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IndianSteel ASSOCIATION

ISA Steel InfraBuild Summit 2024

Economical, greener and always faster steel: Shaping the Future

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Executive summary

India's economic growth largely depends on the steel industry, making the country a global hub for steel production. With deliberate strides towards industrial self-sufficiency, particularly in steel, India is currently the world's second-largest[1] producer. With robust economic growth and government initiatives to support the sector, India is well-positioned to witness continued growth in the steel industry.

India seeks to achieve 300 Million Metric Tonnes (MT) of crude steel capacity by 2030[2] and 500 MT by 2047.[3] Consumption across sectors of the end-user ecosystem will drive this growth, which will also be promoted by government expenditure and increasing urbanisation.

India's per capita steel consumption in 2022-23 was 93.4[4] kg, whereas the global average was 219[5] kg. The figure highlights a significant potential to increase per capita steel usage and the country's overall steel demand. Currently, the building, construction, and infrastructure sectors account for the lion's share of domestic consumption that are poised for robust growth. Per the projections developed in this report, finished steel consumption in India could reach 221–275[6] MT (under different scenarios) by FY34. This report explores end-use sectors, product categories, and state-wise potentials that will provide opportunities and drive domestic demand. It also highlights key policy initiatives to streamline existing processes and improve nationwide demand growth.

Domestic macro demand potential: From FY14 to FY24, India's finished steel consumption posted a CAGR of 5.67 percent.[7] In FY24, domestic finished steel consumption reached 136 MT, marking more than 14 percent year-on-year growth.[8] The growth was driven by sustained momentum across developmental projects and increased government spending in various end-use industries. The primary factors driving the demand for steel include the growth of end-user sectors and the expedited implementation of crucial policy interventions such as the National Steel Policy and Production-Linked Incentive (PLI) schemes for end-users and specialty steel. Governmental initiatives such as Housing for All, AMRUT, and the Gatishakti Masterplan, have also significantly contributed to the rising demand for steel. Of the 136[9] MT of steel consumed in FY24, the building, construction, and infrastructure sectors accounted for ~94 MT, followed by engineering and packaging at 26 MT and automobiles at 16 MT.[10] In terms of product categories, longs and flats constituted 55 percent and 45 percent, respectively. The demand for longs was primarily propelled by bars and rods, with rebars holding a substantial share.

Regional variations in India are expected to drive the demand for specific product categories across industries. For instance, the increase in electric vehicle adoption will boost the need for electrical steel, which is essential for electric motors. Initiatives such as the[11] National Green Hydrogen mission, which seeks to establish India as a global hub for hydrogen production and storage, will drive the demand for stainless steel, which is crucial for electrolysers and storage units. Similarly, the growing food processing and beverage sectors will drive tin-free steel demand, while the rise of renewables will spur the demand for galvanised sheets.

Future domestic steel demand:[12] The multivariate analysis, considering overall, manufacturing, and construction GDP (at constant prices), urbanisation, and government expenditure across key sectors shows a robust correlation among these factors, implying that steel consumption growth mirrors the growth in these variables. Construction GDP (at constant prices) is the most significant parameter in explaining the variability in steel consumption. Steel consumption, by FY34, is expected to be at 221 MT, 252 MT, and 275 MT corresponding to pessimistic, realistic, and optimistic scenarios. Steel

[1] https://worldsteel.org/media/press-releases/2024/december-2023-crude-steel-production-and-2023-global-totals/
[2] National Steel policy 2017
[3] Deloitte Steel Outlook 2030-2047
[4] World Steel Association report on Apparent steel consumption per capita 2023
[5] World Steel Association reports
[6] Deloitte analysis
[7] JPC
[8] Economic Times
[9] Economic Times
[10] https://www.jpcindiansteel.nic.in/writereaddata/files/Trend%20Report%20March%202024.pdf
[11] https://mnre.gov.in/national-green-hydrogen-mission/
[12] Deloitte Analysis

consumption across sectors is projected to grow as below considering the realistic scenario of projection (252 MT).

- **Building and Construction**
  84 MT (from 49 MT currently)
- **Infrastructure**
  90 MT (from 45 MT currently)
- **Automobile**
  31.5 MT (from 16 MT currently)
- **Engineering and Packaging**
  46.5 MT (from 26 MT currently)

Steel consumption across the infrastructure sector indicates a CAGR of ~7 percent, resulting in a ~36 percent share of the total consumption in FY34. Conversely, steel consumption in sectors such as engineering, packaging, building, and construction will witness more moderate growth rates, leading to a decline in their respective shares of the total consumption—from ~36 percent to ~33 percent for building and construction and from ~19 percent to ~18 percent for engineering and packaging.

Moreover, there will be a shift in the consumption of product categories[13], with consumption of longs set to increase from 55 percent currently to 57 percent in FY34, while that of flats is expected to decrease from 45 to 43 percent[14] during the same period.

- **Bars and Rods:** 117.4 MT (from 50.53 MT currently)
- **Structurals:** 17.3 MT (from 8.32 MT currently)
- **Railway Materials:** 2.74 MT (from 1.55 MT currently)
- **HR coils/ strips:** 87.4 MT (from 45.22 MT currently)
- **PM Plates:** 10.1 MT (from 4.8 MT currently)
- **Alloy Steel:** 10.5MT (from 6.03 MT currently)
- **Stainless Steel:** 6.56 MT (from 3.43 MT currently)

[13] The segment of product categories are made corresponding to the JPC data of Annual statistics of 2023 without the value added steel segment
[14] Based on analysis from inputs given by experts

The value-added steel segment, which includes HR Plates, HR sheets, CR coil, GP/GC sheets, color-coated sheets, tin plates, and pipes, is expected to exhibit a growth rate of 6–8 percent except for electrical steel due to a rise in the growth rate of renewables and electrical vehicle adoption and current dependency on imports.

State-wise demand scenarios

Successful achievers

In India's current steel consumption landscape, certain states are successful achievers, driving substantial demand and contributing significantly to the country's industrial and infrastructural development. Maharashtra, with its thriving industrial and infrastructural projects, continues to sustain robust steel demand, while Uttar Pradesh, and Gujarat exhibit promising growth prospects fuelled by ambitious urbanisation endeavours.[15] Additionally, Karnataka and Tamil Nadu, with their burgeoning automotive and manufacturing sectors, are anticipated to remain key contributors to steel consumption. These states have established themselves as leaders in steel consumption, leading to 41 percent of total consumption[16] in FY23, a testament to their proactive approach to economic growth and development. The rising growth of electric vehicles in Tamil Nadu will lead to an increased demand for electrical steel, while the growth of food processing industries will drive the demand for stainless steel[17].

Beacons of tomorrow

Going forward, some states are set to emerge as beacons of steel consumption, poised to shape India's future industrial landscape. States such as Andhra Pradesh and Telangana are expected to witness substantial demand growth, driven by infrastructure developments and building and construction activities leading to increased demand for steel structurals, bars, and rods. Uttar Pradesh is expected to continue to invest in its economic growth, thereby presenting significant opportunities for steel companies looking to expand their market presence. The drive towards urban development and residential and industrial complexes in Andhra Pradesh and Telangana will increase demand for long steel products. Mineral deposits will continue to form heavy industry bases in states such as Odisha. The growth of renewables has sustained momentum in states such as Maharashtra, Gujarat, Karnataka, and Tamil Nadu. However, adaptive strategies attuned to each state's unique socio-economic landscape will be imperative to capitalise on these emerging opportunities and effectively navigate evolving demand dynamics. By doing so, steel companies can position themselves for success in the evolving Indian steel market.

Initiatives to unlock steel potential: The Indian government has taken several measures to boost domestic steel consumption, particularly within the housing and infrastructure sectors. Flagship schemes such as Pradhan Mantri Awas Yojana (PMAY), Atal Mission for Rejuvenation and Urban Transformation (AMRUT), and Smart Cities Mission, along with national projects such as the National Infrastructure Pipeline and Sagarmala, are driving steel demand across sectors. Steel production is projected to increase substantially in FY30[18], reflecting the government's dedication to promoting industry growth. In the future, policymakers may focus on ensuring raw material availability, reducing emissions through greening initiatives, and promoting steel usage in construction and infrastructure projects. Measures such as incentivising green steel procurement, developing steel-specific standards, and enhancing fabricator skills can further propel the industry's growth. Additionally, raising awareness about steel's benefits and implementing quality-based taxation and trade policies are crucial for sustaining growth and innovation in the steel sector.

The steel industry's success hinges on coordinated efforts to boost key enablers and foster ecosystems conducive to steel construction. First, it is essential to raise awareness through strategic branding initiatives highlighting the benefits of steel and dispelling misconceptions, particularly in rural areas. Steel's appeal can be further increased by running campaigns that highlight its prestige and resale value as well as by showing successful steel structures. Second, efficiency and productivity in the construction industry can be completely transformed by promoting digitalisation, automation and AI. By using technology such as robotic welding arms and IoT frameworks, the industry can streamline operations and optimise design parameters. Third, establishing upskilling programmes is vital for developing a skilled workforce capable of meeting industry demands. The steel industry needs to prioritise initiatives that focus on skill development, fabricator training and academic collaboration that are essential to enhance productivity and drive innovation.

With these impactful schemes and measures in place, steel consumption in end-use sectors is poised for significant growth in the coming years, leading to a demand surge by FY34. As the government drives transformative initiatives, it is crucial to emphasise new steel applications, sustainable practices, and skill development. Collaborative efforts between government and industry stakeholders are essential to tackle challenges, seize opportunities, and shape the future of India's steel industry, paving the way for national progress.

[15] Deloitte analysis
[16] Historical consumption has been considered from the dispatch data of JPC, which is used as a surrogate for predicting future consumption.
[17] Deloitte analysis
[18] Deloitte analysis, National Steel Policy 2017

1. Introduction to the ISA Steel InfraBuild Summit

The Indian Steel Association (ISA) is an industry body with 20 members, including 7 executives representing steel companies in India, 11 affiliates, and 2 associates, accounting for nearly 65 percent of India's crude steel production. ISA's vision is to work towards transforming the Indian steel industry as a global leader by facilitating discussions on key issues, challenges, and opportunities related to the Indian steel industry. To unlock the potential of steel and transform India's construction and infrastructure landscape, it plans to organise the ISA Steel InfraBuild Summit in key cities across India. The summit will serve as a platform for stakeholders to explore the latest trends and developments in the steel sector and promote the use of steel.

In 2024, ISA plans to conduct the 2nd Edition of the ISA Steel InfraBuild Summit on the theme "Economical, Greener and Always Faster - Steel: Shaping the Future" in Hyderabad, focusing Andhra Pradesh and adjoining states of Telangana and Karnataka. The theme highlights the inherent advantages of steel in creating structures that are economical, environmentally friendly, and time-efficient. Deloitte has partnered with ISA as a Knowledge Partner to develop this report. The report gives a holistic view of opportunities in the steel sector, growth outlook, and the key initiatives needed to boost steel demand. The event will serve as a platform for industry leaders to share their experience, innovations and success stories, further solidifying steel's position as the material of choice for shaping a sustainable and prosperous future for India.

1.1 Indian steel sector: Flywheel for a Viksit Bharat

The Indian steel sector has emerged as a significant driver of the country's economic growth, playing a pivotal role in various sectors such as construction, infrastructure, automobile, engineering, and defence. The steel sector contributes ~2 percent to India's GDP and employs 6 lakh people directly and 20 lakh people indirectly.[19]

The sector has posted a CAGR of 7.2 percent from 2000 to 2024, with India being the world's second largest steel producer. The production is dominated by the Blast Furnace-Basic Oxygen Furnace (BF-BOF) route (43 percent) followed by the Induction Furnace (IF) route (35 percent) and Electric Arc Furnace (EAF) route (22 percent).[20] Finished steel consumption has increased from 98.71 MT in FY19 to 136 MT in FY24[21] at a CAGR of 6.62 percent.

Steel consumption has a multiplier effect on the economy, playing a critical role in driving GDP growth and employment. The Indian steel industry has an output multiplier effect of ~1.4 times on GDP.[22] It means that every unit increase in steel production results in a 1.4 times increase in the overall GDP. This reflects the extensive linkages of the steel sector with other industries, including construction, automotive, and machinery, which rely heavily on steel for their production processes. Furthermore, the employment multiplier effect of 6.8 times[23] is driven by the steel sector's integration with numerous ancillary industries and services, such as raw material extraction, transportation and retail.

Globally, the steel sector has been a cornerstone of economic growth in various countries. For instance, China's economic transformation over the past few decades has been significantly underpinned by its steel industry, which supported massive infrastructure projects and industrial expansion. Similarly, in countries such as South Korea and Japan, robust steel production has been pivotal in driving their economic development and, facilitating advancements in technology and manufacturing.

In India, the rapid expansion of infrastructure, including roads, railways, and urban development, is a testament to the country's economic boom. The government's focus on initiatives such as the National Infrastructure

[19] https://www.investindia.gov.in/
[20] BigMint
[21] JPC, BigMint
[22] IBEF
[23] https://www.jsw.in/steel/steel-and-indian-economy-upward-curve#:~:text=Steel%20has%20an%20employment%20multiplier,MT%20of%20it%20each%20year.

Pipeline (NIP), GatiShakti, Make in India, Pradhan Mantri Awas Yojna - Housing for all, Nal se Jal, and Urban infrastructure development scheme for small and medium towns, have fuelled the demand for steel, reinforcing its critical role in the country's economic growth.

Steel will play a crucial role in achieving India's vision of becoming a $ 5 trillion economy. The National Steel Policy envisions the steel sector reaching a production capacity of 300 MT per annum by FY31, which will significantly contribute to India's GDP growth. With its multiplier effect on GDP and employment, steel consumption is expected to pick up significantly in the coming years, driven by government initiatives and infrastructure development. As India strives for a Viksit Bharat, the steel sector will play a crucial role in meeting the country's infrastructure and industrial needs.

1.2 Hyderabad as the summit destination

For Andhra Pradesh and the adjoining states, Hyderabad is a central location and thus has been chosen as the venue for the ISA Steel InfraBuild Summit 2024 due to its rapidly growing economy and immense potential for steel consumption in this area. Andhra Pradesh, with population of 5.34 crore[24] had a GSDP of INR8.2 lakh crore (constant prices)[25] in FY24. The economy of Andhra Pradesh majorly focuses upon pharmaceuticals, biotechnology, textiles, automobile, and electronics manufacturing. IT sector, especially in cities like Visakhapatnam, has been an area of concentrated growth, enhancing the state's modern economic landscape. Services sector, including areas like tourism and banking, has been expanding rapidly, contributing substantially to the state's income. The per capita income of Andhra Pradesh stood at INR2.19 lakh[26] in FY23. The government is striving towards creating quality infrastructure and business-friendly environment to make the state an attractive destination for both domestic and foreign investors.

Adjoining states like Telangana and Karnataka also contribute immensely to the nation's economy. With a population of 3.83 crore,[27] Telangana is a significant contributor to India's economic growth, with a GSDP of INR7.27 lakh crore (constant prices) in FY23.[28] Telangana's economy is driven by significant contributions from various sectors, with notable industrial development through initiatives such as the establishment of auto parks and IT hubs. Telangana has attracted significant investments from leading national and international corporations, which makes it an attractive destination for business and industrial growth. Telangana also boasts the highest per capita income among Indian states, with INR3.08 lakh recorded in FY23,[29] underscoring its economic prosperity.

The steel industry plays a crucial role in Telangana's economic landscape. In FY23, the state's steel consumption grew by 15.75 percent year-on-year (from 4.730 MT in FY22 to 5.475 MT in FY23), outpacing the national average.[30]

Telangana's steel consumption in FY23 was 5.48 MT[31] and its population is 3.5 crore.[32] This translated to a per capita steel consumption of 156.43 kg, significantly higher than the national per capita steel consumption of 93.4 kg. This not only underscores the state's robust industrial activity but also positions Telangana as a key driver of future economic growth.

Karnataka's GSDP, with INR14.23 lakh crore (constant prices)[33] in FY24 is one the highest among Indian states. With a population of 6.82 crore,[34] Karnataka is the IT hub of India and boasts thriving industries in automobiles, agriculture, aerospace and defence, textiles and garments, biotechnology, and heavy engineering. The per capita income of Karnataka is one of the highest in the country and stood at INR3 lakh[35] in FY23.

