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Assessment of the structural steel industry in India

July 2025

by S&P Global

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Contents

1. Macroeconomic assessment

Global GDP outlook

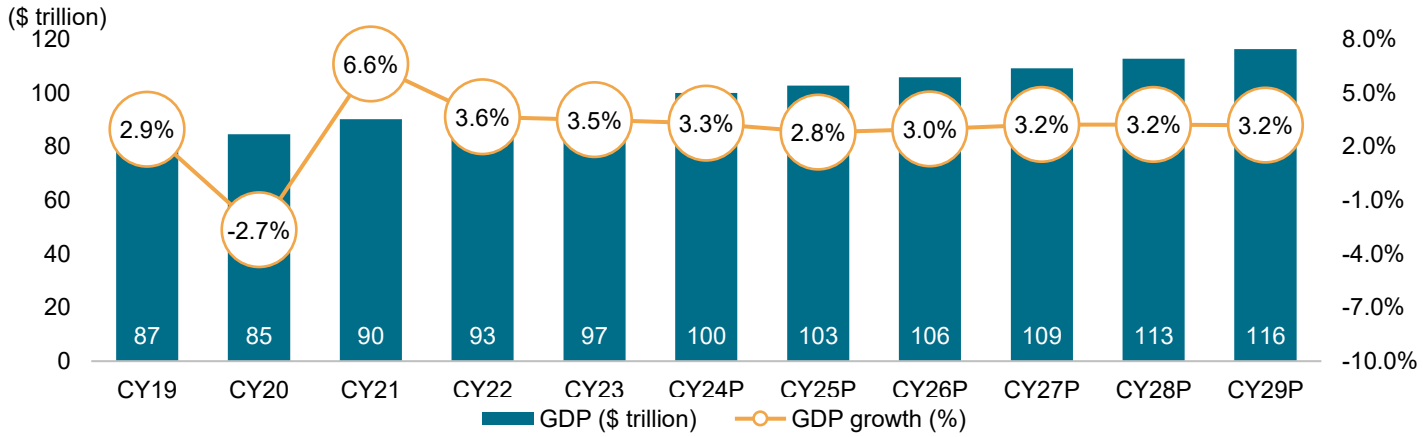
Global GDP is estimated to grow 2.8% in calendar year 2025 and 3.0% in 2026 amid moderating inflation and steady growth in key economies

As per the April 2025 update of the International Monetary Fund (IMF), global gross domestic product (GDP) is projected to grow at 2.8% in calendar year 2025 and 3.0% in 2026. The growth is expected to be propelled by the emerging and developing economies, with regional differences on account of global economic tensions.

The economy showed signs of stabilisation through much of 2024 after a prolonged and challenging period of unprecedented shocks. Inflation declined gradually from multidecade highs towards central bank targets and labour markets normalised, with unemployment and vacancy rates returning to pre-pandemic levels. Overall, growth has hovered around 3% in the past few years.

The escalation in trade tensions and policy uncertainty are, however, expected to have a significant impact on global economic activity.

Global GDP trend and outlook (CY18-26P, $ trillion)



Note: E: Estimated, P: Projection
Source: IMF economic database, Crisil Intelligence

India among the fastest-growing major economies

India became the fifth-largest economy in the world by fiscal 2023 and has grown faster than key global economies. The expanding economy and growing per capita income could positively impact consumer purchasing power, which in turn will influence the demand for discretionary spends like entertainment, leisure and tourism.

United States: For the US, the growth rate is projected to slow to 1.8% in 2025 from 2.8% in the previous year as a result of greater policy uncertainty, trade tensions and a softer demand outlook given slower-than-anticipated consumption growth. Tariffs are also expected to weigh on growth in 2026, projected at 1.7% amid moderate private consumption.

Euro area: The euro area is expected to grow at a slightly slower pace of 0.8% in 2025, before picking up at 1.2% in 2026. Rising uncertainty and tariffs are expected to be the key drivers of subdued growth in 2025, whereas stronger consumption on the back of rising real wages and a projected fiscal easing in Germany are expected to support the uptick in 2026.

Advanced economies: Growth under the reference forecast is projected to drop from an estimated 1.8% in 2024 to 1.4% in 2025 and 1.5% in 2026. The forecasts for 2025 include significant downward revisions for Canada, Japan, the UK and the US and an upward revision for Spain.

Emerging market and developing economies: For emerging market and developing economies, growth is projected to slow to 3.7% in 2025 and 3.9% in 2026, following an estimated 4.3% in 2024.

Real GDP growth comparison between India and advanced and emerging economies (across calendar years)

Real GDP growth (annual % change)	2019	2020	2021	2022	2023E	2024E	2025P	2026P	2027P	2028P	2029P
India	3.9	-5.8	9.7	7.6	9.2	6.5	6.2	6.3	6.5	6.5	6.5
Canada	1.9	-5.0	6.0	4.2	1.5	1.5	1.4	1.6	1.7	1.6	1.6
China	6.1	2.3	8.6	3.1	5.4	5.0	4.0	4.0	4.2	4.1	3.7
Eurozone (euro area)	1.6	-6.0	6.3	3.5	0.4	0.9	0.8	1.2	1.3	1.3	1.2
Australia	1.9	-4.0	6.0	2.9	1.7	1.8	1.4	1.5	1.7	1.7	1.7
UK	1.6	-10.3	8.6	4.8	0.4	1.1	1.1	1.4	1.5	1.5	1.4
US	2.6	-2.2	6.1	2.5	2.9	2.8	1.8	1.7	2.0	2.1	2.1
Saudi Arabia	1.1	-3.6	5.1	7.5	-0.8	1.3	3.0	3.7	3.6	3.2	3.2
Advanced economies	1.9	-4.0	6.0	2.9	1.7	1.8	1.4	1.5	1.7	1.7	1.7
Emerging market and developing economies	3.7	-1.7	7.0	4.1	4.7	4.3	3.7	3.9	4.2	4.1	4.1
World	**2.9**	**-2.7**	**6.6**	**3.6**	**3.5**	**3.3**	**2.8**	**3.0**	**3.2**	**3.2**	**3.2**

Notes: P- projected
** Numbers for India are for the corresponding financial year from April to March (2020 is FY21 and so on) and as per the IMF's forecast.*
Source: IMF economic database, Crisil Intelligence

Growth in per capita GDP of emerging markets and developing economies faster than the global average

Between 2018 and 2024, global per capita GDP clocked a compound annual growth rate (CAGR) of 3.8%, whereas and that of emerging market and developing economies grew at 4.2%, according to the IMF.

India's per capita GDP growth was the fastest compared with global levels, with a CAGR of 5.6% from 2018-2024. China, the US, Saudi Arabia and the UK's per capita GDP clocked a CAGR of 5.0%, 5.7%, 3.3% and 4.2%, respectively, during the same period.

Per capita GDP growth comparison between India, advanced and emerging economies

GDP per capita, current prices (U.S. dollars per capita)	2019	2020	2021	2022	2023E	2024E	2025P	2026P	CAGR growth (19-24)
India	2,050.2	1,915.6	2,250.2	2,366.3	2,497.2	2,697.6	2,936.8	3,210.4	5.6%
US	65,561.3	64,461.6	71,258.0	77,979.9	82,715.1	86,601.3	89,677.9	92,785.9	5.7%
China	10,170.1	10,525.0	12,572.1	12,642.8	12,597.3	12,968.6	13,873.3	14,793.0	5.0%

GDP per capita, current prices (U.S. dollars per capita)	2019	2020	2021	2022	2023E	2024E	2025P	2026P	CAGR growth (19-24)
Saudi Arabia	27,892.8	23,271.4	28,396.1	34,454.2	32,529.7	32,881.3	33,287.2	34,431.3	3.3%
UK	42,712.6	40,230.5	46,731.5	46,103.2	49,647.6	52,423.3	54,279.9	56,143.8	4.2%
Emerging markets and developing economies	5,411.7	5,145.4	5,976.7	6,330.7	6,409.5	6,651.6	6,954.3	7,326.6	4.2%
World	11,530.0	11,125.7	12,566.1	12,976.0	13,400.1	13,898.4	14,450.2	15,038.8	3.8%

Notes: P- projected

** Numbers for India are for financial year from April to March (2020 is FY21 and so on) and as per the IMF's forecast.*

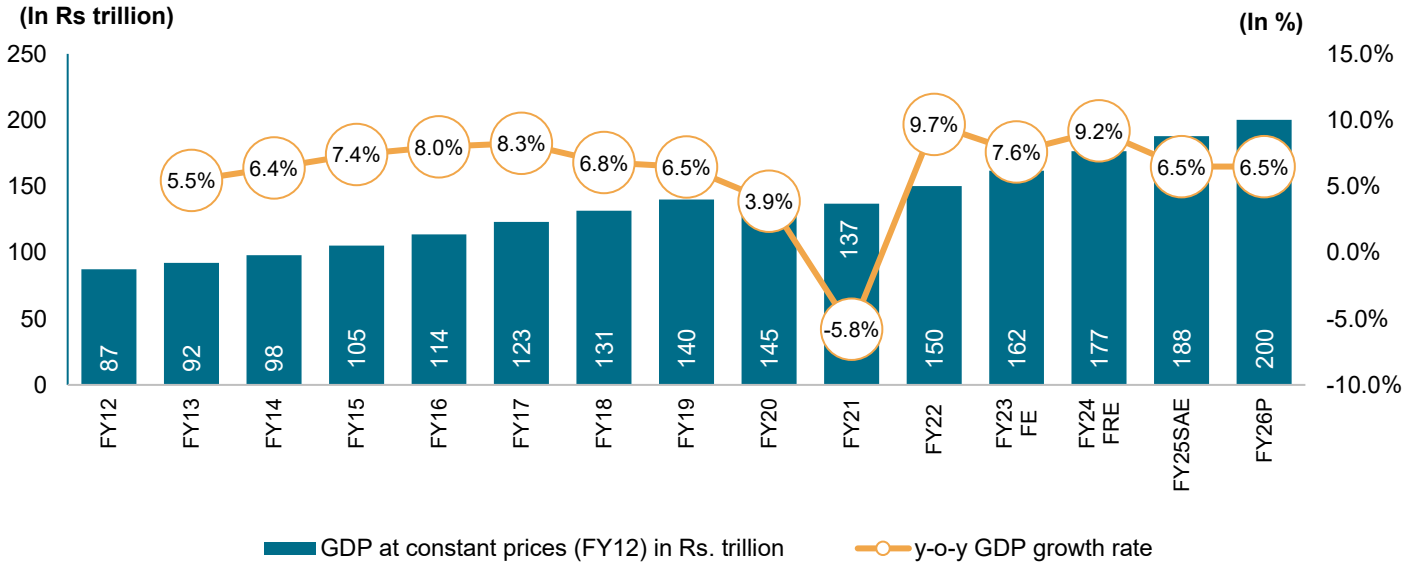
Source: IMF economic database, Crisil Intelligence

India's macroeconomic overview

GDP expanded at 6.1% CAGR between fiscals 2012 and 2025

India's GDP grew from Rs 87 trillion in fiscal 2012 to Rs 188 trillion in fiscal 2025, expanding at a CAGR of 6.1% during the period. The surge in the non-agricultural economy was a key driver, while the government's investment push and easing input cost pressures for industry also played a major role in shoring up growth. However, services growth has been losing pace because of waning pent-up demand (after the pandemic). This excludes financial, real estate and professional services, however, which have powered ahead on the back of robust growth in banking and real estate sectors. As per the government's second advance estimates, GDP grew at 6.5% in fiscal 2025 to Rs 188 trillion.

India real GDP growth at constant prices (new series)



Note: FE: Final estimates, FRE: first revised estimates, SAE: second advance estimates, P: Projected

These estimates are reported by the government at various stages

Only actuals and estimates of GDP are provided in the bar graph

Source: Second Advance Estimates of Annual GDP for 2024-25, Ministry of Statistics and Programme Implementation (MoSPI), Crisil Intelligence

Economy to grow at 6.5% in fiscal 2026, pace to sustain till fiscal 2031

We expects India's GDP to grow at 6.5% this fiscal, apace with the estimated growth in fiscal 2025, propelled by a relatively balanced set of domestic drivers. However, the ongoing trade-related uncertainties pose some downside risks to the forecast. India's economic growth rate is normalising towards its medium-term trend and, in fiscal 2026, will be supported by factors such as lower food inflation and borrowing costs, and higher disposable income of the middle class.

We expect the pace of GDP growth to sustain, averaging 6.7% over fiscals 2025 to 2031, thereby making India the third-largest economy in the world.

A large part of this growth will be driven by capital investments, with the share of the private sector expected to increase as the government continues to focus on fiscal consolidation. The manufacturing and services sectors are expected to grow at a 9.0% and 6.8% CAGR, respectively, over the period. The services sector will remain the dominant growth driver, thereby contributing to ~55.0% share in GDP by fiscal 2031 vs. a ~20.0% share for the manufacturing sector.

That said, the manufacturing sector is expected to grow at a faster pace between fiscals 2025 and 2031 than it did between fiscals 2011 and 2020. Over the next seven years, as global growth is expected to be relatively tepid and the trade environment restrictive, domestic demand will play an important role in supporting the growth of the manufacturing sector.

Per capita net national income improves further in fiscal 2025

India's per capita income, a broad indicator of living standards, rose from Rs 63,462 in fiscal 2012 to Rs 114,705 (provisional estimates) in fiscal 2025 (4.66% CAGR). Growth was led by better job opportunities, propped up by overall GDP growth. Moreover, population growth remained stable at a ~1% CAGR.

Per capita net national income at constant prices

	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23FE	FY24 FRE	FY25 SAE
Per-capita NNI (IRs)	63,462	65,538	68,572	72,805	77,659	83,003	87,586	92,133	94,420	86,034	94,054	100,163	108,786	114,705
On-year growth (%)		3.27%	4.63%	6.17%	6.67%	6.88%	5.52%	5.19%	2.48%	-8.88%	9.32%	6.49%	8.61%	5.44%

FE: Final estimates, FRE: first revised estimates, SAE: second advance estimates
Source: Second Advance Estimates of Annual GDP for 2024-25, MoSPI, Crisil Intelligence

Demographic factors support India's growth

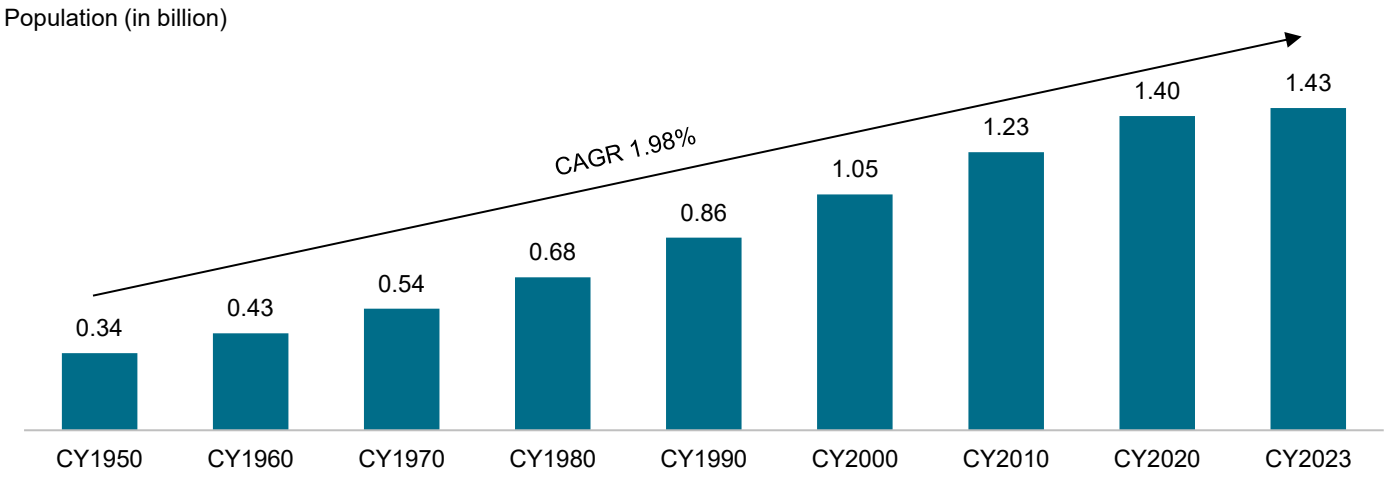
India surpassed China to become the most populous country

India's population grew to ~1.43 billion in 2023 as per the World Population Prospects 2024 report of the United Nations, compared with just 0.34 billion in 1950, exhibiting a CAGR of 1.98%.

It is expected to remain the world's largest throughout the century and will likely peak in the early 2060s at about 1.7 billion.

As per the United Nations Population Fund's State of World Population Report of 2023, India's population exceeded China's by ~2.90 million as of mid-2023.

India's population trajectory



Note: P: Projected
Population in the above chart as of January 1 of the respective year
Source: UN Department of Economic and Social Affairs, World Population Prospects 2024, Crisil Intelligence

Population growth and urbanization trends

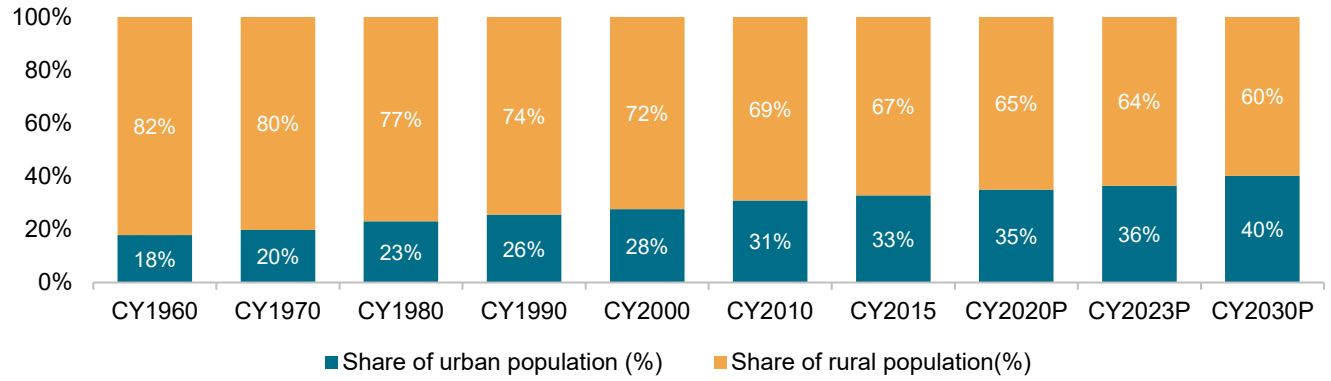
Countries	Growth rate (CY20-23)	Outlook (CY23-30)	Urban and Rural split (CY23)
India	1.31%	0.25%	36% / 64%
China	0.50%	-0.07%	65% / 35%
USA	0.84%	0.15%	83% / 17%
World	1.15%	0.24%	57% / 43%

Source: World Urbanization Prospects: The 2018 Revision, UN, UN Department of Economic and Social Affairs, World Population Prospects 2024, Crisil Intelligence

Urbanisation has also seen an uptrend, growing from 18% in 1960 to an estimated 36% in 2023. This necessitates enhancements in facilities such as housing, transportation and utilities to support the increased population density in urban areas. This in turn has raised spends towards urban infrastructure.

India's urban population is expected to continue to rise on the back of economic growth, with its share in total population projected to increase to nearly 40% by 2030, according to a UN report on urbanisation.

India's urban vs. rural population (in million)



P: projected
Source: World Urbanization Prospects: The 2018 Revision, UN, Crisil Intelligence

Healthy growth in gross value added in fiscal 2025 in line with GDP growth

According to the second advance estimates, gross value added (GVA) grew ~6.37% to Rs 171.8 trillion in fiscal 2025 from Rs 161.51 trillion in fiscal 2024. Financial, real estate and professional services had the highest contribution to GVA at ~23.80%, whereas public administration, defence and other services, and construction GVA had the highest annual growth at ~8.81% and ~8.64%, respectively.

GVA at constant prices

Rs trillion	FY12	FY19	FY20	FY21	FY22	FY23 FE	FY24 FRE	FY25 SAE	Share in GVA FY25	Annual growth in FY25
Construction	7.77	10.27	10.43	9.95	11.94	13.02	14.38	15.62	9.09%	8.64%
Mining and quarrying	2.61	3.27	3.17	2.91	3.09	3.20	3.30	3.39	1.97%	2.76%
Manufacturing	14.10	23.29	22.60	23.29	25.61	25.16	28.26	29.47	17.15%	4.29%
Electricity, gas, water supply and other utility services	1.87	2.94	3.01	2.88	3.18	3.52	3.83	4.06	2.36%	6.03%
Agriculture, forestry and fishing	15.02	18.79	19.94	20.74	21.70	23.06	23.67	24.76	14.41%	4.59%
Trade, hotels, transport, communication and services related to broadcasting	14.13	25.39	26.90	21.54	24.80	27.86	29.95	31.85	18.54%	6.38%
Financial, real estate and professional services	15.31	27.14	28.98	29.54	31.23	34.59	38.15	40.90	23.80%	7.21%
Public administration, defence and other services	10.26	16.25	17.32	16.01	17.22	18.36	19.99	21.75	12.66%	8.81%
Total GVA at constant prices	81.07	127.34	132.36	126.87	138.77	148.78	161.51	171.80	100.00%	6.37%

FE: Final Estimates, FRE: First Revised Estimates, SAE: Second Advance Estimates
Source: MoSPI, Crisil Intelligence

Construction's share in overall GVA estimated to have risen further in fiscal 2025

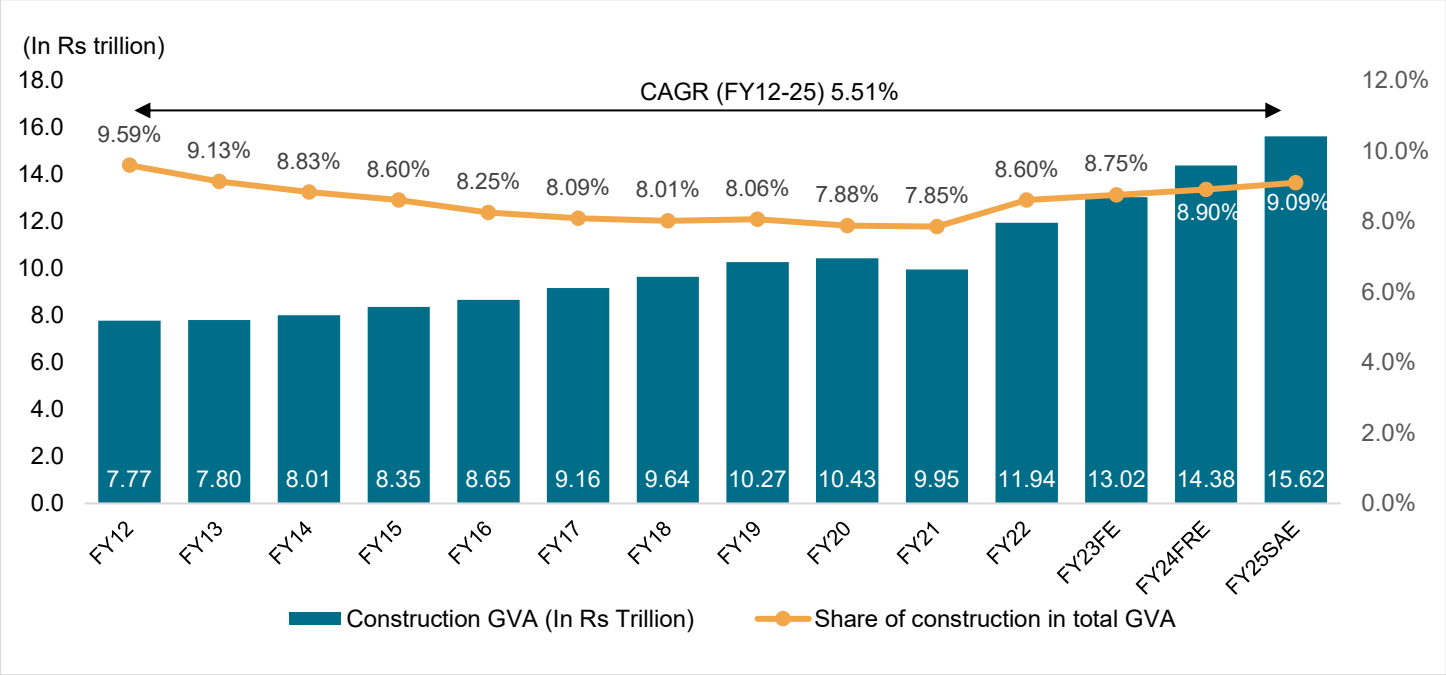
Construction GVA is a critical indicator of economic activity as it represents the value generated by the construction sector, which includes activities related to building infrastructure, real estate and other construction projects.

Construction GVA increased to Rs 15.62 trillion in fiscal 2025 from Rs 7.77 trillion in fiscal 2012, clocking a CAGR of 5.51%. Several factors contributed to the growth, including economic expansion, the government's commitment to infrastructure development — particularly roads, railways and energy projects —and increase in foreign direct investment (FDI), which boosted private sector investments. Furthermore, increasing demand for affordable housing, driven by rising urbanisation and an expanding middle-class population, also played a significant role in elevating construction GVA.

However, in fiscal 2021, the GVA faced pressures resulting from the Covid-19 pandemic. In fiscal 2022, the share of construction in overall GVA rebounded to 8.60% and further increased to 8.75% in fiscal 2023.

As per the provisional estimates for fiscal 2025, construction GVA contributed 9.09% in overall GVA. Overall, construction GVA expanded at a CAGR of 5.51% between fiscals 2012 and 2025.

Construction GVA

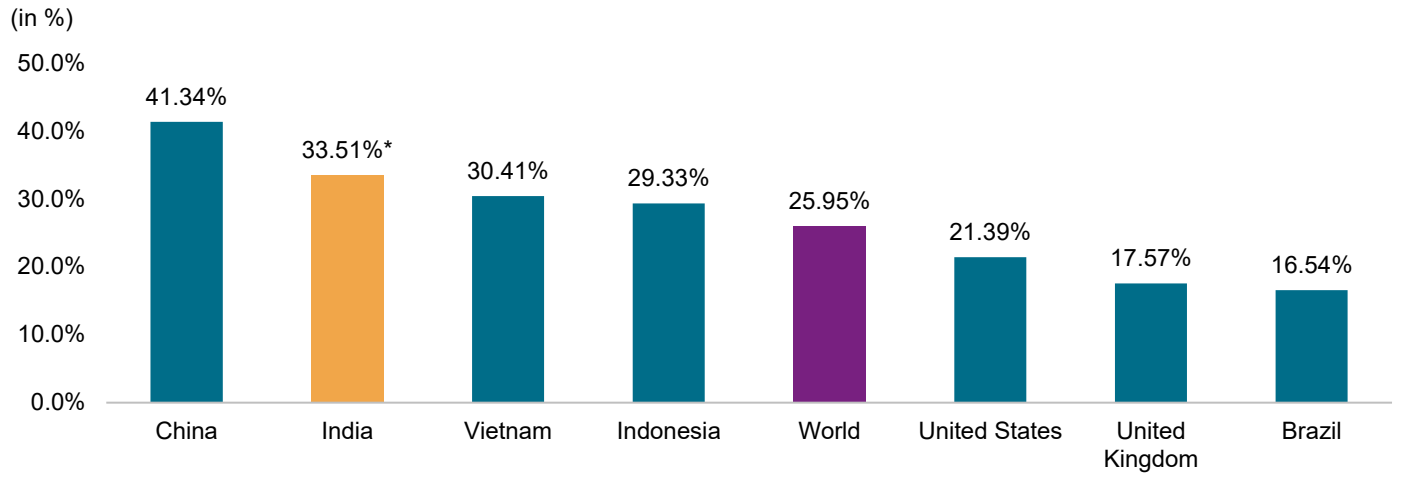


FE: Final Estimates, FRE: First Revised Estimates, SAE: Second Advance Estimates
Source: MoSPI, Crisil Intelligence

India's GFCF as percentage of GDP remains robust in fiscal 2024

Gross fixed capital formation (GFCF) measures the level of investment in creating physical assets and infrastructure, which is crucial to fostering economic growth and development. GFCF includes land improvements (fences, ditches, drains, and so on), plant, machinery equipment purchases, along with construction of roads and railways. It also includes the construction of schools, offices, hospitals, private residential dwellings and commercial and industrial buildings. As of CY2023, India's GFCF as a percentage of GDP was 33.51%, higher than the global average of 25.95%.

GFCF as a percentage of GDP (CY23)

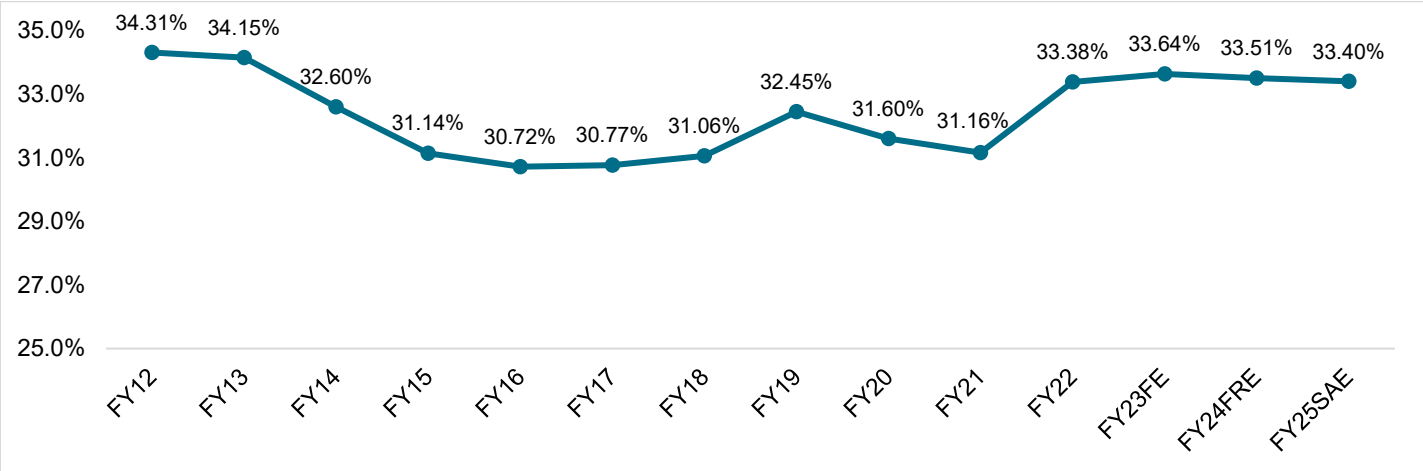


*Note: *India's GFCF as a percentage of GDP for fiscal 2024, according to provisional estimates of the MoSPI, has been considered for the above chart. According to the World Bank, India's GFCF as a percentage of GDP stood at 30.8% in fiscal 2024.*
Source: World Bank, Crisil Intelligence

This is a sharp reversal from fiscals 2020 and 2021, when GFCF fell to 31.60% and 31.16% of GDP, respectively, as Covid-induced disruptions in supply chains and business operations took a toll on investments in physical assets. .

GFCF, however, recovered to 33.38% of GDP in fiscal 2022 and 33.64% of GDP in 2023, due to factors such as the easing of pandemic-induced restrictions, government's focus on infrastructure development, economic reforms and increase in urbanisation, which boosted demand for affordable housing.

