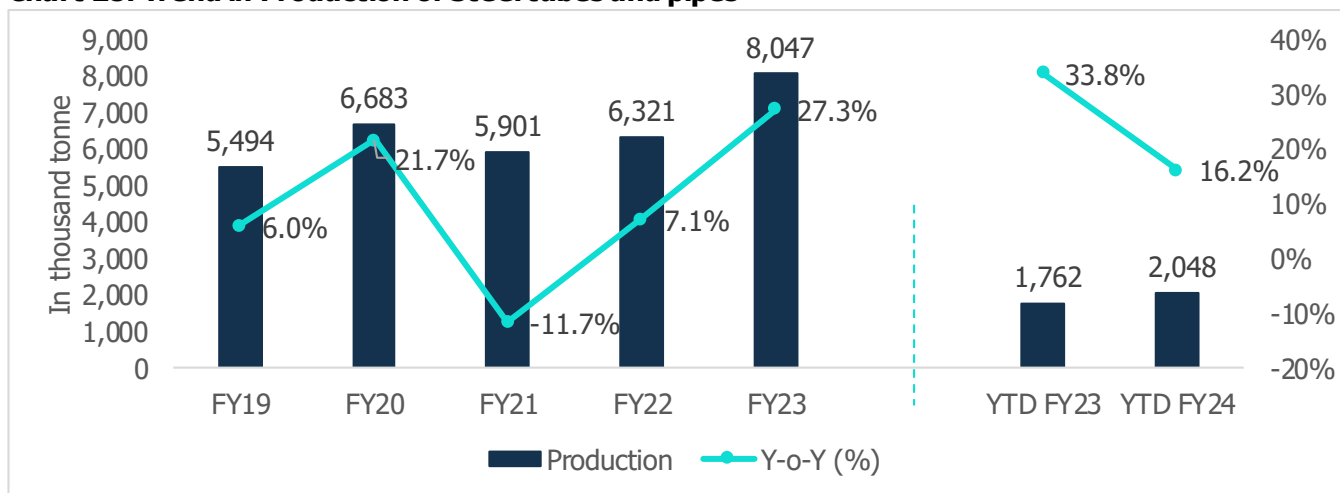
Various initiatives and policies have been adopted by the Government to promote domestic steel production through Make in India initiative and National Steel Policy (NSP) 2017. The NSP envisages development of value-added products such as alloy steel & electrical steel in the domestic market. Overall, the increase in demand for steel tubes and pipes will contribute towards the country's growth and development, making them an important element of the country's infrastructure and manufacturing sectors.

**2.3.2 Domestic Production and Consumption**

The production of steel tubes and pipes grew at a CAGR of about 10% in the past 5 years from FY19-FY23. Of these years, the industry has witnessed a decline only in FY21 due to the outbreak of Covid-19. During FY23, the production increased by 27.3% y-o-y backed by healthy domestic demand.

During YTD FY24, the production of steel tubes and pipes increased by 16.2% on a y-o-y.

**Chart 28: Trend in Production of Steel tubes and pipes**



Source: CMIE

Note: YTD FY23 refers to the period from April 2022-August 2022

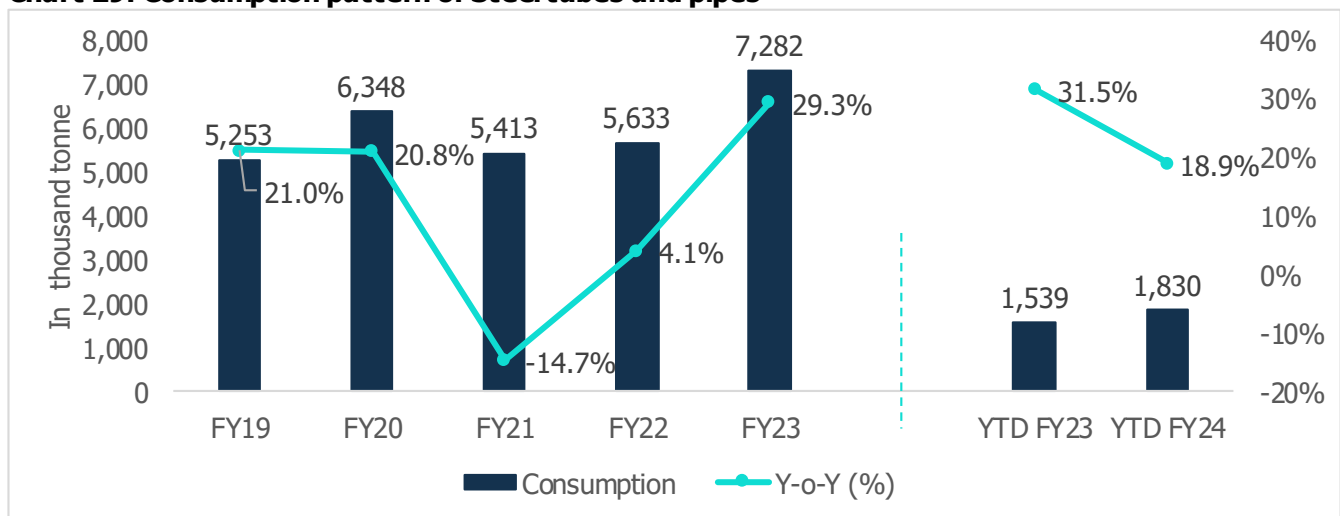
YTD FY24 refers to the period from April 2023-August 2023

The consumption of steel tubes and pipes in India has grown steadily at a CAGR of 8.5% from 5,253 thousand tonne in FY19 to 7,282 thousand tonne in FY23. After witnessing an uptrend till FY20, the industry observed a de-growth of 14.7% in consumption during FY21 due to the pandemic.

During FY23, the industry witnessed a strong growth of around 29.3% y-o-y in consumption on account of the factors such as improvement in construction and real estate activities, continuous investment in infrastructure and policy support by the government.

The industry has observed a growth rate of 18.9% in YTD FY24 in corresponding to the same period last year.

**Chart 29: Consumption pattern of Steel tubes and pipes**



Source: CMIE

Note: YTD FY23 refers to the period from April 2022-August 2022

YTD FY24 refers to the period from April 2023-August 2023

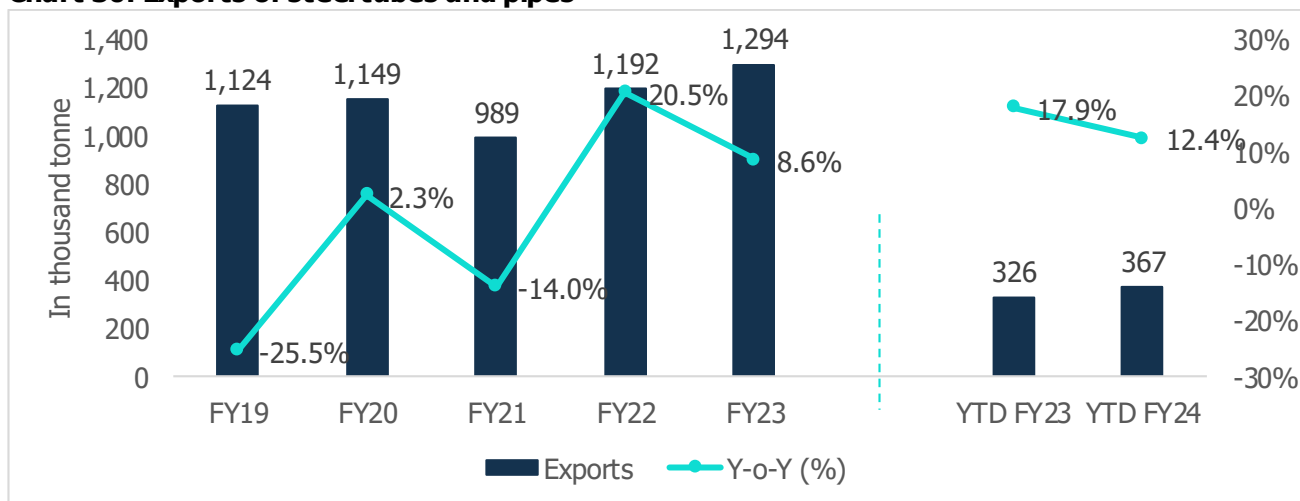
### 2.3.3 Trend in Exports and Imports

#### Exports

The exports of steel tubes and pipes have grown at a CAGR of 3.6% during the past five years from 1,124 thousand tonne in FY19 to 1,294 thousand tonne in FY23. The export market has always been on a steady rise except for FY21 as the outbound shipments were affected by the pandemic. However, they grew by 20.5% y-o-y in FY22 after the easing of lockdown and restrictions.

During FY23, Exports increased by 8.6% y-o-y. A significant y-o-y growth of 24% in outbound shipments to USA, amounting to 310 thousand tonne, led to the rise in exports during FY23. In addition to this, shipments to UAE, Canada, Indonesia and Malaysia also supported the export growth. During YTD FY24, the exports registered a growth of 12.4% on a y-o-y.

**Chart 30: Exports of steel tubes and pipes**



Source: CMIE

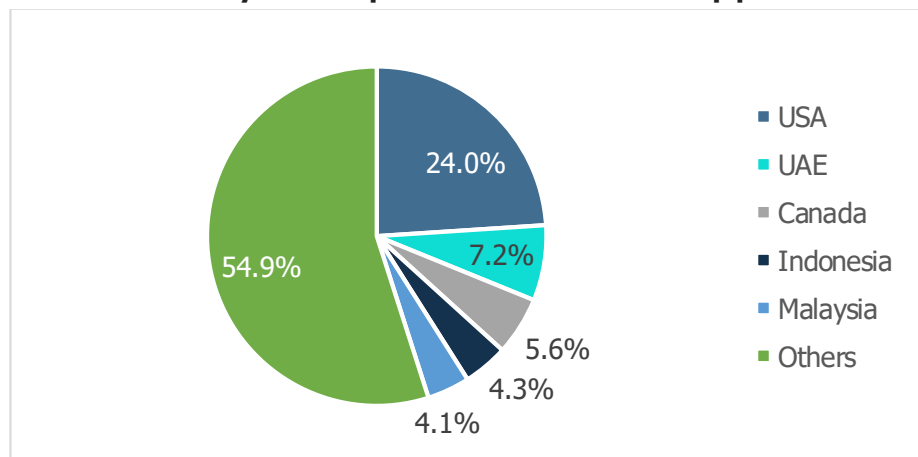
Note: YTD FY23 refers to the period from April 2022-August 2022

YTD FY24 refers to the period from April 2023-August 2023

The exports to the top 5 countries (USA, UAE, Canada, Indonesia and Malaysia) accounted for 45% of the total outbound shipments from India during FY23. USA continued to remain the top export destination with market with share of 24%. Among others, the shipments to UAE and Canada constituted 7.2% and 5.6, respectively, of the total exports from India in FY23.



**Chart 31: Country-wise exports of Steel tubes and pipes in FY23**



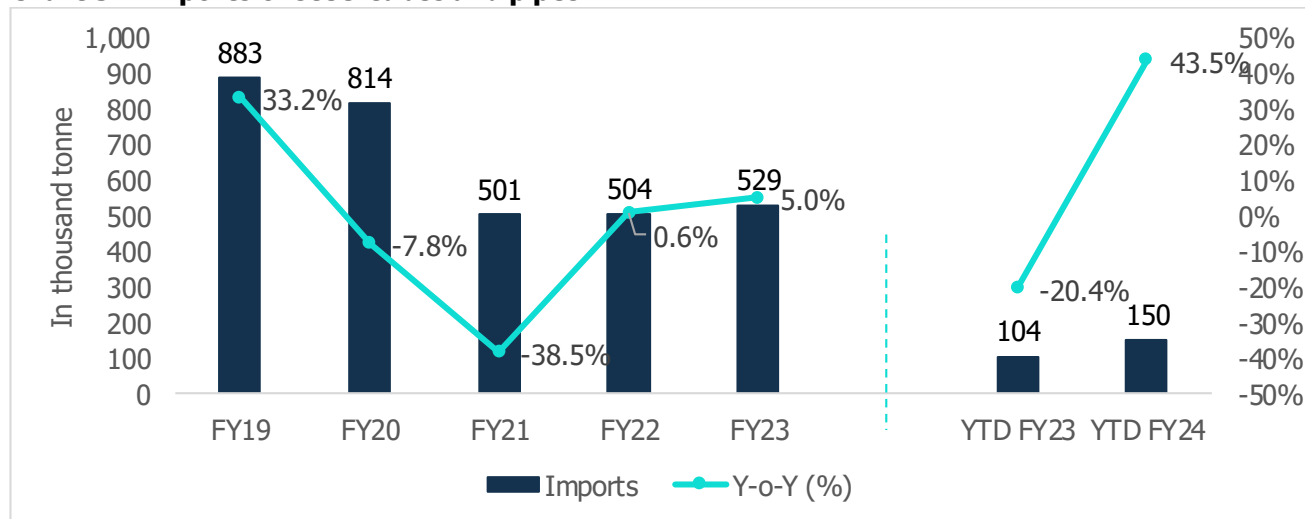
Source: CMIE

**Imports**

India imports steel tubes and pipes to meet the requirements of demand-supply gap in the country primarily for high temperature resistant pipes used for drilling and oil exploration, which are generally imported by the oil refineries in India.

The inbound shipments have observed a decline of 12% CAGR in the last five years from 883 thousand tonne in FY19 to 529 thousand tonne in FY23. During the past three years, the imports have remained flattish. However, the imports have increased significantly from 104 thousand tonne in YTD FY23 to 150 thousand tonne YTD FY24.

**Chart 32: Imports of steel tubes and pipes**



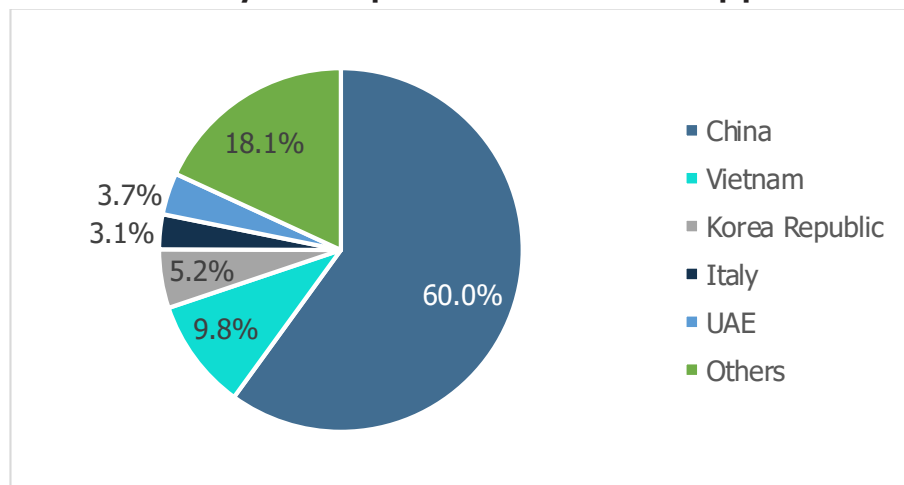
Source: CMIE

Note: YTD FY23 refers to the period from April 2022-August 2022

YTD FY24 refers to the period from April 2023-August 2023

China, Vietnam, Korea Republic, Italy and UAE are some of the leading suppliers to India with almost 82% share in the total imports in FY23. Among these countries, China continues to be the top importer to India with a share of 60%.