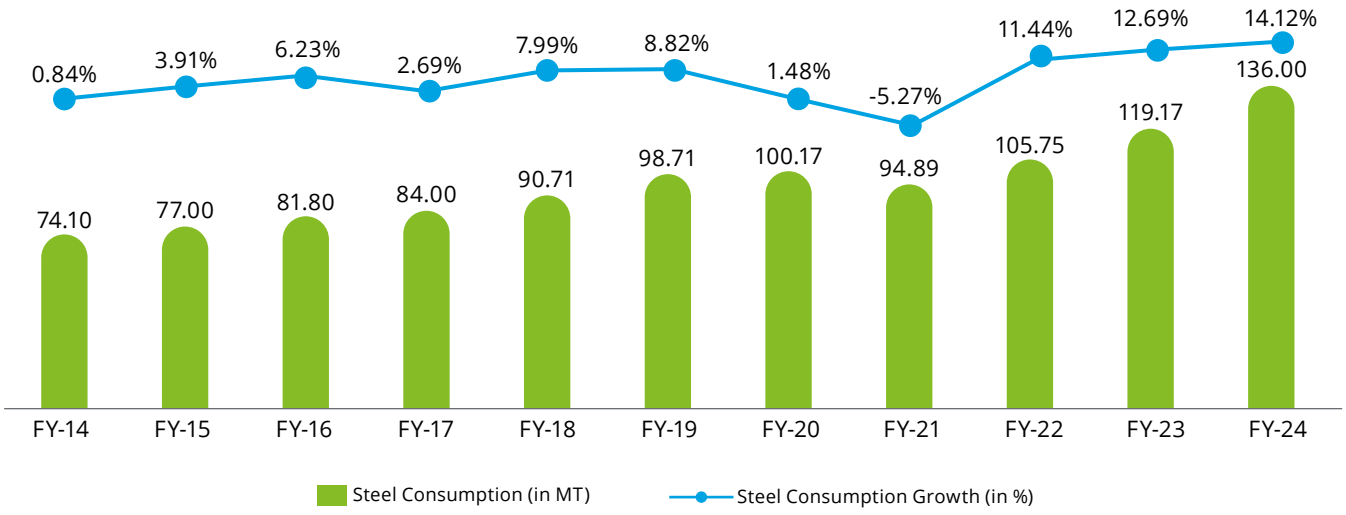
[24] https://statisticstimes.com/demographics/india/andhra-pradesh-population.php
[25] Directorate of Economics & Statistics
[26] https://timesofindia.indiatimes.com/city/vijayawada/ap-makes-big-strides-in-per-capita-income/articleshow/100691603.cms
[27] https://statisticstimes.com/demographics/india/telangana-population.php#:~:text=As%20per%20the%20report%20of,populous%20state%20in%20South%20India.
[28] MoSPI
[29] https://www.business-standard.com/economy/news/telangana-has-highest-per-capita-income-among-all-indian-states-mospi-123072600178_1.html
[30] JPC report
[31] JPC report
[32] https://www.telangana.gov.in/about/state-profile/
[33] Directorate of Economics & Statistics
[34] https://statisticstimes.com/demographics/india/karnataka-population.php
[35] https://timesofindia.indiatimes.com/city/bengaluru/karnatakas-per-capita-gsdp-surpasses-rs-3-lakh-in-fy23/articleshow/108220355.cms

2. Sensing the macro demand potential for finished steel in India

2.1 Overall finished steel demand and growth drivers

India's steel demand jumped by over 14 percent in FY 24, primarily driven by the demand from the infrastructure and the automotive sectors and supported by government investments.

Figure 1: Domestic steel consumption and growth rate



Source: JPC Annual reports, CMIE database

Steel consumption increased significantly after 2021, recovering from the contraction in Indian economy by 6.6 percent, primarily due to COVID-19 pandemic. Over 11 percent increase in demand for the past three years is attributed to the sustained momentum in the growth of developmental projects.

2.2 Broad category of factors driving growth

The policy interventions and government initiatives have driven growth in key sectors and subsectors towards steel consumption. Key factors that have driven the growth are as follows:

The rapid infrastructure development in India and urbanisation have led to a rise in demand for steel products.

In the past 10–12 years, India's steel sector witnessed rapid growth driven by strong local demand. GDP has posted a 7.6 percent[36] CAGR, boosting disposable incomes and the demand for steel-intensive goods.

Population growth and urbanisation have increased the demand for infrastructure, housing and transportation.

Renewable energy projects and initiatives such as PM GatiShakti Masterplan, Smart Cities Mission, AMRUT and Housing for All, have also propelled steel demand.

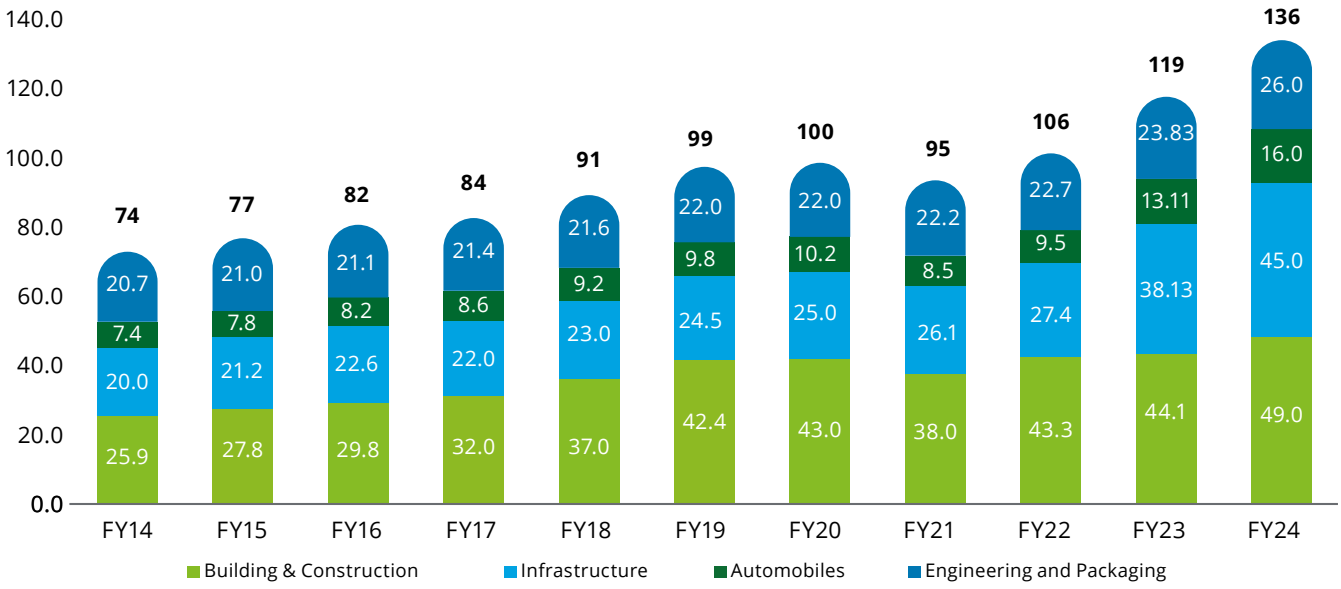
[36] Ministry of Statistics and Programme Implementation

3. Historical demand trends and growth drivers (FY14–FY24)

3.1 End-use sector-wise

The last decade has seen growth across all sectors leading to an increased demand for steel. Considered in our analysis are building and construction, infrastructure (including railways), automobiles, and engineering and packaging. In FY24 building and construction and infrastructure is estimated to have consumed 69 percent of total steel consumption, followed by engineering and packaging (19 percent), and automobiles (12 percent).

Figure 2: Sector-wise steel demand in India (in MT)



Source: Deloitte analysis
Note: The values have been rounded off to the nearest decimal

Building, construction and infrastructure: The construction sector focuses on the development of urban housing, rural housing, commercial real estate, and industrial construction. The infrastructure sector focuses on the development and expansion of airports, rail networks, pipelines, power generation and transmission lines, roads, and bridges.

Steel consumption in the construction sector has increased by ~23 MT from FY14 to FY24 at a CAGR of 6.5 percent,[37] reflecting robust growth.
The infrastructure sector posted a CAGR of ~8.4 percent,[38] with a significant increase after FY21.

This surge is primarily attributed to the government's commitment to implement infrastructure development projects across India. The FY24 union budget increased the capital outlay for the construction sector by 33 percent, for the third year in a row, to INR10 lakh crore. The government has also launched the National Infrastructure Pipeline (NIP) combined with other initiatives such as Make in India and the Production-Linked Incentives (PLI) scheme to promote the growth of the infrastructure sector.

Automobile: During FY14–FY20, the automobile sector consistently witnessed an annual uptick in steel

[37] Deloitte analysis
[38] Deloitte analysis

consumption, increasing from 7.4 MT in FY14 to 10.2 MT in FY20.[39] This sustained growth can be attributed to the burgeoning automobile production, propelled by technological enhancements, escalating demand in both domestic and international markets, rapid urbanization, and increased per capita income.

There was a noticeable drop in steel consumption in FY21 due to the COVID-19 pandemic, but in FY22, the consumption rebounded to 9.5 MT,[40] and the automobile sector started recovering. The trend continued in FY23, where steel consumption surged to 13.11 MT, surpassing the pre-pandemic levels. FY24 is expected to have exhibited even higher consumption at 16.0 MT,[41] showcasing strong growth momentum. Key government interventions supporting demand growth in this sector are shown below:

1. **Foreign Direct Investment (FDI):** Between April 2000 and December 2023, the Indian automobile sector received a cumulative equity FDI inflow of ~US$35.65 billion.[42] The Indian government has allowed 100 percent FDI[43] in the automobile sector under the automatic route.
2. **Policy Initiatives:** The extension of the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) Scheme for two more years, up to 31st March, 2024, provided further impetus to the automobile sector.[44]

Engineering and packaging: The past decade has seen the emergence of transformative policies such as the National Manufacturing Plan (2012), Make in India (2014), and the National Capital Goods Policy (2016). These initiatives have elevated productivity and competitiveness within the engineering and packaging (capital goods) sector and heralded a promising era for domestic steel producers.

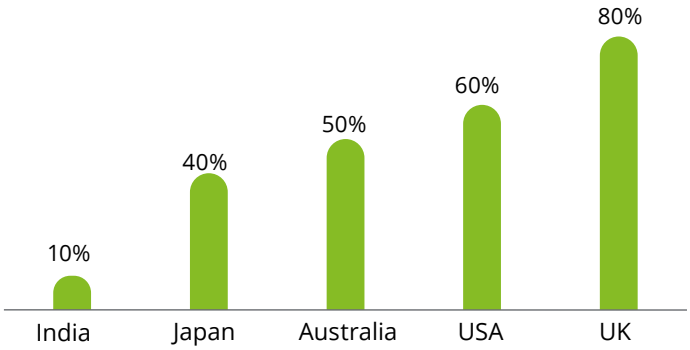
Steel consumption in the sector has shown consistent growth from FY14 to FY24, increasing from 20.7 MT[45] in FY14 to 26.0 MT[46] in FY24 at a CAGR of 2.3 percent. The growth rate during this period was stable, with an average annual increase of ~2.7 percent. This indicates a steady demand for steel within the sector, driven by ongoing industrial activities and infrastructure development.

Comparison of steel versus cement usage in India

Steel consumption in construction remains relatively low in India compared to many developed countries. Despite being one of the largest steel producers globally, the adoption of steel-framed construction in India is limited. Currently, the ratio of India's consumption of steel to that of cement is around 0.3,[46a] which is much lower than the ratio in many developed nations. In advanced countries, the ratio can reach up to 1.5[46b] and higher. This is an indicator, other than per capita consumption, of the potential for our nation to use steel extensively. Similarly, steel-framed construction remains relatively low in India compared to many developed countries.

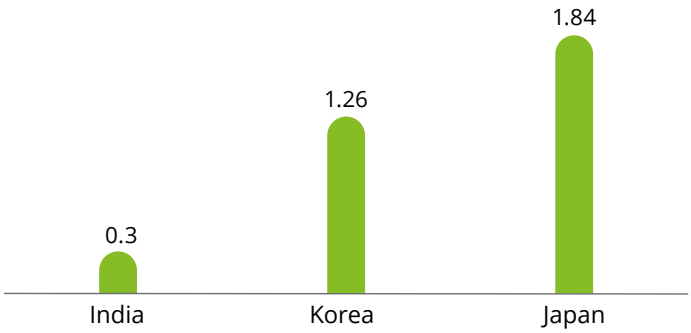
Significant factors contributing to the lower adoption of steel-framed construction in India are higher cost perception, limited awareness, favourable mindset towards concrete and shortage of skilled workforce.

Figure 2a: Share of steel-framed construction



Source: Ministry of Steel

Figure 2b: Ratio of steel and cement in construction



Source: Ministry of Steel

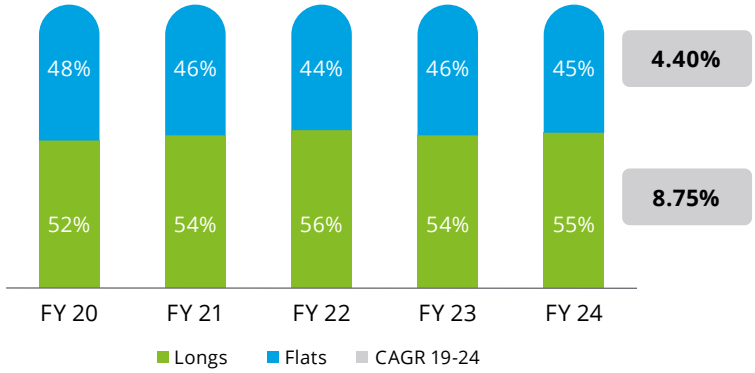
[39] Deloitte analysis
[40] Deloitte analysis, primary research
[41] Deloitte analysis
[42] https://www.ibef.org/industry/india-automobiles
[43] https://www.ibef.org/industry/india-automobiles
[44] https://www.ibef.org/industry/india-automobiles
[45] Deloitte analysis
[46] Deloitte analysis
[46a] INSDAG report
[46b] INSDAG report
[47] Union budget at a glance for last 5 years

3.2 Product category-wise

The consumption of steel products from the subsectors of building, construction, infrastructure, automobiles, and engineering and packaging can be primarily categorised into longs and flats corresponding to non-alloy, alloy, and stainless-steel segments.

Historically, consumption of longs has outperformed that of flat steel products.[47] With government expenditure of more than INR53.41 lakh crore in the defence, commerce, industry, transport, energy, rural and urban infrastructure development sectors for the past 5 years, segment of flats and longs have exhibited a cumulative growth of 4.4 percent and 8.75 percent, respectively.

Figure 3: Historical break up and growth of longs and flat



Year	Longs	Flats
FY 20	4.97% ↑	-2.00% ↓
FY 21	-0.71% ↓	-10.14% ↓
FY 22	14.46% ↑	7.89% ↑
FY 23	11.08% ↑	16.24% ↑
FY 24	14.75% ↑	12.28% ↑

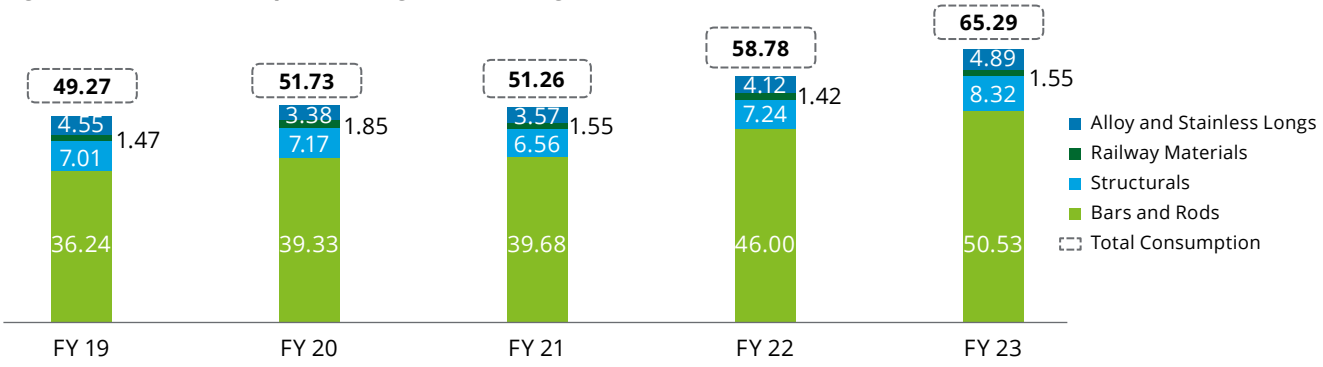
Source: Joint Plant Committee reports

[47] Union budget at a glance for last 5 years

In 2021, there was a dip in the consumption of flats primarily impacted by the Indian automotive sector.[48] Automobiles production declined by 14 percent, reducing demand for flats. This was exacerbated by a 7 percent decline in infrastructure growth[49] and an 8.6 percent drop in the industrial production index. Major sectors and subsectors in India witnessed growth in FY24, with real GDP likely to grow by 8.2 percent.[50] Meanwhile, the index corresponding to eight core infrastructure industries has grown by 7.5 percent.[51]

However, the consumption of the product categories of longs and flats is not uniform. Figure 4 depicts the product category for longs where bars and rods account for ~83 percent of the overall consumption, followed by steel structurals.

Figure 4: Breakdown of product segments in longs (in MT)



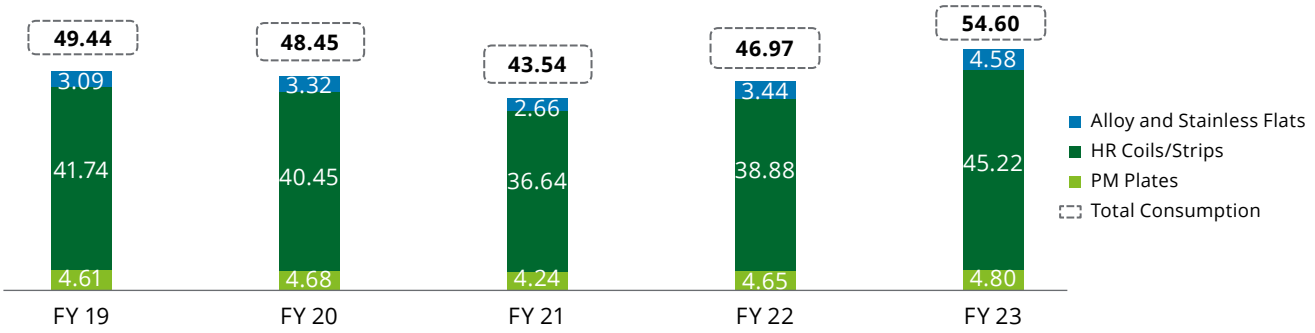
Source: Joint Plant Committee reports

Non-alloy bars and rods accounted for over 90 percent of the total consumption among the product segment in FY23, where rebars were the predominant product, whose consumption was over 69 percent at 39.4 MT.[52] The high consumption of rebars is primarily driven by their use as a reinforcing material in building, construction, and infrastructure projects.[53] About 67 percent of the rebars are used in infrastructure projects, 23 percent in the construction of residential buildings, and 10 percent in commercial building applications.[54]

The share of flat steel products is dominated by hot rolled coils, which consist of more than 80 percent of the total flats' consumption, followed by PM plates.

