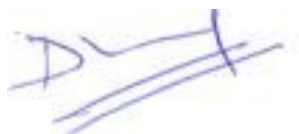


Industry chapter – Value added structural products

Final report

Submitted to Renny Strips Limited

11th December 2025



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Glossary / Abbreviations

Term	Description
3D CAD	3-Dimensional Computer Aided Design
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
BIS	Bureau of Indian standards
C + 1	China plus one strategy: A supply chain strategy that encourages companies across the globe to diversify their supply chains and manufacturing away from China to mitigate concentration risk
CAGR	Compounded Annual Growth Rate
CBAM	Carbon Border Adjustment Mechanism
CCM	Continuous Casting Machine
CEPA	Comprehensive Economic Partnership Agreement
CHQ	Cold Heading Quality
CNC	Computer Numerical Control
CO ₂ e/ton	Carbon dioxide equivalents per tonne
CPI	Consumer Price Index
CY	Calendar Year
DiFOC	Digital Inverter through Fibre Optic Communication
EBITDA	Earnings before interest, tax, depreciation and amortization
ERW pipes and tubes	Electric resistance welded black and galvanized steel pipes and tubes
FY	Financial Year (1st April to 31st March)
GDP	Gross Domestic Product
GI	Galvanized Iron
GNI	Gross National Income
GVA	Gross Value Added
H1	First half of a financial year
HR coils	Narrow width hot rolled coils
IIP	Index of Industrial Production
IMF	International Monetary Fund
JPC	Joint Plant Committee
KVA	Kilovolt-Ampere
MS Billets	Mild Steel Billets
MW	Megawatt
NSP	National Steel Policy
PAT	Profit after tax

PLI	Production Linked Incentive
QMS	Quality management system
RoCE	Return on Capital Employed
RoE	Return of Equity
Scaffolding and Formwork systems	Scaffoldings are temporary structures made of steel, aluminium, or wood/bamboo used in construction, maintenance, and repair to provide a safe platform for workers operating from heights. Formworks are temporary or permanent molds into which concrete is poured to achieve the desired structural shape. These can be made using timber, plywood, steel, plastic, or composite materials.
SEE	Specific Embedded Emissions
SIMS	Steel Import Monitoring System
SWOT	Strengths, Weaknesses, Opportunities, Threats
VMC	Vertical Machining Center

Global macroeconomic overview

GDP growth

Global gross domestic product (GDP), after growing at an average 3.42% annually between calendar year (CY) 2007 and CY 2019, contracted 2.70% in CY 2020 as the Covid-19 pandemic disrupted economic activity. However, the contraction was considerably lower than the estimates of International Monetary Fund (IMF), due to a strong rebound in manufacturing, a shift to new ways of working, and fiscal and policy support.

In CY 2021, GDP growth rebounded to 6.60%, led by Covid-19 vaccine-powered normalisation and continued fiscal support. However, it slowed to 3.80% in CY 2022, 3.50% in CY 2023, 3.30% in CY 2024, and an estimated 3.20% in CY 2025 due to supply-constraint-driven high inflation, tightening financial conditions, the long-term effects of the pandemic, and geopolitical uncertainties.

The pace of global growth is projected to continue to trend below the historical annual average of 3.42% (CY 2007 to CY 2019) in CY 2026, owing to restrictive monetary policies and withdrawal of fiscal support¹.

Five-year historical data and growth forecast

Region-wise historical GDP growth rates and outlook

The IMF has estimated global GDP growth of 3.2% for CY 2025 and projected it at 3.1% in CY 2026, considering geopolitical uncertainties, increasing geoeconomic fragmentation, tighter inflation-tackling monetary policies and fiscal support withdrawal amid high debt and extreme weather conditions.

Real GDP growth (%)	CY 2020	CY 2021	CY 2022	CY 2023	CY 2024	CY 2025P	CY 2026P		CY 2030P
World	-2.70	6.60	3.80	3.50	3.30	3.20	3.10		3.10
Key economies									
US	-2.10	6.20	2.50	2.90	2.80	2.00	2.10		1.80
Euro area	-6.00	6.40	3.60	0.40	0.90	1.20	1.10		1.10
Japan	-4.20	2.70	1.00	1.20	0.10	1.10	0.60		0.50
UK	-10.30	8.60	4.80	0.40	1.10	1.30	1.30		1.40
China	2.30	8.60	3.10	5.40	5.00	4.80	4.20		3.40
India	-5.80	9.70	7.60	9.20	6.50	6.60	6.20		6.50
Key global regions									
Emerging and developing Asia	-0.50	7.80	4.70	6.10	5.30	5.20	4.70		4.50
Middle East and Central Asia	-2.30	4.70	6.40	2.60	2.60	3.50	3.80		3.70
Emerging and developing Europe	-1.80	7.20	0.50	3.60	3.50	1.80	2.20		2.40
Latin America and the Caribbean	-6.90	7.40	4.30	2.40	2.40	2.40	2.30		2.60
Sub-Saharan Africa	-3.10	3.80	4.40	3.70	4.10	4.10	4.40		4.60

¹ IMF – World Economic Outlook report of October 2025

Note: For India, CY 2019 refers to fiscal 2020 and so on

Source: Crisil Intelligence, industry, IMF

Definitions of key regions, as per the IMF, are as follows:

1. *Euro area represents Austria, Belgium, Croatia, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Portugal, Slovak Republic, Slovenia, and Spain*
2. *Emerging and developing Asia represents China, India, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam*
3. *Middle East and Central Asia represents Afghanistan, Algeria, Armenia, Azerbaijan, Bahrain, Djibouti, Egypt, Georgia, Islamic Republic of Iran, Iraq, Jordan, Kazakhstan, Kuwait, Kyrgyz Republic, Lebanon, Libya, Mauritania, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tajikistan, Tunisia, Turkmenistan, United Arab Emirates, Uzbekistan, West Bank and Gaza, and Yemen*
4. *Emerging and developing Europe represents Russia, Türkiye, Poland, Romania, Ukraine, Hungary, Belarus, Bulgaria, Serbia, Albania, Bosnia and Herzegovina, Kosovo, Moldova, Montenegro, and North Macedonia*
5. *Latin America and the Caribbean represents Antigua and Barbuda, Argentina, Aruba, The Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines*
6. *Sub-Saharan Africa represents Nigeria, Angola, Gabon, Chad, Equatorial Guinea, South Africa, Kenya, Ghana, Côte d'Ivoire, Cameroon, Senegal, Zambia, Ethiopia, Tanzania, Democratic Republic of the Congo, Uganda, Mali, Burkina Faso, Republic of Congo, South Sudan, Benin, Botswana, Cabo Verde, the Comoros, Eswatini, Lesotho, Mauritius, Namibia, São Tomé and Príncipe, Seychelles, Burundi, Central African Republic, Eritrea, The Gambia, Guinea, Guinea-Bissau, Liberia, Madagascar, Malawi, Mozambique, Niger, Rwanda, Sierra Leone, Togo, and Zimbabwe*

US

The country's GDP growth, which accelerated from 2.50% in CY 2022 to 2.90% in CY 2023, would have been higher if not for high inflation and the subsequent increase in interest rates by the US Federal Reserve (Fed) to curb it, which in turn impacted spending. The economy, which grew at a relatively benign 2.80% in CY 2024, is projected to expand at a slower pace of 2.00% in CY 2025 and 2.10% in CY 2026² due to fiscal policy tightening, subdued consumer spending as a result of a continued fall in disposable incomes, a deceleration in wage growth, and accumulated savings.

Euro area

While the pace of growth slowdown in the euro area was less pronounced than in the US in CY 2023, it was only a marginal 0.40% because of lower policy rates than the US and support from the NextGenerationEU bonds, which boosted economic activity in the region. The slowdown in CY 2023 was due to the spillover effect from geopolitical issues in Europe, with some economies more affected, and tighter financial conditions. Prices of gas, which is the key source for electricity and heating, rose owing to constrained availability amid high demand, leading to increased manufacturing expenses. That said, the GDP has accelerated to 0.90% in CY 2024 and its growth rate is expected to remain at 1.20% in CY 2025. However, key economies in the region are expected to post diverging trends. Germany is expected to contract faster than expected, whereas France and Spain are expected to see some recovery, helped by tourism.

Japan

Pent-up demand, a surge in inbound tourism, accommodative policies, and a rebound in auto exports pushed up the country's economic growth rate to 1.20% in CY 2023. However, in CY 2024, a negative shift in the terms of trade (ratio of export to import prices) from higher energy import prices, as well as lower consumption as price inflation outpaced wage growth, brought the economic growth rate to 0.10%. The growth rate is expected to rebound to 1.10% in CY 2025 as domestic demand stabilises.

² All forecasts correspond to those in IMF's October 2025 World Economic Outlook report

UK

The UK's GDP growth decelerated from 4.80% in CY 2022 to 0.40% in CY 2023, reflecting tighter monetary policies to curb stubbornly high inflation and lingering impact of the terms-of-trade shock from high energy prices. That said, growth was somewhat supported by a fiscal package announced in September 2022. For CY 2024, GDP growth stood at 1.10% owing to a boost in the construction and services sectors. The economy is expected to grow a 1.30% each in CY 2025 and CY 2026, supported by an expected increase in household consumption and government spending.

China

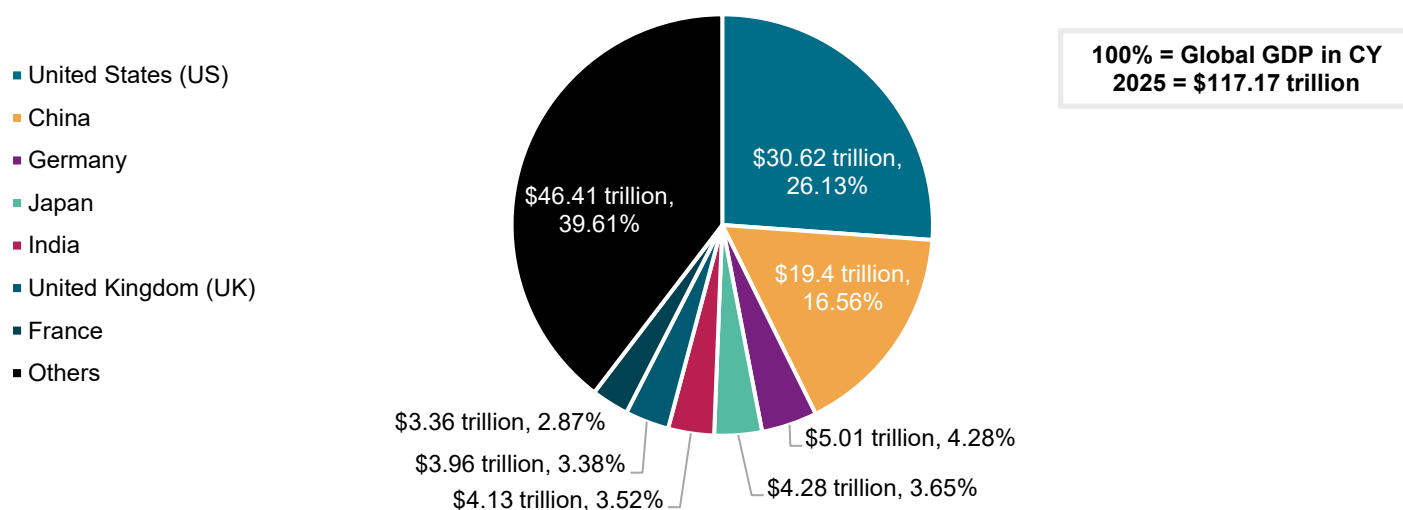
China's GDP grew 8.60% in CY 2021, recovering strongly from growth of 2.30% in CY 2020, on the back of pent-up domestic demand and strong growth in exports owing to a slowdown in industrial activities in the rest of the world. China will continue to contain its macroeconomic stimulus following a property-driven downturn and is, therefore, projected to witness economic growth of more than 4% each in CY 2025 and CY 2026.

India

After a pandemic-induced 5.80% contraction in CY 2020 (corresponding to fiscal 2021), the country's GDP bounced back, growing 9.70%, 7.60%, 9.20%, and 6.50% in CY 2021, CY 2022, CY 2023, and CY 2024 (corresponding to fiscals 2022, 2023, 2024, and 2025), respectively. The strong growth in these years, which made India the fastest-growing major economy, was driven by strong pent-up demand across key sectors such as manufacturing and construction. The growth trend is expected to sustain over the next five years, with the IMF projecting an annual growth rate of 6-7%.

Global GDP overview (CY 2025)

Global GDP (current prices) split by region (value in \$ trillion, % share)



Source: Crisil Intelligence, IMF, Industry

In CY 2025, the US is estimated to be the largest economy with an estimated GDP (current prices) of \$30.62 trillion, accounting for about 26.13% of global GDP (current prices) of \$117.17 trillion. China ranks second, with its GDP accounting for 16.56% of global GDP. India is expected to remain the fifth largest economy with a GDP of \$4.13 trillion, accounting for 3.52% of global GDP.

China-plus-one strategy – Impact on global economy

Overview

In the 1990s and early 2000s, China emerged as the leading global manufacturing hub because of high availability of cheap labour, favourable government policies and vast infrastructure investments. However, in the mid to late 2010s, China began to lose its competitiveness owing to the emergence of the China-plus-one (C+1) strategy.

C+1 is a supply-chain strategy that encourages companies across the globe to diversify their supply chains and manufacturing away from China to mitigate concentration risk. Although this diversification strategy first gained global attention in the early 2010s, it wasn't until CY 2018 that it became a major focus, as global companies started to reduce their dependence on China by establishing alternative production bases in other countries.

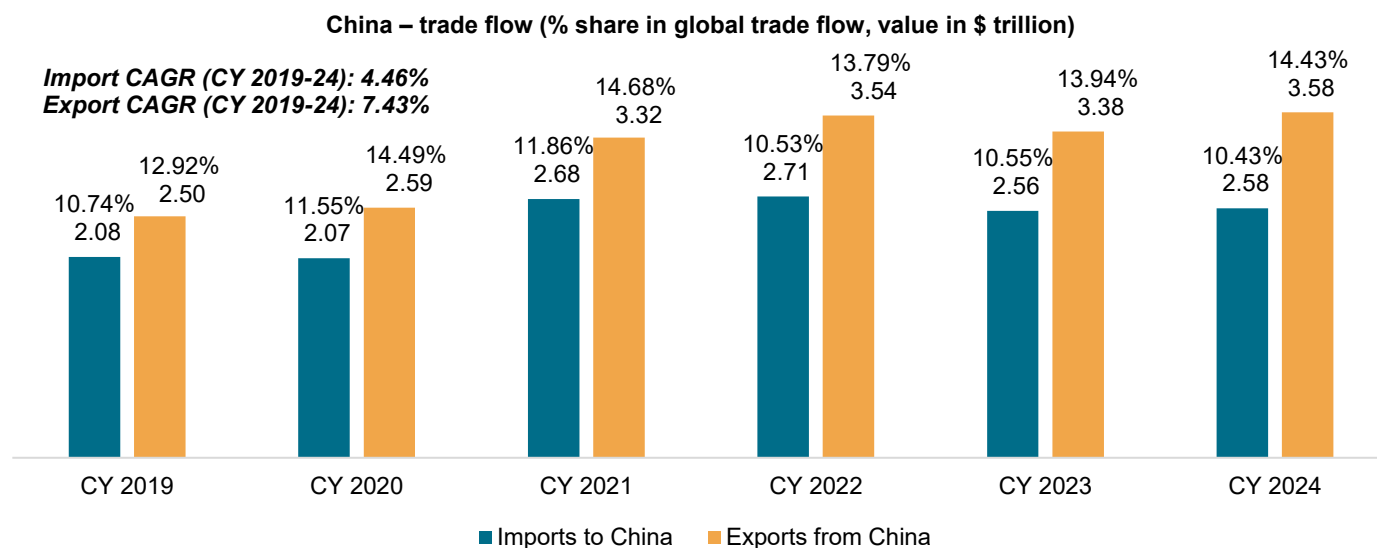
The early drivers of the C+1 strategy included the following:

1. Rising labour costs in China: As the Chinese economy started growing at a rapid pace, wages of its traditionally cheap labour force also began increasing. With the increase in labour costs, China started losing its cost-competitiveness, particularly in industries that were highly labour intensive. For instance, minimum wage rate in the province of Shanghai in China in terms of the Indian rupee stands at Rs 30,000-35,000 per month as of July 2025. On the other hand, in India, as per the April 2025 notification from the Ministry of Labour & Employment, the minimum wage rate (including variable dearness allowance) for an unskilled worker in India stands at Rs 16,000-17,000 per month in a "C" category area, at Rs 20,000-21,000 per month in a "B" category area, and at Rs 24,000-25,000 in "A" category area³. This makes minimum wage rate in "A" category area of India 25-30% lesser than that in China's Shanghai. The increasing wages in China prompted global companies to diversify their manufacturing operations to countries such as India and Vietnam, which offered favourable business environments with lower labour costs.
2. Geopolitical and regulatory tensions: Geopolitical tensions also forced companies to shift some of their manufacturing operations outside China. For example, trade tensions between the US and China, which started in CY 2018, led to the introduction of tariffs and trade barriers, making Chinese goods more expensive and less competitive in global markets. Further, regulatory challenges such as strict environmental regulations and bureaucratic hurdles added to the complexity and costs of doing business in China. For instance, ease of doing business in China was impacted when foreign multinational companies were required to share proprietary information with the local Chinese companies as a condition for access to markets. These policy-related barriers, along with their unpredictable nature, prompted global companies to explore other manufacturing locations to reduce the impact of tariffs and to maintain cost-competitiveness and geographical diversification.
3. Covid-19 pandemic: The pandemic exposed vulnerabilities and risks associated with over-reliance on China. Amid the pandemic, China declared lockdowns, which led to factory closures causing severe global supply-chain disruptions. As a result, companies struggled to source materials (raw materials or finished goods) for their business operations, thus exposing the risk of over-dependence on a single geographic region. This prompted companies to accelerate their diversification efforts to mitigate such disruptions in the future by spreading their production operations across other countries.
4. Economic development and proactive approach of other countries: Many countries, mostly in South and Southeast Asia, including India, positioned themselves as alternative manufacturing locations by investing heavily in

³ "Area A" typically refers to major metropolitan centers and highly urbanized areas, "Area B" includes large cities and important industrial hubs, and "Area C" encompasses smaller towns and rural areas, with the minimum wage rates generally decreasing from A to C.

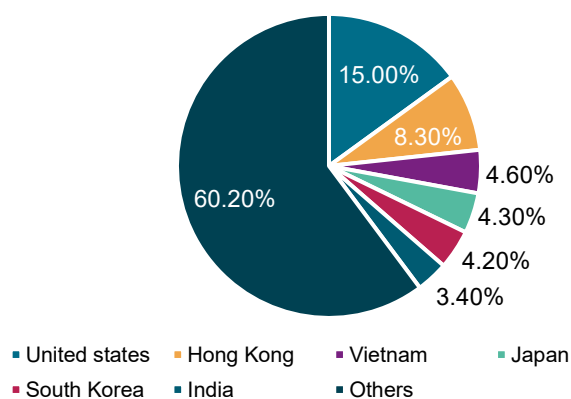
infrastructure, simplifying regulations, improving ease of doing business and offering foreign direct investment (FDI)-related incentives.

Key impacts of the C+1 strategy

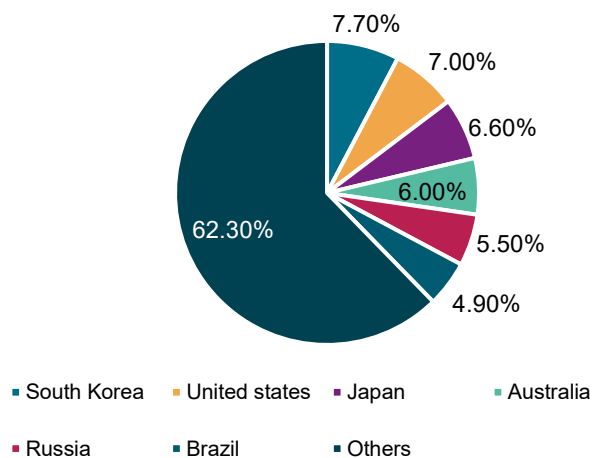


Source: Crisil Intelligence, industry, UN Trade and Development (UNCTAD)

Split of merchandise exported from China in CY 2024
(100% = \$3.58 trillion)



Split of merchandise imported to China in CY 2024
(100% = \$2.58 trillion)



Source: Crisil Intelligence, industry, UNCTAD

Between CY 2019 and CY 2024, merchandise imports to China (in value terms) and merchandise exports from China (in value terms) clocked a compound annual growth rate (CAGR) of 4.46% and 7.43%, respectively. The CAGR of exports from China was greater than the CAGR of global trade flow (equal to 5.08%), leading to an increase in the share of exports from China in global trade flow from 12.92% in CY 2019 to 14.43% in CY 2024. However, the share decreased from the peak of 14.68% in CY 2021 and has remained relatively rangebound thereafter. This implies that after CY 2021, China's exports (in value terms) have been impacted by the C+1 strategy.

In CY 2024, the US emerged as the largest export market for China, with a share of about 15.00% in merchandise exports from China (in value terms). It was followed by Hong Kong and Vietnam, with respective shares of 8.30% and 4.60%. South Korea, the US, and Japan were the largest suppliers of merchandise to China, with respective shares of 7.70%, 7.00%, and 6.60% in merchandise imports to China (in value terms).

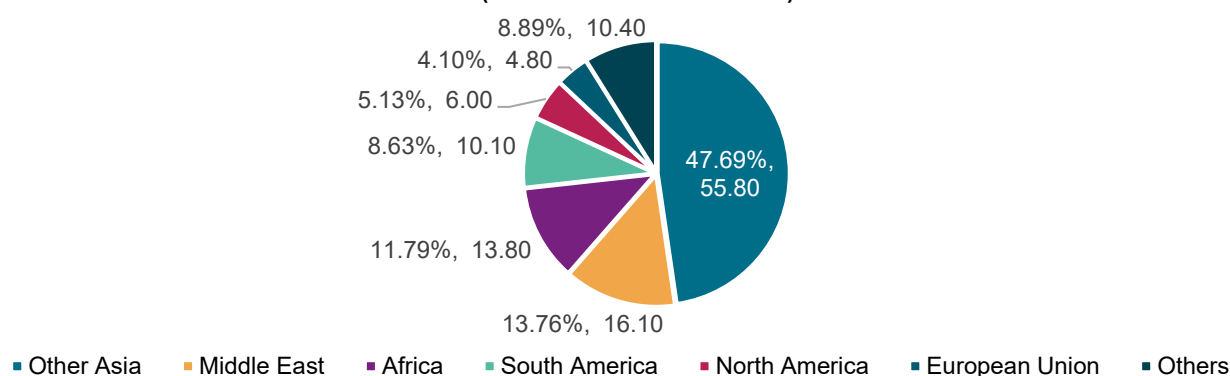
The C+1 strategy will continue to benefit South and Southeast Asian economies such as India, Vietnam, Thailand and Indonesia because of the following reasons:

- (a) Geographical proximity to China: This factor will help companies in gradually moving out of China. The proximity to China would be crucial for those companies that still want to maintain some level of production in China, while initiating diversification to other countries.
- (b) Cost-competitiveness: These countries offer cost-related advantages to companies looking to diversify their operations. Low labour and real estate costs relative to other parts of the world will make these economies strong contenders to become manufacturing hubs for global companies. For example, the average real estate costs in China are 2-3 times the average real estate prices in India. Further, the minimum wage rate in China is around 40-45% higher than that in India.
- (c) Favourable government policies: Governments in these economies have been working to create business environments that are free from regulatory and bureaucratic hurdles. Further, they are investing heavily in infrastructure to provide sustainable solutions for business needs.
- (d) Political, economic and demographic advantages: These countries are home to a large working-age population, which would result in better and cheaper availability of skilled and unskilled labour. Further, proactive policies towards becoming manufacturing hubs and potential economic development opportunities will pave the way for companies to become beneficiaries of the diversification strategy.

Indian steel industry - a potential beneficiary of the C+1 strategy

In CY 2024, China exported about 117 million tonnes of steel, as per the World Steel Association. Other Asian countries accounted for about 48% of steel exported from China (in volume terms). The Middle East and African regions emerged as the second and third largest markets for China-made steel, respectively, with respective shares of 14% and 12%.

Split of steel exported from China in CY 2024 (% share, volume in million tonnes)
(100% = 117 million tonnes)



Source: World Steel Association, Crisil Intelligence, industry

The Indian manufacturing industry is likely to benefit from multinational companies' strategic decision to move their manufacturing bases out of China. The steel and related products manufacturing industry in India is expected to be a

major beneficiary of the C+1 strategy because of a supportive supply-side and demand-side business environment, the government's policy frameworks, and the following factors:

- (a) Government initiatives and policy support: The government has introduced schemes such as Production Linked Incentive (PLI), under which various incentives are provided to industries such as specialty steel, electronics and automobiles, which act as end-use industries for the steel sector. As per the PLI scheme, an incentive outlay of Rs 1.97 trillion (equivalent to over \$26 billion) is underway for 14 key sectors to enhance the country's manufacturing capabilities and exports. This scheme, which will benefit many sectors in India, is also expected to increase demand for steel, in particular stainless steel, in the country. For example, with the strong focus of automobile companies on weight reduction of vehicles by substituting conventional steel with other types of material such as stainless steel, demand for stainless steel is expected to increase, benefiting the domestic stainless steel manufacturing industry.

Further, in CY 2017, the government introduced National Steel Policy (NSP), which aims to increase steel production in India to 300 million tonnes by CY 2030 from about 195-200 million tonnes as of CY 2024 (or fiscal 2025). To achieve this target, the government would be prompted to provide incentives to foreign steel manufacturers for setting up steel production facilities in India.

Additionally, Ministry of Steel under the Government of India is preparing 'Green Steel Mission' with an estimated cost of Rs 150 billion for helping the Steel Industry to reduce carbon emission and progress towards the Net Zero Target. The Mission includes PLI Scheme for Green Steel, incentives for use of renewable energy, and mandates for Government agencies to buy Green Steel. During this process, India has become the first nation to have unveiled the Taxonomy of Green Steel. "Green Steel" shall be defined in terms of percentage greenness of the steel, which is produced from the steel plant with CO₂ equivalent emission intensity less than 2.2 tonnes of CO₂e per tonne of finished steel (tfs). The greenness of the steel shall be expressed as a percentage, based on how much the steel plant's emission intensity is lower compared to the 2.2 t-CO₂e/tfs threshold. Based on the greenness, the Green steel shall be rated and certified (issued on a yearly basis) as follows:

Category of green steel	Characteristics
Five-star green-rated steel	Steel with emission intensity lower than 1.6 t-CO ₂ e/tfs
Four-star green-rated steel	Steel with emission intensity lower than between 1.6 and 2.0 t-CO ₂ e/tfs
Three-star green-rated steel	Steel with emission intensity lower than between 2.0 and 2.2 t-CO ₂ e/tfs
Ineligible for green-rating	Steel with emission intensity higher than 2.2 t-CO ₂ e/tfs

tCO₂e/Tfs: tonnes of carbon dioxide equivalent per tonne of finished steel

These policies will help improve the quantity and quality of steel produced in India. The policies will align domestic manufacturing with the global trends and also help India-made steel avoid climate related trade barriers, making India's steel sector a geopolitically viable alternative to China. For example, European union's Carbon Border Adjustment Mechanism (CBAM), which will impose carbon tariffs on imported steel from 2026, will significantly impact the steel exporters which majorly manufacture steel through coal-heavy processes. However, with the initiatives to promote green steel manufacturing, India is expected to remain in a competitive position for the exports to the European countries.

- (b) Growing export opportunities: The government has been implementing policies, such as the PLI scheme, Make in India scheme, free-trade agreement scheme, Trade Infrastructure for Export Scheme (TIES), Market Access Initiative (MAI) scheme, schemes for improvement of ease of doing business in the country, and schemes related

to FDI and reforms thereof, to promote manufacturing capability and export of steel and value-added products. For example, as per the PLI scheme (1 and 1.1) for specialty steel, a total investment of Rs 198.50 billion has been made up to February 2025, out of the total committed investment of Rs 271.06 billion. Under MAI, an export promotion scheme envisaged to act as a catalyst to promote India's export on a sustained basis, a yearly budget of about Rs 2 billion is earmarked, which is expected to increase further in the coming years.

Further, multiple global markets want to reduce dependence on steel from China. The Indian steel industry can look at catering to requirements of steel and related products in such markets. Moreover, the Indian stainless steel industry is focusing heavily on producing sustainable and environmentally friendly products, which is expected to drive significant demand in export markets in the coming years.

- (c) Growing demand from key industries: Key industries such as building and construction, infrastructure, and automobiles rely heavily on steel. With global automobile companies also considering shifting their manufacturing plants to countries other than China, they will look to source their steel requirements from India, which is the second largest producer of steel (behind China).

India, in a bid to become an attractive business destination for global companies considering the C+1 strategy, has been investing heavily in developing infrastructure. This way, the domestic steel industry will benefit from the ongoing infrastructure development in the country. Similarly, the domestic stainless steel industry is expected to expand as significant growth in demand and a favourable material substitution trend (towards stainless steel) are expected in several end-use industries.

- (d) Raw material availability: India has significant reserves of iron ore and coal, which are the key raw materials/consumables in steel production. In particular, as per the Indian Bureau of Mines, with total reserves of 33.28 billion tonne of haematite (Fe_2O_3) and magnetite (Fe_3O_4) as of May 2023, India is one of the leading producers of iron ore in the world. Further, the Ministry of Coal suggests that India's total estimated coal reserves stood at 378.21 billion tonne in fiscal 2023. A company seeking options beyond China will prefer a country such as India for its steel production facility set-up, as India will provide a secure supply of raw materials.
- (e) Existing expertise in India: India, being the second largest producer of crude steel in the world (production volume of 144.30 million tonnes of crude steel in fiscal 2024, as reported by the Joint Plant Committee), is one of the top choices for global industries shifting their supply base from China. India is home to key integrated steel producers such as Steel Authority of India, JSW Ltd and Tata Steel Ltd, which provides it with a strong competitive edge against other countries from the perspective of availability of skilled workforce and technology. The low cost of workforce gives India an additional advantage, encouraging global industries to install their production bases in the country. The government is consistently taking steps towards upskilling the country's workforce. For example, the government has approved the National Scheme for Industrial Training Institute (ITI) Upgradation and the Setting up of five National Centres of Excellence for Skilling. The scheme will lead to an investment outlay of Rs.600 billion, which will be co-funded by Central government (Share: Rs.300 billion), State government (Share: Rs.200 billion) and Industry (Share: Rs.100 billion). The scheme will focus on upgradation of 1,000 Government ITIs in hub and spoke arrangement with industry aligned courses and capacity augmentation of five National Skill Training Institutes (NSTIs). As a result, over a five-year period, 2 million youth will be skilled through courses that address the human capital needs of industries. The scheme will focus on ensuring alignment between local workforce supply and industry demand, thereby facilitating industries, including MSMEs, in accessing employment-ready workers.
- (f) Trade policies and tariffs: US's continuous imposition of tariffs on the Chinese imports has made Chinese products costlier in the US. Indian exporters can take advantage of the situation by supplying higher volumes to

the US. The US firms are also willing reduce their over-reliance on China by importing more from viable alternatives such as India.

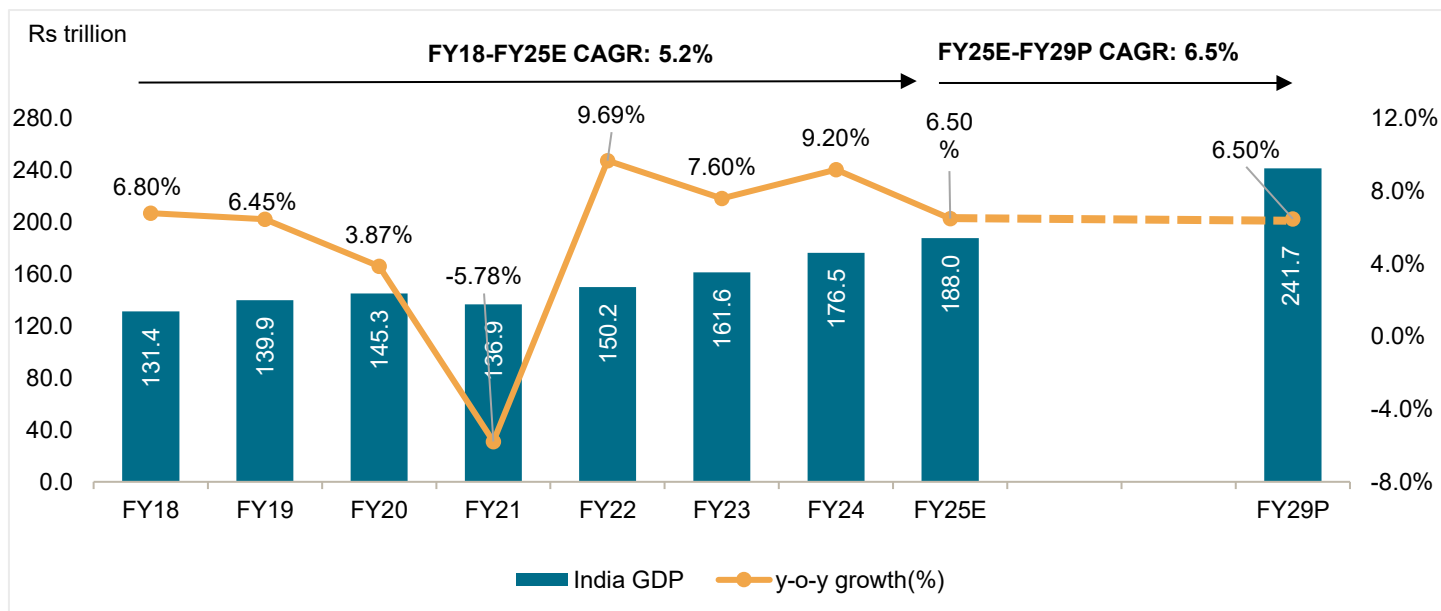
India has also been proactive in signing new trade agreements and increasing diplomatic coordination with multiple countries, thus enabling to position itself as a trusted alternative in global trade flows.