**Chart 33: Country-wise Imports of Steel tubes and pipes in FY23**



Source: CMIE

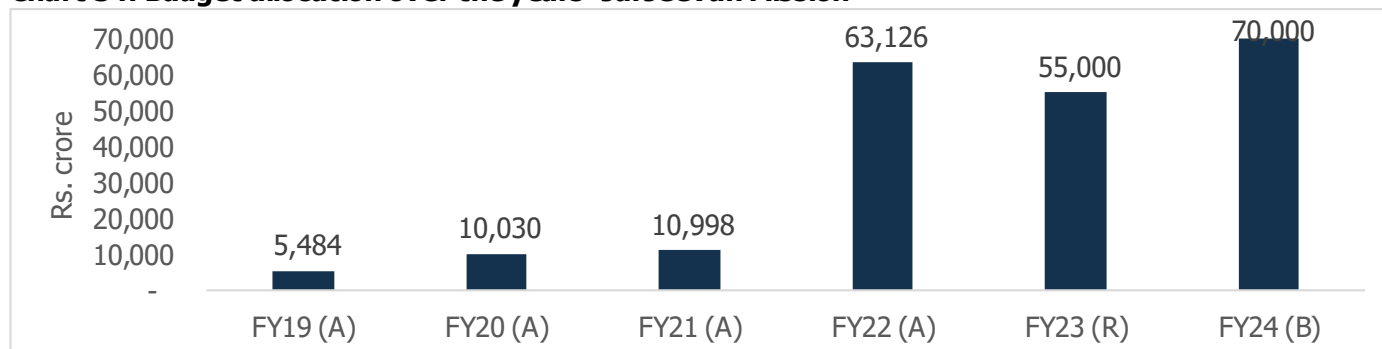
### 2.3.4 Outlook

The growth momentum of the steel pipes and tubes is expected to continue in the medium term backed by rising demand from key end-user industries including oil & gas, infrastructure, real estate, etc.

- Oil and gas:** It is expected that an increase in the length of Natural Gas pipelines by 2024-2025 will contribute towards expansion of steel pipe production. The natural gas sector that already has seen the announcement of 'One nation, one gas grid' initiative, will attract new investments in India's natural gas infrastructure. It is expected that the gas pipeline network which has already crossed 23,000 km currently, will reach to 35,000 km in the coming 4-5 years. The efforts of moving towards the gas-based economy along with implementation of city gas distribution networks is expected to augment the demand for pipes going forward. Along with this, the increase in CNG stations, bio-refineries, bio plants etc will support the infrastructure for gas.
- Housing development:** The trend for affordable housing is picking up in India along with an increase in urban infrastructure. Rising income and employment opportunities have led to migration to urban areas thereby creating greater need for real estate in major Indian cities. There is significant thrust on providing housing for all under the Pradhan Mantri Awas Yojana (PMAY) scheme, an initiative taken by the Government to provide affordable housing to the urban poor and the scheme has been getting steady allocation under the union budget. In the latest budget 2023-24, there has been increase in allocation towards PMAY scheme to Rs. 79,590 crore from Rs. 77,130 crore in 2022-23. Further, the sustained efforts in sanctioning and completing a substantial number of houses under both PMAY-Urban and PMAY-Gramin schemes demonstrates the government's commitment towards promoting affordable housing and improving living conditions for individuals and families across the country.
- Water and irrigation:** The demand for steel tubes and pipes will expand as there is vast usage from agriculture sector especially, for use of irrigation. The 'Atal Mission for Rejuvenation and Urban Transformation' (AMRUT) scheme, which focuses on the development of basic infrastructure in selected cities and towns, focuses on the development of water infrastructure in the sectors such as water supply, storm water drainage, sewerage and septage management, green spaces and parks, and non-motorized urban transport. In addition to that, the 'Atal Bhujal Yojana' (Atal Jal) scheme which is focused on improving ground water management through community, will also lead to infrastructure development. Another initiative 'Jal Jeevan Mission', to provide safe and adequate drinking water to all households in

rural India by 2024, launched by the Government will also contribute towards the development of water infrastructure. This programme has already covered nearly 65% rural households in past 4 years. The mission has always seen a consistent allocation in budget every year. In the Union budget 2023-24, the allocation has increased to Rs. 70,000 crore from Rs. 55,000 crore(Revised estimate of 2022-23).

**Chart 34: Budget allocation over the years- Jal Jeevan Mission**



Source: Budget documents

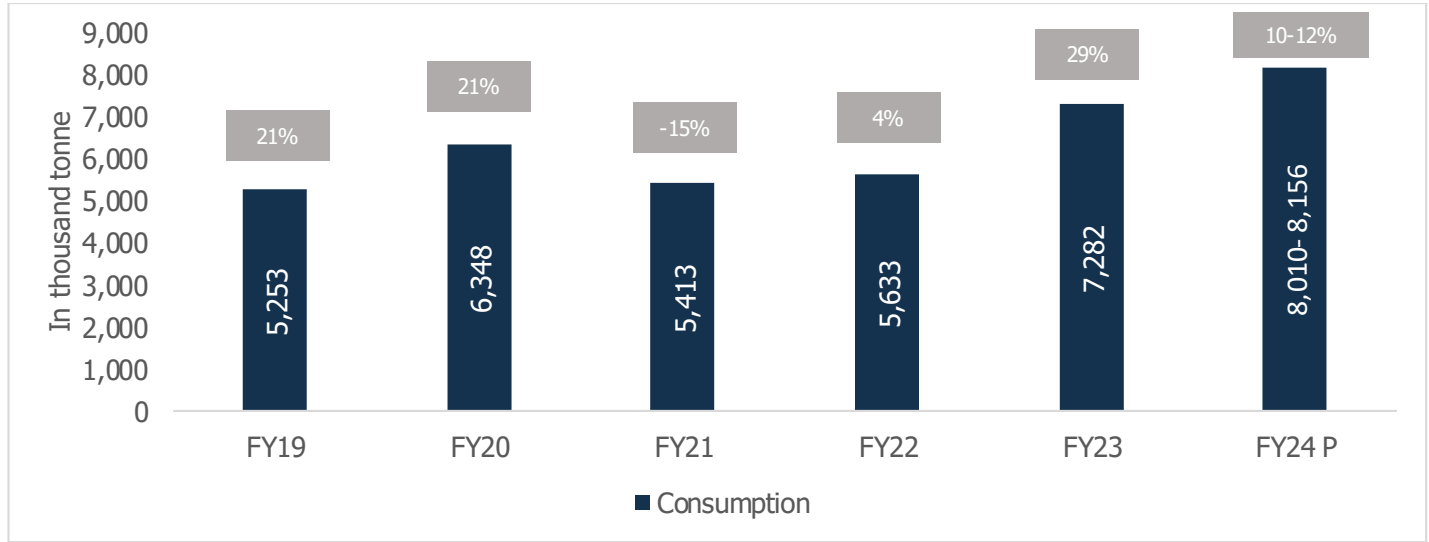
Note: A – Actual budget; R- Revised budget; B- Budgeted

- Focus on infrastructure:** The Indian government has been focussing on development of infrastructure. Many reforms such as Make in India and production linked incentive (PLI) scheme has been set by the Government to achieve its goal of having a USD 5 lakh crore economy by 2025. In the latest budget 2023-24, the outlay in capex investment towards infrastructure has increased by 33% to Rs.10 Lakh crore from Rs. 7.5 lakh crore in 2022-23 budget. Additionally, 100 critical transport infrastructure projects for connectivity for ports, coal, steel, fertilizers and food grains sector have been announced and will likely increase the demand for tubes and pipes. These projects include an investment of Rs. 75,000 crore including Rs. 15,000 crore from private players. Along with this, the government has also announced plans to revive 50 additional airports, heliports, water aerodromes, and advance landing grounds to enhance the regional connectivity and provide accessibility to various regions. Earlier, in the budget for 2022-23, the government planned to set up 100 new airports by 2024 under Ude Desh ka Aam Naagrik (UDAN) scheme.

Further, the usage of steel pipes and tubes will be supported by demand from domestic water infrastructure, oil exploration and transportation, construction, real estate, railways (capital outlay of Rs. 2.4 lakh crore), irrigation, infrastructure and energy.

Driven by the above factors, CareEdge Research expects the domestic consumption of steel tubes and pipes to increase by 10%-12% y-o-y in the range of 8,010 to 8,156 thousand tonne during FY24.

Chart 35: Trend in consumption of steel tubes & pipes



Source: CMIE, CareEdge Research

Note: P - Projections

### 3 Overview on User Industry & its Market Scenario

The oil and gas industry is the largest consumer of steel tubes and pipes in India. Apart from these, they are mainly used for manufacturing, transportation and distribution purposes. Some of the other key end-user industries include automotive, railways, aircraft, agriculture, etc.

#### 3.1 Oil & gas

Oil and gas is the largest end-user that is driving the demand for steel tubes and pipes. Refineries, pipelines, gas terminals, storage capacity, gas cylinders bottling plants, retail outlets etc., require large amount of steel pipes. Oil and gas is generally transported through steel pipelines. Further, steel tubes and pipes are widely used in this sector for drilling and extraction operations.

#### Natural Gas Infrastructure

Natural Gas industry in India is expected to witness substantial growth over the next decade. Driven by increasing usage across various end-user customer segments, the Government of India has come up with multiple reforms as they target to raise the share of Natural Gas in the primary energy mix to 15% by 2030 from around 7% currently (in 2019-20). This is a CAGR of around 7% for the projected period through 2030.

The sector requires significant investments in the coming years to build up terminals, pipelines, etc. As per GAIL, India will be needing an investment of about Rs. 1.6 lakh crores over the next 5-8 years to expand the natural gas infrastructure. The capacity of RLNG terminals in India is expected to increase from 42.7 MMTPA in 2021-2023 to around 83 MMTPA by 2029-30, assuming all the existing and planned terminals in India would set up as planned. Moreover, India is expected to have its first floating LNG terminals at Chhara and Jafrabad, which will possibly commence operations in the second half of FY24. Further, the increase in production and exploration activities will drive the requirement of steel pipes in the industry.

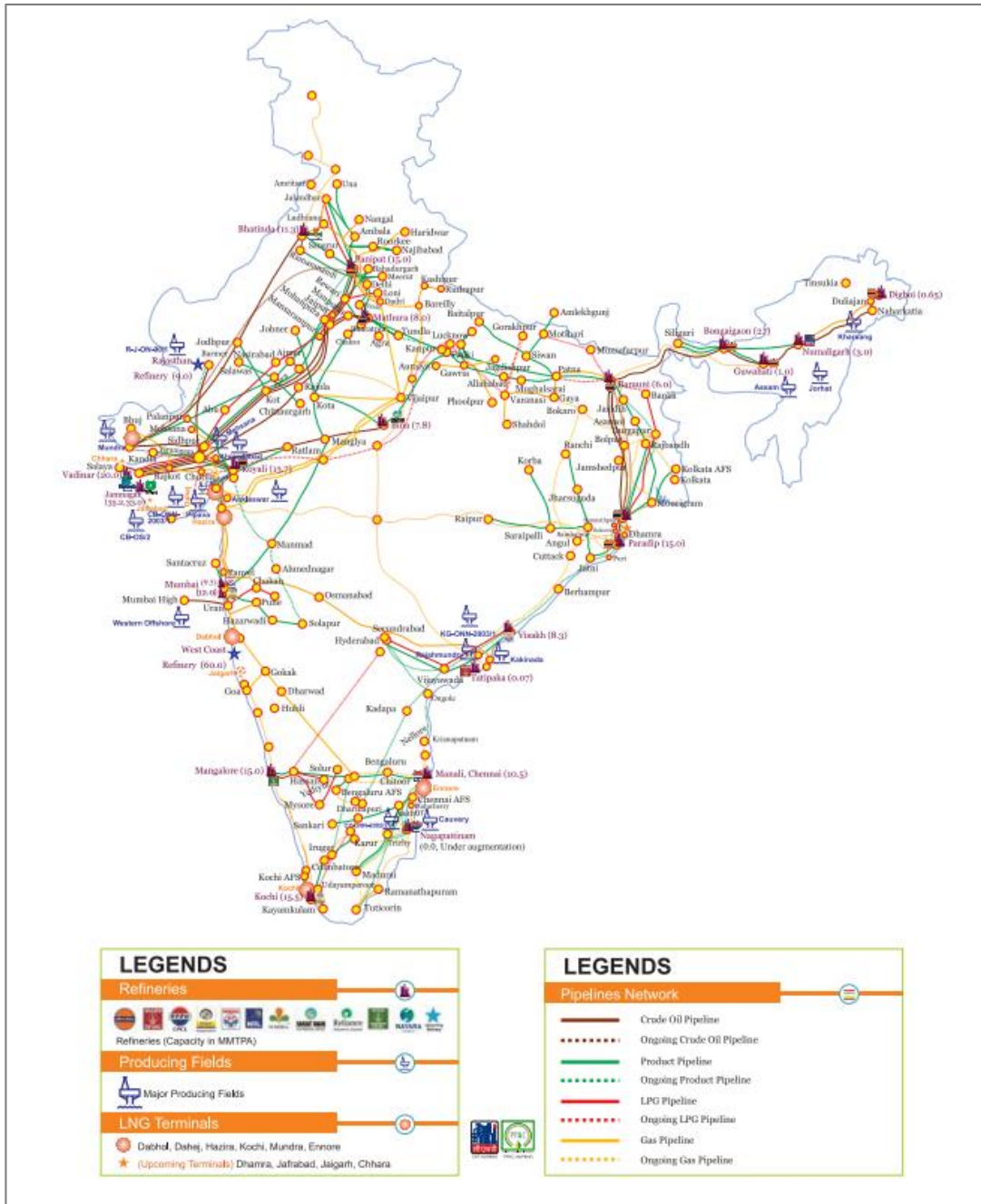
In order to create the National Gas Grid (One Nation, One Gas Grid) and increase the availability of natural gas across the country, Petroleum and Natural Gas Regulatory Board (PNGRB) has authorised approximately 33,592 km natural gas pipeline network across the country. As per Ministry of Petroleum and Natural Gas (MoPNG), 23,173 km natural gas pipelines including spur lines, tie-in connectivity, Sub-Transmission Pipelines (STPL) and dedicated pipelines are operational in India currently and a total of 12,206 km length of pipelines are under various stages of construction.

During the 26<sup>th</sup> session of the Conference of the Parties (COP26) to the United Nations Framework Convention on Climate Change (UNFCCC), which took place in Glasgow, United Kingdom, in November 2021, the Government of India has taken a target to reduce the carbon intensity of the economy by 45% and reduce the total projected carbon emission by 1 billion tonnes by 2030. The ultimate objective is to achieve a net-zero emissions target by the year 2070. The use of natural gas is also expected to receive significant impetus from the Government's commitment towards clean energy under COP26.