The growth in the consumption of HR coils or strips is driven by the demand for products from downstream sectors and subsectors.[55] Production of automobiles registered a 12.59 percent growth in FY23, followed by a 9.62 percent growth in FY24, which was one of the major growth drivers.

Figure 5: Breakdown of product segments in flats (in MT)



Source: Joint Plant Committee reports
Note: The categories have been given corresponding to JPC 2023 report of finished steel consumption (value added steel not considered)

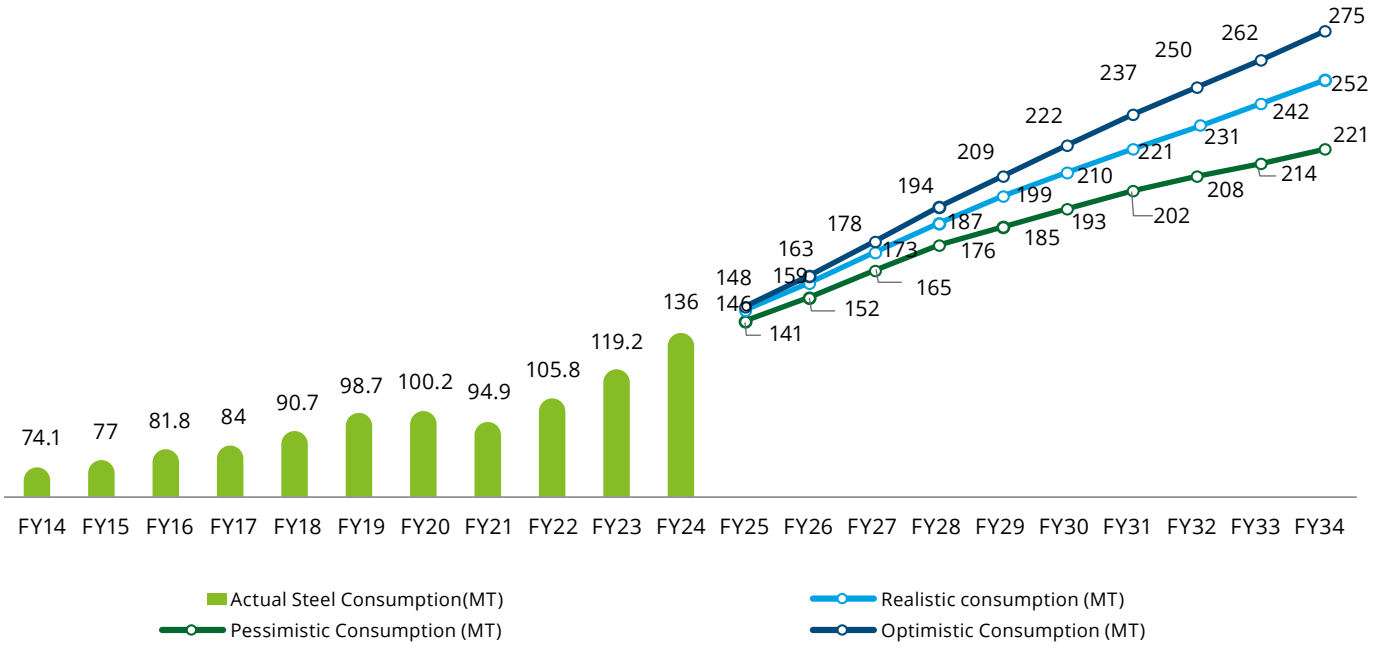
[48] https://www.siam.in/statistics.aspx?mpgid=8&pgidtrail=13
[49] https://www.jpcindiansteel.nic.in/writereaddata/files/Trend%20April%202021.pdf
[50] https://pib.gov.in/PressReleseDetailm.aspx?PRID=2022323
[51] https://www.jpcindiansteel.nic.in/writereaddata/files/Trend%20Report%20April%202024.pdf
[52] JPC report Annual statistics 2023.
[53] Global steel rebars market research report
[54] JPC report Annual statistics 2023.
[55] https://www.siam.in/statistics.aspx?mpgid=8&pgidtrail=13

4. Steel demand growth forecast for the next decade (FY25–FY34)

Our forecast is based on real GDP growth rates considering overall, manufacturing and construction GDP (at constant prices), and government investments. The most significant variable explaining the variability in quarterly and annual steel consumption with highest degree of accuracy is considered as the predictor variable, used to forecast the future steel consumption. Using econometric models and scenario analysis, we have projected steel demand from FY25 to FY34. To validate our forecasts and enrich our quantitative analysis, we conducted interviews with industry players, gathering qualitative insights. By combining expert opinions and industry sentiment with our projections, we aim to provide a comprehensive and detailed outlook on steel consumption trends, offering valuable insights for stakeholders and policymakers.

India's GDP is projected to grow at a CAGR of 6.75 percent to 7.5 percent over the next decade.[56] The increasing rate of urbanisation, combined with the government's focus on sectors such as infrastructure, power, energy, defence, and commerce and industry, is expected to result in a higher allocation of government budgets towards these sectors. This, in turn, will translate into increased demand for steel in the Indian economy. Our multivariate analysis considers the impact of the above mentioned factor and indicates that India's overall steel demand is expected to follow a robust growth trajectory with contribution from construction GDP (at constant prices) having a higher significance than manufacturing and overall GDP (at constant prices). With a sustained momentum of investment across different sectors, overall steel demand is projected to grow at a **CAGR of 5 percent to 7.3 percent**[57] over the next decade leading to a steel demand of **221–275 MT**[58] by FY 34 (under different scenarios).

Figure 6: India steel consumption forecasts FY25–FY34 (in MT)



Source: Deloitte analysis

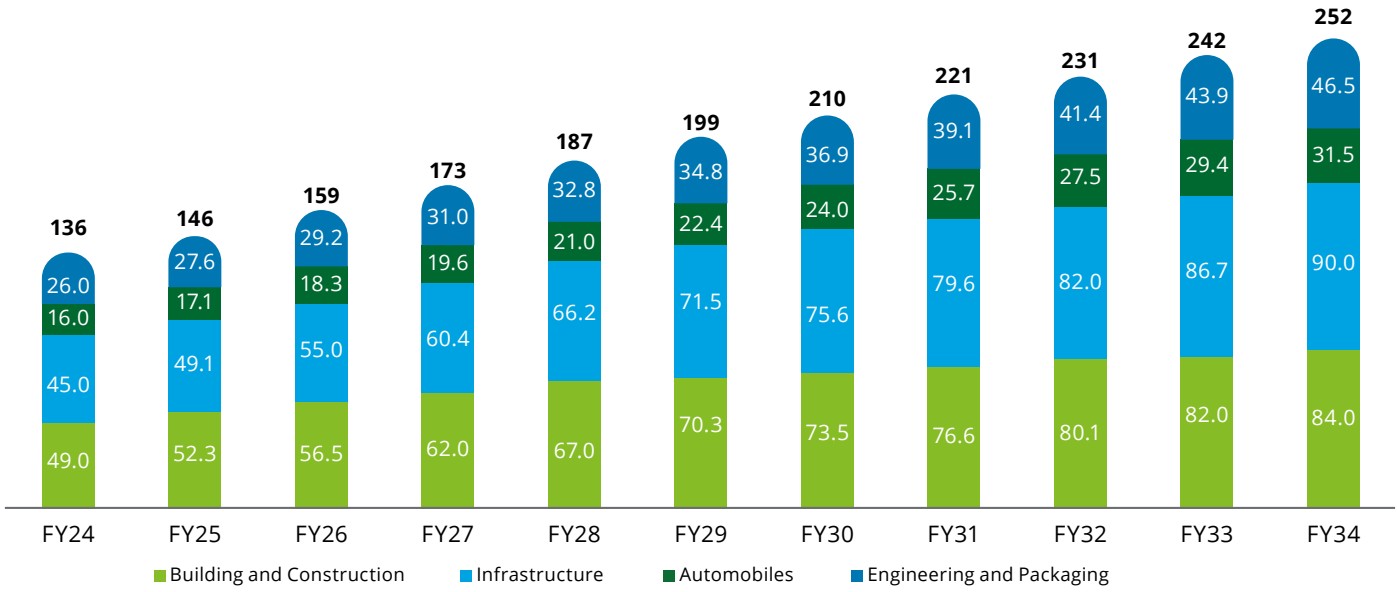
[56] Deloitte analysis
[57] Deloitte analysis
[58] Deloitte analysis

Government spending on infrastructure projects will drive the initial growth phase in the next decade. The development of 11 industrial corridors comprising 32 projects, to be developed in four phases under the PM Gatishakti National Master Plan, will be a key driver for steel consumption.[59] The completion of the governmental initiatives to develop an efficient logistics network will be followed by the focus on developing a manufacturing base in the country. Due to this, the overall demand for steel is envisaged to grow at a higher rate in the first half of the next decade than in the next half.[60]

4.1 End-use sector-wise demand forecast

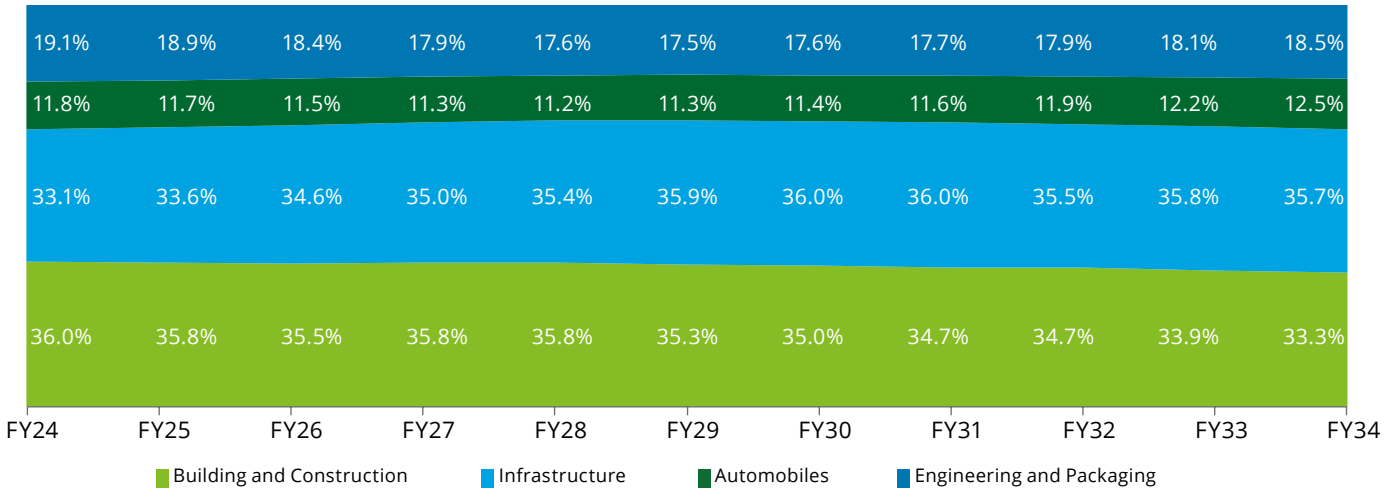
Based on our analysis and discussion with industry experts, we have projected the demand for steel use in the various end use sectors in the next 10 years.

Figure 7: Projected sector-wise steel demand in MT (FY25–FY34 based on realistic consumption levels)



Source: Deloitte analysis

Figure 8: Sector-wise share in demand



Source: Deloitte analysis

[59] Driving India's Future: Development and Impact of Industrial Corridors (makeinindia.com)
[60] Expert interviews

Key takeaways based on analysis

1. Steel demand in the construction sector will likely post a CAGR of ~5.5 percent[61] over the next decade (FY24–FY34). Simultaneously, the demand for steel in the infrastructure sector is expected to register a CAGR of ~7.2 percent during the period.

2. Combining the demand from both sectors, the overall steel demand is projected to stand at a CAGR of ~6.35 percent[62] from FY24 to FY34. The construction and infrastructure sectors are anticipated to account for 69 percent[63] of the total steel demand by FY34.

3. The demand for steel in automobile sector is anticipated to grow from 16.0 MT in FY24 to 31.5 MT in FY34,[64] nearly doubling over the period at a CAGR of ~7.0 percent. The automobile sector's share of the total steel demand is stable, fluctuating between 11 percent and 12 percent[65] during the forecast period. This stability suggests that while the overall market grows, the automobile sector maintains a consistent portion of the demand.

4. The engineering and packaging sector is expected to witness a moderate increase in steel demand from 26.0 MT in FY24 to 46.5 MT in FY34[66] growing at a CAGR of ~6.0 percent. However, its share of total steel consumption is projected to decrease from 19 percent to 18 percent.[67] This suggests that while the sector will grow, other sectors, particularly infrastructure, will capture a larger market share.

The projected increase in steel demand across sectors over the next decade is underpinned by several key growth drivers as mentioned below:

Building, construction and infrastructure

Government policies and initiatives

Increased capital expenditure: The central government's commitment to enhance infrastructure is evident in the significant increase in capital expenditure (capex) allocation to INR11.1 lakh crore for FY24. This 11.1 percent increase from the previous year, representing 3.4 percent of GDP, is set to drive economic growth and infrastructure development.[68]

Affordable housing: The future of home ownership in India is becoming increasingly promising for the middle and lower-income segments. With government schemes such as the Pradhan Mantri Awas Yojana (PMAY) gaining momentum, the FY24 budget saw a 66 percent increase in PMAY's outlay to over INR79,000 crore.[69]

Growing urbanisation: By 2030, more than 40 percent of India's population or ~600 million people are likely to be living in urban centres, necessitating the construction of 25 million additional mid-end and affordable housing units. This is set to significantly boost the construction industry.[70]

Transportation infrastructure development: The upcoming years will see continued investment in the Sagarmala Programme, with US$10.5 million earmarked for over 610 projects from 2015 to 2035 to upgrade

[61] Deloitte analysis
[62] Deloitte analysis
[63] Deloitte analysis
[64] Deloitte analysis
[65] Deloitte analysis
[66] Deloitte analysis
[67] Deloitte analysis
[68] https://www.livemint.com/industry
[69] https://cleartax.in/s/pradhan-mantri-awas-yojana
[70] https://economictimes.indiatimes.com/industry/services/property-/-cstruction/25-million-affordable-housing-units-required-by-2030-report/articleshow/98394858.cms?from=mdr

ports, promote port-based industrialisation and develop coastal communities.[71] The future of India's highway infrastructure looks promising with the Bharatmala Pariyojana, which focuses on building economic corridors, feeder routes, and greenfield expressways.

Airport infrastructure development: By FY25, the Airports Authority of India will invest INR61,000 crore[72] to build new airports, expand and upgrade existing ones, and enhance runways, technical blocks and control towers. An investment of an additional INR30,000 crore[73] is planned for the expansion of PPP airports in Delhi, Bengaluru, and Hyderabad.

Urban transformation: Smart Cities Mission is set to shape the future of urban development in India by creating 100 model cities that can inspire broader urban improvements.[74] Atal Mission for Rejuvenation and Urban Transformation (AMRUT) will continue to play a crucial role in developing basic infrastructure in selected cities and towns, focusing on water supply, sewerage, storm water drainage, and green spaces, driving urban growth and sustainability.[75]

Industrial and logistics sector: The development of 11 industrial corridor projects under the National Industrial Corridor Programme will progress in phases, fostering industrial growth and economic development.

The demand for data centres is expected to grow, with an estimated increase of 15 -18 million sq. ft. in real estate by 2025 across major cities, positioning India as a key player in the global digital economy.[76] By 2025, the Indian warehousing stock is expected to reach ~500 million sq. ft. in the top 8 tier-1 cities, with significant Grade A stock, enhancing the efficiency and capacity of India's logistics infrastructure.[77]

Automobile

Rapid urbanisation and rise in middle class: The growth in urbanisation and rise in disposable incomes will increase the demand for automobiles, as more households will enter the middle class in the next few years.[78]

[71] https://sagarmala.gov.in/sites/default/files/NPP%20executive%20summary.pdf
[72] https://pib.gov.in/Pressreleaseshare.aspx?PRID=1805761
[73] https://pib.gov.in/Pressreleaseshare.aspx?PRID=1805761
[74] https://mohua.gov.in/cms/smart-cities.php
[75] https://mohua.gov.in/cms/amrut.php
[76] https://www.investindia.gov.in/sector/construction
[77] https://www.investindia.gov.in/sector/construction
[78] https://www.makeinindia.com/6-superstar-sectors-boosting-make-in-india

Growth in the Electrical Vehicle (EV) sector: India is on track to become the largest EV market by 2030, with a total investment opportunity of more than US$200 billion over the next 8-10 years.[79]

The Automotive Mission Plan 2026: The plan jointly finalised by the Indian government and the Indian automotive industry, is expected to propel the automobile industry as a key driver of the Make in India and Skill India initiatives, while promoting safe, efficient, and affordable mobility with a focus on environmental sustainability. The plan targets positioning the Indian automotive industry among the top three globally, contributing over 12 percent to India's GDP.[80]

Production Linked Incentive (PLI) scheme: The PLI scheme (outlay of US$3.5 billion) for the automobile sector proposes financial incentives of up to 18 percent to boost domestic manufacturing of advanced automotive technology products and attract investments in the automotive manufacturing value chain.[81]

Engineering and packaging

National capital goods policy expansion: Building on the momentum of previous policies, the government aims to propel the production of capital goods to a formidable US$102.53 billion by FY25.[82]

Expansion targets and infrastructure demand: As India's steel capacity expansion targets gain momentum, the demand for capital goods is poised to witness a significant upsurge.