GFCF as percentage of India's GDP (FY12 to FY25)

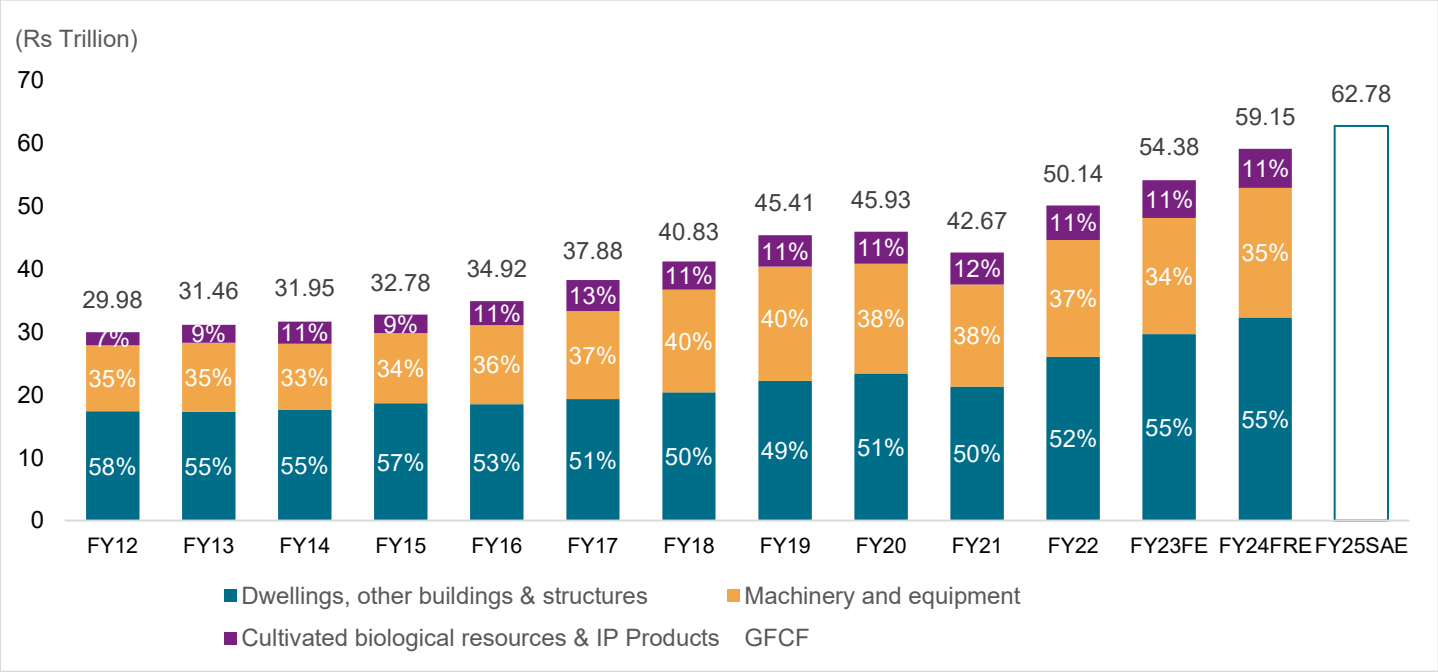


FE: Final estimates, FRE: First revised estimates, SAE: Second advance estimates
Source: MoSPI, PIB, Crisil Intelligence

The rise in fiscal 2022 was largely because of dwellings, other buildings and structures, which had a significant ~55% weightage in GFCF. Key factors contributing to the vertical's dominant share were economic growth, government's commitment to infrastructure development, particularly roads, railways, energy projects and increase in FDI, which boosted private sector investment. Further, a growing middle class and increasing urbanisation boosted the demand for housing and commercial properties, thereby stimulating investment in the construction sector, also aided GFCF.

According to provisional estimates for fiscal 2025, GFCF further increased to Rs 62.78 trillion, on-year growth of 6.1%.

GFCF trend in India



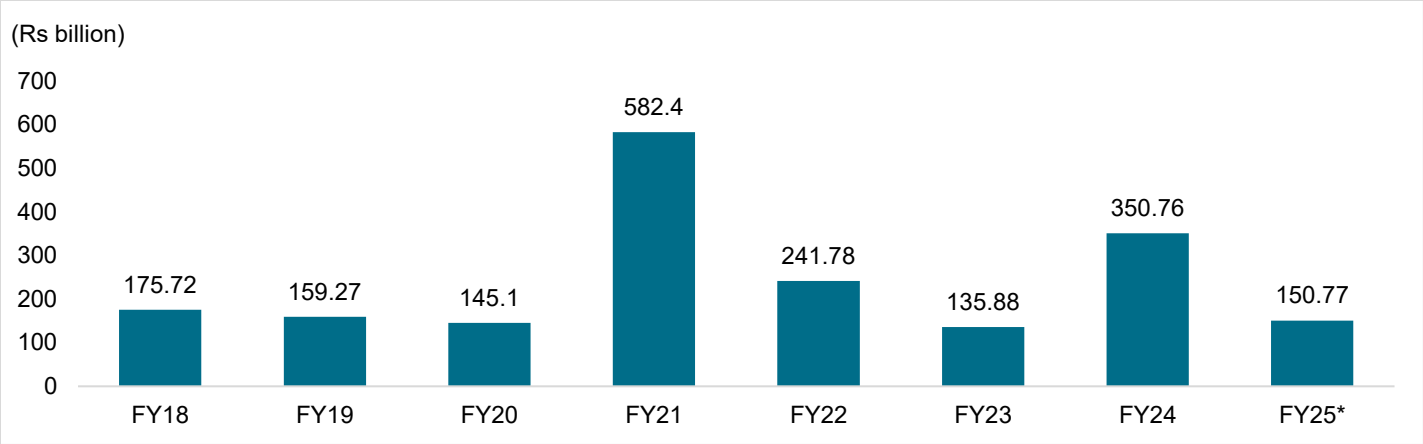
FE: Final estimates, FRE: First revised estimates, SAE: Second advance estimates
Source: MoSPI, Crisil Intelligence

Construction among top 10 sectors to attract FDI

FDI is crucial to India's economic growth and development, and particularly to the construction sector. Currently, key construction (development) projects, including townships, residential and commercial premises, roads, bridges, hotels, hospitals, educational institutions, recreational facilities and city and regional-level infrastructure are open to 100% FDI through the automatic route. Moreover, FDI limits for real estate projects within special economic zones (SEZ) and industrial parks have been raised to 100% through the automatic route.

In the construction (infrastructure) sector, FDI stood at Rs 350.76 billion in fiscal 2024, as against Rs 175.71 billion in fiscal 2018, and was at Rs 150.77 billion in the first nine months (April-December) of fiscal 2025, indicating strong momentum in the sector. FDI investments in construction (infrastructure) sector spiked in fiscal 2021 to Rs 582.40 billion due to a rise in the investment in warehousing segment.

FDI equity inflow in construction (infrastructure) activities



**Data for fiscal 2025 is for 9 months (April-December)*
Source: Department of Industry Policy & Promotion, Crisil Intelligence

Budgetary capex for infrastructure ministries is Rs 10.6 trillion, up 11.6% from fiscal 2025

The budgetary capex for infrastructure ministries is Rs 10.6 trillion, up 11.6% from fiscal 2025RE. This increase aligns with the government's emphasis on infrastructure development, as seen in the rising budget allocations aimed at achieving the goals outlined in the National Infrastructure Pipeline (NIP).

The key announcements for infrastructure section in the Budget for fiscal 2026 are as follows:

- The budgetary capex for infrastructure ministries is Rs 10.6 trillion, up 11.6% from fiscal 2025RE
- Each infrastructure-related ministry will come up with a three-year project pipeline that can be implemented through the public-private partnership (PPP) mode. States are also encouraged to do so
- To support states in infrastructure development, an outlay of Rs 1.5 trillion is proposed for 50-year interest-free loans as capex and incentives for reforms
- In the second phase of the asset monetisation plan, the government aims to generate Rs 10 trillion with a pipeline of assets to be monetised between fiscals 2025 and 2030

Budget allocation for infrastructure sector

Rs trillion	FY24	FY25RE	FY26BE
Budgetary allocation for infrastructure ministries	8.5	9.5	10.7

Note: RE- Revised estimates, BE-Budgeted estimates
Source: Budget documents, Crisil Intelligence

PFCE to maintain dominant share in India's GDP

Private final consumption expenditure (PFCE), at constant prices, clocked a CAGR of 6% between fiscals 2012 and 2024, maintaining its dominant share of 56.1% in fiscal 24 (Rs 99,068 billion in absolute terms, up 5.6% on-year). Growth was led by a healthy monsoon, wage revisions due to the implementation of the Seventh Central Pay Commission's (CPC) recommendations, benign interest rates, growing middle age population and low inflation.

As of fiscal 2025, PFCE is estimated to have increased to Rs 106,618 billion, rising 7.6%, and accounting for 56.7% of India's GDP. The increasing share of discretionary spending from fiscal 2012 suggests rising disposable incomes and spending capacity of households.

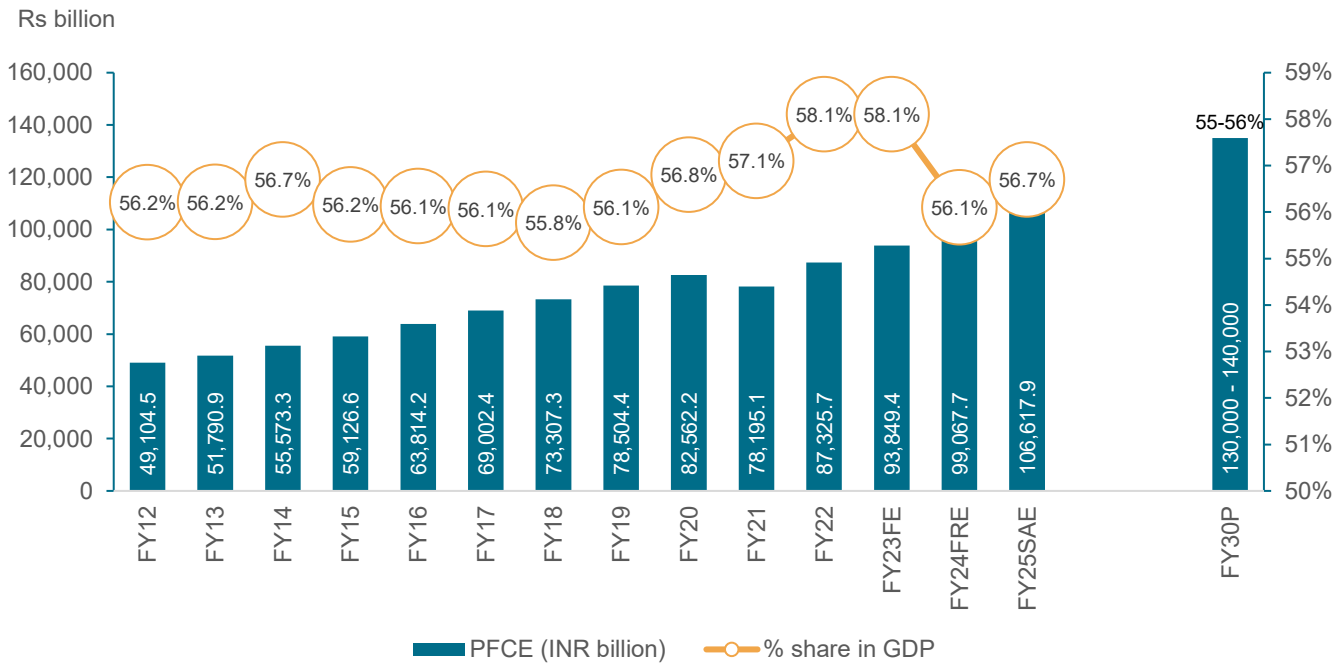
The PFCE clocked a CAGR of ~6.1%, in line with GDP's CAGR of 6.1%, from fiscal 2012 to 2025.

Crisil estimates that PFCE will grow at an average annual growth rate of 6-8% from fiscal 2024 to 2030, representing 55-56% of GDP in fiscal 2030.

Consumption expenditure, led by discretionary spending, to drive GDP growth

In the medium- to long-term, the positive economic outlook and growth across key employment-generating sectors, such as real estate, infrastructure and automobiles, are expected to have a cascading effect on the overall per capita income. This, in turn, is expected to drive discretionary spending.

PFCE (at constant prices)



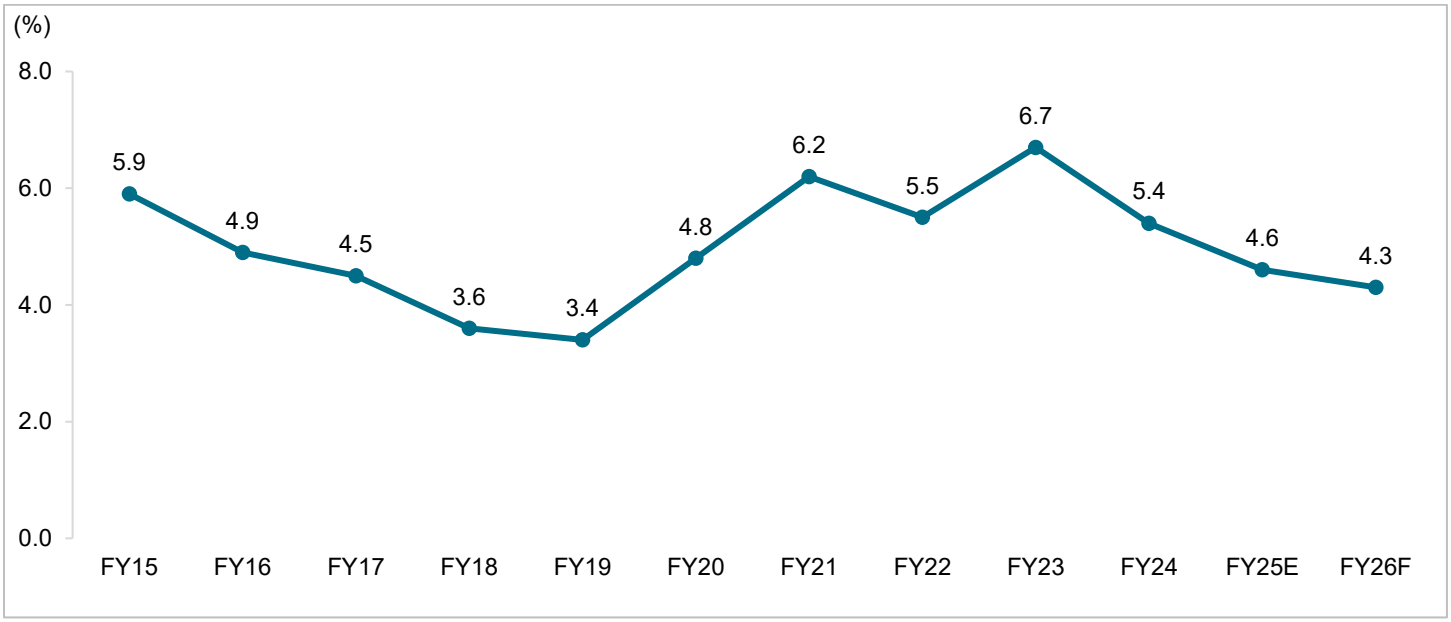
Note: FE: Final estimates; FRE: First revised estimates; SAE: Second advance estimates; P: Projection
Source: Second Advance Estimates of Annual GDP for 2024-25, MoSPI, Crisil Intelligence

CPI inflation is expected to soften to 4.3% in fiscal 2026

In May 2016, the Reserve Bank of India (RBI) adopted flexible inflation targeting, setting a numerical target for Consumer Price Index (CPI) inflation at 4%, with a tolerance band of +/- 2%. CPI has eased from a high of 9.9% in fiscal 2013. Between fiscals 2016 and 2023, inflation was within the tolerance band, except in fiscal 2021 and fiscal 2023. CPI was at 6.2% in fiscal 2021 due to pandemic-induced supply-side disruptions and rose to 5.4% in fiscal 2024 because of reduction in food inflation.

In fiscal 2025, Crisil estimates CPI inflation eased to 4.6% on-year, driven by a normal monsoon and reducing food prices. For fiscal 2026, Crisil Intelligence forecasts CPI at 4.3% . Crisil expects non-food inflation to remain comfortable, supported by softness in consumer demand, a pass-through of the previous year's oil price decline to domestic fuel (petrol and liquefied petroleum gas) prices, and benign crude prices in the base case.

CPI inflation trend



E: Estimated P: Projected
Source: Crisil Intelligence

Overview of manufacturing sector in India

India’s manufacturing landscape is undergoing a transformation shaped by shifting global dynamics, domestic reforms and an active role for the private sector.

Crisil expect manufacturing growth to average 9.0% per year over the medium term (fiscals 2025-2031), up from 6% average in the pre-pandemic decade. Subsequently, as per Crisil estimates, the share of manufacturing in GDP will rise to ~20% by fiscal 2031 from an estimated 17.2% in fiscal 2025. In contrast, the service sector is anticipated to maintain a relatively stable share of around 50% in the overall GVA, whereas the share of agriculture in GDP is projected to decline from 14.4% in fiscal 2025 to ~12% by fiscal 2031.

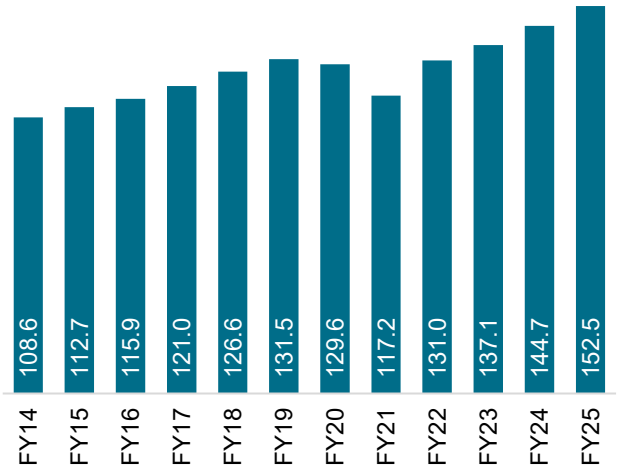
Key parameters related to the manufacturing sector’s performance are discussed in detail below.

Manufacturing IIP increased to 152.5 in fiscal 2025

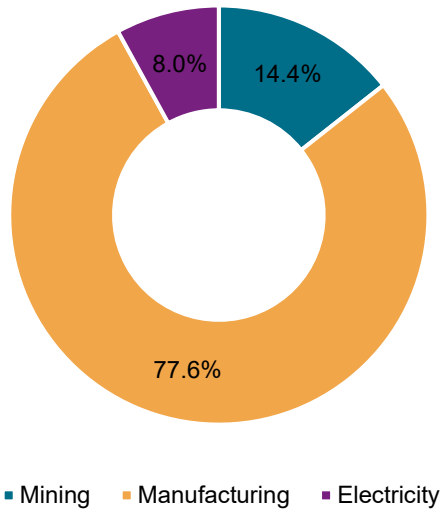
The Index of Industrial Production (IIP) for manufacturing rose to 152.5 in fiscal 2025 from 104.8 in fiscal 2013. The manufacturing sector is a significant contributor to the country's overall industrial growth, with 78% weightage in the overall IIP as of fiscal 2025.

Even though manufacturing IIP declined in fiscal 2020 to 129.6 and to 117.2 in fiscal 2021 owing to the pandemic, it recovered to 131.0 in fiscal 2022 on the back of the easing of Covid-19 related restrictions, government stimulus measures, rising consumer demand and efforts to revitalise the manufacturing sector. Consequently, in fiscal 2025, manufacturing IIP stood at 152.5.

Manufacturing IIP (FY14 to FY25)



Weight of manufacturing in IIP (FY25)



Source: MoSPI, Crisil Intelligence

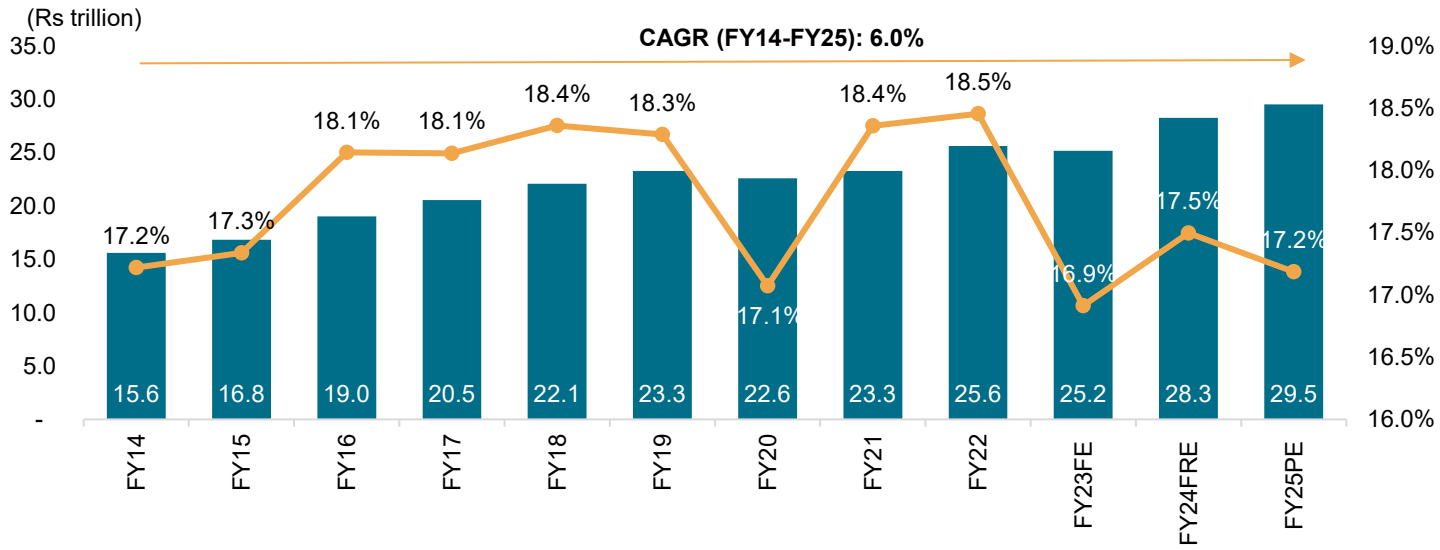
Manufacturing sector GVA improved to Rs 30 trillion in fiscal 2025 on the back of IIP growth

Manufacturing sector GVA logged a CAGR of 6.0% between fiscals 2014 and 2025 to reach Rs ~29.5 trillion in fiscal 2025 compared with ~Rs 15.6 trillion in fiscal 2014. Subsequently, the share of Manufacturing GVA in the industry GVA improved a tad to ~56% from ~55% in fiscal 2014. However, the share of manufacturing GVA in overall GVA remained constant at ~17%.

This fiscal, Crisil estimates US tariff hikes to pose a key downside risk to the industrial outlook. Slower global growth, along with anticipated reciprocal tariffs on India, is likely to hit exports. Uncertainty about tariff duration and frequent tariff changes may hinder investments. A nuance of these developments will be shaped by the kind of trade deal India manages to strike with the US.

However, over the medium term (fiscal 2025- 2031), Crisil estimates manufacturing GVA to grow at 9% on average. This will help India ramp up the share of manufacturing in GDP to ~20% by fiscal 2031, from ~17% in fiscal 2025. The improvement will ride on a focused approach in sunrise sectors such as solar photovoltaics, battery manufacturing and semiconductors. However, the speed with which India's manufacturing sector grows will critically hinge on factors such as the pace of development of its logistics, improvement in its ease of doing business via deregulation and its stance on global tariff wars.

Manufacturing GVA (FY14-FY25)



Note: FE: Final Estimates, FRE: First Revised Estimates, PE: Provisional Estimates, P: Projected
Source: MoSPI, Crisil Intelligence

Factors influencing the manufacturing sector

Global supply chain diversification

In recent years, global manufacturing companies have been actively pursuing diversification to reduce dependence on single-country sourcing models, particularly in light of the Covid-induced disruptions and rising geopolitical tensions. This "China + 1" strategy has resulted in increased interest in India as a manufacturing destination.

India has emerged as a preferred alternative manufacturing destination, driven by government initiatives such as the Make in India programme and the Production Linked Incentive (PLI) schemes. The country offers competitive advantages in terms of scale, a large domestic market and policy momentum. Several multinational corporations have announced plans to either set up or expand manufacturing operations in India across sectors, including electronics, automotive components, pharmaceuticals, and chemicals.

However, India faces challenges in terms of logistics infrastructure, regulatory predictability and end-to-end supply chain integration, which may impact the pace and extent of these shifts in the short- to medium-term.

Competitive labour costs

India benefits from a large and young workforce. This demographic dividend positions India favourably for labour-intensive manufacturing activities such as textiles, apparel, leather goods, and basic consumer electronics.

The availability of low-cost labour supports scalability in certain manufacturing verticals. However, productivity levels and workforce efficiency remain areas for improvement. Moreover, labour market rigidity, informal employment practices and limited automation readiness could moderate the benefits derived from cost arbitrage in high-value manufacturing segments. However, reforms by the central and state governments, including labour code rationalisation, are aimed at enhancing formalisation and promoting a more investment-friendly employment framework.

Upskilling of workforce

As manufacturing processes become increasingly automated and technology-driven, the requirement for a skilled and future-ready workforce is becoming more pronounced. India currently faces a skill mismatch with technical expertise required for modern manufacturing, including robotics, Internet-of-Things (IoT), and Industry 4.0 practices.

Government initiatives such as the Skill India Mission, Pradhan Mantri Kaushal Vikas Yojana (PMKVY), and state-level skilling programmes aim to address this gap. However, training quality, industry alignment and adoption of advanced curricula remain areas that require further development.

Private sector involvement in vocational training and industry-academia collaboration is increasing, and this is expected to contribute to the making of a more capable workforce in the medium to long term. The ability to upskill workers at scale will be a key determinant of India’s competitiveness in capital- and knowledge-intensive manufacturing sectors.

Ease of doing business

India has undertaken significant reforms to improve its investment climate, resulting in a marked improvement in the World Bank’s Ease of Doing Business rankings over the past decade. Key reforms include the digitisation of compliance processes, simplification of procedures for starting businesses, fast-tracking of environmental clearances, and implementation of the goods and services tax (GST). These reforms have had a positive impact on investor sentiment and facilitated an increase in FDI in manufacturing-led sectors such as electronics, defence, renewable energy, and automotive.

Nonetheless, state-level disparities continue to exist, particularly in areas such as contract enforcement, land acquisition, and utility reliability. While states such as Maharashtra, Gujarat, and Tamil Nadu have established strong industrial ecosystems, others require more policy and infrastructure development to attract meaningful investment.

2. Assessment of structural steel market in India

Structural steel is a high-grade variety of the metal, with applications in several end-use industries, including power and construction. Increased government investments in roads, railways, etc have also contributed to the demand for structural steel.

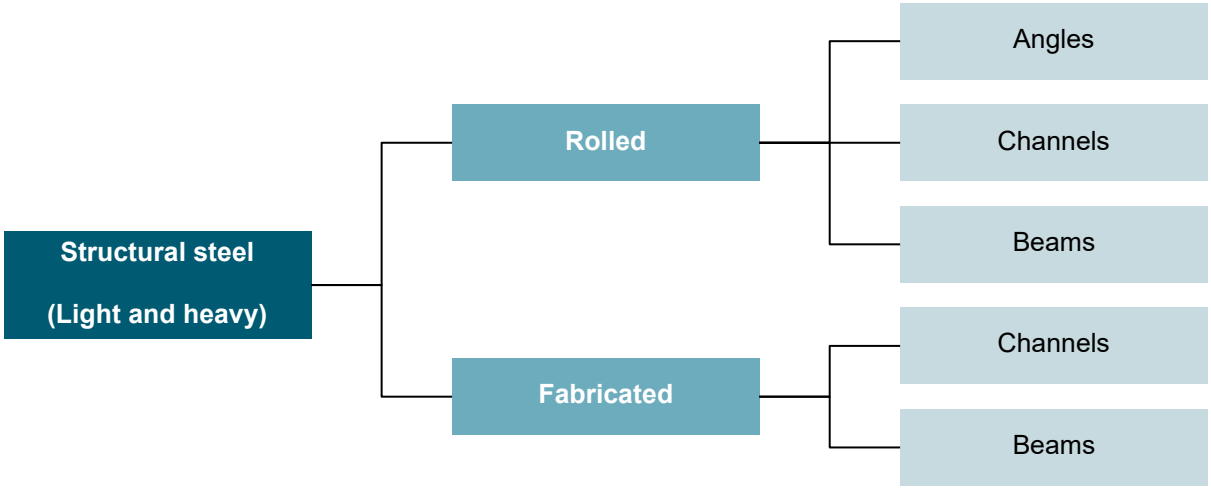
The use of structural steel in the construction industry is popular on account of inherent benefits, such as strength, good ductility, sustainability, etc. In fact, steel's high strength-to-weight ratio allows for lighter, more efficient structures, thereby increasing the load-bearing capacity of buildings in a cost-efficient manner due to reduced material costs. Also, in construction, the use of structural steel not only speeds up construction, it also increases the durability and structural stability of the building.

Using structural steel in conjunction with reinforced concrete (RCC) or on a standalone basis strengthens the building without sharply increasing cost. Furthermore, use of steel in construction is more environmentally friendly than RCC because of recyclability. However, steel can also make the structure susceptible to corrosion/rust. Hence, structural steel is usually coated/treated with certain chemicals through processes such as galvanisation to make it corrosion resistant.

Structural steel can be fabricated into various forms and shapes, thereby offering flexibility in construction.

Structural steel can be broadly classified into rolled and fabricated. Rolled steel, which dominates the structural steel space, is cast in continuous moulds without joints/ breakages. It can be further classified into channels, beams and angels, depending on the mould and end-usage. Fabricated steel includes components that are made through cutting or bending of continuous steel to achieve tailored shapes and sizes; it can be bifurcated into channels and beams. Compared with rolled steel, the fabricated variety offers more flexibility in shapes and sizes. However, it should to be noted that the process is more time consuming and expensive than rolled, owing to additional labour involved for customisation.

Breakdown of structural steel



Source: Crisil Intelligence

Additionally, based on project requirement, channels and beams can be segregated on shapes such as I-beam, C-beam, etc. Depending on the requirements of the project, structural steel can either form the main component of the building or can be used only as a reinforcement agent in the form of beans, frames, bars, etc.

Rolled steel is preferred in the residential segment because of higher strength while commercial set-ups use hollow section pipes because of aesthetics as well as better strength. Fabricated steel is also finding more acceptability, owing to higher design flexibility with customised sizes in the infrastructure segment.

Market size of steel industry

Global demand for finished steel products expected to recover in 2025

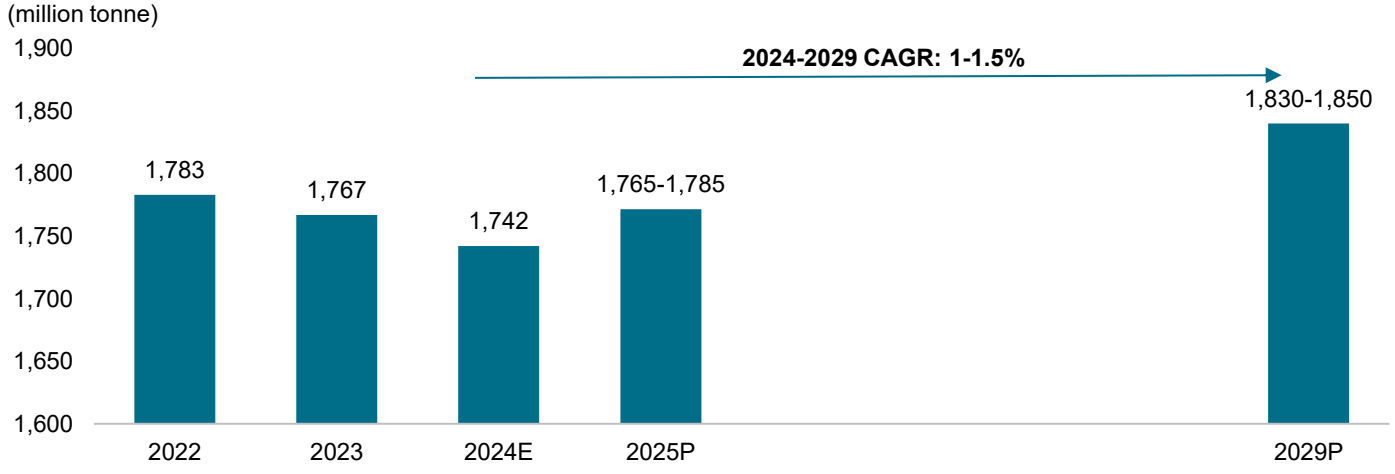
Demand for finished steel products was 1,767 million tonne in 2023 vs 1,783 million tonne in 2022. The decline in the demand was due to weakening investment and offtake of steel in most sectors and regions amid a weakening economic environment globally. The situation continued into 2023, particularly in the EU and the US.

In 2024, global demand of finished steel products was estimated at ~1,742 million tonne as the manufacturing sector continued to grapple with headwinds such as declining household purchasing power, aggressive monetary tightening in key economies and escalating geopolitical uncertainties. The ongoing weakness in housing construction, owing to tight financing conditions and high raw material costs, further contributed to the sluggish demand for steel.

However, in 2025, a broad-based global recovery, excluding China, is projected, which will see global steel demand reach 1,745-1,795 million tonne. Demand in China is expected to remain under strain, owing to ongoing weakness in the property sector; but sustained investment in other infrastructure sectors and support from allied industries is filling the gap. In other key steel markets such as the US, demand is also being closely monitored due to uncertainty with regard to key infrastructure investments. The MENA and ASEAN regions, though, are expected to maintain the growth momentum, as was the case in 2024.

From 2024 to 2029, global steel demand is expected to clock 1.0-1.5% CAGR to 1,830-1,850 million tonne.

Global demand for finished steel products



E – estimated; P – projected
Source: World Steel Association, Crisil Intelligence

South Korea, Taiwan, China among highest per capita apparent steel users

South Korea, Taiwan and China were the top three countries in terms of per capita apparent steel use in 2024, at 924 kg, 746 kg and 601 kg, respectively. However, in terms of per capita apparent steel use over 2019 to 2024, Türkiye, India and Argentina were the high growth countries, at 7.29%, 6.75% and 1.65 CAGR, respectively.