#### Crude and Petroleum Product Pipeline Infrastructure

According to Petroleum Planning and Analysis Cell (PPAC), 10,420 km of crude oil pipeline and 22,488 km of petroleum product pipeline was operational in India as on March 31, 2023. As pipeline is more efficient mode of fuel transportation, the crude and petroleum product pipeline infrastructure is expected to be expanded to cater to the growing domestic demand.

Chart 36: Oil & Gas Map of India

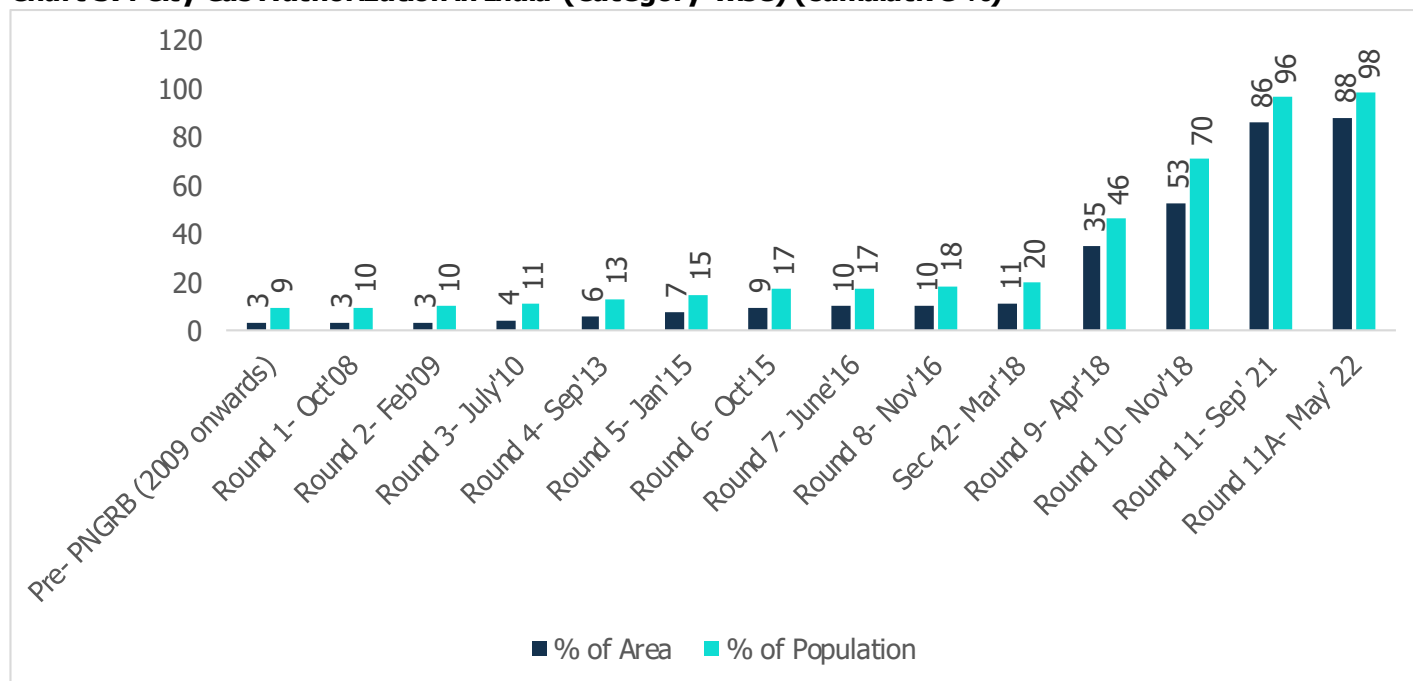


Source: PPAC

### City Gas Distribution

The CGD network in India has expanded significantly in the past decade. As on December 2022, post completion of 11A CGD bidding round, 295 Geographical Areas (GAs) covering about 98% of the population and 88% of total geographical area of the country spread over around 630 districts in 28 States/UTs including all cities under these GAs, have been covered under the CGD network.

**Chart 37: City Gas Authorization in India (Category-wise) (cumulative %)**



Source: PNGRB

As per PPAC, there were 5,283 compressed natural gas (CNG) stations, 1.07 crore domestic piped natural gas (PNG) connections, 37,387 commercial PNG connections and 15,066 industrial PNG connections as on February 2023.

Following factors will drive the expansion in CGD network going forward.

- Expansion of CGD network to around 295 geographical areas post Round 11A of CGD bidding.
- Expansion of natural gas under the 12<sup>th</sup> CGD bidding round (to offer 8 geographical locations - Arunachal Pradesh, Meghalaya, Manipur, Mizoram, Nagaland, Sikkim, Union territory (UT) of Jammu & Kashmir and Ladakh).
- Industries using blast furnaces such as steel, oil refineries, long-haul transport, and heating and cooling requirement.
- Continued high requirement from the fertilizer as well as power sector.

### 3.2 Real Estate

The real estate industry is one of the most crucial sectors across the globe. The industry can be further segmented into four sub-sections – housing, commercial, retail and hospitality. Of these, the residential segment contributes a majority share in the overall sector. The growth of the overall real estate industry also depends upon the growth in the corporate environment and the demand for office space, urban and semi-urban accommodations.

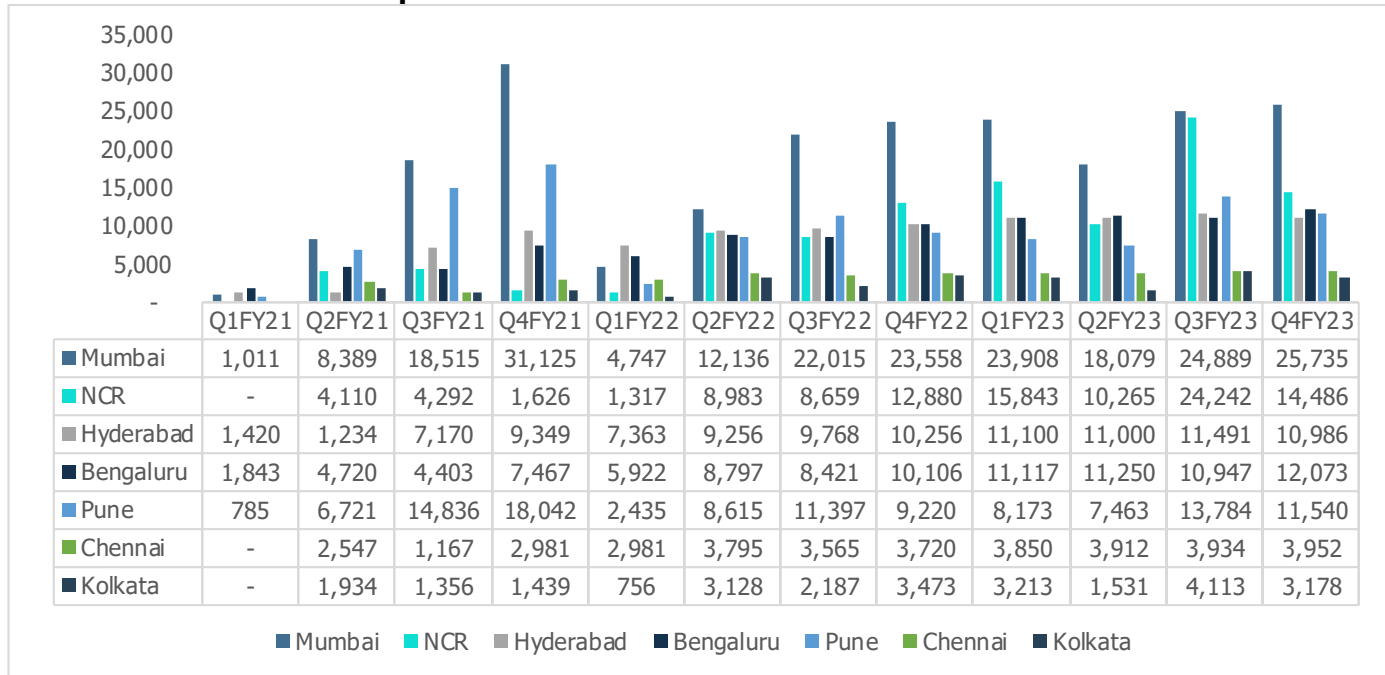
#### Residential Real estate:

The residential real estate segment was performing exceptionally well during the first half of the previous decade on account of growth in the economy and the services sector which resulted in migration to metros and propelled the demand for housing units in these areas. However, problems related to elevated property prices, delayed launches by developers and stalled projects triggered some cold feet towards the sector. From the point of view of financing too, the IL&FS crisis created problems in the NBFC sector, which is a pivotal source of funding for real estate. To add to this, the coronavirus

outbreak in early 2020 and the concomitant lockdowns across the country caused acute stress to the residential real estate segment during H1CY20.

After the reopening of the economy, there has been a notable increase in demand for residential properties, primarily driven by end-users in the affordable housing segment. Foreign investments continued to flow into the sector, aided by the easing of the pandemic situation, resumption of travel, favourable policies such as tax benefits, and advantageous currency exchange rates, which have further contributed to increased investments from Non-Resident Indians (NRIs), particularly in the residential sector. During FY23, the residential real estate market witnessed steady growth with increased sales momentum supported by past inventory levels and continued new project launches specifically in the affordable and mid-size segments.

**Chart 38: New launches in top 8 Indian cities in residential real estate**

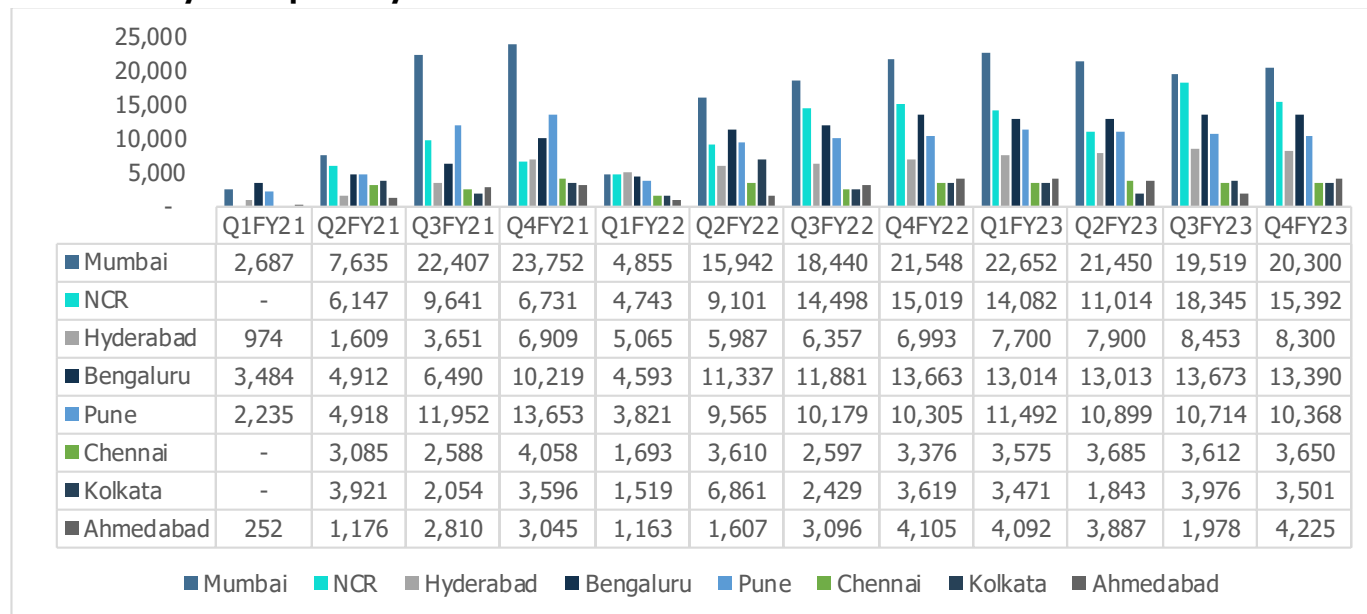


Source: Knight Frank & CareEdge Research



Trend in sales in top 8 cities in residential real estate

Chart 39: City-wise quarterly unit sales in residential real estate



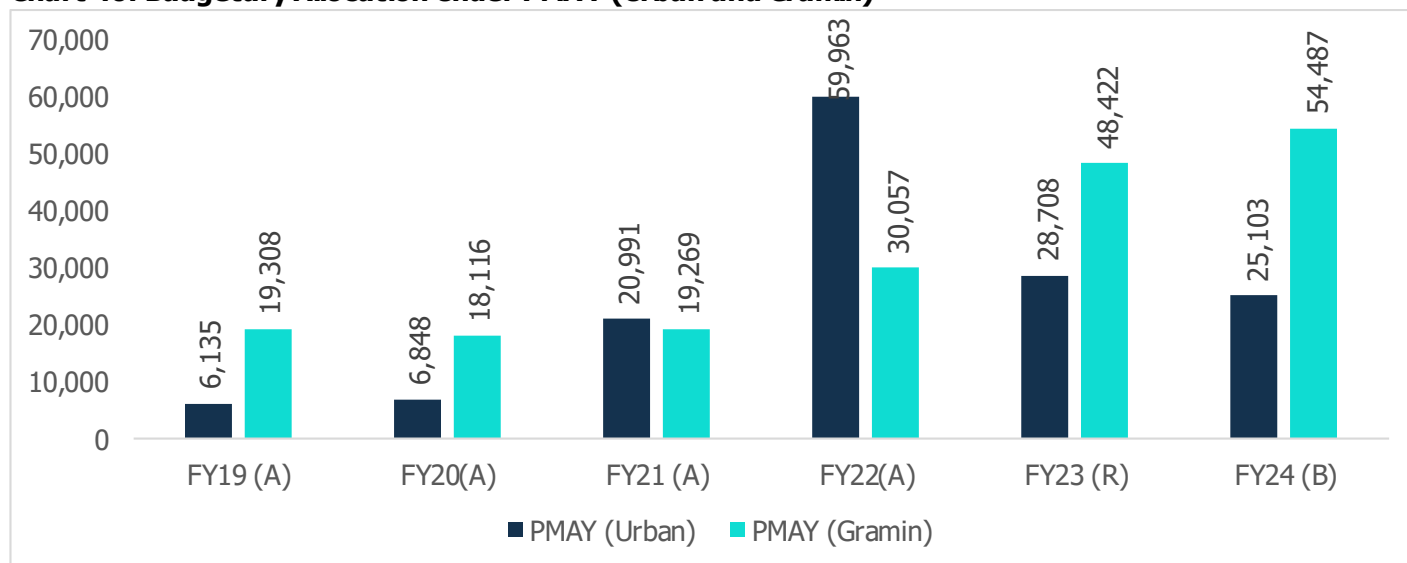
Source: Knight Frank & CareEdge Research

Outlook:

The relocations and shift in buying individuals behavior with a desire to live in a space with modern amenities, proximity to their workplace, leisure and desire to relocate closer to extended families and friends is projected to increase the demand for projects with good architecture, uncluttered space and recreational activities for children and elderly.