India's macroeconomic overview

GDP trend and composition by sector

India's GDP is estimated to have expanded at a 5-year CAGR of 5.2% to Rs 188 trillion in fiscal 2025. In fiscal 2021, GDP contracted 5.8% because of pandemic-induced lockdowns. However, it grew 9.7% and 7.6% in fiscals 2022 and 2023, respectively, driven by strong pent-up demand across sectors, primarily manufacturing and construction.

India's GDP trend



E: Estimated; P: Projected

Source: Central Statistical Office (CSO), Crisil Intelligence

In fiscal 2024, India's GDP grew 9.20% on-year owing to strong output from the services and manufacturing sectors and robust infrastructure spending. Despite support from the demand side on account of expectation of a normal monsoon and easing inflation, Crisil estimates a moderation in GDP growth to 6.50% in fiscal 2025 owing to rising borrowing costs, geopolitical tensions and fiscal consolidation, leading to lower capital expenditure (capex) by the government.

On-year demand-side real GDP growth (%)

At constant 2011-2012 prices	FY20	FY21	FY22	FY23	FY24	FY25E
Private consumption	5.17%	-5.29%	11.68%	7.47%	5.56%	7.20%
Government consumption	3.95%	-0.77%	0.02%	4.30%	8.14%	2.28%
Gross fixed capital formation	1.15%	-7.10%	17.52%	8.45%	8.78%	7.06%
Exports	-3.38%	-6.96%	29.60%	10.32%	2.20%	6.34%
Imports	-0.84%	-12.62%	22.09%	8.92%	13.75%	-3.67%

E: estimated

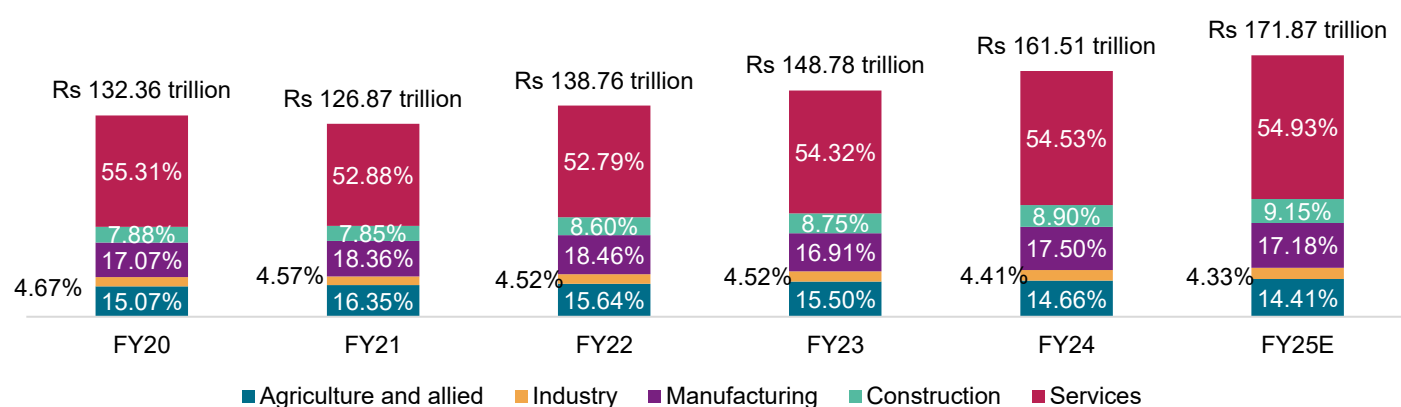
Source: Crisil Intelligence, CSO

On the demand side, investment (gross fixed capital formation) is estimated to have cooled moderately in fiscal 2025 (7.06% on-year in fiscal 2025 vs 8.78% the previous fiscal). Private consumption expenditure is estimated to have grown by 7.20% in fiscal 2025 vs 5.56% last fiscal. Several government-led schemes, such as Make in India and Aatmanirbhar

Bharat, and the government's push for turning India into a manufacturing hub have supported private sector investments in the existing and new-age sectors.

India's net exports are also estimated to have improved significantly in fiscal 2025, with an export growth estimate of 6.34% in fiscal 2025, a substantial increase from the 2.20% growth recorded in the previous fiscal. On the other hand, imports are estimated to have contracted by 3.67%, in stark contrast to the 13.75% growth seen in the previous fiscal. This divergence in export and import trends is likely to boost India's net exports, thereby supporting the trade balance. The improvement in exports can be attributed to the government's efforts to enhance competitiveness and diversify export markets. Meanwhile, the decline in imports reflects its initiatives to promote domestic production and reduce dependence on foreign goods.

Split of gross value added (GVA) by type of economic activity (% split, Rs trillion)



- Note:
1. Industry includes mining and quarrying, electricity, gas, water supply, and other utilities
 2. Services include those related to trade, hotels, transport, communication, broadcasting, finance, real estate, public administration, defence and professional and others

E: estimated

Source: Crisil Intelligence, CSO

Total GVA increased from Rs 132.36 trillion in fiscal 2020 to Rs 171.87 trillion in fiscal 2025, at a CAGR of about 5.36%. Over this period, the only on-year decline came in fiscal 2021, when GVA reduced about 4.15% on account of pandemic-induced lockdowns. It rebounded about 9.38% on-year in fiscal 2022 owing to pent-up demand across sectors.

The share of the services sector remained the highest, accounting for 53-55% of overall GVA during each of the six fiscals. It was followed by the manufacturing and agriculture sectors (contributed 17-18% and 15-16%, respectively).

On-year increase in supply-side gross value added by economic activity

At basic 2011-12 price	FY20	FY21	FY22	FY23	FY24	FY25E
Agriculture and allied	6.16%	4.01%	4.62%	6.26%	2.66%	4.63%
Industry*	-0.49%	-6.25%	8.28%	7.15%	6.06%	4.40%
Manufacturing	-2.97%	3.07%	9.96%	-1.74%	12.30%	4.52%
Construction	1.62%	-4.61%	19.91%	9.11%	10.41%	9.35%
Services^	6.43%	-8.35%	9.18%	10.33%	8.99%	7.19%

*Industry includes mining and quarrying, electricity, gas, water supply, and other utilities

[^]Services include those related to trade, hotels, transport, communication, broadcasting, finance, real estate, public administration, defence, and professional and other services

Source: Crisil Intelligence, CSO

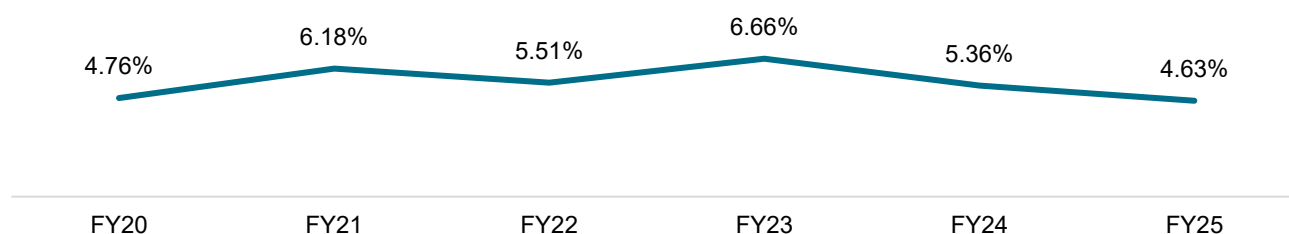
On the supply side, India's agriculture and allied sectors maintained their growth trajectory until fiscal 2023, before slowing down in fiscal 2024. However, they are estimated to have rebounded in fiscal 2025. Estimates of fiscal 2025 showed that apart from agriculture which accelerated to 4.63% (versus 2.66% in the previous fiscal), the growth in all other sectors contracted with manufacturing decelerating by around 8 percentage points to 4.52% (versus 12.30% in the previous fiscal).

Performance of key macroeconomic indicators

Trend in inflation based on Consumer Price Index

India's average Consumer Price Index (CPI) inflation rate was ~5.52% between fiscals 2020 and 2025. In fiscal 2023, it increased to 6.66%, led by surging food prices, before moderating slightly to an average of 5.36% in fiscal 2024. Although core and fuel inflation numbers have remained low, food inflation has been keeping CPI inflation above the Reserve Bank of India's medium-level target rate of 4%. For instance, food inflation remained at 8.36%, 9.69%, and 8.20%, respectively, in the months of September, October, and November of 2024, primarily led by acceleration in foodgrain, meat and fish prices and slower deflation in edible oils.

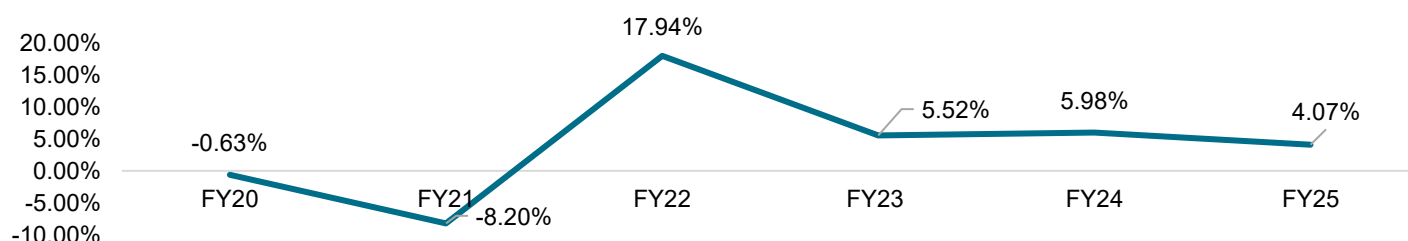
In fiscal 2025, CPI inflation is estimated to have moderated further to 4.63% on average, driven by an expected dip in food inflation, aided by a favourable monsoon and a high base effect.



Source: National Statistical Office (NSO), Ministry of Commerce and Industry, Crisil Intelligence

Index of Industrial Production growth trend

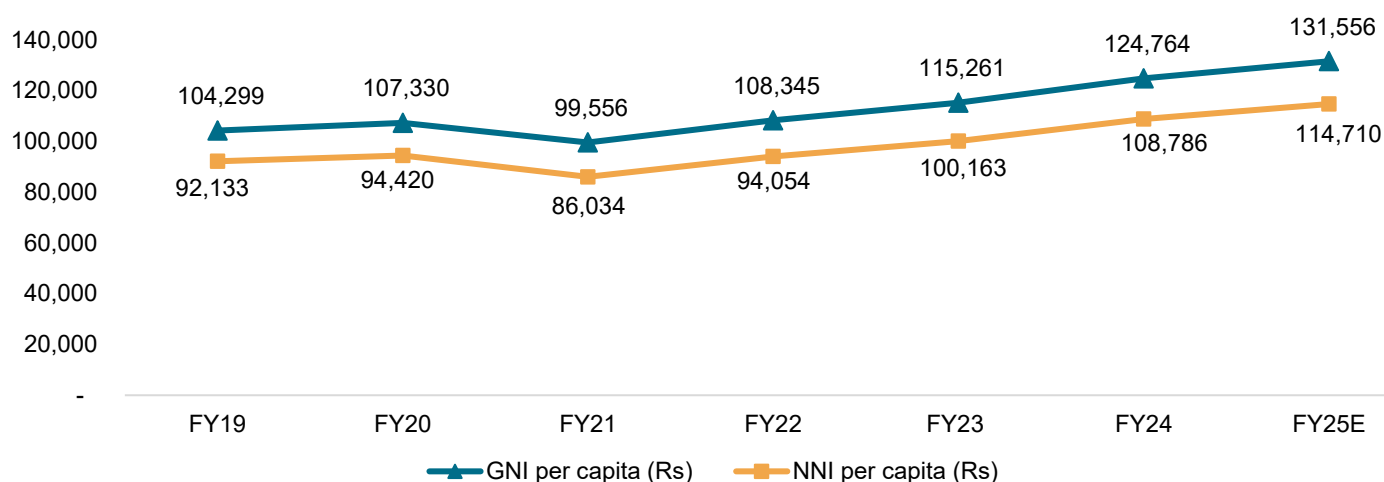
India's Index of Industrial Production (IIP) remained in the negative territory in fiscals 2020 and 2021, before surging robustly to 17.94% in fiscal 2022 on the account of resumption of economic activities post lifting of pandemic induced lockdowns. The index then moderated to 5.52% in fiscal 2023 as the economy came back to track after the pent-up demand got absorbed in fiscal 2022. It then increased to 5.98% in fiscal 2024 on the account of a strong pick-up in the manufacturing of electrical equipment and basic metals. In fiscal 2025, average IIP moderated to 4.07% primarily due manufacturing sector's growth deceleration amid geopolitical uncertainties.



Source: NSO, Ministry of Commerce and Industry, Crisil Intelligence

Per capita GDP and income growth trend

A country's gross national income (GNI) is derived by adding receipts from overseas to the GDP and subtracting the payments made overseas in the form of wages, salaries and property income. Net national income (NNI) is obtained by subtracting asset depreciation from GNI. The growth trend in both GNI per capita and NNI per capita has largely been positive except for fiscal 2021, when they declined 7.24% and 8.88% on-year, respectively. The decline was primarily due to a dip in GDP during the fiscal. However, in fiscal 2022, GNI per capita and NNI per capita grew 8.83% and 9.32%, respectively, on-year, owing to a rebound in demand, labour market and consumer sentiment. The growth in fiscals 2023 and 2024 amounted to 6-6.5% and 8-9%, respectively for both indicators, on account of economic stabilisation and a positive growth outlook. In fiscal 2025, the on-year growth in per capital GNI and NNI slowed to approximately 5.40% each.



Note: E – estimated; FY24 and FY25 values are as per the first revised estimates and provisional estimates, respectively, of annual GDP for FY 2024-2025 by NSO

Source: NSO, Ministry of Commerce and Industry, Ministry of Statistics and Programme Implementation, Crisil Intelligence

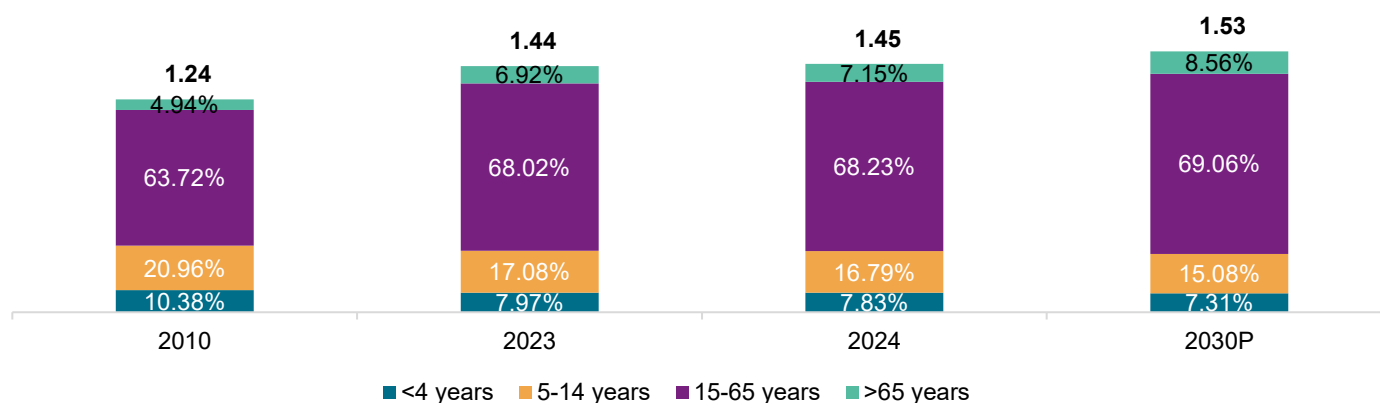
India's demographic overview

As per the World Bank's data, India's population stood at 1.45 billion in 2024, growing by over 16% from 1.24 billion in 2010. The population of India is expected to reach 1.53 billion by 2030.

Population split by age bracket

The median age of India's population has been growing steadily and is expected to continue growing going forward. It is validated by the fact that the percentage of population over 65 years of age has grown from 4.94% in 2010 to 7.15% in 2024 and is projected to reach 8.56% by 2030.

Total population (billion) and % split by age bracket



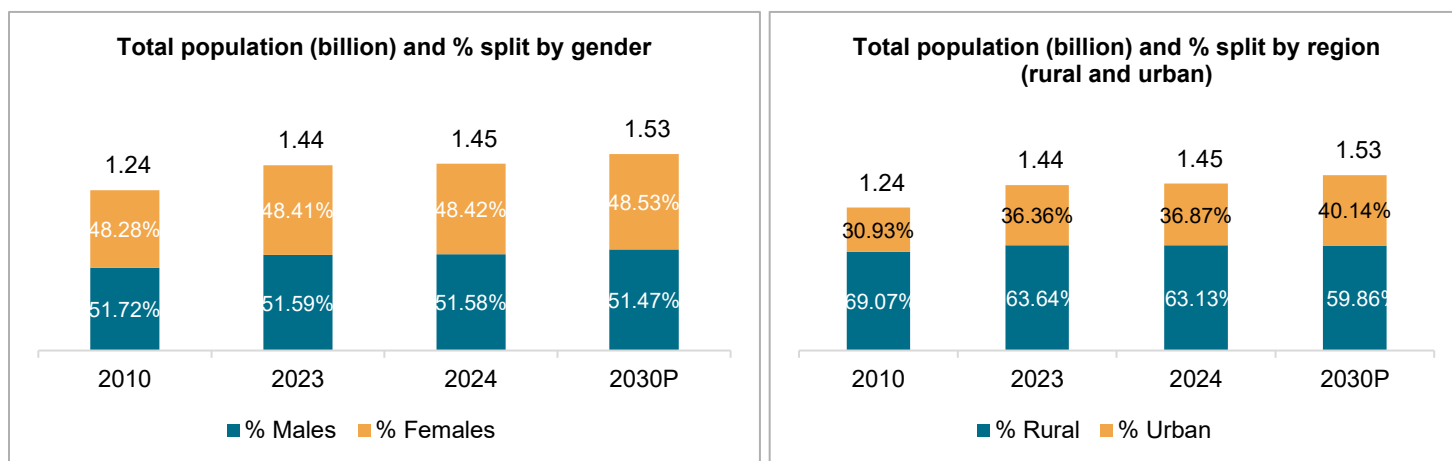
Note: E – estimated; P – projected

Source: World Bank, industry, Crisil Intelligence

Population split by gender and region

The gender ratio (number of males per 100 females) has been declining steadily and is expected to continue the trend going forward as well. The proportion of females increased slightly from 48.28% in 2010 to 48.42% in 2024 and is expected to further increase to 48.53% by 2030.

India has also been urbanising rapidly on account of the higher concentration of employment opportunities in urban areas and an increasing desire for improved living standards. The proportion of urban population increased from 30.93% in 2010 to 36.87% in 2024. Going forward, the proportion of urban population is expected to increase to 40.14% in 2030.



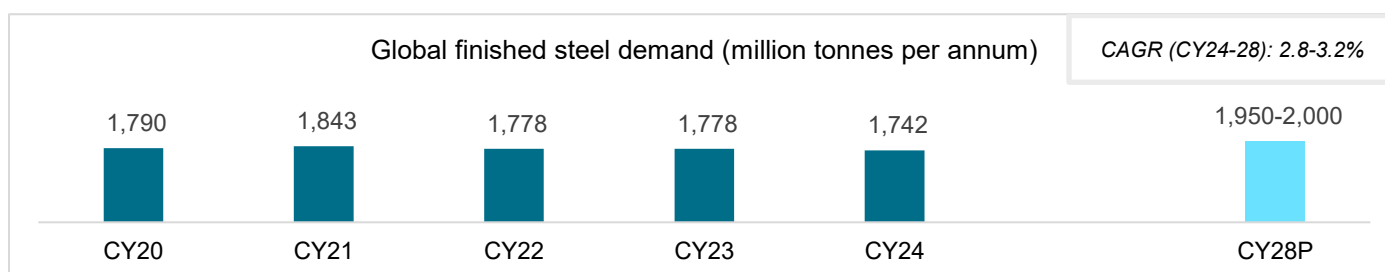
Note: E – estimated; P – projected

Source: World Bank, industry, Crisil Intelligence

Global steel industry overview

In calendar year (CY) 2021, the global demand for finished steel rose on-year by around 3% to 1,843 million tonnes per annum from 1,790 million tonnes per annum in CY 2020. It then dipped to 1,778 million tonnes per annum in CY 2022 and remained rangebound in CY 2023. In CY 2024, the demand again fell 2% on-year to 1,742 million tonnes per annum. The global finished steel demand, thus, largely remained rangebound between CY 2020 and CY 2024 primarily owing to lower demand from key steel consumer China in light of its property sector downturn along with increased global interest rates amid escalating geopolitical tensions during the period.

Global finished steel demand (million tonnes per annum)



Note: P – projected

Source: Crisil Intelligence, World Steel Association

Going forward, the global demand for finished steel is expected to log a CAGR of 2.8-3.2% between CY 2024-2028 to clock 1,950-2,000 million tonnes per annum in 2028 on the account of an expected growth in demand from markets other than China. A positive industrial activities' outlook in the European union, an expected recovery in automobile and construction sectors in Japan, and an anticipated growth in multiple sectors including building, construction, infrastructure, engineering, and packaging in India will drive the global steel demand in the next 4 years.

Country-wise finished steel demand trend (million tonnes)

Country	CY20		CY21		CY22		CY23		CY24	
	Volume	Share	Volume	Share	Volume	Share	Volume	Share	Volume	Share
China	1,008.70	56.34%	954.40	51.78%	926.70	52.11%	905.10	50.90%	856.60	49.16%
India	89.30	4.99%	106.20	5.76%	116.10	6.53%	132.80	7.47%	147.90	8.49%
US	80.00	4.47%	97.10	5.27%	94.50	5.31%	90.50	5.09%	89.10	5.11%
Japan	52.60	2.94%	57.40	3.11%	55.00	3.09%	53.40	3.00%	51.40	2.95%
South Korea	49.20	2.75%	56.00	3.04%	51.30	2.88%	54.70	3.08%	47.80	2.74%
Russia	42.30	2.36%	43.90	2.38%	41.70	2.34%	44.60	2.51%	43.70	2.51%

Source: Crisil Intelligence, industry

Note:

1. Volume column is finished steel demand in the respective country for the corresponding year in million tonnes
2. Share column represents the percentage share of the respective country in the overall global finished steel demand in the corresponding year

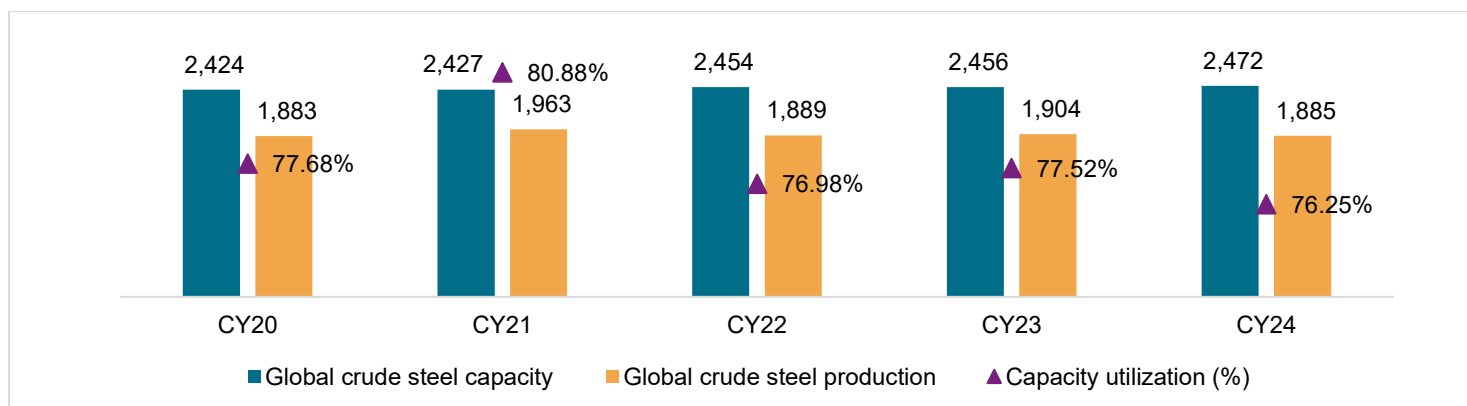
The share of China in global finished steel demand fell from 56.34% in CY 2020 to 49.16% in CY 2024 primarily due to reduced demand from its struggling real estate industry. India, on the other hand, increased its share in global finished steel demand from 4.99% in CY 2020 significantly to 8.49% in CY 2024. This surge in steel demand in the country happened as a result of growth in major steel consuming sectors such as construction, infrastructure, automobile and consumer goods.

Other major steel consumers such as US, Japan, South Korea, and Russia have managed to keep their respective shares in global steel demand rangebound.

Global steel supply

Global crude steel capacity and production

Global crude steel capacity and production levels largely remained rangebound between calendar years 2020 and 2024. This happened primarily on the account of production cut calls taken by China, the leading steel producer in the world during the period, owing to its weak internal demand amid profitability and tariff related concerns.



CY: calendar year

Note:

1. CY24 values are provisional;

2. Global crude steel capacity and Global crude steel production are in million tonnes

Source: Crisil Intelligence, World Steel Association

Further, global macroeconomic factors (global interest rate hikes), declining manufacturing and construction activities (notably in China), and geopolitical tensions across the globe disrupting supplies of raw materials and energy (especially to and from Europe) kept utilization rates of global crude steel industry under pressure.

Country-wise crude steel production trend (million tonnes) and % share in global crude steel production

Country	CY20		CY21		CY22		CY23		CY24		CAGR (CY20-24)
	Prod.	Share (%)	Prod.	Share (%)	Prod.	Share (%)	Prod.	Share (%)	Prod.	Share (%)	
China	1,064.7	56.54%	1,035.2	52.74%	1,019.1	53.95%	1,028.8	54.03%	1,005.1	53.32%	-1.43%
India	100.3	5.33%	118.2	6.02%	125.4	6.64%	140.8	7.39%	149.4	7.93%	10.47%
Japan	83.2	4.42%	96.3	4.91%	89.2	4.72%	87.0	4.57%	84.0	4.46%	0.24%
US	72.7	3.86%	85.8	4.37%	80.5	4.26%	81.4	4.28%	79.5	4.22%	2.26%
Russia	71.6	3.80%	77.0	3.92%	71.7	3.80%	76.0	3.99%	71.0	3.77%	-0.21%
South Korea	67.1	3.56%	70.4	3.59%	65.8	3.48%	66.7	3.50%	63.6	3.37%	-1.33%

Source: Crisil Intelligence, World Steel Association

1. Prod. column is crude steel production in the respective country for the corresponding year in million tonnes

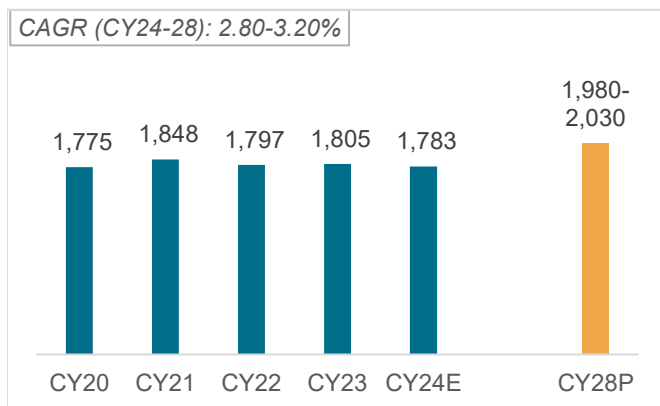
2. Share (%) column represents the percentage share of the respective country in the overall global crude steel production in the corresponding year

Amid decreasing production levels in China and South Korea and a near-flat production growth in Japan and Russia; India stood out by recording a crude steel production volume CAGR of over 10% between 2020 and 2024. This high growth in India's crude steel production volume is attributed to strong growth in domestic steel demand owing to Indian government's strong push for infrastructure development and an increased demand from housing, automobile and capital goods sectors.

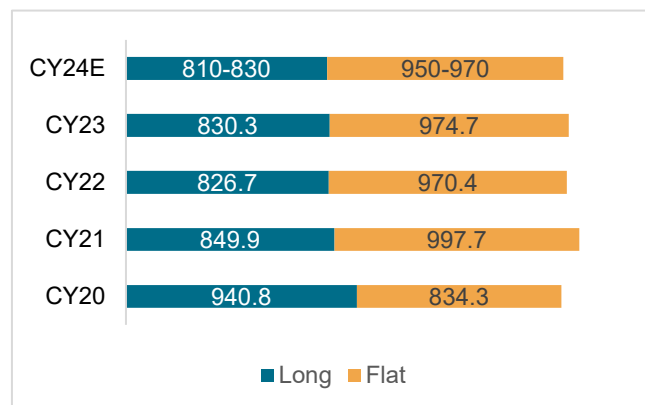
Global finished steel production

Global finished steel production remained rangebound during the period between CY 2020 and CY 2024, primarily owing to production cuts in steel mills in China, the single largest steel producer in the world.

Global finished steel production (million tonnes)



Global flat and long steel production (million tonnes)



P – projected; E- Estimated

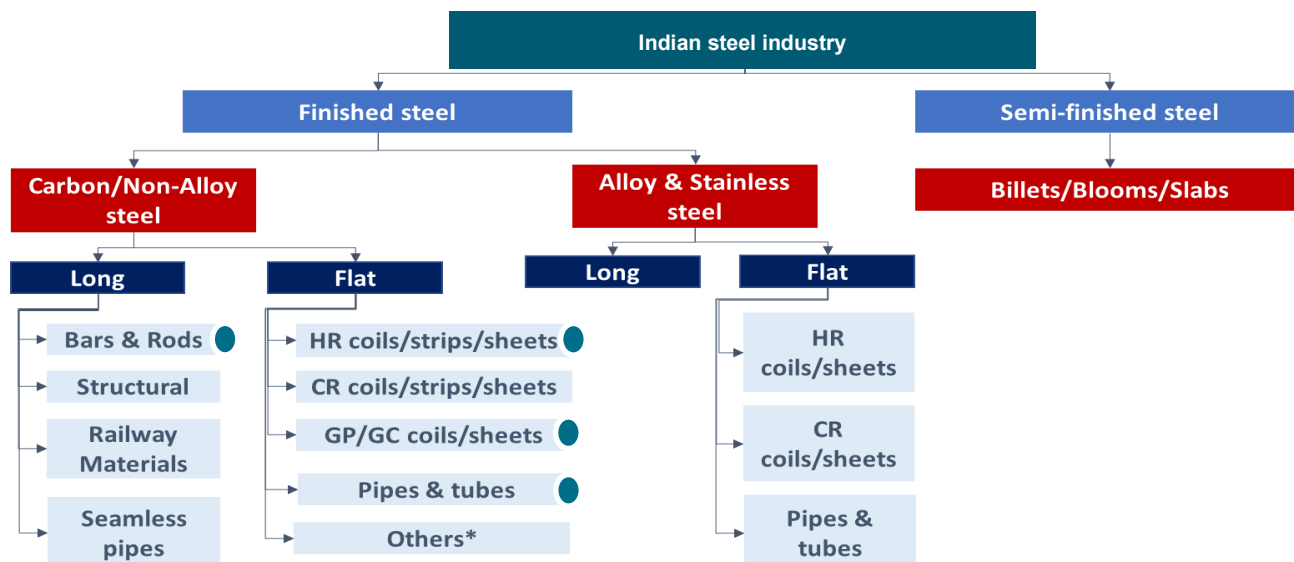
Note: The actuals of global finished steel production and the long-flat production split for CY24 are not available; the above representations give estimated values for both for CY24.

Source: Crisil Intelligence, World Steel Association

Going forward, the global finished steel production is expected to grow at a CAGR of 2.80-3.20% between CY 2024-2028 in line with the expected global demand growth for the period.

Domestic steel industry

Domestic steel industry structure and overview



*Prime plates, hot strip mill plates, colour-coated coils/sheets, electrical coils/sheets, tin plates, tin-free steel, tin mill black plates, pipes, etc.

Note: Pipes and tubes included under both flat carbon/non-alloy steel and flat alloy & stainless steel segments include hollow section pipes and welded pipes. Further, seamless pipes under the long segment also include hollow section.

Source: Crisil Intelligence, industry

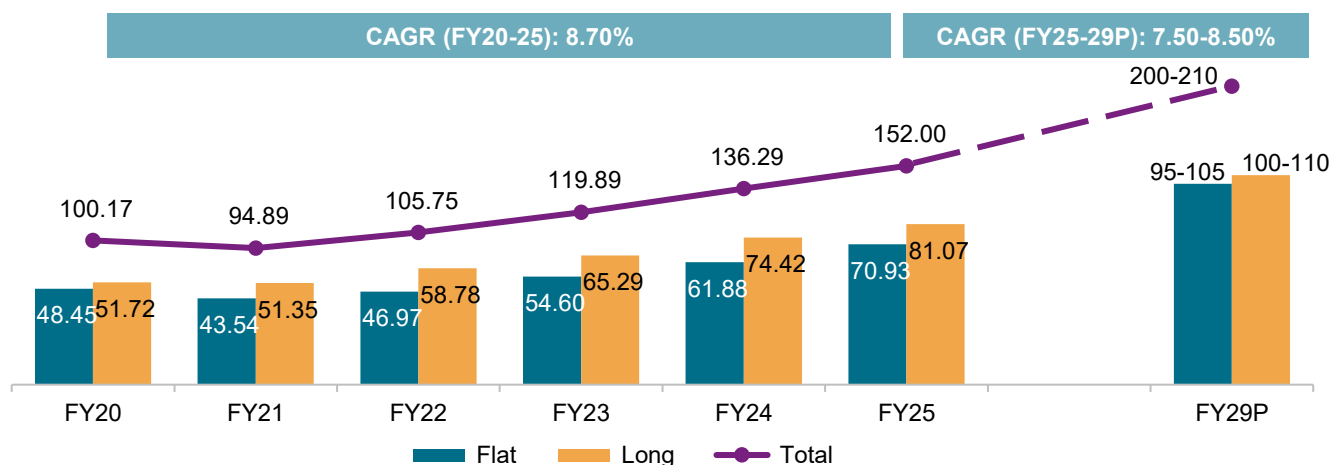
The highlighted product segments are used to make structural components such as scaffoldings

Domestic steel demand

Finished steel demand

The domestic steel industry logged a CAGR of 8.70% between fiscals 2020 and 2025, reaching a demand of 152.00 million tonnes per annum in fiscal 2025 from 100.17 million tonnes in fiscal 2020. The spurt in demand is attributable to the aggregate effect of growth in the automobile, infrastructure and construction sectors as well as market volatility faced during the pandemic.