Indigenous production drive: There is a discernible shift towards indigenous production, propelled by initiatives such as the National Capital Goods Policy (2016) and the Scheme for Enhancement of Competitiveness in the Indian Capital Goods Sector (2022) to set the stage for a future, where self-reliance and innovation are expected to reign supreme.

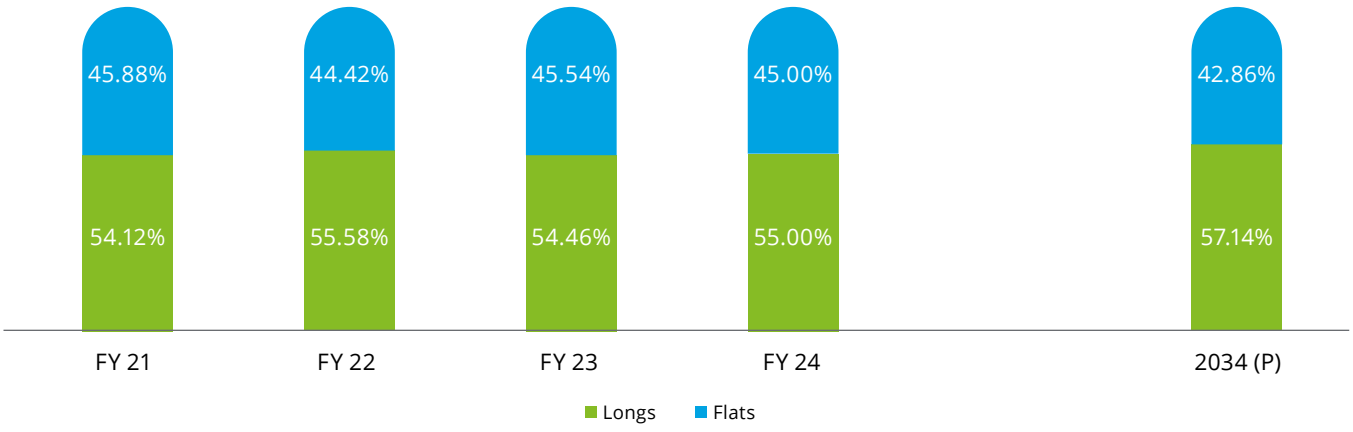
Defence and aerospace: The defence and aerospace sectors are expected to emerge as fertile grounds for capital goods expansion, aligning with the clarion call of Atmanirbhar Bharat for self-reliant domestic manufacturing.

4.2 Product category wise demand forecast

The increased initiatives such as the National Steel Policy and Production linked Incentives will focus on the growth of the Indian steel sector, making the country self-reliant. The consumption of the longs and flats will be corresponding to the developmental initiatives across sectors. By FY34 the anticipated growth in the consumption of longs will be at 6.75 percent to 144 MT while that of the flat steel consumption is likely to grow at 5.82 percent to 108 MT.

The emphasis of the largest majority party forming the government to create world class infrastructure will be emphasised on the construction of new railway tracks of 5000+ kms every year and expanding the modern road connectivity to 15000 kms of access-controlled highways. Redevelopment of 1300+ stations and manufacturing

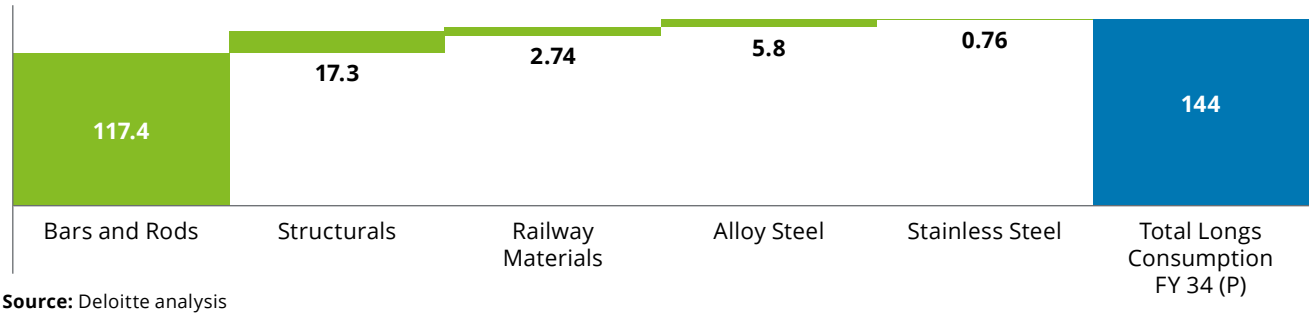
Figure 9: Projected share of longs and flat steel



Source: Deloitte analysis

[79] https://www.ibef.org/industry/india-automobiles
[80] Press information bureau (PIB)
[81] https://www.investindia.gov.in/sector/automobile
[82] https://economictimes.indiatimes.com/news/economy/policy/governmentapproves-capital-goods-policy-aims-21-million-new-jobs/articleshow/52433592.cms, accessed in September 2020

Figure 10: Projected consumption of longs product segments (in MT)

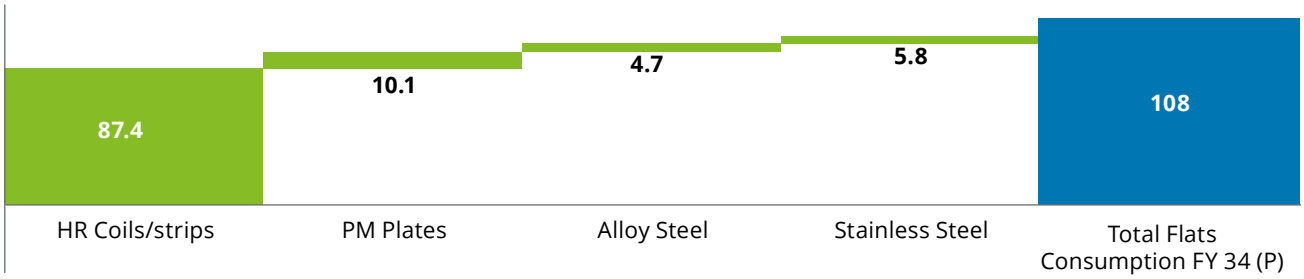


Source: Deloitte analysis

of world class new age trains such as Vande Bharat, Amrit Bharat, and Namo Bharat will expand the railway network. Expanding the metro network, as a part of urban development, to 20+ cities and constructing the first bullet train corridor will create high demand for the longs and flats steel products.[83]

The development of ship-building industry in India as a part of the Make in India policy will enhance the country's capability to secure domestic and international orders to manufacture vessels for ship owners. The Shipbuilding Financial Assistance Policy Scheme, providing financial assistance to Indian shipyards for shipbuilding contracts will be a key boost for the demand of flat steel plates.[84] The envisaged growth of automobile sector at the rate of ~7 percent will lead to an upside demand for the HR coils/ strips and other value-added products such as cold rolled and colour coated sheets.[85]

Figure 11: Projected consumption of flats product segment (in MT)



Source: Deloitte analysis

Note: The categories have been given corresponding to JPC 2023 report of finished steel consumption of crude steel equivalent

The growth in building, construction, and infrastructure activities will boost demand for capital goods such as heavy earth-moving machinery and industrial equipment, driving the demand for flat steels. Additionally, significant government investments in the defence sector, aimed at making India self-reliant, will boost the demand for special-grade plates.

[86]With India aiming to increase the EV sales to 30 percent for private cars, 70 percent for commercial vehicles, 40 percent for buses, and 80 percent for two-wheelers and three-wheelers by 2030, will lead to an increase in the demand for electrical steel which are primarily used in electric motors. Demand for[87] electrical steel will also increase as due to the rising needs for clean energy sources where it is used as a critical material. In 2023, 0.26 MT of electrical steel was imported, 62.5 percent of which was of CRNO grade, and 21 percent of CRGO grade. Thus, India needs to build its capacities corresponding to the growing demand for electrical steel.[88] However, due to its associated costs, electrical steels are getting replaced by CR sheets, and CR is getting replaced by thinner gauges of HR. For example, in lower segment of electrical fans (where electrical core loss is not that significant), normal CR is being used over electrical steels due to price difference.

[83] BJP Manifesto
[84] Expert interviews
[85] Expert interviews
[86] https://ciiblog.in/indias-booming-electric-vehicle industry/#:~:text=India%20has%20set%20an%20ambitious,and%20three%2Dwheelers%20by%202030.
[87] Expert Interviews
[88] Expert interviews

Benefits of stainless steel

The benefits of stainless steel over conventional steel in coastal areas will increase its demand corresponding to infrastructural developments in coastal areas.

Coastal areas are critical in shaping global trade, tourism and industry. However, the coastal environment (high humidity, salt-laden air and exposure to seawater) poses significant challenges. Therefore, stainless steel can play an important role in such applications. To address the corrosion issues in coastal areas, there is a need to promote the usage of stainless steel in buildings and infrastructures within 50 km of the sea.

- **Superior durability:** Stainless steel's chromium content forms a passive chromium oxide layer, preventing corrosion.
- **Reduced maintenance costs:** Stainless steel infrastructure requires significantly less maintenance, which translates to substantial cost savings over the lifecycle.
- **High tensile strength:** Stainless steel maintains its structural integrity under extreme conditions, including high winds and saltwater exposure, making it suitable for critical infrastructure such as bridges, piers and coastal buildings. Regular steels range from 360-510 MPa UTS, while stainless steel has a UTS of ~540 to 750 MPa.[88a]
- **Longevity:** Structures made from stainless steel have a significantly longer lifespan than conventional steel, often needing replacement or significant corrosion-related repairs.
- **Sustainability and economic efficiency:** While the initial cost of stainless steel is higher than that of conventional steel, the reduced maintenance and longer lifespan result in a lower total cost of ownership. Over 90 percent of stainless steel is recycled at the end of its lifecycle.

Example 1: Bayonne Breakwater, France – The breakwater protecting the entrance of the harbour of Bayonne was reinforced with duplex EN 1.4362 stainless steel rebar.[88b] The high strength allowed a reduction in the required tonnage (only 130 tonnes were needed), contributing significantly to the overall economics of the stainless-steel solution.[88c]

Example 2: Coastal Protection at Cromer, UK – Following significant storm damage, Cromer's coastal defences were reinforced using 335 tonnes of duplex stainless-steel grade 2304 reinforcing bars.[88d]

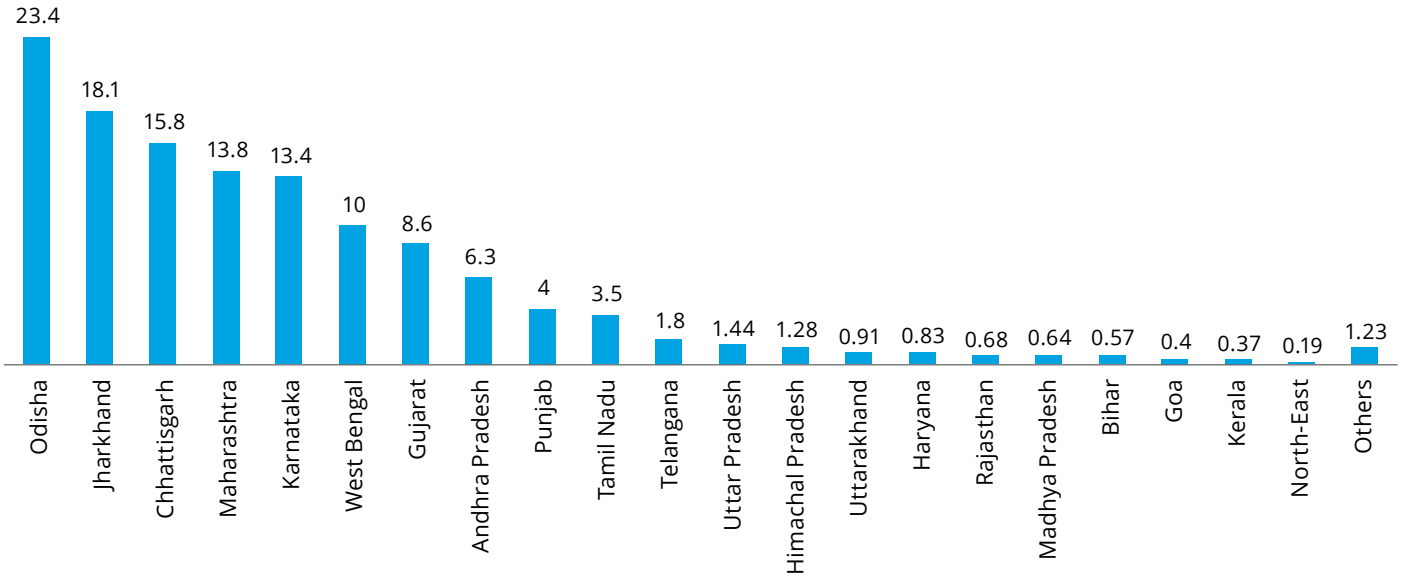
Example 3: Coastal Fence at Curl Curl Beach, Australia – Stainless steel (grade 316) was supplied for a 450 m coastal fence, chosen for its superior tensile strength, corrosion resistance, and unparalleled longevity.[88e]

[88a] https://yenaengineering.nl/comparison-of-stainless-steel-and-regular-steel/#:~:text=Generally%20speaking%2C%20steels%20having%20a,around%20540%20to%20750%20MPa.&text=Every%20element%20has%20a%20different,and%20chemical%20properties%20of%20steel.
[88b] https://www.stainlesssteelrebar.org/applications/bayonne-breakwater/
[88c] https://www.stainlesssteelrebar.org/applications/bayonne-breakwater/
[88d] https://www.stainlesssteelrebar.org/applications/coastal-protection-at-cromer-uk/
[88f] https://www.assda.asn.au/blog/363-stainless-steel-triumph-in-coastal-conservation

5. Understanding state-wise demand scenarios

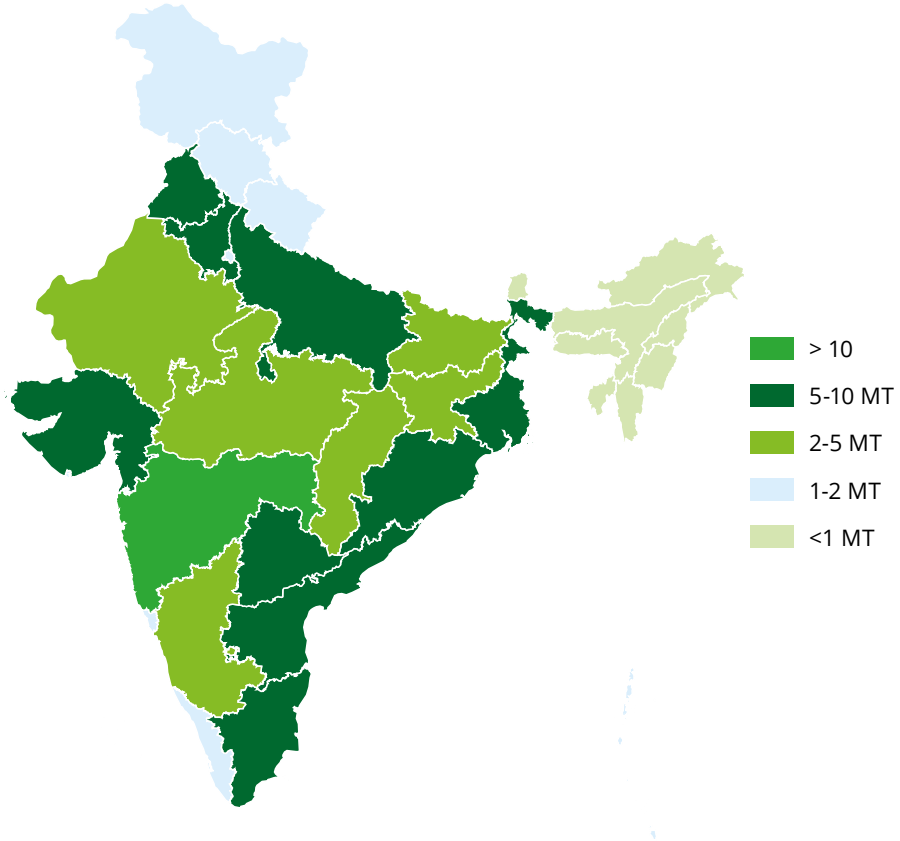
In FY23, India's crude steel production and finished steel consumption stood at 127 MT and 120 MT, respectively. For this study, 28 states have been chosen (with North-eastern states being considered as a single region comprising 8 states) to project the demand potential corresponding to FY34 by considering demand across end-user industries along with the state government initiatives. For the purpose of this report, the steel dispatch data (as published by JPC) to a state has been considered as the surrogate for steel consumption in that state. This is because state-wise steel consumption data is not published.