Furthermore, Government’s initiatives, including the Pradhan Mantri Awas Yojna (PMAY), Urban Development Plan, and the digitization of land records, have been playing a pivotal role in stimulating growth within the sector. Under the PMAY scheme of the Union Ministry of Housing and Urban Affairs, more than 1.20 crore houses have been sanctioned under the PMAY-Urban, out of which 75.31 lakhs have been completed as on 10<sup>th</sup> July 2023, and the rest are under construction. In addition to that, about 2.90 crore houses have been sanctioned under PMAY-Gramin out of which 2.32 crore have been completed.

**Chart 40: Budgetary Allocation Under PMAY (Urban and Gramin)**



Source: Budget Documents

Note: A – Actual budget; R- Revised budget; B- Budgeted

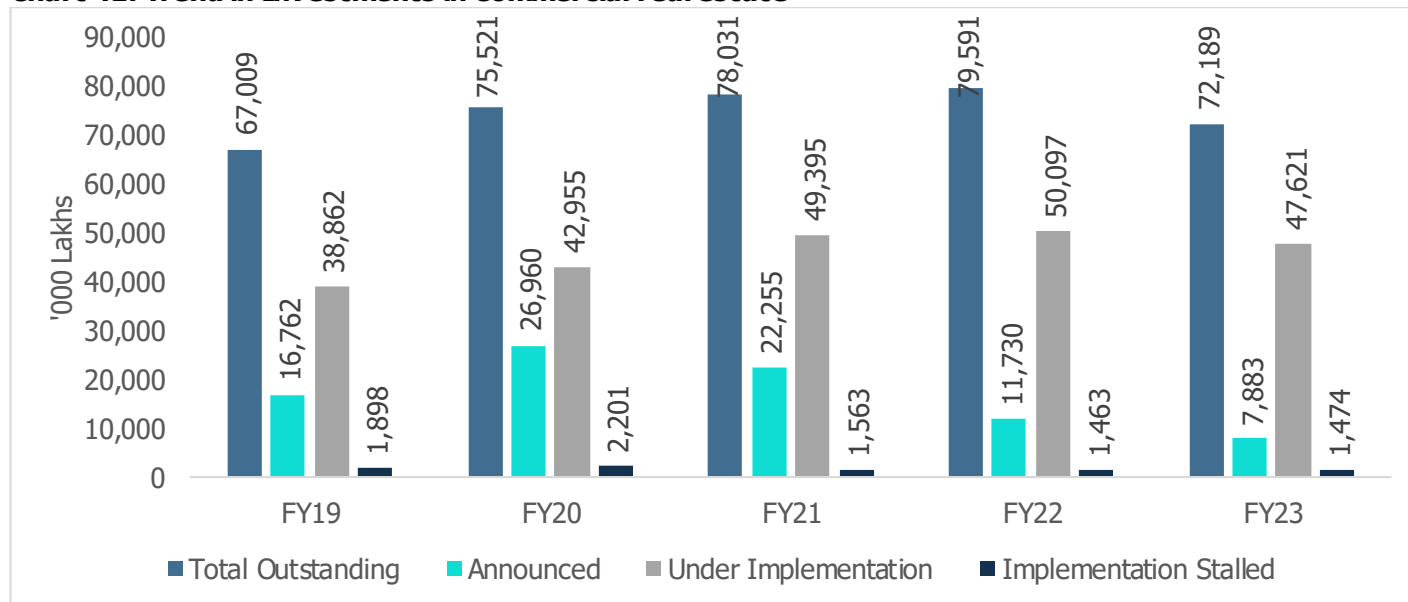
**Commercial Real estate:**

The Indian real estate industry witnessed a slowdown in the years prior to the pandemic due to the general slowdown in the economy. However, this had little impact on the demand for office space. The demand for office space grew by leaps and bounds for the better part of the past decade with the unavailability of good quality supply being the only impediment to higher growth.

Growth in the office segment was aided by investors who showed great interest in the commercial space. Along with this, NRIs also started investing in this segment because of lucrative returns. An increasing number of private equity funds showed interest in the commercial office space in 2018 which was followed by the same in 2019.

With the residential real estate becoming end-user driven, the commercial real estate emerged as a more attractive investment proposition for individual investors as well as institutional funds. Due to the investment potential of commercial spaces, developers are also responding to the demand. Incidentally, a better performance of the office segment will eventually trickle to greater demand for the residential segment. As a result, the commercial space is crucial in terms of both, its impact and its linkages.

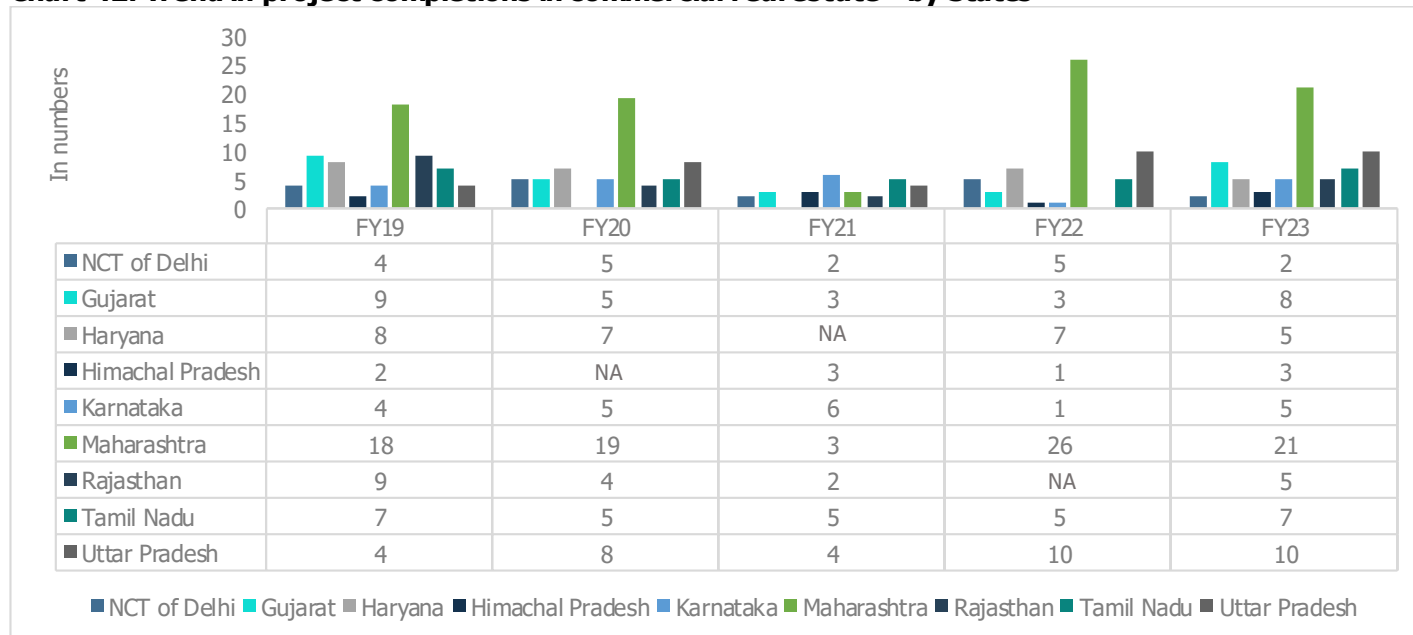
**Chart 41: Trend in Investments in Commercial real estate**



Source: CMIE & CareEdge Research

The chart above shows that total outstanding investments across India dipped in FY19 after growing for three consecutive years. The value of announced projects increased for three straight years from FY18 to FY20 following which it fell in FY21 due to Covid-19 related disruptions and uncertainty. During FY22, the value of projects under implementation rose to a three-year high, while the value of stalled projects remained low. In FY23, the value of announced projects dipped, but the ticket size of projects under implementation was marginally lower than FY22 as demand stabilised.

**Chart 42: Trend in project completions in commercial real estate - by States**



Source: CMIE & CareEdge Research

Data in the above chart shows that project completions across major states have picked up in FY22 and FY23 with the largest number of projects being complete in Maharashtra.

**Outlook:**

Commercial real estate (including retail space) industry is expected to witness stable growth in the near-medium term driven by back-to-office / hybrid work trends, business growth especially in e-commerce, co-working, information technology and BFSI sectors, and rising consumer spending.

The demand for office spaces will be driven by expansion of co-working segment, increase in hiring across various sectors like IT, E-commerce etc., increased connectivity due to augmentation of infrastructure and an overall economic growth in India. Real estate companies are also focusing on tier-II and tier-III cities since they are quickly urbanizing due to lower rental cost. The sophistication of commercial real estate is also rising as a result of the incorporation of new age technologies including sensor-activated disinfectants, retina scanners for admission, digitized ventilation systems, and more.

The retail space growth will be driven by increasing disposable income, availability of wide range of brands and food options, multiple entertainment avenues, high brand consciousness, convenience, social media marketing, availability of international brands etc.

However, delay in project construction leading to cost overrun and ability of the developers to lease the ready office and retail spaces are key monitorable for the industry. Also, impact of global slowdown on IT/BPO/KPO companies which may lead to slow expansion and less demand for commercial space in India in near term.

**3.3 Water infrastructure**

Water infrastructure is another major end-user industry which involves usage of steel tubes and pipes. In general water infrastructure includes, drinking water facilities (treatment plants and distribution lines), sewage lines, storage tanks, dams, reservoirs etc.

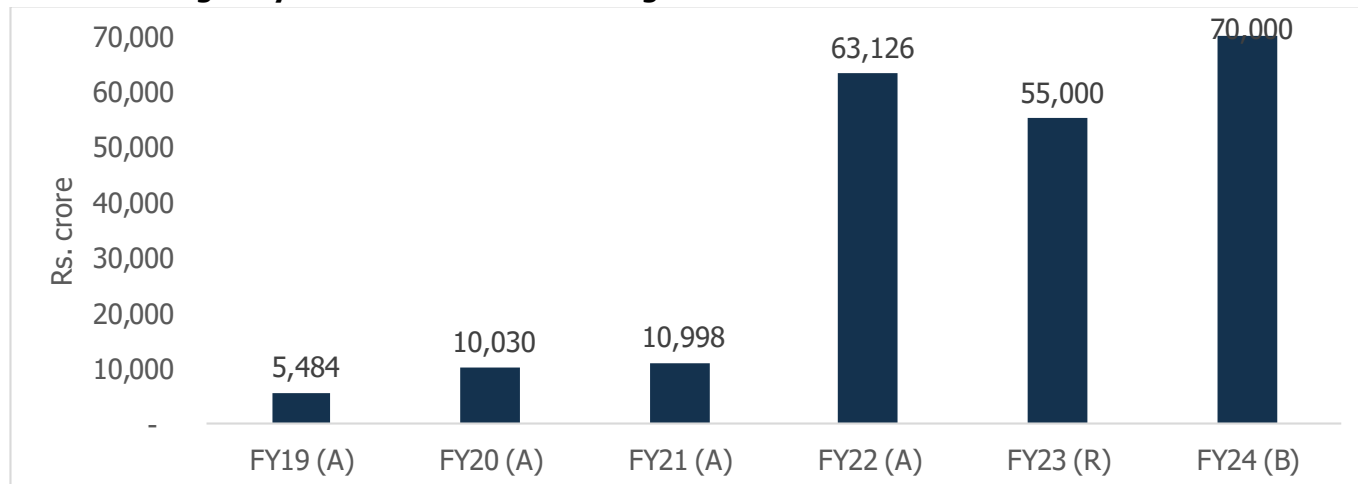
Steel pipes are considered as the most durable of all water supply pipes because of their non-corrosion properties. They can sustain high water pressure and are more readily available in longer lengths than most other pipes. Demand for steel tubes and pipes is increasing as there is continuous supply from agriculture where steel pipes are used in borewells or irrigation facility. Moreover, there is constant demand for improving water infrastructure in both rural and urban cities along with the focus to improve on the wastewater management. This is expected to augment the demand and push the volumes of galvanised pipes.

With growing urbanization, India continues to fall behind in groundwater infrastructure. Water consumption has been growing at an exponential rate on account of rising population, increase in urbanization and shift in lifestyles. Many households have access to water for only a few hours a day. Water demand in India is expected to exceed available supply by 2030, resulting in severe water scarcity for billions of people. To ensure there is water supply which is both affordable and sustainable, Government has launched 'Atal Bhujal Yojana' (Atal Jal) to upgrade ground water management system through community participation. The major objective of this scheme is to improve the management of groundwater resources in select water stressed areas in identified states namely Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.

On 15<sup>th</sup> August, 2019, "Jal Jeevan Mission" programme has been launched by the Government to provide safe and adequate drinking water to all households in rural India by 2024. The functional household tap connections as on 15<sup>th</sup> August 2019 were about 3.23 crore. This program has already connected taps to more than 19.5 crore rural households and established 12.6 crore rural household tap connections within a span of 4 years. This programme will further enhance the water infrastructure and aid in the demand for pipes in the country.

Further, the budgetary allocation trend towards this scheme is increasing and in the latest budget 2023-24, the Government has increased the allocation to Rs. 70,000 crore from 55,000 crore in the previous year. In addition to that, the Government’s push towards cleanliness and sanitation will boost the water infrastructure in the country.

**Chart 43: Budgetary allocation towards drinking water**



Source: Budget documents

Note: A – Actual budget; R- Revised budget; B- Budgeted

### 3.4 Railways

Indian Railways is among the world’s largest rail networks. It is the 4<sup>th</sup> largest railway system in the world behind US, Russia and China with total track length of 1,26,611 km over 68,103 km of the route along with 7,337 stations as of FY21. Steel tubes or pipes are used in applications such as rails, wagons, and coaches. The Indian railway sector has seen multiple developments in the last decade such as introduction of high-speed trains, modernization of railway stations, increase in rolling stock inventories etc.

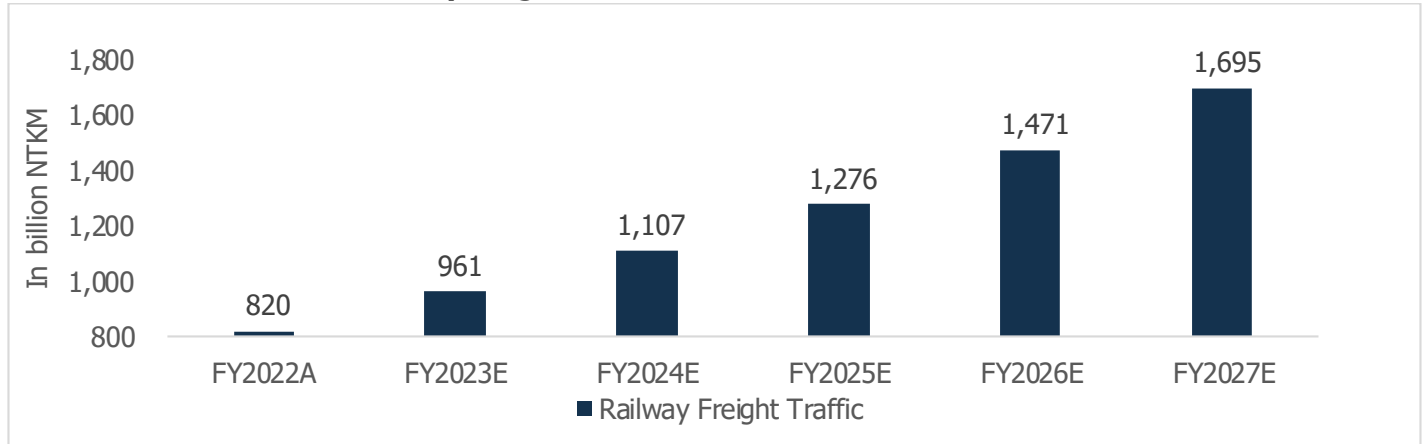
The government has been increasing its focus on augmentation of railways to reduce cost and time of logistics and to reduce the overall carbon footprint of the country as railways are more environment friendly compared to road transport. The key focus areas have been decongestion of overutilised rail network, construction of new lines, doubling, tripling, quadrupling of rail lines and purchase of rolling stock such as wagons, locomotives, coaches, etc.