Finished steel demand by product type (million tonnes per annum)



E: Estimated; P: Projected

Source: JPC, Crisil Intelligence

Note: FY 2025 figures are as per provisional data released by JPC in its March 2025 report

In fiscal 2023, domestic steel demand grew 13.37% on-year to 119.89 million tonnes per annum owing to pent-up demand from key end-use sectors after a pandemic-led slowdown in the previous few fiscals, restoration of economic activities and revival of consumer sentiment post the pandemic. In fiscal 2024, the domestic demand for finished steel further increased 13.68% on-year, owing to higher demand from the automobile sector on account of higher disposable income, housing and construction sector, led by government's affordable housing schemes, and government-led capital expenditure in the infrastructure segment in the run-up to the 2024 general elections. Demand for domestic finished steel is further estimated to have grown 11.53% on-year to 152 million tonnes per annum in fiscal 2025, driven by strong demand from building and construction, infrastructure and capital goods sectors.

Demands for flat and long steel are estimated to have increased at respective CAGRs of 7.92% and 9.41% between fiscals 2020 and 2025. While demand growth for flat steel was supported by the automobile and construction segments, that for long steel was fuelled by the infrastructure development sector.

Domestic demand for finished steel is expected to log a CAGR of 7.5-8.5% over fiscals 2025-29, reaching 200-210 million tonnes per annum, led by healthy growth prospects in the building and construction, infrastructure, and automobile sectors, and boosted by government's National Steel Policy, 2017.

• Building and construction

Steel demand from the building and construction sector accounts for 35-40% of aggregate finished steel demand (amounting to 55-60 million tonnes per annum in fiscal 2025). Over fiscals 2025-29, demand for steel from the segment is expected to clock a CAGR of 6.5-8.5%, driven by:

- The government's focus on affordable housing

For instance, as of February 2025, the government of India has approved the proposal for construction of additional 20 million houses under Pradhan Mantri Awaas Yojana- Gramin (PMAY-G) during the period between fiscals 2025 and 2029. Further, under Pradhan Mantri Awas Yojana-Urban (PMAY-U) 2.0, financial assistance will be provided to 10 million urban poor and middle-class families for construction of houses.

- Robust rural housing demand against the backdrop of the government's ongoing focus on rural development and higher minimum support prices

- Improvement in urban housing demand owing to increased commercialisation of tier-3 and tier-4 cities, led by better infrastructure connectivity

• Infrastructure

The infrastructure segment is the second-largest driver of steel demand and accounts for 30-32% of the aggregate finished steel demand (amounting to 45-50 million tonnes per annum in fiscal 2025) and is expected to grow at a CAGR of 8-10% between fiscals 2025-2030. The sub-segments of roads, highways, and railways (including metros) cumulatively contribute to 50-55% of domestic finished steel demand coming from the infrastructure segment. Healthy demand from the sector is expected to persist, driven by increasing developmental activities and the swift pace of execution in steel-intensive segments such as railways. Other significant contributors include the irrigation, dams, water supply and sanitation sectors.

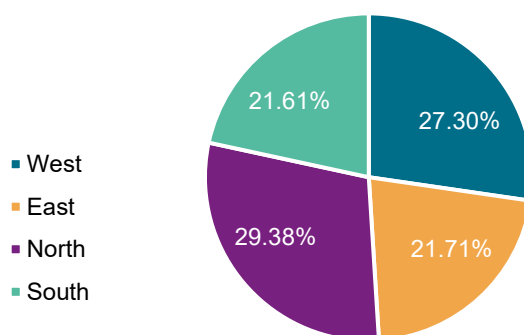
The government's strong focus on infrastructure development through various centrally funded schemes such as national infrastructure pipeline, Bharatmala Pariyojana, Sagarmala Pariyojana, etc. and high budgetary allocations towards the segment are expected drive the growth in the segment. For example, in the union budget of fiscal 2025-26, government allocated a capital expenditure of Rs 11.21 trillion for the infrastructure sector.

• Automotive

The automotive sector accounts for 5-7% of aggregate finished steel demand, which amounts to a demand of 8-10 million tonnes per annum. Despite a slowdown in fiscal 2022, the following fiscal witnessed resolution of supply-side issues and improved consumer sentiment, thereby fuelling growth in the sector. The industry is expected to log a CAGR of 5-7% between fiscals 2025 and 2029 owing to growing preference for personal vehicles, easy financing options, improving living standards and income levels of rural as well as urban population.

Finished steel demand split by region (FY 2024)

Region-wise domestic demand for finished steel (FY24) (100% = 136.3 million tonnes)



Source: JPC, Crisil Intelligence

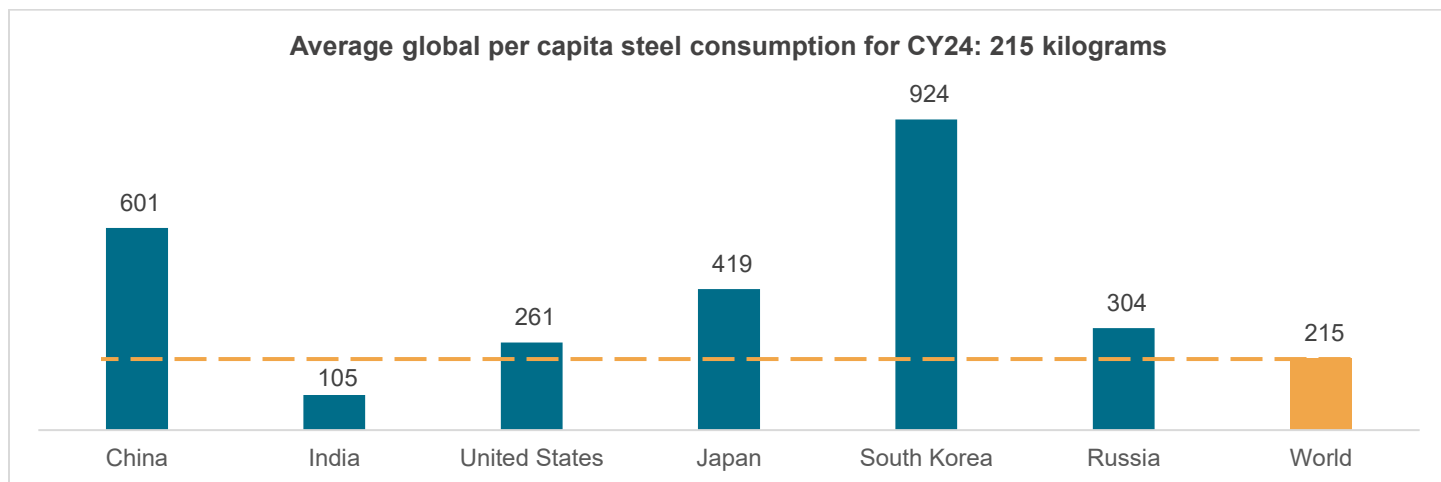
Note 1: Estimated region-wise domestic demand for finished steel is based on the volume of dispatches of finished steel in different states and regions

Note 2: Numbers for FY25 regional split are not known

The northern and western regions are the largest markets of finished steel in India, accounting for 29.38% and 27.30%, respectively, of the overall finished steel consumption. These regions are undergoing rapid urbanisation, leading to increased finished steel products' usage in building, construction and infrastructure segments. Further, multiple end-use industries are being rapidly set up, especially in the northern states of Haryana, Uttar Pradesh and Rajasthan and western states of Gujarat and Maharashtra, further contributing to demand for finished steel products in these regions.

Additionally, manufacturing plants of major automobile companies such as Maruti Suzuki, Hyundai and Bajaj, among others, are set up in the two regions.

Per capita steel consumption in India vis-à-vis global benchmarks (in kilograms)



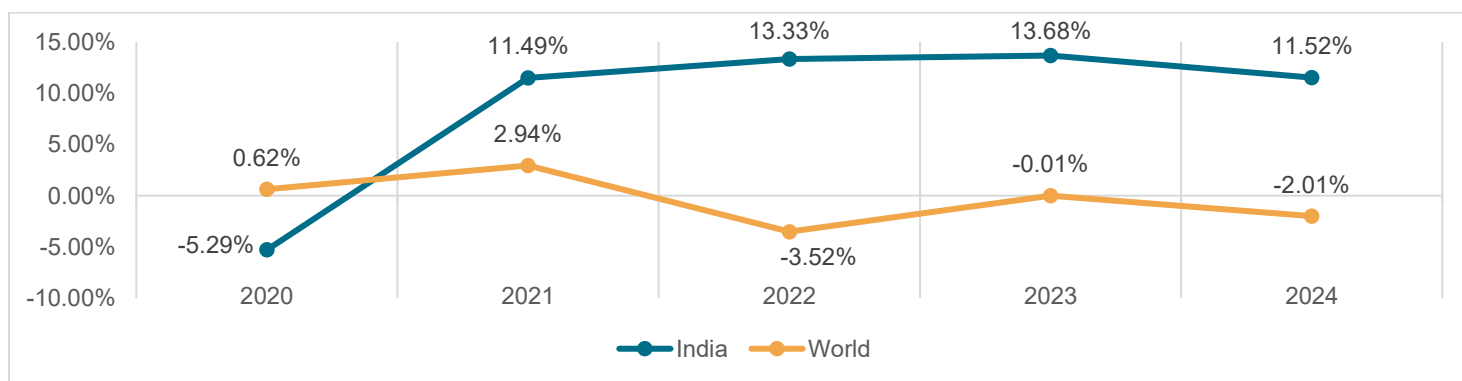
Note: For all countries except India, volume refers to 2024. For India, demand volume is based on fiscal 2025.

Source: World Steel Association, World Bank

The global average per capita steel consumption was 215 kg in 2024. However, since the US, Russia, Japan and China have higher steel usage owing to significantly higher investment in infrastructure projects, their per capita steel consumption stood above the world average.

In fiscal 2025, India's per capita steel consumption stood at 105 kg, which was less than half of the global average per capita steel consumption. However, with increasing thrust on infrastructure development, the underpenetrated Indian steel market holds considerable growth potential.

On-year demand % growth for Indian steel demand vis-à-vis global steel demand



Source: World Steel Association, JPC, Crisil Intelligence, industry

Note: Years mentioned on the horizontal axis correspond to calendar years for the world; for India, these correspond to nearest fiscals. For example, year 2019 corresponds to FY20 and so on

After the pandemic and subsequent lockdown impacted year of 2020, steel demand in India rebounded strongly. As a result, the on-year growth rates for Indian steel domestic demand remained well above near- and sub-zero global steel demand growth rates during the period between 2021 and 2024. This gap between steel demand for India and the rest of

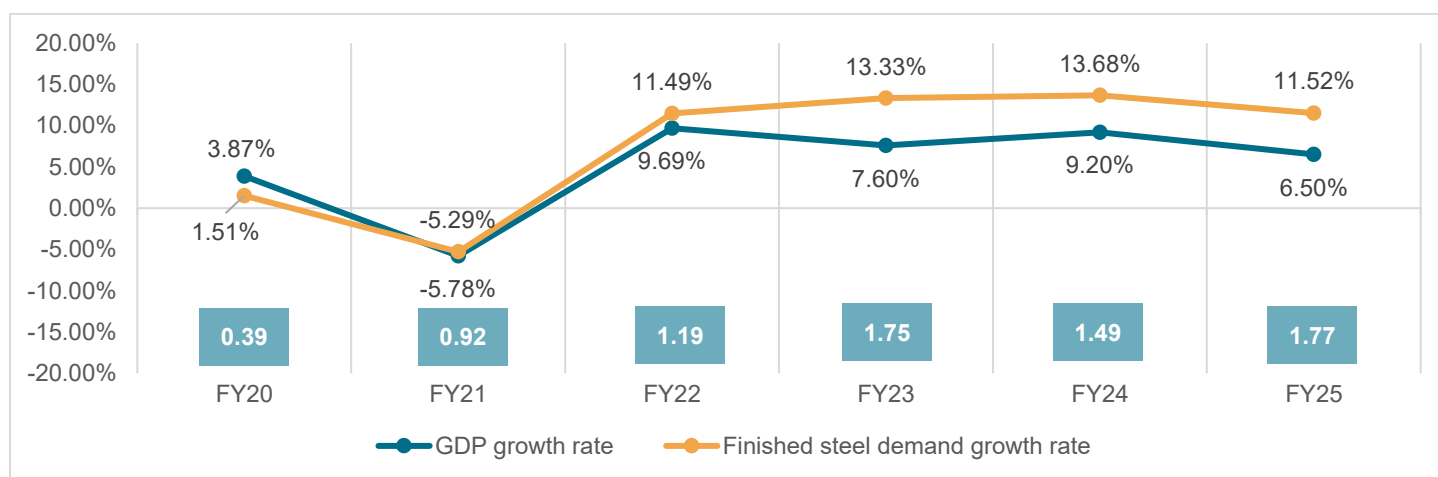
the world was fuelled by a strong recovery of economic activity post the pandemic and pent-up demand from major steel consuming sectors such as infrastructure, building and construction and automobile.

Correlation of steel demand and GDP growth: India

Given the huge population and low level of per capita steel consumption in India, the steel industry has the potential to become a key economic growth driver. While fiscal 2020 saw a slowdown in major steel consuming sectors (automobile, construction and infrastructure), fiscal 2021 witnessed pandemic-led lockdowns, which kept the ratio of steel demand growth to GDP growth under 1.

As the economy started reopening in fiscal 2022, the ratio improved to 1.19. In fiscal 2023, the ratio of steel demand growth to GDP growth further grew to 1.75 owing to recovery in economic activity from the lows of the pandemic and a strong pent-up demand from key steel consuming sectors. Despite a reduction to 1.49 in fiscal 2024 and a subsequent rise to 1.77 in fiscal 2025, the ratio/GDP multiplier managed to remain higher than the pre-pandemic levels.

Growth of domestic finished steel demand vs GDP growth rate (on-year growth rates)



Note: Figures in boxes represent steel demand growth-to-GDP growth multiplier

Source: Crisil Intelligence, industry

Domestic steel supply

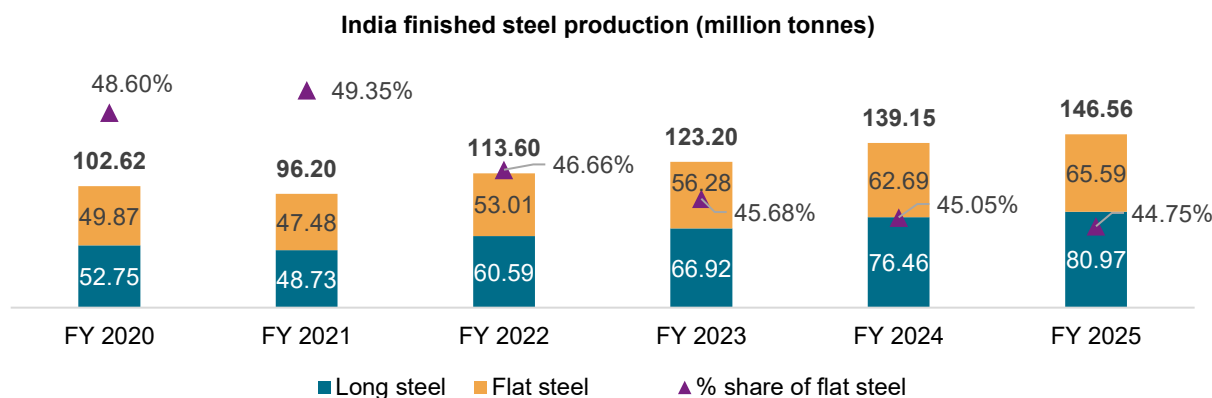
Type of steel: By product type



Long products: Finished long steel products are typically produced by hot-rolling/forging of blooms/billets/ingots into useable shape/sizes. These are generally supplied in straight length/cut length, except wire rods, which are supplied in wound coils. The different types of long products include bars and rods (thermo-mechanically treated bars, wire rods, round bars, etc.), structural steel (angles, channels, beams, fabricated sections, girders, etc.), and railway materials.



Flat products: Flat products are produced from slabs/thin slabs in rolling mills using flat rolls and comprise hot rolled (HR) and cold rolled (CR) coils, coated products, etc. HR flat products are produced by re-rolling slabs/thin slabs at high temperatures (above 1,000°C) in plate mills or hot strip mills. CR coils/strips are produced by cold-rolling HR coils/strips in cold-rolling mills (generally at room temperature). CR coils/strips/sheets have lower thickness, better/bright finish and specific mechanical/metallurgical properties.



Source: Crisil Intelligence, industry, Joint Plant Committee (JPC)

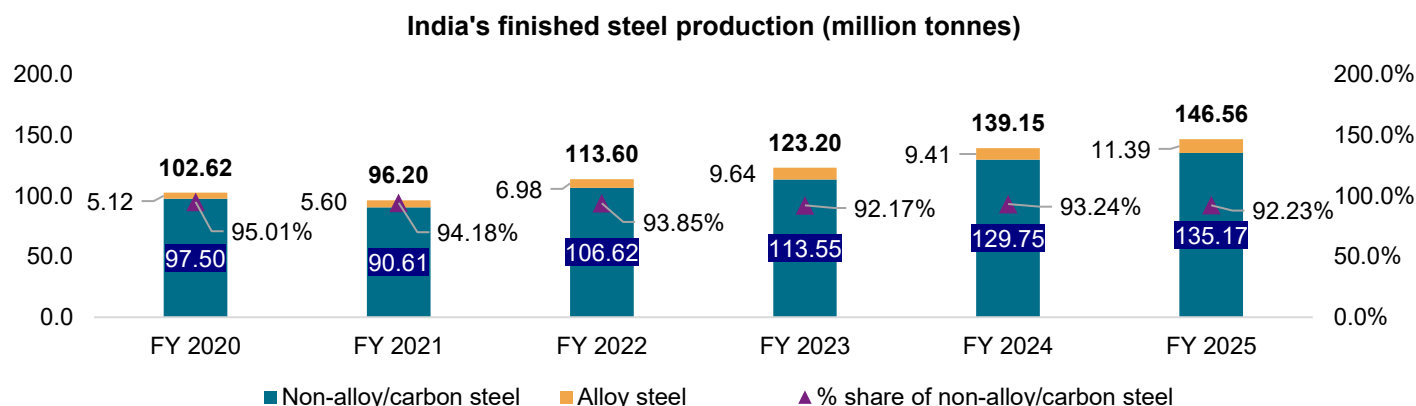
Note: FY 2025 figures are as per provisional data released by JPC in its March 2025 report

Type of steel: By composition

Alloy steel: Alloy steel is manufactured in various grades and produced with one or more elements of carbon, manganese, silicon, nickel, copper, lead, chromium, tungsten, molybdenum, niobium and vanadium in specified proportions to impart specific physical, mechanical, metallurgical and electrical properties. Stainless steel is a type of alloy steel.

Alloy/stainless steel is used in forgings, tools and dies, bearings and fasteners, which are used by the automobiles, power, oil and gas, industrial machines, railways/ mass rapid transport systems and defence sectors to manufacture crankshafts, connecting rods, camshafts, bearings, fasteners, railway carriage wheels, bombshells, cutting tools, surgical instruments and utensils.

Non-alloy steel: Non-alloy or carbon steel comprises iron and carbon. It is the most produced variant of steel. In the past five years, non-alloy steel constituted 92-95% of India's finished steel production. The main components of non-alloy steel are carbon, manganese and silicon in proportions of up to 1.70%, 0.90% and 0.30%, respectively. A change in the composition of carbon affects the properties of carbon steel. Steel does not contain any alloying element. Non-alloy steel is used in the construction, infrastructure, automobiles and consumer durables sectors. Popular applications include buildings, bridges, rails, pipelines, body panels for cars, refrigerators and washing machines.



Source: Crisil Intelligence, industry, JPC

Note: Alloy steel production volume considers stainless steel as well. Further, FY 2025 figures are as per provisional data released by JPC in its March 2025 report

Key government schemes supporting domestic steel sector

Aatmanirbhar Bharat/Make in India/Ease of Doing Business initiative

The government's strong focus on transforming India into a global manufacturing hub through schemes such as Make in India, Aatmanirbhar Bharat and PLI, along with the ongoing supply-chain derisking strategy of global companies, is expected to help India narrow its trade deficit and eventually turn it into a net exporter. This, in turn, will support economic growth and domestic steel sector.

Schemes such as Make in India and Aatmanirbhar Bharat have provided impetus to the Indian economy by boosting employment, attracting foreign investment and transforming India into a global manufacturing hub, supported by a favourable environment for investment, innovation and entrepreneurship.

The National Manufacturing Policy supports the broader objectives of Make in India and Aatmanirbhar Bharat. It aims to increase the manufacturing sector's share in India's GDP to 25% and create 100 million jobs by the end of 2025 by establishing national investment and manufacturing zones and simplifying business regulations. This push will support the growth in steel sector as well.

As a result of these efforts, India has seen an improvement in its ease of doing business rankings in recent years. This has, in turn, positively impacted tax collection, reduced compliance burden, increased the number of start-ups in the country, and supported foreign direct investment.

Many Indian states, on a standalone basis, have also been launching multiple initiatives that support business growth from regulatory standpoint. One such example is the launching of "FastTrack Punjab" portal by the state government of Punjab in June 2025. This portal is a unified digital gateway for industry and institutional establishments and aims to provide speed, accountability, and transparency in every service delivery. As per the state government's orders, the portal keeps a maximum cap of 45 working days on all the approvals. The companies with project costs upto Rs 1.25 billion in plant and machinery will be getting in-principle approval in 3 days (3 days if the location is in an industrial park, otherwise 15 days) under Punjab Right to Business act.

Therefore, an increasing improvement in the country's and individual states' business friendliness will benefit overall manufacturing sector including the domestic steel sector.

National Steel Policy 2017

The National Steel Policy (NSP), approved in May 2017 by the Union Cabinet, seeks to boost domestic steel consumption, ensure high-quality steel production and create a technologically advanced and globally competitive steel industry.

NSP's vision for demand, supply and trade:

- To increase steel consumption across the infrastructure, automotive and housing sectors, resulting in a potential rise in per capita steel consumption to 158 kg by fiscal 2030 from ~65 kg in fiscal 2017
- To achieve 300 million tonnes per annum of steelmaking capacity by 2030 through additional investments of Rs 10 trillion
- To produce steel domestically for high-end applications, such as electrical steel (cold-rolled grain-oriented), special steel and alloys for power equipment, aerospace, defence and nuclear applications
- To eliminate reliance on steel imports and increase exports to ~24 million tonnes per annum by 2030

Indian steel industry: Historical trend and vision under NSP

Parameter (million tonnes)	NSP 2005	NSP 2017	FY23	FY24	FY25E	FY29P
	FY20	FY30				
	(Target)	(Target)				
Crude steel capacity		300	161.30	179.51	195-200	240-250
Crude steel production	110	255	127.20	144.30	152.0	200-210
Finished steel demand	90	230	119.89	136.29	152.0	200-210
Finished steel import	6	0	6.02	8.32	9.60	-
Finished steel export	26	24	6.72	7.49	4.90	-

Note: E – estimated as per provisional data

*FY25 estimates are based on April 2024-March 2025 provisional data released by JPC

Source: Crisil Intelligence, Joint Plant Committee (JPC) report, NSP 2005, NSP 2017

PLI scheme (launched in 2020)

Keeping in view India's vision of becoming 'Aatmanirbhar', an incentive outlay of Rs 1.97 trillion (equivalent to over \$26 billion) under the PLI scheme for 14 key sectors is underway to enhance the country's manufacturing capabilities and exports. The scheme aims to attract investments (domestic and foreign) in the areas of core competency and apply cutting-edge technology; ensure efficiencies; create economies of scale; and boost exports to make India an integral part of the global value chain.

Particulars	Units	Amount
PLI scheme-led investment	Rs trillion	1.76
PLI scheme sales*	Rs trillion	16.50
PLI scheme-led exports*	Rs trillion	5.31
PLI-led employment generation	Million	1.20 (direct and indirect)

*All figures in the table are until March 2025 except for

1. The PLI scheme sales, where the figure corresponds to June-July 2025; and
2. the PLI scheme-led exports, where the figure corresponds to August 2024 data and

Source: Press Information Bureau

Benefits through PLI scheme

Specialty steel sector

- In January 2025, the Ministry of Steel launched the PLI Scheme 1.1 for specialty steel for five product categories: coated/plated steel products, high-strength/wear-resistant steel, specialty rails, alloy steel products and steel wires, and electrical steel. The scheme will be implemented during the production period of fiscal 2026 to fiscal 2030 and will operate within the funds originally allocated for the scheme (first round of the scheme launched originally in fiscal 2022), i.e., Rs 63.22 billion
- In the first round of this PLI scheme, 44 projects by 26 companies are active with a committed investment of about Rs 271.06 billion and 24 million tonnes per annum of downstream capacity creation. As per the March 2025 notification, the actual investment achieved was around Rs 200 billion with a direct employment generation of around 9,000

The PLI scheme is aimed at increasing domestic production in multiple industries, which will give a strong push to industrialisation and in turn support growth in the building, construction and infrastructure sectors.

Green steel mission (Under preparation: to be launched)

Government of India is preparing 'Green Steel Mission' with an estimated cost of Rs 150 billion for helping the Steel Industry reduce carbon emission and progress towards the Net Zero Target. The Mission includes: production linked incentive scheme for Green Steel, incentives for use of renewable energy, and mandates for Government agencies to buy Green Steel. This policy is expected to improve exports and global competitiveness of India-made steel. For instance, green steel, thus produced, will be able to meet European union's carbon border adjustment mechanism (CBAM) standards, shielding exports from any carbon tariffs and improving access in green markets. The government has also released green steel taxonomy which will certify and star-rate steel products as per its carbon emission level. This certification will help steel manufacturers have better access to markets which lay high importance to the sustainability standards.

National Green Hydrogen Mission (approved and launched in 2023)

This mission, spearheaded by the Ministry of New and Renewable Energy, integrates the steel sector into the broader goal of producing and using green hydrogen, contributing to the decarbonisation of steel production. This will also assist in making India-made steel globally competitive, particularly in the regions which impose carbon tariffs.

Steel Scrap Recycling Policy (launched in 2019)

This policy aims to increase the availability of domestically generated quality scrap, thus promoting resource efficiency and generating a circular economy. In a scenario, as is envisaged in the National Steel Policy, where the domestic steel production rises to 250 million tonnes per annum, the government plans to make available 70-80 million tonnes of high-quality steel scrap for steel making domestically. Under this scenario, the Steel Scrap Recycling Policy will ensure the generation of steel scrap to the tune of 70-80 million tonnes per annum by enabling steel scrap processing industry to work on a 4+1 hub and spoke model. As a result of this model, there will be a requirement of 700 scrap processing centres or shredding units accompanied by 2,800-3,000 scrap collection and dismantling units spread all over the country.

Domestically Manufactured Iron & Steel Products (DMI&SP) Policy

This policy promotes 'Made in India' steel for government procurement.

Tariffs and duties

The details of tariffs, safeguard duties, or anti-dumping measures/duties implemented to protect the domestic steel sector in the past five years are as follows:

1. Currently, steel products attract basic customs duty ranging from 5% to 15%. The import of certain steel products from the US attracts custom duties of 20% to 27.5%.
2. Anti-dumping duty (ADD) on some steel products such as seamless tubes, pipes and hollow profiles of iron, alloy, or non-alloy steel (other than cast iron and stainless steel) (from China), electro-galvanized steel (from Korea, Japan, Singapore), stainless-steel seamless tubes and pipes (from China), welded stainless steel pipes and tubes (from Vietnam and Thailand) are in place currently.
3. In April 2025, the government imposed a 12% safeguard duty on the import of certain non-alloy and alloy steel flat products in a bid to protect domestic flat steel manufacturers from the adverse impact of import surges and to ensure fair competition in the market.
4. Countervailing duty (CVD) is in place for welded stainless steel pipes and tubes from China and Vietnam.
5. Basic customs duty exemption on ferrous scrap has been continued up to the end of fiscal 2026.

Steel quality control order

The Government has introduced Steel Quality Control Order thereby banning sub-standard/defective steel products in the domestic market as well as imports to ensure the availability of quality steel to the industry, users and public at large.

This move will help reduce the consistent dumping of low cost, sub-standard, and non-compliant (with Bureau of Indian standards (BIS)) steel products and will remove the unfair advantage that the imported steel products possessed over the India-made steel. Thus, this move will in-turn benefit the domestic steel manufacturers.

Further, a clarificatory order was issued in June 2025 stressed that the intermediate material used for manufacturing of final products under BIS Standards will also have to follow BIS Standards prescribed for such intermediate products. This move will counter the inflow of those steel products which themselves were compliant with the BIS standards but the base material which was used to manufacture those steel products did not adhere to the BIS standards. For instance, coated steel cannot qualify as BIS compliant, if its raw material i.e. hot rolled coil is not BIS compliant, even if the coating process itself is BIS compliant.

Additional steps by the government

- Revamping of Steel Import Monitoring System (SIMS) 2.0 for more effective monitoring of imports to address the concerns of the domestic industry.
- Coordination with ministries and states, besides other countries, to facilitate the availability of raw material to manufacture steel on more favourable terms.

These initiatives aim to make India a global steel powerhouse, resulting in increased domestic production and increased exports of steel and related products, and reduce import dependency.

Investment scenarios

Investment scenario in domestic steel manufacturing industry

As of fiscal 2024, India's crude steel capacity was ~179 million tonnes per annum, which is estimated to have grown to 195-200 million tonnes per annum in fiscal 2025. With the growing demand for steel in the domestic end-use industries

such as infrastructure and automobile, domestic steel producers are planning to ramp up their production output by increasing their manufacturing capacities and improving capacity utilisation levels.

- Over the period between fiscals 2025-2027, India is expected to add a total of 30-35 million tonnes of annual crude steel manufacturing capacity, in lines with that planned by ASEAN⁴ countries during this period (30-35 million tonnes per annum) and exceeding that planned by Middle Eastern countries (8-10 million tonnes per annum) during this period, which are also investing heavily in the steel sector
- Between fiscals 2025-2029, India is expected to add approximately 50 million tonnes of annual crude steel manufacturing capacity in total.

Current and planned crude steel manufacturing capacities at key Indian steel producers

Steel producer	FY24 capacity (million tonnes per annum)	FY25E capacity (million tonnes per annum)	FY29 projected capacity (million tonnes per annum)
SAIL	20	20	23
RINL	7	7	7
Tata Steel Ltd	21	26	30
AMNS	10	10	15
JSW Ltd	28	34	41
JSPL	10	10	16
NMDC	3	3	3
Others	81	88	112
Total	179	195-200	240-250

SAIL: Steel Authority of India Ltd, RINL: Rashtriya Ispat Nigam Ltd, JSPL: Jindal Steel and Power Ltd; NMDC: National Mineral Development Corporation

Note: Tata Steel Ltd includes capacities of Bhushan Steel Ltd (BSL) and Neelachal Ispat Nigam Ltd. (NINL); JSW Ltd includes capacities of Bhushan Power & Steel Ltd (BPSL) and Monnet Ispat & Energy Ltd

Source: Crisil Intelligence, industry

Investment scenario in domestic infrastructure

The government's focus on infrastructure development was evident in budget 2025-2026 allocations.

- The government allocated a capital expenditure of Rs 11.21 trillion for the infrastructure sector
- The government announced a capital outlay of Rs 0.2 trillion for the nuclear energy sector, under which five indigenously developed small modular reactors will be operational by 2033
- The government announced to set up a Rs 250 billion Maritime Development Fund
- The government announced opening greenfield airports in Bihar and unveiled a new UDAN (Ude Desh ka Aam Naagrik) scheme to enhance regional connectivity to 120 new destinations and carry 40 million passengers in the next 10 years
- The centre proposed an outlay of Rs 1.50 trillion for the 50-year interest-free loans to states for capital expenditure and incentives for reforms

⁴ The Association of Southeast Asian Nations comprising 10 countries in Southeast Asia

- The government extended the Jal Jeevan Mission till 2028, focusing on quality infrastructure and rural piped water supply schemes
- The government announced the establishment of a Rs 1 trillion Urban Challenge Fund to implement proposals for 'Cities as Growth Hubs', 'Creative Redevelopment of Cities' and 'Water and Sanitation', as announced in Interim Budget 2024. Under this, an allocation of Rs 0.1 trillion has been proposed for fiscal 2026

Key government-led initiatives in domestic infrastructure space

- Transportation sector

Pradhan Mantri Gati Shakti: The PM Gati Shakti National Master Plan (NMP), launched in 2021 aims to provide seamless and efficient connectivity for the movement of people, goods, and services across various modes of transport, thereby enhancing last-mile connectivity and reducing travel time. A milestone of assessing a total of 208 big-ticket infrastructure projects worth Rs.15.39 trillion under PM Gati Shakti has been achieved.

- Highways and roads sector

Bharatmala Pariyojana: The Government of India has undertaken several initiatives to enhance and strengthen the National Highways network through flagship programmes such as the Bharatmala Pariyojana which includes the subsumed National Highway Development Project (NHDP), the Special Accelerated Road Development Programme for the North-East Region (SARDP-NE), and many more ongoing projects. As a result of these initiatives, national highway construction pace rose 2.8 times from 12.1 km/day in 2014-15 to 33.8 km/day in 2023-24.

Pradhan Mantri Gramsadak Yojana: This scheme aims to provide connectivity to unconnected habitations as part of a poverty reduction strategy. In 2006-2007, 1,07,370 km of roads were completed under the PMGSY, with a total expenditure of Rs 107.69 billion. In 2014-15, 4,19,358 km of roads were completed with a total expenditure of Rs 1,301.49 billion and in 2024-25, 7,71,950 km of roads were completed with a total expenditure of Rs 3,315.84 billion.

- Civil aviation

Ude Desh ka Aam Nagrik (UDAN): UDAN aims to bring essential air travel access to previously isolated communities and boost regional economic development. The number of operational airports in India in 2014 were 74, which by September 2024, had increased to 157.

- Shipping and ports sectors:

Approximately 95% of the country's trade by volume and 70% by value is moved through Maritime Transport. Cargo handling capacity has increased from 800.5 million tonnes per annum in 2014 to 1,630 million tonnes per annum in 2024.

- Railways sector

The manufacturing of Linke-Hofmann-Busch (LHB) coaches has increased from 2,209 coaches in year 2006-2014 to 31,956 coaches in year 2014-2023. During 2004-14, 14,985 route kilo meters (RKM) of rail track work was done whereas during 2014-23, 25,871 RKM of track laying work has been done. In the year 2022-23, per day 14 km track was laid.