Apparent steel use per capita (kg/ capita)

Country/ region	2019	2020	2021	2022	2023	2024	CAGR (2019-2024)
India	**74**	**64**	**76**	**82**	**93**	**103**	**6.75%**
South Korea	1028	949	1081	990	1057	924	-2.12%
Taiwan, China	741	789	886	741	726	746	0.13%
China	641	708	669	650	628	601	-1.28%
Türkiye	312	350	394	381	444	444	7.29%
Japan	503	420	461	444	433	419	-3.59%
Italy	420	343	447	426	400	389	-1.55%
Canada	346	361	379	352	328	329	-0.98%
Germany	423	376	426	390	337	313	-5.86%
Spain	281	247	274	263	266	284	0.21%
Asia	300	311	305	297	292	283	-1.15%
United States	292	238	288	279	266	261	-2.25%
Netherlands	266	238	270	275	261	255	-0.83%
North America	236	201	237	228	226	221	-1.33%
Middle East	190	177	188	198	194	197	0.70%
France	226	189	214	183	154	177	-4.76%
Brazil	99	101	123	109	110	119	3.80%
United Kingdom	152	125	164	139	135	118	-4.87%
Argentina	88	80	111	112	109	96	1.65%
South America	88	82	106	94	94	96	1.65%
Africa	31	27	28	25	24	25	-3.91%
World	229	228	233	224	219	215	-1.28%

Source: World Steel Association, Crisil Intelligence

China leads in exports of steel products, the EU and the US in imports

In 2024, China was the world's largest steel exporter; at 117.1 million metric tonne. This represented ~26% of global steel exports in the year. Notably, in 2019, China's steel exports volume almost triple that of the world's second-largest exporter, Japan. India exported close to 10 million metric tonne of steel in 2019, i.e. 2% of overall steel exports.

In 2024, the European Union (EU) was the largest importer of steel, at 42.8 million tonne.

Key steel importing and exporting countries

	Countries	Exports (million tonne)	Share in exports (%)		Countries	Imports (million tonne)	Share in imports
Top steel exporting countries across the world (2024)	China	117.1	26%	Top steel importing countries across world (2024)	EU	42.8	10%
	Japan	31.2	7%		United States	27.3	6%
	South Korea	28.0	6%		Türkiye	19.7	4%
	European Union	27.8	6%		Italy	18.5	4%
	Germany	22.6	5%		Germany	18.3	4%
	Türkiye	17.0	4%		Mexico	17.6	4%
	Belgium	15.4	3%		Viet Nam	17.2	4%
	Italy	15.0	3%		South Korea	14.2	3%
	Viet Nam	13.4	3%		Thailand	13.5	3%
	Russia	12.3	3%		Indonesia	12.8	3%
	Indonesia	11.4	3%		Belgium	11.9	3%
	Iran	10.8	2%		Poland	11.5	3%
	Brazil	10.3	2%		India	11.5	3%
	France	9.8	2%		France	11.2	2%
	India	9.7	2%		United Arab Emirates	10.6	2%
	Malaysia	9.4	2%		Spain	10.5	2%
	Taiwan, China	9.2	2%		Canada	9.3	2%
	United States	8.7	2%		Taiwan, China	8.9	2%
	Netherlands	8.7	2%		China	8.7	2%
	Spain	8.0	2%		Netherlands	8.3	2%

Source: World Steel Association, Crisil Intelligence

Hot rolled sheets and galvanised sheets are the key steel products exported

Hot-rolled (HR) sheets and coils (HRC) were the most exported steel products globally during 2014-2024, accounting for ~19% of total exports in 2024. See the table for details.

Product-wise steel exports

Product	2020	2021	2022	2023	2024	Share in 2024 (%)
Hot-rolled sheets and coils	74.6	79.3	68.0	76.0	82.0	19%
Ingots and semi-finished material	55.7	61.1	44.6	53.1	54.6	13%
Galvanised sheet	37	45.3	38.4	41	43.2	10%
Steel tubes and fittings	32.3	34.3	34.2	36.5	37.2	9%
Plates	29.4	30.9	32.2	34.6	35.5	8%
Cold-rolled sheets and coils	19	36.7	30.8	30.1	31.9	8%
Wire rod	25.2	29	25.5	22.8	23.8	6%
Angles, shapes and sections	19.6	20.3	19	20.3	21.7	5%
Other coated sheet	18.1	20.2	16.5	18.3	21.2	5%
Concrete re-inforcing bars	19.2	22	15.4	15.5	17.7	4%
Bars and rods, hot-rolled	12.8	15.3	12.7	12.3	12	3%
Drawn wire	8.7	9.6	8.6	9.9	8.9	2%
Other bars and rods	4.5	6.1	7.4	8.4	7.7	2%
Tinmill products	7	6.8	6.9	5.9	6.9	2%
Electrical sheet and strip	3.9	5.1	5.2	4.5	4.6	1%
Cold-rolled strip	3.7	4.8	4.1	4	3.9	1%
Railway track material	2.6	2.8	2.6	3.1	3.2	1%
Hot-rolled strip	2.8	3.4	3	3.1	3.2	1%
Castings	1.1	1.4	1.5	1.4	1.4	0%
Wheels (forged and rolled) andaxles	0.7	0.9	0.8	1	1.3	0%
Forgings	0.9	1	1.1	1.1	0.9	0%

Source: World Steel Association, Crisil Intelligence

Export and import trends of steel structures

The exports of other structures and parts of structures made of iron and steel (excluding floating structures) have exhibited a notable growth trend, with a CAGR of 10.1% between FY19 and FY25. The United States has emerged as the primary importer throughout this period, with exports to the US demonstrating a significant increase, rising from approximately 18.1% in FY19 to 40.5% in FY25.

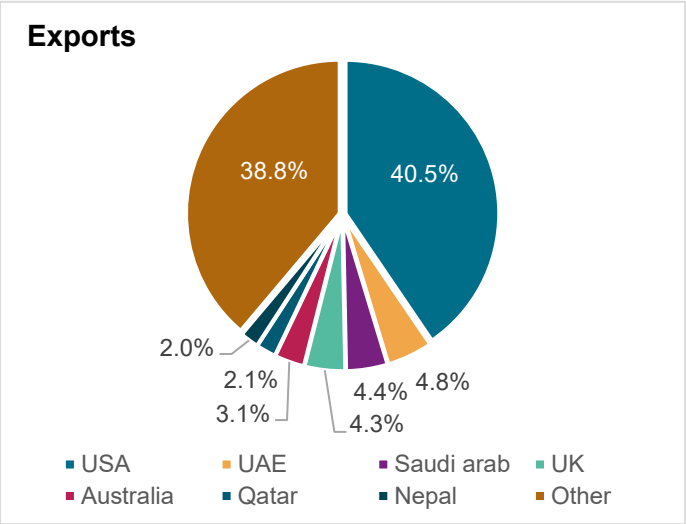
In contrast, the imports of iron or non-alloy steel products, including bars, rods, shapes, pipes, sections, and other seamless tubes/pipes and hollow profiles, have consistently declined over the period signifying increased domestic use of steel products, with an exception of FY20, and have recorded a CAGR of -5.6% between FY19 and FY25. Throughout this period, China has maintained its position as the primary exporter, accounting for a significant proportion of total imports, with an average share of approximately 43% and reaching a peak of 55% in FY24.

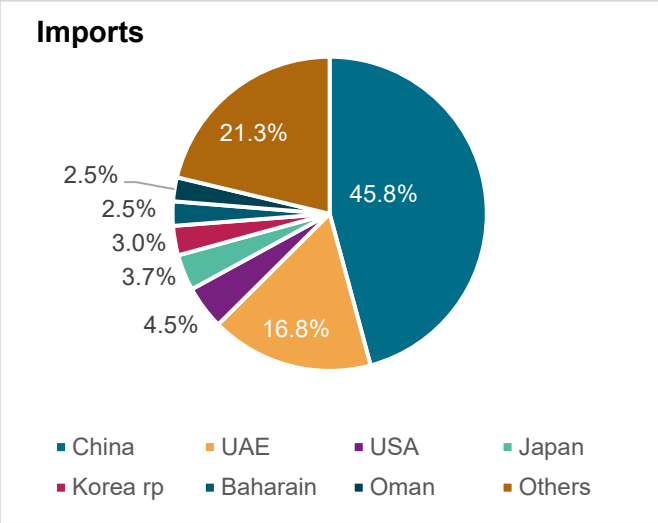
Product-wise steel structures exports & imports

Product	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
Exports (Rs Billion)							
Other structure and parts of structures of iron and steel (excluding floating structures)	30.55	31.11	34.22	48.75	51.93	49.83	54.31
Total exports	**30.55**	**31.11**	**34.22**	**48.75**	**51.93**	**49.83**	**54.31**
Imports (Rs Billion)							
Other bars and rods of iron or non-alloy steel, not further worked than forged, hot rolled, hot-drawn or hot-extruded, but including those twisted after rolling	1.55	1.68	1.09	0.97	1.86	3.32	2.30
U sections, not further worked than hot-rolled, hot-drawn or extruded of a height of 80 mm or more	0.08	0.07	0.17	0.20	0.24	0.19	0.30
I sections, not further worked than hot-rolled, hot-drawn or extruded of a height of 80 mm or more	0.30	0.97	0.19	0.19	0.30	0.21	0.17
H sections, not further worked than hot-rolled, hot-drawn or extruded of a height of 80 mm or more	1.51	1.26	1.09	0.75	0.51	1.55	1.64
Other angles, shapes and sections, not further worked than hot-rolled, hot-drawn or extruded	0.08	0.15	0.33	0.06	0.08	0.43	0.20
Iron pipes for oil/gas pipelines	4.78	2.87	5.13	1.61	1.75	3.33	2.09
Other seamless tubes/pipes and hollow profiles	9.49	12.02	6.91	8.80	7.73	7.23	5.88
Total imports	**17.79**	**19.02**	**14.92**	**12.58**	**12.47**	**16.26**	**12.58**

Source: Ministry of Commerce and Industry, Crisil Intelligence

Exports and imports of other structure and parts of structures of iron and steel by geography (FY25)





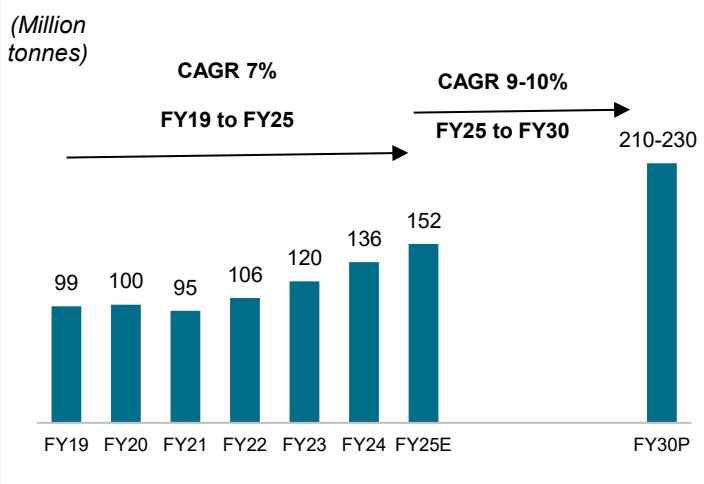
Source: Ministry of Commerce and Industry, Crisil Intelligence
Note: HS codes used for exports- 73089090,
HS codes used for imports- 72163100,72163200,72163300,72165000,73041910,73049000 and 72149990

Steel consumption in India to be driven by key downstream end use segments like building construction and infrastructure

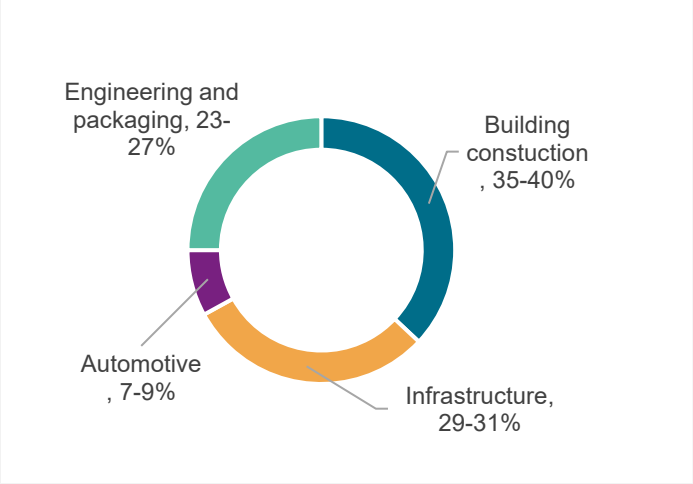
The steel industry in India serves many downstream industries and its downstream applications include various steel materials required for industrial facilities and construction projects, such as stainless steel. Pipe fittings, micro-joint components, construction hardware parts, lock products, etc and all kinds of metal products like machinery and equipment, transportation tools, moulds, screws and nuts, steel wires and cables, and. These downstream segments drive the overall steel consumption in India and have been critical to drive domestic industry.

Historically, healthy steel consuming segments like infra, automobiles, capital goods have supported the growth in domestic steel industry. Further, healthy urban housing progress is ensuring and continues to push demand for key steel products. In FY2024, steel sector experienced strong demand from allied sectors and from the support of the government's capital spending drive. Steel demand was also driven by the infrastructure boom in roads and railways. In FY2025, Steel demand witnessed a expected growth of 11-11.5%, driven by strong demand from end-user sectors such as building and construction, infrastructure, and capital goods. However, the transport sector experienced a slowdown in the steel-intensive commercial vehicle segment, primarily affecting Medium and Heavy Commercial Vehicles (MHCV).

Steel consumption in India



Steel consumption by end use segment



E: Estimated P: Projected
Source: Joint Plant Committee, Crisil Intelligence

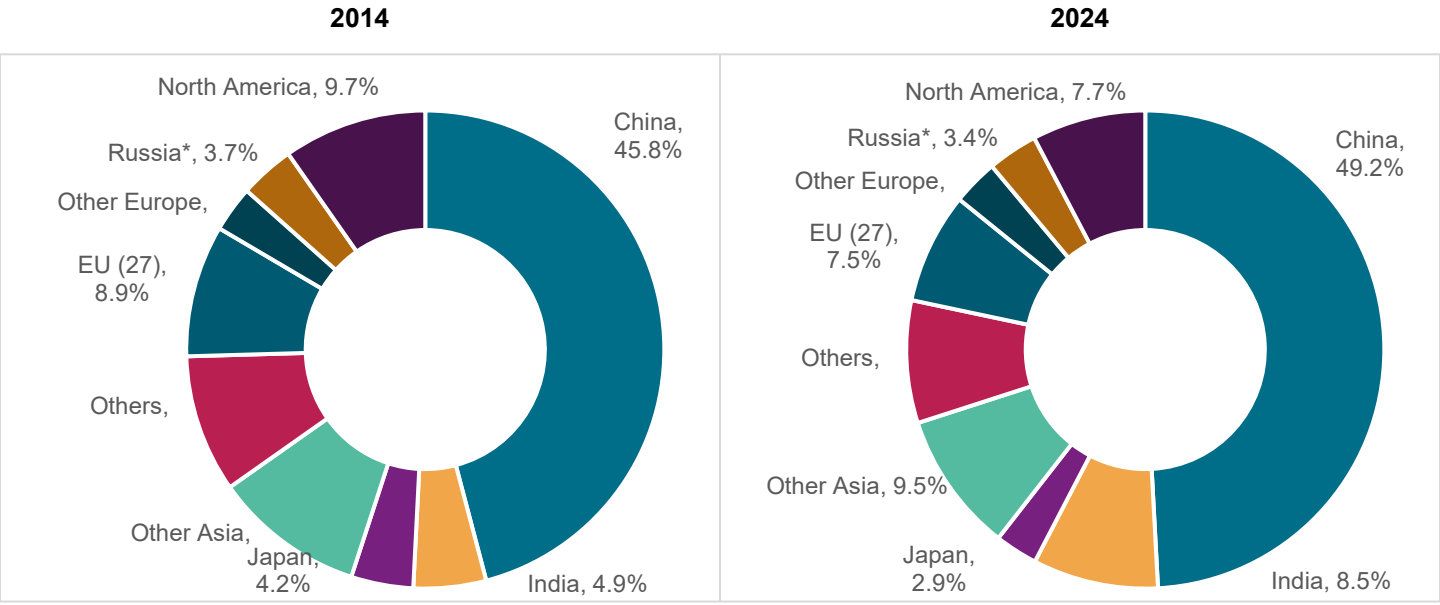
The domestic steel demand growth projected in near term is driven by a healthy demand pull across the segments. Infrastructure is expected to witness a growth rate of 11-13% year-on-year in FY2026. The building and housing segments is also expected to witness a growth rate of 9-11% year-on-year. A healthy housing market in the top 7 cities and an increase in individual house constructions across the country are supporting this segment. Additionally, it has been observed that traditional brick and mortar construction methods are being replaced with RCC (Reinforced Cement Concrete) type construction to increase the pace of construction and reduce overall costs. Meanwhile, in the commercial space, the trend of prefabricated steel buildings is gaining increased adoption in India. Government initiatives, such as the Pradhan Mantri Awas Yojana (PMAY), are further supporting this segment. In the transport segment, production growth rates are expected to rise from a lower base. The increase in commercial vehicle (CV) production growth in fiscal 2026 is influencing this segment.

On overall basis steel consumption in India is expected to be clock 9-10% CAGR supported by uptake in key end use segments like Building construction, infrastructure etc.

India’s share in global finished steel products demand rose between 2014-2024

India’s consumption of finished steel products accounted for 8.5% of global consumption in 2024, up from 4.9% in 2014. On the other hand, the share of the EU, Japan and North America decreased in 2024 over 2014. However, India still trails China, which accounted for 49.2% of finished steel product consumption in 2023 vs 46% in 2014, suggesting scope for potential demand in India.

Apparent steel use (finished steel products) by geography



*Note: *Russia and other CIS+ Ukraine*
Others comprise Africa, the Middle East, Central and South America, Australia and New Zealand
Source: World Steel Association, Crisil Intelligence

Overview of National steel policy

National Steel Policy enshrines the long-term vision of the government to give impetus to the steel sector. The policy envisages to create a technologically advanced and globally competitive steel industry that promotes self-sufficiency in steel production as well as economic growth. Steel being a de-regulated sector, government acts a facilitator, by creating enabling environment for development of steel. The National Steel Policy envisions achieving 300 MT of production capacity by 2030-31 and 500 MT by 2047. The scheme also envisages to increase India’s per Capita Steel Consumption to 160 Kgs by 2030-31

As at March 2024, India's crude steel capacity stands at 179.5 million tonnes. In pursuit of the National Steel Policy's 2031 target of 300 million tonnes, significant capacity expansions are underway. Notably, major steel players are investing in Blast Furnace-Basic Oxygen Furnace (BF-BoF) route expansions. Key projects include JSW Steel's 5 million tonnes per annum (mtpa) Vijayanagar expansion and BPSL's 1.5mtpa plant addition, which was commissioned in FY25. Both are in ramping up stage. Tata Steel has also commissioned a 5mtpa expansion at Kalinganagar and will add 0.85 mtpa Electric Arc Furnace (EAF) capacity at Ludhiana by FY2026. JSPL will add 3.9 mtpa at Angul by FY2026 and another 2.4 mtpa by FY2026. Meanwhile, AMNS plans to increase its Hazira plant capacity from its current capacity of 9 mtpa to 15 mtpa by FY2027.

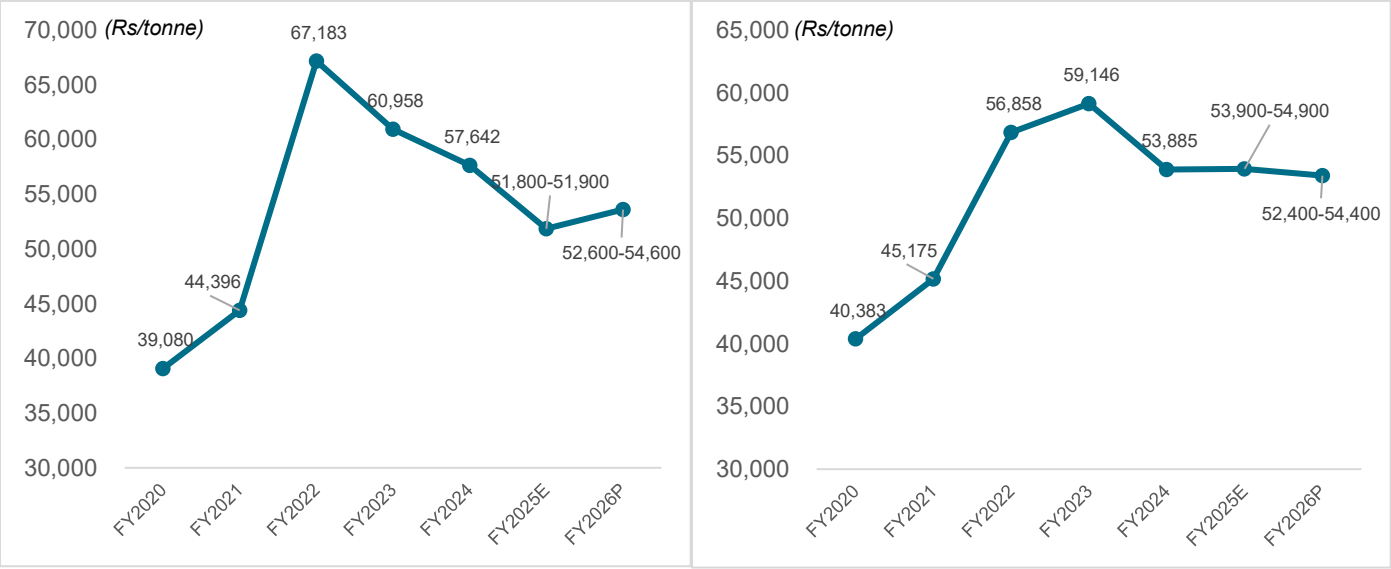
Thus around ~92-96 MT capacity additions are expected to be commissioned from FY2025 to FY2030. To meet the growing needs of Indian market, this capacity additions will keep demand and supply in balance and hence aid domestic steel industry.

Imposition of safeguard duty to curb dumping of cheaper imports, to give an edge to domestic steel prices

Domestic steel prices are expected to rise in fiscal 2026, driven by curtailing of cheap steel imports and supportive raw material prices.

HRC prices are expected to rise 2-5% in fiscal 2026, following a 9-10% decline in fiscal 2025, due to competition from cheaper imports and muted exports. The imposition of safeguard duties on cheaper flat steel products in fiscal 2026 is expected to positively impact prices. New capacity additions, increasing supply in the market, and soft exports will limit the price increase led by duty imposition. In contrast, long steel prices, despite the cooling of raw material costs, are expected to dip marginally in fiscal 2026. In fiscal 2025, long steel prices remained steady.

Domestic HRC price outlook



Note: E - estimated, P - projected
Source: Industry, Crisil Intelligence

Market size of structural steel industry

Domestic structural steel market clocked ~12% CAGR over fiscals 2019-2025

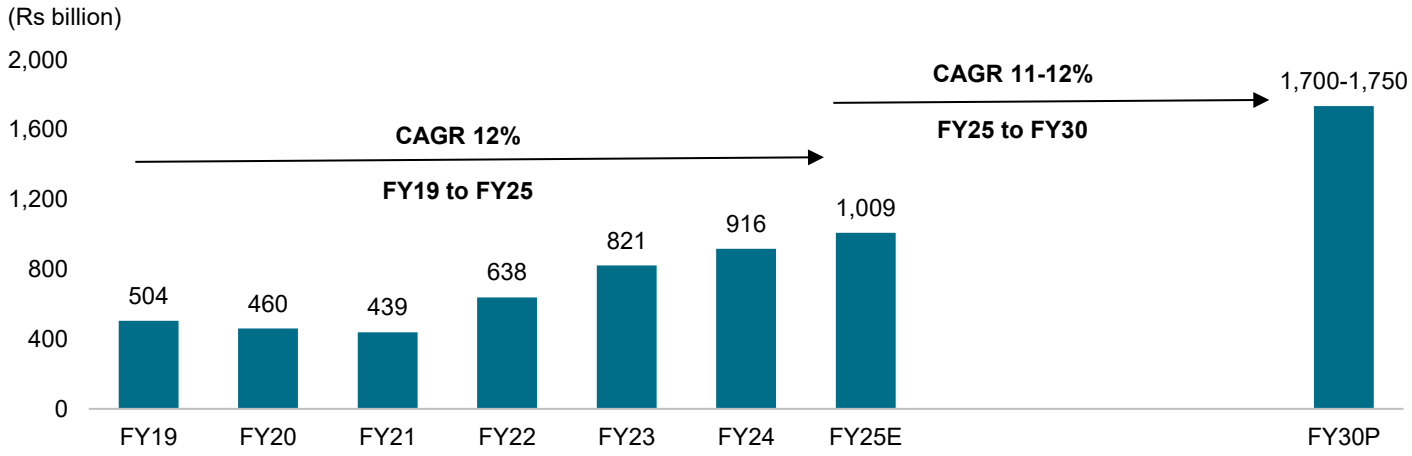
The domestic structural steel market is estimated to have expanded to Rs 1,009 billion in fiscal 2025 from Rs 504 billion in fiscal 2019, at a CAGR of 12%. Structural steel has two major product categories viz. rolled sections and fabricated sections. Rolled section includes products like angles, beams and channels while fabricated segment consists of standardised and custom fabricated structural steel products. In the overall market, rolled sections form 75-80% of the total structural steel market whereas fabricated sections form 25-30% of the overall structural steel market. The Indian structural steel market is characterised by presence of integrated steel producers as well as secondary fabricators. The majority of the market still remains unorganised.

Growth drivers include robust infrastructure projects by the government, increasing manufacturing/industrialising construction capex and a developing construction sector. Additionally, the disparity between the growth rates of structural steel market on the basis of value and volume suggests that the market has been more influenced by the increase in prices.

Between fiscals 2025 and 2030, the market is projected to grow at a CAGR of 11-12%. Demand for structural steel will be driven by sustained construction activities (residential, commercial and industrial) along with healthy demand from the automotive and power segments. In the residential building segment, investments will be driven mainly by affordable housing, PMAY, smart cities, rising disposable incomes, nuclearisation of families and urbanisation. Additionally, pent-up demand from the automotive industry, which prefers fabricated structural steel due to its customisable nature, is also expected to contribute to the overall demand of structural steel in India.

Furthermore, structural steel has multiple applications in the power segment in transmission towers and substations because of durability and low thermal conductivity. It is also being used in the renewable sector (equipment manufacturing). Hence, increasing capacity additions in the power segment will augment overall industry growth.

Estimated market size of domestic structural steel market



Note: E - estimated, P – projected

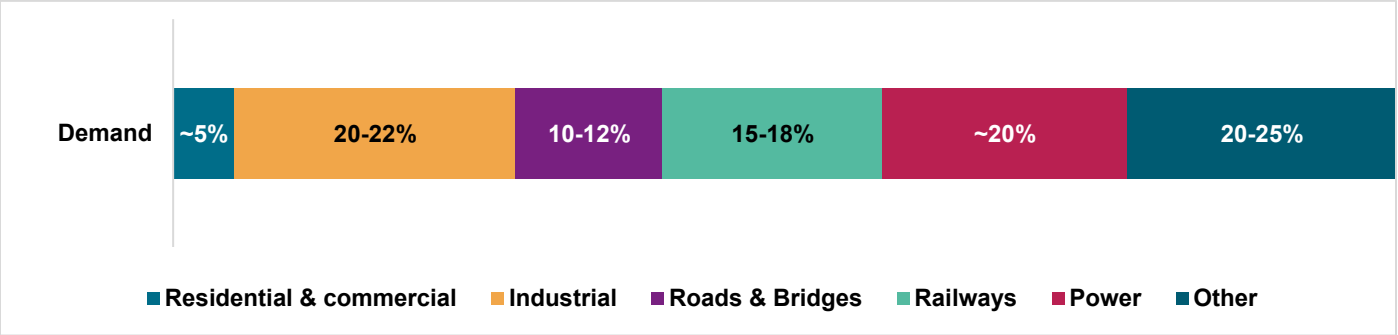
Structural steel market is defined as use of structural steel products (rolled and fabricated) in end use applications primarly involving Residential & commercials, industrials, roads & bridges, railways, Power and others sectors. Others include application not categorised above like New age applications.

Source: Crisil Intelligence

Industrials, roads & bridges, railways and power are some of the key end use segments for structural steel in India

The demand for structural steel in India is expected to grow significantly, driven by government initiatives, infrastructure development, and urbanization. Building Construction, Industrials, roads and bridges, railways and power are some of the key application areas for the total structural use in India. The use of structural steel in these end sectors depends on type of structure, steel intensity and other sector related parameters. Angles, channels and beams are some of the key types of structural steel products used in these end use segment. In building construction use of channels and beams is more prevalent whereas in industrial an infra segment, use of angles and beams is more prevalent.

Split of end use applications for structural steel in India (FY25)



Source: Crisil Intelligence

Over the long term, investments in building construction are projected to increase 5-7% a year between fiscals 2025 and 2029 which will in turn support the growth in the structural steel consumption whereas infrastructure investments (including roads & bridges, railways, power etc.) are expected to grow 1.5-1.7 times over that seen during the fiscals 2020-25 period supporting the growth of the structural steel products in India. Apart from this, Structural steel is used in the construction of industrial facilities, such as factories, warehouses, and power plants, including equipment and machinery support structures. Based on an analysis of eight key sectors, Crisil Intelligence estimates construction investment in the industrial sector at Rs 4-5 trillion over fiscals 2026-30, compared with Rs 4 trillion spends in fiscals 2021-25. The rise in investment is projected due to the inclusion of the PLI scheme in the capex investments of the industrial sector.

Apart from this, the Indian government has set a target to increase the use of steel from ~60 kg per capita in 2016 to 160 kg per capita by 2030. To achieve this, the government is promoting the use of steel in construction through various initiatives which will also propel growth in the structural steel.

Overall, structural steel has become an essential material in the Indian construction industry, offering several benefits over traditional building materials. While there are challenges to be addressed, the future demand in structural steel in India is driven by government initiatives and growing demand from the construction sector.

Key end use industries driving structural steel demand in India

High rise buildings (Building construction)	Metro rail	Infrastructure (Roads & bridges)	Data centres	Defence	Power/ Renewable power	Warehouses /logistics	Others Steel structures

1. High rise buildings (Building construction)

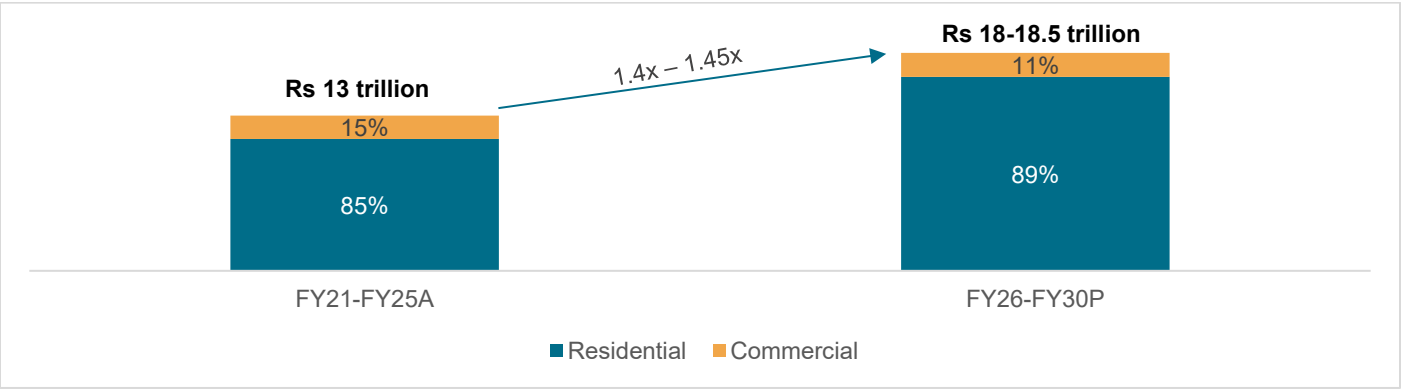
The key advantage in using steel structure in high-rise building construction is the load-bearing capacity. With high stiffness and strength, steel enables buildings to withstand significant loads while creating efficient structural systems. This reduces the overall weight of the building, allowing for flexible designs in high-rise structures without compromising safety or load-bearing capabilities. Some of the common types of designs used in high rises include braced frame and shear wall systems, rigid frame systems, transfer beam systems, outrigger systems and framed tube systems.

Building & construction segment to grow over the medium term, in line with growing residential demand

The building and construction sector is expected to grow 4-6% in fiscal 2025. Over the longer term, investments in building construction are projected to increase 5-7% a year between fiscals 2025 and 2029. A key factor driving this growth is the government's focus on affordable housing.

In September 2024, the government launched PMAY-U 2.0 under the "Housing for All" initiative. By March 2025, approvals were granted for the construction of 350,000 houses under this scheme. These homes fall under two categories: beneficiary led construction (BLC) and affordable housing in partnership (AHP). To support this initiative, the government has committed Rs 2.30 trillion in financial assistance, with an overall investment of Rs 10 trillion. This push for affordable housing is expected to boost construction activity and create long-term growth opportunities in the sector.