The government proposes to launch 400 new Vande Bharat trains in the next 3 years along with development of 100 Cargo Terminals over next few years. Additionally, construction of Dedicated Freight Corridor (DFC) which are broad gauge rail networks to be utilized exclusively for freight trains will lead to increase in Railway’s share in domestic freight movement. The western and eastern DFCs are 86% and 90% complete, respectively, and are expected to be commissioned by FY25. Also, East Coast Corridor, East- West Corridor and North-South Corridor are under the planning stage.

Moreover, Railways Station Redevelopment Programme which was launched in February 2017 to modernize the infrastructure across the nation will enhance the experience of the passengers by providing concept of intelligent building, and state of the art facilities. For this, the Government has launched ‘Amrit Bharat Station Scheme’ where in a total of 1,275 railway stations under 32 different states have been identified for development. This will further boost the demand for steel pipes in the economy.

Under the National Rail Plan (NRP), the railway’s share in freight transport is expected to increase to 45% by 2030 from existing 26%. This implies that the total freight transported by Indian Railways will increase to 3,000 million tonnes by FY2027 and 3,600 million tonnes by FY2030 from 1,418 million tonnes in FY2022. Further, railway freight traffic measured in Net Tonne Kilometres (NTKM) is expected to double to 1,695 billion NTKM by FY2027 from 820 billion NTKM in FY2022.

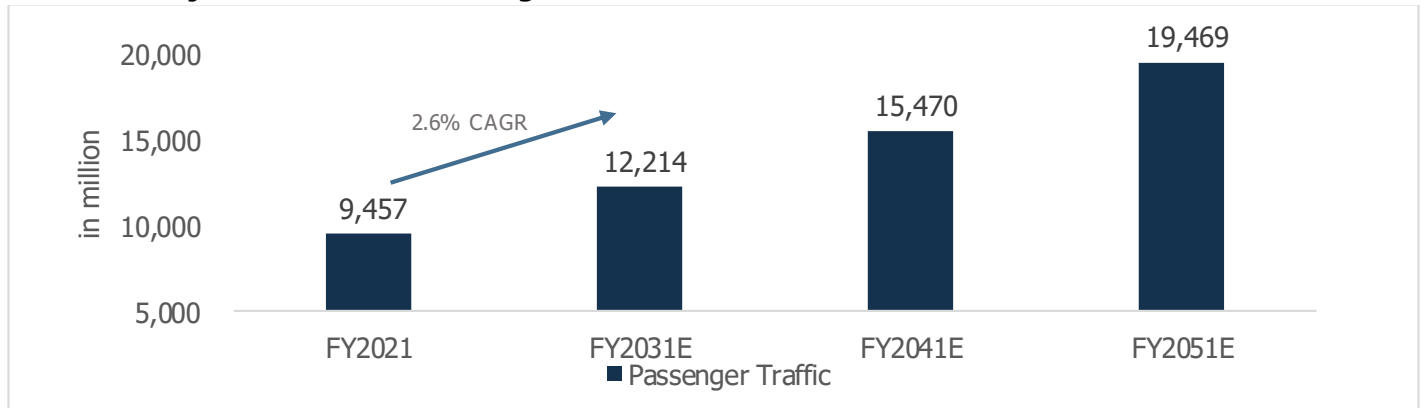
**Chart 44: Trend in Indian Railway Freight Traffic**



Source: Indian Railways, Report of the Committee on Mission 3000 million tonnes

The passenger traffic is expected to grow at a CAGR of 2.6% between 2021 and 2031 driven by population growth and growing workforce.

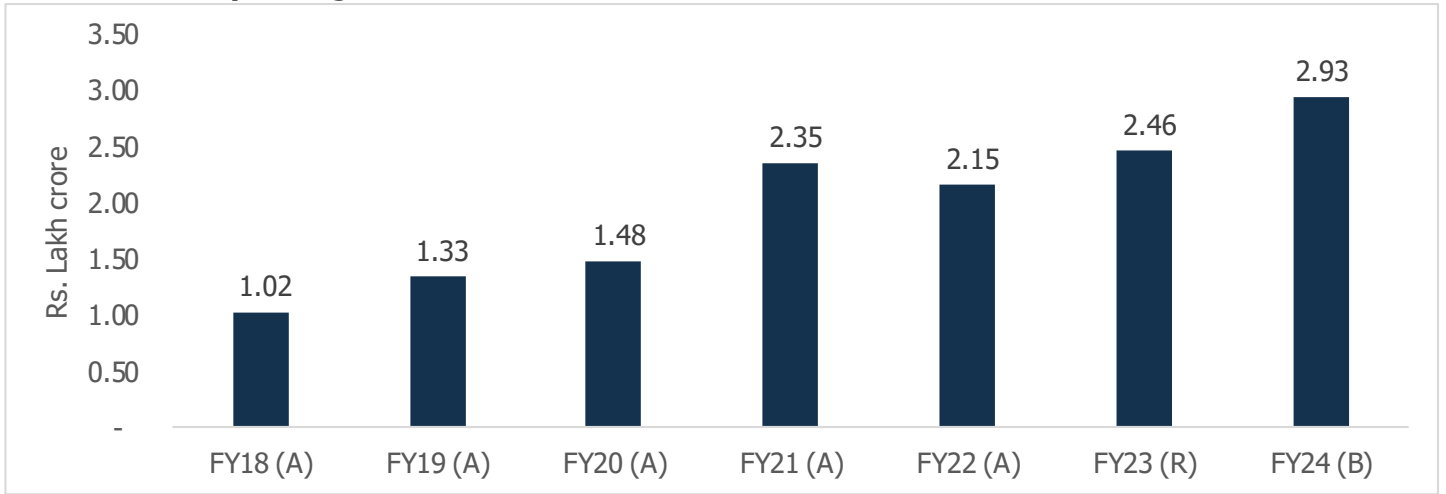
**Chart 45: Projected Growth in Passenger Traffic**



Source: Indian Railways, National Railway Plan

In the Union Budget 2023-24, the government has allocated Rs 2.93 lakh crore towards railways which is the highest ever allocation and an increase of 15% over previous year’s allocation. The allocation towards rolling stock has more than doubled Y-o-Y to Rs 37,581 crore in the union budget 2023-24 from Rs 15,158 crore (revised budget) in 2022-23.

**Chart 46: Railways- Budget Allocation over The Years**



Source: Budget Documents. Note: B – Budgeted, A – Actual, R – Revised and Includes Internal and Extra Budgetary Resources (IEBR)

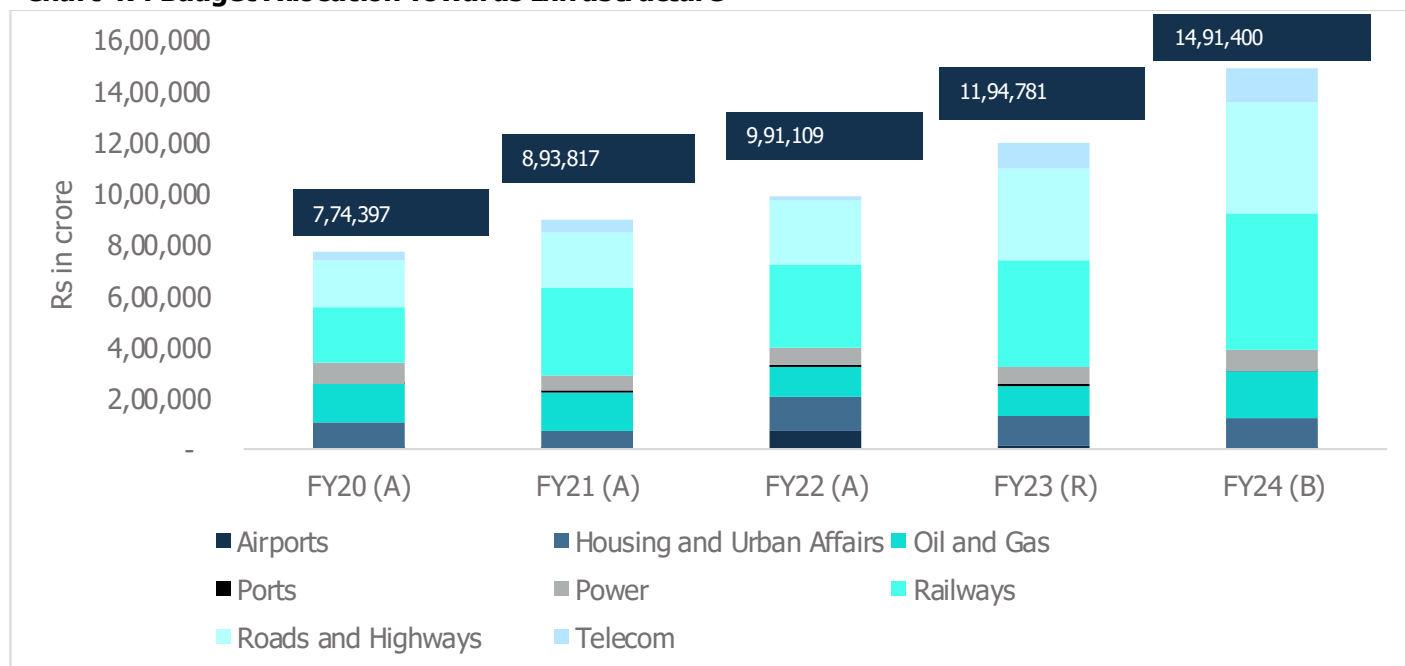
The above factors augur well for the demand of steel tubes and pipes from the Indian Railways.

## 4 Key Demand Drivers

### • Continued thrust on construction and infrastructure

One of the major drivers for the steel tubes and pipes industry is the infrastructure investment thrust by the Government of India. The budgetary allocation towards infrastructure has grown at a CAGR of about 18% in the past 5 years between FY19-20 to FY23-24. In the Union Budget 2023-24, the government continued its focus on infrastructure development with the allocation of Rs 10 lakh crore towards infrastructure capital expenditure, an increase of 33% over allocation under the Union Budget 2022-23. Total allocation towards infrastructure, including investments in public enterprises, stood at Rs. 14 lakh crore, an increase of 24.8% over revised estimates of 2022-23.

**Chart 47: Budget Allocation Towards Infrastructure\***



Source: Union Budget 2022-23

Note: A – Actual budget; R- Revised budget; B- Budgeted

\*Including investments in public enterprises

The government has expanded the National Infrastructure Policy (NIP) to 7,400 projects from 6,835 projects and announced plans for the National Monetization Pipeline and Development Finance Institution (DFI) to improve the financing of infrastructure projects. The NIP covering rural and urban infrastructure, entails investments to the tune of Rs. 111 lakh crore, which is being undertaken by the central government, state governments and the private sector during FY20-25. Moreover, the alignment of PM Gati Shakti National Master Plan and NIP will aid in debottlenecking hurdles for faster execution of projects.

### • Growth in Real Estate Absorption led by Urbanisation and Increasing Purchasing Power

#### Increase in urbanization

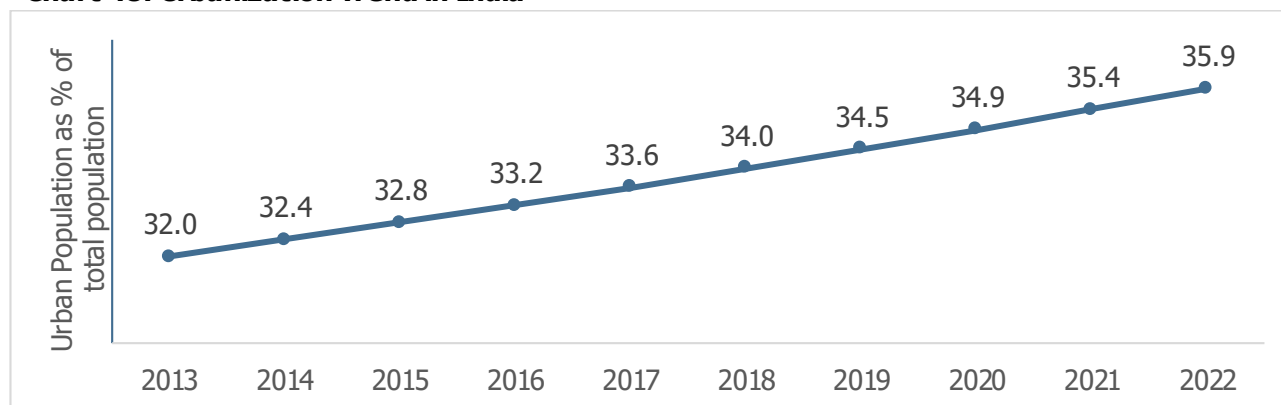
Rapid urbanization bodes well for the sector. India is the second largest urban system in the world. Indian cities are home to about 11% of the total global urban population. Urban growth is expected to contribute to around 73% of the total population increase by 2036 according to Ministry of Health and Family Welfare (MoHFW), 2019.



According to Census of India 2011, India has an urbanization level of 31.1% which has only increased over the years. Earlier estimations indicate that about 416 million people will be added as urban dwellers in India between 2018 and 2050 according to United Nations study dated 2018 and that India will be 50% urban by 2050 according to UN-Habitat, 2017.

The growth in the urbanisation will lead to increased demand for tubular steel structures as it involves usage in the construction of buildings, pipes for water supply, improved drainage systems, waste treatment plants, elevators etc.