- Urban affairs and housing sectors

Smart cities mission: Total projects amounting to Rs 1,647.06 billion have been planned, of which projects amounting to Rs 1,543.51 billion have been completed, as per the data provided by 100 Smart Cities as of January - February 2025.

Swachh Bharat Mission (SBM): Under SBM Urban 2.0, there has been a 97% increase in the urban waste collection from 2014-15 to 2024-25.

Pradhan Mantri Awas Yojana (PMAY): During 2004-14, 1.346 million houses were approved, which substantially increased in the 2015-2024 period, when 11.864 million houses were approved under PMAY-Urban.

- Metro rail sector

Average metro rail lines commissioned per month increased from 0.68 km before fiscal 2014 to 6 km per month between 2014-2024. As a result, the number of cities with operational metro rail increased from 5 till 2014 to 23 as of fiscal 2025

- Water supply and sanitation

Atal Mission for Rejuvenation and Urban Transformation (AMRUT): In last 10 years (2015-2025 period), 20.3 million tap connections and 15 million sewer connections have been provided under AMRUT & AMRUT 2.0. A total of Rs 2.73 trillion worth of projects were sanctioned during this period, out of which projects worth Rs 1.12 trillion have been completed.

Jal Jeevan Mission (JJM): As of February 2025, this mission had provided 122 million tap-water connections, increasing the total tap-water connections in rural India to 154.4 million households. This scheme was launched in 2019, when only 17% of the rural households in India had access to tap-water connections. As of June 2025, the percentage coverage increased to close to 81%.

Har Ghar Nal Yojana is another government sponsored scheme which is drawing investments towards water supply and sanitation segment of infrastructure industry.

Note: Overall, the infrastructure segment accounts for 28-30% of the aggregate finished steel demand. Within the segment, roads and highways, and railways (including metros) account for 50-60% of segment's steel demand. Other significant contributors include sectors such as irrigation, dams, water supply and sanitation.

Challenges to export of steel or steel products to Europe

Carbon Border Adjustment Mechanism (CBAM)

The European Union (EU) has implemented CBAM to impose carbon tariffs on imports based on the carbon emissions generated during the production of imported products. Since Indian steel or downstream steel producers use coal-based furnaces, which are more carbon intensive than the current EU emission standards permit, they are likely to face heavy tariffs. Therefore, Indian exports of steel without carbon offsets or green steel certifications, may face high carbon taxes, reducing their cost competitiveness.

Stringent quality certifications

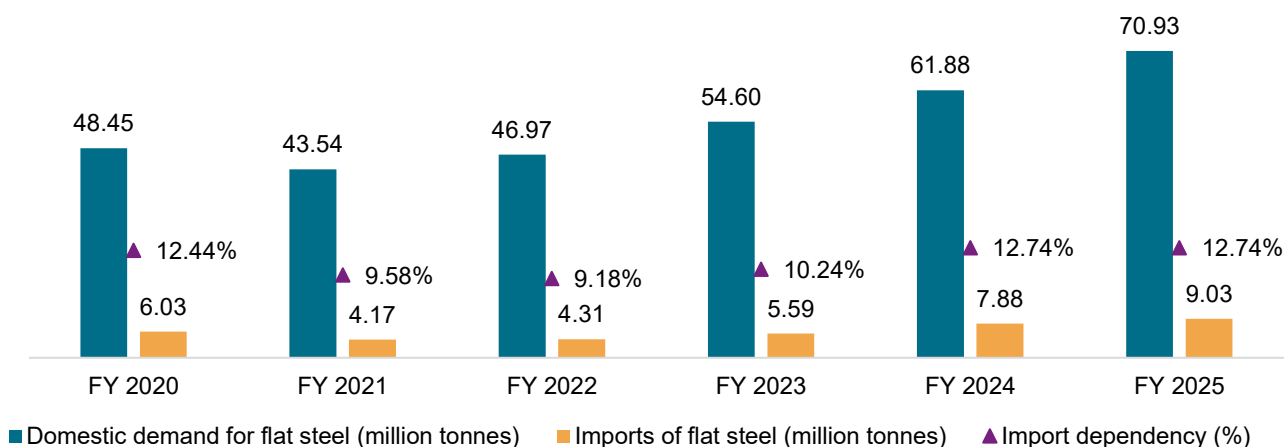
The EU demands strict compliance with EN and other standards, along with detailed documentation. Some small-scale Indian steel producers may find it difficult to consistently meet these requirements, leading to rejection of their products or restricted access.

Anti-dumping duties

The EU has been effectively using anti-dumping and safeguarding duties, which can pose a challenge to the Indian steel producers wanting to export to the region. Further, lack of proper free trade agreements between India and EU leads to higher tariffs on India-made steel or related products.

Raw material assessment and steel export opportunities

Overview of flat steel availability as raw material



Source: Joint Plant Committee, industry, Crisil Intelligence

Note: Import dependency is the ratio of import volume of flat steel and domestic demand for flat steel expressed in percentage terms

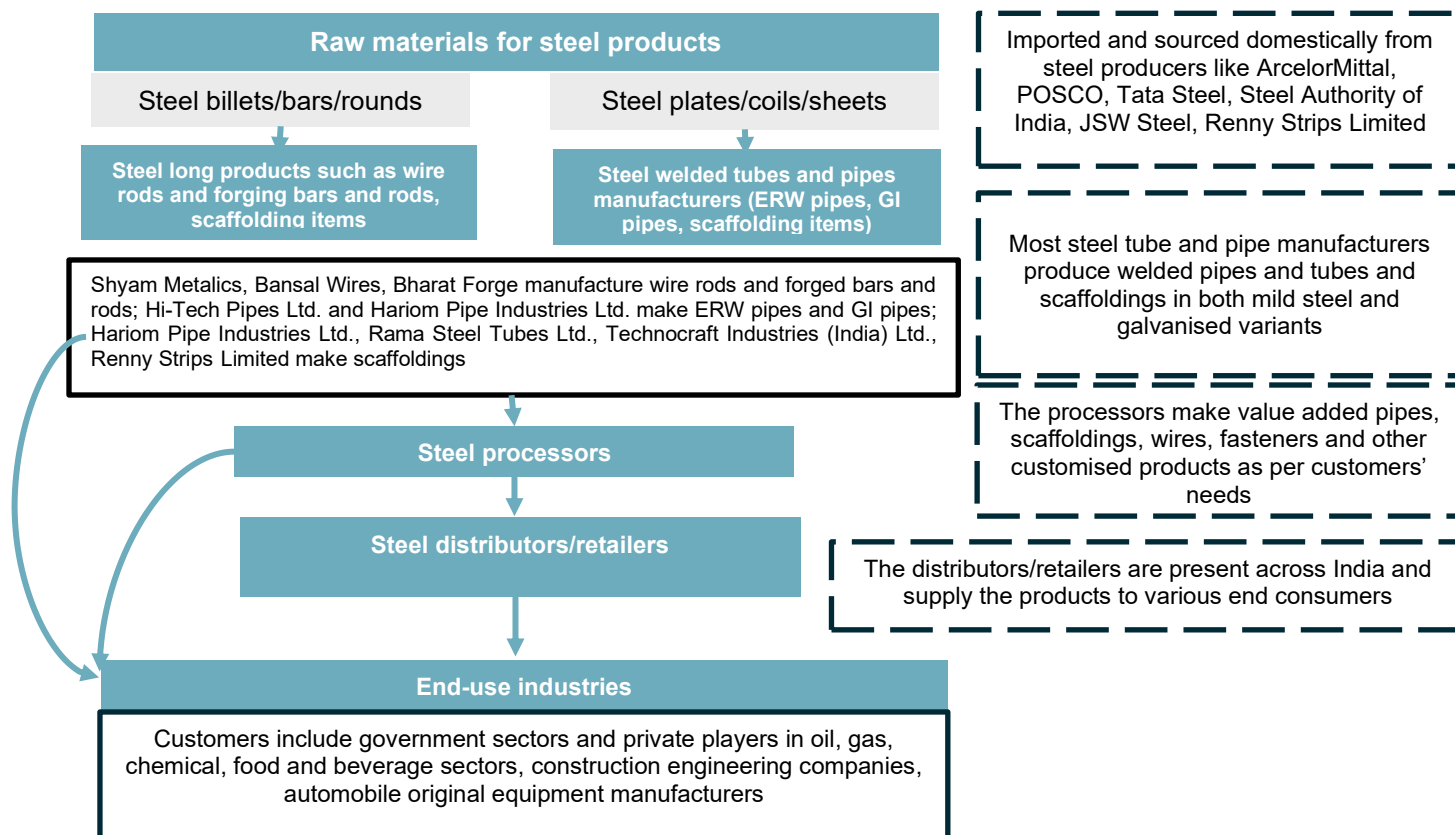
India's import dependency for flat steel products stood at 12.44% in fiscal 2020, which dipped to 9-11% between fiscals 2021 and 2023, owing to strong support by government through various schemes such as Make in India and Aatmanirbhar Bharat. However, with the increase in availability of cheaper steel products (both flat and long) especially from Asian countries such as China, Malaysia, Indonesia, the imports of flat steel products volume increased in India, carrying the import dependency up to 12.74% in fiscals 2024 and 2025. This resulted in a major increase in unsold inventory of finished steel (both flat and long) as follows in India:

Fiscals	FY20	FY21	FY22	FY23	FY24
Unsold finished steel inventory in India in million tonne	13.69	8.97	7.99	10.59	14.29

Source: Ministry of Steel, industry, Crisil Intelligence

Note: FY 25 numbers are not available

Steel industry products value chain analysis



Source: Industry, Crisil Intelligence

GI: Galvanized iron, ERW: Electric resistance welded

Special growth segment for the steel: Livestock housing industry

Overview of the livestock industry

India has the world's largest population of livestock, which plays an important role in the economy. For example, about two-thirds of the country's rural community depends on livestock for livelihood. According to the Ministry of Fisheries, Animal Husbandry and Dairying, the livestock sector has remained a strong driver of rural, agricultural, and overall Indian economy as it logged a CAGR of 12.99% between fiscals 2015 and 2023. India is ranked first in milk production, contributing 24.76% of global milk production as of CY 2024. According to Food and Agriculture Organization Corporate Statistical Database (FAOSTAT) production data (2022), India ranks second in egg production and fifth in meat production, in the world.

Role of steel products in the livestock housing industry

1. Fencing and enclosures

Pipes and tubes are widely used to manufacture modular fencing systems for cattle, sheep, and poultry. Further, scaffolding pipes are used as structural components to create temporary or permanent animal holding areas such as feeding zones and breeding enclosures.

These metal pipes and tubes and scaffoldings are preferred over traditional wooden fences due to their higher durability, better weather resistance, and ease of cleaning and maintenance.

2. Handling systems

These systems are used in gates and crushes to ensure safe handling and movement of livestock in the field. These are highly flexible which allow for easy customisation as per the size and type of livestock.

3. Shelter, housing, feeding and watering infrastructure

Pipes and tubes serve as frames for sheds and roofs alongside polymer sheets or fabric covers. Pipes and tubes are also used as water pipelines and as feeding racks, especially in commercial farm setups.

Growth drivers (including government-led schemes) of livestock housing industry

1. Establishment of Gokul Gram under Rashtriya Gokul Mission

Integrated indigenous cattle development centres “Gokul Grams” are being established under the Rashtriya Gokul Mission for conservation and development of indigenous bovine breeds in a scientific and holistic manner. Establishment of Gokul Grams will help increase the population of indigenous breeds and their productivity.

2. Farmer awareness programmes

To create awareness amongst farmers, the government organises fertility camps, which aim to improve the population and productivity of livestock.

3. National Livestock Mission

The National Livestock Mission, originally launched in fiscal 2015, was revised and realigned with an outlay of Rs 23 billion for five years starting fiscal 2022. The Cabinet approved the re-aligned scheme on July 14, 2021. The scheme focusses on employment generation, entrepreneurship development, increase in per animal productivity and thus targeting increased production of meat, goat milk, eggs and wool.

4. Kisan Credit Cards

The government of India extended the benefit of Kisan Credit Cards (KCC) to animal husbandry and dairy farmers during 2019. This step ensured credit to landless animal husbandry farmers at low interest. This move will support the growth in the overall animal husbandry industry, and increase the demand for livestock housing infrastructure.

5. National Programme for Dairy Development

The Department of Animal Husbandry and Dairying implemented the National Programme for Dairy Development (NPDD) across the country in 2014 with an objective of creating/strengthening infrastructure for the production of quality milk, procurement, processing and marketing of milk and milk products by the state implementing agency (SIA). NPDD aims to enhance quality of milk and milk products and increase share of organised milk procurement. This tendency to move towards the organised animal husbandry will increase the trend towards building organised livestock infrastructure which will push the demand for livestock housing.

6. Shift to commercial and intensive farming

Many countries including India are pushing for larger and commercial livestock operations which require robust fencing and housing infrastructure.

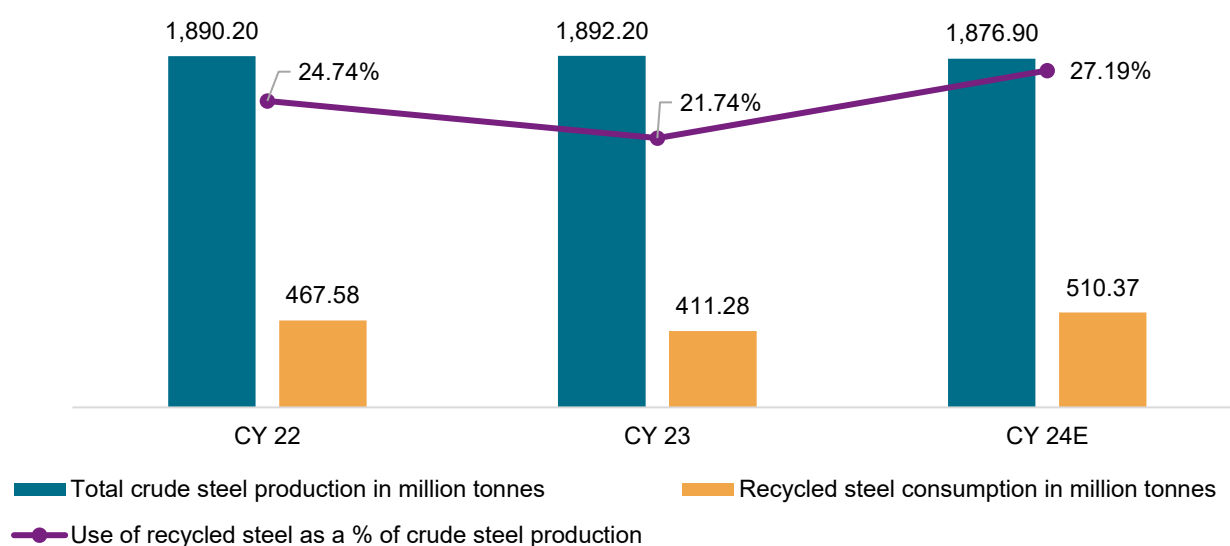
7. Growing demand for modular and portable solutions

The popularity of portable and temporary fencing systems is growing, which would support the demand for steel modular assemblies for easy set-up and relocation.

Steel recycling sector

The global consumption of recycled steel decreased to 411.28 million tonnes per annum in 2023 from 467.58 million tonnes per annum in 2022, registering an on-year dip of 12.04%. In 2024, consumption is estimated to have increased to 510.37 million tonnes per annum, recording an on-year increase of 24.09%. The proportion of recycled steel usage in crude steel production decreased on-year to 21.74% in 2023 from 24.74% in 2022 on account of lower steel production in Türkiye and key South Asian markets, and a reduction in global scrap trade, impacted by trade restrictions in exporting countries. However, with key steel producing countries focusing on sustainable practices and the economic benefits of recycling, the usage of recycled steel in the production of crude steel is estimated to have increased to 27.19% in 2024.

Use of recycled steel in global steel production



Source: Crisil Intelligence, Bureau of International Recycling, industry

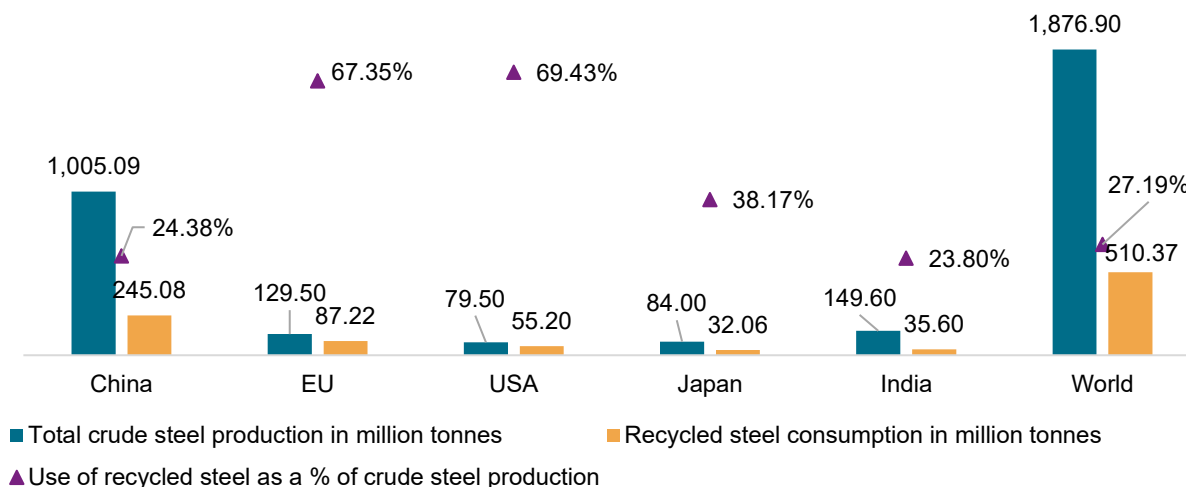
E: Estimated (recycled steel consumption is estimated on a pro-rata basis)

Advantages of steel recycling

1. The process of steel-making through the electric arc or induction furnace involves the usage of scrap. The process emits lesser pollutants than through blast furnace.
2. According to the World Steel Association, every tonne of scrap used for steel production reduces the emission by 1.50 tonne of carbon dioxide and also reduces consumption of iron ore by 1.40 tonne, coal by 0.74 tonne and limestone by 0.12 tonne.
3. According to the Material Recycling Association of India, the use of steel scrap saves 75% of the energy it takes to manufacture steel from virgin iron ore.

Consumption of recycled steel in crude steel production

Recycled steel consumption patterns for CY24E



Source: Crisil Intelligence, Bureau of International Recycling, industry

E: Estimated (recycled steel consumption is estimated on a pro-rata basis)

EU: European Union, US: United States of America

Developed economies such as the US and those within the EU have the highest steel scrap utilisation rates in the production of crude steel. The proportion of recycled steel usage in crude steel production in 2024 in the US and EU stood at 69.43% and 67.35%, respectively, which is significantly higher than the global average recycled steel proportion usage in crude steel production (27.19%). They are followed by Japan where the proportion of scrap usage in the overall crude steel production was 38.17% in 2024. China and India, which produce the highest volume of steel, had recycled steel usage proportion of 24.38% and 23.80%, respectively, which was lower than the global average. The higher proportion of recycled steel usage in steel manufacturing processes in the US, EU and Japan is on the account of their well-established infrastructure for collecting, processing and sorting steel scrap, enabling efficient recycling and utilisation.

On the other hand, China and India have a highly fragmented scrap collection system, which leads to lower usage of recycled steel in the production of crude steel. However, a growing global trend of steel production through the electric arc furnace has been supporting scrap usage.

India's policy push for steel scrap usage

The National Steel Policy has set a target of 300 million tonnes per annum steel production capacity by 2030, with a contribution of 35-40% through electric arc/ induction furnace. To support the goal, the policy has also recommended steel recycling. In 2019, the government announced the *Steel Scrap Recycling Policy*, which aims to:

1. Ensure processing and recycling steel scrap in an organised, safe and environment-friendly manner;
2. Ensure production of high-quality ferrous scrap for quality steel production, thus minimising the dependency on imports;
3. Conserve resources and energy and create a vibrant and responsive ecosystem.

Through the policy, the government aims to raise the share of scrap in steel production to 50% by 2047 from 23-24%, targeting a reduced emission intensity of 2.25 million tonnes of carbon dioxide per annum. To achieve this, the country should be able to produce 70-80 million tonnes of ferrous scrap annually as and when the total crude steel annual output

reaches 250 million tonnes per annum. This, in turn, will require setting up ~700 scrap shredders, fed by 2,800-3,000 collection and dismantling centres in the country.

The availability and usage of scrap steel-making increased in the country as a result of increased steel scrap imports. For example, the ferrous scrap imports stood at 11.76 million tonnes per annum in 2023, logging an on-year increase of ~40% and doubling from ~5.56 million tonnes per annum of ferrous scrap imports in 2013. However, through various policies supporting an increased availability of domestic scrap, India's overall ferrous scrap imports reduced on-year by ~19% to 4.45 million tonnes per annum in the first half of 2024.

The government has announced a few other supporting policies to increase the generation of domestic scrap so as to achieve recycled steel targets. One such initiative is the *Voluntary Vehicle-Fleet Modernisation Programme* in 2021 aimed at phasing out old passenger and commercial vehicles and formalise vehicle scrappage and recycling.

India's policy push for green steel

'Green Steel Mission' with an estimated cost of Rs 150 billion is under preparation in India. This mission will help the Steel Industry reduce carbon emission and progress towards the Net Zero Target. The Mission includes production linked incentive scheme for Green Steel, incentives for use of renewable energy, and mandate for Government agencies to buy Green Steel.

India has also become the first country to have unveiled green steel taxonomy which will enable it to issue green steel certifications and green steel ratings to prospective grades of steel. These certifications will help the steel manufacturers increase their market presence across the globe, especially in the regions like the EU, where a strict adherence to carbon emission standards will be mandatory.

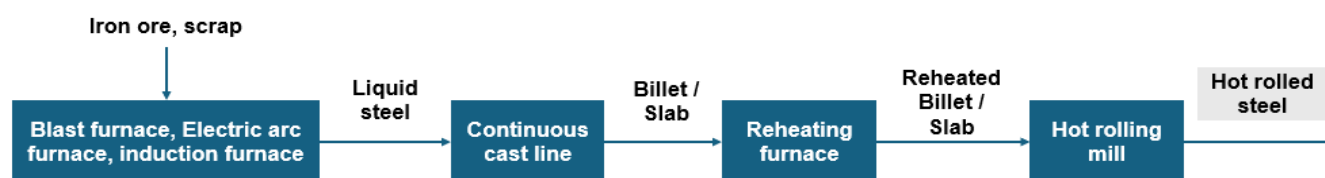
Market assessment of steel products

1. Hot rolled (HR) steel

HR steel - Overview

Hot rolled (HR) steel is a foundational material in the steel value chain, produced by rolling steel (in the form of billets or slabs) at high temperatures to produce coils, sheets, or plates. HR steel serves as a primary input for various downstream products such as cold rolled steel, pipes, tubes, and structural products such as scaffoldings, formworks, etc.

HR steel - Manufacturing process

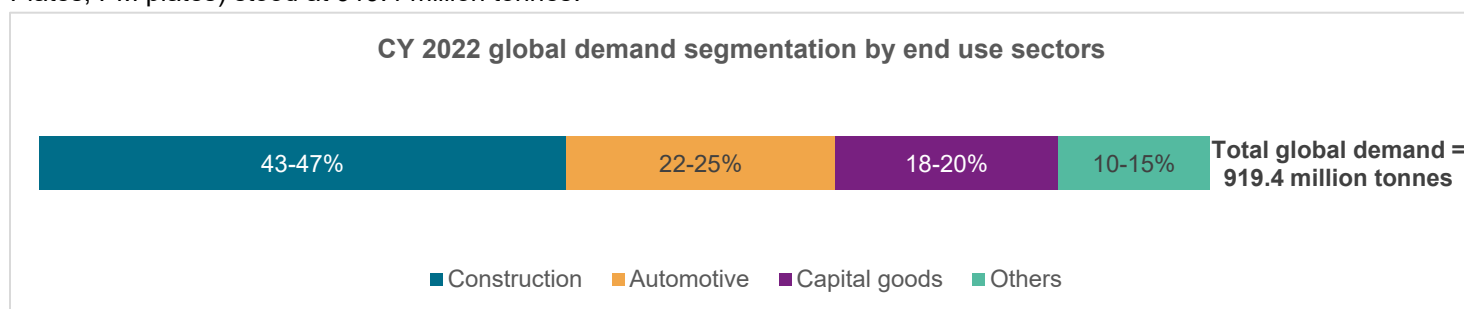


Source: Industry, Crisil Intelligence

1.A. Global hot rolled steel

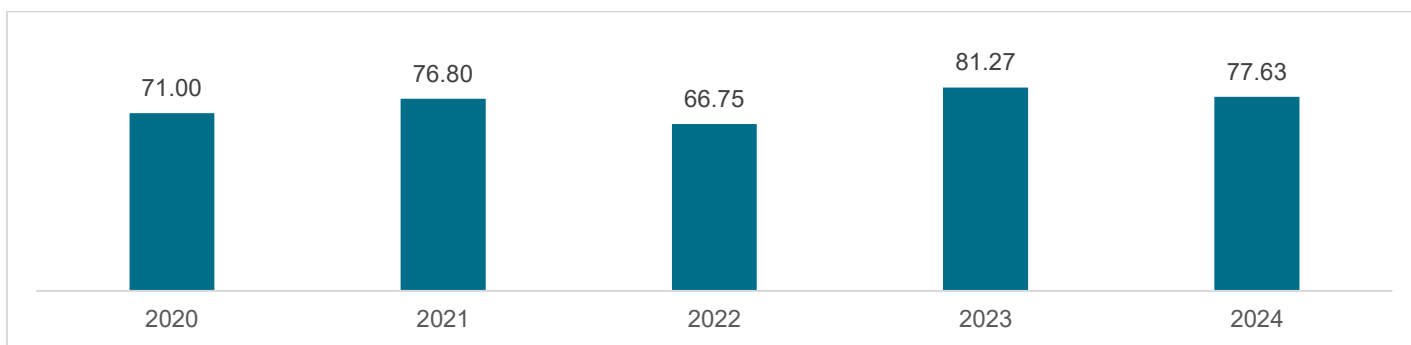
Global HR steel - demand

As per world steel association, in CY 2022, the global demand for flat steel (which includes HR coils, sheets, strips HSM Plates, PM plates) stood at 919.4 million tonnes.



Source: Industry, Crisil Intelligence, world steel association

Global HR steel – trade flow (in million tonnes)

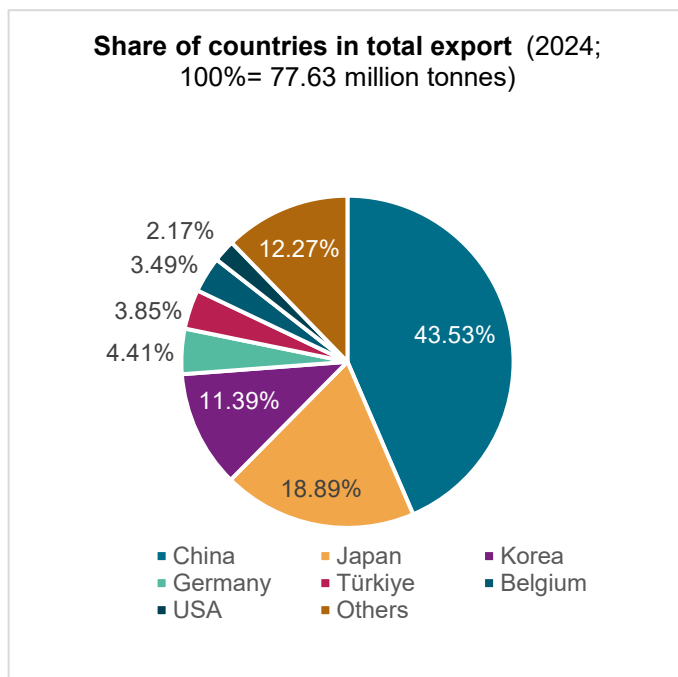
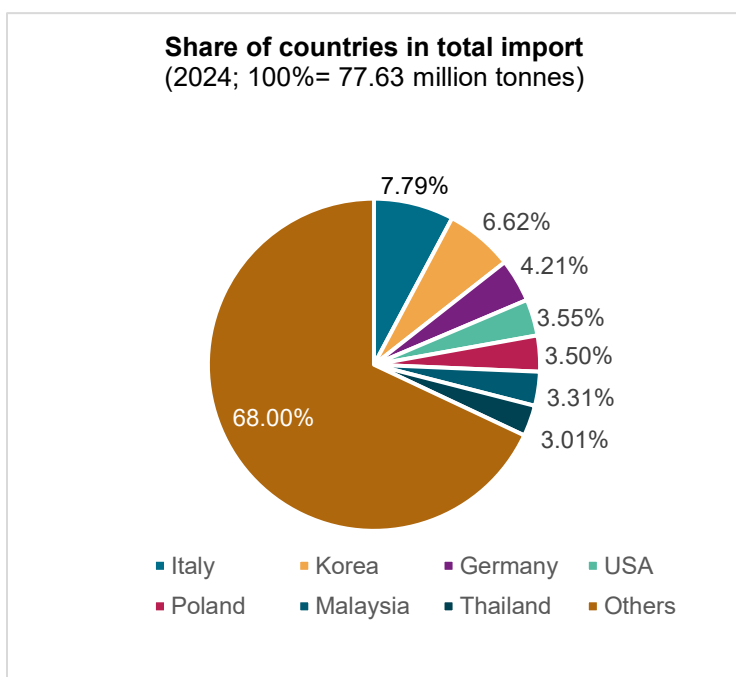


Source: Crisil Intelligence, United Nations Comtrade, industry

Harmonized System of Nomenclature code (HSN code) 7208 has been considered for calculation of trade volume of hot rolled steel

The global trade flow for hot-rolled steel increased by 8% on-year to 76.80 million tonnes in 2021 from 71.00 million tonnes in the pandemic affected year of 2020. In 2022, the global trade flow of hot rolled steel declined by 13% on-year to 66.75 million tonnes on the account of geopolitical uncertainties which caused disruptions to global supply chain network. In 2023, on the account of increased exports of low-cost steel products from south-Asian countries, the global trade flow of hot rolled steel increased on-year by 22% to 81.27 million tonnes in 2023. In 2024, the global trade flow decreased 4% on-year to 77.63 million tonnes owing to a decrease in demand amid rising interest rates and escalating geopolitical tensions.

HR steel – global import-export split by region (2024)



Korea: Republic of Korea; USA: United States of America

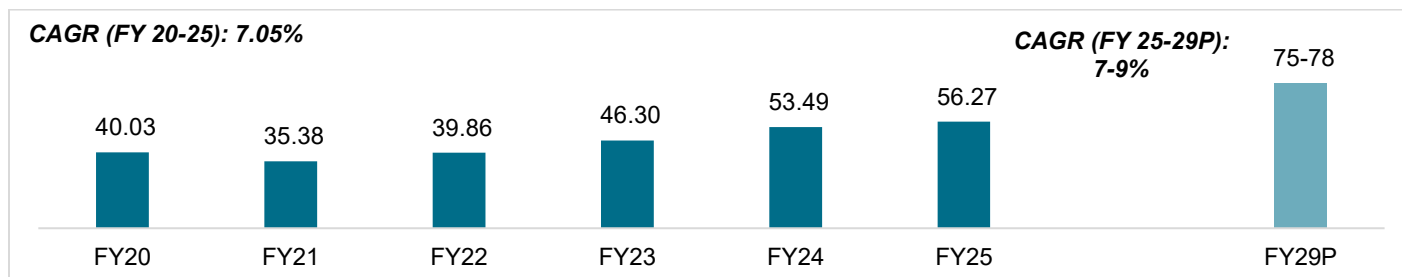
Source: United Nations Comtrade, Crisil Intelligence, industry

Note: Harmonized System of Nomenclature code (HSN code) 7208 has been considered for calculation of trade volume of hot rolled steel

In 2024, Italy, Korea and Germany were the top hot rolled steel importers in the world, accounting for 18.62% share in overall traded volume of hot rolled steel in the world. On the exports side, China alone accounted for 43.53% share in the global traded volume of hot rolled steel, followed by Japan and Korea, with respective shares of 18.89% and 11.39%.

1.B. Domestic hot rolled steel

HR steel - Domestic demand (in million tonnes per annum)



Source: Crisil Intelligence, Joint plant committee (JPC), industry

P: projected

Note: The graph represents non-alloy HR steel demand volumes only

The demand for hot rolled steel grew from 40.03 million tonnes in fiscal 2020 to 56.27 million tonnes in fiscal 2025, recording a CAGR of 7.05% during the period. The demand growth in the last five fiscals was primarily led by strong growth and rising steel intensity in segments such as building and construction, infrastructure and capital goods. Particularly, a healthy urban housing progress ensured a robust hot rolled steel demand between fiscals 2020 and 2025.

Going forward, the domestic demand for HR steel is expected to log a CAGR of 7-9% to clock 75-78 million tonnes per annum of demand volume by fiscal 2029. This expected growth will majorly be led by infrastructure, building and construction, automobile, consumer durables and capital goods sectors.