Break-up of the building construction sector

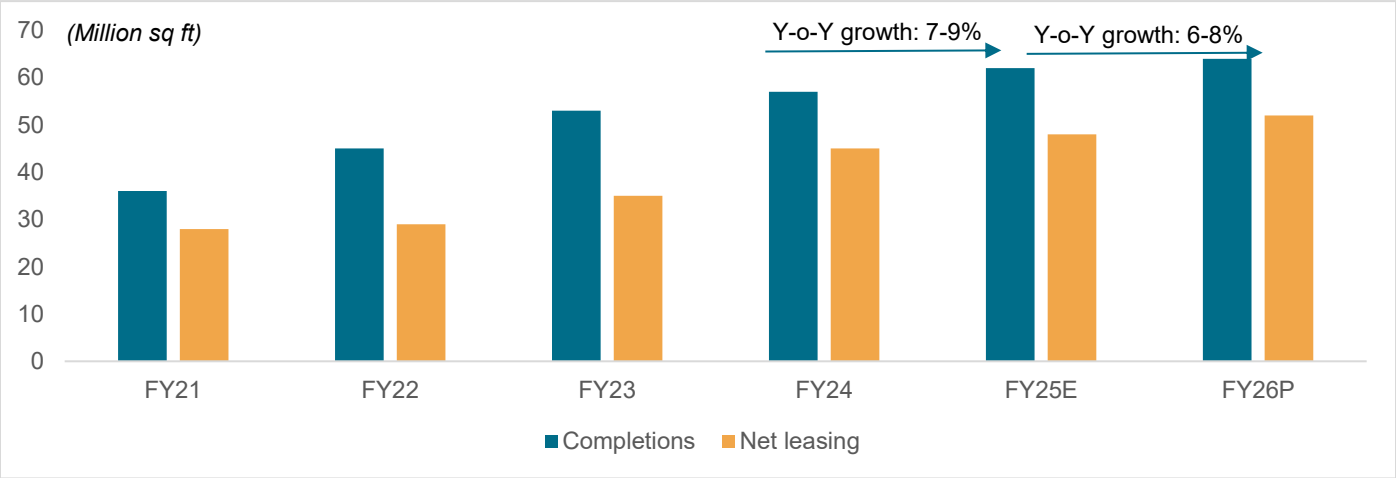


Note: A - Actual, P – Projected
The numbers in the above chart represents cumulative investments for the specific period
Source: Crisil Intelligence

Commercial real estate segment to support growth in building construction

The commercial real estate sector in the country saw strong growth in recent years, driven by innovation, sustainability and expanding geographical markets. In the past decade, it has emerged as a key pillar of economic development because of urbanisation, MNC expansion and government policies promoting foreign investment. This market is now poised to see sustained growth on the back of digital transformation, infrastructure development and government initiatives like Smart Cities and Make in India. The annual demand-supply in the top 7 commercial real estate markets (Mumbai, Delhi-NCR, Pune, Bengaluru, Hyderabad, Chennai, Kolkata) has seen healthy growth with completions and net leasing growing 7-9% in fiscal 2025 and projected to increase by 6-8% in fiscal 2026. Net leasing of commercial office space will be driven by factors such as global capability centres (GCCs) showing an increasing preference for India, return to office, increased hiring in key sectors and expectation of healthy economic growth. However, recessionary pressure in developed economies would be a key monitorable.

Commercial real estate market in India*



*-Commercial real estate market of top 7 cities — Mumbai, Delhi-NCR, Pune, Bengaluru, Hyderabad, Chennai, Kolkata
Source: Industry, Crisil Intelligence

Key drivers and trends for commercial real estate market in India

Drivers and trends	Details
Economic growth	The Indian economy is expected to clock a CAGR of 6.1% between FY12 and FY25, which has resulted in a strong consumption sentiment. Multinational corporations, domestic enterprises, GCCs and technology and R&D firms are entering or expanding their operations in the country that is becoming a viable destination for many. This is increasing the demand for office and co-working spaces, among others.
Growing urbanisation rate of urbanisation	India has a growing population. But it is also seeing more people migrating from rural to urban regions for employment and better life, leading to rapid urbanisation. This has increased demand for commercial areas such office buildings and industrial parks as more people are available for employment now.

Drivers and trends	Details
Government initiatives and reforms	The Indian government has launched a number of measures and reforms to propel the real estate market by attracting domestic and foreign investments. Through Make in India, Smart Cities Mission and Digital India, there have been an improvement in infrastructure, regulatory procedures and ease-of-doing-business. By encouraging investments, boosting urban development and enhancing connectivity, these initiatives have had a positive effect on the commercial real estate market in the country.
Technological advancements and digital transformation	The Indian commercial real estate market has evolved in recent years because of technological advancement and digital transformation in the corporate world. The need for commercial spaces has risen due to the growth of e-commerce, cloud computing and flexible working arrangements. As businesses adopt digital strategies and prioritise flexible work arrangements, the need for agile, technologically advanced office spaces and fulfilment centres has increased in recent years. In order to address these trends, commercial real estate developers are incorporating smart technologies, sustainability elements and better connectivity features into their projects.

Source: Crisil Intelligence

Emergence of high rise buildings in India

Indian cities' skylines have changed significantly in the last few years, owing to the increased construction in metro cities. City neighbourhoods are filled with high-rise apartment buildings. According to the United Nations, by 2030, India's urban population is expected to be more than 40% of the country's total population. As the urban population swells, the country will have to unlock many new growth avenues in cities, which could lead to increased construction of tall buildings as a way to fulfil the demand. Developers in India are incorporating residential, commercial and recreational areas into high-rise projects, an indication of urban space shortage and increasing demand for more convenient dwellings. In addition government schemes such as the Smart Cities Mission, are also promoting denser, well-designed infrastructure, spurring growth in such developments. With urban areas growing upwards, constructing high-rises is emerging as a key trend in the country's real estate market. Financial capital Mumbai is one of the hubs of tall buildings in India. From a sectoral perspective, residential developments dominate the tall building landscape in the country.

Constructing these buildings require additional commercial and technical expertise due to their need for complex foundations, building systems for high air load and high-tech equipment, gas, elevators, and fire-resistant systems. In addition, a support system is needed to accommodate elevators and building resource systems.

2. Metro rail projects

Steel is one of the most widely used materials for the construction of railway tracks thanks to its strength, durability and versatility. Beyond these functional advantages, steel rail also offers several other benefits—steel rail is highly efficient, as it provides a smooth surface for trains to travel on. This reduces friction and wear on the train's wheels, allowing efficient operations with less energy. This translates into lower operating costs for railway operators, as they are able to transport goods and passengers more efficiently and at a lower cost.

Investments in metro projects to rise by 1.6 times in next five years

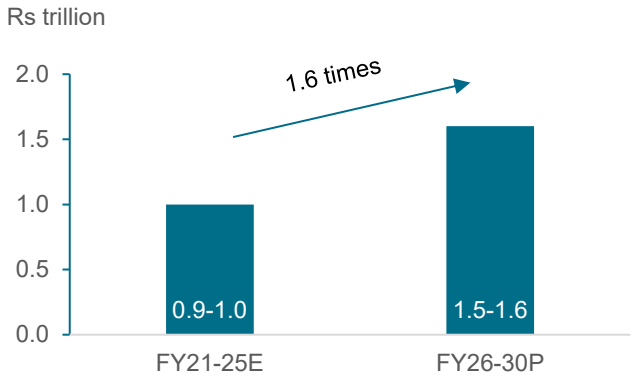
Crisil Intelligence estimates that expenditure in metro projects will reach Rs 1.6 trillion during fiscals 2026-2030, up 1.5-1.6 times over fiscals 2021-25, garnering the second-largest share in urban infrastructure investments. Bulk of the metro projects are under construction and has achieved financial closure. In fiscal 2021, the Covid-19 lockdowns and migration of

labour impeded their development, driving investments lower. However, this deferral of investments led to a revival in fiscal 2022. The momentum continued during the next two fiscals.

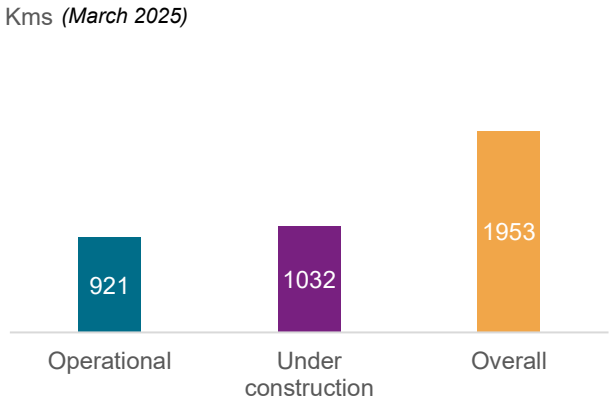
Going ahead, new project announcements and completion of under construction projects by state governments will aid growth in the sector. The metro rail policy announced in the Union Budget 2017-18 is expected to boost private interest in the segment.

To increase the viability of metro projects and to make them available across cities with lesser populations, the government has announced Metro-Neo and Metro-Lite. These are cheaper to construct and operate and suited for cities with lower population densities. These also would aid in creating construction opportunities in the segment which include construction of buildings and other metro infrastructure.

Investments in metro network



Metro network to double in coming years



Notes: E - Estimated, P – Projected
Source: Crisil Intelligence

3. Infrastructure (Roads and bridges)

With the government increasing the target for investments in national highways over the next five years, construction of bridges and elevated roads is also expected to rise substantially supported by road capex, safety and traffic regulation concerns for village / town intersections and robust connectivity between national highways.

FY21-25: **Rs 34 trillion**
Projected growth: **1.5x-1.7x**

Infrastructure

- Infrastructure investments are seen growing faster than the other two sectors due to the government's push through the NIP, NMP and the Gati Shakti initiatives. Construction investments in this sector are expected to be ~Rs 50-55 trillion between fiscals 2026 and 2030, up from Rs 34 trillion between fiscals 2021 and 2025.
- The share of infrastructure projects is expected to stabilise in the ~67-70% range in five years (fiscals 2026-30). The central government's focus on roads, urban infrastructure and railways will boost infrastructure investments. Roads, railways, irrigation and power sectors will continue to drive the bulk of these investments.

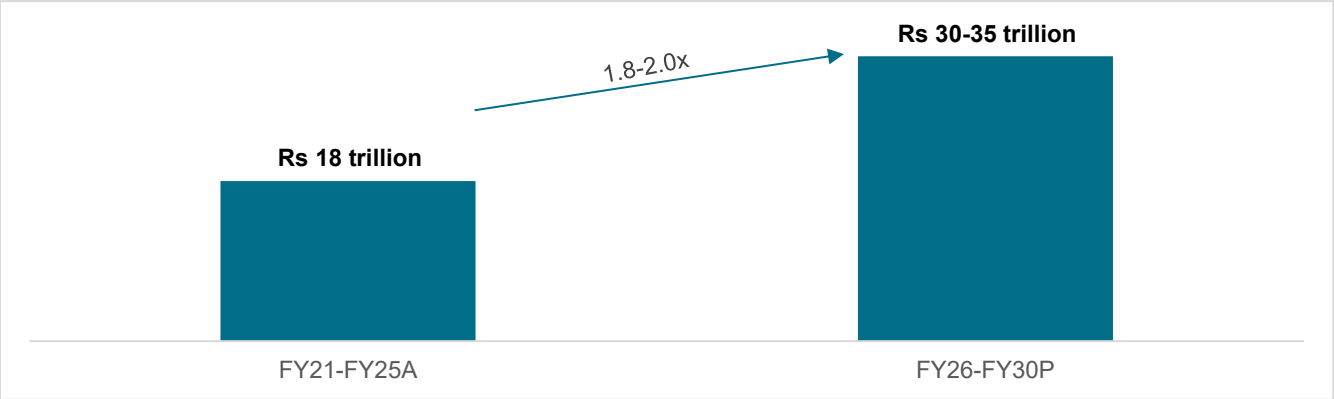
Note: A - Actual, P – Projected
Infrastructure vertical includes warehouse

Building construction includes residential, commercial and non-commercial verticals
Source: Crisil Intelligence

Expressways to support roads segment investments

Investment in the road sector grew at an average annual rate of 12% between fiscal years 2021 and 2024, driven by a high number of national highway projects being approved and built. However, in fiscal year 2024, highway approvals dropped by 31%, bringing the total to 8,581 km. Between April and December 2024, the number of new highway projects remained similar to the previous year, but there was a boost in January, adding 4,200 km. Despite this, overall highway approvals for fiscal year 2025 are expected to stay in the range of 7,000-9,000 km, similar to last year. However, the government is shifting its focus toward building wider, high-capacity highways, so even though fewer kilometers may be constructed, spending on road infrastructure will remain high.

Roads construction investments



Notes: A - Actual, P – Projected
The numbers in the above chart represent cumulative investments for the period
Source: Crisil Intelligence

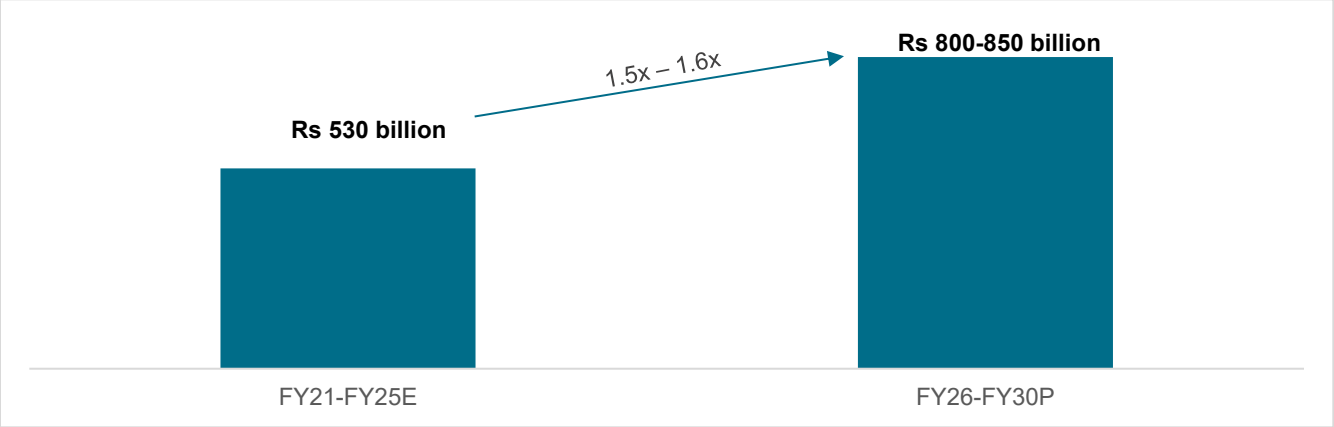
4. Data centres

Steel building are used in data centre establishments as these buildings can be engineered to withstand seismic activity and fire, ensuring the protection of critical data centre equipment. Steel buildings can be designed to maintain precise temperature, humidity, and airflow conditions, which are essential for optimal data centre operations. Thus future investments in data centre industry are expected to aid the structural steel demand as a key end use application.

Data centre capex to see healthy growth in medium term on capacity additions

The Indian data centre market has experienced a significant growth and transformation in recent years. The key factors that contribute to the dynamism and potential of the market are the Digital India initiative, regulatory push for data localisation and rapid growth in data consumption. The increasing global investment and rise of colocation and edge computing have also boosted the overall growth of data centre market in India. Data centre capacity in the country has grown from 350 MW in fiscal 2019 to 900-950 MW in fiscal 2024. It is expected to reach to 2,000-2,300 MW by fiscal 2027. During fiscals 2026-30, supported by capacity additions, the construction capex in the domestic data centre industry is expected to grow 1.5-1.6 times over the capex seen in fiscals 2021-2025. Power (substations, transformers, switch gears), land and buildings, and HVAC systems are some of the key categories where capex will be used in the data centre industry.

Data centre capex



Notes: E - Estimated, P – Projected
Source: Crisil Intelligence

5. Defence

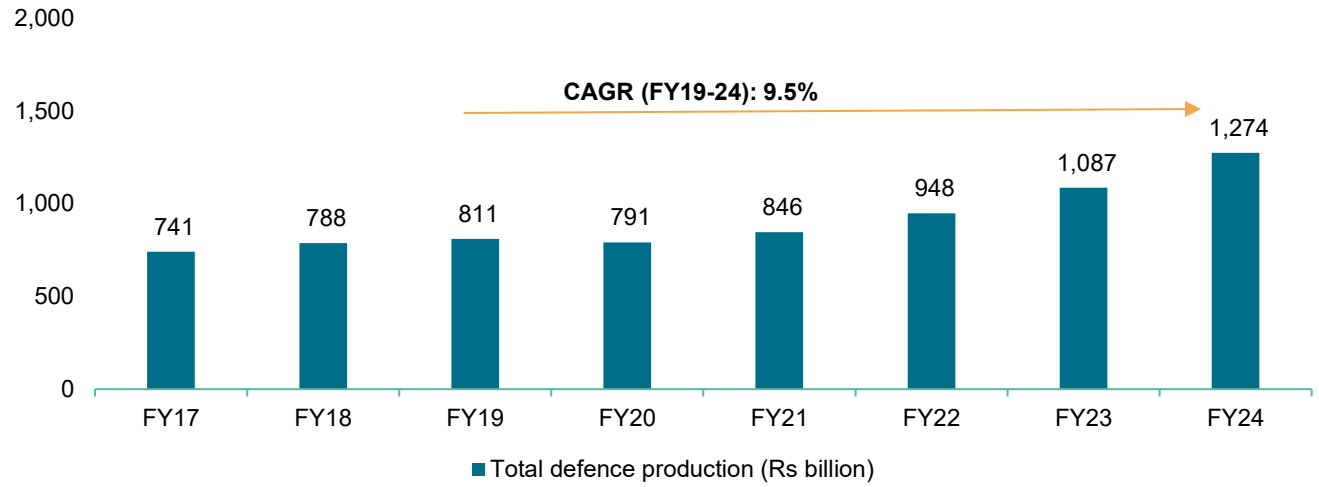
Steel's properties make it an essential component in various military technologies, from armoured vehicles and naval vessels to weaponry and infrastructure. Specialised steel is used in armoured and naval vessels, weaponry and equipment, infrastructure and fortifications.

Defence production clocked 9.5% CAGR over fiscals 2019-24

Over the past few years, indigenous defence production has been a key priority for the government. Various measures have been introduced to encourage the domestic defence industry. This includes, raising the FDI limit to 74% from 49%, DAP-2020 (which focuses on domestic procurement), PILs, simplification of industrial licensing, the iDEX scheme, SRIJAN portal, reforms in the offset policy, transfer of technologies, etc.

Defence production in India totalled Rs 1,274 billion in FY2024, up at a CAGR 9.5% over fiscals 2019-24.The robust growth in production in defence will be supported by policy reforms, strong impetus on the private sector's involvement, and infrastructure development (defence corridors in Uttar Pradesh and Tamil Nadu).In line with defence production, defence exports hit a record Rs 236 billion in FY2025, expanding 34 times since FY2014. Strategic policies have fuelled this momentum, encouraging private participation, technological innovation, and the development of advanced military platforms. The surge in the defence budget, from Rs 2.53 trillion in FY2014 to Rs 6.81 trillion in FY2026, underlines the nation's determination to strengthen its military infrastructure.

Total defence production in India, FY19-24



Source: Ministry of Defence, Crisil Intelligence

6. Power (Renewable power)

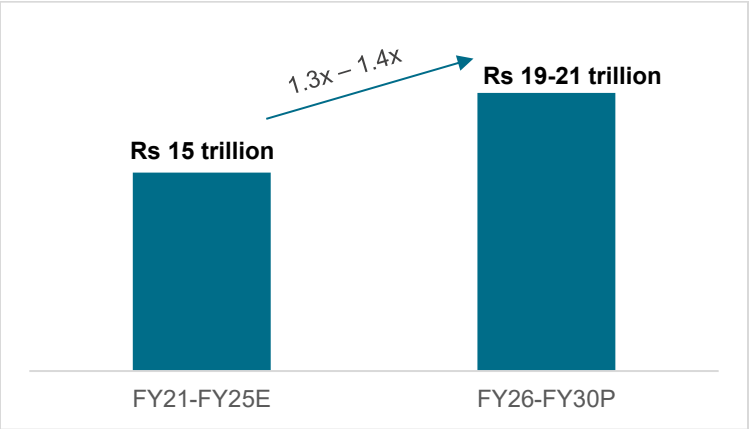
Whether based on fossil fuels, nuclear technology, or renewable energy sources such as wind, solar or geothermal, steel is vital to power value chain. Steel plays a key role in converting solar energy into electricity or hot water. It is used as a base for solar thermal panels and in pumps, tanks, and heat exchangers. Steel is also the main material used in onshore and offshore wind turbines. Almost every component of a wind turbine is made of steel, from the foundation to the tower, gears, and casings. Thus growth in power infrastructure augurs well for steel demand in India.

Power investments driven by renewable capacity additions to rise 13-15% in FY26

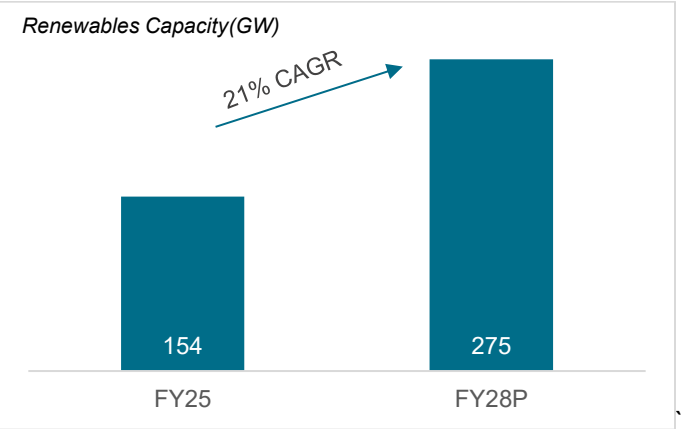
Crisil expects construction spending on power to rise 13-15% year on year in FY2026 driven by capacity additions in the renewable energy space. Significant capacity additions are anticipated in the renewable energy sector over the next five fiscal years. This substantial increase underscores a robust shift towards renewable energy sources, driven by both technological advancements and policy support aimed at reducing carbon emissions and promoting sustainable energy. Renewables capacity is expected to increase by ~21% CAGR from FY2025 to FY2028 to reach 275 GW.

However, it's important to note that the construction intensity in the renewable energy sector is lower compared to that in the conventional energy sector. Renewable energy projects, such as solar and wind farms, typically require less intensive construction efforts and shorter project timelines compared to conventional energy projects, such as coal-fired power plants, which involve more complex and extensive construction processes.

Power sector investments



Capacity additions



Source: Crisil Intelligence

7. Warehousing and logistics

In the logistics industry, building a warehouse requires consideration of technical and functional factors. In designing and building logistic warehouses, using steel structures could provide benefits. Steel structures are usually more fire resistant than many other materials, helping to minimize the risk of fire in logistic warehouses. In addition, steel construction can also integrate firefighting and security systems to increase warehouse safety. Steel structures also allow for easy warehouse expansion or upgrades as storage needs increase. Changing the structure and space size can be done flexibly and effectively.

New warehousing hubs to emerge, organised players to benefit

CRISIL Research projects construction investments in the warehousing (agricultural and industrial) and cold-storage (single- and multi-commodity) sectors to reach Rs 460-500 billion over the next five years on expectations of increased demand. Industrial warehousing is likely to comprise over 85-90% share of total investment in warehousing. Early payback in multipurpose cold storages as against single-commodity storage is expected to boost investments in the segment.

In the new scheme of things, Haryana is emerging as a consumer durable and FMCG hub, compared with New Delhi or Ghaziabad. This is because of its dual advantage of being one of the highest consumption markets in the National Capital Region, and located within 300 km from major markets, such as Punjab and Delhi, and 350-450 km from Rajasthan, Himachal Pradesh, and Uttarakhand. Another new hub is expected to emerge in Assam, the north-eastern region.

8. Other steel structures

I.Industrial

Steel structures for industrial use include large, heavy steel structures that can withstand heavy loads such as beams, trusses, frames, supports, tanks and many other diverse types of steel structures. They are commonly used in industrial construction projects such as offshore oil rigs, railways, power plants, refineries. Portal rigid frame, building frame, beams, truss and grid are some of the common steel structures used in industrial applications.

Sector-wise investments in industrial segments

Automobiles: Investments in the automobiles sector are expected to rise to Rs 520-560 billion over fiscals 2024-2028, from the previous 5-year level of around 400-450 billion. The previous years had a high base attributable to the jump in capex for meeting emission norms laid out by the government. Capex revival led by deferred capex is seen from fiscal 2022 along with rising automobile sales. The upgradation of technologies, introduction of the corporate average fuel efficiency (CAFE) norms and the shift towards autonomous, connected, electric, shared (ACES) architecture would see investments in the automobile space.

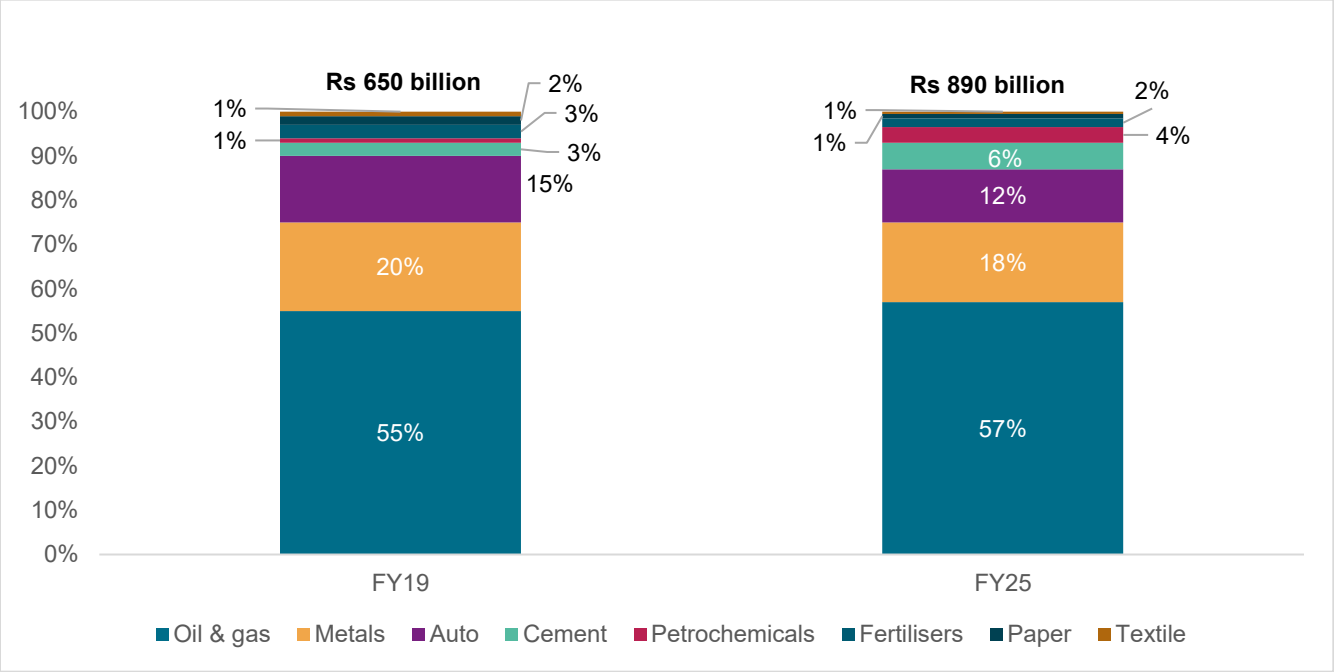
Metals: Crisil expect construction investment in metals to record to ~Rs 450-500 billion over the next 5 years.The upcoming investments are expected to be in the brownfield expansions. Larger players have been undertaking inorganic growth because of stressed assets in the sector. Anticipating strong demand growth, India's steel industry had added ~26 million tonne (MT) of incremental capacity in the past 5 years. New investments are expected to be in brownfield expansions. Larger players have been undertaking inorganic growth because of stressed assets in the sector. Investment is expected to grow in the aluminium segment, led by Nalco's capacity expansion plans, as both export and domestic demand continues to rise. Rising global aluminium prices will boost earnings for local players.

Petrochemicals: Construction spending in the petrochemicals industry is expected to rise to Rs 120-150 billion in the next 5 years period from FY2026-30, as against Rs 85 billion in the previous 5 years. Crisil expects domestic petrochemical capacity to grow in line with the 8-9% CAGR in demand. The scope for polymer capacity addition is constrained by the availability of feedstock olefins, because of insufficient cracker capacity. Increasing cracker capacity is challenging as it requires high capital cost and it also has to deal with cost competitiveness from natural gas-based capacities in the Middle East and coal-based capacities in China. India, which has a well-established chemical production base, is seeing a renewed investment push by players because of the China Plus 1 strategy being followed by global companies.

Fertilisers: Construction investment in fertilisers is expected to rise by nearly 60% in the next 5 years from FY2026-30 to Rs ~150 billion, from Rs 107 billion in the past 5 years. The government's focus to reduce urea imports and become self-sufficient on this front is expected to drive investments. The government has been incentivising private players to enhance domestic capacity.

Cement: Crisil expects construction spending in the cement sector to increase to Rs 160-180 billion in the next 5 years from FY2026-30 from Rs 172 billion in the previous 5 years. Over the next 5 years, nearly 140-150 MT of capacities are expected to come on-stream compared to ~122 MT added over the previous 5 years. Increased government spending on the Pradhan Mantri Awas Yojana will provide an impetus to the housing segment, which has been fairly subdued over the past few years. Further, the grant of infrastructure status to affordable housing will facilitate easier access to low-cost finance. Investments are also expected to increase considerably in segments such as roads, railway, irrigation and urban infrastructure. This is also expected to boost cement demand.

Break-up of industrial segment in sectors



Note: A - Actual,
Source: Crisil Intelligence

II.Sport infrastructure

India's sports infrastructure landscape is undergoing a strategic transformation, aligned with the government's broader objective of fostering a sports culture and creating an enabling environment for talent development. Sports infrastructure is increasingly being recognised as a sub-sector within social infrastructure and forms part of the broader vision of the National Infrastructure Pipeline (NIP).

Government-led Investment and policy framework

The government has, through the Ministry of Youth Affairs and Sports, launched several initiatives, including the Khelo India Scheme, the Target Olympic Podium Scheme (TOPS) and state-level infrastructure development programmes. The Khelo India programme aims to create sports infrastructure at the grassroots level with emphasis on inclusivity and early talent identification.

NIP (2020–2025), though primarily focused on transport, energy and urban development, has recognised sports infrastructure as a key enabler under the "social and commercial infrastructure" vertical. Investments in this category are increasingly targeting multi-sport indoor halls, synthetic tracks and athlete training centres in alignment with the NIP objectives to support urban and semi-urban community development.

The National Sports Development Fund (NSDF), established under the Ministry of Youth Affairs and Sports, has also emerged as a significant instrument in mobilising non-budgetary resources for sports infrastructure. The fund enables partnerships with corporates, public sector units (PSUs) and philanthropies through corporate social responsibility (CSR) contributions, which are deployed for the development of specialised training centres, high-performance academies and athlete support facilities. Notable collaborations include NSDF-supported Inspire Institute of Sport and other initiatives. By linking private capital to national sports priorities, the fund plays a catalytic role in augmenting the reach and quality of sports infrastructure in the country.

Public-private partnerships and private sector initiatives

The sector is also witnessing increased traction from public-private partnerships (PPPs). Private players and CSR-funded initiatives are investing in high-performance training centres, coaching academies and sports-specific infrastructure. Examples include the JSW Inspire Institute of Sport, Reliance Foundation's athletics and football programmes and the Tata Football Academy. These institutions are developing infrastructure in line with international standards and are supplementing government efforts, particularly in items that can be part of Olympic games. Professional leagues such as the Indian Premier League (IPL), Indian Super League (ISL) and Pro Kabaddi League have further catalysed private investment in stadia, sports science facilities and franchise-led training hubs.

High-performance centres, smart infrastructure and integration of technology

Smart technologies are integrated into modern sports infrastructure to manage venues, provide security, engage fans, and track athlete performance. High-definition video screens, Wi-Fi access, mobile apps for ticketing and concessions, and digital signage for engaging fan experiences are just a few of the amenities that make stadiums smart. Furthermore, elite athletes can now receive top-notch instruction, get support from sports scientists and access medical facilities at high-performance centres, helping them perform better at the global level. To maximise training and competition results, these centres concentrate on athlete development pathways, sports-specific training programmes and performance analysis, ultimately enhancing the overall sports experience for both athletes and fans.

III.Structural steel in electromechanical applications like power transformers

Transformer tanks used in power transformers substations, play a crucial role in the energy sector, specifically in electricity transmission and distribution systems. These transformers are integral to the safe and efficient transfer of electricity over long distances, ensuring the stability and reliability of power supply across industries and residential areas.