Figure 12: Crude steel production in FY23 (MT)



Source: JPC

Figure 13: Finished steel consumption in FY23 (MT)



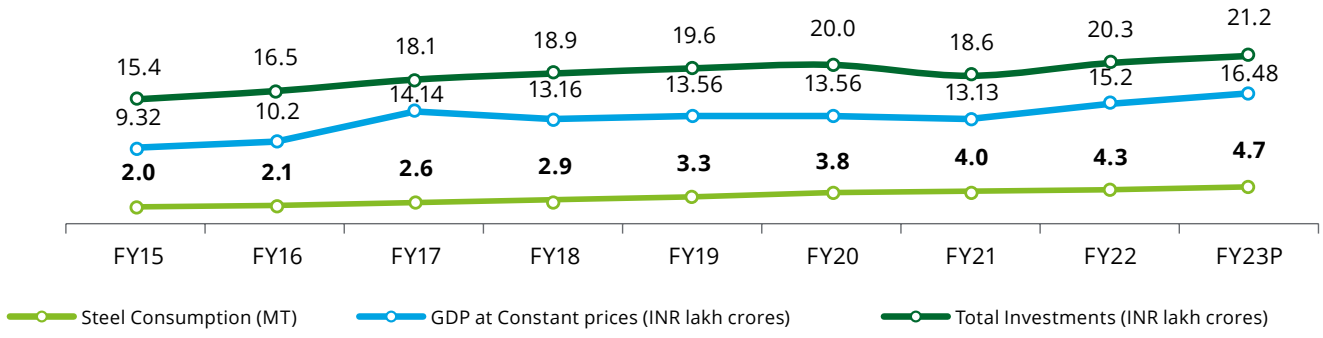
Source: JPC

5.1 Maharashtra

Overview

Maharashtra is one of India's most industrialised states. It has the highest GDP among Indian states. The state's Gross State Domestic Product (GSDP) in FY24 was estimated to be at INR22.2 lakh crore (constant prices),[89] and it has been increasing at a CAGR of ~4 percent in last 10 years. Aligned with its GDP growth and rapidly growing economy, Maharashtra is also the largest steel-consuming state in India. In FY23, finished steel consumption was at 16.48 MT[90] with a 7.3 percent CAGR in the past eight years. Analysis of historical data suggests that steel has a correlation of 0.92 with GSDP and a correlation of 0.86 with investment.

Figure 14: Historical steel consumption, GSDP and investment trends in Maharashtra



Source: JPC, Annual Budgets, Directorate of Economics & Statistics of states

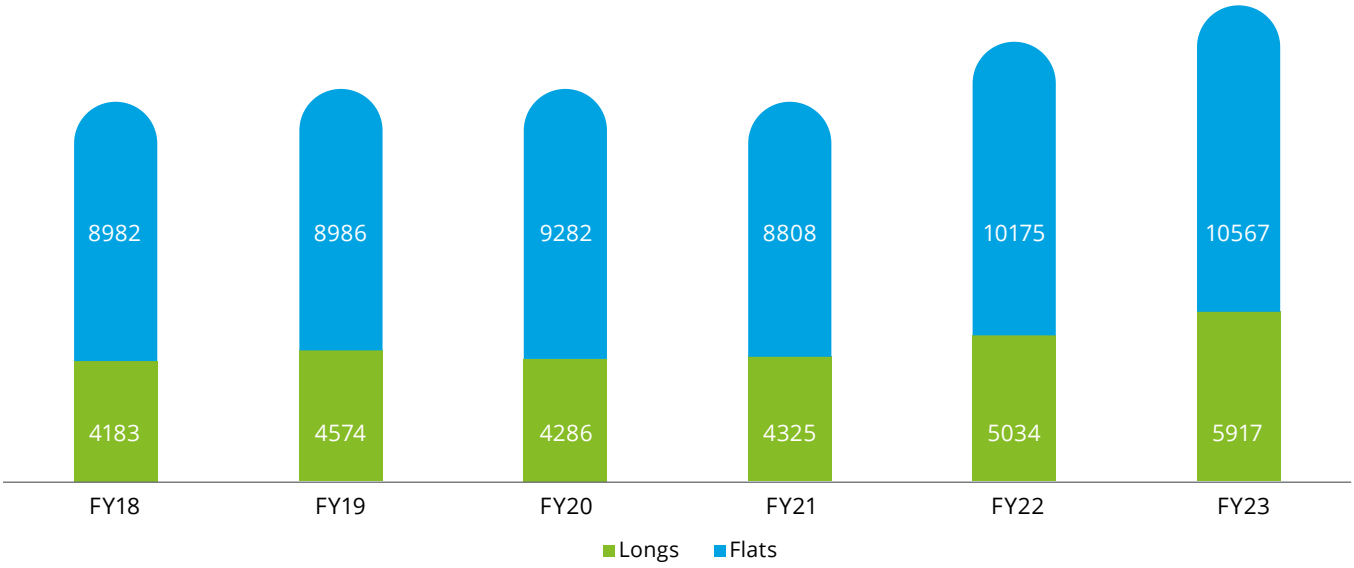
[89] Deloitte Analysis
[90] JPC

Historical demand trends

In Maharashtra, traditionally, flat products have dominated the market with 64 percent share in FY23. However, in the last five years, the demand for long products has been increasing (albeit gradually). The share of long products grew from 31.77 percent in FY18 to 35.9 percent in FY23. This surge can be attributed to the government's significant investments in the infrastructure sector in the last decade as mentioned below:

- About 14000 km[91] of national highways have been built between 2013 and 2023.
- Rail network has crossed 6,000 km from around 5,000 kms since the beginning of the last decade.[92]
- Six new airports[93] under the UDAN Scheme have been operationalised.

Figure 15: Consumption of longs and flats in Maharashtra (in KT)



Source: JPC

Table 1: Consumption of steel product categories in Maharashtra

Product category	Consumption in FY18 (Thousand tonnes)	Consumption in FY23 (Thousand tonnes)	Growth (CAGR)
Bars and rods	3,508	5,020	7%
HR coils and sheets	586	783	6%
CR Coils/Sheets	3,928	6,367	10%
GP/GC Sheets	2,289	1,934	-3%
Pipes	1,980	809	-16%
Others	874	1,571	12%

Source: JPC

[91] Handbook of Statistics on Indian States
[92] https://www.maharail.com/railway-map-of-maharashtra.php
[93] Secondary research

End-use industries in Maharashtra:

Automobile

The rapid urbanisation and increased per capita income has been driving growth in this sector. The state's automobile and auto component sector contributes to a 20 percent[94] share in India's overall output.

Food processing

Maharashtra dominates this sector with 16,512 small and medium-sized food processing plants and 322 large-scale food processing units.[95] The government has developed two mega food parks in Satara and Aurangabad, and one is under development.[96]

Aerospace and defence

Maharashtra is the hub of defence transport equipment manufacturing such as aircraft, ships, boats, weapons and ammunitions.[97]

Chemical manufacturing

The state has one of the largest chains of chemical industries with a 17 percent share of India's total chemical output.[98]

Historical steel production and planned capacities

Crude steel production in Maharashtra has increased from 9.1 MT in FY19 to 13.8 MT[99] in FY23 at an 11 percent CAGR. Therefore, the state has registered strong growth in steel production. However, it still consumes more steel than it produces that can be attributed to the presence of significant end-use industries as mentioned earlier.

JSW Dolvi is a major steel plant in the state with a 10 MTPA[100] production capacity. JSW Group plans to invest INR19,000 crore to expand the capacity of its Dolvi plant by 5 MTPA[101] by 2027. Evonith Steel also seeks to expand the capacity of its Wardha plant to 2.5 MTPA. POSCO Group is also present in Maharashtra, with a rolling plant and a steel processing plant.

Macroeconomic and steel demand outlook

The government of Maharashtra aims to make the state a US$2 trillion[102] economy by 2035. Overall, infrastructure projects worth INR8 lakh crore are under various stages of implementation.[103] Some key initiatives are mentioned below:

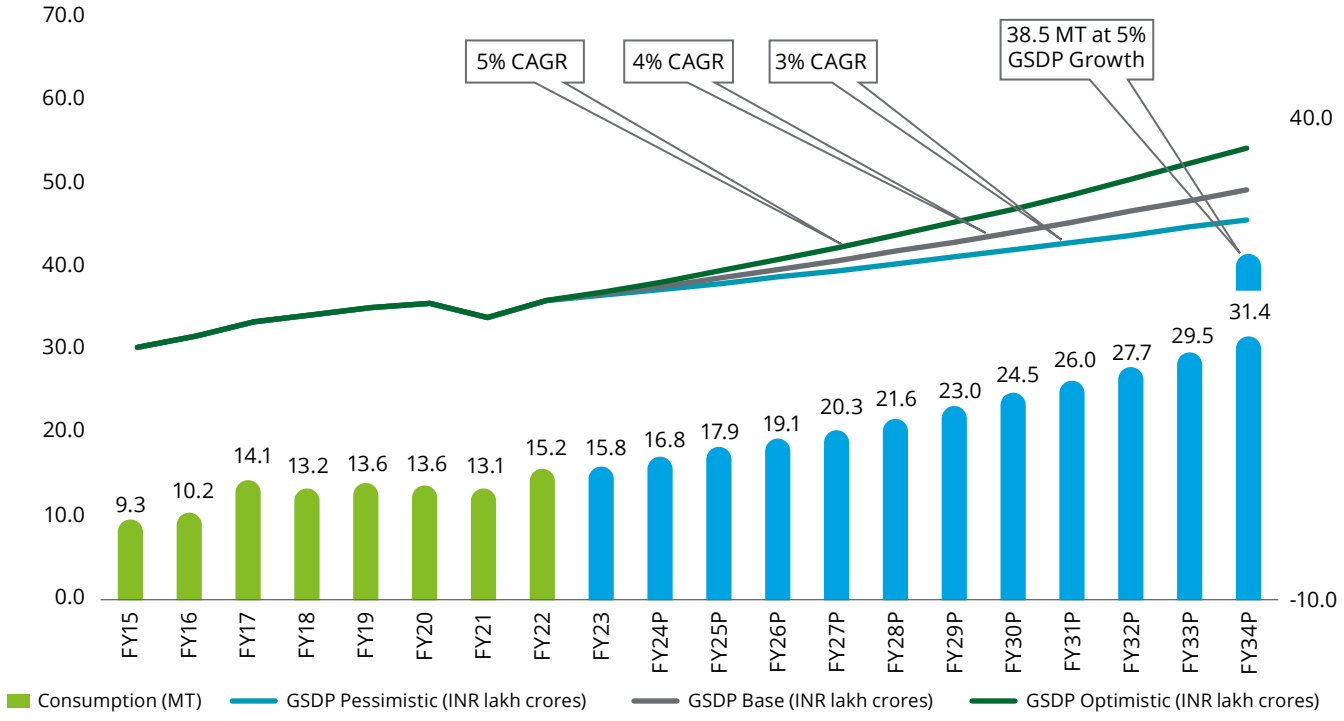
- The state government is looking to invest ~INR6 lakh crore to build ~4,000 km road network, ~1,400 km rail network and 5 airports over the next 5 years.[104]
- The government has approved metro train projects for cities such as Nashik, Pune, Thane and Mumbai.[105]
- The government has approved an investment of ~INR1 lakh crore for the development of 500 IT Parks.[106]

With these investments and policy measures, the state's GDP is expected to post a CAGR of 3–5 percent over the next decade. Based on the regression analysis and the

[94] https://www.investindia.gov.in/state/maharashtra#:~:text=Maharashtra's%20automobile%20and%20auto%2Dcomponents,%2C%20Nashik%2C%20Aurangabad%20and%20Nagpur.
[95] https://testbook.com/mpsc-preparation/industries-in-maharashtra
[96] https://pib.gov.in/PressReleasePage.aspx?PRID=1982721
[97] https://www.midcindia.org/focus-sectors/aerospace-defense/
[98] https://testbook.com/mpsc-preparation/industries-in-maharashtra
[99] JPC
[100] Company website
[101] https://www.manufacturingtodayindia.com/jsw-steel-invests-rs-19000-crore-in-dolvi-plant-expansion/
[102] https://timesofindia.indiatimes.com/city/pune/maharashtra-aims-to-become-2-trillion-economy-by-2035/articleshow/108359884.cms
[103] https://economictimes.indiatimes.com/news/india/infrastructure-projects-worth-rs-8-lakh-crore-under-execution-in-maharashtra-cm-shinde/articleshow/108530100.cms?from=mdr
[104] https://www.magicbricks.com/blog/mega-projects-in-maharashtra/134812.html
[105] Secondary research
[106] Secondary research

macroeconomic outlook, the steel demand in Maharashtra is projected to post a CAGR of 4.2–8 percent to reach ~26–38.5 MT by FY34.[107]

Figure 16: Steel consumption and GSDP growth outlook - Maharashtra



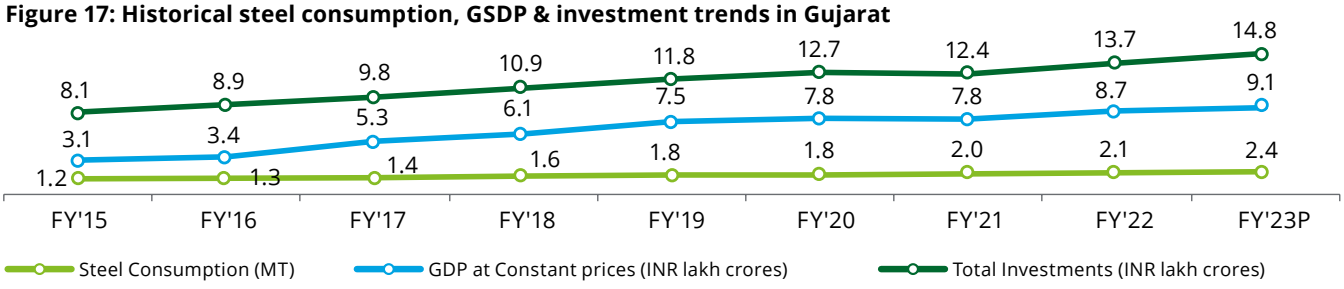
Source: JPC, MoSPI, Deloitte analysis

5.2 Gujarat

Overview

Gujarat is one of the leading industrialised states in India with industries such as petrochemicals, pharmaceuticals, cement, steel, textiles, and engineering. It is one of the fastest-growing economies among Indian states. Its GDP in FY'24 was estimated at INR15.9 lakh crore (constant prices),[108] and it has been posting a CAGR of ~8 percent in the last 10 years. It is also one of the largest steel-consuming states in the country. In FY'23, it consumed 9.1 MT[109] of finished steel, at a CAGR of ~14 percent in the past eight years. Based on the historical data analysis, it is observed that steel has a correlation of 0.98 with GSDP and 0.96 with investment.

Figure 17: Historical steel consumption, GSDP & investment trends in Gujarat



Source: JPC, Annual Budgets, Directorate of Economics & Statistics of states

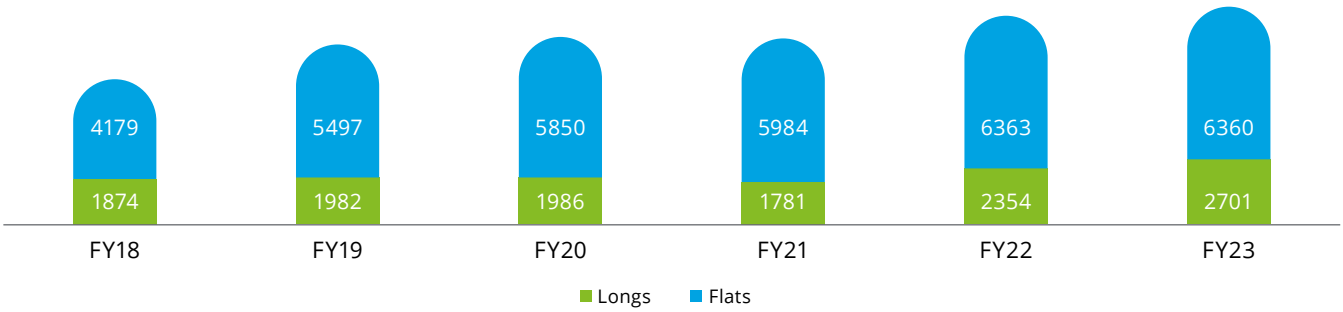
[107] Deloitte Analysis
[108] Deloitte Analysis
[109] JPC

Historical demand trends

In Gujarat, traditionally, flat products have dominated the market with ~70 percent share in FY23. However, in the past 5 years, the demand for long products has been increasing. It increased from 1.8 MT in FY18 to 2.7 MT in FY23 at a CAGR of 7.5 percent.[110] This can be attributed to government's significant investments in the infrastructure sector in the last decade as mentioned below:

- Around 4,000 km of national highways have been built over the last decade.[111]
- Around 1000 km rail network (including new line, doubling, 3rd and 4th line) and electrification of ~2200 km of track has been accomplished in last ten years.[112]
- 13 Port Projects have been completed under Sagarmala Project and 6 Airports have been operationalised under UDAN Scheme.[113]

Figure 18: Consumption of longs and flats in Gujarat (in KT)



Source: JPC

Table 2: Consumption of steel product categories in Gujarat

Product category	Consumption in FY18 (Thousand tonnes)	Consumption in FY23 (Thousand tonnes)	Growth (CAGR)
Bars and rods	1,327	2,072	9%
HR coils and sheets	1,806	2,959	10%
CR Coils/Sheets	734	821	2%
GP/GC Sheets	396	1,106	23%
Pipes	688	1,165	11%
Others	1,102	938	-3%

Source: JPC

End-use industries in Gujarat:

Chemical and petrochemical

Gujarat is a hub of chemical and petrochemical product manufacturing. It is responsible for 62 percent of the total petrochemical production and 35 percent of the total chemical production in India.[114]

Drug and pharmaceutical

Gujarat is the leading pharmaceutical manufacturing hub in India, and accounts for 33 percent of sector turnover and 28 percent of India's pharma exports.[115] This industry mainly consumes stainless steel.