**Chart 48: Urbanization Trend in India**

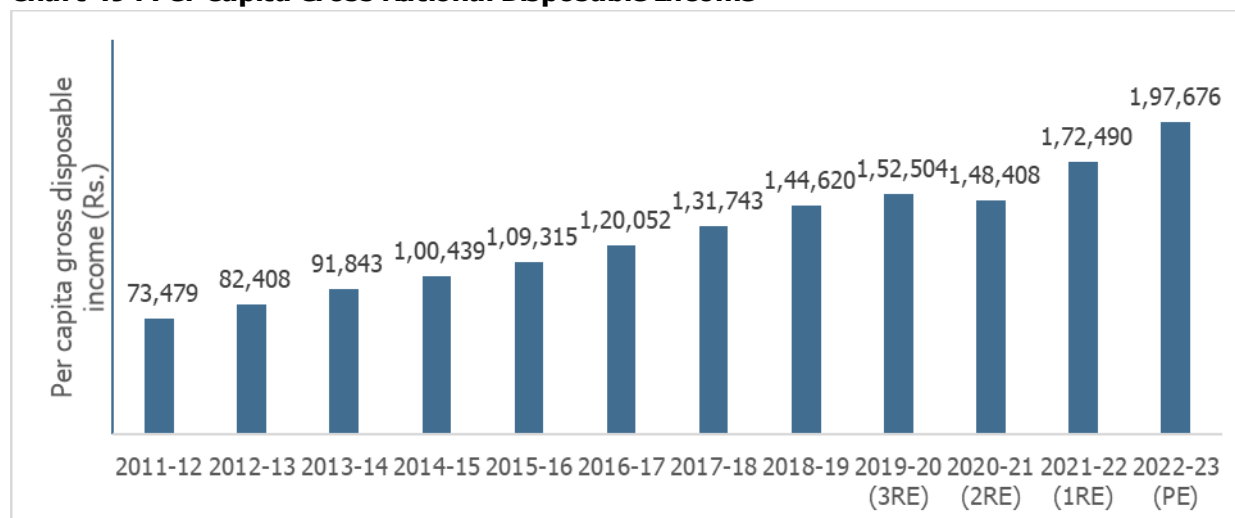


Source: World Bank Database

**Increasing purchasing power**

The rising disposable income, which has grown at a CAGR of 9.4% between the period FY12 to FY23, is expected to lead to increase in demand for residential real estate in India as more and more people are able to afford real estate purchases. This will lead to more consumption of steel in the country and helps the steel manufacturers to produce more steel, thus improving the demand in the steel industry.

**Chart 49 : Per Capita Gross National Disposable Income**



Source: MOSPI

Note: 3RE – Third Revised Estimate, 2RE – Second Revised Estimates, 1RE – First Revised Estimates, 2AE – Second Advanced Estimate;

• **Development of natural gas sector**

The government’s focus on enhancing the share of natural gas in India’s energy mix will increase the demand for steel pipes. Additionally, India has taken several initiatives to develop the natural gas sector such as facilitating development of gas infrastructure including LNG terminals, long-distance transmission pipelines and city gas distribution networks. This will in turn increase the demand for steel pipes. A total of 1544 Kms of pipelines have been laid as part of the National Gas Grid in 2020. The government launched the Indian Gas Exchange (IGX), first nationwide online delivery-based gas trading platform in 2020.

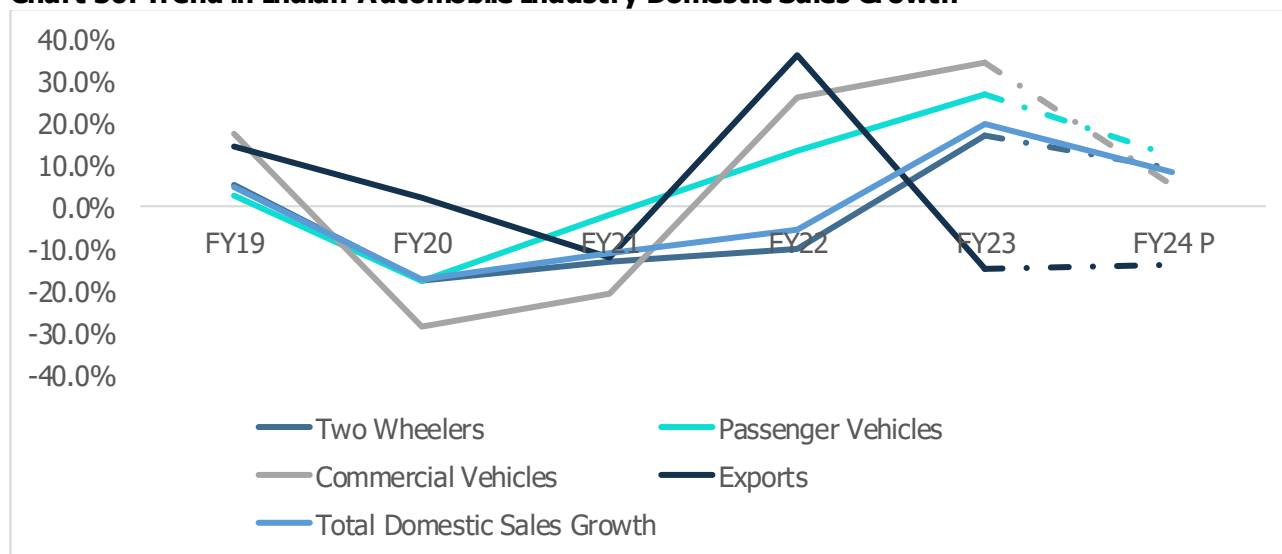
With the governments’ focus on increasing the natural gas consumption, massive investments are expected in developing the natural gas infrastructure. Many infrastructural developments are in progress including expansion of LNG import capacity, addition of new gas pipelines, development of City Gas Distribution networks. As of March 2023, the total operational length of national gas pipeline network is 23,173 kms and 12,206 are under construction. The government’s favorable policies will help in driving the gas demand growth over the next decade and this in turn, will boost the demand for steel.

• **Stable growth in automotive industry**

Steel tubes or pipes is used in main structure of the vehicle known as chassis and other automotive components such as control shaft tube stack pipe, shock absorber, exhaust pipe, sway bars, other vehicle accessories (side railings, bumpers, grill guards) etc.

India was the third-largest automobile market in 2022. After witnessing a de-growth due to the pandemic, the automobile sector began to recover on account of revival in economic activities. The domestic automobile sales grew by 20% y-o-y in FY23, the first full year without any impact of the pandemic after a gap of two years. The growth in sales volume across segments was supported by healthy demand in the urban areas, increasing replacement demand, growing demand for utility vehicles in the passenger vehicle segment, vehicle scrappage policy, and higher infrastructure spending. Despite inflationary pressure throughout the year, preponing purchases before the implementation of new fuel emission norms (BS-VI Phase -II), easing of semiconductor chip supply, and pent-up demand supported the sales growth. During FY23, all the categories saw double-digit growth, with two-wheelers at 17%, passenger vehicles at 27%, commercial vehicles at 34%, tractors at 12%, and 3-wheelers at 87% y-o-y growth in domestic sales.

**Chart 50: Trend in Indian Automobile Industry Domestic Sales Growth**



Source: CareEdge, SIAM (Society of Indian Automobile Manufacturers), TMA (Tractors Manufacturers Association), CMIE

Note: P-Projected

CareEdge Research expects the domestic automobile sales volume to grow by 7-9% in FY24 and the growth momentum is expected to continue after the robust demand (20% sales growth) seen in FY23, supported by favourable demand sentiments and various government initiatives for rural and urban development.

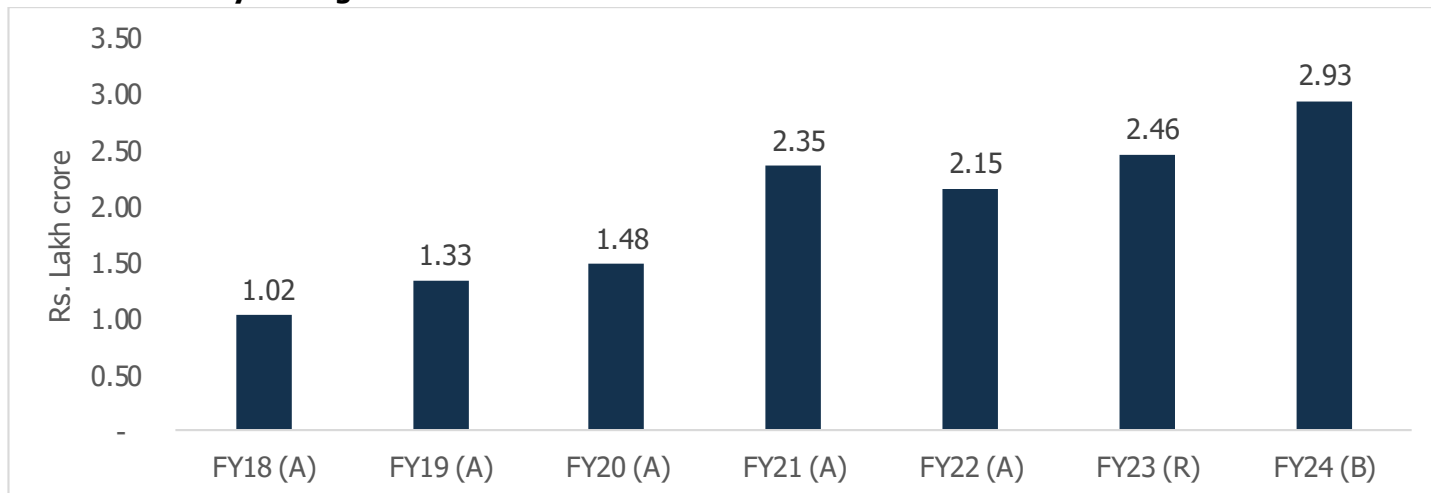
Further, the growth in the automobile sector will also be supported by electric vehicles (EV) as the shift in demand of consumers towards electric vehicles is increasing. In the Union Budget 2023-24, the allocation towards the FAME (Faster adoption and manufacturing of EVs) scheme has increased to Rs. 5,172 crore from Rs. 2,908 crore in the previous year. Further the cut in customs duty on lithium-ion batteries from 21% to 13% will also result in an increase in sales and accelerate the demand for EVs. This will aid the growth in the auto sector.

• **Growing infrastructure for Railways**

As the infrastructure expenditure to GDP multiplier is estimated to be 2.5-3.5x, the government has identified infrastructure development as a key focus area to become a USD 5 trillion economy by 2026-27. To achieve this objective, the government launched the National Infrastructure Pipeline (NIP) in 2020 which identified a group of social and economic infrastructure projects to be implemented during FY20-25. The expected capex under NIP is USD 1.4 trillion with railways having an allocation of 12%. Railways is one of the key enablers for economic growth and an investment of USD 750 billion was suggested by the government in the Union Budget 2019-20 to improve the railway infrastructure over 2018 - 2030. The budgetary allocation to Indian Railways has consistently been on a rise.

The capex for Indian Railways has increased substantially from an annual average capex of Rs. 1.02 lakh crore during FY14 to Rs. 2.93 lakh crore allocated in the 2023-24 Budget. This is the highest ever allocation and an increase of 15% over previous year’s allocation.

**Chart 51: Railways- Budget Allocation over The Years**



Source: Budget Documents. Note: B – Budgeted, A – Actual, R – Revised and Includes Internal and Extra Budgetary Resources (IEBR)

• **Expansion of metro rail**

As of August 2022, about 775 Km of metro lines have been operationalised across 19 cities. The metro network, including regional rapid transit systems (RRTS) is proposed, to be expanded to 1,700 Km across 27 cities by 2025 and subsequently to 50 cities. The government is also proposing Metro Lite and Metro Neo lines which are suitable for smaller cities with lower peak traffic. Currently, approximately 2,500 coaches have been deployed in the operational metro lines roughly costing 32,500 Cr. 31 metro rail projects are under construction and 18 projects are under approval. As the operational

metro lines are expected to increase by more than 2x over the next 4-5 years, domestic demand for metro rail rolling stock is expected to witness significant increase.

- **Others**

The growth in demand for steel tubes or pipes will also be supported by transportation, capital goods (construction, electrical equipment, machine tools, industrial machinery, plant equipment etc), aircraft components, mining activities and renewable energy projects. Further, it will also be driven by the export market which has seen a steady increase in the past few years and contributes to the overall production in the industry which has been discussed earlier in chapter 2.

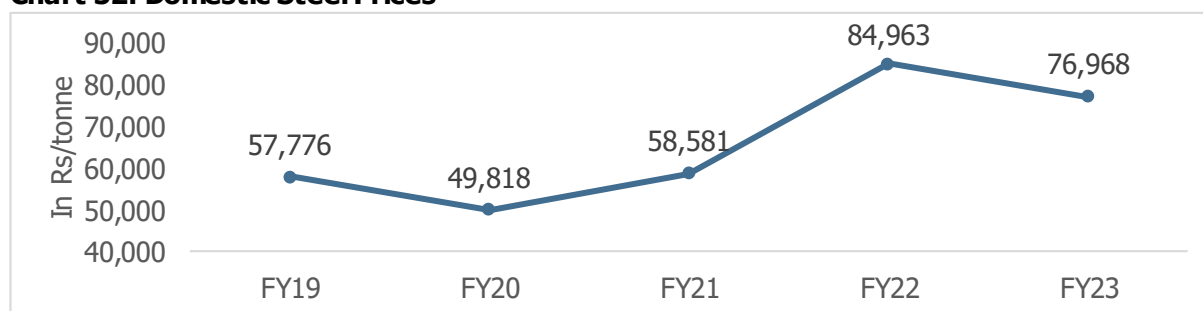
## 5 Challenges Faced By The Industry

### • Volatility in steel prices

Raw materials such as stainless steel, mild steel, scrap steel etc are used in making steel tubes or pipes. The prices of steel have remained quite volatile due to geo-political tensions, weak international demand and fluctuation in raw material cost such as coking coal as discussed in earlier sections.

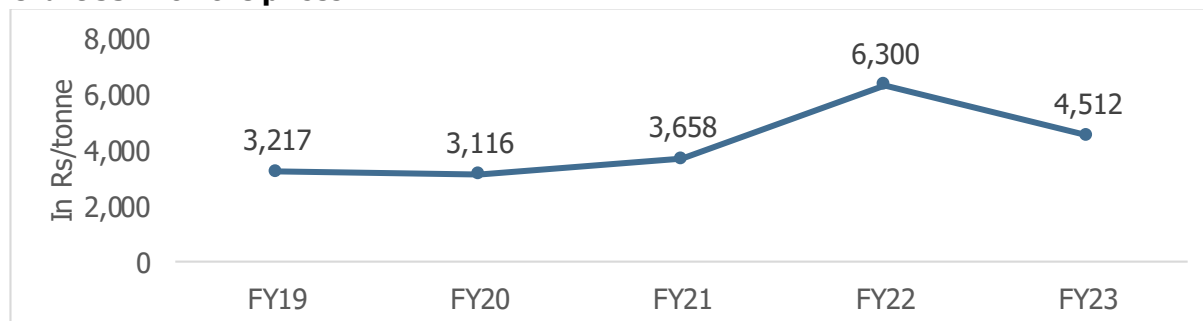
Volatility in steel prices could impacts the input cost of steel tubes and pipes manufacturers. In case of a sharp correction in steel prices, players need to sell high-cost inventory at lower prices which temporarily impacts their margin. Further if the prices remain high over a long period, the procurement from industries such as water infra, irrigation etc. gets postponed, thereby impacting the demand.