Structural steel is a critical material in various electromechanical applications owing to its superior mechanical properties, including high tensile strength, durability, and ease of fabrication. One of its key applications is in the manufacturing of transformer tanks, which serve as protective enclosures for the core, windings, and insulating fluid of a power transformer.

Transformer tanks are required to endure significant mechanical stresses, internal pressure variations, and thermal expansion resulting from operational load cycles. Structural steel, particularly low-carbon variants, is well-suited for this application due to its excellent weldability, dimensional stability, and resistance to deformation under load. These characteristics ensure the transformer tanks' structural integrity and leak-proof performance over prolonged periods of service. Additionally, structural steel facilitates effective electromagnetic shielding and grounding, thereby enhancing the overall operational safety and performance of the transformer unit. Its adaptability allows for the integration of essential auxiliary components such as radiators, bushings, conservators, and cooling systems with precision and reliability.

Domestic consumption, of power and distribution transformer, increased by 7% year-over-year in fiscal 2024, reaching Rs 217 billion, driven by a surge in production and price growth. This was driven by increased focus on grid augmentation in line with RE integration and the central scheme to reduce operational losses of distribution utilities. This is expected to continue over the long term where the domestic power transformer market is expected to be driven by orders under the Green Energy Corridor (GEC) scheme and CTUIL investments for high-voltage transmission lines. Similarly, the distribution transformer market is expected to be driven by the Revamped Distribution Sector Scheme (RDSS), where distribution utilities are expected to rehaul / install transformers to reduce technical losses. As a result, Crisil Intelligence expects the overall transformers market to grow at a compound annual growth rate (CAGR) of 11-13% from Rs 217 billion in fiscal 2024 to Rs 345-350 billion in fiscal 2028.

IV.Structural steel for shipping containers

Shipping container industry is critical to global trade, supporting the movement of goods across geographic locations. Increase in international trade and logistics activities, combined with e-commerce growth, has supported the demand for shipping containers. These containers are also used as temporary offices in sectors like real estate.

Structural steel plays a crucial role in the design and construction of shipping containers, offering the strength, durability, and flexibility required for global cargo transportation. The most commonly used type of steel in container manufacturing is Corten steel (also known as weathering steel), which is a high-strength, low-alloy steel designed to withstand harsh marine environments. Steel's high load-bearing capacity and resistance to deformation make it suitable for withstanding the stresses of stacking, shifting, and impact during loading and unloading. Furthermore, steel containers are modular, repairable, and recyclable, contributing to their popularity in logistics and their growing reuse in construction and architecture.

Increased Demand for Containers due to Export Growth

India's FTP 2023 aims to grow merchandise exports to USD 2 trillion by 2030. As international trade expands, so does the need for shipping containers, which are essential for transporting goods. This supports the demand for new container production, where structural steel is one of the key material. India's merchandise exports grew at a CAGR of 7.0% from USD 313 billion in FY20 to USD 438 billion in FY25, this upward trend will support the demand for steel-based logistics infrastructure.

Key growth drivers of structural steel

Key growth drivers	Description
Growing acceptance in construction	• As mentioned above, due to its inherent benefits, structural steel is being widely accepted in construction. In 2023, building and infrastructure (including other infrastructure) accounted for 50-60% of global steel consumption. The demand for steel in construction is fuelled by increasing urbanisation and a growing preference for eco-friendly options
Increasing penetration of PEB	• PEBs are gaining more prominence in the construction industry due to benefits, including reduced project timelines and limited potential revenue loss due to shortened project times. This trend will directly provide an impetus to the demand for structural steel, which is a major component of PEB
Faster construction timelines	• Structural steel allows for faster construction timelines due to faster assembly and installation of steel components. Additionally, steel components are usually fabricated in a factory under a controlled environment, which also allows for simultaneous work at construction sites. This allows for optimised construction schedules
End to end solutions	• Structural steel players provide solutions ranging from manufacturing, design and assembly of steel structures as per the project need. This may lead to faster execution of the projects and may help save costs.
Growing infrastructure investments	• Demand for structural steel is driven by key end-users infrastructure and industrial segments. Within infrastructure, roads, bridges and power are witnessing increasing investments from both public and private sources. This is expected to boost the overall demand for structural steel
Increasing use in industrial segments	• The industrial segment is one of the primary end-use segments of structural steel, with a wide range of applications such as towers, industrial rooftops, and within the oil and gas sector. Based on an analysis of eight key sectors, Crisil Intelligence projects construction investment in the industrial sector at Rs 4.5-5.5 trillion between fiscals 2025 and 2029 vs Rs 3-4 trillion spent over fiscals 2020-2024. The rise in investment is projected due to inclusion of the PLI scheme in the capex investments of the industrial sector. We have included only three capex-intensive sectors in case of PLI scheme--auto and auto components, textiles and specialty steel--in our estimates. The rise in industrial construction investments is estimated to provide a boost to the structural steel segment as well
Availability of advanced technological tools	• The advancement of technological tools is also catalysing adoption of structural steel in construction through precise modelling and visualisation. Further, the use of technologies such as augmented reality (AR)/virtual reality (VR) has streamlined design, coordination and optimisation processes, ensuring precise and efficient steel structures. Automation in fabrication, including computer numerical control (CNC) machinery also enhances production speed, quality and cost effectiveness
Increasing demand from the power segment	• Structural steel plays an important role in the renewable energy space and is used in solar panels, wind turbines, geothermal pipes, etc. Hence, the ongoing shift to more sustainable sources of energy due to increasing awareness of adverse environmental effects of energy generation through fossil fuels will also contribute to higher demand for structural steel, which is a convenient option for equipment manufacturing • In the renewable energy space, we expect strong capacity additions of 290-300 GW till fiscal 2030, of which, solar and wind will see the highest capacity additions of 180-190 GW and 55-60 GW, respectively. Additionally, we expect the share of non-fossil fuels in the generational mix to increase to 45% by fiscal 2030, with solar accounting for 50% of incremental non-fossil generation. Capacity additions will require substantial capex for the needed infrastructure. Crisil Intelligence expects capex of ~Rs 30.3 trillion in the renewable energy space between fiscals 2024 and 2030

Source: Crisil Intelligence

Key challenges in the structural steel market

Challenges	Description
Shortage of skilled labour supply	• The structural steel fabrication industry depends on the skill sets of welders, fabricators and engineers. Shortage of skilled labour poses significant challenges in the operations of steel fabrication
Fluctuations in input prices	• Raw material prices directly impact the profitability of structural steel suppliers. While price trends of coking coal and iron ore, two of the main raw materials for steel, have been diverging since July 2021 (balancing each other to an extent), they remain key risks for the industry

Challenges	Description
Cyclicity in end use industries	• Structural steel demand is usually depended on the demand from end use industries like construction, infrastructure and industrial segments. These industries could go through cycles of capex which makes the cyclical in nature and hence demand may be impacted in the low capex cycles in these industries in turn impacting demand in structural steel industry
Import dependencies	• India is still dependent on imports for certain types of structural steel, such as high-strength steel and specialized steel products. This dependence on imports can lead to supply chain disruptions and higher costs.

Source: Crisil Intelligence

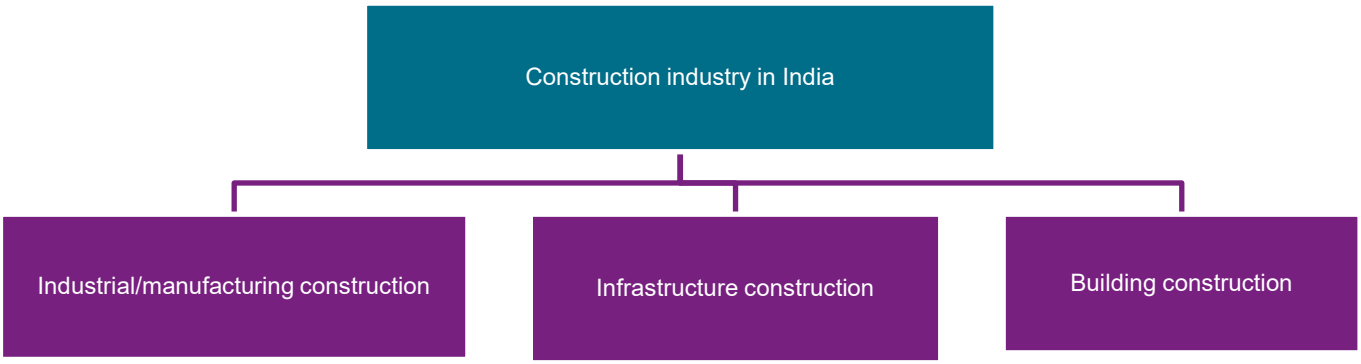
SWOT analysis of India's structural steel industry

S (strengths)	• **Growing economy**: Economic growth supports infrastructure development and construction activities • **Government initiatives**: Government have introduced initiatives like the National Steel Policy (2017) to promote the growth of the steel industry and increase steel consumption in the country which is expected to support long term growth of the structural steel industry • **Availability of labor**: India has a large pool of skilled and unskilled labor at competitive costs, making it an attractive location for manufacturing thus aiding manufacturing in structural steel segment • **Growing domestic market**: Major end use segments for structural steel like building construction, industrial construction and infrastructure are on growth trajectory in turn supporting demand for structural steel industry
W (weaknesses)	• **Dependence on Imports:** Despite having a large production capacity, India still relies on imports of high-grade steel, which can be a constraint on the industry's growth • **Environmental concerns:** The steel industry is a significant contributor to pollution, and Indian steel manufacturers face challenges in meeting environmental regulations and reducing their carbon footprint. • **Financial constraints**: Challenges with regard to access to finance and high borrowing cost can limit the capacity for new and expansion projects • **Fluctuating raw material prices**: he industry is vulnerable to fluctuations in global raw material prices, which can impact profitability.
O (opportunities)	• **Infrastructure Development:** The Indian government's focus on infrastructure development, such as roads, bridges, and buildings, is expected to drive demand for structural steel. • **Housing and Construction:** The government's initiatives to promote affordable housing and urbanization are likely to boost demand for structural steel. • **Export Opportunities:** India's strategic location and competitive costs make it an attractive location for exporting structural steel to neighboring countries and other regions. • **Increasing Use of High-Grade Steel:** The growing demand for high-grade steel in industries like automotive, aerospace, and construction presents an opportunity for Indian manufacturers to upgrade their product offerings.
T (threats)	• **Economic slowdown**: Any downturn in the economy can significantly affect the construction sector and in turn structural steel sector • **Regulatory and policy challenges**: Changes in regulations and policies related to manufacturing and trade can impact sectors growth • **Competitive pressures**: Intense competition from domestic as well as international players can put pressure on margins

Overview of investments in construction sector

Construction sector serves as the end use segment for the structural steel industry. The country's construction sector can be broadly classified into building construction, industrial/manufacturing construction and infrastructure construction. Industrial/manufacturing construction includes factories, power plants and other highly specialised facilities. Infrastructure construction includes warehouses, bridges, dams, roads, airports and canals, among others. Building construction includes residential buildings; non-commercial buildings such as hospitals, educational institutions; and commercial-use buildings such as offices and retail malls.

The further division of these verticals into conventional and unconventional construction methods has been discussed in the latter section of the report.



Source: Crisil Intelligence

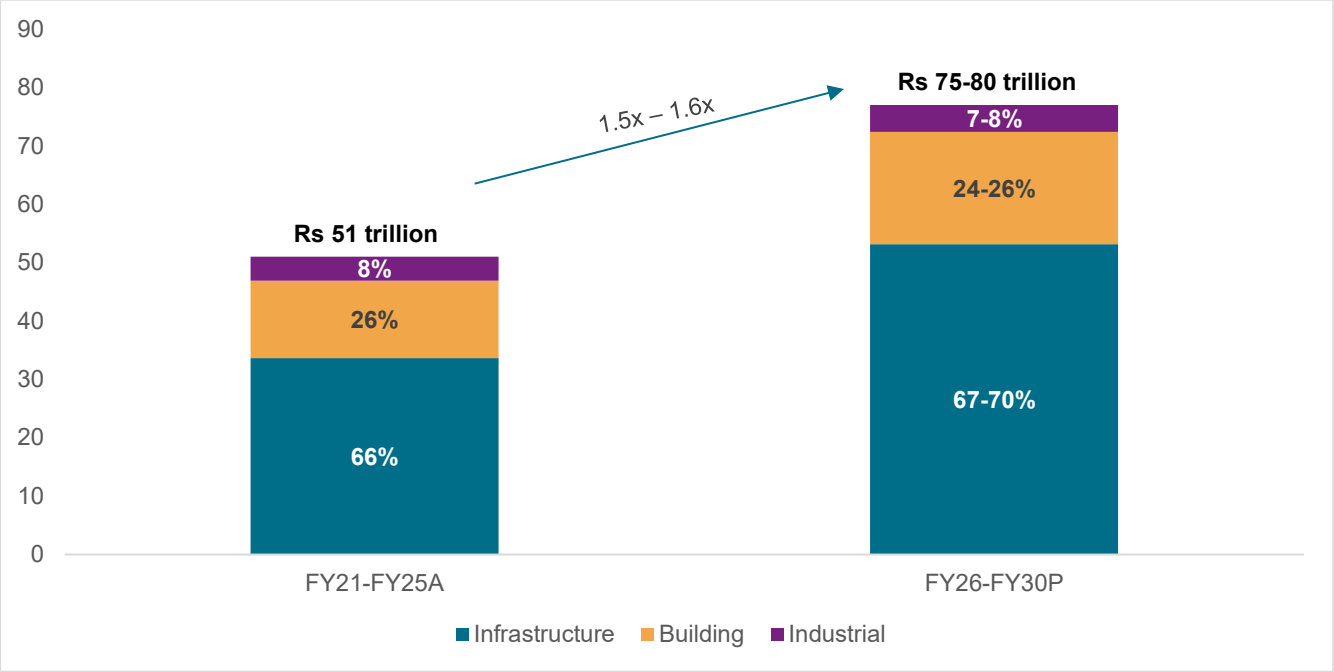
Investments in construction sector

Capital expenditure in construction rose 7% on-year to Rs 12.7 trillion in fiscal 2025, led by the infrastructure segment. This rise is in keeping with the government's focus on infrastructure, which led to higher capex allocations in the central and state budgets to create the infrastructure outlined in the NIP.

The construction sector is projected to grow at 6-8% in fiscal 2026 and the infrastructure segment is set to have a major contribution to this rise, given the increase in investments by central and state governments, and the pace of roll-out of initiatives such as the NIP, NMP and Gati Shakti. This push from the infrastructure segment is likely to be stay over the medium to long term. Private investments are expected to play a crucial role in sustaining the growth trajectory.

Overall, Crisil estimates cumulative construction investments of ~Rs 51 trillion over fiscals 2021-25 and this is expected to increase to Rs ~75-80 trillion over fiscals 2026-30.

Break-up of the domestic construction sector



Note: A - Actual, P – Projected
The numbers represent cumulative investments for the specific period
Source: Crisil Intelligence

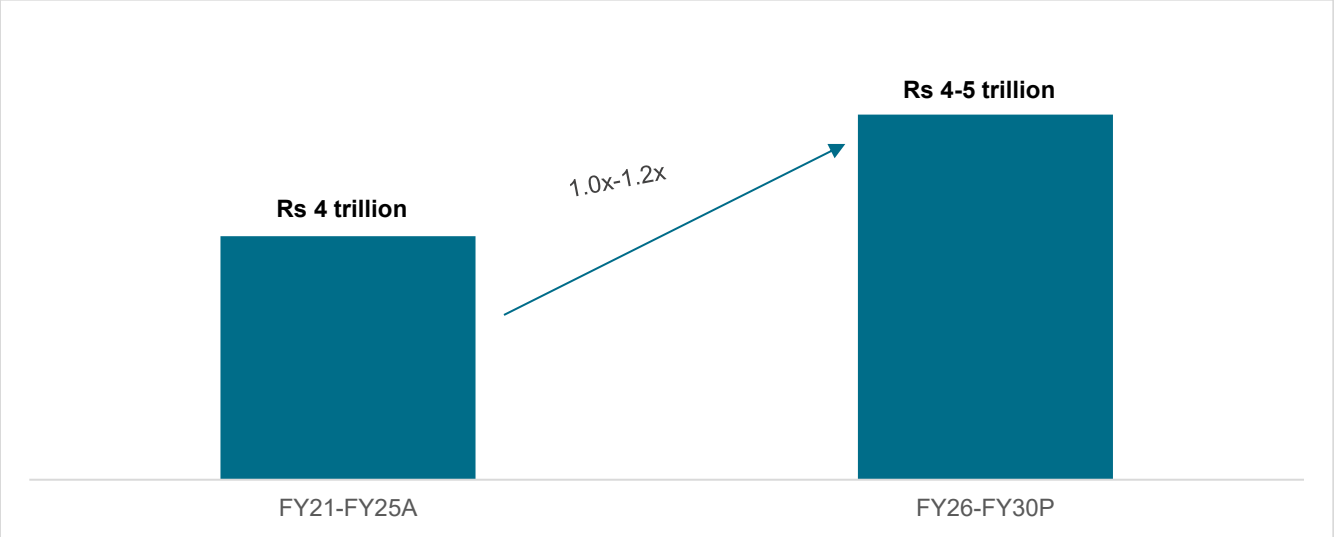
Increased investments in industrial construction sector

In fiscal 2026, construction spends across industrial investments are likely to rise 3-4% on the back of an expansion in the oil and gas, and metals segments. To be sure, the growth would be on a high base that was seen in fiscal 2025, when the sector grew due to deferred investments from fiscals 2021 and 2022, and a pick-up in capex investments through the PLI scheme.

The PLI scheme is a time-bound incentive scheme announced by the government to promote domestic manufacturing. The government gives financial incentives to companies that meet certain targets in incremental production and/or exports and capex over a base year.

Based on an analysis of eight key sectors, Crisil Intelligence estimates construction investment in the industrial segment at Rs 4-5 trillion between fiscals 2026 and 2030. This is 1.0-1.2 times more than the spends seen between fiscals 2021 and 2025. The rise in investments is expected due to the inclusion of the PLI scheme in the capex investments of the industrial sector.

Investments in industrial construction sector



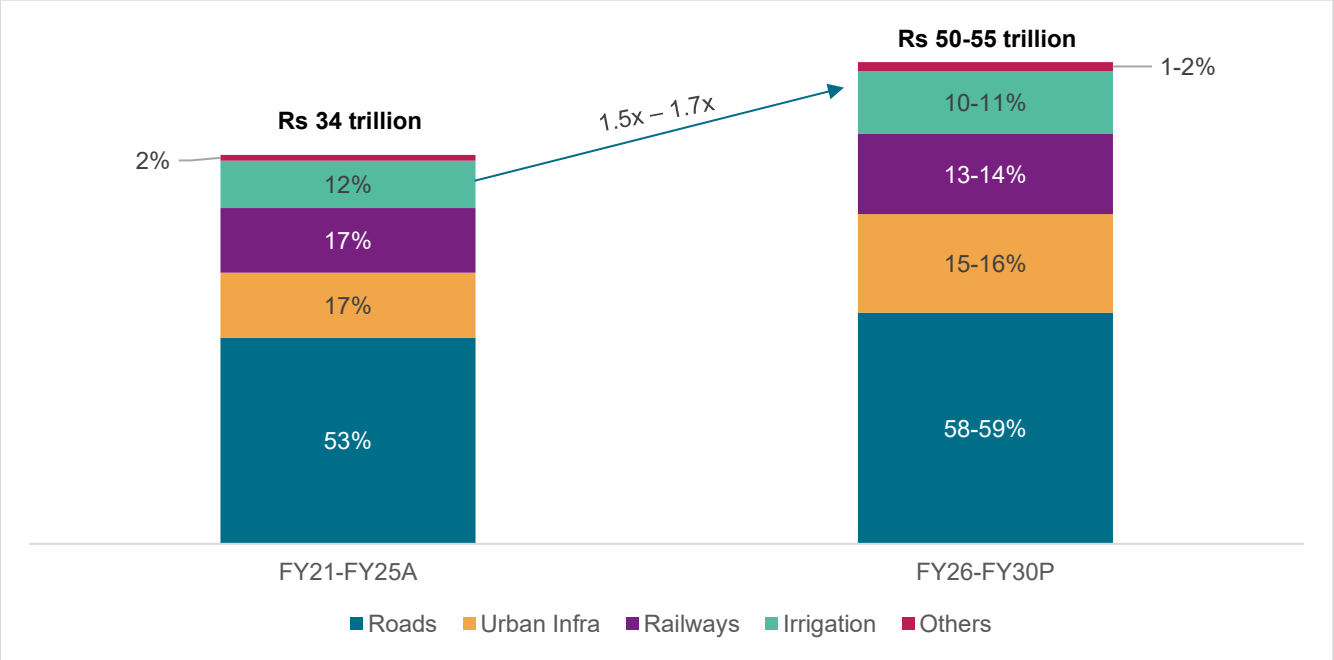
Note: A - Actual, P – Projected
Source: Crisil Intelligence

Infrastructure spending to see increased traction amid government impetus

In fiscals 2023 and 2024, the central government significantly increased its spending on infrastructure, leading to a sharp rise in infrastructure capex, with growth reaching double digits, driven by large-scale investments in roads, railways and urban development projects.

With the central government prioritising infrastructure, its focus on roads, urban infrastructure and railways is expected to boost infrastructure investments further. The roads, railways, irrigation and power sectors will continue to drive the bulk of these investments. The building and construction, and industrial segments are expected to witness muted growth. Within the infrastructure space, road projects will be a critical investment driver during fiscals 2025-29. Crisil Intelligence also expects metro rail, water supply and sanitation to garner larger shares. Overall, infrastructure investments have logged a healthy 15% CAGR between fiscals 2021 and 2025. Between fiscals 2026 and 2030, infrastructure investments are expected to grow 1.5-1.7 times over that seen during the fiscals 2020-25 period.

Infrastructure investments



Notes: A - Actual, P – Projected
The numbers in the above chart represent cumulative investments for the period
Source: Crisil Intelligence

Privatisation and greenfield airports to propel airport capex to Rs 600-650 billion in five years

Airport infrastructure in India has been in focus in recent years, as is evident from the increased capital expenditure in greenfield and brownfield projects. The expansion of airports, including the upgradation of infrastructure/ facilities at airports, is a continuous process, which is undertaken by the Airports Authority of India (AAI) or the airport operators concerned, depending on the operational requirements, traffic, demand and commercial feasibility.

In the past few years, the government had supported the capex in airport infrastructure by developing greenfield and brownfield airports. The government had formulated a Greenfield Airports (GFA) Policy, 2008. Under this policy, the government accorded approval for setting up of 21 new greenfield airports. Of these, 12 have been operationalised as of February 2025.

Crisil Intelligence expects investments of Rs 600-650 billion in airport infrastructure between fiscals 2025 and 2029, compared with Rs 790 billion between fiscals 2020 and 2024. The projected investments are almost evenly split between greenfield projects, such as the Jewar airport, Navi Mumbai airport and Bhogapuram airport, as well as brownfield expansions in Bengaluru, Hyderabad, Guwahati and Chennai.

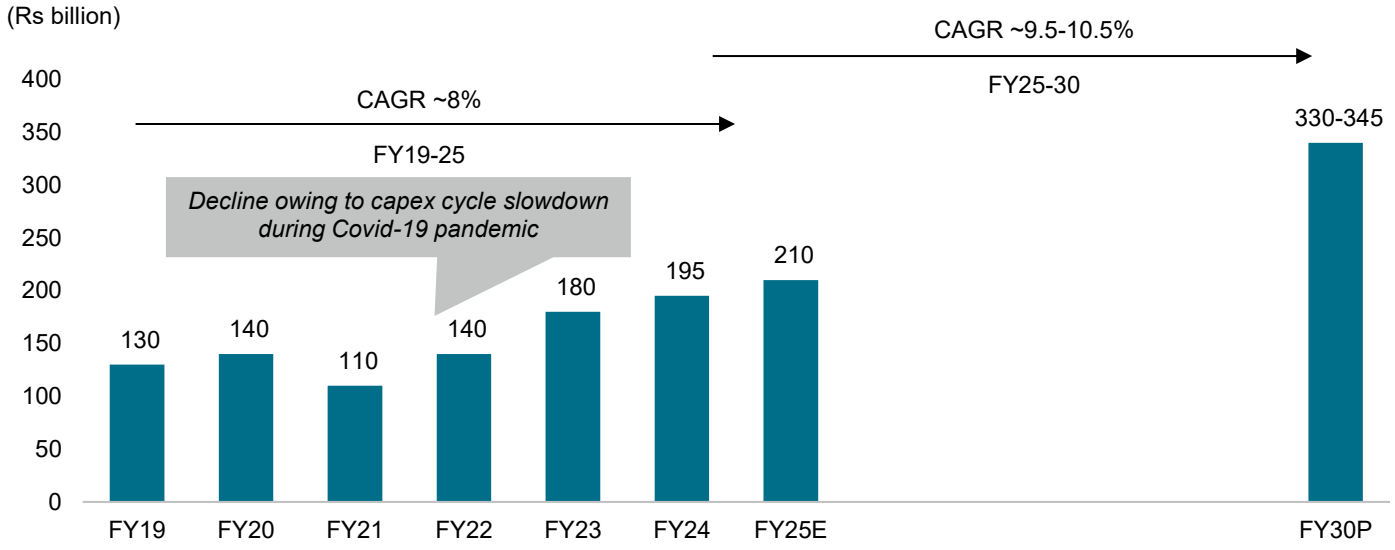
Investments in PEB sector

PEB market in India to log 9.5-10.5% CAGR between fiscals 2025 and 2040

The industry is expected to have expanded at a CAGR of ~8.0% over fiscals 2019 and 2025, growing from Rs 130 billion in 2019 to Rs 210 billion in fiscal 2025, driven by increased construction investments and growing awareness of PEB and its advantages.

The medium-term outlook is optimistic, with the industry expected to clock a CAGR of 9.5-10.5% between fiscals 2025 and 2030 to Rs 330-345 billion, supported by investments in the industrial and infrastructure sectors, such as warehouses and logistics as well as expressways (wayside amenities and toll plazas).

Pre-engineered steel buildings market in India



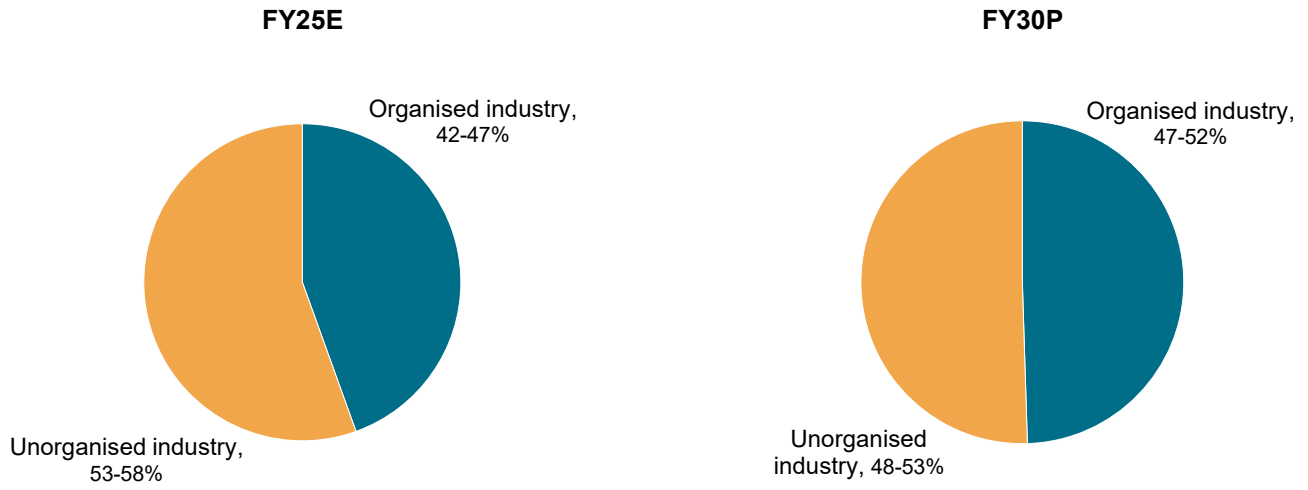
E: Estimated; P: Projected

Source: Crisil Intelligence

Pre-engineered buildings market remains competitive with large unorganised vertical; organised sector remains superior to unorganised one

As of fiscal 2025, the organised industry held a 42-47% revenue share in the overall industry. The remainder is the fragmented unorganised industry, which accounts for 53-58% of the overall market, as high capital investment is not required for entering the market. However, the organised sector has an edge over the unorganised sector in terms of a reliable track record, maximised supply chain capabilities, and quality engineering services and products, due to which there has been a growing shift towards the organised sector. This shift is also expected to augment the revenue of players in the organised market. Hence, moving forward, the share of the organised industry is expected to improve to 47-52%, with the unorganised industry forming the remainder 48-53% by FY30.

Share of organised and unorganised sectors in PEB

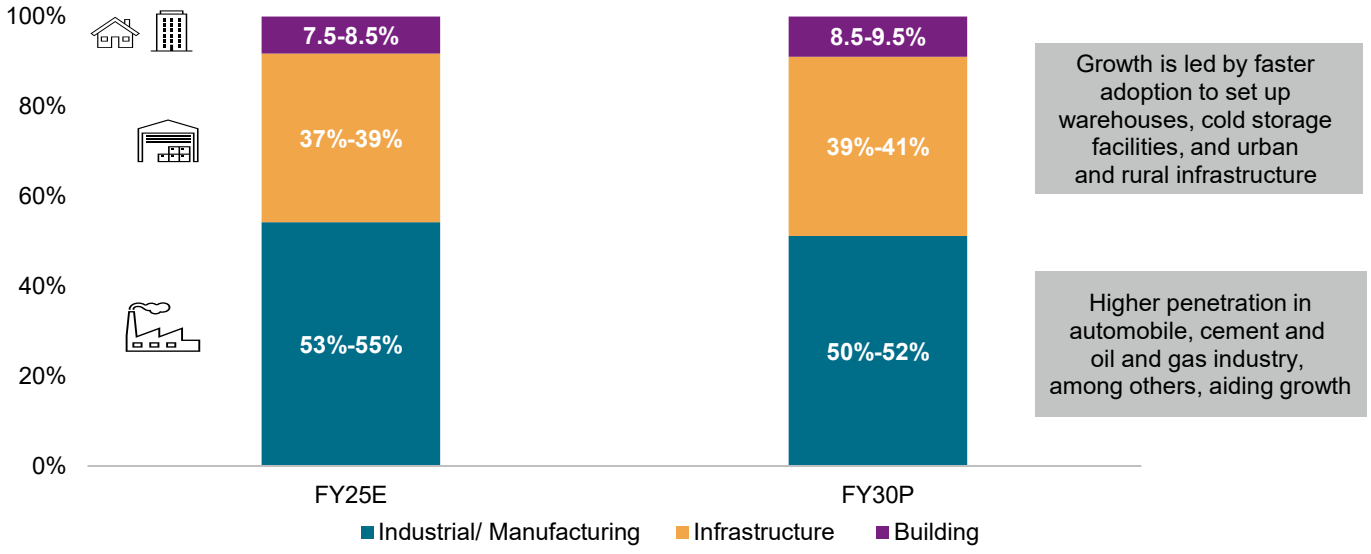


Source: Crisil Intelligence

Share of infrastructure in the pre-engineered steel building market to increase

The pre-engineered steel building market in India can be divided into three broad end-use sectors—industrial/ manufacturing, infrastructure, and building. The industrial sector, which is estimated to hold the largest market share of 53-55% in fiscal 2025, is expected to account for 50-52% of the market by fiscal 2030. The high share of industrial sector in the pre-engineered steel buildings market is led by higher penetration in the automobile, cement, and oil and gas markets. The infrastructure sector is estimated to increase its share to 39-41% by fiscal 2030 from an estimated 37-39% in fiscal 2025. Pre-engineered steel buildings in the sector include warehouses, cold storage facilities, data centres, and power plants. The share of buildings sector in the pre-engineered steel buildings market, which was low at 7.5-8.5% in fiscal 2025, is estimated to remain range bound at 8.5-9.5% in fiscal 2030.

Market segmentation by end-use sectors



Note:
E: Estimated; P: Projected
Source: Crisil Intelligence

Major government initiatives to boost construction industry

Key government schemes such as, Aatmanirbhar Bharat, Production Linked Incentive (PLI) schemes, NIP, Bharatmala Pariyojana, SagarMala, Pradhan Mantri Awas Yojana-Gramin (PMAY-G) and Pradhan Mantri Awas Yojana-Urban (PMAY-U) are expected to drive growth of the construction industry in India.

PLI schemes

The government introduced PLI schemes to boost domestic manufacturing, attract investments and enhance exports. These schemes essentially offer incentives for companies to start manufacturing in the country. Apart from enhancing the country's manufacturing prowess, they also aim to foster technological advancements and elevate India's position in global markets. With an outlay of Rs 1.97 trillion (over $24 billion), the government has now PLI schemes in 14 critical sectors. These sectors are aligned with the government's goal of strengthening domestic production and expanding exports, contributing to the broader vision of Atmanirbhar Bharat.