Automobile and auto components

Gujarat accounts for 9 percent of India's total output of transport equipment manufacturing. It has a strong heavy and light engineering sector that supports the local auto production base.[116]

[110] JPC
[111] Handbook of statistics on Indian States
[112] https://indianrailways.gov.in/railwayboard/uploads/directorate/prd/Booklets/STATEWISE_ACHIEVEMENT/2022/Gujarat_English.pdf
[113] Secondary research
[114] https://www.india-briefing.com/news/major-industries-and-preferential-policies-for-foreign-investment-in-gujarat-29829.html/
[115] India briefing
[116] India briefing

Historical steel production and planned capacities

Gujarat is one of the leading crude steel-producing states in India. In FY23, it produced 8.6 MT[117] of crude steel. AM/NS Hazira is the leading steel plant in the state with a production capacity of 9 MTPA.[118] Other small players in the state include Electrotherm India, Gallant Metal, Welspun Steel, Shah alloys and Laxcon Steel. AM/NS has plans to expand its production capacity by 15 MTPA with an investment of INR60,000 crore by 2026.[119]

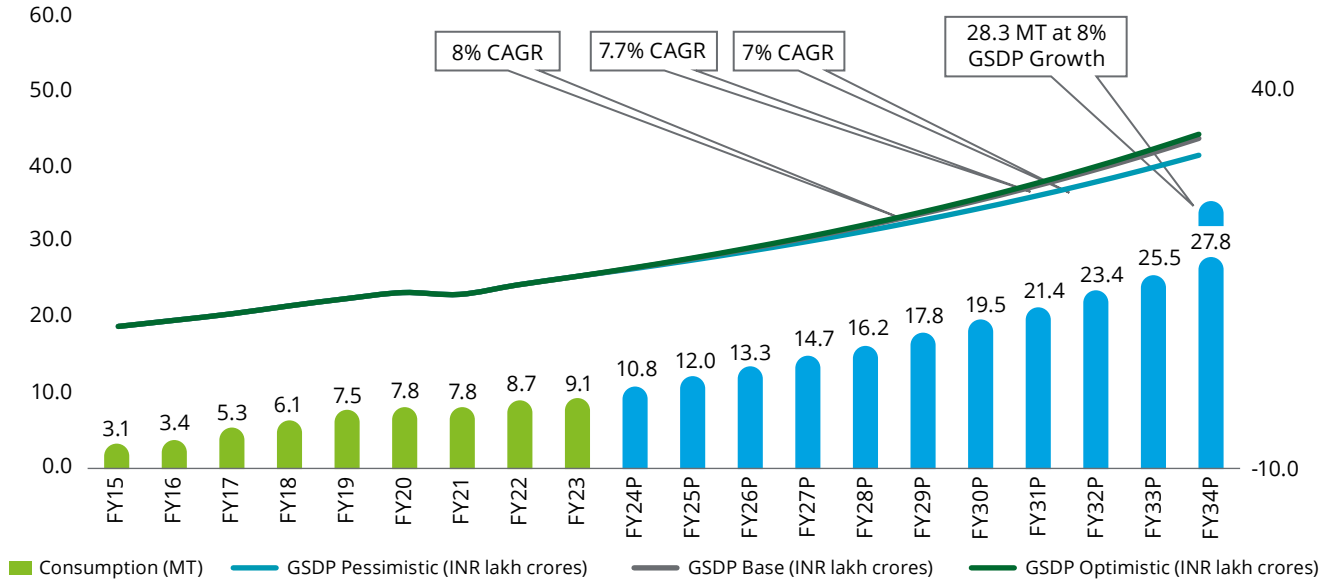
Macroeconomic and steel demand outlook

The Gujarat government seeks to become a US$1 trillion[120] economy by 2030. The state is set to undergo major transformation in terms of infrastructure and the government is planning huge investments along with some private firms to achieve the target. Some key projects in the state are as follows:

- During the 10th Vibrant Gujarat Summit in January 2024, over 30,000 MoUs worth more than INR15 lakh crore were signed across sectors such as renewable energy, manufacturing, infrastructure, healthcare, and tourism.[121]
- An Indian multinational conglomerate plans to invest INR2 trillion to boost green energy initiatives in Gujarat.[122] Another conglomerate also plans to set up a green energy giga complex in Jamnagar spread across 5,000 acres.
- A salt-to-steel Indian conglomerate plans to build a semiconductor fabrication facility and a C295 defence aircraft manufacturing facility.[123]
- With an investment of INR1 lakh crore, the Ahmedabad-Mumbai High Speed Rail Corridor (Bullet Train Project) is under construction.[124]

With all these investments and policy measures, the state GDP is expected to register a CAGR of 7-8 percent over the next decade. Aligned with this growth, the steel consumption in Gujarat is expected to post a CAGR of 10-11 percent to reach about 25.5-28.3 MT by FY34.[125]

Figure 19: Steel consumption and GSDP growth outlook - Gujarat



Source: JPC, MoSPI, Deloitte analysis

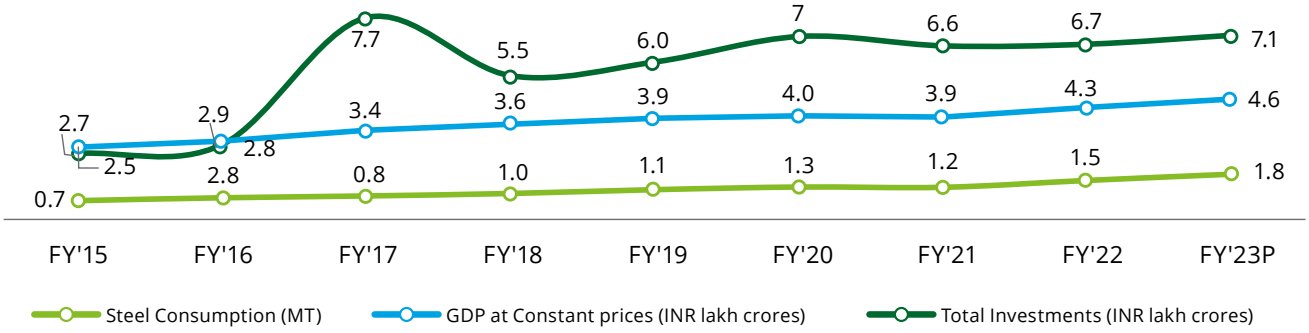
[117] JPC
[118] Company website
[119] https://www.business-standard.com/article/companies/amns-india-to-invest-rs-60-000-crore-to-expand-hazira-plant-chairman-122102801071_1.html
[120] https://timesofindia.indiatimes.com/city/pune/maharashtra-aims-to-become-2-trillion-economy-by-2035/articleshow/108359884.cms
[121] https://www.manufacturingtodayindia.com/gujarat-a-manufacturing-powerhouse-attracting-global-attention/
[122] https://www.livemint.com/news/india/vibrant-gujarat-summit-sees-billion-dollar-pledges-from-tatas-semiconductor-fab-to-new-maruti-plant-here-are-details-11704875810169.html
[123] https://www.livemint.com/news/india/vibrant-gujarat-summit-sees-billion-dollar-pledges-from-tatas-semiconductor-fab-to-new-maruti-plant-here-are-details-11704875810169.html
[124] Secondary research
[125] Deloitte Analysis

5.3 Odisha

Overview

Odisha is one of the most mineral-rich states in India. Iron ore, coal, manganese, and limestone are among the key minerals found in the state. The state leads the iron ore production in India with over 50 percent share. In FY24, iron ore production of Odisha was ~158 MT.[126] Hence, Odisha is a key state regarding mineral & metal-based industries. In FY24, the state's GDP was estimated at ~INR5 lakh crore (constant prices).[127] It has registered a CAGR of ~6.5 percent in the last ten years. It is also one of the top steel consuming states in the country. In FY23, it consumed 7.05 MT[128] of finished steel , with a CAGR of ~14 percent in past eight years. Based on the historical data analysis, steel has a correlation of 0.94 with GSDP and 0.85 with investment.

Figure 20: Historical steel consumption, GSDP & investment trends in Odisha



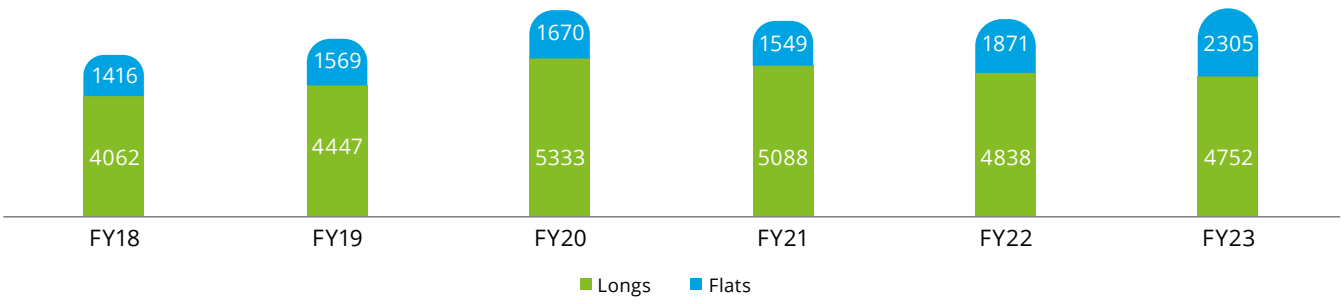
Source: JPC, Annual Budgets, Directorate of Economics & Statistics of states

Historical demand trends

In Odisha, flat products dominated the market with ~67 percent market share in FY23.[129] But for the last five years, the demand for long products has been increasing gradually. The share of long products grew from 25.8 percent in FY18 to 32.7 percent in FY23 . This surge can be attributed to the government's significant investments in the infrastructure sector in the last decade, as mentioned below:

- Around 1600 km railway network (400 km new line and 1200 km doubling) has been developed in the last ten years.[130]
- About 4000 km of new national highways have been constructed. Four airports under the UDAN Scheme have been developed.[131]
- The Odisha government has primarily invested in sports infrastructure. In FY23, the government had allocated INR911 crore for its development. The state is home to the world's largest hockey stadium in Rourkela.[132]

Figure 21: Consumption of longs and flats in Odisha (in KT)



Source: JPC

[126] BigMint
[127] As per State Annual Budget/PRS India Summary
[128] JPC
[129] JPC
[130] https://www.narendramodi.in/odisha-witnessing-a-decade-of-development--581051
[131] https://www.narendramodi.in/odisha-witnessing-a-decade-of-development--581051
[132] https://olympics.com/en/news/birsa-munda-international-hockey-stadium-capacity

Table 3: Consumption of steel product categories in Odisha

Product category	Consumption in FY18 (Thousand tonnes)	Consumption in FY23 (Thousand tonnes)	Growth (CAGR)
Bars and rods	1,221	2,000	10%
HR coils and sheets	1,727	1,683	-1%
CR Coils/Sheets	674	369	-11%
GP/GC Sheets	477	408	-3%
Pipes	974	2,096	17%
Others	405	501	4%

Source: JPC

End use industries in Odisha:

IT industry and special economic zones

Odisha is growing as the new IT hub of India and large IT infrastructure initiatives such as info Park, Info valley, Infocity, and IT investment regions and various SEZ[133] are under development.

Ports & Maritime

The government of Odisha has identified 14[134] sites for developing minor ports. Paradip Port is set for further expansion and aims to cross 400[135] MTPA cargo handling capacity mark and mechanise all berths in the next 5 years.

Downstream Steel Processing Parks

A stainless steel player is establishing a stainless-steel park in Odisha with an investment of INR1500 crore.[136] Another steel player is also setting up a 1 MTPA steel service centre.[137]

Historical steel production & planned capacities

Odisha is the largest steel producer in India primarily due to abundant raw materials and investor friendly policies of the state government. Crude steel production of Odisha has grown from 19.2 MT in FY19 to 23.3 MT[138] in FY23 at a CAGR of 5 percent. Jindal Steel and Power Ltd (JSPL) is present with 6 MTPA capacity[139] that is expected to be ramped up to 12 MTPA. Tata Steel BSL Ltd has an installed capacity of 5.6 MTPA. Tata Steel has invested ~INR23,500[140] crore to expand the capacity of its Kalinganagar plant from 3 MTPA to 8 MTPA. JSW BPSL has an installed capacity of 3.5 MTPA, which will be enhanced further by 1.5 MTPA.[141] SAIL is increasing the capacity of its Rourkela Steel Plant from 4.2 MTPA to 9.7 MTPA . AMNS plans to establish a 24 MTPA integrated steel plant in Odisha.

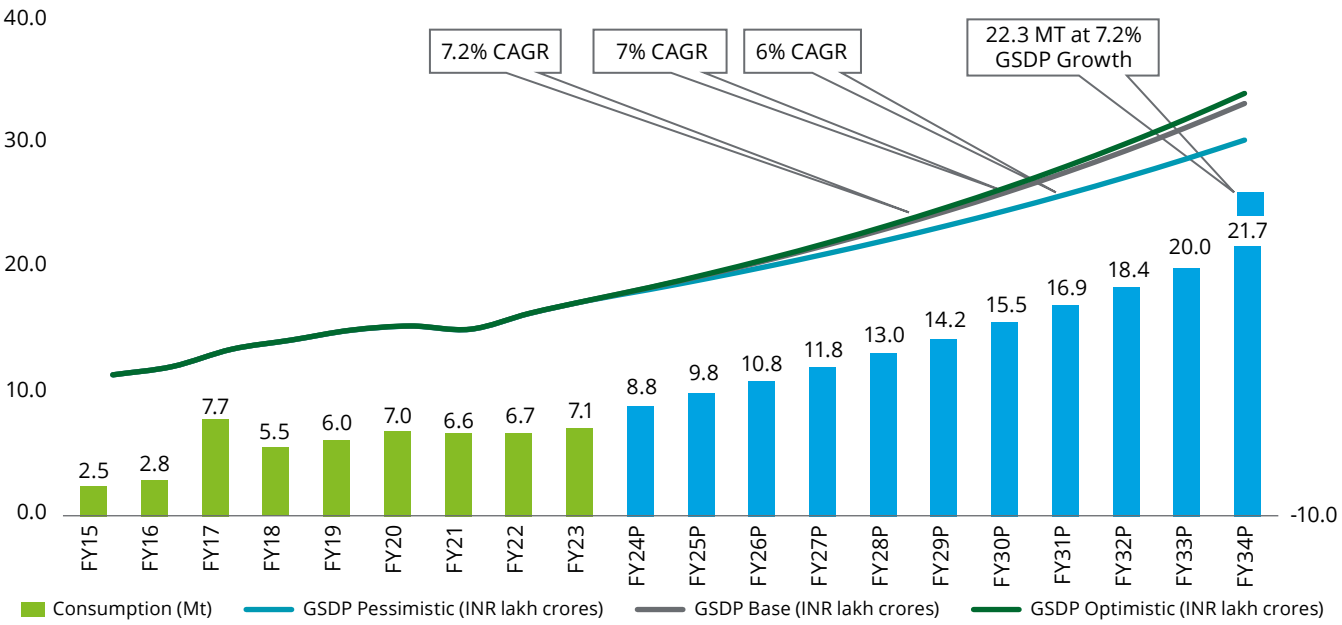
Macroeconomic and steel demand outlook

The government of Odisha has laid an ambitious target of becoming a US$1 trillion economy. Some of the key initiatives to achieve the goal are mentioned below:

- During the Make in Odisha (MIO) Conclave, the government received an overall investment proposal of INR10 lakh crore[142] that would generate 10,37,701 employment potential across sectors from 741 companies.
- The government plans to invest over INR1 lakh crore for establishing the National Investment and Manufacturing Zone (NIMZ)[143] at Kalinganagar.
- A 650 km long Biju Expressway connecting major cities of Odisha is under development.[144] The Dhamra Airport Project is also under development.