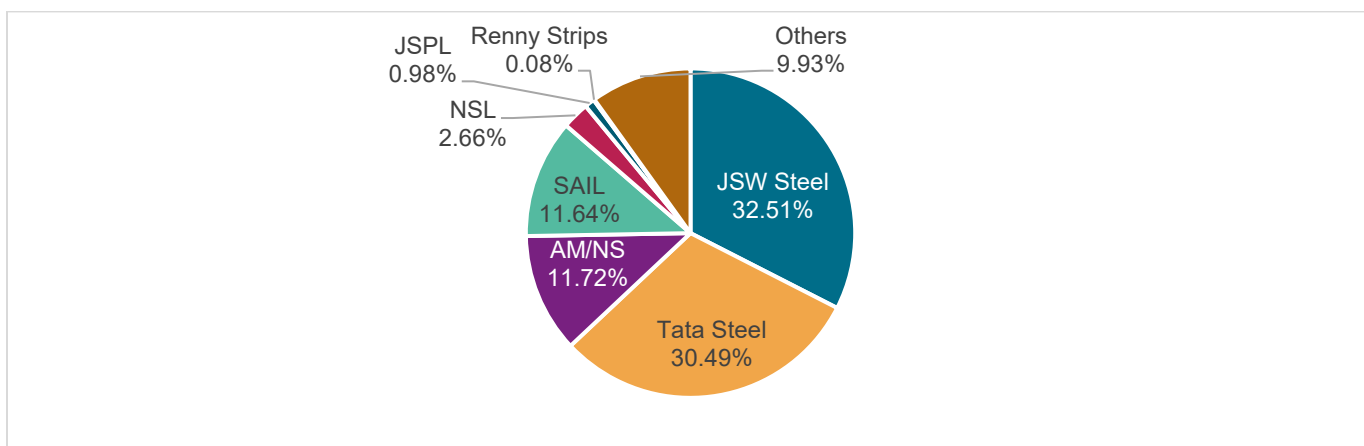
Infrastructure: The segment accounts for 35-40% of the overall HR steel domestic demand, amounting to 19-21 million tonnes of demand. This segment includes various sub-segments such as pipes and tubes, ship-building, poles, crash barriers, railways, solar installations, etc. The growing investments towards infrastructure development in India through government led schemes such as National Infrastructure Pipeline, Jal Jeevan Mission, PM Gati Shakti, Bharatmala Pariyojana, Sagarmala Pariyojana, UDAN, AMRUT, etc. are expected to drive demand for HR steel in the medium to long term.

Building and construction: In this segment, HR steel is used in making components such as structural frameworks, roofing and cladding as well as in constructing warehouses and pre-engineering buildings. The segment accounts for 15-20% of the overall HR steel domestic demand, amounting to 9-10 million tonnes of demand volume. Government led schemes such as Pradhan Mantri Awas Yojana-Urban and Gramin, growing disposable income level, and improving urbanization are expected to drive this segment, thereby, supporting the demand for HR steel.

Automobile: This segment holds 9-11% share in domestic HR steel demand, amounting to 5-6 million tonnes in terms of volume. The segment is expected to grow on the back of growing preference for personal vehicles, improving living standards and income levels, and increasing urbanization and financing options.

Capital goods: This segment includes all the machineries and equipment that are deployed across industries and accounts for a 5-7% share in the overall HR steel demand in India, amounting to ~3 million tonnes of HR steel volume. Growing push towards localized manufacturing through various government schemes such as Make in India, Production linked incentives, Aatmanirbhar Bharat, etc. are expected to improve the industrial production volumes in India, which in turn will boost the domestic demand for capital goods.

HR steel – Domestic market share of key players (FY 2025)



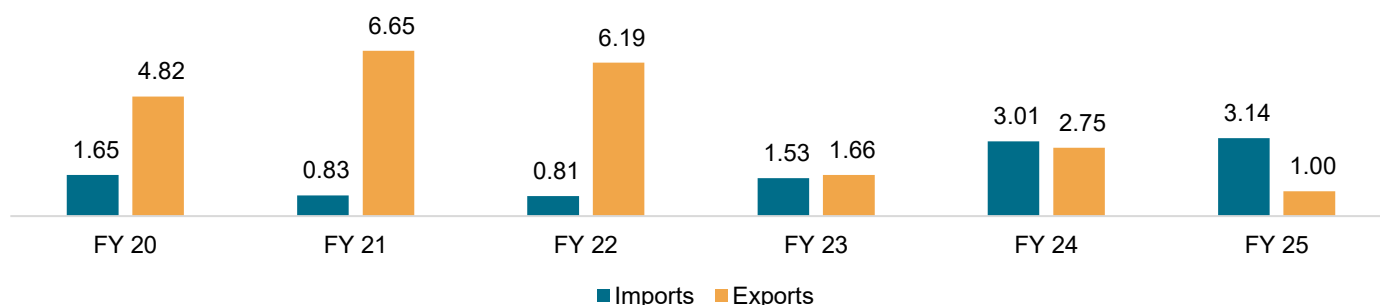
Source: Crisil Intelligence, Joint plant committee (JPC), industry, company

AM/NS: ArcelorMittal Nippon Steel, NSL: NMDC Steel Limited, SAIL: Steel Authority of India Limited, JSPL: Jindal Steel and Power Limited

Note: The above shares are determined with respect to the companies' production volumes in the fiscal 2025

JSW Steel and Tata Steel are the largest producers of hot rolled steel in India, with a cumulative market share of 63%.

HR steel - Trade (to and from India) in million tonnes

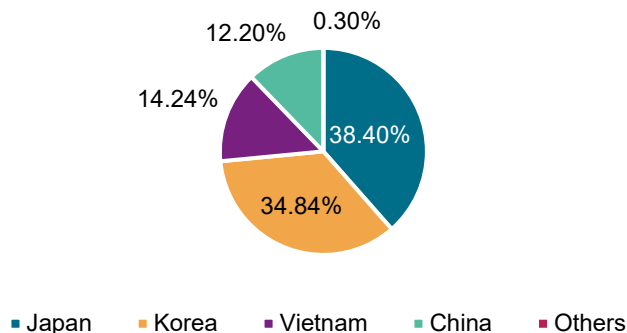


Source: Crisil Intelligence, Industry, Joint plant committee reports

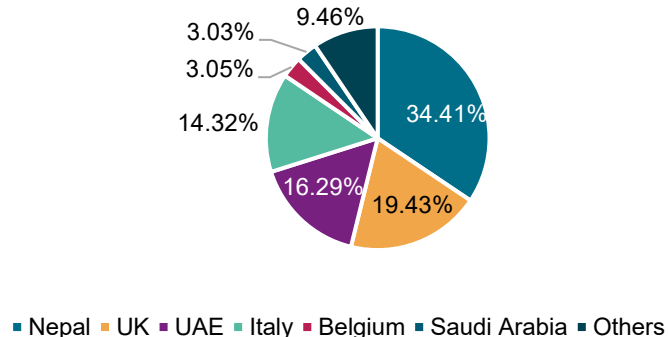
India continued to remain net exporter of hot rolled steel between fiscals 2020 and 2023 owing to its strong production output and subdued domestic demand during the period on the account of pandemic led disruptions. In fiscal 2023, however, the export vs import gap narrowed significantly due to rise in imports and a slow-down in exports. In the following fiscal of 2024, despite an increase in export volume to the tune of around 66% on-year, India turned into a net importer of hot rolled steel owing to an on-year increase in imports of approximately 100% in fiscal. This happened on the account of high influx of low-cost steel from south Asian countries which gave a strong competition to the domestically produced steel. In fiscal 2025, the gap between imports and exports further widened as India's exports plunged by 64% on-year on the account of high competition in the key export destinations from the low-cost steel supplied by other south Asian countries.

HR steel - import-export split by region (To and from India)

Imports to India: split by countries
(FY25; 100%= 3.14 million tonnes)



Exports from India: split by countries
(FY25; 100%= 1.00 million tonnes)



Korea: Republic of Korea; UAE: United Arab Emirates; UK: United Kingdom

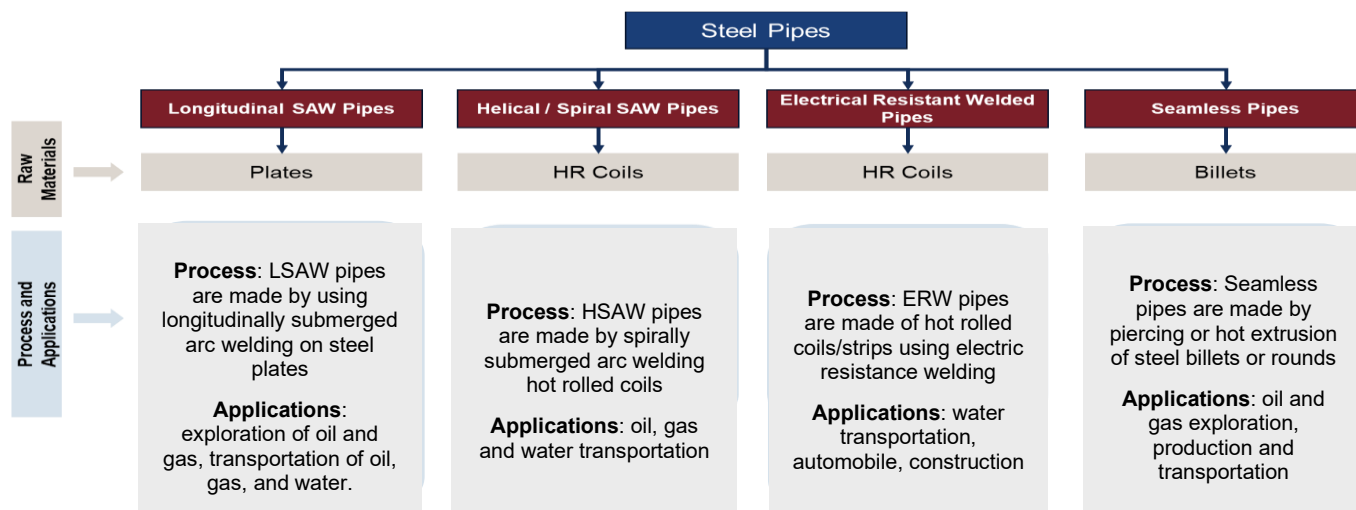
Source: Crisil Intelligence, Joint Plant Committee reports, industry

Nepal accounted for about 34.41% of India's HR steel exports in fiscal 2025, while around 100% of India's import requirements of HR steel were fulfilled by supply from Asian countries including Japan, Korea, Vietnam, and China.

2. Steel pipes

Steel pipes and tubes - Overview

Steel pipes and tubes, being a key steel downstream product, find applications primarily in the transport of liquid or gas, including oil, gas and water and in the construction sector. The steel pipes and tubes manufacturing industry is highly fragmented with more than 100 manufacturers operating in the country.



LSAW: longitudinal submerged arc welded; HSAW: helical submerged arc welded; ERW: electrical resistance welded

Source: Crisil Intelligence, industry

2.A. Global steel pipes and tubes market

As of 2022, China stood as the global leader in the production of steel pipes and tubes, followed by Russia and India. In 2022, China accounted for more than 60% of pipes and tubes produced globally. India's share in global production volume of steel pipes and tubes increased from 4.82% in 2020 to 5.23% in 2022. The overall production of steel pipes and

tubes (both welded and seamless pipes and tubes) decreased on-year by around 5.45% in 2022 to approximately 131.90 million tonnes owing to supply related constraints caused by geopolitical conflicts.

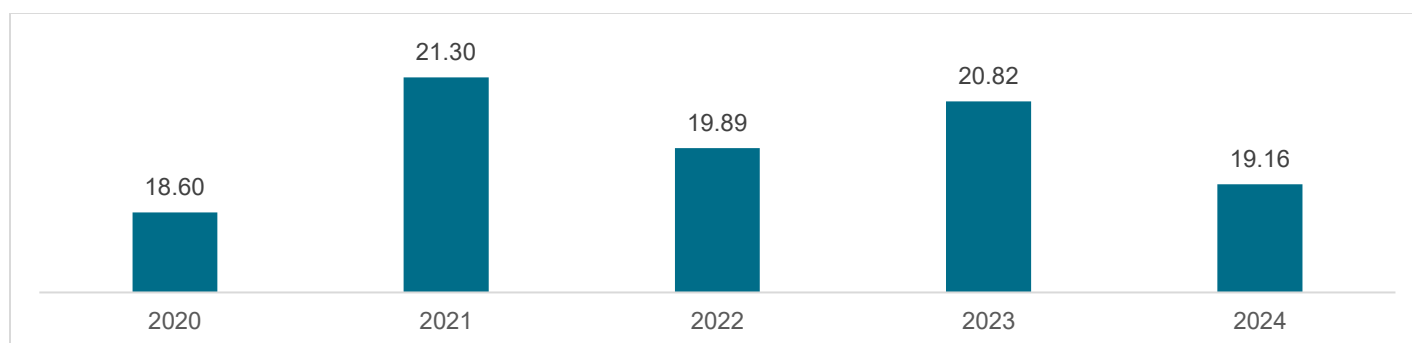
Global steel pipes and tubes production (volume in million tonnes)

Country	CY20		CY21		CY22	
	Volume	Share	Volume	Share	Volume	Share
China	89.50	64.39%	89.30	64.01%	82.60	62.62%
Russia	10.30	7.41%	11.10	7.96%	12.70	9.63%
India	6.70	4.82%	5.80	4.16%	6.90	5.23%
Japan	4.80	3.45%	5.10	3.66%	5.00	3.79%
South Korea	4.50	3.24%	4.60	3.30%	0.10	0.08%
Others	23.10	16.62%	23.60	16.92%	24.60	18.65%
Total global production	139.00	100.00%	139.50	100.00%	131.90	100.00%

Source: Crisil Intelligence, World Steel Association 2024

Note: Volume column refers to volume of steel pipes and tubes produced by a particular country in the corresponding calendar year. Share column represents % share of the country in the global production volume of steel pipes and tubes in that corresponding calendar year.

Global ERW pipes and tubes– trade flow (in million tonnes)

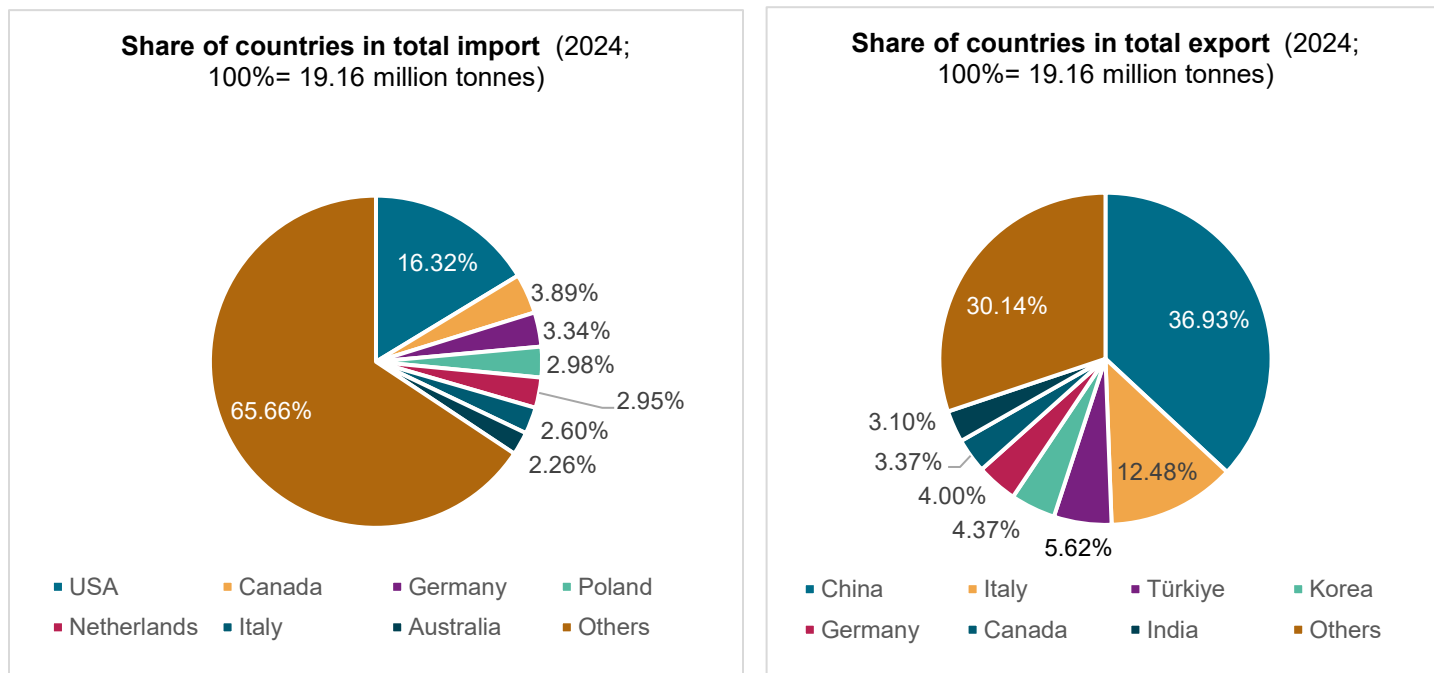


Source: Crisil Intelligence, United Nations Comtrade, industry

Note: Harmonized System of Nomenclature (HSN) codes: 730419; 730431, 730439, 730619, 730629, 730630, 730661, 730669, and 730690 have been considered for calculation of trade volume of ERW pipes

The global trade flow for ERW pipes and tubes increased by 15% on-year to 21.30 million tonnes in 2021 from 18.60 million tonnes in 2020, which was impacted by the pandemic led supply chain disruptions across the globe. In 2022, the global trade flow of ERW pipes and tubes declined by 7% on-year to 19.89 million tonnes on the account of disruptions in global supply chain due to geopolitical uncertainties. The increase in exports of ERW pipes and tubes in 2023 to the tune of 5% (with the traded volume increasing to 20.82 million tonnes) happened on the account of increased demand from infrastructure sectors, particularly in emerging markets. In 2024, the global trade flow decreased 8% on-year to 19.16 million tonnes owing to geopolitical tensions.

ERW pipes and tubes – global import-export split by region (2024)



Korea: Republic of Korea; USA: United States of America

Source: United Nations Comtrade, Crisil Intelligence, industry

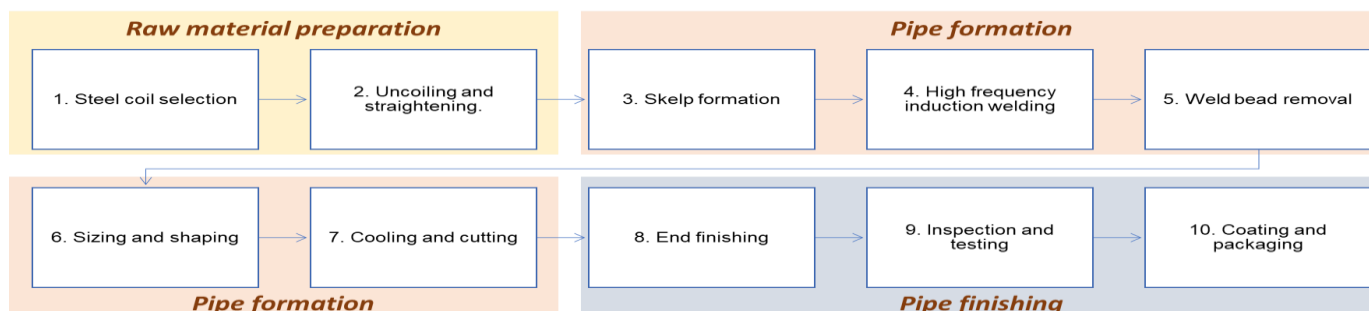
Note: Harmonized System of Nomenclature (HSN) codes: 730419, 730431, 730439, 730619, 730629, 730630, 730661, 730669, and 730690 have been considered for calculation of trade volume of ERW pipes and tubes

In 2024, the North American region accounted for the highest share in the global import of ERW pipes and tubes, with the USA and Canada cumulatively accounting for over 20% share in the global ERW pipes and tubes' traded volume in the year. On the exports side, China alone accounted for 36.93% share in the global exports of ERW pipes and tubes in 2024 on the back of its globally competitive prices supported by low production, labour, and real estate costs. It was followed by Italy with a share of 12.48% in the global exports of ERW pipes and tubes in 2024.

2.B. Domestic ERW pipes and tubes

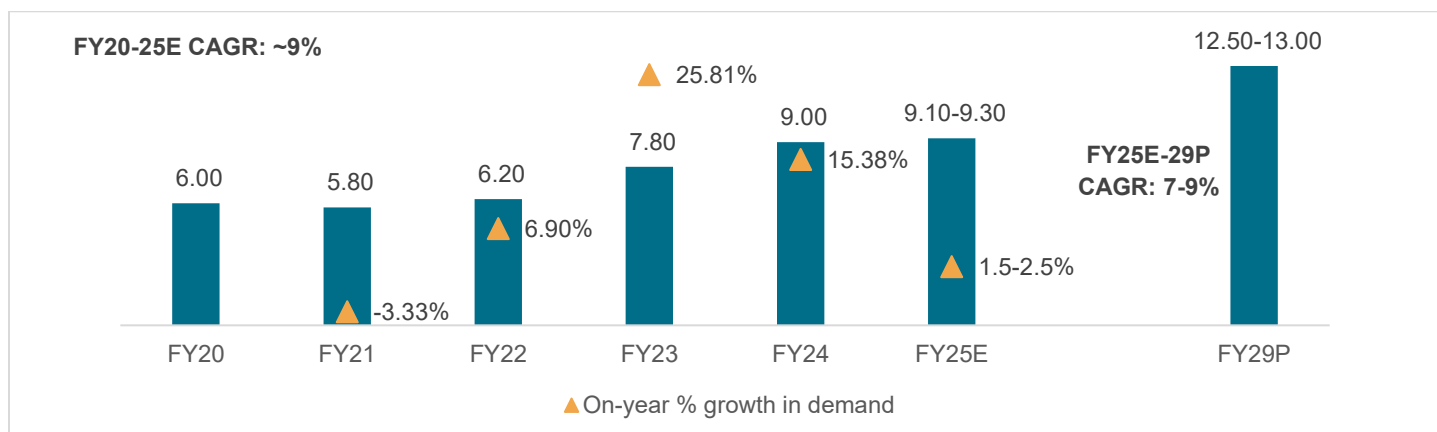
ERW pipes and tubes - Manufacturing process

ERW pipes and tubes are manufactured using the electric resistance welding method in which the proximity effect of high frequency current is used to heat the edges of hot rolled coils or plates. The heated edges are then fused together to form a seamless joint. Diameters of these pipes range from 10 mm to 500 mm. In general, ERW pipes and tubes are priced lower than the other welded pipes and tubes like SAW pipes.



Source: Crisil Intelligence, industry

ERW pipes and tubes - Domestic demand (in million tonnes per annum)



Source: Industry, Crisil Intelligence

The domestic demand for ERW pipes and tubes is projected to clock a CAGR of 7-9% between fiscals 2025 and 2029 to 12.50-13.00 million tonnes per annum in fiscal 2029 on the back of rising investments in housing, urban infrastructure, water supply and sanitation, irrigation, smart cities, and oil and gas segments. Further, continued investments in schemes such as affordable housing, Jal Jeevan Mission and Har Ghar Nal Yojana, and initiatives towards improving city-level gas distribution networks and oil and gas transmission pipelines are expected to support growth in the domestic welded pipes and tubes demand and especially in ERW pipes and tubes demand. The key end-use segments driving demand growth in the ERW pipes and tubes segment are as follows:

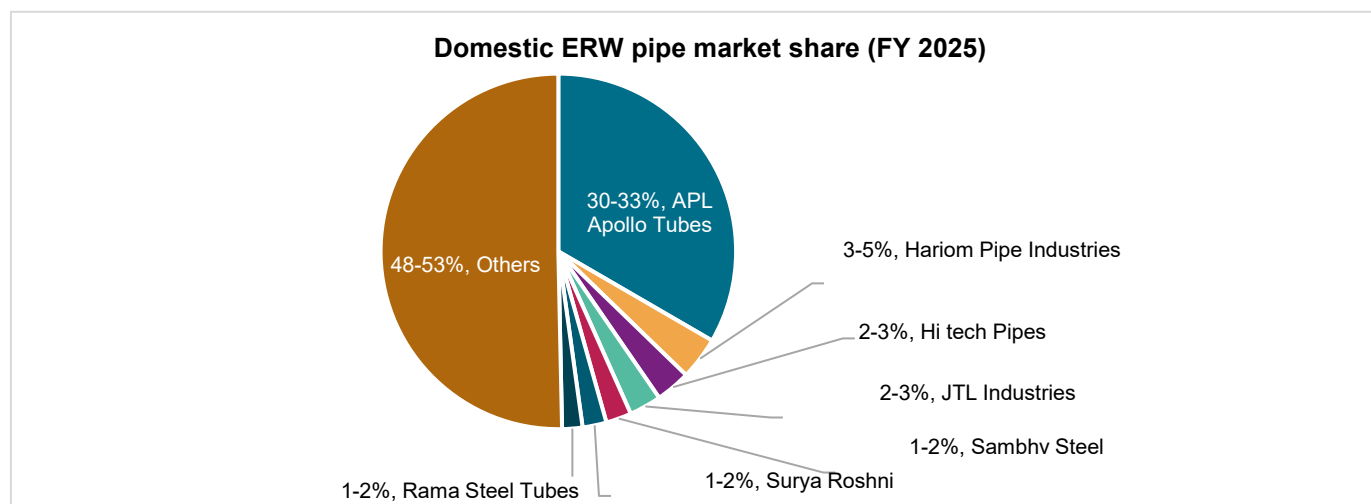
Building, construction, and Infrastructure: This segment accounts for 30-35% share in overall domestic demand for ERW pipes and tubes, amounting to 3-3.2 million tonnes per annum of demand volume. This segment includes various sub-segments such as real estate, housing, warehousing, etc., wherein ERW pipes and tubes are consumed. In housing and real estate sub-segments, the government sponsored affordable housing schemes will drive the demand for these pipes and tubes, which are majorly used in applications such as roofing, balconies, door frames, planks, etc. Further, owing to changing customer preferences towards acquiring luxury living spaces, demand for the real estate and housing segment is expected to rise, giving a push to the ERW pipes and tubes demand.

Further, central government's focus on urban infrastructure, railways, and airports will boost investment in the infrastructure sector and will drive the market for ERW pipes and tubes. Various government-led schemes such as PM Gati Shakti, UDAN, etc. are expected to support the demand in the medium to long term.

Water supply, sanitation and irrigation: This segment holds 25-28% share in overall domestic demand for ERW pipes and tubes, which amounts to 2.3-2.5 million tonnes demand volume. The investments towards the sector are expected to continue to grow in light of multiple government schemes such as Swachh Bharat Mission, Jal Jeevan Mission, AMRUT, and PM Krishi Sinchai Yojana.

Oil and gas: This segment, which accounts for 12-14% share in overall domestic demand for ERW pipes and tubes, consumes 1.1-1.2 million tonnes of ERW pipes and tubes domestically. An increase in natural gas pipeline capacity, a growth in demand for petroleum products, an improving pipeline (especially petroleum pipeline) coverage, and a strong focus of government to increase gas share in the energy mix from the current level of 6.5% to 15% by 2030, this sector is expected to exhibit robust growth. This, in turn, will drive the demand for ERW pipes and tubes in the country.

ERW pipes and tubes – Domestic market share of key players



Source: Crisil Intelligence, industry

ERW pipes and tubes - Trade in million tonnes (to and from India)



Source: Ministry of commerce, Crisil Intelligence, industry

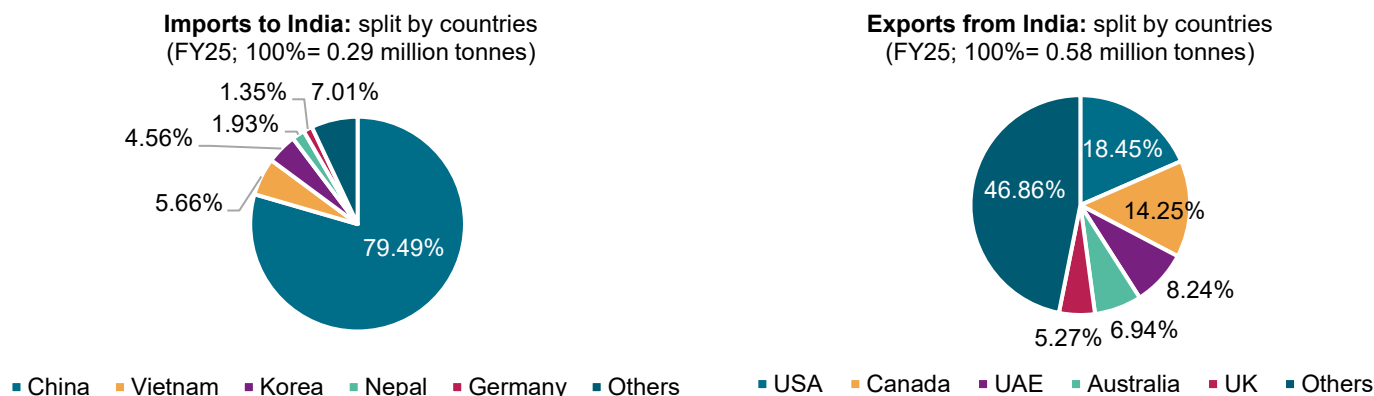
Harmonized System of Nomenclature (HSN) codes considered are: 730419; 730431, 730439, 730619, 730629, 730630, 730661, 730669, 730690

The imported volume of ERW pipes and tubes decreased at a CAGR of ~26% between fiscals 2020 and 2022 from 0.33 million tonnes to 0.18 million tonnes, owing to reduced domestic demand from key end-use industries due to pandemic-led economic disruptions. In fiscals 2023 and 2024, however, the imported volume recovered 17% and 67% on-year to 0.21 million tonnes and 0.35 million tonnes, respectively. This was primarily because of an increase in import of cheaper steel pipes and other steel products from South Asian countries. In fiscal 2025, as a result of government's initiatives to curb cheap steel pipe imports from key exporting countries, the imported volume reduced on-year by 17% to 0.29 million tonnes.

ERW pipe and tube exports from India fell 31% on-year in fiscal 2021 due to the disruptions caused by the pandemic. Following the economic recovery in key global markets and strong pent-up demand, the exports surged 73% on-year in fiscal 2022 to 0.59 million tonnes. Despite a strong increase in the supply of low-priced steel products by the other South Asian countries to India's key export markets, the export volumes of ERW pipes and tubes from India managed to remain rangebound in fiscals 2023, 2024, and 2025 (0.57 million tonnes, 0.59 million tonnes, and 0.58 million tonnes, respectively). This was because of a surge in overall demand for steel pipes and tubes in the last two fiscals in the Middle

East and North America, where investment towards the oil and gas sector increased and several water desalination projects began. As a result, India has been able to remain a net exporter of ERW pipes and tubes.

ERW pipes and tubes - import-export split by region (to and from India)



Korea: Republic of Korea; USA: United States of America; UAE: United Arab Emirates; UK: United Kingdom

Harmonized System of Nomenclature (HSN) codes considered are: 730419; 730431, 730439, 730619, 730629, 730630, 730661, 730669, 730690

Source: Ministry of Commerce, Crisil Intelligence, industry

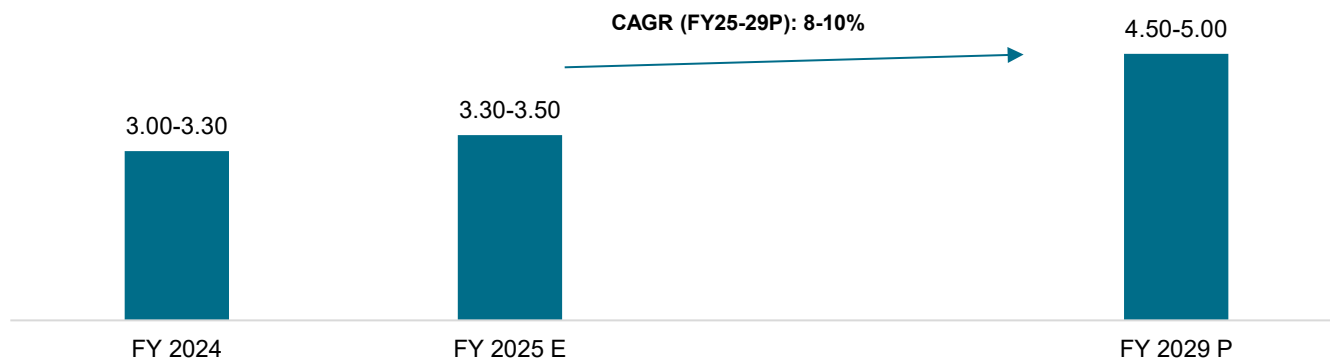
North America (Canada and USA) accounted for about 32.70% of India's ERW pipe and tube exports in fiscal 2025, while around 80% of India's import requirements were fulfilled by supply from China.

2.C. Domestic galvanised iron (GI) pipes

GI pipes – Overview and manufacturing process

GI pipes are made by coating ERW pipes with a protective layer of zinc, typically through hot-dip galvanisation. These pipes are mainly used in areas with a high risk of corrosion or rusting. Typically, GI pipes are an essential element of hot and cold-water supply, irrigation and plumbing systems.

GI pipes - Domestic demand (in million tonnes per annum)

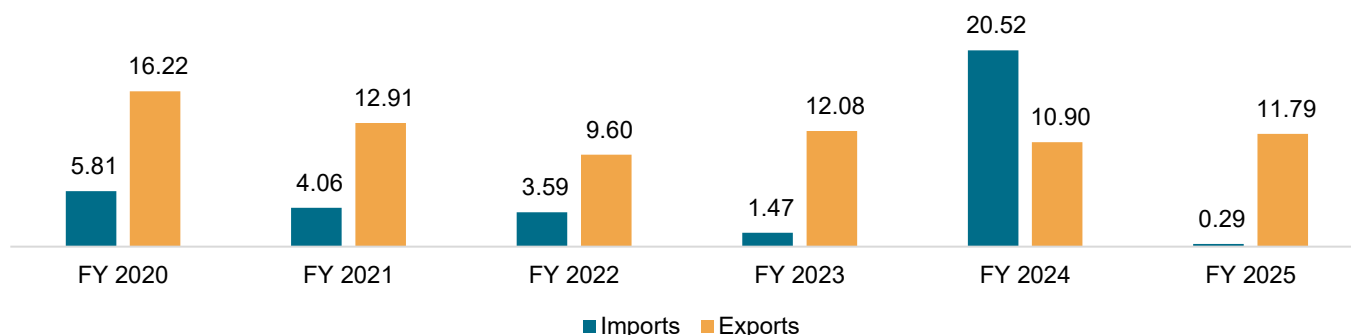


Source: Industry, Crisil Intelligence

The demand for GI pipes is expected to exhibit a CAGR of 8-10% between fiscals 2025 and 2029 from 3.00-3.30 million tonnes per annum to 4.50-5.00 million tonnes per annum, primarily led by expected support from construction, infrastructure, and water and supply sectors.