The purpose of PLI schemes is to attract investments in key sectors and cutting-edge technology; ensure efficiency and bring economies of size and scale in the manufacturing sector and make Indian companies and manufacturers globally competitive. These schemes have the potential to significantly boost production, increase manufacturing in the country and contribute to economic growth over the next five years or so. As of August 2024, actual investments totalling Rs 1.50 trillion have been realised through these schemes. These investments have already led to a boost in production and sales, amounting to Rs 12.50 trillion, while directly and indirectly generating approximately 950,000 jobs.

NIP

The National Infrastructure Pipeline (NIP), aims to improve project preparation and attract investments into infrastructure. The programme projected an investment of Rs 111 trillion during fiscals 2020-2025, which is expected to have positively impacted the construction industry. The project aimed to build a robust infrastructure and boost the economy by increasing employment opportunities and enhancing living standards. The sectors such as energy, roads, urban infrastructure and railways have a major share in NIP.

At the time of its launch, NIP had 6,835 projects under it. This expanded to 9,288 projects in calendar 2023 with a total project outlay of Rs 108.90 trillion between fiscals 2020 and 2025. Transport (~42%), energy (~25%), water and sanitation (~15%) and social infrastructure (~3%) sectors accounted for around ~85% of the projected infrastructure investments under NIP.

Bharatmala Pariyojana

Bharatmala Pariyojana is an umbrella project of the central government. Its objective is to improve efficiency in the roads sector. It is expected to supersede the National Highways Development Project (NHDP) and envisages the construction of 65,000 km of highways under the following categories: national corridor (north-south, east-west, and Golden Quadrilateral), economic corridor, inter-corridor roads and feeder roads. As per the ministry, Bharatmala, along with the schemes currently undertaken, could require a total outlay of Rs 6.90 trillion.

The phase 1 of the scheme envisaged development of about 34,800 km of national highways/roads, plus residual 10,000 km of NHDP between fiscals 2018 and 2022. Awarding under the Bharatmala began from fiscal 2018 and Crisil expects the phase 1 to have stretched until fiscal 2025. As of February 2025, projects covering a total length of 26,425 km had

been awarded. Of this, 19,826 km has already been constructed. As of February 2025, 6,669 km of high-speed greenfield corridors were awarded, of which 4,610 km was already constructed.

Atmanirbhar Bharat Abhiyan

Prime Minister Narendra Modi launched the Atmanirbhar Bharat Abhiyan on May 12, 2020, to make the country self-reliant through five pillars: economy, infrastructure, system, vibrant demography and demand.

As the Atmanirbhar Abhiyan places a strong emphasis on infrastructure development, including roads, highways, bridges, airports, urban projects and local manufacturing and production, it is not only expected to drive demand for infrastructure construction through construction of roads and highways but also facilitate growth of allied industries such as cement and metals.

Urban infrastructure projects: WSS and metro projects

Government schemes focused on urban infrastructure such as the Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Smart Cities Mission and the implementation of metro projects are set to drive significant growth in the construction sector.

In May 2015, the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) was succeeded by AMRUT, which prioritised essential infrastructure services, including water supply, sewerage (sewage system), stormwater drains (all these come under the water supply and sanitation or WSS sector), transportation and development of green spaces and parks in urban areas.

Under AMRUT, the Centre has been assisting states based on project cost and population of the cities and towns. The financial aid is released in three instalments in the 20:40:40 ratio, based on achievement of the milestones indicated in the State Annual Action Plan.

The scheme also covers JNNURM projects sanctioned between 2005 and 2012 and those that have achieved 50% physical progress (102 projects) or have availed of 50% central government funding up to the initiation of project (296 projects). The budgetary outlay for AMRUT this fiscal is Rs 100.00 billion while revised estimates for last fiscal stood at Rs 60.00 billion.

Additionally, the government's emphasis on urban infrastructure projects, including the Smart Cities Mission and metro projects, should fuel substantial growth in the construction sector. . According to Crisil estimates, Metro projects are the second-highest contributors to urban infrastructure investments at approximately Rs 1.6 trillion in upcoming fiscals. Furthermore, Smart Cities Mission will also boost the construction sector as construction-intensive verticals such as housing, roads, non-residential development, and sewage systems will constitute a considerable portion of total investments.

SagarMala

SagarMala is the central sector scheme of the Ministry of Ports, Shipping and Waterways to promote port-led development in the country by harnessing the country’s 7,500 km long coastline and 14,500 km of potentially navigable waterways. Under the Scheme, the ministry provides financial assistance to state/UT governments to set up port infrastructure projects, coastal berth projects, road and rail projects, fish harbours, skill development projects, coastal community development, cruise terminal and projects such as RO-PAX ferry services etc.

As of March 2025, there were 839 projects worth ~Rs 5.80 trillion investment for implementation under the SagarMala scheme. Of this, 272 projects worth ~Rs 1.41 trillion have been completed. These projects are being implemented by

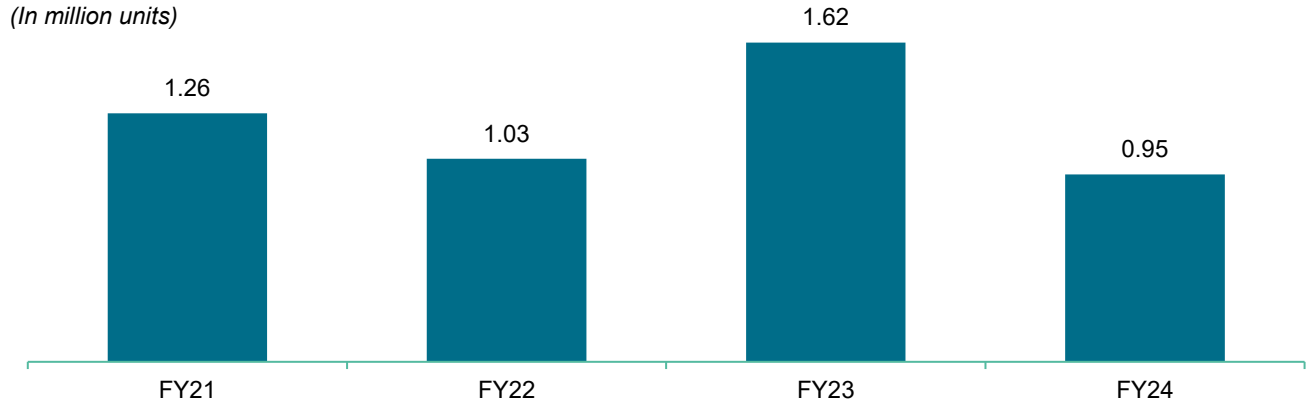
relevant central ministries, state governments and major ports and include PPP projects, internal resources of ports and equity investments. Projects having high social impact but with no return or low internal rate of return are being provided financial assistance under the scheme. As of March 2025, a total of 119 projects worth Rs 94.07 billion have been supported under SagarMala scheme for partial funding. Out of these projects, 72 projects have been completed.

PMAY-U

PMAY-U is an affordable housing scheme being implemented from fiscals 2015. It was supposed to end fiscal 2022 but has been extended until 2025. The scheme is aimed at achieving housing for all.

In fiscal 2024, construction pace moderated as 0.95 million units were built compared with ~1.62 million units in fiscal 2023. While construction sanctions have already surpassed targeted houses (~11.90 million houses sanctioned as of March 2025), over ~9.15 million houses have already been completed (~77%) and another ~2.75 million are under various stages of construction.

Progress in urban housing (number of housing units)



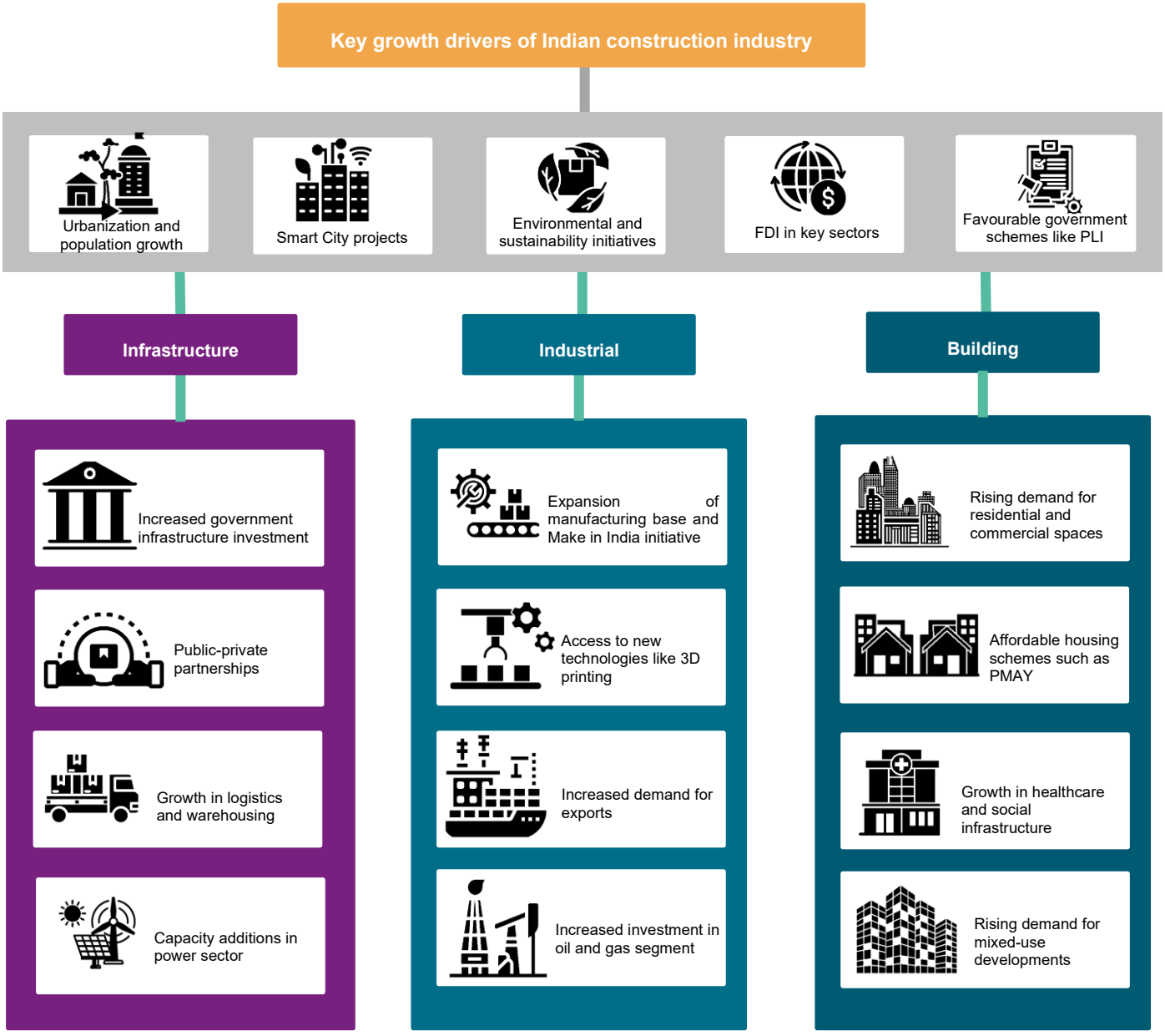
Source: MoHUA, CRISIL Intelligence

Pradhan Mantri Awas Yojana–Gramin (PMAY–G)

In order to achieve the objective of 'Housing for All' in rural areas, the Ministry of Rural Development launched Pradhan Mantri Awaas Yojana–Gramin (PMAY–G) on April 1, 2016 to provide assistance to 49.5 million eligible rural households with basic amenities by March 2029. As of February 2025, states/UTs were given a target of 37.9 million houses, of which 33.4 million houses were sanctioned and 26.9 million were completed.

In addition, the Union Cabinet approved the construction of a further 20 million houses from fiscals 2025 to 2029 under PMAY-G, of which the ministry has targeted 8.4 million houses in fiscal 2025 to 18 select states.

Key growth drivers in Indian construction industry



Source: CRISIL Intelligence

Key challenges and risks in Indian construction industry

Key challenges	Description
 **Time contingency**	Cost-savings and timely execution are essential for all stakeholders – owner, contractor, subcontractor, etc – involved in a construction project. The project may get stalled on account of several reasons, such as unavailability of land, lack of funds and proper clearances not in place. Depending on the risk, the burden of increased costs could fall on either the owner or the contractor.
 **Price risk**	Capital investments, especially in the industrial segment, depend on the successful offtake of the planned product. However, that depends largely on product-pricing ability. Investments in the commodity segment also depend on international commodity prices. For the past two years, the global prices of crude oil was subdued. Thus, investments in oil exploration, which used to form a major chunk of investments in the oil and gas sector, declined.
 **Risks involved in dealing with government agencies**	Many construction segments, especially the infrastructure space, have various government authorities as counterparty. These are either central or state government authorities, or special purpose vehicles incorporated by the government to cater to some requirement. Thus, for sectors such as irrigation, where most of the payment is from state governments, players typically face elongated working capital cycles on account of delayed payments. Also, a difference of opinion between the Centre and state government could hold up required clearances, thus stalling the project.
 **Regulatory risk**	This risk relates to issues such as increased taxes and royalties, revocations or changes to the concession, exchange controls on proceeds, forced government participation in shares, and refusal of the government to grant import licences for essential equipment. For e.g., on account of political challenges following the separation of Andhra Pradesh and Telangana, there were delays in payments to contractors. Also, investments from the state governments were impacted.
 **Input-related risk**	The construction industry has exposure to multiple input-related risks. For e.g., the cost of input materials such as bitumen depends on the international crude oil market. As bitumen is a major raw material, any change in crude oil price affects the overall project cost. The international scenario for other commodities such as steel and cement also affect the industry. Additionally, land is one of the most important inputs for the infrastructure segment. There are various stages involved in land acquisition, with the overall process time consuming. Thus, the status of land acquisition during awarding of a project or within a time period after the project has been awarded is crucial.
 **Fragmented industry**	The construction industry is highly fragmented on account of low fixed capital requirement for construction contracts. Capital expenditure is only required for procuring the necessary equipment, unlike in the case of manufacturing, which requires heavy capex for plant and machinery for production. The low entry barrier leads to a competitive environment, where numerous players bid for the same projects.

Key challenges	Description
 **Possibility of payment delays**	Construction projects are mainly funded and managed by the developer. But timely payments depend on the developer's credit profile and the nature of the project. Apart from the initial advance, contractors receive payments after a project milestone is completed. Most projects, especially infrastructure, have a gestation period of 2-3 years. Hence, any delay in payment can push up the receivables of contractors. Such a scenario makes the construction industry working capital intensive.

Source: CRISIL Intelligence

SWOT analysis of India's construction industry

S **(strengths)**	• **Growing economy**: Economic growth supports infrastructure development and construction activities • **Government initiatives**: Programmes such as Smart Cities, affordable housing, Sagarmala, Bharatmala and significant investment in infrastructure projects provide a boost to the construction sector • **Abundant labour**: Country has a readily available large pool of skilled labour, including masons, carpenters and engineers, for construction projects • **Low-cost labour**: Labour cost is relatively low • **Growing domestic market**: Major sectors such as automobile, residential and commercial real estate are on a secular growth trajectory, along with population growth
W **(weaknesses)**	• **Regulatory challenges**: Land is a critical component in infrastructure construction across segments. Hence, any delay in receiving clearance or inability to acquire the required land hinders progress • **Environmental concerns:** The construction sector in India faces criticism for its impact on the environment, particularly in terms of waste generation and energy consumption • **Financial constraints**: Challenges with regard to access to finance and high borrowing cost can limit the capacity for new and expansion projects • **Input-related risk**: Rise in raw material cost would impact the profitability of companies. However, cost escalation clause in a contract protects contractors from raw material price inflation • **Working capital management**: Delay in receipt of payment from government agencies and need to provide security and retention money stretches working capital, resulting in high interest cost
O **(opportunities)**	• **Urbanisation**: Rapid urbanisation offers significant opportunities for residential, commercial and other infrastructure projects • **Technological advancements**: Adoption of new technologies such as building information modelling and prefabrication, and green building practices can improve efficiency and sustainability • **Rural development**: Government focus on rural infrastructure development creates opportunities in new geographic areas
T **(threats)**	• **Economic slowdown**: Any downturn in the economy can significantly affect the construction sector • **Regulatory challenges**: Changes in regulations, such as the introduction of the Real Estate (Regulation and Development) Act, can impact the construction sector's growth • **Competitive pressures**: Intense competition from domestic as well as international players can put pressure on margins

3. Assessment of bridge industry in the railway and road sectors

Indian Railways at a glance

Key parameters	FY15	FY24	Growth (times) – FY15 to FY24
Locomotives	10,773	15,110	1.40x
Coaches and freight wagons	68,558 coaches 254,018 freight wagons	91,948 coaches 327,991 freight wagons	Coaches: 1.34x Freight wagons: 1.29x
Railway stations	7,137	7,461	1.05x
Route km	65,600	69,181	1.05x
Running track	90,803 km	1,09,748 km	1.21x
Passengers originating and passenger earnings	Passengers originating: 8,224 million Passenger earnings: Rs 421.90 billion	Passengers originating: 6,905 million Passenger earnings: Rs 706.93 billion	Passengers originating: 0.84x Passenger earnings: 1.68x
Total freight traffic – tonne originating	1,101.09 million	1,589.95 million	1.44x
Gross revenue receipts	Rs 1,610.17 billion	Rs 2,552.72 billion	1.59x

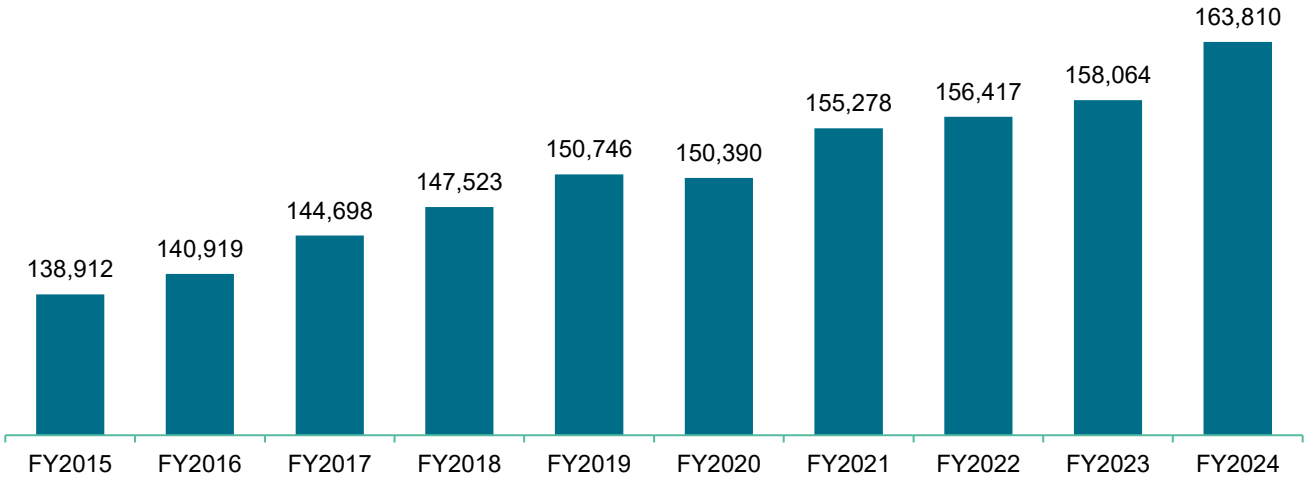
Source: Indian Railways, Crisil Intelligence

Increasing urbanisation and rising income (both urban and rural) are driving growth in the passenger segment. India is projected to account for 40% of global rail activity by 2050. In fiscal 2024, passengers originating stood at 6,905 million, compared with 8,086 million pre-pandemic in fiscal 2020.

Overview of bridge infrastructure in the railway sector

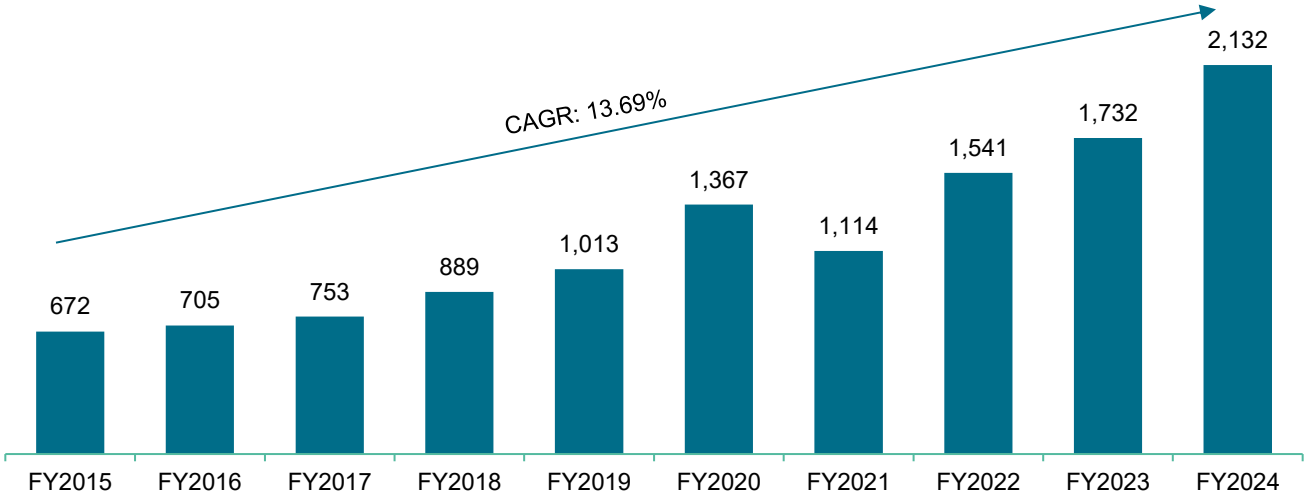
Railway bridges are critical components of rail transportation systems, allowing trains to safely and efficiently cross over waterways, valleys and other obstacles. As of fiscal 2024, Indian Railways had 1,63,810 bridges, of which 740 were important, 13,176 major and 1,49,894 minor bridges. Further, 2,132 bridges were strengthened/ rehabilitated/ rebuilt in fiscal 2024 to enhance the safety of train operations.

Total number of bridges – Indian Railways



Source: Annual reports, Indian Railways, Crisil Intelligence

Total number of bridges strengthened/ rehabilitated/ rebuilt – Indian Railways



Source: Annual reports, Indian Railways, Crisil Intelligence

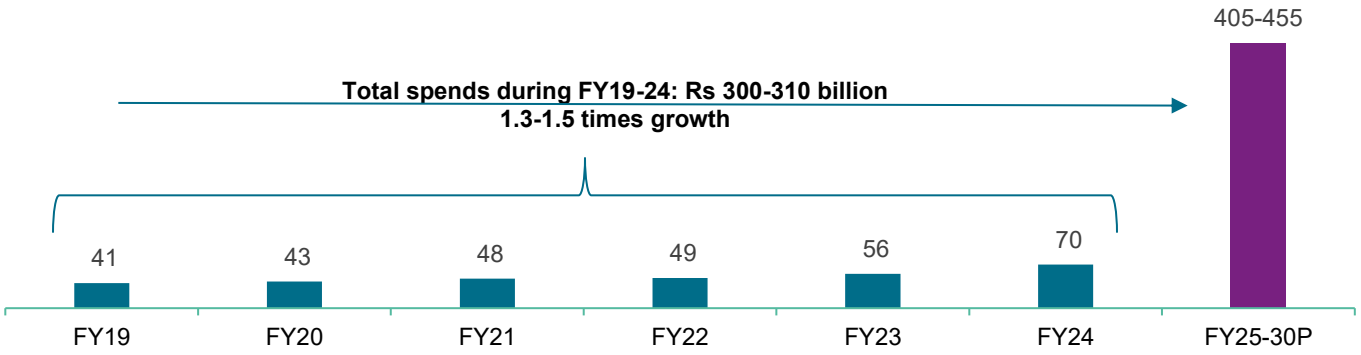
Railway bridge construction is expected to see 1.4-1.6 times rise over the medium term

CRISIL Intelligence estimates the construction spend on railway bridges at Rs. 300-310 billion between fiscal 2019 and 2024. Going forward, over the medium term that is from fiscal 2025 to 2030, spending on railway will be supported by rise in spend on upgradation of aging infrastructure, large pipeline of sanctioned bridges, focus on conversion of manned level crossing to bridges, rapid urbanisation, freight demand growth, government schemes like National Infrastructure Pipeline, Gati Shakti etc. Over the medium term, CRISIL Intelligence expects the spending on railway bridges to increase by 1.3-1.5 times to Rs 405-455 billion between fiscal 2025 and 2030.

The Indian railway bridge industry will also benefit from special projects like Metros, Dedicated Freight Corridors, Regional Rapid Transit System and High-speed rail corridors etc where the majority of the rail track alignment is on viaducts and bridges. Viaducts are series of bridges which enable the rail lines to traverse over obstacles such as roads, rivers, and buildings, while minimizing land acquisition and environmental impact. For these projects, majority of the cost is allocated to viaducts and bridges as they are required to traverse urban landscape.

Construction spends on Indian railway bridges

Rs billion



Note: P-Projected; Source: CRISIL Intelligence

Key drivers of steel bridge construction in the railway sector

Key advantages of steel bridges contributing to their increased adoption

Overview of types of bridges in the railway sector

Bridge type	Brief description	Application	Advantages	Disadvantages
Masonry bridges	These bridges consist of masonry structures such as masonry pipes and masonry arch bridges	Older railway networks and low-traffic areas	Durable and low maintenance	Limited load-bearing capacity – not suitable for high-speed or heavy rail loads
Concrete bridges	These bridges consist of reinforced cement concrete slab culverts, pre-stressed concrete slab culverts, pre-stressed concrete girders, etc.	Modern rail networks, including metro and mainline railways	High durability, low maintenance, and resilient to environmental factors	Heavier structures requiring sting foundations and longer curing time for RCC construction
Steel bridges	These bridges consist of steel girders of various spans, either of plate girder type or open web girder type	High-load railway bridges, long-span bridges, and high-speed rail corridors	Lighter than concrete, quicker to fabricate and install, and suitable for long spans	Higher initial cost and requires periodic maintenance

Note: The above data is indicative in nature and not an exhaustive representation of the types of bridges in the railway sector
Source: Industry, Crisil Intelligence

Rising urbanisation, population growth, and expansion of the metro system across India

In India, rising urbanisation and population growth are driving demand for an efficient railway network. New metro systems are being constructed to accommodate the increasing number of commuters in urban areas and to reduce traffic congestion and pollution in cities.

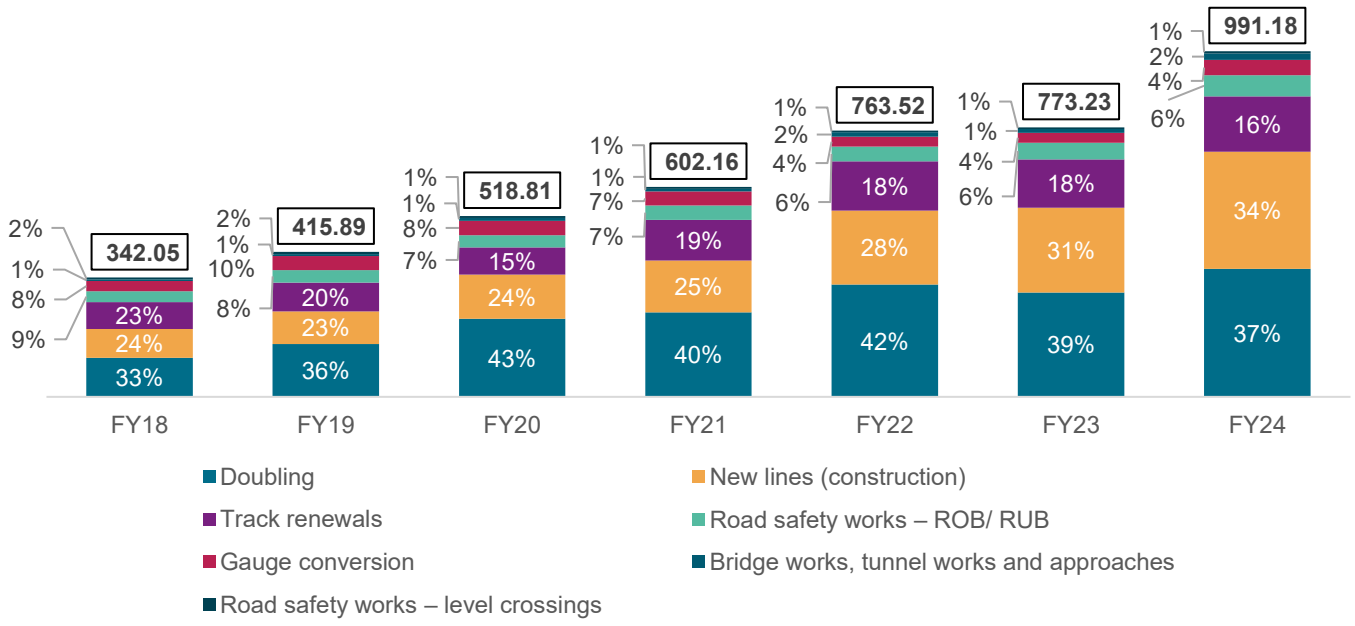
About 1,011 km of metro rail network, including the RRTS, is operational in 23 cities across the country, and about 1,000 km is under construction in 28 cities. Viaducts are playing a crucial role in the expansion of the metro system. Viaducts

are series of bridges that enable metro lines to traverse over obstacles such as roads, rivers and buildings, while minimising land acquisition and environmental impact. Viaducts are being extensively used in metro projects, such as the Delhi Metro, Mumbai Metro and Bengaluru Metro. As India continues to expand its metro network, demand for viaducts is expected to increase, driving investment in this critical infrastructure component. Viaducts are also finding applications in projects related to mainline railway where land acquisition is a challenge and the terrain is difficult. For example, the 51.38 km Bairabi-Sairang New Line Railway Project in the Northeast features a total of 55 major bridges, requiring 42,000 MT of steel.

Revitalisation of ageing infrastructure

Indian Railways is prioritising the replacement of ageing bridges with contemporary steel structures to improve safety and reliability. Numerous older bridges, constructed with obsolete materials and methods, are undergoing upgrades to align with modern standards. The versatility and durability of steel render it an excellent option for retrofitting initiatives, facilitating smooth integration with the current infrastructure. As of fiscal 2024, Indian Railways reported actual net expenditure of Rs 60.96 billion for 'road safety works – road over/ under bridges (ROB/ RUB)' and Rs 19.02 billion for 'bridge works, tunnel works and approaches'. Total capex for railways in budget estimate 2024-25 was Rs 2,652 billion with gross budgetary support of Rs 2,522 billion. Out of this, Rs 1,924.46 billion has already been spent. In safety-related works, out of the budgetary allocation of Rs 344.12 billion, Rs 282.81 billion (82%) has been spent.

Net actual expenditure by Indian Railways across select civil engineering works, FY18-24 (Rs billion)



Source: Annual reports, Indian Railways, Crisil Intelligence

Government thrust

The government has sharpened focus on overall development of railway infrastructure through schemes and policies such as station redevelopment, modernisation of 40,000 normal bogies to Vande Bharat bogies, and the National Rail Plan (NRP) 2030 under which the government aims to increase the share of railways in freight to 45% and reduce the transit time. Additionally, Indian Railways is focusing on construction of ROBs/ RUBs to eliminate manned level crossing gates, a continuous process across all zones of Indian Railways.

As on January 31, 2024, a total of 1,948 ROBs and 2,325 RUBs had been sanctioned over Indian Railways, which are at different stages of planning, estimation and execution. These factors are expected to boost the importance of railways as a mode of transport, driving up demand for railway bridges.

Development of high-speed rail corridors

India is progressing well with its initiatives for high-speed rail corridors, placing a strong emphasis on the construction of steel bridges given their capacity to meet the specific requirements of these systems. These bridges offer the necessary strength, stability and precise alignment essential for the operation of high-speed rail, thereby ensuring both safety and optimal performance at increased velocities.

The sanctioned cost of the Mumbai-Ahmedabad High-Speed Rail (MAHSR) project is Rs 1,080 billion. As per NHSRCL, for the MAHSR corridor, 465 km of viaducts and 10 km of bridges are to be constructed under the project, against the project's total length of 508 km. As of December 2024, over 243 km of viaduct construction has been completed under the Mumbai-Ahmedabad Bullet Train project.

The majority of viaducts will be in urban areas with high population (and physical structure) density, such as the big cities/towns. As part of this project, 28 steel bridges will be constructed, with individual spans ranging from 60 to 130 metres. The total length of all the steel bridges will be ~1 km, and their construction would require more than 70,000 tonne of steel fabrication. Steel bridges are the most suitable choice for crossing highways, expressways and existing railways lines.

In India, steel bridges have been utilised for trains operating at 100-160 km/hour, but with the MAHSR corridor project, steel bridges in India will portray strength and resilience for high-speed application.