[133] Secondary Research
[134] https://indianinfrastructure.com/2022/12/30/port-progress-upcoming-opportunities-in-the-state-of-odisha/
[135] https://www.financialexpress.com/business/infrastructure-odishas-paradip-port-authority-outperforms-becomes-indias-premier-cargo-handling-port-know-all-about-future-expansion-plans-and-more-3444615
[136] https://www.manufacturingtodayindia.com/jindal-stainless-industrial-park-set-to-attract-%E2%82%B910000-crore-investments-from-msmes/
[137] https://www.biznextindia.com/odisha/odisha-govt-clears-735-crore-tata-steel-downstream-park-at-kalinganagar-jajpur/
[138] JPC
[139] https://www.jindalsteelpower.com/odisha.html
[140] https://www.thehindubusinessline.com/companies/tata-steel-to-complete-kalinganagar-project-expansion-vice-president-rajiv-kumar/article67647374.ece
[141] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1913865
[142] https://www.livemint.com/industry/odisha-receives-over-rs-10-5-lakh-cr-investment-proposals-during-mio-conclave-11670085736049.html
[143] https://infrainfohub.com/future-upcoming-odisha-megaprojects/
[144] https://infrainfohub.com/future-upcoming-odisha-megaprojects/

Figure 22: Steel consumption and GSDP growth outlook - Odisha



Source: JPC, MoSPI, Deloitte analysis

With all these investments and policy measures, the state GDP is expected to grow at a CAGR of 6-7.2 percent[145] over the next decade. Based on the regression analysis and the macroeconomic outlook, the steel consumption in Odisha is projected to post a CAGR of 9.5-11 percent to reach about 19 to 22.3 MT by FY34.[146]

[145] Deloitte analysis
[146] Deloitte Analysis

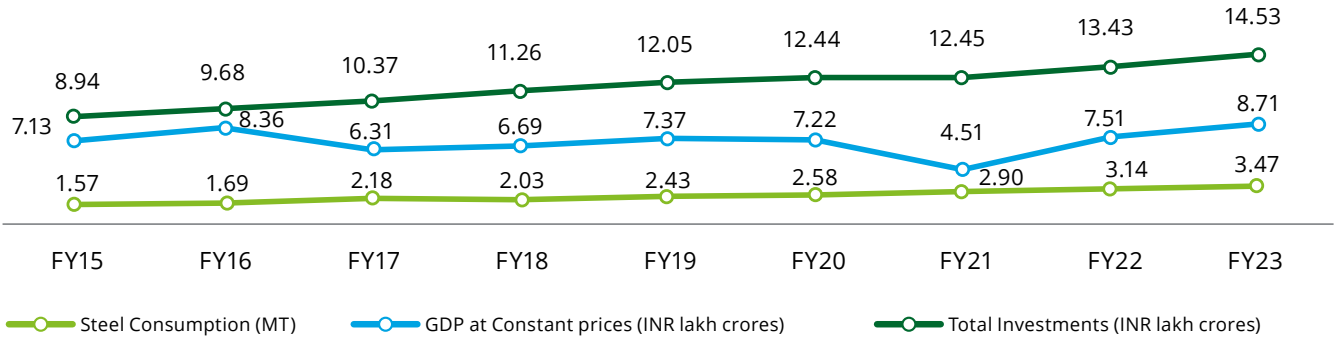
5.4 Tamil Nadu

Overview

Tamil Nadu is one of the most industrialised states in India contributing ~7 percent to India's real GDP in FY23.[147] With more than 45,000 registered factories across its 38 districts,[148] it is one of the largest economy of India.[149] It has emerged as a state with a rich economic diversity, showcasing remarkable proficiency in multiple manufacturing sectors. It has consistently demonstrated excellence in vital industries, including automobiles, food products, textiles, apparel, leather goods, machinery, engineering goods, electronics, basic metals, chemicals and rubber products. These extensive arrays of thriving sectors highlight Tamil Nadu's economic resilience and significant presence in the manufacturing sector, which accounts for 19 percent[150] of the state's economy.

The state consumed 6.45 percent of the total national steel consumption, amounting to 8.7 MT[151] at CAGR growth of 2.45 percent against the national CAGR of 5.41 percent during FY15-FY23. Based on the historical data analysis, and after removing the outliers, it was observed that steel has a correlation of 0.96 with GSDP and 0.9 with expenditure.

Figure 23: Historical steel consumption, GSDP, and expenditure trends in Tamil Nadu



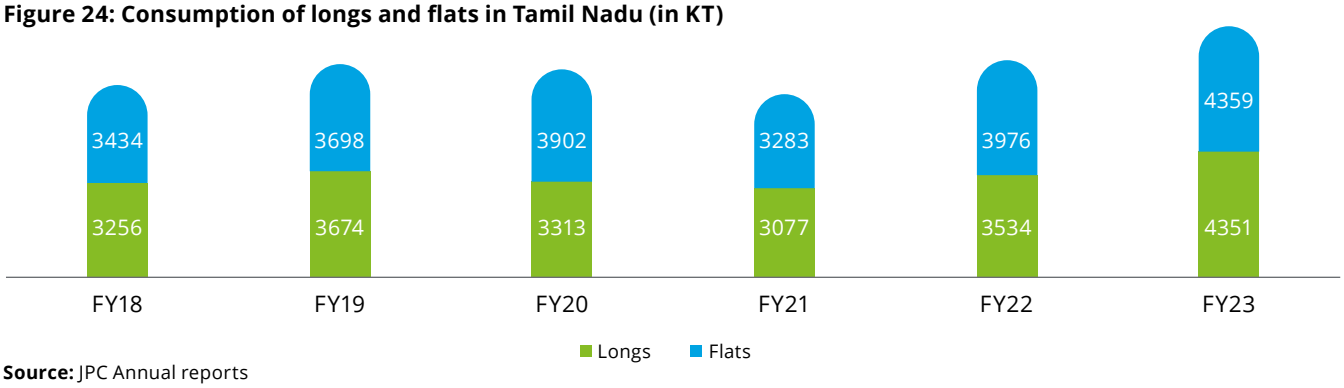
Source: JPC, Annual Budgets, Directorate of Economics & Statistics of states, RBI Publication views, PRS India

Note: Expenditure corresponding to FY 23 is estimated figure and for FY 17 is the revised estimates of budget

Historical demand trends

Steel consumption has grown at 5.4 percent CAGR (FY18-23) where the consumption for the flats has been slightly higher than that of longs. In FY18, flats accounted for 51.3 percent of total consumption, while the remaining was contributed by longs. However, during 2018-23, longs posted a CAGR of 5.97 percent, while flats grew at 4.89 percent. The higher growth rate of longs has resulted in its contribution to be ~50 percent of the total consumption.

Figure 24: Consumption of longs and flats in Tamil Nadu (in KT)



Source: JPC Annual reports

[147] https://dish.tn.gov.in/aboutdept.html#:~:text=In%20Tamil%20Nadu%20as%20on,works%2C%20cement%20and%20engineering%20units.
[148] https://www.tn.gov.in/district_view
[149] https://www.forbesindia.com/article/explainers/gdp-of-indian-states-union-territories/88157/1
[150] https://www.thehindubusinessline.com/economy/tamil-nadus-economy-may-grow-to-26-trillion-by-2047-48-need-capex-of-111-billion-report/article67788720.ece
[151] JPC report

The growth in the steel consumption have been driven across sectors and subsectors. Some of the key initiatives driving the growth are as follows:

- About 1,082 km long national highways have been built between FY18 and FY23.[152]
- Phase 1 of the Chennai Metro rail project at an estimated base cost of INR3,770 crore.[153]
- The Chennai-Kanyakumari industrial corridor upgrading 16 state highways across 589 km.[154]

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Table 4: Consumption of steel product categories in Tamil Nadu

Product category	Consumption in FY18 (Thousand tonnes)	Consumption in FY23 (Thousand tonnes)	Growth (CAGR)
Bars and rods	2,709	3,712	6.50%
Structurals	486	571	3.28%
Railway materials	61	68	2.20%
Plates	563	297	-12.01%
HR Sheets/Coils/Skelp	1,751	2,157	4.26%
CR Coils/Sheets	798	937	3.26%
GP/GC sheets	298	846	23.21%
Others	24	122	38.43%

Source: JPC Annual reports

End-use industries in Tamil Nadu includes:

Automobile

The state is responsible for manufacturing ~36 percent of two-wheelers and 25 percent of four-wheelers. It has the largest EV manufacturing facility, manufacturing ~40 percent of EVs sold in India.[155]

Renewable energy

Tamil Nadu is a frontrunner in India's renewable energy sector, boasting a wind capacity of over 10,247 MW and substantial solar installations. Its renewable energy manufacturing sector is also robust, accounting for 46 percent of India's capacity.[156]

Aerospace and defence

Tamil Nadu supports aerospace and defence start-ups through four incubation centres. Additionally, three centres of excellence, established with partners such as GE Aerospace and Siemens, support MSMEs in designing military prototypes using Industry 4.0. Common engineering facilities for tasks such as surface coating and metal fabrication are being set up in collaboration with major industry players across various nodes of the defence corridor. Under the Tamil Nadu Aerospace & Defence Policy, the government offers special incentives for key projects and offset obligations. The state is also developing dedicated industrial parks, including the upcoming Space Industrial and Propellants Park, in collaboration with the public and private sectors.[157]

Engineering and Capital goods

Tamil Nadu is the second-largest producer of machinery and equipment in India, accounting for 18 percent of the country's total output. It also ranks second in exports of machinery and heavy engineering, valued at ~US$7 billion. The state has four international airports with global connectivity, with Chennai airport leading in cargo turnaround time at 30 hours. Additionally, there is a 700-acre heavy engineering park in Tiruvallur, specialising in automotive and electrical components.[158]

[152] https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/0HANDBOOKINDIANSTATESD9D0BE06170B4731B2C5269FD4A7C2EF.PDF
[153] https://chennaimetrorail.org/project-status/
[154] https://indiainvestmentgrid.gov.in/opportunities/nip-project/607945
[155] https://investingintamilnadu.com/DIGIGOV/TN-pages/individual-sector.jsp?pagedisp=static&sector=focus_automobile
[156] https://investingintamilnadu.com/DIGIGOV/TN-pages/individual-sector.jsp?pagedisp=static&sector=focus_renewable_energy
[157] https://investingintamilnadu.com/DIGIGOV/TN-pages/individual-sector.jsp?pagedisp=static&sector=focus_aerospace
[158] https://investingintamilnadu.com/DIGIGOV/TN-pages/individual-sector.jsp?pagedisp=static&sector=focus_heavy_engineering

The report underscores the burgeoning growth in the aerospace, defence, and renewable energy sectors, alongside the resilient performance of the automobile, engineering and capital goods industries. Within these sectors, steel products play a pivotal role, encompassing an array of flat and long steel products. Structural steel beams, plates and pipes are indispensable for erecting structures and fabricating machinery, while bars, rods and sections serve diverse purposes in the building, construction, and infrastructure sectors. High-quality steel alloys are used in the aerospace industry for crafting aircraft components in defence for fortifying vehicle armour and weaponry. Moreover, many steel variants are integral to automobile manufacturing, employed in vehicle bodies, engine parts and exhaust systems. In the engineering and capital goods industries, steel serves as the backbone for machinery parts, tools, and various components, such as hot-rolled coils (HRC) to alloy steel, galvanised plain (GP), galvanised corrugated (GC) and electrical steel.

Historical steel production & planned capacities

Crude steel production in Tamil Nadu has grown from 3.03 MT in FY19 to 3.48 MT in FY23 at a CAGR of 3.47 percent.[159] However, the capacity has grown by just 0.6 percent from 3.85 MT to 3.93 MT.[160] Therefore, it is evident that Tamil Nadu, over the past few years has increased its capacity utilization from 79 percent in FY19 to over 88 percent in FY23. Due to the presence and growth of various end-user industries, it consumes more steel than it produces.

One of the major steel plants in the state is JSW Salem with a production capacity of 1 MTPA.[161] SAIL also has a specialty steel plant at Salem. Additionally, Beekay Steel manufactures steel at Chennai's automobile hub. Apart from specialty steel, it hosts several manufacturers catering to the requirements of building and construction industry.

During the recent business investor meet of Tamil Nadu, a major steel player has announced to double its investment to INR30,000 crore[162] in next few years. However, no other major steel players have officially announced their planned capacities in Tamil Nadu.

Macroeconomic and Steel demand outlook

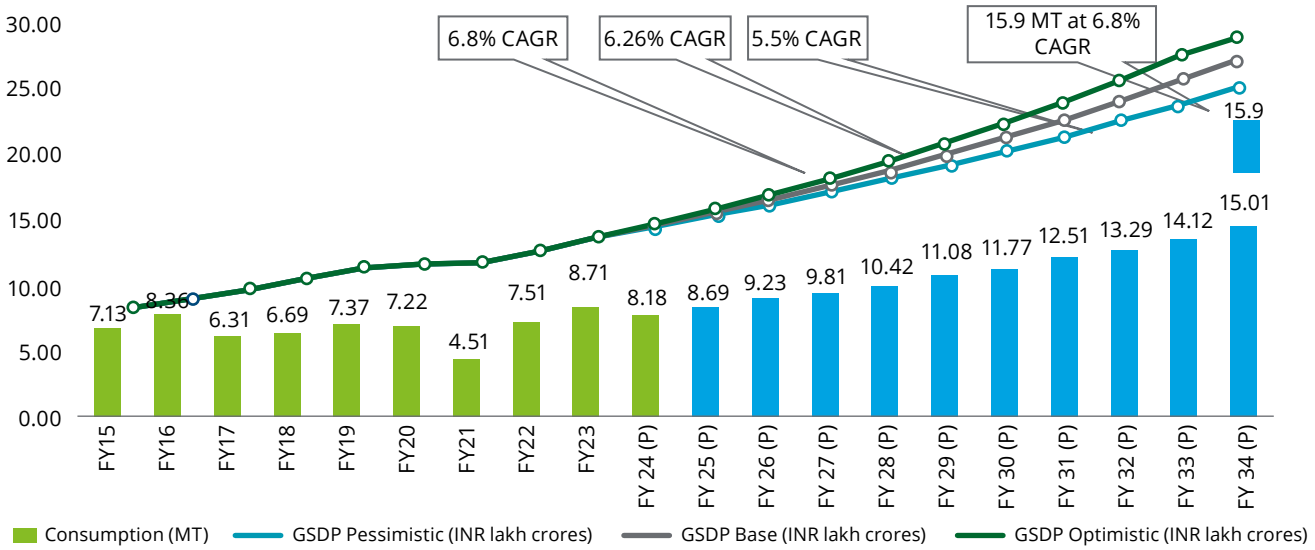
The Tamil Nadu government released a vision document, aiming to become a US$1 trillion[163] economy by 2030. Apart from its policy on making the state a semiconductor and advanced electronics manufacturing hub, it hosts several major upcoming infrastructural initiatives of more than US$18 billion[164]

- The recent announcement of an investment of over INR17000 crore, aimed at making the V.O. Chidambaranar port India's first Green Hydrogen Hub Port.[165]
- Inauguration of four major road projects valued at INR4,586 crore to improve the state's road infrastructure.[166]
- The Indian Government initiated 11 infrastructure projects in Tamil Nadu, covering railways, highways, and housing sectors with an investment of about INR31,530 crore.[167]

The state's GDP is expected to post a CAGR of 5.5-6.8 percent over the next decade, driven by these investments and policy measures. Based on the regression analysis and the macroeconomic outlook, the steel demand in Tamil Nadu is projected to reach ~13.9 to 15.9MT by FY34.

[159] JPC Annual Statistics report 2022-23
[160] JPC
[161] https://www.jswsteel.in/salem-works
[162] hashttps://economictimes.indiatimes.com/news/company/corporate-trends/jsw-group-to-double-investments-in-tamil-nadu-chairman-sajjan-jindal/articleshow/106613744.cms?from=mdr
[163] https://www.thehindubusinessline.com/economy/gim2024-tn-releases-vision-document-to-achieve-1-trillion-economy-by-2030-a-semiconductor-and-advanced-electronics-policy-released/article67715530.ece
[164] https://content.knightfrank.com/research/2807/documents/en/tamil-nadu-unveiling-economic-dynamism-and-future-potential-2024-10910.pdf
[165] https://www.fortuneindia.com/macro/pm-modi-unveils-infra-projects-worth-17000-cr-in-tamil-nadu/115949
[166] https://www.fortuneindia.com/macro/pm-modi-unveils-infra-projects-worth-17000-cr-in-tamil-nadu/115949
[167] https://www.thehindu.com/news/national/tamil-nadu/pm-unveils-infra-projects-worth-31530-cr-in-tamil-nadu/article65464478.ece

Figure 25: Steel consumption and GSDP growth outlook – Tamil Nadu



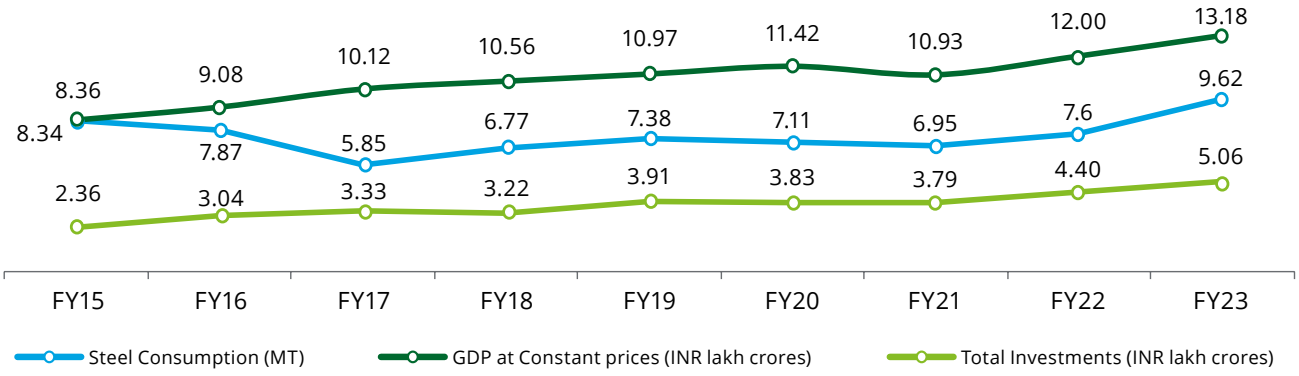
Source: JPC, MoSPI, Deloitte analysis

5.5 Uttar Pradesh

Overview

Uttar Pradesh is one of the most populous and economically significant states in India. With a GSDP of INR14.2 lakh crore (constant prices) in FY24, it ranks third in terms of GSDP among Indian states.[168] Its economy has grown rapidly, at 10.63 percent in the last 10 years. Uttar Pradesh has a population of ~23.5 crore people and has a dynamic economy that reflects a blend of agriculture, industry, services, and cultural legacy. It is also a significant player in the steel industry with finished steel consumption of 9.62 MT,[169] registering a 1.77 percent CAGR in the past eight years. Based on the historical data analysis, after removing the outliers, it was observed that steel has a correlation of 0.95 with GSDP and 0.93 with investment.