GI pipes - Trade in kilo tonnes (to and from India)

Import and export volume (in kilo tonnes)



Source: Ministry of Commerce, Crisil Intelligence, industry

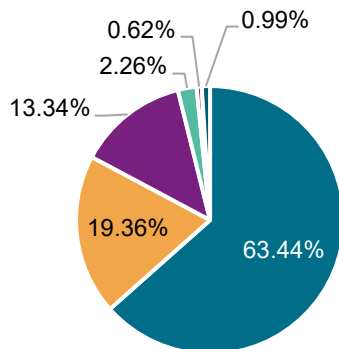
Harmonized System of Nomenclature (HSN) codes considered are: 73051111, 73051119, 73051211, 73051219, 73051911, 73051919, 73061911, and 73061919

The imported volume of galvanised pipes and tubes decreased at a CAGR of ~21% between fiscals 2020 and 2022 from 5.81 kilo tonne to 3.59 kilo tonne owing to decreased domestic demand on the account of pandemic-led disruptions. In fiscal 2023, the imported volume dropped 59% on-year, with a steep decrease in imports from key South Asian countries like Malaysia. This was because of high international steel prices and elevated shipping costs in early fiscal 2023, low demand in key end-use industries such as real estate and automobile, and an increase in domestic steel-making capacity and utilisation rates backed by the government's strong push to domestic manufacturing. In fiscal 2024, however, the imported volume surged to 20.52 kilo tonne, primarily owing to a sudden rise in India's imports from the UAE after signing the Comprehensive Economic Partnership Agreement (CEPA). The CEPA reduced tariffs significantly, which led to a rise in trade activities between the two countries. Further, there was an increase in imports of cheaper galvanised pipes and other steel products from South Asian countries like Malaysia. India, which has traditionally been a net exporter of galvanised pipes, became a net importer because of this surge. In fiscal 2025, the imported volume of galvanized pipes plunged significantly to 0.29 kilo tonne owing to a massive reduction in imports from key suppliers like UAE and Malaysia amid India's initiatives to promote domestic production and to reduce reliance on imports.

Exports of galvanised pipes also fell at a CAGR of 23% between fiscals 2020 and 2022 to 9.60 kilo tonne because of pandemic-led disruptions. After the economic recovery following the pandemic, exports surged 26% on-year in fiscal 2023, primarily owing to a global rise in pent-up demand from key end-use industries. In fiscal 2024, however, the exports fell 10% on-year to 10.9 kilo tonne on account of a surge in supply of cheaper steel products from other South Asian countries in the key export markets. Fiscal 2025 showed improvement in exports of galvanized pipes which surged on-year by 8% to 11.79 kilo tonne.

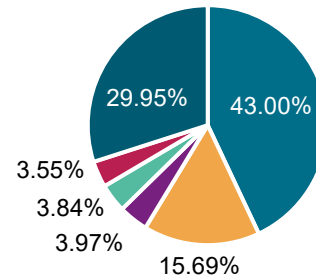
GI pipes - import-export split by region (to and from India)

Imports to India: split by countries
(FY25; 100%= 0.29 kilo tonne)



■ China ■ USA ■ UAE ■ Taiwan ■ Malaysia ■ Others

Exports from India: split by countries
(FY25; 100%= 11.79 kilo tonne)



■ Australia ■ Bangladesh ■ Nepal ■ USA ■ Tanzania ■ Others

USA: United states of America; UAE: United Arab Emirates

Harmonized System of Nomenclature (HSN) codes considered are: 73051111, 73051119, 73051211, 73051219, 73051911, 73051919, 73061911, and 73061919

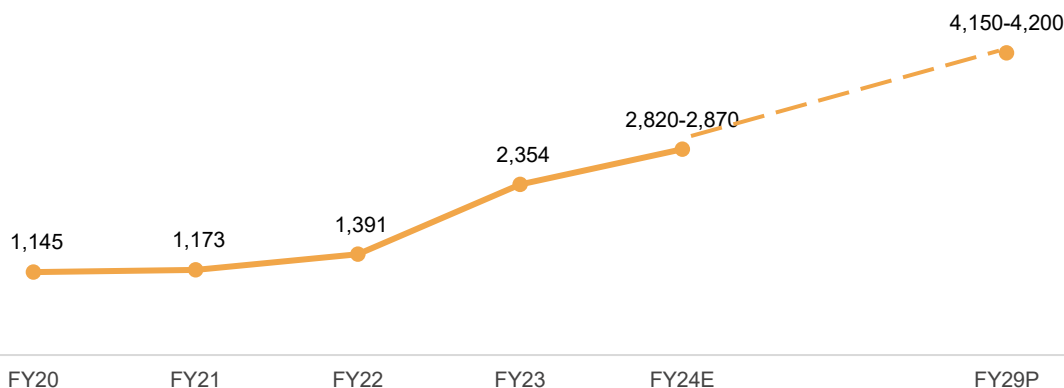
Source: Ministry of Commerce, Crisil Intelligence, industry

In fiscal 2025, China, USA, and UAE accounted for the highest shares in India's galvanised pipe imports, together contributing ~97% of the overall imported volume. From the exports perspective, Australia and Bangladesh were the biggest markets for India-made galvanised pipes, cumulatively accounting for around 58.69% share in the overall galvanised pipes export volume from India.

Key initiatives driving domestic demand for ERW and GI pipes

Various central and state government projects and schemes have been driving the domestic demand for steel pipes. Water supply, sanitation, irrigation and flood control have consistently been the top end-use sectors for the steel pipe industry and are expected to continue to do so over the next few years through schemes such as Jal Jeevan Mission and Har Ghar Nal Yojana.

Water supply, sanitation and irrigation related investments in India (in Rs billion)



Source: Crisil Intelligence, industry

E: estimated, P: projected

Annual investments in the water supply and sanitation and irrigation sectors in the country are estimated to have grown to Rs 2,820-2,870 billion in fiscal 2024 from Rs 1,145 billion in fiscal 2020, clocking a CAGR of over 25% during the period. This was led by the increasing focus of the central and state governments on supplying piped water for domestic consumption and initiatives towards flood control and effective irrigation practices. The annual investment value is expected to reach Rs 4,150-4,200 billion in fiscal 2029, clocking a CAGR of ~8% between fiscals 2024 and 2029, primarily on the back of the government's mission to ensure 100% coverage of piped water supply.

AMRUT

In 2015, the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) was introduced in 500 cities and towns to improve basic infrastructure, such as storm water drainage, green spaces and parks, non-motorised urban transport, water supply, and sewage and septage management.

States and Union Territories have so far undertaken 5,873 projects worth Rs 822.22 billion. Of these, 4,676 projects valued Rs 327.93 billion have been completed, while 1,197 projects worth Rs 494.30 billion have been grounded and are awaiting implementation.

On October 1, 2021, the government launched AMRUT 2.0 under which continuing AMRUT 1.0 projects will also receive funding till March 31, 2023.

Jal Jeevan Mission

Investment in Jal Jeevan Mission and other projects in major states

States	Coverage -under Jal Jeevan Mission	Other projects
Uttar Pradesh	90.85%	Automatic water stations, Namami Gange, minor irrigation projects
Maharashtra	90.21%	Dug well and borewell programme
Karnataka	86.42%	Development of canals, water purification plants
Odisha	77.14%	Multiple mega-piped water supply projects
Telangana	100.00%	Minor and major irrigation projects
Madhya Pradesh	72.71%	Development of canals, irrigation projects
Rajasthan	57.60%	Development of canals, irrigation projects
Gujarat	100.00%	Development of canals, irrigation projects
Andhra Pradesh	74.48%	Development of canals, irrigation projects
India	81.40%	

Source: E-jalshakti portal of Government of India, industry, Crisil Intelligence

As of December 2025, the coverage of Jal Jeevan Mission stands at 81.40%. Among the states which have the highest budgetary allocations towards water supply, sanitation, irrigation and flood control, Rajasthan, Madhya Pradesh, Odisha, Andhra Pradesh and Karnataka have the lowest coverage. On the other hand, Telangana and Gujarat have achieved 100% coverage under the mission.

These government-led initiatives are expected to support the water supply, sanitation and irrigation sectors and boost the water-based pipeline infrastructure. This will in-turn support growth in pipes demand.

Demand-related challenges/inhibitors for steel pipes

Increasing globalisation

The rise in globalisation of steel and related products poses a threat to the Indian steel pipes industry from domestic and international manufacturers of products in the entire value chain, including sponge iron, blooms, HR coils, ERW black pipes, GI pipes, HR coils and CR coils.

Oil price fluctuations

High oil prices push up inflation, current account deficit and fiscal deficit in major oil importing nations like India and China. This usually results in lower government and private sector spending, especially in the oil and gas sector, potentially reducing demand for ERW pipes and tubes. A decline in the oil prices, meanwhile, negatively impacts government spending in countries like Saudi Arabia, Nigeria and the United Arab Emirates (UAE), as they are heavily dependent on revenue from crude oil exports. This reduces demand for ERW pipes in the oil exporting countries and impacts Indian ERW pipe and tube exporters.

Geopolitical and trade-related challenges

Geopolitical conflicts, trade barriers, taxes and reduced international investments can present a threat to the Indian steel pipes and tubes businesses by limiting their ability to acquire raw material, export completed goods, access new markets and identify growth prospects. Further, the availability of less expensive imported steel pipes and tubes may pose a challenge to the sales volume and margins of domestic players in the industry. However, the companies may counteract the effects of less expensive imports by raising the quality of their goods, streamlining their supply chain and growing their clientele, among other measures.

Other challenges

Volatility in raw material and commodity prices, and changing government policies, custom duties, environmental, health and safety regulations, employment, consumer confidence and disposable income levels can pose both supply and demand-side threats to the steel pipes and tubes industry.

Fluctuations in steel prices based on the availability and cost of raw material, steel demand, worldwide production and capacity, changes in the volume of steel trade, transportation costs and various social and political factors also present challenges to the industry.

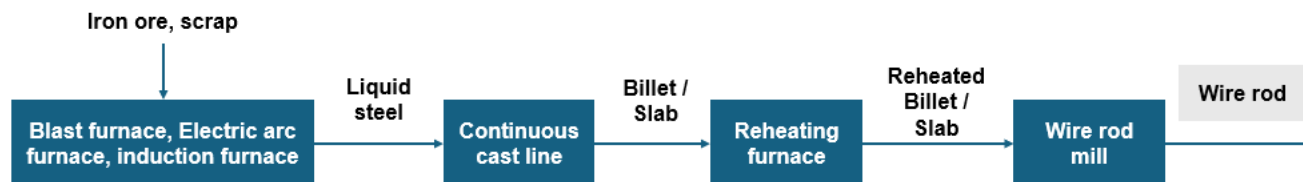
- Low steel prices adversely affect the operations of the industry, resulting in lower revenue and margins, and write-down of products and raw material inventories. Moreover, decreases in steel and steel product prices during periods of economic weakness have not always been balanced by commensurate price increases during periods of economic strength
- Domestic steel pipes and tubes players could also be affected by the introduction of or increase in import tariffs in their export markets, changes in trade agreements between countries and additional levies in the form of countervailing or anti-dumping duties on a number of items imported into India

3. Cold heading quality wire rods

Cold heading quality (CHQ) wire rods - Overview

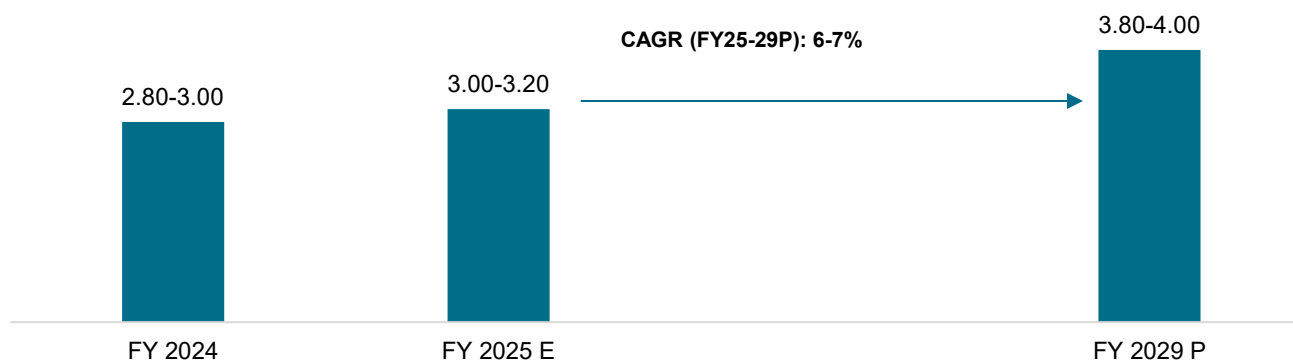
Cold heading quality (CHQ) wire rods find applications primarily in the manufacturing of cold forged parts such as fasteners, nuts and bolts, and screws. The primary end-use industries for CHQ grade steel include automobile, power, oil and gas.

CHQ wire rods - Manufacturing process



Source: Industry, Crisil Intelligence

CHQ wire rods - Domestic demand (in million tonnes per annum)



Source: Industry, Crisil Intelligence

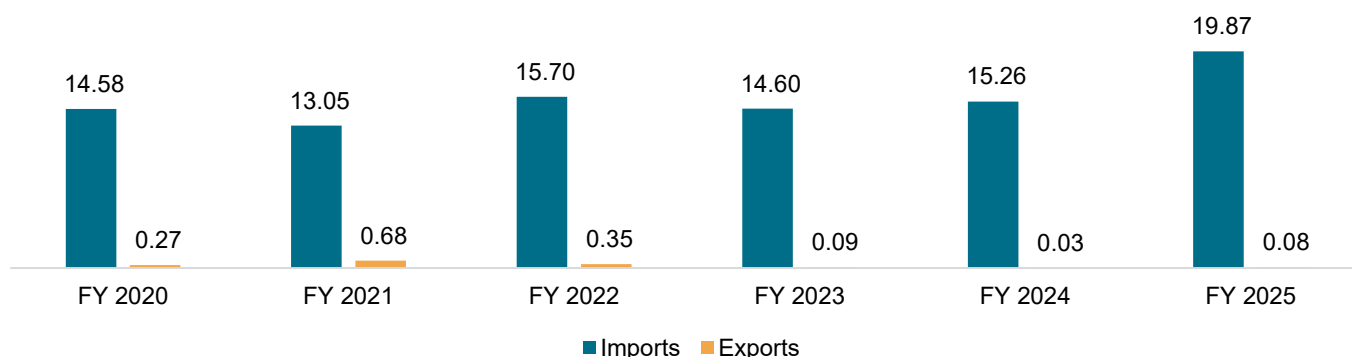
The domestic demand for CHQ wire rods is expected to clock a CAGR of 6-7% from fiscal 2024 to 2029, growing from 2.80-3.00 million tonnes per annum to 3.80-4.00 million tonnes per annum, primarily on the back of demand from the automobile, building and construction, and infrastructure (including power and energy sectors).

Automobile: This segment accounts for ~50% share in domestic demand for CHQ wire rods, amounting to 1.4-1.5 million tonnes per annum as of fiscal 2025. This segment is expected to clock a healthy CAGR of 6-8% during fiscals 2024-2029 owing to growing public preference for personal vehicles, easy financing options, improving living standards and increasing income levels.

Building, construction and infrastructure: Building, construction and infrastructure segments cumulatively account for around 25-30% share in the overall domestic demand for CHQ wire rods, amounting to a demand volume of 0.75-0.85 million tonnes as of fiscal 2025. In these segments, CHQ wire rods are utilized in the form of fasteners, anchors, structural support components such as scaffoldings, and wires. Going forward, owing to a strong push by the government towards infrastructure development and affordable housing combined with growing urbanization trends is expected to support the growth in this segment, and in-turn support the demand for CHQ wire rods.

CHQ wire rods - trade in kilo tonnes

Import and export volume (kilo tonne)



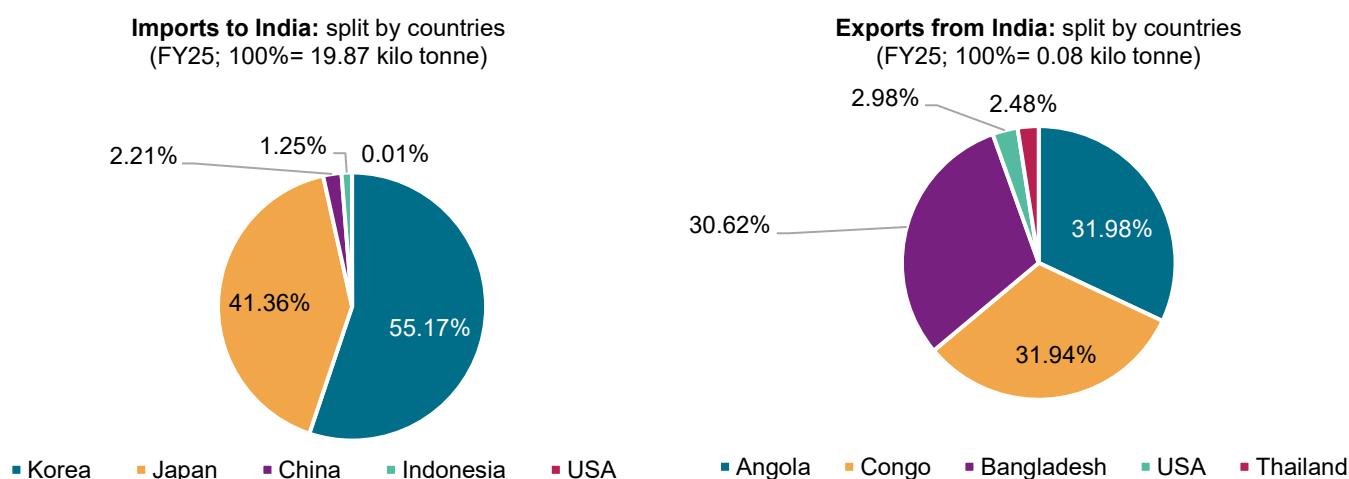
Source: Ministry of Commerce, Crisil Intelligence, Industry

Harmonized System of Nomenclature (HSN) codes considered are: 72132020, 72139120, and 72139920

India has remained a net importer of CHQ wire rods throughout the considered period (fiscal 2020 to 2025). The imported volume of CHQ wire rods which stood at 14.58 kilo tonnes in fiscal 2020 fluctuated between fiscals 2020 and 2023 owing to demand side disruptions on the account of pandemic but remained rangebound, at 14.60 kilo tonnes in fiscal 2023. The imported volume of CHQ wire rods grew at a robust CAGR of ~17% between fiscals 2023 and 2025 primarily on the account of an increased in-flow of low-priced steel products from Asian countries.

The export volume of CHQ wire rods has remained considerably lower than the imports for the assessment period and as a result, its net imports to India have been on the rise in the recent past.

CHQ wire rods - import-export split by region



USA: United States of America

Harmonized System of Nomenclature (HSN) codes considered are: 72132020, 72139120, and 72139920

Source: Ministry of Commerce, Crisil Intelligence, industry

In fiscal 2025, Korea and Japan accounted for the highest share in the CHQ wire rods imports to India, together contributing to 96.53% of the overall imported volume. From the exports perspective, Angola, Congo, and Bangladesh

were the biggest markets for India-made CHQ wire rods, cumulatively accounting for around 94.54% share in the overall export volume of CHQ wire rods from India.

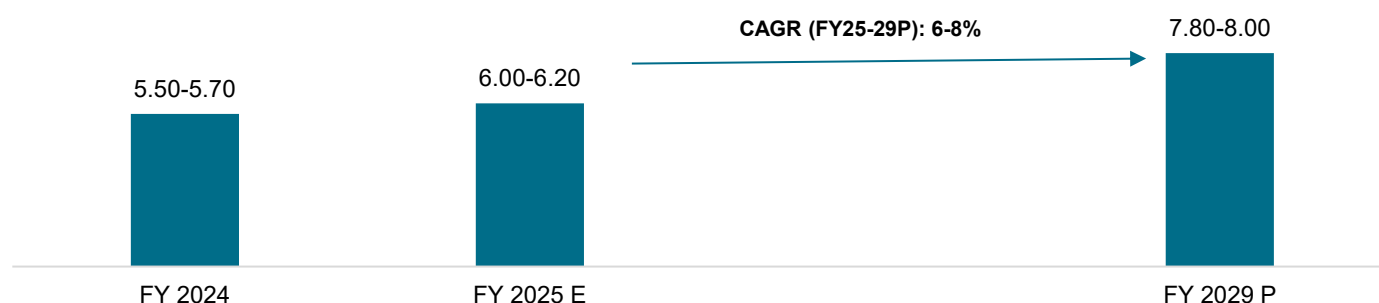
4. Forging quality steel

Forging quality steel - Overview

Forging quality steel is primarily available in the form of billets or bars and rods which are the downstream products created by heating and shaping steel billets. The forging quality steel has a high load-bearing capacity and can withstand severe conditions, making them ideal for critical applications that demand superior mechanical performance and reliability.

For example, forging quality steel finds applications in sectors such as oil and gas (as drill collars, valve stems and shafts), aerospace (landing gear components, engine parts and turbine shafts), automotive (in crankshafts, connecting rods and gears) and in the process industry (such as heavy machinery including axles, gear shafts and hydraulic components).

Forging quality steel - Domestic demand (in million tonnes)



Source: Industry, Crisil Intelligence

The demand for forging quality steel is expected to grow from 5.50-5.70 million tonnes per annum in fiscal 2024 to 7.80-8.00 million tonnes per annum in fiscal 2029 at a CAGR of 6-8% during the period, primarily on the back of demand from automobile, construction and infrastructure, process industry, and oil and gas sectors.

Automobile segment which accounts for around 40% share in forging quality steel (amounting to around 2.40-2.70 million tonnes demand as of fiscal 2025), consumes forging quality steel in the manufacturing of connecting rods, wheel hubs, axles, crankshafts, etc. The automobile segment, which is expected to grow on the account of increasing income levels and a growing preference for personal vehicles, will support the demand for forging quality steel.

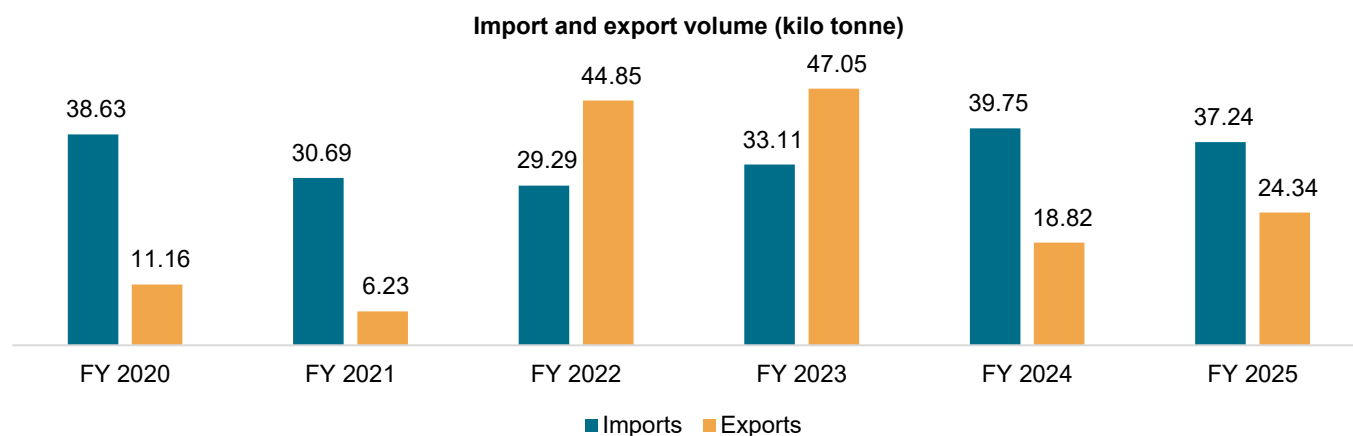
Construction and infrastructure segments approximately account for 10-15% share in forging quality steel demand in India, amounting to 0.50-1.00 million tonnes of demand in volume terms. For example, drilling tools, excavator links, and multiple parts of railways infrastructure (including brake components, wheel sets) consume forging quality steel. With a growing focus of government towards infrastructure development through multiple schemes such as PM Gati Shakti, National Infrastructure Pipeline, etc., it is expected that forging quality steel will gain healthy demand volume in medium to long term.

Oil and gas segment consumes forging quality steel in the manufacturing of pipeline components, flanges, valves, shafts, etc. and as a result accounts for 10-15% share in the domestic demand for forging quality steel (amounting to 0.50-1.00 million tonnes of demand in volume terms). Going forwards, with an increase in natural gas pipeline capacity, a growth in demand for petroleum products, an improving petroleum pipeline coverage, and an expected increase in share of gas in

the energy mix, the investments towards the oil and gas segment are expected to witness a robust increase. This, in turn, will support the demand for forging quality steel.

Industrial segment accounts for ~10% share in the demand for forging quality steel (amounting to 0.50-0.70 million tonnes of demand). Owing to an increasing push towards domestic manufacturing across industries through PLI, Make in India, and other government schemes, the industrial production is expected to get a boost in the next 5-6 years. This will in turn support the demand for forging quality steel which is extensively used to manufacture press components, couplings, hammers, and shafts in the industrial set-ups.

Forging quality steel - Trade in kilo tonnes



Source: Ministry of Commerce, Crisil Intelligence, Industry

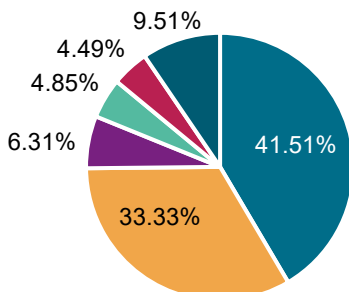
Harmonized System of Nomenclature (HSN) codes considered are: 721410 and 722840

India was a net importer of forging quality steel in fiscals 2020 and 2021 but became their net exporter for the following two fiscals, and again a net importer in fiscal 2024. The imported volume of forging quality steel decreased at a CAGR of ~13% to 29.29 kilo tonne in fiscal 2022 from 38.63 kilo tonne in fiscal 2020 on account of Covid-19-induced economic disruptions. In fiscal 2023, the imported volume increased 13% on-year, due to pent-up demand from key end-use industries. Between fiscals 2023 and 2025, the imported volume of forging quality steel surged at a CAGR of 6% to 37.24 kilo tonne primarily due to an increase in imports of low-priced steel products from Asian steel producers.

The exports of forging quality steel fell 44% on-year to 6.23 kilo tonne in fiscal 2021 from 11.16 kilo tonne in fiscal 2020. Exports, however, increased sharply to 44.85 kilo tonne in fiscal 2022 and to 47.05 kilo tonne in 2023 as Indian steel companies sought to cater to foreign destinations such as Italy and other European countries, in combination with low domestic demand from key end-use industries of real estate and automobiles. However, between fiscals 2023 and 2025, exports of forging quality steel from India dipped at a CAGR of (-28)% owing to increased availability of cheaper forging quality steel produced and supplied by the other south Asian countries in the key export markets.

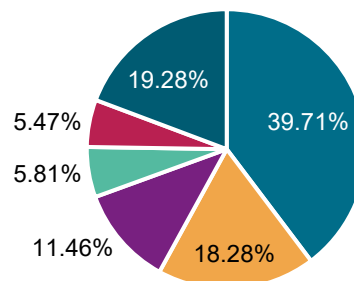
Forging quality steel - import-export split by region

Imports to India: split by countries
(FY25; 100%= 37.24 kilo tonne)



■ Germany ■ China ■ Japan ■ Sweden ■ Italy ■ Others

Exports from India: split by countries
(FY25; 100%= 24.34 kilo tonne)



■ Bhutan ■ Mauritius ■ Seychelles ■ Tanzania ■ UAE ■ Others

UAE: United Arab Emirates

Harmonized System of Nomenclature (HSN) codes considered are: 721410 and 722840

Source: Ministry of Commerce, Crisil Intelligence, industry

In fiscal 2025, Germany, China, and Japan accounted for the highest shares in the forging quality steel imports to India, together contributing to 81.15% of the overall imported volume. From the exports perspective, Bhutan, Mauritius, and Seychelles were the biggest markets for India-made forging quality steel, cumulatively accounting for around 69.45% share in the overall export volume of forging quality steel from India.

5. Scaffolding and formwork systems

Scaffoldings - Overview and manufacturing process

Scaffoldings are temporary structures that are made of steel, aluminium or wood/bamboo and are used in the construction, maintenance and repair work to provide a safe platform for workers operating from heights. They are primarily designed to support workers, materials, tools, ensuring safety, efficiency and accessibility during construction or renovation activities.

Steel scaffoldings are the most popular choice owing to their strength, durability, high suitability for heavy-duty construction projects, and their high resistance to fire and adverse weather conditions. Aluminium scaffoldings are lightweight and easy to assemble and thus are majorly used in maintenance and mobile scaffolding applications and are mostly deployed inside buildings. Wooden or bamboo scaffoldings are low cost and are highly suitable for light-weight construction works.

Technocraft Industries (India) Ltd., ADTO Group (China), and KHK Scaffolding & Formwork (UAE) are key global scaffoldings manufacturers.

The steel scaffoldings are primarily manufactured using raw materials such as hot rolled coils, pipes, wire rods using processes such as cutting, shearing, forming, and forging, etc.

Formwork - Overview and manufacturing process⁵

⁵ Since many players in the global and domestic formwork industry associate both formwork and scaffoldings with a common umbrella category of scaffoldings, we have used common terminology i.e. "scaffoldings" which describes the cumulative market size and trade

Formworks are temporary or permanent molds into which concrete is poured to achieve the desired structural shape. These can be made using a variety of materials including timber, plywood, steel, plastic, and composite materials. The most common choice of material is steel or aluminium because of their high durability, precision and reusability.

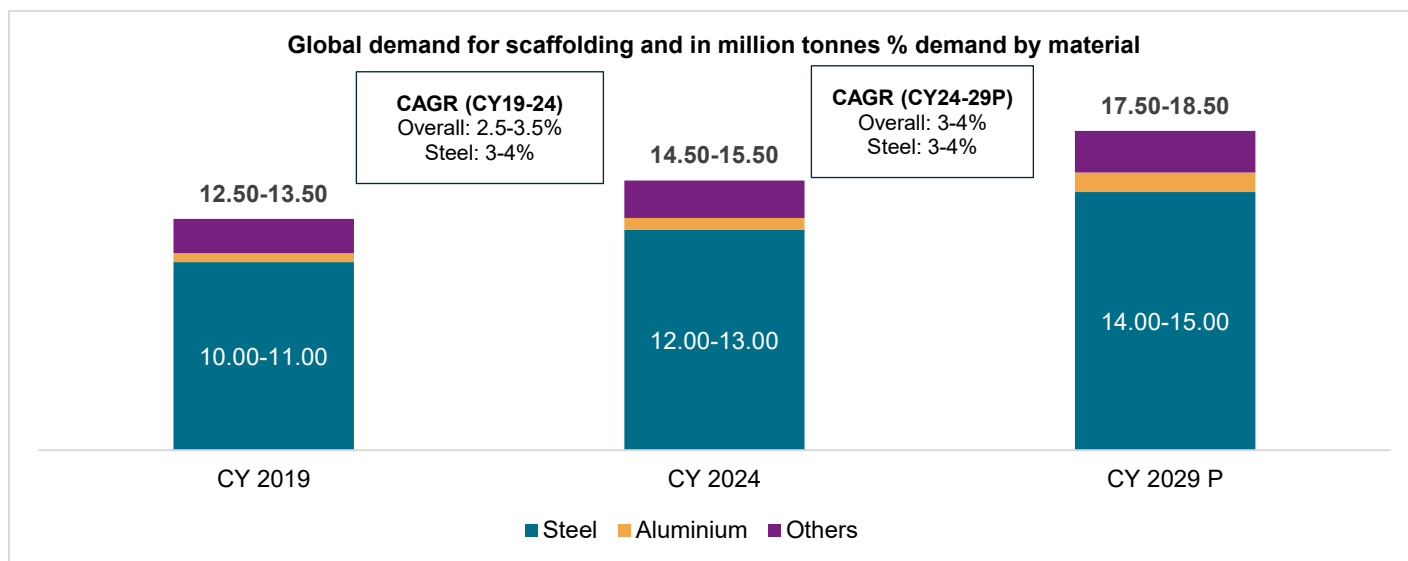
Formwork plays a critical role in construction by providing support until the concrete gains strength and as a result formworks are used in making various structural components such as slabs, beams, columns, walls and foundations.

The manufacturing process of formwork includes cutting and bending metal sheets, which is followed by welding or bolting components. Galvanizing or powder coating is also done as surface treatment to enhance the corrosion resistance and smoothness of formwork.

Formworks are gaining high traction as the modern construction activities use these extensively to reduce labour costs, improve safety and speed up infrastructure project completions.

5.A. Global scaffolding market

Scaffoldings - Global demand in million tonnes per annum



Years	CY 2019		CY 2024		CY 2029 P	
Particulars	Demand in million tonnes per annum	% share in total demand	Demand in million tonnes per annum	% share in total demand	Demand in million tonnes per annum	% share in total demand
Total demand	12.50-13.50	100%	14.50-15.50	100%	17.50-18.50	100%
Steel scaffoldings	10.00-11.00	81-83%	12.00-13.00	81-83%	14.00-15.00	79-81%
Aluminium scaffoldings	0.45-0.55	3-4%	0.50-0.70	3.5-4.5%	1.10-1.20	6-7%

(from both global and domestic point of view) of scaffoldings (i.e. the temporary support structures that are used in the construction, maintenance and repair work) and formwork systems (i.e. temporary or permanent molds into which concrete is poured to achieve the desired structural shape).

Years	CY 2019		CY 2024		CY 2029 P	
Other scaffoldings	1.80-2.00	13-15%	1.90-2.20	12.5-14.5%	2.30-2.60	12.5-14.5%

Source: Crisil Intelligence, industry

Others primarily include wooden and bamboo.