Steel bridges have demonstrated efficient execution in terms of pre-fabrication and transportation, on-site assembly and installation in HSR projects. For instance, the steel bridge erected in Surat, near Kamrej Toll Plaza on NH-53 (Chainage: 254.585), as part of the MAHSR project, is 70 m long and weighs 673 tonne. The bridge was fabricated at a location 1,200 km away from the installation site. 700 pieces were transported to the site and assembled.

Fast-tracking of approvals

As per the existing procedure in the railways for sanctioning a project, proposals for various projects received from zonal railways are examined internally by the Railway Board. Of these, the firmed-up proposals are sent for an 'in-principle' approval to the National Institution for Transforming India (NITI) Aayog. Projects costing less than Rs 5 billion are approved by the Minister of Railways and those above that are reviewed by both NITI Aayog and the expanded Railway Board and approved by the Cabinet Committee on Economic Affairs.

After obtaining requisite approvals, projects are included in the budget. Thereafter, Indian Railways carries out a final location survey and prepares detailed estimates. Generally, tenders are floated after the sanction of detailed estimates. This entire process between the initiation of the proposal and the final award of tender takes 9-12 months now, compared with 2-2.5 years earlier.

Key advantages of steel bridges in the railway sector contributing to their increasing adoption

- **Improved lifecycle cost efficiency:** Steel bridges present financial benefits throughout their operational life, primarily due to reduced maintenance needs and the option to refurbish individual components rather than replacing them entirely. Advances in protective coatings and enhanced corrosion resistance contribute to minimising long-term costs, establishing steel as a financially sound option for Indian Railways.

- **Modular design for efficiency:** Modular steel bridge designs are increasingly popular owing to their flexibility and straightforward installation process. These designs facilitate rapid assembly and disassembly, making them especially advantageous in remote or hard-to-reach areas. Furthermore, the modular method supports standardised manufacturing practices, which helps lower expenses and expedite project schedules.
- **Multi-purpose utility:** Steel bridges are progressively being engineered to fulfil various functions, including the support of pipelines, fibre-optic cables and pedestrian walkways adjacent to railway lines. This multifunctional approach enhances the effectiveness of infrastructure investments and is in harmony with India's initiative for cohesive transport and utility systems.
- **Enhanced capacity for load and traffic:** Steel bridges are capable of handling heavier loads and higher traffic volumes, making them ideal for India’s expanding railways infrastructure. With growing freight and passenger demands, these bridges offer the structural strength and flexibility required to support increased axle load and accommodate future scalability in traffic.
- **Incorporation of aesthetic and cultural elements**: Steel bridges are increasingly being designed with a focus on aesthetics, integrating elements that showcase India's cultural heritage or contemporary architectural styles. Notable examples, such as the first cable-stayed rail bridge in Reasi over the Chenab River, merge practicality with visual attractiveness, enhancing tourism and fostering local pride.

Key threats and challenges facing the industry

Threat/Challenge	Description
Complex projects	Bridge projects in the railway and metro segment are highly complex in nature with regard to scale, technical expertise, financial capability, and legal and regulatory requirements. This complexity increases risks and costs.
Cost overrun and execution delays	Projects may experience cost overruns and execution delays due to delays in land acquisition, inadequate planning, project financing issues, approval from several authorities, complex engineering requirements, unforeseen ground conditions, and so on.
High input cost volatility	Fluctuations in steel prices lead to increased project costs and can exert considerable strain on budgets for road bridge projects. The unpredictability of raw material prices may deter long-term investments in large-scale initiatives.
Corrosion and environmental exposure	Steel bridges face harsh weather conditions that can compromise their structural integrity and longevity. Factors such as heavy rainfall, extreme temperatures and high humidity accelerate corrosion, especially in humid or coastal areas where salt water and moisture are prevalent. This rapid deterioration of critical steel components increases maintenance costs, necessitating regular inspections and more frequent anti-corrosion treatments, such as protective coatings or galvanisation.

Source: Crisil Intelligence

Key success factors for steel bridge construction players

Brand	Design capability	Experience	Pricing	Launching operations	Project management expertise
					

Source: Crisil Intelligence

Brand and experience

A strong brand name is a key success factor for streel bridge construction players as it indicates reliability and quality of raw materials. Furthermore, established brands are also known to adhere to industry standards and codes, ensuring product quality remains consistent.

Having a well-established brand instils confidence in the project's key stakeholders and reduces the risks associated with dealing with lesser-known suppliers. Furthermore, established players invest in research and development and modern technology, resulting in better product quality due to more efficient processes. This, in turn, ensures clients receive products with a high level of quality and safety. Therefore, opting for a well-known brand name is not just a preference but a practical necessity to ensure success.

Design capability

A company with strong in-house design capabilities, comprising experienced engineers and state-of-the-art software, can handle complex bridge design projects. Familiarity with Indian codes and standards is essential. Clients prefer players that have established design/architecture teams and design capabilities, as these factors directly influence the functionality and aesthetics of a bridge.

Launching operations

Launching steel bridges presents unique and significant challenges considering the variety of environments such as hilly terrains, busy rail corridors, over water bodies etc. These geographies pose challenges related to accessibility, extreme weather conditions, vital safety concerns, restricted working hours, and space constraints.

The launching operations requires expertise from the contractor which needs to ensure precise coordination with authorities, safety measures, minimal traffic disruptions, and accurate handling of large sub-structures for assembling the bridge the site. The contractor is required to have detailed knowledge of the geography, expertise in transportation and assembly of modular components, and incremental launching.

Pricing

The fragmented structure of the steel bridge industry grants customers significant bargaining power. Hence, competitive pricing is imperative for success. However, suppliers must ensure a balance between affordability and quality, along with a transparent cost structure.

Project management expertise

It is a pivotal factor in evaluating steel bridge construction players given the industry's long project timelines. Project management skills are crucial for ensuring timely project completion, avoiding cost overruns and maintaining quality standards.

Overview of key government schemes and policies in the railway sector impacting the railway bridge industry

National Rail Plan 2030

Indian Railways' National Rail Plan (NRP) for India – 2030 aims to create a 'future-ready' railway system by 2030, by:

- formulating strategies based on both operational capacities and commercial policy initiatives to increase the modal share of railways in freight to 45%;
- reducing transit time of freight substantially by increasing the average speed of freight trains to 50 kmph;
- identifying new dedicated freight corridors;
- identifying new high-speed rail corridors;
- assessing rolling stock requirement for passenger traffic, as well as wagon requirement for freight;
- assessing locomotive requirement to meet the twin objectives of 100% electrification (green energy) and an increased freight modal share;
- assessing the total capital investment required, along with a periodic break-up; and
- sustaining private sector involvement in areas such as operation and ownership of rolling stock, development of freight and passenger terminals, and development/operation of track infrastructure.

Total cost of the proposals given in NRP

Sr no	Project	2021-26	2026-31	2031-41	2041-51	Total
1.	North-South DFC, East-West DFC, East Cost, and Eastern DFC		Rs 1,517.20 billion; 3,793 km	Rs 482.40 billion; 1,206 km	Rs 300.4 billion; 751 km	Rs 2,300 billion; 5,750 km
2.	HSR corridor: • Delhi-Varanasi • Varanasi-Patna • Patna-Kolkata • Delhi-Ahmedabad • Hyderabad-Bangaluru • Nagpur-Varanasi • Mumbai-Nagpur, • Mumbai-Hyderabad • Patna-Guwahati		Rs 5,042 billion; 2,521 km	Rs 2,946 billion; 1,473 km	Rs 6,970 billion; 3,485 km	Rs 14,958 billion; 7,479 km

Sr no	Project	2021-26	2026-31	2031-41	2041-51	Total
	• Delhi-Amritsar • Amritsar-Jammu • Chennai-Mysuru					
3.	Indian Railways network	Rs 1,269.14 billion	Rs 713.58 billion	Rs 2,214.56 billion	Rs 1,819.67 billion	Rs 6,016.96 billion
4.	Flyovers and bypasses	Rs 799 billion	-	-	-	Rs 799 billion
5.	Terminal development	Rs 605.57 billion	Rs 203.36 billion	Rs 93.25 billion	Rs 40.41 billion	Rs 942.59 billion
6.	Electric locomotives	Rs 1,543.36 billion	Rs 650.44 billion	Rs 1,891.40 billion	Rs 2,357.18 billion	Rs 6,442.38 billion
7.	Wagons	Rs 388.38 billion	Rs 464.30 billion	Rs 862.74 billion	Rs 1,259.90 billion	Rs 2,975.32 billion
8.	Coaches	Rs 1,212.76 billion	Rs 564.39 billion	Rs 855.08 billion	Rs 1,138.58 billion	Rs 3,770.91 billion
9.	**Total**	**Rs 5,818.21 billion**	**Rs 9,155.27 billion**	**Rs 9,155.27 billion**	**Rs 13,886.14 billion**	**Rs 38,205.16 billion**

Source: National Rail Plan – India, Crisil Intelligence

High-speed rail projects

The Government of India has envisaged development of high-speed rail (HSR) corridors and has identified 8 corridors for constructing HSR projects of which the Mumbai Ahmedabad corridor is under construction while DPR preparation of the remaining projects is under preparation.

Mumbai-Ahmedabad High Speed Rail (MAHSR) project passes through high growth rate States of Gujarat and Maharashtra connecting business centres of Mumbai, Surat, Vadodara and Ahmedabad. The sanctioned cost of the MAHSR project is Rs. 1,080.0 billion. As of February 9, 2024, 290.64 km of pier foundation, 267.48 km of pier construction, 150.97 km of Girder Casting and 119.00 km of Girder launching have been completed. As per the Economic survey 2024-25, as of October 2024, it has achieved 47.17% physical progress with an expenditure of Rs 674.86 billion.

Status of select HSR projects

Key HSR projects in India				
Sr no	**Project**	**Length (km)**	**Status**	**Project cost (Rs billion)**
1	Mumbai-Ahmedabad	508	Under construction	1,080
2	Delhi-Varanasi	855	DPR	1,710
3	Delhi-Ahmedabad	886	DPR	1,772
4	Mumbai-Nagpur	789	DPR	1,578
5	Mumbai-Hyderabad	709	DPR	1,418
6	Chennai-Bengaluru-Mysore	462	DPR	924
7	Delhi-Chandigarh-Amritsar	485	DPR	970
8	Varanasi-Kolkata	~780	DPR	1,560

Source: National Rail Plan – India, Crisil Intelligence

Dedicated freight corridors

The Ministry of Railways has taken up the construction of two dedicated freight corridors (DFCs): Eastern Dedicated Freight Corridor (EDFC) and Western Dedicated Freight Corridor (WDFC). EDFC extends from Ludhiana to Son Nagar (1,337 km) and WDFC from Jawaharlal Nehru Port Terminal (JNPT) to Dadri (1,506 km). The construction of DFCs will aid in reducing logistics costs through higher axle load trains, double-stack container trains and faster access to northern hinterlands via western ports, while supporting the development of new industrial hubs and Gati Shakti cargo terminals.

As of February 11, 2025, EDFC was fully completed, and 102 km of the 1,506 km WDFC will be commissioned by December 2025, with train operations ongoing in completed sections. The Eastern and Western DFC comprises 596 major bridges, 4643 minor bridges, 304 road-over-bridges, 557 road-under-bridges, and 52 rail flyovers. The DFC, despite comprising only 4% of the Indian railway network, handles over 10% of the gross tonne kilometres (GTKMs). As of June 2024, EDFC was running close to 200 trains per day, and WDFC was running 125 trains per day. In the same month, these corridors reported a combined freight of more than 14 billion GTKM and 8.5 billion net tonne kilometres.

Amrit Bharat Station Scheme

Launched on August 6, 2023, the Amrit Bharat Station Scheme aims to transform and revitalise 1,337 railway stations nationally. As of December 2024, tenders have been awarded and work has commenced in 1,198 railway stations. Six railway stations have been developed and commissioned: Rani Kamlapati Station of West Central Railway, Gandhinagar Capital Station of Western Railway, Sir M. Visvesvaraya Terminal Station of South Western Railway, the first phase of Gomti Nagar Railway Station of North Eastern Railway, Ayodhya Railway Station of Northern Railway, and Cuttack Railway Station of East Coast Railway.

This scheme focuses on:

- Developing and implementing master plans to improve amenities at railway stations
- Improving the building, integrating the station with both sides of the city, multimodal integration, amenities for Divyang jans, sustainable and environment-friendly solutions, provision of ballastless tracks, 'roof plazas' as per necessity, phasing and feasibility and creation of city centres at the station in the long term

Kisan Rail

Small and marginal farmers often struggle to transport their produce over long distances. To address the issue and help them access larger markets, the government announced ‘Kisan Rail’ in the budget of fiscal 2021. The major aim of Kisan Rail services is to transport perishable goods such as dairy products, poultry, fruits, vegetables, meat, fisheries, etc, from regions of high production to regions of high consumption. Up to November 15, 2023, Indian Railways has operated 2,364 Kisan Rail services, transporting ~793,000 tonne of perishables goods, including fruits and vegetables.

Budgetary allocation for railways this fiscal similar to fiscal 2025

The total capital outlay for the Ministry of Railways for this fiscal has been kept at Rs 2,652 billion, of which Rs 2,520 billion are meet through gross budgetary resources. The budgeted capital outlay is similar to the revised estimates for the previous fiscal, with the gross budgetary support also remaining similar.

The budget includes several announcements, such as the introduction of 200 new Vande Bharat trains, 100 Amrit Bharat trains, and 50 Namo Bharat rapid rail services over the next two to three years. Additionally, 17,500 non-AC general

coaches will be added, making rail travel more accessible to budget-conscious passengers. A substantial Rs 1,160 billion will be dedicated to enhancing railway safety, including the installation of modern signalling systems, track upgrades and additional safety measures to prevent accidents.

In the previous budget, the key announcements include the development of three targeted corridors: a) energy, mineral and cement, b) port connectivity and c) high traffic density, which are planned to be developed under PM Gati Shakti. Additionally, 40,000 normal rail bogies are planned to be upgraded to Vande Bharat standards to enhance passenger safety and convenience.

Overview of the roads sector and national highways

The road transport sector's contribution to India's GVA

The road transport sector's share in India's GVA was estimated at 2.87% in fiscal 2024. The sector's share has hovered between 3.00% and 3.30% from fiscal 2012 to fiscal 2023. Fiscal 2021 was an exceptional year in which it contributed 2.51% of the GVA, mainly due to the impact of Covid-19. In absolute terms, road transport GVA at constant prices was Rs 4,629.20 billion in fiscal 2024.

GVA trajectory (% change)

GVA (at constant prices)	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
Road transport share (%) in GVA	3.20%	3.29%	3.29%	3.27%	2.51%	3.07%	3.01%	2.87%
Road transport (Rs Billion)	3,623.24	3,964.01	4,175.38	4,321.60	3,178.97	4,267.10	4,462.47	4,629.20

Source: National account statistics 2024, Ministry of Statistics and Programme Implementation (MoSPI), CRISIL Intelligence

Road network in India

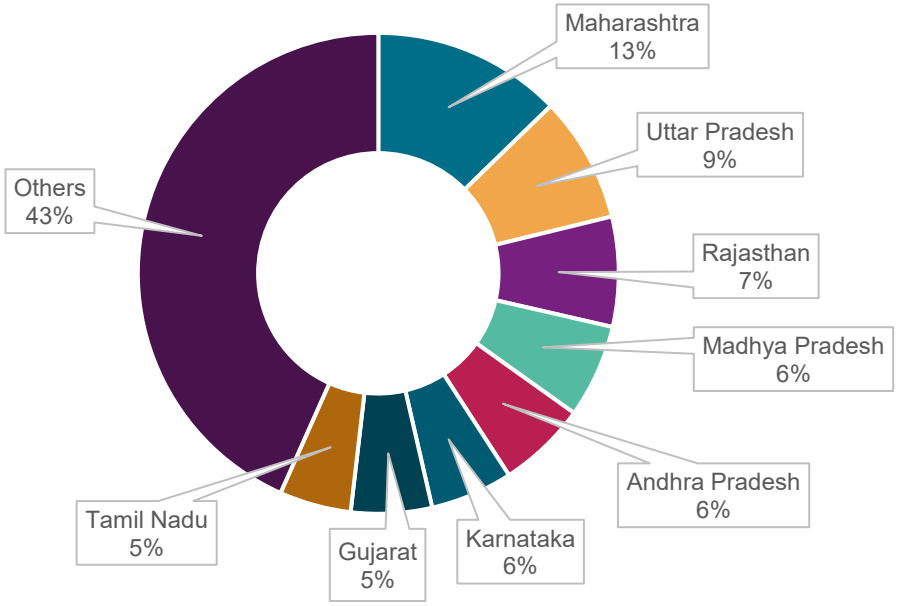
India has the second-largest road network in the world, spanning 6.35 million km. Road transportation has gradually increased over the years with improved connectivity between cities, towns and villages.

Road network in India

Road network	Length ('000km)	Connectivity to
National highways	146.10 (as of FY24)	Union capital, state capitals, major ports, foreign highways
State highways	179.50 (as of FY20)*	Major centres within the states, national highways
Other roads	6,019.70 (as of FY20)*	Major and other district roads, rural roads- production centres, markets, highways, railway stations

**This includes roads constructed under Jawahar Rozgar Yojana*
Source: Road Transport Yearbook 2019-20, MoRTH Annual Report 2023-24, CRISIL Intelligence

State-wise length of national highways in India as of fiscal 2024



Source: MoRTH Annual Report 2023-24, CRISIL Intelligence

NHAI awarding estimated to be muted in fiscal 2025, with the revamped BOT model likely to account for an improved share

National Highways Authority of India (NHAI) awarding had risen from merely 2,222 km in fiscal 2019 to 6,003 km in fiscal 2023. However, in fiscal 2024, the awarding momentum was marred by various roadblocks. There were significant cost overruns in the NHAI's flagship Bharatmala Pariyojana Programme (BMP) Phase-1 on account of more expensive land acquisition and high inflation. Currently, the estimated cost of BMP Phase-1 is almost twice the initial estimate. The ministry is awaiting cabinet approval for a revamped programme and additional funds for rapid awarding of projects in the pipeline. As a result, NHAI awarded ~3,339 km in fiscal 2024.

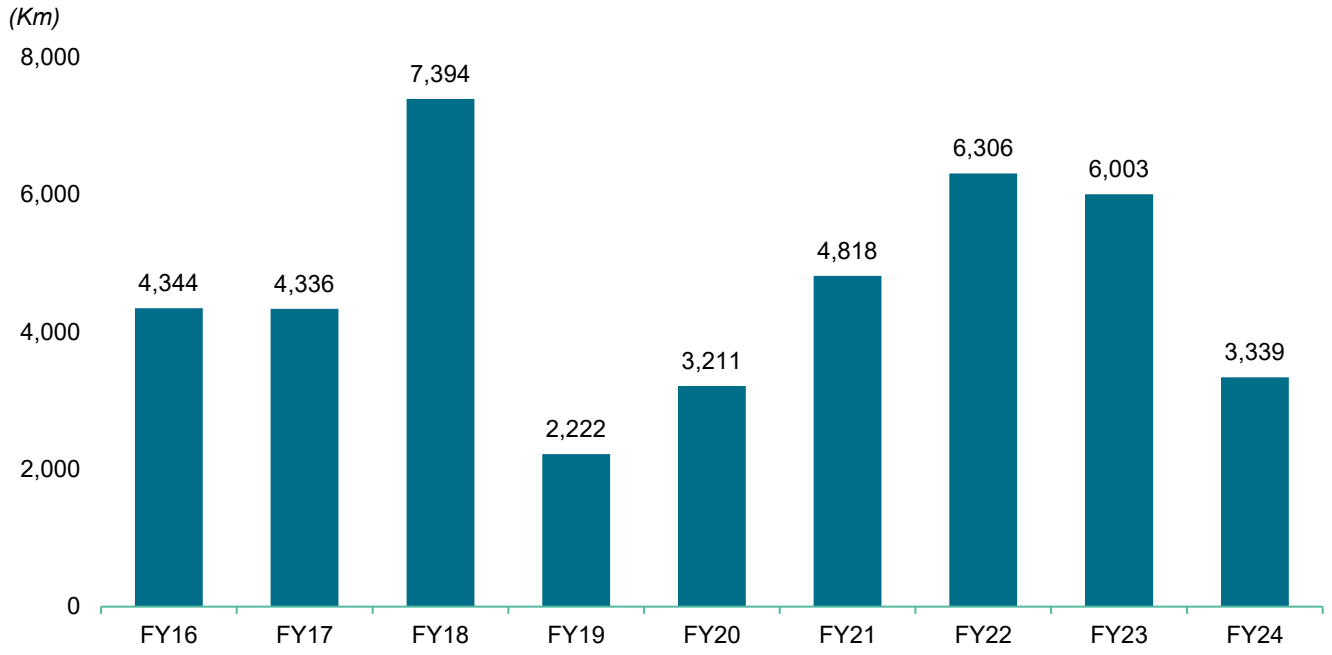
Notably, the share of the hybrid annuity model (HAM) dipped significantly due to the aforementioned issues regarding the BMP. It share is expected to revive to 25-30% in fiscal 2025. Further, on account of amendments in the build-operate-transfer (BOT) model concession agreement (MCA), the awarding under the BOT model may increase. This is likely to be supported by the interest of developers in the revamped BOT model due to the factors mentioned below.

HAM was favored by road developers due to lower risk and higher profitability. However, the competition in HAM awarding has increased substantially, leading to average bid premiums tumbling from a peak of 15-20% to 4-6% in the past few fiscals. As a result, the share of the larger developers has dropped substantially since many have refrained from bidding aggressively for HAM projects to protect their margins. Given the amendment in the BOT MCA and the scope of higher profitability due to lower bidding competitiveness in the BOT space, many large developers are keen on taking up BOT projects.

Furthermore, owing to the healthy balance sheets, the developers are also in a comfortable position to undertake BOT projects with high funding requirements. The increased traffic visibility vis-à-vis earlier years also augurs well for the BOT projects. The shift towards the BOT model comes against the backdrop of the NHAI facing funding challenges and moderation in growth in the central government's budgetary outlay towards the roads and highways sector. Thus, the shift

will have a two-pronged benefit by not only alleviating funding challenges to a great extent but also increasing private investment in the sector.

National highways – year-wise total length awarded (km) by NHAI



Note: E - Estimated; P - Projected
Source: CRISIL Intelligence

NHAI execution is also rising steadily, with focus on swifter execution

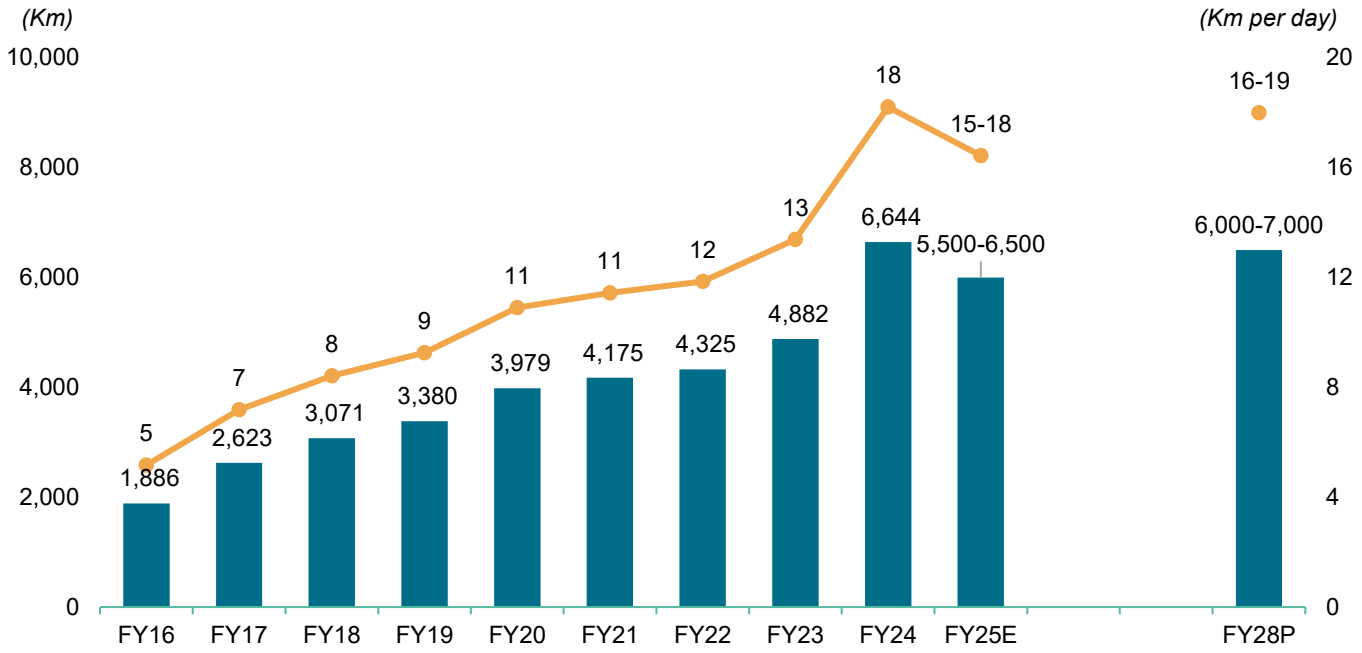
Overall national highways construction at the MoRTH level had remained flattish in fiscals 2022 and 2023, with the NHAI execution rising sequentially from 4,175 km in fiscal 2021 to 6,644 km in fiscal 2024.

Acceleration in project awards, sharper focus on resolving land acquisition issues and 'Atmanirbhar Bharat' initiatives to ease liquidity for EPC road players augured well for the pace of execution of NHAI projects. Liquidity easing measures include monthly milestone payments, release of retention money, reduction in performance security and extension of 3-6 months in milestones and SCODs.

Higher awarding of the previous years (fiscals 2021-2023) and many of those projects receiving appointed dates in a timely manner have further boosted NHAI execution in fiscal 2024. As a result, 6,644 km of NHAI projects were executed during the year; with construction per day stood at ~18 km. Given the healthy orderbooks of the developers, the momentum in the pace of execution is likely to continue in fiscal 2025 as well. Crisil Intelligence expects NHAI execution to be 5,500-6,500 km in fiscal 2025.

Over the medium term, the pace of construction is expected to rise steadily to reach 16-19 km per day by fiscal 2028.

National highways – total length constructed/ upgraded (km) by NHAI



Note: E - Estimated; P - Projected
Source: CRISIL Intelligence

Overview of the bridge and elevated road industry in India

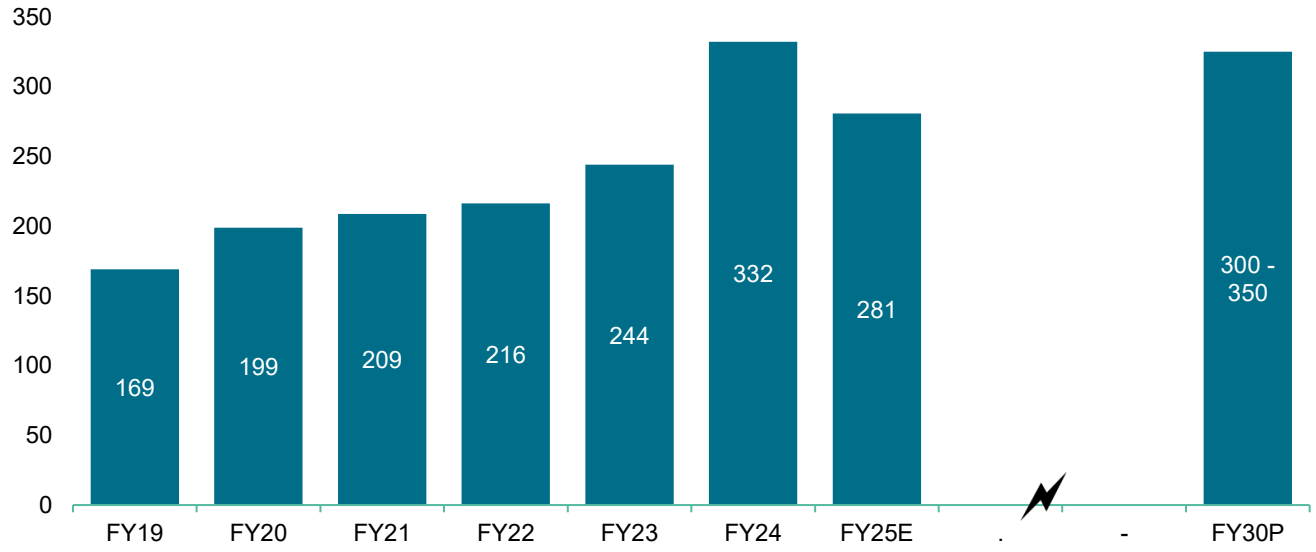
With the government increasing the target for investments in national highways over the next five years, construction of bridges and elevated roads is also expected to rise substantially supported by road capex, safety and traffic regulation concerns for village / town intersections and robust connectivity between national highways.

Bridges and elevated roads require more per km spending against non-elevated roads

Bridges and elevated roads contribute to nearly 4-5% of national highway construction in terms of kilometres but to 10-15% in terms of construction spend as of fiscal 2025.

Based on primary sourcing from some major EPC road construction players and technical consultants, CRISIL estimates that for every 50 km of a four-lane highway stretch, an average 4-5 major bridge of (2-3 kms length) are constructed.

Bridges and elevated road construction (Kms)



Note: E-Estimated, P-Projected
Source: CRISIL Intelligence

Average cost of construction

Parameter	Average Cost (Rs. Mn. Per Km.) *
Road Construction	140-150
Road + Bridge	300-350
Bridge Construction	850-900
Factor: Bridge/Road construction (x)	6.5-7.0x

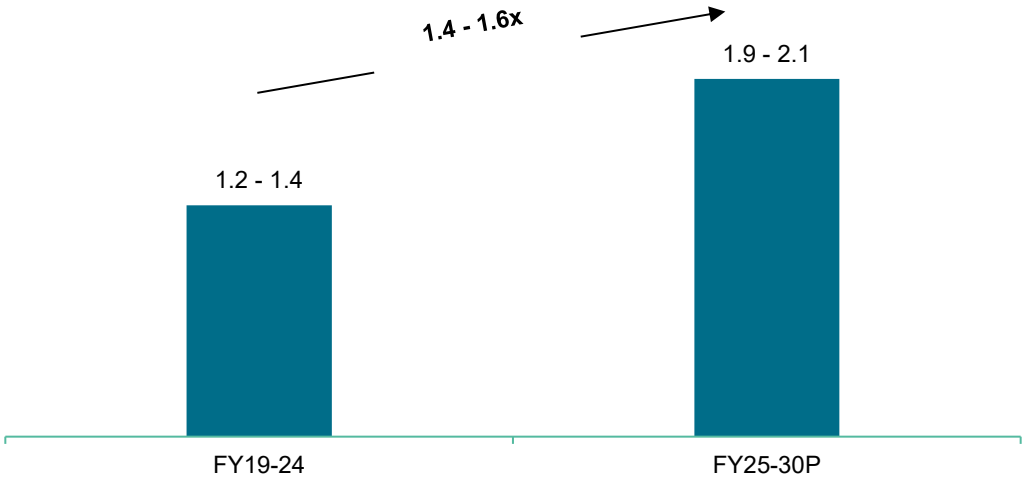
**Based on primary interaction with major EPC payers*
Source: CRISIL Intelligence

Bridge and elevated road construction is expected to see 1.4 - 1.6 times rise

CRISIL Intelligence estimates the construction spend on bridges and roads for national highways at Rs. 1.2 – 1.4 trillion between fiscal 2019 and 2024. Going forward, over the medium term that is from fiscal 2025 to 2030, spending on bridges and elevated roads will be supported by rise in spend on elevated expressways, rise in construction of national highways and robust road network connection. With this CRISIL Intelligence expects the spending on bridges and roads to increase by 1.4 – 1.8 times to Rs. 1.9 - 2.1 trillion between fiscal 2025 and 2030.