**Chart 52: Domestic Steel Prices**



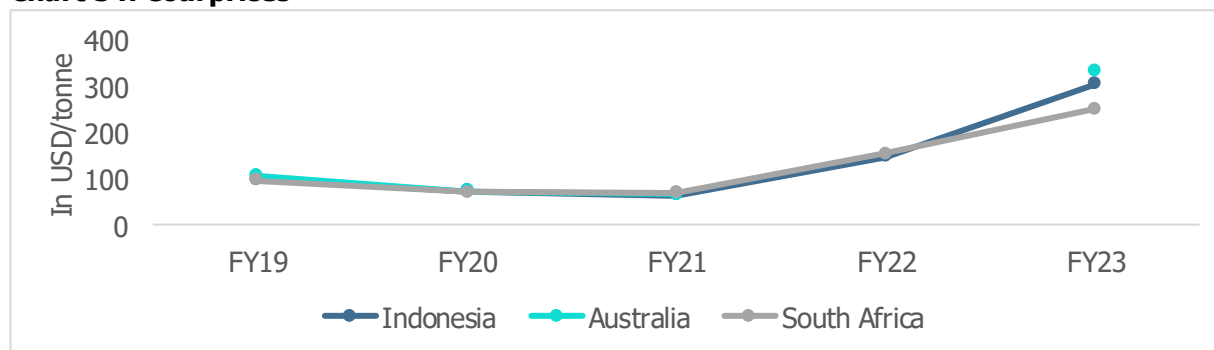
Source: CMIE

**Chart 53: Iron ore prices**



Source: CMIE

**Chart 54: Coal prices**

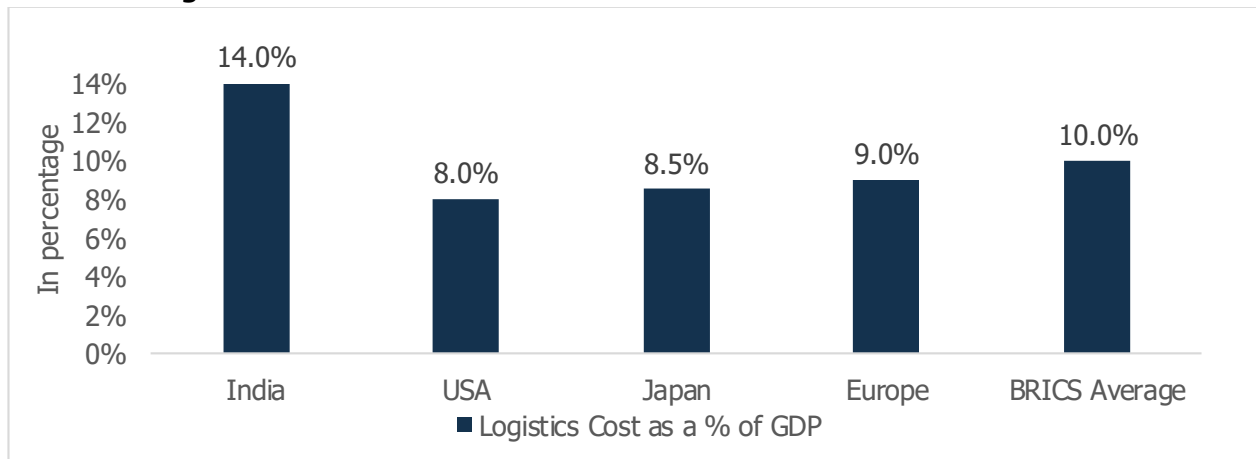


Source: CMIE

• **High logistics costs**

Logistics costs in India are significantly higher compared to global peers and account for about 14% of the GDP. The chart below shows the comparison of the share of logistics cost in GDP of India vs. developed economies.

**Chart 55 : Logistics Cost as a Share of GDP**

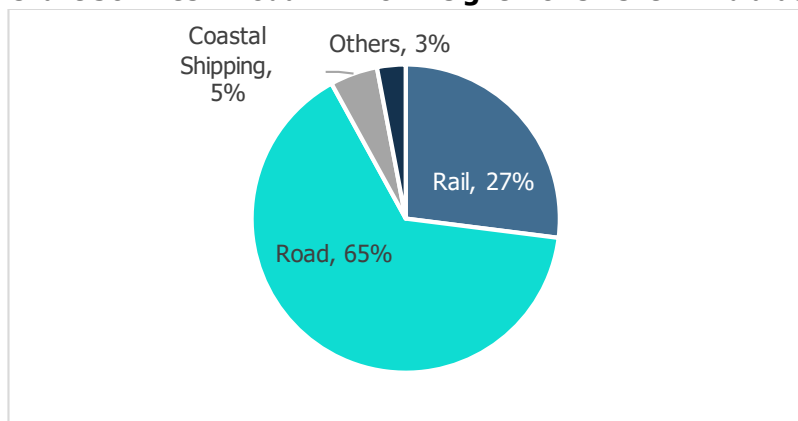


Source: Ministry of Railways, Report of the Committee on Mission 3000 million tonnes, Industry Sources

The logistics industry connects other industries to domestic and international markets, it affects the efficiency of the manufacturing global value chains, and the competitiveness of a country’s economy within these value chains. Some of the reasons that can be attributed to the higher cost of logistics in India are:

- **Inter-modal mix is skewed towards road transport:** The capacity of Indian railways is constrained and there are various challenges like rake availability and delays in rake placements. Road transport is preferred compared to railways despite it being a cheaper alternative. Road transport currently has a share of about 64% in the freight movement in the country.

**Chart 56: Inter-modal Mix for Freight Movement in India as on FY22**



Source: National Railway Plan

- **Inefficient transport vehicles:** India has a fleet of small and inefficient trucks. The highest capacity of trucks in India is 16 tonne and 25 tonne. In countries like China, the trucks have 26-40T capacity.

- **Road Infrastructure Constraints:** Underdeveloped road infrastructure leads to inefficient movement of freight. Additionally, there is a lack of 4/6 lane roads, which further results in congestion across the key routes leading to an increase in costs.

The high cost of logistics adversely affects the global competitiveness of Indian steel tubes and pipes products.

- **Global slowdown**

According to IMF, the global economic growth for CY23 is estimated at 2.8% down from 3.4% in CY22, a de-growth of around 18%. This is largely because of the turbulence in the financial sector, geo-political tensions, supply chain disruptions, tightening monetary policies, persistent inflation and hike in interest rates. The growth of key export destinations of steel tubes and pipes such as USA and Canada are projected at 1.6% and 1.5% for CY23 as compared to 2.1% and 3.4% for CY22. Currently, the steel tubes and pipes industry exports around 16% of its production which may get impacted owing to recession, inflationary pressures, supply chain disruptions etc. across the world.

- **Decarbonisation and environmental concerns**

The Indian steel industry is responsible for roughly 12% of India's carbon dioxide (CO<sub>2</sub>) emissions, surpassing the global average of 7-9%<sup>5</sup>. The emission intensity in the Indian steel industry stands at 2.55 T/TCS<sup>6</sup>, while the global average emission intensity is 1.91 T/TCS.

India has made a commitment to decrease the emissions intensity of its Gross Domestic Product (GDP) by 45% by 2030, compared to 2005 levels and achieve net zero by 2070. To support this target, the Ministry of Steel has committed to achieve a Net-Zero by 2070 and has taken a medium-term target to reduce the emission intensity of the steel sector to 2.4 T/TCS by 2030. These targets remain critical for steel industry players including steel pipes and tubes manufacturers for reducing the emissions within the set timelines. The reduction of emissions is also vital for the industry to maintain its competitiveness in export markets which is becoming increasingly environment conscious - Commencing from October 2023, the European Union (EU) has decided to implement Carbon Border Adjustment Mechanism (CBAM) – a tariff on carbon-intensive imports, which is aimed at preventing carbon leakage. The first phase of CBAM will cover iron & steel, cement, aluminum, fertilizer, electricity and hydrogen sectors.

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<sup>5</sup><https://worldsteel.org/publications/policy-papers/climate-change-policy-paper/#:~:text=In%202020%2C%20on%20average%2C%20every,between%207%25%20and%209%25.>

<sup>6</sup> Tonne of CO<sub>2</sub> equivalent per tonne of crude steel

## 6 SWOT Analysis

| <b>Strength</b>   | <b>Weakness</b>   |
|---|---|
| <ul style="list-style-type: none"> <li>• Healthy expansion plans of oil &amp; gas pipeline infrastructure</li> <li>• Government thrust on infrastructure development</li> <li>• Increase in budgetary allocation towards infrastructure, railways etc</li> <li>• Government initiatives such as 'One nation, One gas grid', 'Jal Jeevan mission' and 'Pradhan Mantri Awas Yojana'</li> <li>• Healthy demand from end-user segments such as real estate, water infrastructure, automobiles, railways, capital goods etc</li> </ul> | <ul style="list-style-type: none"> <li>• High logistic costs</li> <li>• Recession fears and weak global demand may have impact on export growth</li> <li>• Increasing environmental concerns over the carbon emissions from the steel industry</li> </ul> |
| <b>Opportunity</b>  | <b>Threat</b>   |
| <ul style="list-style-type: none"> <li>• Government's focus on increasing natural gas infrastructure</li> <li>• Expansion of water infrastructure in India as majority of households lack access to safe water on daily basis</li> <li>• Significant capacity additions in power generation expected over the next 7-8 years including renewable resources</li> </ul>   | <ul style="list-style-type: none"> <li>• Volatility in steel prices which could affect profitability of the business</li> <li>• Persistent inflation may result in low demand for products and cause delay in execution of projects</li> </ul>            |



## 7 Competitive Analysis of Key Listed Players

### 7.1 APL Apollo Tubes Ltd (APL Apollo)

#### Business Profile

- **Date of incorporation:** February 24, 1986
- **Brief description:** APL Apollo is a manufacturer of structural steel tubes and PVC pipe with a network of more than 800 dealers.
- **Plant location:** Uttar Pradesh, Maharashtra, Tamil Nadu, Telangana, Karnataka and Chhattisgarh.
- **Key Products manufactured:** uPVC pipes & fittings, uPVC column pipes, SWR drainage pipes, uPVC pressure pipes, well casting pipes, underground drainage pipes, PPR-C pipes & fittings, CPVC pipes & fittings, structural steel, pre-galvanized structural steel tubes
- **Current installed capacity:**

| Plants    | Unit (MTPA) |
|-----------|-------------|
| All Units | 1,36,000    |

The company has plans to increase its total capacity to 286,000 MTPA in coming 3-4 years.

#### Financial Profile (Standalone)

| Particulars         | FY21   | FY22   | FY23    |
|---------------------|--------|--------|---------|
| Revenue (Rs. Crore) | 6008.0 | 9062.4 | 14279.3 |
| EBITDA Margin (%)   | 3.6%   | 4.6%   | 5.2%    |
| PAT (Rs. Crore)     | 153.8  | 287.1  | 511.9   |
| PAT Margin (%)      | 2.6%   | 3.2%   | 3.6%    |

Source: Company's disclosures

### 7.2 Rama Steel Tubes Limited (RSTL)

#### Business Profile

- **Date of incorporation:** February 26, 1974
- **Brief description:** RSTL has executed more than 400 crores of projects across various sectors such as power, refinery, water distribution, highway electrification etc over the past 6 years.
- **Plant location:** Uttar Pradesh, Maharashtra and Andhra Pradesh
- **Key Products manufactured:** ERW Galvanized steel pipes and tubes, ERW Black steep pipes and tubes, scaffolding pipes and tubes, swaged poles, structural steel products, hollow sections
- **Current installed capacity:**

| Plants         | MTPA     |
|----------------|----------|
| Uttar Pradesh  | 60,000   |
| Maharashtra    | 1,32,000 |
| Andhra Pradesh | 72,000   |

It is planning to expand its operations by making investments and manufacturing value-added products in Chhattisgarh and Nigeria in the overseas market.

### Financial Profile (Standalone)

| Particulars         | FY21  | FY22  | FY23    |
|---------------------|-------|-------|---------|
| Revenue (Rs. Crore) | 325.7 | 517.3 | 1,009.9 |
| EBITDA Margin (%)   | 4.8%  | 4.9%  | 3.7%    |
| PAT (Rs. Crore)     | 5.4   | 10.5  | 16.5    |
| PAT Margin (%)      | 1.7%  | 2.0%  | 1.6%    |

Source: Company's disclosures

## 7.3 Hi-Tech Pipes Limited

### Business Profile

- **Date of incorporation:** January 02, 1985
- **Brief description:** Hi-tech pipes Ltd is a producer and marketer of steel tubes and pipes having 5 manufacturing units in India with more than 390 distributor and dealers and over 150 OEM partners.
- **Plant location:** Uttar Pradesh, Maharashtra, Gujarat and Andhra Pradesh.
- **Key Products manufactured:** Black Hollow Section and Round Pipe, Galvanised and Pre Galvanised Pipes and Cold Rolled Coils
- **Current installed capacity:**

| Plants                    | MTPA     |
|---------------------------|----------|
| Uttar Pradesh (two units) | 2,55,000 |
| Gujarat                   | 1,25,000 |
| Andhra Pradesh            | 1,20,000 |
| Maharashtra               | 80,000   |

The company has plans to expand their value added products and is tapping new opportunities in the market to achieve 1 million MTPA from 0.58 million MTPA in FY22.

### Financial Profile (Standalone)

| Particulars         | FY21    | FY22    | FY23    |
|---------------------|---------|---------|---------|
| Revenue (Rs. Crore) | 1,026.5 | 1,511.9 | 1,860.6 |
| EBITDA Margin (%)   | 5.1%    | 5.0%    | -0.4%   |
| PAT (Rs. Crore)     | 15.0    | 29.9    | 28.9    |
| PAT Margin (%)      | 1.5%    | 2.0%    | 1.6%    |

Source: Company's disclosures

## 7.4 Hariom Pipes Industries Limited

### Business Profile

- **Date of incorporation:** June 21, 2007
- **Brief description:** Hariom Pipes Industries Ltd is a steel and steel pipes manufacture in Southern India and has recently spread its distribution to Western India establishing its presence in 5 states - Maharashtra, Telangana, Andhra Pradesh, Karnataka and Tamil Nadu currently.
- **Plant location:** Telangana and Andhra Pradesh
- **Key Products manufactured:** Sponge iron, MS billets, HR strips, MS tubes & pipes, scaffolding
- **Current installed capacity:**

| Plants         | MTPA     |
|----------------|----------|
| Telangana      | 2,64,832 |
| Andhra Pradesh | 36,000   |

The company has plans to expand Furnace Unit capacity from 95,832 MTPA to ~1,04,500 MTPA and MS pipe manufacturing capacity from 84,000 MTPA to 1,32,000 MTPA.

#### Financial Profile (Standalone)

| Particulars         | FY21  | FY22  | FY23  |
|---------------------|-------|-------|-------|
| Revenue (Rs. Crore) | 254.1 | 430.6 | 643.7 |
| EBITDA Margin (%)   | 13.8% | 13.7% | 12.8% |
| PAT (Rs. Crore)     | 15.1  | 32.0  | 46.2  |
| PAT Margin (%)      | 6.0%  | 7.4%  | 7.2%  |

Source: Company's disclosures

### 7.5 Venus Pipes and Tubes Ltd

#### Business Profile

- **Date of incorporation:** February 17, 2015
- **Brief description:** Venus Pipes and Tubes Ltd is a manufacturer and exporter of stainless steel pipes and tubes and is mainly into producing seamless tubes/pipes and welded tubes/pipes.  
The company's products are used in various end-user industries such as chemical, engineering, fertilizers, power, food processing, pharmaceutical, paper, oil & gas, aerospace etc.
- **Plant location:** Gujarat
- **Key Products manufactured:** Sponge iron, MS billets, HR strips, MS tubes & pipes, scaffolding
- **Current installed capacity:**

| Plants  | MTPA   |
|---------|--------|
| Gujarat | 12,000 |

The company is planning to expand their capacity to 33,600 MTPA during FY24.