P: Projected

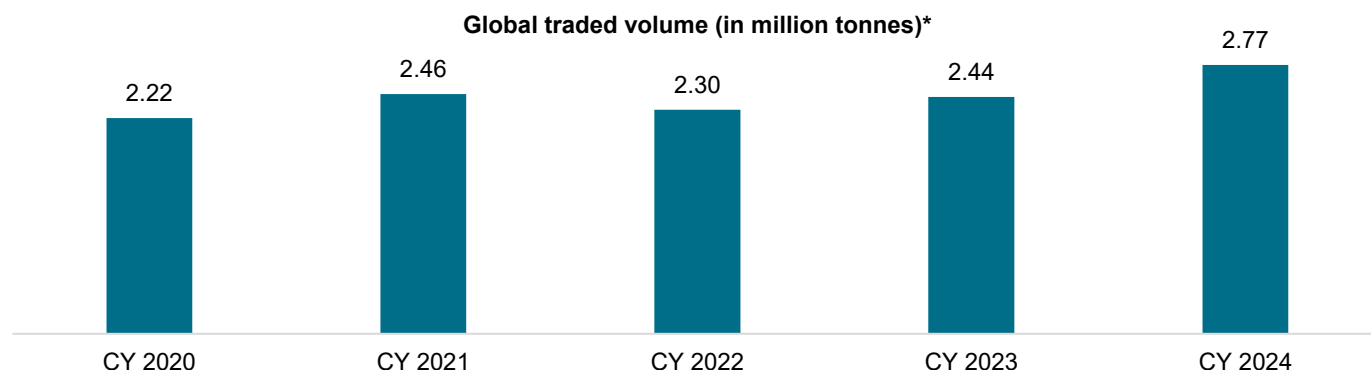
The global demand for scaffoldings stood at 14.5-15.5 million tonnes per annum in 2024, with the steel scaffoldings segment accounting for 81-83% in the overall global demand. In 2024, the demand for steel scaffoldings stood at 12-13 million tonnes per annum and that for aluminium was 0.5-0.7 million tonnes per annum, contributing 81-83% and 3.5-4.5%, respectively, of the global scaffoldings demand for the year. Other scaffolding types, including wooden and bamboo, accounted for 12.5-14.5% of the global scaffoldings demand in 2024, clocking a demand of 1.9-2.2 million tonnes per annum.

The global demand for scaffoldings is expected to log a CAGR of 3-4% between 2024 and 2029 to clock 17.5-18.5 million tonnes per annum in 2029 owing to higher demand from building, construction, infrastructure, industrial and energy sectors.

Key end use industries	% share in demand	Growth drivers
Building, construction and infrastructure sectors	60-70%	- A rapid rise in urbanization globally - Urban development and multiple skyscraper projects planned in developing countries - Growing need of renovation and maintenance of old buildings in developed countries - Large-scale infrastructure projects such as construction of metro rails, bridges, smart cities in emerging markets such as India, China and middle eastern and African countries
Industrial, oil and gas, and shipbuilding sectors	10-15%	- Used in the construction, maintenance and repairs of factories, refinery units, off-shore drilling rigs, mines, warehousing facilities - Erected around ship's hull for construction and maintenance; also used in interior outfitting - Growing shift towards automation and other new-age technologies in the manufacturing and refining facilities will drive the need for an increased repair, renovation, retrofitting and maintenance activities - The rise of e-commerce will support the growth in demand for scaffolding for construction, racking systems and automation setup (in warehouses)
Energy sector (including power and renewable energy sectors)	10-15%	- Deployed in power plants (including thermal, hydro, nuclear, solar and wind) for turbine installation, transmission line setup and regular maintenance - A growing shift towards green energy is fueling demand for solar and wind infrastructure, which will drive the demand for scaffoldings - For example, an increase in installation of solar parks amid a growing push towards renewable energy transition in developing countries like India will drive the demand for scaffoldings

Scaffoldings - Global trade in million tonnes (2020-2024)

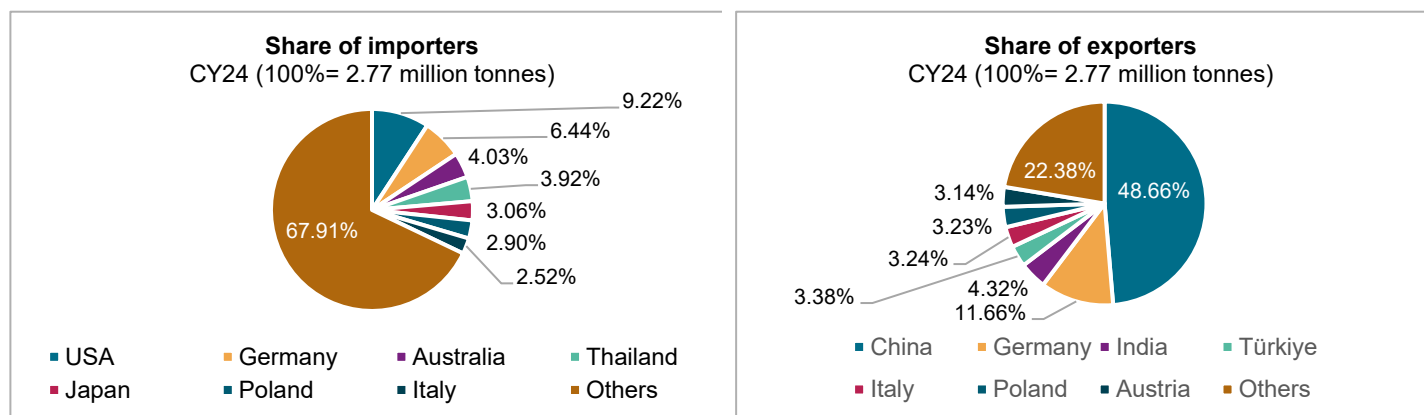
Global trade volume of scaffoldings increased 11% on-year to 2.46 million tonnes in 2021 from 2.22 million tonnes in 2020 on the back of recovery of global economy from the lows of pandemic affected year of 2020. The global trade flow remained rangebound for the next two years and clocked 2.44 million tonnes in 2023. In 2024, the global trade volume of scaffoldings surged 13% on-year to 2.77 million tonnes on the back of positive sentiment in the global real estate sector and an increase in infrastructure activities in emerging economies.



Source: Crisil Intelligence, United Nations Comtrade, industry

* Only includes trade volumes from countries, which shared trade data with the United Nations Comtrade database for Harmonized System of Nomenclature (HSN) code 730840

Scaffoldings - Global import-export split by region (2024)



Source: United Nations Comtrade, Crisil intelligence, Industry

Note: Only includes trade volumes from countries, which shared trade data with the United Nations Comtrade database for Harmonized System of Nomenclature (HSN) code 730840

USA: United States of America

USA and European countries of Germany, Poland, and Italy cumulatively accounted for 21.08% of the overall imported volume of scaffoldings in 2024. Australia, Thailand and Japan were the other prominent importers of scaffoldings in the year, with respective shares of 4.03%, 3.92%, and 3.06% in its globally traded volume.

China was the biggest exporter of scaffoldings, accounting for 48.66% in global scaffoldings exports in 2024, followed by European countries: Germany, Türkiye, Italy, Poland, and Austria with a cumulative share of 24.64% in the total scaffoldings exported volume. India accounted for 4.32% share in global exports of scaffoldings in 2024.

5.B. Domestic scaffolding market

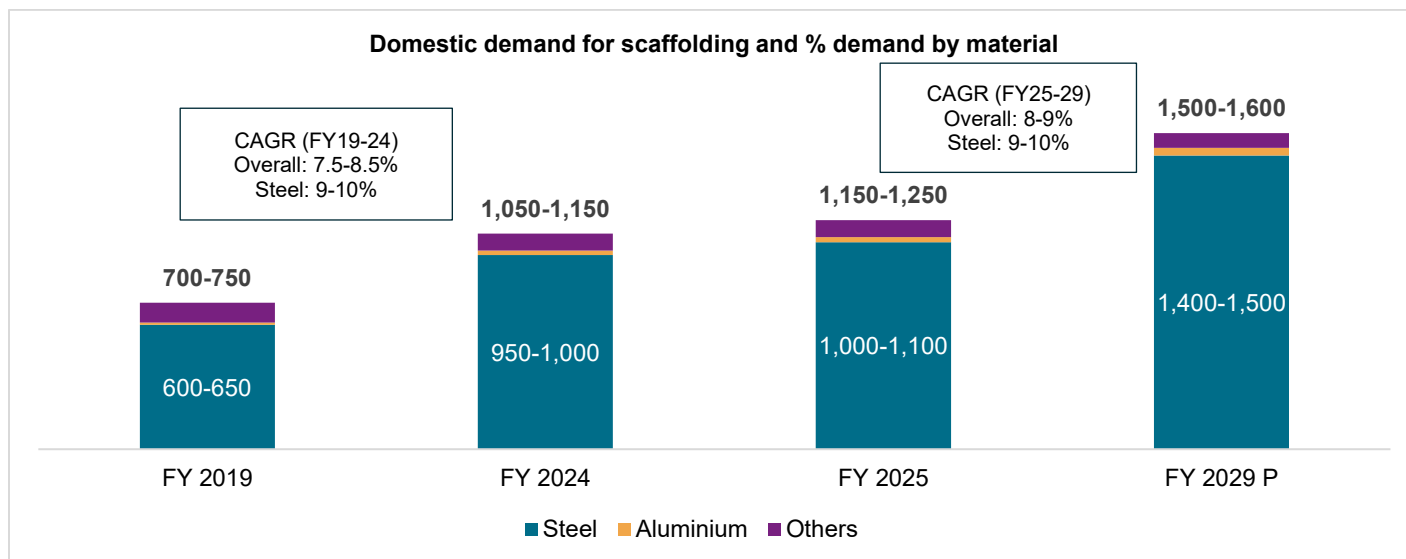
Scaffoldings – Domestic industry Overview

Similar to the global scaffolding market, the Indian market mainly consists of three types of scaffolding: steel (primarily mild steel but also galvanised), aluminium, and wooden (Nilgiri wood) or bamboo. However, the penetration of each category varies from region to region. For instance, in metro cities, the penetration of steel in scaffolding demand is the

highest owing its higher suitability to big-ticket projects like infrastructure and high-rise constructions. However, in Tier 2 and 3 cities and in rural areas, Nilgiri wood (also known as wooden prop) or bamboo are preferred more.

The domestic scaffolding industry is highly fragmented, with only 20-25% of the demand being met by the organised sector. Key players within the organised segment include **Technocraft Industries (India) Ltd**, **BSL Scaffolding**, **Hariom Pipe Industries Ltd.**, and **Rama Steel Tubes Ltd.**, which have dedicated production facilities for scaffolding and related products.

Scaffoldings - Domestic demand in KT



Years	FY19		FY24		FY25		FY29P	
Particulars	Demand In KT	% share in total demand	Demand In KT	% share in total demand	Demand In KT	% share in total demand	Demand In KT	% share in total demand
Total demand	700-750	100%	1,050-1,150	100%	1,150-1,250	100%	1,500-1,600	100%
Steel scaffolding	600-650	82-87%	950-1,000	88-93%	1,000-1,100	88-93%	1,400-1,500	90-95%
Aluminium scaffolding	10-12	1-2%	20-25	1.5-2.5%	22-27	1.5-2.5%	35-40	2-3%
Other scaffolding	95-105	13-15%	80-90	7-9%	80-90	6-8%	70-80	4-6%

Source: Crisil Intelligence, industry

KT: kilo tonne; P: projected

Other scaffolding primarily includes materials like Nilgiri wood and bamboo

The demand for scaffolding in India stood at 1,050-1,150 KT in fiscal 2024 and is estimated to have reached 1,150-1,250 KT in fiscal 2025. Steel scaffolding (including galvanised scaffolding) accounted for 88-93% of this demand, amounting to 950-1,000 KT in fiscal 2024. Aluminium scaffolding had a share of 1.5-2.5% in overall domestic demand at 20-25 KT in fiscal 2024. Rest of the demand was for bamboo and wooden prop scaffolding.

Scaffolding demand in India is expected to grow on the back of growth in the building and construction, and infrastructure segments, refineries, industries, power plants and renewable energy set-ups.

1. The building and construction segment, which accounts for 60-70% of the demand for scaffolding (amounting to 750-800 kilo tonnes of demand volume in fiscal 2025), is expected to grow at a CAGR of 6.5-8.5% between fiscals 2025 and 2029. The growth will be led by rising disposable income levels, improving living standards, increasing urbanisation, easier financing options and growing real estate development owing to the rise in demand for housing and commercial spaces. Further, schemes such as Pradhan Mantri Awas Yojana (PMAY) are expected to support the growth in the domestic building and construction industry

In fiscal 2025, the government approved the PMAY 2.0 scheme, under which financial assistance will be provided to 10 million urban poor and middle-class families in five years to construct, purchase or rent an affordable house. The government will provide assistance of Rs 2.30 trillion under the scheme.

2. The infrastructure segment accounts for 11-13% of the domestic scaffolding demand, amounting to 140-160 kilo tonnes of demand volume in fiscal 2025, and is expected to provide a major impetus to growth going forward. The sector is expected to clock a CAGR of 8-10% during the period between fiscals 2025 and 2029 on the back of the government's strong infrastructural push through increasing budgetary allocations and schemes such as the National Infrastructure Pipeline and PM Gati Shakti
3. Industrialisation, which includes the construction of manufacturing plants, ships, oil and gas refineries, and warehouses, accounts for 8-10% of domestic scaffolding demand as of fiscal 2025. Amounting to a demand of 120-140 kilo tonnes, the sector will act as a key driver in pushing the demand for scaffolding. The government's Make in India initiative combined with production-linked incentives is expected to encourage domestic industries to grow, which will drive the demand for scaffolding for industry construction, repair and maintenance activities. Further, rising energy demand matched with the government's increasing investments in building pipelines and refining infrastructure is also expected to push the industrial sector to grow at a CAGR of 6-7% over the next five fiscals.
4. The shipbuilding sector, which is also accounted under manufacturing and industrialisation, is expected to exhibit a CAGR of 6-7% for the next five fiscals on the back of various schemes for infrastructure and maritime development (such as Maritime India Vision 2030).
5. The energy segment, including power and renewable energy, is expected to be another key driver of scaffolding demand, accounting for 4-6% share in domestic scaffolding demand as of fiscal 2025 (amounting to 45-55 kilo tonnes volume of demand). For the next five fiscals, power and renewable energy sectors are expected to clock CAGRs of 5-7% and 12-14%, respectively. In particular, the government's renewable energy targets (such as achieving 500 GW of non-fossil fuel electricity by 2030) are driving the construction of renewable power generation set-ups in wind and solar sectors. This, in turn, will support the demand for scaffolding systems for plant construction (such as solar parks) and their repair and maintenance activities.

Scaffolding – End-use industry wise growth CAGRs for scaffolding and formwork systems

End use industry	Global demand CAGR (CY 2024-2029)	Domestic demand CAGR (CY 2024-2029)
Building and construction	2.5-3.5%	6.5-8.5%
Infrastructure	3.5-4.5%	8-10%
Industrial	3-4%	6-7%
Shipbuilding	3-4%	6-7%
Power	3-4%	5-7%
Renewable energy	4.5-6.5%	12-14%

Source: Crisil Intelligence, industry

For domestic demand CAGR, CY 2024-2029 CAGR has been considered in the table above for a like-to-like comparison against global demand CAGR for the same period

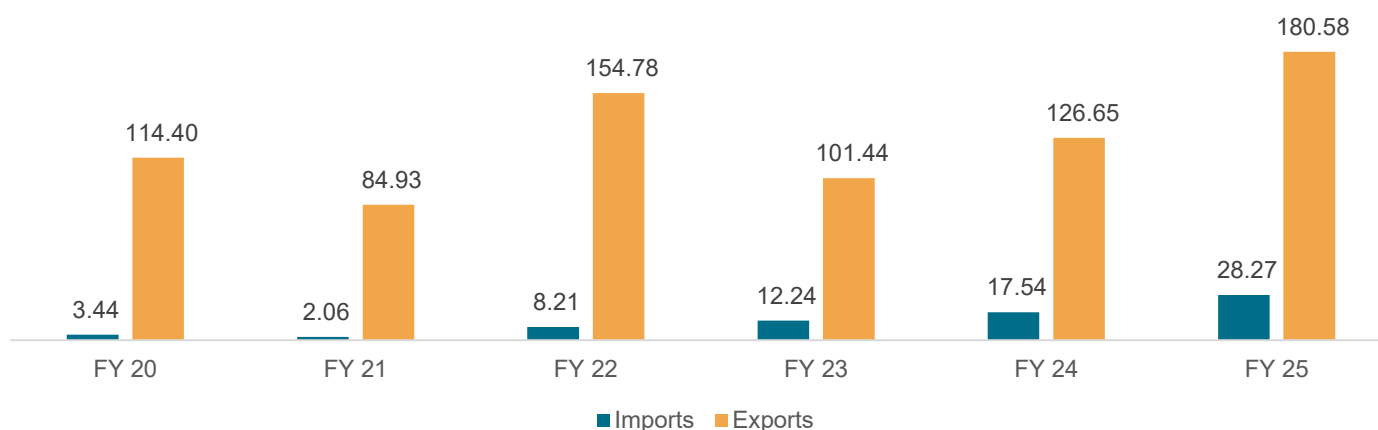
Scaffolding – Region-wise domestic demand by material

Domestic demand split – region wise (FY 2025)	Metro cities	Tier 2 and tier 3 cities	Rural areas
Share of steel based scaffoldings	90-95%	85-90%	60-65%
Share of aluminium based scaffoldings	4-6%	1-2%	<1%
Share of other scaffoldings (bamboo, wood, etc)	2-3%	10-12%	30-35%

Source: Crisil Intelligence, industry

The demand for steel and aluminium scaffolding primarily arises from urban areas, whereas rural areas still rely heavily on bamboo and wooden scaffolding given their lower cost and higher suitability to low-load applications. However, with modern warehouses and plants coming up in rural areas, the demand for steel scaffolding is gaining traction in these areas as well.

Scaffoldings - Trade in million units (FY 2020-2025)



Source: Ministry of Commerce, Crisil intelligence, industry

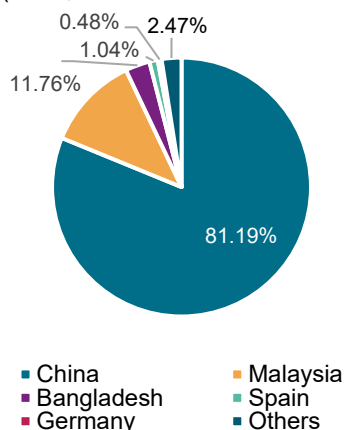
The relevant Harmonized System of Nomenclature (HSN) code is 73084000

India has remained a net exporter of scaffolding and related products. The imported volume decreased 38% to 2.06 million units in fiscal 2021 from 3.44 million units in fiscal 2020, primarily on the account of the pandemic reducing demand from the end-use real estate and infrastructure industries. However, imports surged over thirteen times between fiscals 2021 and 2025, reaching 28.27 million units in fiscal 2025, on the back of pent-up demand and the recovery in the domestic real estate sector.

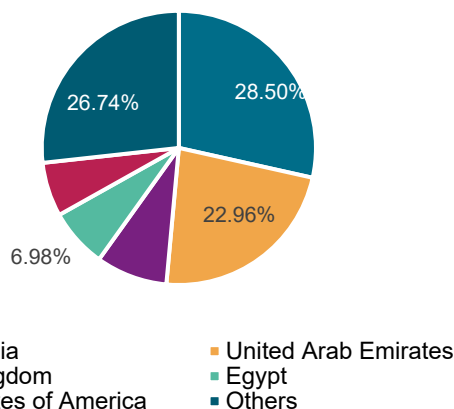
The export volume decreased 26% to 84.93 million units in fiscal 2021 from 114.40 million units in fiscal 2020 owing to a suppressed real estate sector globally. The exports, however, grew a staggering 82% in fiscal 2022 as the real estate sector recovered in the wake of lifting of lockdowns in key export destinations. Exports fell at a CAGR of ~9% between fiscals 2022 and 2024 to 126.65 million units on account of increased competition from other exporters like China, which offered scaffolding at lower prices. However, with a sharp increase in global demand for scaffoldings especially in the regions of middle east such as United Arab Emirates, Saudi Arabia, and Egypt on account of ambitious government-led initiatives and substantial private investments, the exports of scaffoldings increased by over 42% on year to 180.58 million units in fiscal 2025.

Scaffoldings - Domestic import-export split by region (FY 2025)

Imports to India: split by countries
(FY25; 100%= 28.27 million units)



Exports from India: split by countries (FY25;
100% = 180.58 million units)



Source: Ministry of Commerce, Crisil intelligence, industry

In fiscal 2025, China was the largest scaffolding supplier to India, accounting for 81.19% of the total imported volume of scaffolding (in units). On the other hand, middle east countries such as Saudi Arabia, United Arab Emirates and Egypt along with the United Kingdom and the United States of America were the biggest export destinations for Indian scaffolding. The exports to the European region, alone amounted to ~33 million units in fiscal 2025, accounting for ~18% of the total scaffolding exports from India.

Product wise domestic demand summary

Product	Units	Domestic demand per annum (FY 2025)	Domestic demand per annum (FY 2029 P)	CAGR (FY2025-FY2029 P) in %
HR steel	Million tonnes	56.30	75.00-78.00	7-9%
ERW pipes and tubes	Million tonnes	9.10-9.30	12.50-13.00	7-9%
GI pipes	Million tonnes	3.30-3.50	4.50-5.00	8-10%
CHQ wire rods	Million tonnes	3.00-3.20	3.80-4.00	6-7%
Forging quality steel	Million tonnes	6.00-6.20	7.80-8.00	6-8%
Scaffolding and formwork systems	Million tonnes	1.00-1.10	1.40-1.50	9-10%

Note: Demand mentioned against scaffolding and formwork systems corresponds to that of steel scaffolding and formwork systems
P: Projected; Source: Crisil intelligence, industry

Product wise global demand summary

Product	Units	Global demand per annum (CY 2024)	Global demand per annum (CY 2029 P)	CAGR (CY2024-CY2029 P) in %
Scaffolding and formwork systems	Million tonnes	12.00-13.00	14.00-15.00	3-4%

Note: Demand mentioned against scaffolding and formwork systems corresponds to that of steel scaffolding and formwork systems
P: Projected; Source: Crisil intelligence, industry

Competition benchmarking

Operational benchmarking

Renny Strips Limited manufactures mild steel products across the value chain including billets, wire rods, narrow-width HR coils, ERW black and galvanized pipes and tubes, and scaffolding and formwork systems. As a result, it faces competition from companies in different steel business domains as highlighted below:

Product range mapping for companies (as of fiscal 2025)

Companies	MS billets	Wire rods	Narrow-width HR coils	ERW black and galvanized pipes and tubes	Scaffolding and formwork systems
Hariom Pipe Industries Ltd.					
Rama Steel Tubes Ltd.					
Sambhv Steel Tubes Ltd.					
Technocraft Industries (India) Ltd.					
Renny Strips Limited					

HR: Hot rolled; MS: Mild steel; ERW: Electric resistance welded

Note:

1. Green coloured tab indicates presence of the corresponding product manufacturing capability with the respective company.
2. Hariom Pipe Industries Ltd. is into standard HR coils

Source: Crisil Intelligence, Industry

Product wise capacity, production and utilisation rates

Product – MS billets

Company	MS billets (FY23)			MS billets (FY24)			MS billets (FY25)			MS billets (H1 FY26)		
	Capacity (TPA)	Prod. (tonnes)	Utilization rate (%)	Capacity (TPA)	Prod. (tonnes)	Utilization rate (%)	Capacity (TPA)	Prod. (tonnes)	Utilization rate (%)	Capacity (TPA)	Prod. (tonnes)	Utilization rate (%)
Hariom Pipe Industries Ltd.	104,232	86,078	82.60%	104,232	N/A	N/A	104,232	N/A	N/A	104,232	N/A	N/A
Sambhv Steel Tubes Ltd.	231,000	218,341	94.52%	317,400	262,077	82.57%	300,000	255,240	85.08%	300,000	N/A	N/A
Renny Strips Limited	151,760	100,347	66.12%	189,000	179,882	95.18%	189,000	178,385	94.38%	189,000	93,375	98.81%

TPA: Tonne per annum; N/A: data not available

Capacity: Production capacity (annualized in case of H1 FY26 period); Prod.: Production volume in tonnes in the corresponding period; Utilization Rate: Capacity utilization rate

Note: For H1 FY26 period i.e. period between April 2025 to September 2025, the utilization rate is calculated basis the half of annualized capacity

Source: Company reports, industry, Crisil Intelligence

Product – Narrow-width HR coils

Company	Narrow-width HR coils (FY23)			Narrow-width HR coils (FY24)			Narrow-width HR coils (FY25)			Narrow-width HR coils (H1 FY26)		
	Capacity (TPA)	Prod. (tonnes)	Utilization rate (%)	Capacity (TPA)	Prod. (tonnes)	Utilization rate (%)	Capacity (TPA)	Prod. (tonnes)	Utilization rate (%)	Capacity (TPA)	Prod. (tonnes)	Utilization rate (%)
Hariom Pipe Industries Ltd.	124,000	76,069	61.30%	124,000	N/A	N/A	124,000	N/A	N/A	124,000	N/A	N/A
Sambhv Steel Tubes Ltd.	350,000	191,205	54.63%	350,000	205,485	58.71%	390,000	225,693	57.87%	390,000	N/A	N/A
Renny Strips Limited	-	-	-	97,222	88,500	91.03%	97,222	69,712	71.70%	97,222	42,612	87.66%

TPA: Tonne per annum; N/A: data not available

Capacity: Production capacity (annualized in case of H1 FY26 period); Prod.: Production volume in tonnes in the corresponding period; Utilization Rate: Capacity utilization rate

Note:

1. For H1 FY26 period i.e. period between April 2025 to September 2025, the utilization rate is calculated basis the half of annualized capacity
2. Hariom Pipe Industries Ltd. is into standard HR coils manufacturing and its HR coils TPA capacity corresponds to that of its rolling mill

Source: Company reports, industry, Crisil Intelligence

Product – ERW black and galvanized pipes and tubes

Company	ERW black and galvanized pipes and tubes (FY23)			ERW black and galvanized pipes and tubes (FY24)			ERW black and galvanized pipes and tubes (FY25)			ERW black and galvanized pipes and tubes (H1 FY26)		
	Capacity (TPA)	Prod. (tonnes)	Utilization rate (%)	Capacity (TPA)	Prod. (tonnes)	Utilization rate (%)	Capacity (TPA)	Prod. (tonnes)	Utilization rate (%)	Capacity (TPA)	Prod. (tonnes)	Utilization rate (%)
Hariom Pipe Industries Ltd.	264,000	119,167	45.10%	432,000	N/A	N/A	432,000	N/A	N/A	516,000	N/A	N/A
Rama Steel Tubes Ltd.	294,000	176,400	60.00%	294,000	144,095	49.01%	294,000	170,745	58.08%	N/A	N/A	N/A
Sambhv Steel Tubes Ltd.	250,000	104,450	41.78%	250,000	185,100	74.04%	350,000	246,925	70.55%	350,000	N/A	N/A
Renny Strips Limited	-	-	-	-	-	-	33,395	23,725	71.04%	37,476	13,802	73.66%

TPA: Tonne per annum; N/A: data not available

Capacity: Production capacity (annualized in case of H1 FY26 period); Prod.: Production volume in tonnes in the corresponding period; Utilization Rate: Capacity utilization rate

Note:

1. For H1 FY26 period i.e. period between April 2025 to September 2025, the utilization rate is calculated basis the half of annualized capacity
2. Out of Hariom Pipe Industries Ltd.'s total capacity as of fiscals 2024, 2025, and H1 FY 2026: 300,000 TPA capacity corresponds to a galvanised pipes plant. Similarly, out of its capacity as of fiscal 2023, 180,000 TPA capacity corresponds to a galvanised pipes and coils plant

Source: Company reports, industry, Crisil Intelligence

Product – Scaffolding and formwork systems

Company	Scaffolding and formwork systems (FY23)	Scaffolding and formwork systems (FY24)	Scaffolding and formwork systems (FY25)	Scaffolding and formwork systems (H1 FY26)
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	Capacity (TPA)	Prod. (tonnes)	Utilization rate (%)	Capacity (TPA)	Prod. (tonnes)	Utilization rate (%)	Capacity (TPA)	Prod. (tonnes)	Utilization rate (%)	Capacity (TPA)	Prod. (tonnes)	Utilization rate (%)
Hariom Pipe Industries Ltd.	5,000	3,371	67.42%	5,000	N/A	N/A	5,000	N/A	N/A	5,000	N/A	N/A
Rama Steel Tubes Ltd.	N/A	N/A	N/A	N/A	9,000-10,000	N/A	N/A	9,000-10,000	N/A	N/A	N/A	N/A
Technocraft Industries (India) Ltd.	40,000	39,712	99.28%	50,000	29,930	59.86%	68,000	36,941	54.33%	68,000	17,856	52.52%
Renny Strips Limited	-	-	-	-	-	-	5,295	4,780	90.27%	14,520	6,951	95.75%

TPA: Tonne per annum; N/A: data not available

Capacity: Production capacity (annualized in case of H1 FY26 period); Prod.: Production volume in tonnes in the corresponding period; Utilization Rate: Capacity utilization rate

Note:

1. For H1 FY26 period i.e. period between April 2025 to September 2025, the utilization rate is calculated basis the half of annualized capacity
2. Sales volume instead of production volume has been mentioned against Rama Steel Tubes Ltd. and Technocraft Industries (India) Ltd.
3. The capacity of Technocraft Industries (India) Ltd. corresponds to the cumulative capacity of steel scaffolding, steel formwork and aluminium formwork
4. The production numbers in the table above correspond to only steel scaffolding and formwork systems and are considered for calculating capacity utilization rates

Source: Company reports, industry, Crisil Intelligence

Other operating metrics (number of countries served, number of Indian states served, number of dealers/distributors)

Company	FY23			FY24			FY25			H1 FY26		
	Number of countries	Number of Indian states	Number of dealers	Number of countries	Number of Indian states	Number of dealers	Number of countries	Number of Indian states	Number of dealers	Number of countries	Number of Indian states	Number of dealers
Hariom Pipe Industries Ltd.	0	16	650+	0	20	800+	0	14	900+	N/A	14	900+
Rama Steel Tubes Ltd.	16+	17+	300+	18+	17	300+	16+	18	350+	N/A	N/A	N/A
Sambhv Steel Tubes Ltd.	0	9	600+	0	9	600+	N/A	16	700+	N/A	N/A	700+
Technocraft Industries (India) Ltd.	80	22	N/A	80	22	N/A	80	22	0	N/A	N/A	N/A
Renny Strips Limited	0	3	0	0	9	0	13	11	0	21	12	0

Source: Company reports, industry, Crisil Intelligence

N/A: data not available

Note: Number of dealers include number of dealers as well as number of distributors

Plant locations

Company	Total units	Locations
Hariom Pipe Industries Ltd.	4	Mahabubnagar – Telangana (2 units), Ananthapur – Andhra Pradesh (1 unit), Perundurai – Tamil Nadu (1 unit)
Rama Steel Tubes Ltd.	4	Sahibabad - Uttar Pradesh (2 units), Raigad – Maharashtra (1 unit), Anantapur – Andhra Pradesh (1 unit)
Sambhv Steel Tubes Ltd.	2	Raipur (2 units)
Technocraft Industries (India) Ltd.	9	Mathura – Uttar Pradesh (1 unit), Bhilwara – Rajasthan (1 unit), Indore - Madhya Pradesh (1 unit), Nashik, Solapur, & Nagothane – Maharashtra (3 units), Bellary – Karnataka (1 unit), Kutch, Mundra – Gujarat (2 units)
Renny Strips Limited	3	Ludhiana – Punjab (3 units)

Source: Company reports, industry, Crisil Intelligence

Note: The data corresponds to fiscal 2025

Financial benchmarking

To benchmark the performance of Renny Strips Limited with its competitors, a comparison is drawn across the profitability, liquidity and leverage parameters for fiscals 2022-2024.