Construction of bridge and elevated roads

Rs trillion



Note: P-Projected
Source: CRISIL Intelligence

Key bridge projects in India

Sr no	Project	State / Union territory	Length (km)	Total cost (Rs million)	Status
1.	Major bridge over Middle Strait Creek on NH-223 in Andaman & Nicobar Islands	Andaman and Nicobar Islands	1.96	2,629	Under implementation
2.	Major Bridge over Humphrey Strait Creek on NH-223 in Andaman & Nicobar Island	Andaman and Nicobar Islands	1.45	2,710	Completed
3.	Mumbai Trans Harbour Link	Maharashtra	21.8	1,78,430*	Completed
4.	Bandra Versova Sea Link Project	Maharashtra	17.2	1,13,328	Under implementation
5.	Versova-Virar-Palghar Sea Link Project	Maharashtra	43.0	6,34,260	Planning
6.	Major Bridge (Bankot Creek) Project	Maharashtra	1.7	27,288	Under implementation
7.	High Level Bridge (Yetimoga-Yedurumundi Island) Project	Andhra Pradesh	0.9	10,371	Planning
8.	Package 2 of the missing link Mumbai Pune expressway project (Two viaduct cable-stayed bridge of 790 m and 650 m)	Maharashtra	1.44	66,000**	Under implementation

** Administrative approval estimate value, ** Cost is for complete missing link project both package 1 & package 2*
Note: NA-Not available
Source: Setu Bhartam Yojana & MoRTH, Projects Today, CRISIL Intelligence

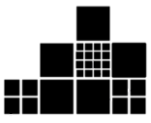
Key highway projects in India

Sr no	Project	State / Union territory	Length (km)	Total cost (Rs million)	Status
1.	Hindu Hruday Samrat Balasaheb Thackeray Maharashtra Samruddhi Mahamarg	Maharashtra	701	5,53,350	Partially completed
2.	Pavnar-Patradevi Maharashtra Shaktipeeth Expressway	Maharashtra and Goa	805	8,63,589	Planning
3.	Zojila Tunnel Project	Jammu & Kashmir	14.2	68,087	Under implementation
4.	Ganga Expressway (Bijoli-Nagla Barah) Project (Group – I)	Uttar Pradesh	129.7	65,550	Under implementation
5.	Elevated Corridor (Danapur-Bihta-Koilwar) Project	Bihar	23.5	37,375	Under implementation
6.	Varanasi-Aurangabad NH-2 Road Project	Bihar and Uttar Pradesh	192	33,795	Under implementation

Note: The above list is not exhaustive and only an indicative list of projects

Source: Projects Today, CRISIL Intelligence

Key trends and drivers of India's steel bridge industry

Modular and prefabricated bridge	Sustainable infrastructure	Technological advancement	Improved use in remote areas	Government initiatives	Rising urbanisation	Disaster-proof structures	Faster execution
							

Source: Crisil Intelligence

Modular and prefabricated steel bridges

Modular and prefabricated steel bridges are gaining significant traction in India, particularly in urban and congested areas. The structures are manufactured offsite and delivered in segments to the construction site, which greatly minimises installation time and traffic disturbances. The prefabrication process also guarantees enhanced accuracy, quality assurance and safety, compared with conventional construction techniques. Government and private entities consider the bridges as a viable remedy for delays and budget excesses, especially in densely populated urban corridors and for urgent projects such as highway expansions.

Focus on sustainable infrastructure

India's dedication to sustainable infrastructure development, exemplified by initiatives such as the National Green Hydrogen Mission and the National Action Plan on Climate Change, is helping the industry transition toward recyclable materials, particularly steel. Steel bridges can be dismantled and reused, which positions them as a more sustainable alternative to traditional concrete structures. Additionally, manufacturers are focusing on the production of corrosion-resistant and high-strength steel, which minimises maintenance and extends their lifespan, especially in coastal and industrial regions that face greater environmental challenges.

Technological advancements

The incorporation of state-of-the-art technologies is transforming the construction process of steel bridges. Sophisticated software applications such as BIM and finite element analysis facilitate accurate design, cost assessment and load simulations. Additionally, structural health monitoring systems integrated with IoT sensors are being installed in bridges to deliver real-time information on stress, temperature and vibrations. These advancements not only improve safety but also reduce long-term operational expenses by enabling predictive maintenance.

Increased use in hilly and remote areas

Steel bridges have emerged as essential solutions in mountainous and isolated regions, primarily because of their reduced weight and straightforward assembly process. In contrast to concrete constructions, which necessitate prolonged onsite curing and construction periods, steel bridges can be quickly assembled, even at challenging locations. Initiatives such as Bharatmala Pariyojana and those aimed at improving border connectivity have prominently featured steel bridges to facilitate the swift establishment of infrastructure in strategic and underserved areas.

Government initiatives and infrastructure spending

The government has prioritised infrastructure as a central element of its economic growth strategy. Bharatmala Pariyojana and NIP have earmarked significant funding for the enhancement of road and bridge networks. Steel bridges are essential within this framework, owing to their rapid construction capabilities and versatility across different landscapes. Furthermore, the PM Gati Shakti National Master Plan seeks to unify transport systems, thereby increasing the demand for steel bridges as integral components of efficient logistics corridors.

Rising urbanisation and congestion

India's rapid urbanisation has resulted in heightened road congestion within its metropolitan areas. In response to this, steel bridges are being utilised for the construction of flyovers, bypasses and elevated corridors. Their capacity for swift construction without interfering with traffic flows makes them favourable in the development of urban infrastructure. Additionally, their contemporary and streamlined designs enhance their aesthetic appeal, complementing the urban planning objectives of smart cities.

Demand for resilient and disaster-proof structures

India's susceptibility to natural disasters has highlighted the critical need for resilient infrastructure. Steel bridges, known for their flexibility and strength, exhibit superior performance under seismic stress, compared with inflexible concrete structures. The application of advanced coatings and galvanisation significantly improves their corrosion resistance in areas prone to flooding, rendering them ideal for regions vulnerable to disasters. The government's heightened emphasis on infrastructure that can withstand such calamities is driving a growing demand for these types of bridges.

Faster execution timelines

The government's initiative to ensure prompt project completion has highlighted the importance of materials and techniques that shorten construction timelines. Steel bridges are particularly well-suited to this requirement as they can be installed faster than conventional concrete bridges. As a result, EPC contractors and infrastructure developers are progressively opting for steel, given they can adhere to strict timelines with its usage, thus preventing cost overruns and associated penalties. In addition, EPC players work with structural steel providers having sufficient capacity for their requirements who provide timely delivery.

Key uses of steel bridges in India's road sector

Flyover and overpasses

Facilitate the smooth movement of traffic at intersections within urban and semi-urban regions, which minimise congestion and reduce travel time for commuters

Long-span bridges

They are suitable for crossing extensive rivers, valleys and difficult landscapes. They are commonly employed for infrastructure projects over the Ganga, Yamuna and Brahmaputra

Modular bridges

Utilised for temporary, emergency or military applications, prefabricated components facilitate rapid assembly and deployment, particularly in regions affected by disasters

Toll infrastructure

Steel bridges serve as robust and visually appealing structures for overpasses and connections along expressways. For e.g., Delhi-Mumbai Expressway

Seismic-prone regions

Steel bridges are more flexible than inflexible structures, allowing them to better withstand seismic shocks, which is vital in earthquake-prone regions such as the Himalayan belt and northeast

Source: Crisil Intelligence

Key risks and challenges impacting the steel industry

Risks/ challenges	Description
High input cost volatility	Fluctuations in steel prices lead to increased project costs and considerable strain on budgets for road bridge projects. The unpredictability of raw material prices may deter long-term investments in large-scale initiatives.
Land acquisition delays	Extended land acquisition procedures can delay bridge construction in road projects due to complex negotiations, value assessments and legal compliance. Compensation disputes may require mediation or legal intervention and obtaining approvals from various government bodies is tedious and time-consuming. The lengthy processes lead to delays, increased costs and reduced public confidence in infrastructure development.
Logistical challenges	Transporting substantial steel components to isolated or mountainous regions presents significant logistical challenges. Inadequate last-mile connectivity in rural locations obstructs prompt delivery and construction efforts.
Corrosion and environmental exposure	Road bridges face harsh weather conditions that can compromise their structural integrity and longevity. Heavy rainfall, extreme temperatures and high humidity accelerate corrosion, especially in humid or coastal areas where saltwater and moisture are prevalent can lead to rapid deterioration of critical steel components. This increases maintenance costs, necessitating regular inspections and more frequent anti-corrosion treatments, such as protective coatings or galvanisation.
Project financial issues	The availability of financial assistance for smaller road bridge projects is significantly restricted due to budgetary limitations. These constraints often result from competing priorities within government budgets, where funds are allocated to larger infrastructure projects, leaving little room for smaller initiatives. Consequently, many local government bodies and agencies may struggle to secure the necessary funding to initiate or complete these vital projects, which can lead to a backlog of essential repairs and upgrades.

Source: Crisil Intelligence

4. Assessment of competitive landscape of structural steel industry in India

In this section, CRISIL has analysed some key players operating in the construction and structural steel industry in India.

The value chain for manufacturing structural steel products starts with the procurement of raw materials, such as steel and other essential components. This is followed by the design and engineering phase. The manufacturing stage involves fabricating steel components through processes like cutting, welding, and assembling, accompanied by rigorous quality control measures. On-site construction and assembly involve preparing the site and erecting the structures. Post-construction services include maintenance and upgrades.

Since structural steel involves light and heavy steel fabrications which is ultimately used in varied end use industries ,for the competitive landscape we have included key players in the structural steel fabrication and Pre-engineered buildings (PEBs) manufacturing sectors which has applications of light and heavy structural steel products depending on end use. Given the industry's fragmentation, with a few large players and many small ones, the selected companies are based on comparable turnover and business nature. The list of competitive landscape peers considered in this section is not exhaustive but an indicative list.

Data has been obtained from publicly available sources, including annual reports available in the public domain/ filed with the RoC, investor presentations of listed players, regulatory filings, rating rationales, and/or company websites and social media pages. Financials in the competitive section have been re-classified by CRISIL, based on annual reports available in the public domain/ filed with the RoC and financial filings by the relevant players. Financial ratios used in this report may not match with the reported financial ratios by the players on account of standardisation and re-classification done by CRISIL.

Operational Overview

Overview of key players in construction industry in India

Company name	Year of incorporation[1]	Business overview
Heavy Steel Fabricators		
Steel Infra Solutions Company Ltd.[%]	2017	Incorporated in October 2017 , Steel Infra Solutions Company Limited specializes in fabricating heavy structural steel, with an installed capacity of approximately 100,000 metric tonnes per annum. The company is promoted by Mr. Ravi Uppal, Mr. K. Rajagopal and Mr. Nildari Sarkar with key managerial persons including Mr. Aman Choudhari, Mr. Ranjan Sharma and Mr. Zarksis Parabia. Its corporate office is located in New Delhi, with design and engineering centers in Bengaluru, Hyderabad, Chennai and Bhilai, as well as marketing offices in Delhi, Chennai, and Mumbai. Additionally, the company operates four manufacturing units in Bhilai, one plant in Vadodara, and has another plant under commissioning in Hyderabad.
JSW Severfield Structures Pvt. Ltd. (JSSL)	2009	JSSL, incorporated in 2009, is a 50:50 JV between JSW Steel Ltd and Severfield Mauritius Ltd, a wholly owned subsidiary of Severfield Plc. JSSL manufactures heavy fabricated steel structures for the commercial and industrial segments and offers structural steel building solutions.
Eversendai Construction Pvt. Ltd. (ECPL)	2009	ECPL a subsidiary of Malaysia-based Eversendai Corporation Berhad (ECB), was incorporated in India in 2009 with geographic presence in Tamil Nadu & Maharashtra. ECB, established in 1984, focuses on fabricated structural steel, composite structures, and civil construction projects, with a presence in Asian and Middle Eastern countries. ECPL operates a fabrication facility in Trichy, India executing supply-cum-erection contracts for structural steel, composite structures, and civil construction projects.

Company name	Year of incorporation[1]	Business overview
Atmastco Ltd.	1994	Founded in 1987 by Mr. Subramaniam Swaminathan Iyer and Mr. G. Venkataraman as a partnership firm, Atmastco Private Limited (now known as AL) initially focused on trading engineering products. The company underwent transformations, first becoming a private limited entity in 1994 and later a public limited company in 2016, with being listed in February 2024. The company operates two manufacturing units in Bhilai, focusing on the fabrication of boiler structures, columns, beams, and heavy steel assemblies, primarily catering to the power plant sector.
Zamil Steel Building*	2003	Established in April 2003, Zamil is a designer, manufacturer, and supplier of PEBs and components, with its corporate office in Pune and a manufacturing facility in Ranjangaon. As a subsidiary of Zamil Industrial Investments Asia Private Ltd., Zamil operates under the ultimate holding company, ZIIC. With presence across India, Zamil has a pan-India network of regional offices in all major cities.
Pre-Engineered Buildings (PEBs) / Building products / Other roofing solutions players		
Everest Industries Ltd. (EIL)	1934	Established in 1934, EIL has presence in 28 states and 8 union territories. Over the years, the company has diversified its product portfolio to include a range of non-asbestos building products, such as roofing sheets, flooring, cladding, and boards, as well as design, manufacture, and erection of PEBs, with a manufacturing infrastructure comprising eight plants located across India.
Pennar Industries Ltd. (PIL)	1975	Established in 1975 by founder Nrupender Rao, PIL has a national and international presence in Telangana, Maharashtra, Tamil Nadu, Hyderabad, Uttar Pradesh, USA & France. With a range of products and services, manufacturing precision-engineered items such as steel strips, railway wagons, and solar panels, as well as providing solutions for road safety, water treatment, and desalination. The company's portfolio is categorized into three main segments: engineered products, engineering solutions, and engineering services.
Interarch Building Products	1983	Interarch building Products, incorporated in 1983, is promoted by Mr. Gautam Suri and Mr. Arvind Nanda based at Noida, Uttar Pradesh, with a pan India network of regional offices in all major cities. The company started operations by manufacturing PEBs, metal ceilings, roofing, and claddings. It has two plants in Tamil Nadu, two plants in Uttarakhand and 1 in Andhra Pradesh.

Notes:

The companies have been broadly categorized into two segments: (1) heavy steel structural fabrication, and (2) companies, which primarily focus on pre-engineered buildings (PEB), building products, and other roofing solutions. This classification has been done basis the steel fabrication and PEBs / Building products / Other roofing solutions etc. capacity data for respective peers as mentioned on their company websites and company filings.

1 Year of incorporation has been taken from Ministry of Corporate Affairs

%- The capacity and plant details as per draft Chartered Engineer's certificate provided by the company

**- As per the segment reporting for the company, the company's business activities predominantly involve manufacturing of steel structures and parts thereof hence we have considered it under heavy steel fabricators segment. However, company has capacity for PEB production as well.*

Source: Company annual reports, filings, websites, CRISIL Intelligence

Key operational metrices

Company name	Brief offerings of the company**	Number of manufacturing facilities	Capacity of manufacturing facilities (MTPA)
Heavy Steel Fabricators			
Steel Infra Solutions Company Ltd.[%]	Heavy Fabricated Steel Structures and offers structural steel solutions with solutions encompassing design, engineering, manufacturing, and project management.	6	Structural steel fabrication - 100,000
JSW Severfield Structures Pvt. Ltd. (JSSL)	Heavy fabricated steel structures and offers complete structural steel building solutions	2	Fabrication Capacity - 175,000+
Eversendai Construction Pvt. Ltd. (ECPL)	Engaged in execution of supply-cum erection contracts of FSS, Composite structures as well as civil construction work	1	Fabrication Capacity - 30,000

Company name	Brief offerings of the company**	Number of manufacturing facilities	Capacity of manufacturing facilities (MTPA)
Atmastco Ltd.	Ceiling Girder, Columns, Box Columns, Beams, Bracings, Hopper, bunker shells, Pre-Engineered	2	Fabrication Capacity - 24,000
Zamil Steel Building*	Pre-engineered buildings and parts thereof	1	Structural steel fabrication - 20,000 Pre-engineered buildings (PEBs) - 80,000
Pre-Engineered Buildings (PEBs) / Building products / Other roofing solutions and panels players			
Everest Industries Ltd. (EIL)	AC roofing, non-asbestos BP (roofing sheets, flooring, cladding and other boards); and design, manufacture, and erection of PEBs	8	Roofing Solutions - 8,50,000 Boards - 1,74,801 Panels Capacity - 39,911 Pre-Engineered Steel Building - 72,000
Pennar Industries Ltd. (PIL)^	Pre-Engineered Building Systems, Solar, Building Products, Auto Profiles, ESP, Strip Galvanizing, Hot Dip Galvanizing, Fuel Additives, Water Treatment Chemicals & Solutions etc.	13	Pre-engineered buildings (PEBs) - 90,000 Precision tubes – 60,000 Solar Panels - 250 MWPA
Interarch Building Products	Metal roofing, cladding, pre-engineered buildings (PEBs), Suspended Ceiling Systems etc.	5	Pre-engineered buildings (PEBs) - 161,000

Note: The companies have been broadly categorized into two segments: (1) heavy steel structural fabrication, and (2) companies, which primarily focus on pre-engineered buildings (PEB), building products, and other roofing solutions. This classification has been done basis the steel fabrication and PEBs / Building products / Other roofing solutions etc. capacity data for respective peers as mentioned on their company websites and company filings.

**- As per the segment reporting for the company, the company's business activities predominantly involve manufacturing of steel structures and parts thereof hence we have considered it under heavy steel fabricators segment. However, company has capacity for PEB production as well.*

***-Offerings of the players is only indicative and not exhaustive*

%- The capacity and plant details as per draft Chartered Engineer's certificate provided by the company

^ The capacity details for Pennar Industries have been provided as per the capacity data available on their website for PEBs and precision tubes, company also mentions their combined capacity as 350,000 MTPA but bifurcation for the same is not available.

Source: Company annual reports, filings, websites, CRISIL Intelligence

End user industries & key customers served

Company name	End user industries served*	Key customers served*
Heavy Steel Fabricators		
Steel Infra Solutions Company Ltd.	Heavy fabricated steel structures and structural steel solutions for industrial structures, high rise buildings, airport terminals, ports, refineries, bridges, warehouses, power, sports stadiums and hospitals.	Larson & Tubro, Tata Projects, Shapoorji & Pallonji, Adani, Reliance, Marie Tecnimont, Technip, Thyssenkrupp, URC Constructions, KMV, KEC International, Afcon, Llyod, Megha Engineering, AreclorMittal, Offshore Infra, Deepak Fertiliser, Tata steel, Numaligarh Refinery
JSW Severfield Structures Pvt. Ltd. (JSSL)	Real Estate, Industrial Projects, Infrastructure Projects, Data Centers	P&G, Siemens, ITC, Doosan, Intel, Prestige Group, JSW, Kichelin, L&T, Reliance Industries etc.
Eversendai Construction Pvt. Ltd. (ECPL)	Power and energy, oil and gas, transport and airport, real estate, industrial and commercial	Larsen & Toubro, DLF Info Park Developers, Reliance Industries, Lodha, PRL Developers, Samsung C & T India, etc.
Atmastco Ltd.	Cement, steel, power, mining	L&T, BHEL, Indian Railways, Indian Oil, Afcons, TCS, TATA Steel, ISRO, NTPC, Vestas, etc.
Zamil Steel Building	Industrial, commercial, agricultural, aviation, entertainment, military, and infrastructure	NA
PEB / Building products / Other roofing solutions and panels players		

Company name	End user industries served*	Key customers served*
Everest Industries Ltd. (EIL)	Rural and Agro Markets, Industrial and Warehousing, Commercial and Residential Structures	Aditya Birla Grasim, Indian railways, Atul, Vinati Organics ltd., Adani, Taj, ITC Hotels, HUL, Patanjali, Indigo, etc.
Pennar Industries Ltd. (PIL)	Automotive, Construction & Infrastructure, Pre - Engineered, white goods, railways, and tubes.	Amazon, HUL, ITC. TATA Thermax, JSW, MRF, Reliance, L&T etc.
Interarch Building Products	Infrastructure, Industrial, Logistics, Renewable	Asian Paints, Aditya Birla Grasim, Unilever, Berger, Adverb Technologies

Note: The companies have been broadly categorized into two segments: (1) heavy steel structural fabrication, and (2) companies, which primarily focus on pre-engineered buildings (PEB), building products, and other roofing solutions. This classification has been done basis the steel fabrication and PEBs / Building products / Other roofing solutions etc. capacity data for respective peers as mentioned on their company websites and company filings.

** End User industries served, and key customers served of players are only indicative and not exhaustive*

NA – Not available

Source: Company annual reports, filings, websites, CRISIL Intelligence

Credit rating for Players

Companies	Long term	Short term	Amount (Rs Mn.)		Date	Rating agency
			Long term	Short term		
Heavy Steel Fabricators						
Steel Infra Solutions Company Ltd.	Crisil A-/Stable	CRISIL A2+	1,532.0	4,420.0	20-Feb-25	CRISIL Ratings
JSW Severfield Structures Pvt. Ltd. (JSSL)	CRISIL A-/Stable	CRISIL A2+	6,010.0	9,570.0	7-Jul-23	CRISIL Ratings
Eversendai Construction Pvt. Ltd. (ECPL)	IND BBB-/Stable/IND A3	IND A3	1,900.0	3,600.0	10-Apr-25	India Ratings and Research
Atmastco Ltd.	IND BB-/Negative (Issuer not Cooperating)	IND A4+ (Issuer not Cooperating)	477.5	380.0	18-Mar-25	India Ratings and Research
Zamil Steel Building	WD*	WD*	1,485.0#	1,851.0	10-Jul-20	India Ratings and Research
PEB / Building products / Other roofing solutions and panels players						
Everest Industries Ltd. (EIL)^	[ICRA]A (Negative)	[ICRA]A2+	1,300.0	2,500.0	28-May-25	ICRA Limited
Pennar Industries Ltd. (PIL)	CARE A; Stable	CARE A1	7,022.4	8,835.0	7-Oct-24	CareEdge Ratings
Interarch Building Products	Crisil A/Stable	CRISIL A1	4,450.0	500.0	7-Apr-25	CRISIL Ratings

Note: The companies have been broadly categorized into two segments: (1) heavy steel structural fabrication, and (2) companies, which primarily focus on pre-engineered buildings (PEB), building products, and other roofing solutions. This classification has been done basis the steel fabrication and PEBs / Building products / Other roofing solutions etc. capacity data for respective peers as mentioned on their company websites and company filings.

^ The company also has unallocated funds of Rs. 600 million, which are categorized as both long-term and short-term, and have been rated [ICRA]A (Negative)/ [ICRA]A2+.

** Affirmed at 'IND BBB-'/Stable/'IND A3' before being withdrawn*

 # Fund-based facility is a sublimit of non-fund based facility

Source: Company website, Credit rating rationale reports, CRISIL Intelligence

Financial Overview

Operating Revenue

Company Name (Rs million)	FY23	FY24	FY25	CAGR (FY23-FY25)
Heavy Steel Fabricators				
Steel Infra Solutions Company Ltd.*	5,117.17	5,734.87	6,360.99	11.49%
JSW Severfield Structures Pvt. Ltd. *	13,839.25	13,515.11	NA	-2.34%^
Eversendai Construction Pvt. Ltd.	4,324.95	3,766.76	NA	-12.91%^
Atmastco Ltd*	2,419.51	2,240.06	2,895.70	9.40%
Zamil Steel Building	6,227.92	7,617.52	NA	22.31%^
PEB / Building products / Other roofing solutions and panels players				
Everest Industries*	16,476.34	15,754.52	17,228.17	2.26%
Pennar Industries*	28,946.20	31,305.70	32,265.80	5.58%
Interarch Building Products	11,239.26	12,933.02	14,538.25	13.73%

Notes:

The companies have been broadly categorized into two segments: (1) heavy steel structural fabrication, and (2) companies, which primarily focus on pre-engineered buildings (PEB), building products, and other roofing solutions. This classification has been done basis the steel fabrication and PEBs / Building products / Other roofing solutions etc. capacity data for respective peers as mentioned on their company websites and company filings.

NA – Not available

For Steel Infra Solutions Company Ltd, the financials are as per restated financial statements provided by the company

^Due to the unavailability of FY25 financials, the CAGR calculation is based on the period FY23-24

**on consolidated basis*

Source: Company annual reports, CRISIL Intelligence

Operating EBITDA

Company Name (Rs million)	FY23	FY24	FY25	CAGR (FY23-FY25)
Heavy Steel Fabricators				
Steel Infra Solutions Company Ltd.*	407.08	485.59	663.07	27.63%
JSW Severfield Structures Pvt. Ltd.*	1164.58	1206.31	NA	3.58%^
Eversendai Construction Pvt. Ltd.	419.13	364.21	NA	13.11%^
Atmastco Ltd*	309.86	384.59	428.65	17.62%
Zamil Steel Building	82.19	262.1	NA	218.91%^
PEB / Building products / Other roofing solutions and panels players				
Everest Industries*	675.19	409.61	299.04	-33.45%
Pennar Industries*	2211.90	2729.70	3107.50	18.53%
Interarch Building Products	1,063.80	1,130.15	1,362.41	13.17%

Notes:

The companies have been broadly categorized into two segments: (1) heavy steel structural fabrication, and (2) companies, which primarily focus on pre-engineered buildings (PEB), building products, and other roofing solutions. This classification has been done basis the steel fabrication and PEBs / Building products / Other roofing solutions etc. capacity data for respective peers as mentioned on their company websites and company filings.

Operating earnings before interest, taxes, depreciation and amortization (Operating EBITDA) = PAT + total tax expense + finance costs + depreciation + amortization and impairment expense - other income - exceptional income + exceptional expense.

NA – Not available

For Steel Infra Solutions Company Ltd, the financials are as per restated financial statements provided by the company

^Due to the unavailability of FY25 financials, the CAGR calculation is based on the period FY23-24

**on consolidated basis*

Numbers reclassified as per CRISIL standards and may not match company reported numbers
Source: Company annual reports, CRISIL Intelligence

Profit after Tax (PAT)

Company Name (Rs million)	FY23	FY24	FY25	CAGR (FY23-FY25)
Heavy Steel Fabricators				
Steel Infra Solutions Company Ltd.*	175.33	248.45	329.62	37.11%
JSW Severfield Structures Pvt. Ltd. *	318.28	330.32	NA	3.78%^
Eversendai Construction Pvt. Ltd.	55.46	-97.05	NA	n.m.^
Atmastco Ltd*	127.77	163.46	192.84	22.85%
Zamil Steel Building	-66.16	98.92	NA	n.m.^
PEB / Building products / Other roofing solutions and panels players				
Everest Industries*	423.59	179.98	-36.04	n.m.
Pennar Industries*	754.2	983.4	1,194.50	25.85%
Interarch Building Products	814.63	862.62	1,078.29	15.05%

Notes:
The companies have been broadly categorized into two segments: (1) heavy steel structural fabrication, and (2) companies, which primarily focus on pre-engineered buildings (PEB), building products, and other roofing solutions. This classification has been done basis the steel fabrication and PEBs / Building products / Other roofing solutions etc. capacity data for respective peers as mentioned on their company websites and company filings.
n.m.: not meaningful
For Steel Infra Solutions Company Ltd, the financials are as per restated financial statements provided by the company
^ Due to the unavailability of FY25 financials, the CAGR calculation is based on the period FY23-24
**on consolidated basis*
Numbers reclassified as per CRISIL standards and may not match company reported numbers
Source: Company annual reports, CRISIL Intelligence

Key financial ratios (FY24)

Company name	Operating EBITDA (%)	PAT %	ROE%	RoCE%	Modified RoCE%	Debt / Equity	Net Debt / Equity	Cash Conversion Cycle
Heavy Steel Fabricators								
Steel Infra Solutions Company Ltd.*	8.47%	4.31%	13.20%	23.06%	19.93%	0.18	0.22	-12
JSW Severfield Structures Pvt. Ltd.*	8.90%	2.43%	7.24%	17.95%	22.55%	0.19	-0.01	-120
Eversendai Construction Pvt. Ltd.	9.70%	-2.52%	-5.30%	2.79%	3.22%	0.67	0.45	-84
Atmastco Ltd*	17.20%	7.26%	15.14%	22.64%	29.13%	0.66	0.12	132
Zamil Steel Building	3.40%	1.30%	8.95%	13.55%	11.40%	0.66	0.56	43
PEB / Building products / Other roofing solutions and panels players								
Everest Industries*	2.60%	1.13%	3.01%	5.10%	5.39%	0.08	0.05	47
Pennar Industries*	8.70%	3.10%	11.21%	16.47%	16.23%	0.85	0.73	14
Interarch Building Products	8.70%	6.60%	19.40%	26.93%	36.86%	0.02	-0.28	34

Notes:
The companies have been broadly categorized into two segments: (1) heavy steel structural fabrication, and (2) companies, which primarily focus on pre-engineered buildings (PEB), building products, and other roofing solutions. This classification has been done basis the steel fabrication and PEBs / Building products / Other roofing solutions etc. capacity data for respective peers as mentioned on their company websites and company filings.
For Steel Infra Solutions Company Ltd, the financials are as per restated financial statements provided by the company
**on consolidated basis*
Numbers reclassified as per CRISIL standards and may not match company reported numbers

Source: Company annual reports, CRISIL Intelligence

Formulae used are as follows:

Operating EBITDA % = Operating EBITDA / operating income

PAT % = PAT / total income

RoE % = PAT / (tangible net worth – intangible assets)

Debt / Equity = Debt / tangible net worth

Net Debt / Equity = Net Debt [non-current borrowings + non-current lease liabilities + current borrowings (including current maturities of non-current borrowings) + current lease liabilities - less cash and cash equivalents and bank balances] / total equity

RoCE = Profit before interest and tax / (average total debt + average tangible net worth + average deferred tax liability)

Modified RoCE = Profit before interest and tax (PBIT) / capital employed [total net worth (equity share capital + other equity) + net debt]

Cash Conversion Cycle = Days inventory + days receivables (debtor days) - days payables

Key financial ratios (FY25)

Company name	Operating EBITDA (%)	PAT %	ROE%	RoCE%	Modified RoCE%	Debt / Equity	Net Debt / Equity	Cash Conversion Cycle
Heavy Steel Fabricators								
Steel Infra Solutions Company Ltd.*	10.42%	5.16%	15.16%	27.29%	23.80%	0.06	0.19	-19
JSW Severfield Structures Pvt. Ltd.*	NA	NA	NA	NA	NA	NA	NA	NA
Eversendai Construction Pvt. Ltd.	NA	NA	NA	NA	NA	NA	NA	NA
Atmastco Ltd*	14.80%	6.64%	15.15%	20.80%	26.21%	0.58	0.19	173
Zamil Steel Building	NA	NA	NA	NA	NA	NA	NA	NA
PEB / Building products / Other roofing solutions and panels players								
Everest Industries*	1.74%	-0.21%	-0.60%	2.39%	2.03%	0.28	0.43	68
Pennar Industries*	9.63%	3.66%	11.95%	16.43%	17.14%	0.78	0.62	16
Interarch building Products	9.37%	7.31%	14.35%	23.48%	25.35%	0.02	-0.24	49

Notes:

The companies have been broadly categorized into two segments: (1) heavy steel structural fabrication, and (2) companies, which primarily focus on pre-engineered buildings (PEB), building products, and other roofing solutions. This classification has been done basis the steel fabrication and PEBs / Building products / Other roofing solutions etc. capacity data for respective peers as mentioned on their company websites and company filings.

NA – Not available

For Steel Infra Solutions Company Ltd, the financials are as per restated financial statements provided by the company

**on consolidated basis*

Numbers reclassified as per CRISIL standards and may not match company reported numbers

Source: Company annual reports, CRISIL Intelligence

Formulae used are as follows:

Operating EBITDA % = Operating EBITDA / operating income

PAT % = PAT / total income

RoE % = PAT / (tangible net worth – intangible assets)

Debt / Equity = Debt / tangible net worth

Net Debt / Equity = Net Debt [non-current borrowings + non-current lease liabilities + current borrowings (including current maturities of non-current borrowings) + current lease liabilities - less cash and cash equivalents and bank balances] / total equity

RoCE = Profit before interest and tax / (average total debt + average tangible net worth + average deferred tax liability)

Modified RoCE = Profit before interest and tax (PBIT) / capital employed [total net worth (equity share capital + other equity) + net debt]

Cash Conversion Cycle = Days inventory + days receivables (debtor days) - days payables

Income Segmentation (FY24)

Company name	Domestic	International
Heavy Steel Fabricators		
Steel Infra Solutions Company Ltd.*	89.38%	10.62%
JSW Severfield Structures Pvt. Ltd.*	NA	NA
Eversendai Construction Pvt. Ltd.	NA	NA
Atmastco Ltd*[1]	NA	NA
Zamil Steel Building	0.983	0.017
PEB / Building products / Other roofing solutions and panels players		
Everest Industries*	97.20%	2.80%
Pennar Industries*	78.10%	21.90%
Interarch Building Products	99.90%	0.10%

Notes:

The companies have been broadly categorized into two segments: (1) heavy steel structural fabrication, and (2) companies, which primarily focus on pre-engineered buildings (PEB), building products, and other roofing solutions. This classification has been done basis the steel fabrication and PEBs / Building products / Other roofing solutions etc. capacity data for respective peers as mentioned on their company websites and company filings.

**on consolidated basis*

1 The Company operates primarily in India and there is no other significant geographical segment

NA – Not available

For Steel Infra Solutions Company Ltd, the financials are as per restated financial statements provided by the company

Source: Company annual reports, CRISIL Intelligence

Key observations:

- Amongst the companies considered, SISCOL is amongst the top 3 heavy structural steel fabricators in India, in terms of installed capacity as of March 31, 2025.
- Amongst the heavy structural companies considered, SISCOL has the third highest CAGR for operating income, second highest CAGR for Operating EBITDA & highest CAGR for PAT between fiscal 2023 and fiscal 2025 of 11.49%, 27.63%, & 37.11% respectively.

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