#### Financial Profile (Standalone)

| Particulars         | FY21  | FY22  | FY23  |
|---------------------|-------|-------|-------|
| Revenue (Rs. Crore) | 309.3 | 387.0 | 552.4 |
| EBITDA Margin (%)   | 12.1% | 13.3% | 12.9% |
| PAT (Rs. Crore)     | 23.6  | 31.7  | 44.2  |
| PAT Margin (%)      | 7.6%  | 8.2%  | 8.0%  |

Source: Company's disclosures

## 7.6 Good Luck India Limited

### Business Profile

- **Date of incorporation:** November 06, 1986
- **Brief description:** Good Luck India Ltd is into manufacturing of wide range of engineering structure, precision/auto tubes, forging for defence and aerospace, CR products and GI pipes.  
The company's products are used across various sectors such as infra, high speed railway, specialized infrastructure, solar, aerospace and defense components.
- **Plant location:** Uttar Pradesh and Gujarat
- **Key Products manufactured:** galvanized & cold rolled coils/sheets, galvanized & black steel tubes & hollow sections, forgings & flanges, cold drawn welded & precision tubes, engineering fabricated structures, girders, boiler support structures, pipe rack structures, chimney structures and secondary support structures, and other cold rolled value added products.
- **Current installed capacity:**

| Plants                    | MTPA     |
|---------------------------|----------|
| Uttar Pradesh and Gujarat | 3,64,000 |

### Financial Profile (Standalone)

| Particulars         | FY21    | FY22    | FY23    |
|---------------------|---------|---------|---------|
| Revenue (Rs. Crore) | 1,572.1 | 2,613.2 | 3,048.0 |
| EBITDA Margin (%)   | 7.8%    | 7.2%    | 7.2%    |
| PAT (Rs. Crore)     | 30.1    | 75.0    | 86.9    |
| PAT Margin (%)      | 1.9%    | 2.9%    | 2.9%    |

Source: Company's disclosures

## 7.7 Swastik Pipe Limited (SPL)

### Business Profile

- **Date of incorporation:** October 10, 1973
- **Brief description:** SPL is into manufacturing and exporting of steel pipes and tubes and supplies to various heavy engineering industries in India.
- **Plant location:** Haryana and Uttar Pradesh
- **Key Products manufactured:** ERW Black/Galvanized Steel Pipes & Tubes, ERW Section Pipe (Round Hollow Sections & Square Hollow Sections), Swaged Tubular Poles, Cold Rolled Steel (CR) Strips/Sheets, Steel Fabrication, Solar Structure and Steel Structures.
- **Current installed capacity:**

| Plants                  | MTPA     |
|-------------------------|----------|
| Haryana & Uttar Pradesh | 2,44,001 |

### Financial Profile (Standalone)

| Particulars         | FY22  | FY23  |
|---------------------|-------|-------|
| Revenue (Rs. Crore) | 608.7 | 711.3 |
| EBITDA Margin (%)   | 7.4%  | 4.7%  |
| PAT (Rs. Crore)     | 27.9  | 9.1   |
| PAT Margin (%)      | 4.6%  | 1.3%  |

Source: Company's disclosure

## 7.8 Vibhor Steel Tubes Pvt Ltd (VSTPL)

### Business Profile

- **Date of incorporation:** April 16, 2003
- **Brief description:** VSTPL is a manufacturer of steel products in India and majorly supplies to west and southern market companies located in Maharashtra, Gujarat, Madhya Pradesh, Telangana, Karnataka and Tamil Nadu. The company's products are used in various sectors such as water transport, industrial, electric cables, agriculture, automobiles, telecom, infrastructure and oil & gas.
- **Plant location:** Maharashtra and Telangana
- **Key Products manufactured:** Electric Resistance Welded Pipes, Hot-dipped Galvanized Pipes, Hollow section pipes, Primer painted pipes
- **Current installed capacity:**

| Plants      | MTPA     |
|-------------|----------|
| Maharashtra | 1,25,000 |
| Telangana   | 96,000   |
| Haryana     | 2,160    |

The company has plans to expand their operations by setting up manufacturing unit in Orissa upto 1,20,000 MTPA and expanding the current capacity in Telangana to 1,52,000 MTPA.

### Financial Profile (Standalone)

| Particulars         | FY21  | FY22  | FY23   |
|---------------------|-------|-------|--------|
| Revenue (Rs. Crore) | 516.6 | 823.7 | 1123.8 |
| EBITDA Margin (%)   | 4.2%  | 3.8%  | 4.2%   |
| PAT (Rs. Crore)     | 2.9   | 11.0  | 20.9   |
| PAT Margin (%)      | 0.6%  | 1.3%  | 1.9%   |

Source: Company's disclosures

## 8 Regulatory Policies/ Government Initiatives

### Measures to enhance domestic production, availability of raw materials and promote trade competitiveness

#### Anti Dumping Duty:

- In December 2022, the Indian Government has imposed an anti-dumping duty on Stainless Steel Seamless Tubes and Pipes from China which is the top exporting country for India with a share of 60% in total imports, to protect the domestic players.
- In October 2021, a notification was passed by Ministry of Finance, Government of India based on the recommendation made by Directorate General of Trade Remedies (DGTR) to extend the anti dumping duty on Stainless Steel Seamless Tubes and Pipes from China for a period of 5 years.
- The custom duty was placed on Stainless-Steel Seamless Tubes and Pipes with diameter up to and including 6 NPS, or comparable thereof in other unit of measurement, whether manufactured using hot extrusion process or hot piercing process and whether sold as hot finished or cold finished pipes and tubes, including subject goods imported in the form of defectives, non- prime or secondary grades originating in or exported from China.
- The duties levied on the products are in range from USD 114 to USD 3,801 per tonne.
- This act came effective because of continuous and massive dumping of goods from the import country despite the duties that were in effect and affected the domestic market.

#### Domestically Manufactured Iron & Steel Products (DMI&SP) :

- Domestically Manufactured Iron & Steel Products (DMI&SP) are those iron and steel products which are manufactured by entities that are registered and established in India, including in Special Economic Zones (SEZs). In addition, such products shall meet the criteria of domestic minimum value-addition.
- On 8 May, 2017, the policy was approved by Government which mandates to provide preference to DMI&SP, in Government Procurement in which a minimum value addition of 15% have taken place domestically. This has been revised to 20% in the revised policy dated 31 December, 2020.
- The policy is intended to encourage domestic production and consumption of steel as well as import substitution and promote growth in the industry.

#### Quality Control Order on Steel:

- Ministry of Steel has introduced Steel Quality Control Order (QCO) thereby banning sub-standard/ defective steel products both from domestic & imports to ensure the availability of quality steel to the industry, users and public at large.
- This measure is taken to enhance the availability of quality steel to the users. According to the Order, it is ensured that only quality steel conforming to the relevant BIS standards is made available to the end users.
- As of March 2023, the QCO covers 145 categories of steel and steel products including carbon steel, alloy steel and stainless steel. In addition, goods & articles made up of steel such as stainless-steel pipe & tubes, laminations/ cores of transformers, products of tin plate & tin free steel etc have also been notified to prevent circumvention of the Steel Quality Control Order.

**National Steel Policy (NSP), 2017:**

- NSP was introduced in 2017 with the objective to increase domestic steel production and consumption, produce high-quality steel and increasing India’s competitiveness globally. It also focuses on cost efficiency, raw material availability and research & development to achieve the overall objectives laid out under the policy. The mission defined under NSP, 2017 is as below:
  - Self-sufficiency in steel production by providing policy support & guidance to private manufacturers, MSME steel producers, and CPSEs & encourage adequate capacity additions
  - Development of globally competitive steel manufacturing capabilities
  - Cost-efficient production and domestic availability of iron ore, coking coal, and natural gas
  - Facilitate investment in overseas asset acquisitions of raw materials
  - Enhance domestic steel demand

**Table 4: Target Set Under the NSP, 2017**

| Parameter   | Projections (FY31) |
|---|--------------------|
| Total crude steel capacity (in MTPA)              | 300                |
| Total crude steel demand/ production (in MTPA)    | 255                |
| Total finished steel demand/ production (in MTPA) | 230                |
| Sponge iron demand/ production (in MTPA)          | 80                 |
| Pig iron demand/ production (in MTPA)             | 17                 |
| Per Capita Finished Steel Consumption (in kg)     | 160                |

Source: Ministry of Steel

**Atma Nirbhar Bharat Policy:**

- Government initiatives such as Make in India and Atma Nirbhar Bharat which consists of 5 pillars (Economy, Infrastructure, System, Vibrant Demography and Demand) has been playing a significant role in economic development.
- In steel tubes and pipes sector, the demand for seamless and ERW pipe sectors is increasing because of these policies. According to this policy, any purchases made by PSUs must include at least 35% local value addition in the supply of pipes. This will eventually supports domestic manufacturers in the country.
- Under this policy, a stimulus of Rs. 20 lakh crore was announced by the Governemnt to aid the country to fight against Covid-19 pandemic.

**Production Linked Incentive (PLI) Scheme:**

- To enhance the manufacturing capabilities and export market, the government has launched PLI scheme for specialty steel under Ministry of steel during July 2021 with an budgetary outlay of Rs. 6,322 crores.
- India is dependent on specialty steel as it is used in automobiles, defence, railways, space, power and renewable energy. The usage of this steel goes into manufacturing of tubes and pipes due to its properties such as heat resistance and corrosion resistance.
- The scheme covering specialty steel grades is applicable for the following product segments below:
  - i. Coated/Plated Steel Products
  - ii. High Strength/ Wear resistant Steel
  - iii. Specialty Rails

- iv. Alloy Steel Products and Steel wires
- v. Electrical Steel

- PLI is expected to boost the production of the above products in domestic industry and reduce the dependency on imports. This will not only ensure import substitution of goods and but also encourage a growth in the exports.
- Through this scheme, the production of specialty steel grade is estimated to grow more than double by FY27 to 42.2 MT from 17.6 MT in FY20, an increase of 140%.
- This incentive scheme is also expected to attract investments of about Rs.39,625 crore by FY30 in specialty steel.

#### India's Carbon Emission Reduction Targets:

- During the 26th session of the Conference of the Parties (COP26) to the United Nations Framework Convention on Climate Change (UNFCCC), which was held in Glasgow, United Kingdom, India proposed its targets for country's transition to a clean and climate resilient economy and is expected to bring investment and new technologies for the same. The climate action plans includes 5 nectar elements (Panchamrit):
  - i. To reach 500GW Non-fossil energy capacity by 2030
  - ii. To utilize 50% of its energy requirements from renewable energy by 2030
  - iii. To reduce the total projected carbon emissions by 1 billion tonne by 2030
  - iv. To reduce the carbon intensity of the economy by 45% by 2030, over 2005 levels
  - v. To achieve the target of net zero emissions by 2070

#### Programmes/ initiatives taken by the Government to aid the growth in end-user industries

- **Pradhan Mantri Awas Yojana (PMAY)**

The Pradhan Mantri Awas Yojana (PMAY) was introduced as part of the 'Housing for All' initiative with the objective of facilitating the provision of affordable housing at a reduced cost by the deadline of December, 2024. It offers various forms of support to different income groups, including interest subsidies on home loans, financial assistance for self-construction, public-private partnerships for affordable housing projects, and slum redevelopment initiatives.

The scheme also promotes the use of innovative construction technologies and the development of affordable rental housing complexes. PMAY embodies the government's commitment to ensuring housing for all and improving living conditions for people across the country.

In the Union Budget 2023-24, the government allocated Rs. 79,590 crores towards this scheme, an increase of 3% y-o-y. Under the PMAY-Urban scheme, pucca houses are provided to individuals falling within the Economically Weaker Sections/Low Income Group (EWS/LIG) and Middle-Income Group (MIG) categories, including slum dwellers. As of 10<sup>th</sup> July 2023, approximately 75.31 lakh houses have been completed, around 112.22 lakh houses have commenced construction, and approximately 118.9 lakh houses have received official sanction, while the total demand stands at approximately 112.24 lakh houses.

The PMAY-Gramin scheme aims to offer pucca houses to rural individuals lacking shelter or residing in kutcha (temporary) and dilapidated housing structures. As of 20<sup>th</sup> July 2023, a total of 232.05 lakh houses have been completed, indicating an 80% achievement rate in relation to the Ministry of Rural Development's (MoRD) target of 290.60 lakh houses.



- **Jal Jeevan Mission**

Jal Jeevan Mission is an initiative taken by the Government with an objective to provide safe and adequate drinking water through individual household tap connections by 2024 to all households in rural India. The programme will also focus on source sustainability measures as mandatory elements, such as recharge and reuse through grey water management, water conservation, rain water harvesting.

The main objectives of the programme are:

- To provide FHTC (Functional Household Tap Connection) to every rural household
- To prioritize provision of FHTCs in quality affected areas, villages in drought prone and desert areas, Sansad Adarsh Gram Yojana (SAGY) villages, etc
- To provide functional tap connection to Schools, Anganwadi centres, GP buildings, Health centres, wellness centres and community buildings
- To monitor functionality of tap connections
- To promote and ensure voluntary ownership among local community by way of contribution in cash, kind and/or labour and voluntary labour (shramdaan)
- To assist in ensuring sustainability of water supply system, i.e. water source, water supply infrastructure, and funds for regular O&M
- To empower and develop human resource in the sector such that the demands of construction, plumbing, electrical, water quality management, water treatment, catchment protection, O&M, etc. are taken care of in short and long term
- To bring awareness on various aspects and significance of safe drinking water and involvement of stakeholders in manner that make water everyone's business

The nation has been successful in providing tap connections to nearly 65% rural households in the past 4 years. This program has already connected taps to more than 19.5 crore rural households and established 12.6 crore rural household tap connections within a span of 4 years. The mission has always seen a consistent allocation in budget every year. In the Union budget 2023-24, the allocation towards this scheme has increased by Rs. 15,000 to Rs. 70,000 crore as compared to previous budget 2022-23.

- **One Nation, One Gas Grid Project**

The main objective of the Indian government to focus on developing the Natural Gas infrastructure in the country and to implement "One Nation One Gas Grid" is to increase the share of natural gas in the Primary Energy mix. As on 31<sup>st</sup> December 2022, Petroleum and Natural Gas Regulatory Board (PNGRB) has authorized 33,592 km Natural Gas Pipeline network for the development of pipelines across the country. Out of this, 23,173 km Natural Gas Pipelines were operational and a total of 12,206 km length of pipelines were under construction. The projects are being undertaken as per the timelines approved by PNGRB.

## About CARE Advisory, Research and Training Ltd (CareEdge Research)

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