Peer comparison for FY22-FY25 and H1 FY26 (Rs million, unless mentioned otherwise)

Revenues, EBITDA, PAT (in Rs million)

Particulars	Revenue from operations				EBITDA				PAT			
Year	FY23	FY24	FY25	H1FY26	FY23	FY24	FY25	H1FY26	FY23	FY24	FY25	H1FY26
Hariom Pipe Industries Ltd.	6,437.12	11,531.88	13,570.49	7,968.32	818.83	1,385.94	1,754.26	1,002.92	462.08	568.00	617.26	340.16
Rama Steel Tubes Ltd.	13,367.54	10,465.10	10,480.52	5,885.84	530.83	600.99	296.15	64.79	274.37	299.96	227.44	60.23
Sambhv Steel Tubes Ltd.	9,372.20	12,857.57	15,113.55	11,387.98	1,173.00	1,598.72	1,544.81	1,329.16	603.83	824.39	572.65	644.71
Technocraft Industries (India) Ltd.	19,845.32	21,816.28	25,955.84	13,848.47	4,033.55	3,983.51	4,153.97	2,356.00	2,745.43	2,797.52	2,629.57	1,615.11
Renny Strips Limited	5,333.84	8,821.90	8,562.45	4,878.68	184.25	283.86	483.94	455.19	95.88	114.70	196.58	237.83

Source: Company financials, Crisil Intelligence

EBITDA: Earnings before interest, tax, depreciation and amortization; PAT: Profit after tax

Total borrowings and Net worth (in Rs million)

Particulars	Borrowings				Net Worth			
Year	FY23	FY24	FY25	H1FY26	FY23	FY24	FY25	H1FY26

Hariom Pipe Industries Ltd.	2,960.18	3,708.85	4,003.22	3,947.62	3,751.67	4,641.18	5,726.74	6,047.96
Rama Steel Tubes Ltd.	1,927.83	1,443.50	878.98	1,242.87	2,501.15	3,351.46	3,643.02	4,662.72
Sambhv Steel Tubes Ltd.	2,827.72	3,468.76	5,044.28	1,881.50	2,103.97	4,382.82	4,953.41	9,776.32
Technocraft Industries (India) Ltd.	6,558.12	6,750.67	8,457.67	8,226.90	14,158.17	16,750.09	17,723.15	18,837.24
Renny Strips Limited	1,412.26	2,012.10	2,897.32	3,724.61	437.15	622.13	818.64	1,057.61

Source: Company financials, Crisil Intelligence

Growth CAGR in Revenues, EBITDA, PAT between FY 2023-2025; EBITDA margin; PAT margin (in %)

Particulars	Revenue growth CAGR	EBITDA growth CAGR	PAT growth CAGR	EBITDA margin				PAT margin			
				FY23	FY24	FY25	H1FY26	FY23	FY24	FY25	H1FY26
Hariom Pipe Industries Ltd.	45.20%	46.37%	15.58%	12.72%	12.02%	12.93%	12.59%	7.18%	4.93%	4.55%	4.27%
Rama Steel Tubes Ltd.	-11.45%	-25.31%	-8.95%	3.97%	5.74%	2.83%	1.10%	2.05%	2.87%	2.17%	1.02%
Sambhv Steel Tubes Ltd.	26.99%	14.76%	-2.62%	12.52%	12.43%	10.22%	11.67%	6.44%	6.41%	3.79%	5.66%
Technocraft Industries (India) Ltd.	14.36%	1.48%	-2.13%	20.32%	18.26%	16.00%	17.01%	13.83%	12.82%	10.13%	11.66%
Peer set average	15.26%	8.72%	-0.48%	13.37%	13.20%	11.90%	12.16%	8.33%	7.92%	6.21%	6.81%
Renny Strips Limited	26.70%	62.07%	43.19%	3.45%	3.22%	5.65%	9.33%	1.80%	1.30%	2.30%	4.87%

Source: Company financials, Crisil Intelligence

Return of Equity (RoE) and Return on Capital Employed (RoCE) (in %)

Particulars	Return of Equity (RoE)				Return on Capital Employed (RoCE)			
	FY23	FY24	FY25	H1FY26	FY23	FY24	FY25	H1FY26
Hariom Pipe Industries Ltd.	12.32%	12.24%	10.78%	5.62%	12.79%	13.04%	13.57%	7.03%
Rama Steel Tubes Ltd.	10.66%	8.69%	6.25%	1.45%	10.90%	11.49%	5.21%	0.71%

Sambhv Steel Tubes Ltd.	28.70%	18.81%	11.56%	6.59%	20.84%	18.72%	12.21%	9.47%
Technocraft Industries (India) Ltd.	18.87%	15.77%	14.46%	8.28%	17.70%	14.84%	12.37%	6.89%
Peer set average	17.83%	15.15%	12.43%	6.68%	16.45%	14.60%	11.89%	6.88%
Renny Strips Limited	21.93%	18.44%	24.01%	22.49%	8.64%	9.08%	11.62%	8.60%

Source: Company financials, Crisil Intelligence

Fixed Asset Turnover Ratio and Debt to Equity Ratio

Particulars	Fixed Asset Turnover Ratio				Debt to Equity Ratio			
Year	FY23	FY24	FY25	H1FY26	FY23	FY24	FY25	H1FY26
Hariom Pipe Industries Ltd.	4.83	3.16	3.21	1.78	0.79	0.80	0.70	0.65
Rama Steel Tubes Ltd.	18.45	13.87	14.98	7.81	0.73	0.42	0.24	0.26
Sambhv Steel Tubes Ltd.	3.19	3.82	2.02	1.56	1.34	0.79	1.02	0.19
Technocraft Industries (India) Ltd.	4.76	3.26	3.30	1.74	0.45	0.39	0.47	0.43
Peer set average	5.35	3.92	3.21	1.91	0.62	0.52	0.56	0.38
Renny Strips Limited	7.16	6.64	5.55	3.12	3.23	3.23	3.54	3.52

Source: Company financials, Crisil Intelligence

Cash conversion cycle or working capital days

Year	FY23	FY24	FY25	H1FY26
Hariom Pipe Industries Ltd.	203	153	138	136
Rama Steel Tubes Ltd.	59	39	26	34
Sambhv Steel Tubes Ltd.	72	47	12	41
Technocraft Industries (India) Ltd.	374	303	263	239
Peer set average	165	140	117	113
Renny Strips Limited	58	47	79	86

Source: Company financials, Crisil Intelligence, industry

Company profiling

Business profile

Founded in 1996, Renny Strips Limited is a prominent player in the engineered building materials industry. Headquartered in Ludhiana, Punjab, the company has a fully integrated steel products manufacturing facility erected at three near-by units in the city. At Unit I, the company manufactures mild steel (in form of billets) which is in-turn used to produce narrow-width hot rolled (HR) coils and wire rods. Unit I and Unit II process the raw material viz. steel scrap into molten steel which is consumed at Unit I to manufacture mild steel (MS) billets. Unit III is a downstream manufacturing facility which specializes in manufacturing electric resistance welded (ERW) black and galvanized pipes and tubes and scaffolding and formwork systems.

The company is one of the prominent manufacturers through the induction furnace route in India in terms of installed capacity as of fiscal 2025. The company operates three induction furnaces (two at Unit I and one at Unit II) which cumulatively account for a total melting capacity of 199,200 tonnes per annum, significantly higher than the industry average capacity of 65,000-75,000 tonnes per annum⁶ for induction furnace-based finished steel manufacturers in India. The company also operates two continuous casting lines for the production of steel billets, which are further processed into wire rods and HR coils through two rolling mills (one each dedicated to wire rods and coils). The products manufactured by the company fall in the “green steel”⁷ category as the company primarily uses steel scrap as a raw material, supporting sustainable and environmentally conscious manufacturing practices.

The company was among the first movers in North India to produce MS billets, narrow-width HR coils, and wire rods; and has since built on this advantage by currently being one of the few players in the region with a fully vertically integrated manufacturing set-up. The company is also one of the few players in India to use narrow-width HR coils produced in-house in the manufacturing of ERW black and galvanized pipes and tubes. Further, wire rods, narrow-width hot rolled coils, and ERW black and galvanized pipes and tubes, manufactured in-house by the company, are captively consumed to produce scaffolding and formwork systems through its robust in-house forging and precision engineering capabilities. As a result, the company is amongst a very limited number of players in India, manufacturing Scaffolding and Formwork systems with vertical integration. The complete vertical integration allows the company to have a complete control over product quality, lead times and cost efficiency, thereby providing it a competitive edge in domestic and global markets.

The company's products find high utility applications in construction, automotive, water, oil and gas, and fabrication industries. Its scaffoldings portfolio, in particular, as of September 2025, spans over 1,000 stock keeping units (SKUs) which are delivered to its diversified range of customers in over 10 countries globally.

The company is ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, ISO 14064-3:2019, and EN 1090-1:2009+A1:2011 certified, proving its commitment to high-quality management systems and standards.

ISO: International Organization for Standardization, EN: European Norm

Product lines of the company – Description images and principal end usages:

Products	Images	Principal end usage
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⁶ Average steel manufacturing capacity through the induction furnace route is calculated as total manufacturing capacity through the induction furnace route in India divided by total number of working units with induction furnaces in India (Source: Joint Plant Committee)

⁷ This is as per the “Green Steel Taxonomy” released by the Ministry of Steel (Government of India) in December 2024. According to the taxonomy, “Green Steel” shall be defined in terms of percentage greenness of the steel, which is produced from the steel plant with CO2 equivalent emission intensity less than 2.20 tonnes of CO2e per tonne of finished steel (tfs).

MS billets		MS billets are used for rolling into HR Coils, rolling, drawing into wire rods and forging applications.
Narrow-width HR coils		HR Coils are used to manufacture ERW Pipes and Tubes, structural beams, channels, and angles, crash barriers, agricultural equipment, general fabrication and stamping, solar panel structures, pre-engineered building systems.
Wire rods		Wire rods are drawn to manufacture a wide range of products including cold heading nails, screws, bolts, and fasteners, weld mesh and fencing, automotive springs and components, edge protection systems, agricultural tools and machinery parts, construction reinforcements, electrical cable armoring.
ERW black and galvanized pipes and tubes		ERW pipes and tubes are used in construction and structural frameworks, water, oil, and gas conveyance, scaffolding systems, furniture and consumer goods, greenhouse and livestock structures, pre-engineered buildings, solar mounting systems, and road and highway barriers.

Scaffolding and formwork systems		Scaffolding and formwork systems are used in commercial and residential building construction, infrastructure projects such as bridges, airports, and tunnels, metro and railway projects, oil and gas installations, shipbuilding and offshore platforms, industrial plant maintenance, energy and power plant projects, and events and stage construction.
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Note: Images in the above table are provided by the company

HR: hot rolled; ERW: electric resistance welded; MS: mild steel

Product lines of the company, infrastructure and respective capacities (as of September 2025):

Finished products	Infrastructure	Cumulative capacity (tonnes per annum)
MS billets	Three induction furnaces, Two continuous casting lines	189,000
Narrow-width HR coils	One flat rolling mill	97,222
Wire rods	One wire rod mill	77,778
ERW black and galvanized pipes and tubes	Two tube mills	37,476
Scaffolding and formwork systems	Customized product manufacturing facility	14,520

Source: Company

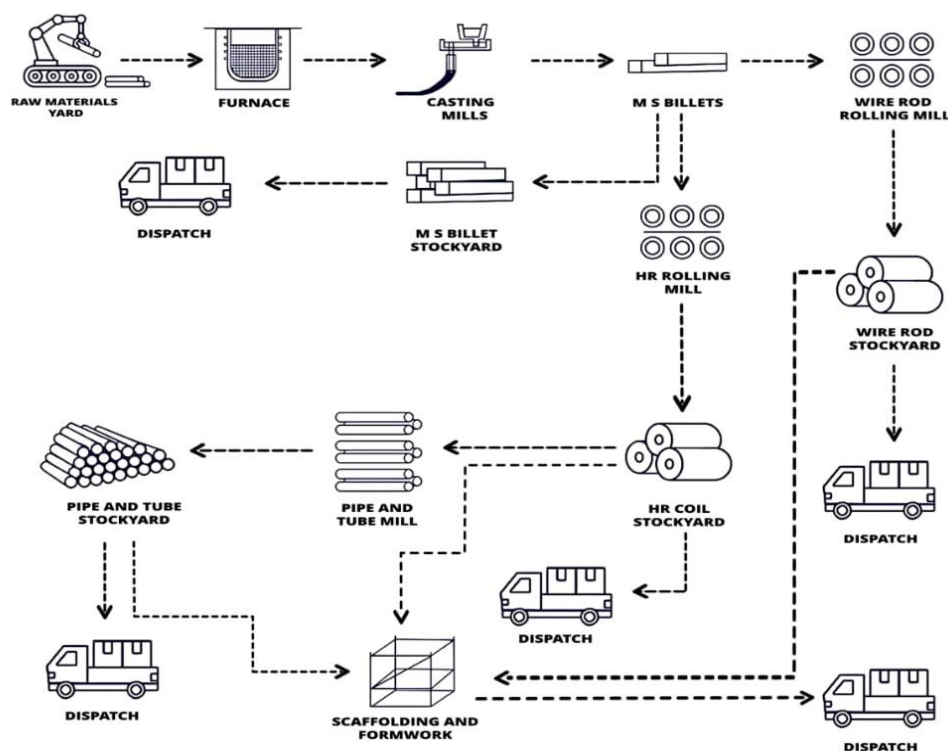
HR: hot rolled; ERW: electric resistance welded; MS: mild steel

Renny Strips Limited's commitment to maintaining high quality standards is supported by the fact that all of its products adhere to Bureau of Indian Standards (BIS), European Standard (EN), and American Society for Testing and Materials (ASTM) standards. Additionally, features such as hot-dip galvanising for enhanced rust resistance and advanced welding techniques provide structural integrity to the pipes.

Expansion plans of the company

The company is proposing to set up a new manufacturing unit to expand its production capabilities to manufacture Scaffolding and Formwork systems along with ERW pipes and tubes. The company is also proposing to upgrade its production process at Unit I and Unit III.

Overview of manufacturing process



Source: Company

The detailed manufacturing process flow for the company is as follows:

1. Raw material input:

The process begins at the raw material yard, where key inputs, primarily steel scrap, is received and stored. The company's procurement strategy involves sourcing from a network of domestic and international market, ensuring a consistent supply of raw material.

2. Primary processing:

Stored raw materials are transported to the company's induction furnaces, where they are melted into molten steel. This molten steel is then directly transferred to the continuous casting lines to produce MS billets in desired shapes and sizes. An automated system at the exit of the casting lines performs a critical temperature check before proceeding it to rolling mills.

3. Manufacturing of Wire Rods and HR Coils:

Accepted MS billets are routed to the rolling stage via a technologically advanced common-conveyer system.

(a) Wire rods production:

MS Billets are sheared to the required length and undergo initial rough shaping. The material is then passed through the rolling mill to reduce its diameter and form wire rods. The wire rods are then spooled for easier handling and are then moved to the wire rod stockyard for storage before being dispatched or used in other processes.

(b) HR Coil production:

MS Billets are rolled into narrow-width coils of specific thickness and width, which are then stored in the coil stockyard. The rolled coils can be further processed through the slitting line, where they are cut and recoiled to precise measurements.

4. Manufacturing of ERW pipes and tubes and Scaffolding and Formwork systems:

A portion of the MS billets, Wire Rods, and HR coils produced can be sold in the open market, while the remainder can serve as the primary input for production of ERW pipes and tubes and Scaffolding and Formwork systems. Coils are transformed into pipes and tubes and are welded to meet specific industry standards. Further, the production of Scaffolding and Formwork systems involves the precise fabrication, welding, and assembly of the company's structured components.

5. Finishing and dispatch:

All manufactured products undergo final finishing processes such as electroplating, galvanizing, or powder coating to enhance durability, provide corrosion resistance, and meet specific aesthetic requirements.

Use of technology at the company

- The company adopts lean production principles that help it reduce wastages, optimise production processes and increase output capacity without sacrificing quality.
- It has facilities to perform rigorous tests, including hydro, spectro and eddy current tests, to ensure the final products meet the rigorous quality standards. The company has quality control processes at every stage of production such as raw material inspection, in-process quality checks, final product testing, and packaging and shipping inspection.
- Further, the company's welding techniques ensure structural integrity in its products.

Sustainability

For Renny Strips Limited, sustainability is a core focus. The company has various initiatives to reduce the environmental impact of its operations. Some of the key sustainability initiatives taken by the company are as follows:

- The company is in the process of commissioning of a 22 mega-watt solar power plant to reduce carbon footprint and operational costs.
- The company uses high volume of steel scrap in its manufacturing processes which helps it in generating carbon credits which in turn helps it in complying with global sustainability standards
- Through its operationally efficient processes to convert steel into downstream products, the companies achieves a significant reduction in energy consumption, demonstrating its dedication to environmental stewardship
- The company is highly focussed on reducing waste and emissions, efficient water management, and recycling processes
- The company implements ISO 14001:2015 standards for environmental management

The company's manufacturing operations reflect this commitment, with significantly lower emissions compared to industry averages. During fiscal 2025, while the company's Unit I and Unit II had emissions amounting to **0.395 tonnes of CO₂e per ton of production**, the company's Unit III had even lower emissions, amounting to **0.065 tonnes of CO₂e per tonne**

of production. These emission levels, considering the industry standards (2.2 tonnes of CO₂e/ton of production as average in the industry) are very low and portray the company's continued focus on sustainable operations.

The company's sustainability practices align with global standards and facilitate carbon credit generation, providing it a competitive advantage, particularly among environmentally conscious customers. The Company gains competitive advantage with respect to the Carbon Border Adjustment Mechanism (CBAM) tax-related parameters in Europe, making it a preferred supplier in the eco-conscious market.

As a result, importers have to pay less for Renny Strips Limited's products compared with that of its competitors, providing the company a distinct advantage in the market and helping it attract environmentally conscious clients. These strategies reinforce its commitment to sustainability and enhance its market position.

CBAM tax benefits

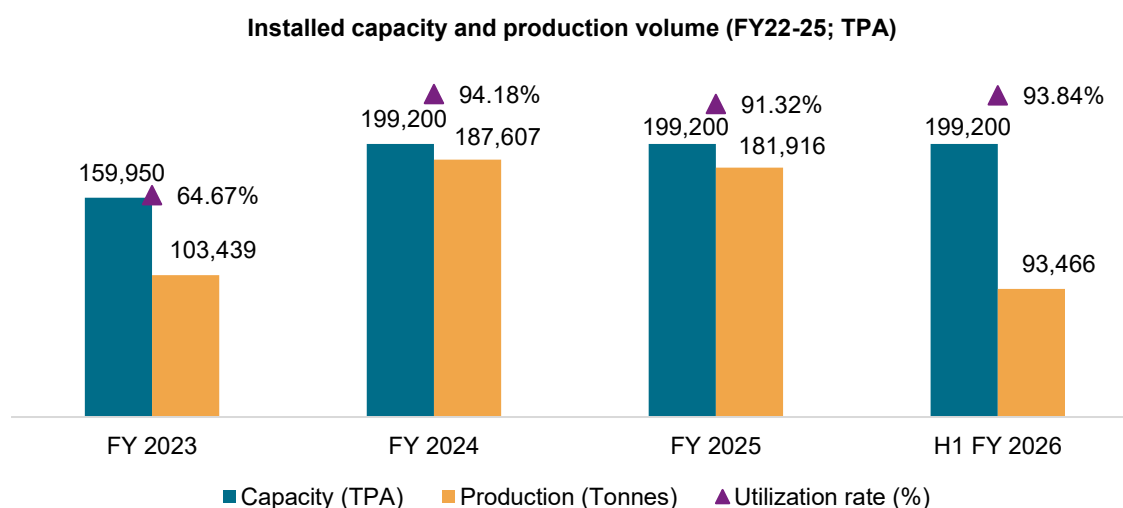
CBAM tax is charged on importers based on the carbon emissions of the products they bring in. The company's lower emissions make its products more affordable for European importers.

Parameter	Description	Benefit
Industry standard	Renny Strips Limited's emissions are lower than the industry averages	Competitive advantage in the European market
Importer costs	Reduced tax liability for importers of the company's products	Increased demand for the company's products
European market	Growing demand for eco-friendly products	Steady demand growth for the company's products

By leveraging its sustainable practices and lower carbon emissions, Renny Strips Limited is poised to capitalise on the CBAM parameters and strengthen its position in the European market.

Past performance of the company

Operational performance- Steel melting (FY 2023-FY 2025 and H1-FY 2026)



TPA: tonnes per annum

Note:

1. The utilization rate for H1 FY26 is calculated basis half of the annualized capacity

Source: Company

The company expanded its steel melting capacity from 159,950 tonnes per annum in fiscal 2023 to 199,200 tonnes per annum in fiscal 2024. The company has been able to keep its capacity utilization rate at over 90% for fiscals 2024 and 2025. In the first half of fiscal 2026, the company has clocked a total steel melt production volume of 93,466 tonnes, thereby achieving the capacity utilization rate of approximately 93.84% on an half yearly basis.

Segment-wise operational and financial overview

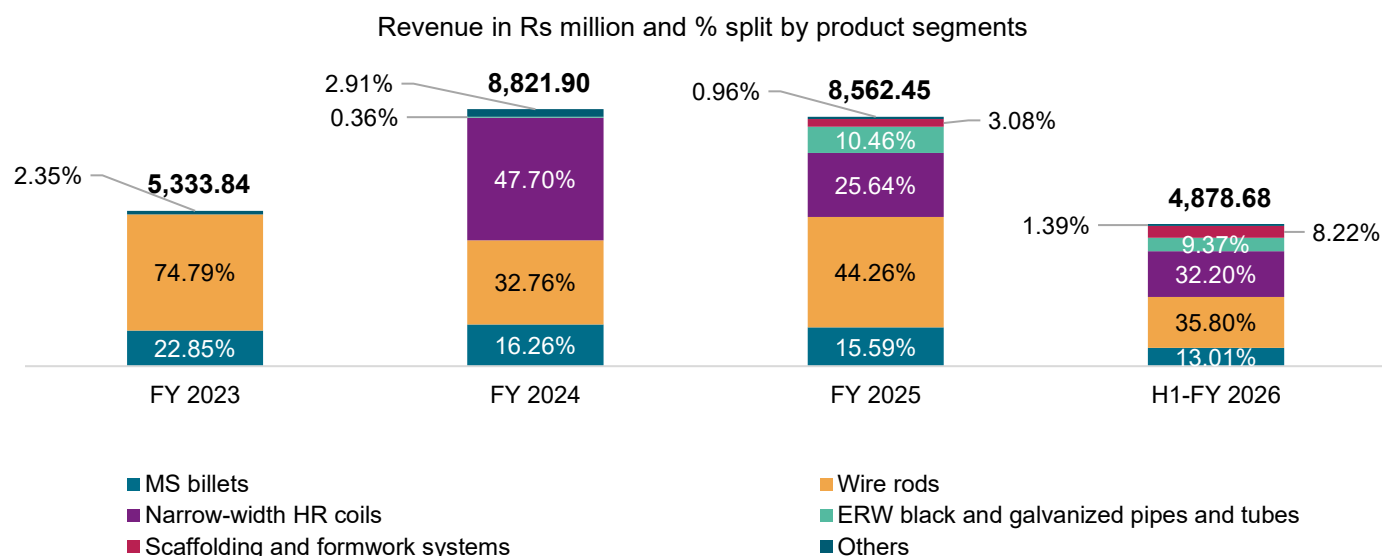
Product-wise sales volume in metric tonne (unless mentioned otherwise)

Product segment	FY23	FY24	FY25	H1 - FY26
MS billets	24,571	32,065	30,747	15,487
Wire Rods	71,063	57,426	75,593	35,534
Narrow-width HR Coils	-	86,260	46,335	33,661
ERW black and galvanized pipes and tubes	-	557	17,803	9,028
Scaffolding and formwork systems	-	-	1,491,068 pieces	1,316,633 pieces

Note: HR: hot rolled; ERW: electric resistance welded; MS: mild steel

Source: Company

Product-wise operating revenue in Rs million



Source: Company

Note: Others primarily include non-alloys rounds, scrap, and residue

During the period between fiscals 2023 and 2025, the company kept its focus on introducing new products, increasing production capacities and widening its product portfolio. For instance, having increased the sales volume of MS billets substantially (on-year) in fiscal 2023, the company began the production of narrow-width HR coils in fiscal 2023 and that

of ERW black and galvanized pipes and tubes towards the end of fiscal 2024. Further, in fiscal 2025, the company also started production of scaffolding and formwork systems.

Operating revenue logged a staggering CAGR of 26.70% between fiscals 2023 and 2025 from Rs 5,333.84 million to Rs 8,562.45 million, primarily led by an increase in steel melting production capacity from 159,950 TPA in fiscal 2023 to 199,200 TPA in fiscal 2024. The share of the wire rods product segment in operating revenue was 74.79% in fiscal 2023, which fell to 32.76% in fiscal 2024 on the account of revenues from a new segment i.e. narrow-width HR coils. Further, the new segments of scaffolding and formwork systems and ERW black and galvanized pipes and tubes cumulatively accounted for 13.54% and 17.59% shares in the operating revenues of fiscal 2025 and first half of fiscal 2026, respectively.

SWOT analysis

Strengths

Complete vertical integration at a single location and supply-chain control

- Renny Strips Limited is one of the very few companies that operates a fully vertically integrated manufacturing setup encompassing its steel plant, wire rod mill, HR coil mill, tube mill, and scaffolding production facility—all strategically located within the same city.
 - The close proximity between its operational facilities significantly reduces reliance on external suppliers for key raw materials, thereby protecting the company from supply chain disruptions.
 - Additionally, the proximity of these facilities enables streamlined material flow and coordination, resulting in substantial savings on logistics and handling costs. This integrated model not only enhances operational efficiency but also strengthens the Company's ability to maintain high margins (vis-à-vis competitors), consistent quality, and reduced lead times
- It is a vertically integrated steel manufacturing company with robust forging and engineering capabilities, enabling it in the sustainable production of high strength and high precision steel products catering to a diverse range of end use industries and applications
- It is one of the few companies that uses narrow-width hot rolled coils produced in-house to manufacture ERW pipes and tubes and scaffolding and formwork systems.
- The company's integrated manufacturing facility is designed in such a manner that it is able to respond swiftly to market demand for a particular size of ERW black and galvanized pipes and tubes or scaffolding and formwork systems as it controls the end-to-end supply chain for its products unlike other industry players who rely on external coil manufacturers for supply of the required grade and size of narrow-width HR coils.
- The company, as an end-to-end scaffolding manufacturer with an in-house competence in procurement of raw materials, production, marketing and sales, is well-positioned to capitalize on the growth in the engineered buildings material sector.
- Vertical integration helps the company in achieving operational efficiency, reducing product costs, controlling supply of raw materials, and monitoring the quality of its products, thus giving it a competitive advantage. As a result, the company's integrated manufacturing processes enable it to deliver consistent quality products with reduced delivery timeline and at competitive prices, making it a preferred choice for customers. This leads to higher operating margins, allows the company to service its customers faster, and also allows the company to produce value added products.

High quality and highly customized finished products

- Renny Strips Limited produces narrow-width HR coils which allows it to manufacture ERW black and galvanized pipes and tubes of thickness as per customer requirements and reduces its dependency on external HR coil suppliers, thus giving it a competitive edge.
 - The company produces narrow-width HR coils with chemical and physical properties at par with the prominent domestic steel manufacturers, making it one of the few players producing highly customized scaffolding products using high quality raw material

- It is one of the few integrated manufacturers delivering high-performance narrow-width HR coils, wire rods, ERW black and galvanized pipes and tubes, custom scaffolding and formwork systems for the domestic and international market
- The company sources high quality steel scrap from its trusted supply partners both domestically and internationally, thus highly emphasising on the grade of raw material for its manufacturing operations

High operational efficiency

- The company's manufacturing process is designed to maximize operational efficiency while ensuring high product quality.
 - One of the key process innovations lies in the seamless integration between the induction furnaces and the continuous casting line.
 - In the conventional steel rolling industry, billets are first cast and then reheated before being converted into rolled products, which leads in higher fuel consumption, greater emissions, and increased costs. In contrast, the company's technologically advanced process eliminates the reheating stage entirely. By feeding the molten metal directly from the induction furnaces into the continuous casting line and then to rolling line, the company significantly reduces both emissions and operating expenses.
 - However, before going to the rolling process from the continuous casting line, the MS billets are then assessed for temperature at the exit of the continuous casting line. If the temperature is within the optimal rolling range (950–1000°C), the MS billets are immediately directed to the rolling mill for further processing into wire rods or narrow-width HR coils—eliminating the need for reheating. MS billets falling outside this range are directly sold in the market, ensuring zero waste and flexible output management. This temperature-based decision mechanism reflects the company's emphasis on process discipline, product quality, and cost efficiency.
 - The company has strategically differentiated itself in the steel industry by integrating induction furnaces directly with its continuous casting and rolling line, eliminating the reheating step. This integrated setup enables superior yield per unit of raw material and strengthens its competitive edge over industry peers that follow reheating-based processes.
- The company, by avoiding the reheating process altogether, is also able to reduce its material loss, which usually happens during the reheating/burning process. This gives the company higher output yield per unit consumption of raw material, providing it an edge over its competitors who rely on billet reheating before rolling.
- The company benefits from a 24-hour power supply from a dedicated 66 kilo-volt substation which helps it maintain high-capacity utilization rate in the power intensive steel manufacturing industry

Wide and diversified product portfolio and markets

- The integrated capabilities enable the company to deliver structural products for diverse ultimate end-use industries including construction, infrastructure, automotive, railways, oil & gas, agriculture, shipbuilding, general and heavy engineering, amongst others in domestic and international markets
- The company's deep vertical integration also enables it to cater to highly customized requirements of customers, particularly in the scaffolding segment, where the company, as of September 2025, produces over 1,000 stock keeping units using high performance wire rods, ERW black and galvanized pipes and tubes, and narrow-width HR coils produced in-house.
- On the account of its vertical integration, the company is able to customize the products even for small batches.

- The company serves a variety of end-use industries including engineering construction, farm equipment, water supply and sanitation, oil and gas, fabrication, fencing, bicycle, etc. through its wide portfolio spanning from MS billets to narrow-width HR coils and wire rods, and further to ERW black and galvanized pipes and tubes and scaffolding and formwork systems.
- The company serves global markets, exporting to various countries with a focus on the EU and Middle East. It has established strong international partnerships, reinforcing its position as a reliable global player
- In fiscal 2025, the company sold around 1.49 million units of scaffolding and formwork systems, out of which European region alone accounted for ~35% share amounting to 0.50-0.55 million units of scaffolding and formwork systems in the fiscal.
 - **Capturing nearly 1.58% of India's total scaffolding exports to Europe (in volume terms) in its very first year of operations (Fiscal 2025)**, the company has rapidly positioned itself as an emerging player in the global scaffolding market. This early success underscores the company's manufacturing excellence, product quality, and ability to meet stringent European standards.

Agile and adaptive manufacturing process

- The company has implemented an adaptive common conveyer system that significantly enhances production flexibility and responsiveness. This system enables MS billets to be seamlessly directed either to the wire rod mill or the narrow-width HR coil mill, based on real-time demand and production priorities.
 - By facilitating quick decision-making regarding product routing, the company is able to optimize capacity utilization, respond rapidly to market dynamics, and minimize operational downtime.
 - This agile setup reflects the company's commitment to technological advancement and customer-centric manufacturing.

Green manufacturing and sustainability focus

- Renny Strips Limited is a vertically integrated sustainability-focused structural products manufacturing company.
- It is one of the few domestic structural products manufacturing company that uses steel scrap as a raw material to manufacture products ranging from HR coils and wire rods to ERW pipes and tubes and scaffolding and formwork systems.
 - The use of steel scrap, sourced from domestic and international markets, enables cost-effective and flexible raw material management.
 - On an average, almost 90% of the steel raw material requirement is fulfilled through steel scrap. The high usage of steel scrap supports company's sustainable and environmentally conscious manufacturing practices.
 - This approach enables resource efficiency and significantly lowers its carbon footprint compared to the industry average.
 - For fiscal 2025, company's emission levels (0.395 tonnes of CO2e per tonne for Unit I and Unit II and 0.065 tonnes of CO2e per tonne for Unit III) are substantially below the industry average of 2.2 tonnes of CO2e per tonne, reflecting its strong focus on sustainable operations.
- The company is in the process of commissioning of a 22 mega-watt solar power plant to reduce carbon footprint and operational costs.
- The combination of steel scrap usage and renewable power integration will not only reinforce the company's commitment to responsible manufacturing but will also align it with international sustainability frameworks such as the

European Union's Carbon Border Adjustment Mechanism (CBAM). This helps gain CBAM approval, ensuring compliance with the stringent European Union (EU) sustainability standards, thus giving an advantage in the European markets by enhancing its competitiveness and reducing carbon taxes.

- EU guidelines require a payment of 80 euros worth of carbon tax per CO2 equivalent tonne of emission. Through the sustainable practices, the company will be able to sell its products in the EU region at affordable prices with respect to competitors.
- It is expected that UK will also release guidelines on similar lines in a few years from now. The sustainable product manufacturing will help the company gain market access in UK as well, similarly.

Quality standards and strong industry certifications

- Certified as ISO 9001, EN 1090, EN 3834-2, ISO 14001, and ISO 45001 by external agencies, ensuring adherence to international standards. These certifications improve credibility and ease market entry in strictly regulated markets
- With uncompromised quality and safety, the company conducts thorough testing of all its products before delivery, ensuring the highest industry standards and at the same time on-time delivery
- The company has custom online quality management system for quality control inspection

Robust financial growth

- The company witnessed strong financial growth over the past three fiscals as compared to its peers on the back of product and market diversifications and improvements in operational efficiencies.
 - Between fiscals 2023 and 2025, the company achieved a revenue CAGR of 26.70%, which is significantly higher than the peer set average of 15.26% during the period.
 - Further, the company's EBITDA CAGR stood at 62.07%, compared to the peer set average of 8.72% during the period.

Pricing power

- Renny Strips Limited's vertical integration leads to cost savings, which can be passed on to customers while maintaining profitability
- It has the ability to offer high-quality products at competitive rates compared with global competitors

Technology

- Built on an energy-efficient cascading production model that eliminates reheating between stages, the company leverages automation, digital quality monitoring, and engineering to ensure consistency, strength, and reliability across its offerings.
- The company has deployed advanced technology across manufacturing stages, which ensures precision engineering, high efficiency and consistent product output
- It focusses on increasing the lifespan of products through hot-dip galvanisation, electro-galvanisation, painting and powder coating
- The company is investing in new materials and technologies to enhance product durability

Weaknesses

High capex on sustainability and expansion

- Investments in solar energy, CBAM compliance and expansion are significant upfront costs before yielding returns

Limited brand recognition in some international markets

- While the company's brand image is strong in India, global awareness is still growing in regions such as Europe and the US
- It also competes against well-established global brands, which requires intensive marketing and partnership-building

Managing multiple product lines and facilities

- A high range of SKUs increases operational complexity. However, with the use of appropriate technology, the company would be able to improve the management of diversified product portfolio.

Opportunities

Expansion into livestock housing solutions

- Increasing demand for high-quality, durable steel livestock enclosures, dairy farm structures and poultry housing
- Growth in India, Europe and the Middle East, where commercial-scale animal farming is rising

Growth in renewable energy components

- Solar power projects need mounting structures and custom steel components, which align with Renny Strips Limited's production capabilities
- Wind energy infrastructure also requires fabricated steel components, creating another business opportunity

Increasing market for pipes and tubes domestically and globally

- Supported by various government led schemes such as AMRUT, Jal Jeevan Mission, Swacch Bahrat Mission, the demand for pipes and tubes (both ERW and GI) is expected to increase in India
- Further, the growing construction segment and several water desalination projects internationally, especially in the Middle east are expected to drive demand for pipes outside India, providing a business opportunity for the company

Sustainable construction market growth

- Rising global demand for eco-friendly scaffolding and formwork aligns with the company's low-emission, CBAM-compliant products
- Increasing focus on carbon-neutral construction in Europe, the US and Australia

Emerging markets in the Middle East, Africa and Southeast Asia

- Rapid urbanisation is driving demand for high-quality scaffolding, formwork and steel structures

Potential joint ventures and strategic partnerships

- Collaboration with real estate developers, construction firms, solar energy companies and steel distributors

- Partnering with international distributors and resellers to enter new markets more efficiently

Threats

Raw material price volatility and steel market fluctuations

- Global steel price fluctuations can impact profit margin, despite the vertical integration

Complex logistics and lead times

- Shipping heavy steel-based products internationally involves high freight costs and long lead times
- Dependence on import/ export regulations and customs duties may impact profitability

Competition from low-cost manufacturers

- Chinese and Southeast Asian manufacturers offer cheaper scaffolding and steel products, resulting in pricing pressure
- The company would need to differentiate through quality, durability and sustainability certifications

Changing trade regulations and tariffs

- Import/ export restrictions, anti-dumping duties and trade wars can impact international business
- Shifting European regulations may require constant adjustments to compliance strategies

Geopolitical instability and global economic uncertainty

- Conflicts, economic recession or supply-chain disruption could affect key export markets
- Currency fluctuations and trade barriers may impact profitability from international markets

Customer preferences shifting to alternative materials

- Advances in composite materials, aluminium and 3D-printed structures may reduce demand for steel scaffolding
- The company would need to do continuous research and development to stay ahead of industry trends

Environmental regulations and carbon emission laws

- As global carbon taxation policies tighten, even green steel manufacturers may face new compliance costs
- Continuous adaptation is required to maintain a low-carbon manufacturing footprint

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