Figure 26: Historical steel consumption, GSDP and investment trends in Uttar Pradesh



Source: JPC, Annual Budgets, Directorate of Economics & Statistics of states

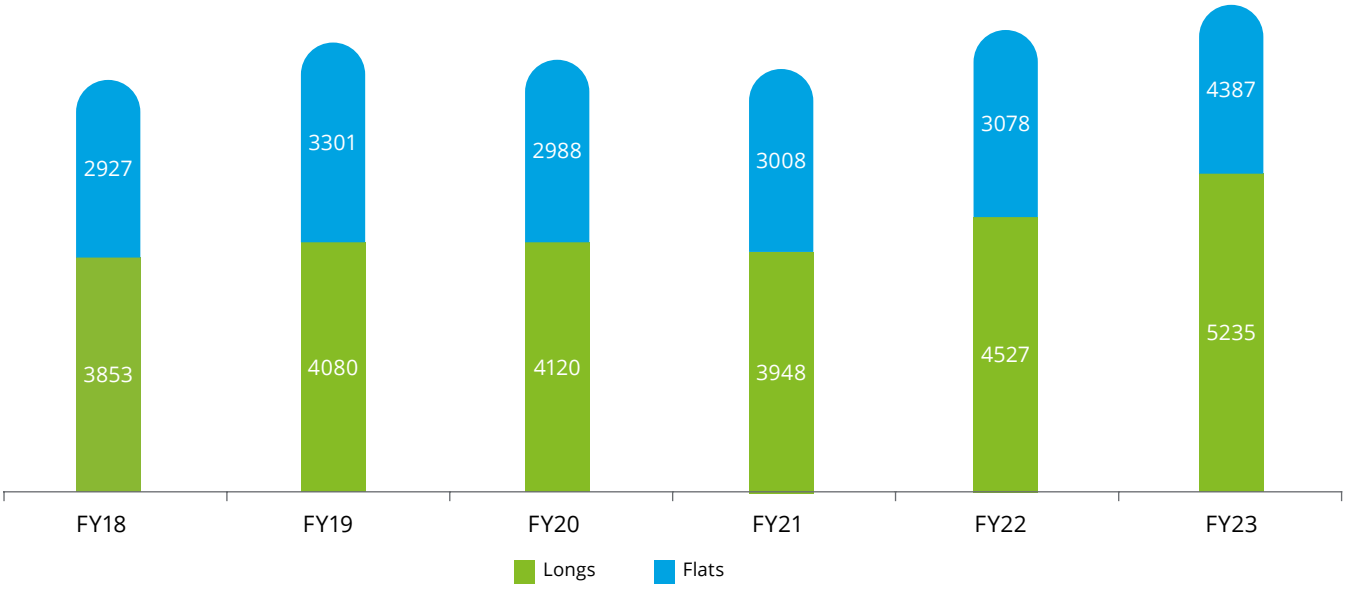
[168] Directorate of Economics & Statistics
[169] JPC

Historical demand trends

In FY23, longs dominated the UP market with a 54 percent share. However, the demand for flat products has also been increasing gradually over the past five years. The consumption of long products has increased from 3.85 MT in FY18 to 5.24 MT in FY23 at a CAGR of 6.32 percent.
This growth can be attributed to the government's significant investments in the infrastructure sector as mentioned below:

- About 3252 km of national highways have been built between FY18 and FY23.[170]
- Largest railway network in the country spanning over 9077 kms[171]
- Six new airports under the UDAN Scheme have been operationalised.[172]

Figure 27: Consumption of longs and flats in Uttar Pradesh (in KT)



Source: JPC

Table 5: Consumption of steel product categories in Uttar Pradesh

Product category	Consumption in FY18 (Thousand tonnes)	Consumption in FY23 (Thousand tonnes)	Growth (CAGR)
Bars and rods	2961	4187	7.17%
Structurals	659	841	5.00%
HR Coils/Sheets	1368	2832	15.66%
CR Coils/Sheets	411	401	-0.49%
GP/GC sheets	851	868	0.40%
Others	258	246	-0.95%

Source: JPC

[170] Handbook of Statistics on Indian States
[171] https://currentaffairs.adda247.com/indian-state-with-the-largest-rail-network/#:~:text=Uttar%20Pradesh's%20rail%20network%20spans,the%20most%20extensive%20rail%20network.
[172] https://pib.gov.in/PressReleasePage.aspx?PRID=1898741

End-use industries in Uttar Pradesh:

Infrastructure and construction

From FY19 to FY23, the government has spent INR5.31 lakh crore on infrastructure development.[173]

Automobile

The state government's plan to rapidly transform Western and Central Uttar Pradesh into the hub of the auto and electric vehicle industry will drive the sector in UP.[174] The state has emerged as the leader in vehicle sales, with 8,22,472 units across all vehicle categories.[175]

Food processing

Uttar Pradesh accounts for ~10 percent of the total food processing industry in India, with a share of INR41,984 crore (US$5.12 billion).[176] The industry also employs over 1.5 million people.[177]

Aerospace and defence

Uttar Pradesh has a growing aerospace and defence sector, with several major defence equipment manufacturers and research institutions based in the state. The sector is driven by the state's strategic location and the presence of several defence establishments.

The end-use industries, including infrastructure and construction, automotive, food processing, and aerospace and defence, drive substantial demand for various finished steel products in the state. Long products such as bars, rods, rebars, and structural steel are vital for infrastructure projects and construction activities. The automotive sector, poised to become a hub for auto and electric vehicle manufacturing, requires specialty steels such as electrical steels, as well as flat products such as plates, sheets, coils and pipes. The food processing industry utilises finished steel products such as stainless steel sheets, tubes, and tanks for equipment and facility construction. Meanwhile, the aerospace and defence sector demands high-grade steel plates, sheets, and precision-engineered components for advanced machinery and defence equipment.[178]

Historical steel production and planned capacities

Crude steel production in Uttar Pradesh increased from 1.32 MT in FY19 to 1.44 MT in FY23[179] at a CAGR of 2.2 percent. However, the finished steel consumption (9.62 MT)[180] is more than the production that can be attributed to the presence of significant end-use industries.

Uttar Pradesh has several smaller steel plants including Rathi Steel and Power Limited, Kamdhenu Ispat Limited, and Super Smelters Limited in Ghaziabad and Kanpur. These plants produce a range of steel products such as TMT bars, galvanised steel, and structural steel. However, there are no major integrated steel plants in the state. With ongoing and planned capacity expansions, the state's steel industry is expected to boost the regional industrial growth.

Macroeconomic and steel demand outlook

The government of Uttar Pradesh aims to become a US$1 trillion economy by 2028.[181] The government has prioritised key infrastructure projects to bolster connectivity within the state and beyond. Some key initiatives[182] are mentioned below:

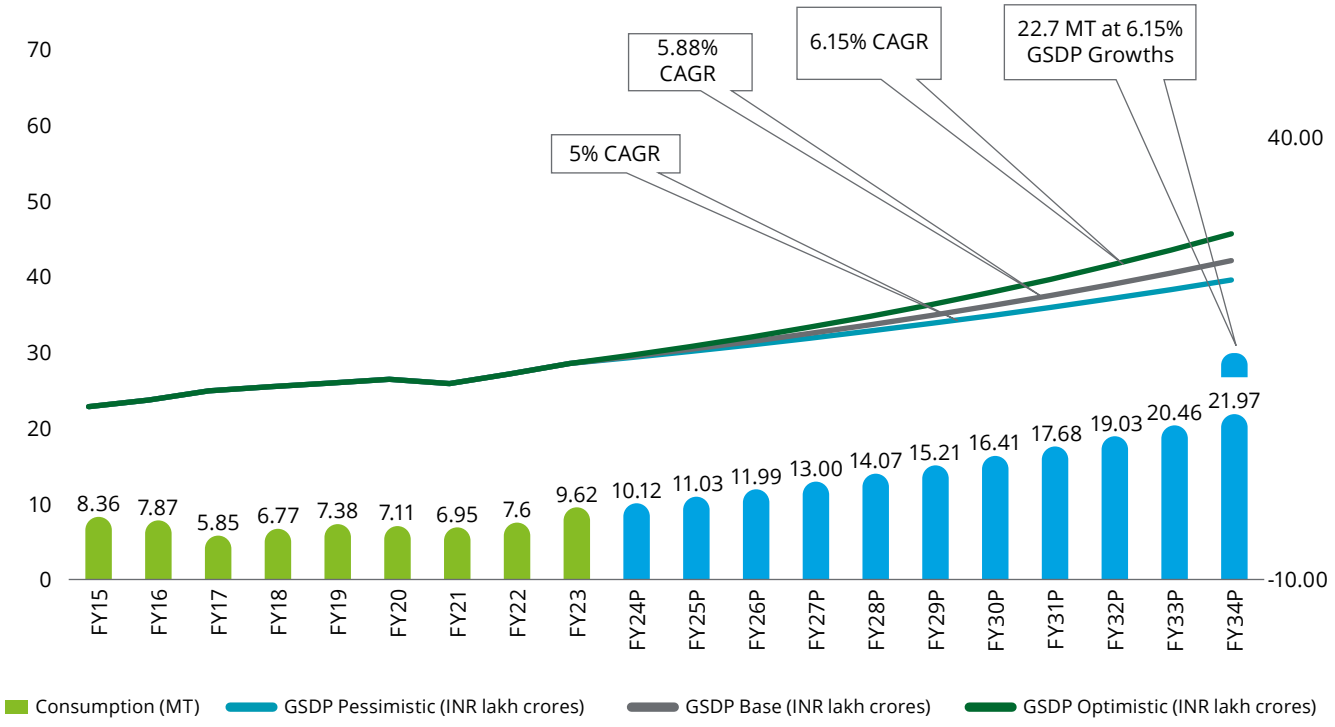
- In FY24, a budget of INR55,005 crore was earmarked for diverse infrastructure projects. These initiatives encompass the construction of expressways, roads, and metro systems, aiming to establish UP as one of the most well-connected states in India.[183]

[173] https://www.businesstoday.in/latest/economy/story/top-10-indian-states-with-the-highest-spending-on-infrastructure-development-in-the-last-five-years-411286-2023-12-29
[174] https://upinternationaltradeshow.com/automobile-industry-debuts-in-first-international-trade-fair-of-uttar-pradesh/
[175] https://www.manufacturingtodayindia.com/uttar-pradesh-dominates-indian-vehicle-sales-maharashtra-follows-in-second-place/#:~:text=According%20to%20data%20from%20the,reported%20selling%208%2C22%2C472%20units.
[176] https://invest.up.gov.in/wp-content/uploads/2023/04/English_Final-Food-processing-policy_160423.pdf
[177] Confederation of Indian Industry (CII)
[178] Industry Interviews
[179] JPC
[180] JPC
[181] https://www.hindustantimes.com/cities/lucknow-news/uttar-pradesh-s-trillion-dollar-economy-goal-from-modi-s-vision-to-yogi-s-execution-101708367166081.html
[182] https://egov.eletsonline.com/2024/02/uttar-pradesh-undergoing-massive-infrastructural-transformation/
[183] https://egov.eletsonline.com/2024/03/uttar-pradesh-maximising-investment-opportunities/

- Some of the notable investments include INR2057 crore for the Ganga Expressway, INR100 crore for Ayodhya's overall development, INR150 crore for the expansion of Maharishi Valmiki International Airport, and INR1750 crore for road development to religious sites. Additionally, allocations include INR500 crore for the Link Expressway, INR346 crore for the Agra Metro, INR400 crore for the Atal Industrial Infrastructure Mission and a proposed INR1,150 crore for the Noida International Airport.
- Uttar Pradesh has been promoting industrial corridors such as the Delhi-Mumbai Industrial Corridor (DMIC) and the Eastern Dedicated Freight Corridor (EDFC) that serve as catalysts for industrial growth, attracting investments, and generating employment opportunities.

With these investments and policy measures, the state's GDP is expected to post a CAGR of 5-6.2 percent over the next decade. Based on the regression analysis (after removing the outliers) and the macroeconomic outlook, the steel consumption to Uttar Pradesh is projected to register a CAGR of 6.7-8.1 percent to reach about 19.6 MT to 22.70 MT by FY34.

Figure 28: Steel consumption and GSDP growth outlook – Uttar Pradesh



Source: JPC, MoSPI, Deloitte analysis

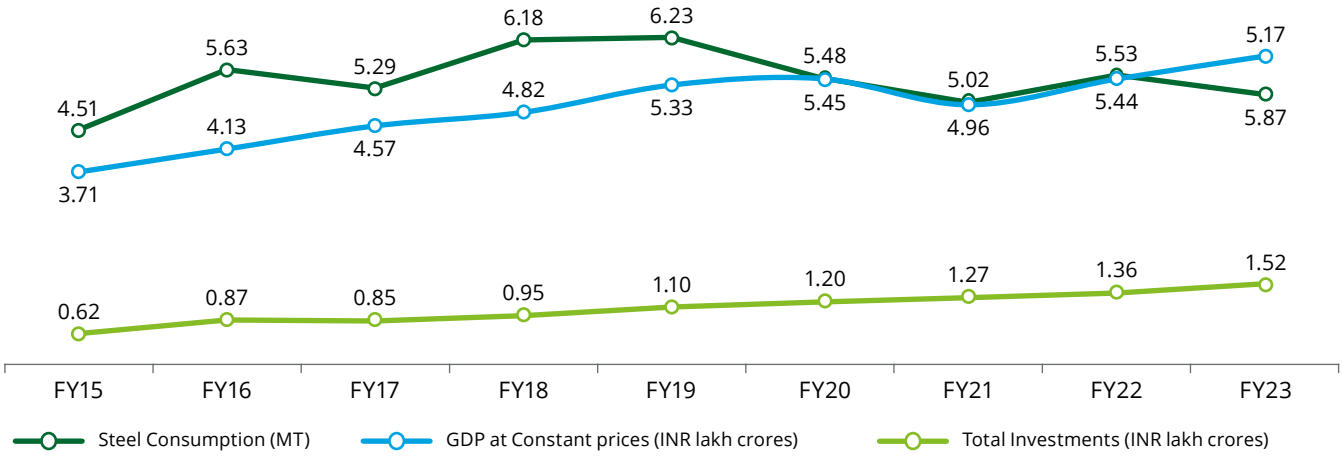
5.6 Haryana

Overview

Haryana is a key player in India's economic landscape. With a GSDP of INR6.34 lakh crore in FY24, it ranks 13th in terms of GSDP among Indian states. Its economy has been growing rapidly at 10.98 percent in the last 10 years. Home to ~3.07 crore people,[184] Haryana's economy is a diverse mix of agriculture, manufacturing and services, making it one of the leading contributors to the national economy. The state is also a major producer of passenger vehicles and motorcycles, and its exports have seen a substantial increase in recent years. Haryana is also a significant player in the steel industry with finished steel consumption of 5.17 MT,[185] a 1.72 percent CAGR over the past eight years. Based on the historical data analysis, after removing the outliers, it was observed that steel has a correlation of 0.87 with GSDP and 0.94 with investment.

[184] https://statisticstimes.com/demographics/india/haryana-population.php
[185] JPC

Figure 29: Historical steel consumption, GSDP and investment trends in Haryana



Source: JPC, Annual Budgets, Directorate of Economics & Statistics of states

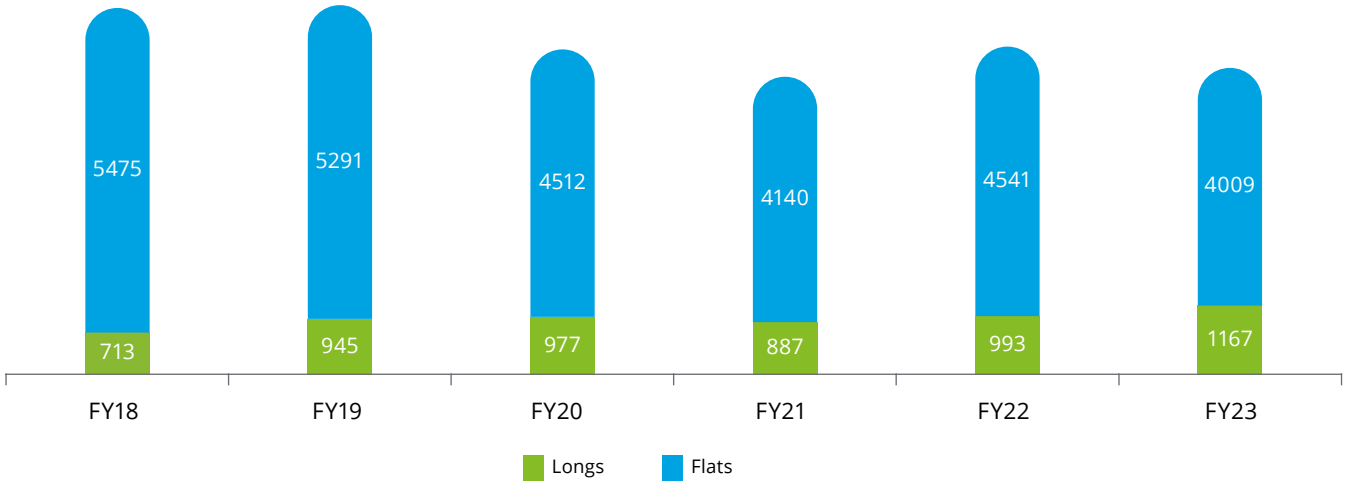
Historical demand trends

In Haryana, flat products have dominated the market with ~77.5 percent market share in FY23. However, for the last 5 years, the demand for long products has also been increasing gradually. The consumption of long products has posted a CAGR of 10.51 percent from 0.71 MT in FY18 to 1.17 MT in FY23. There has been an overall decline in steel consumption from FY18 to FY23.

However, the government is spending on infrastructure that is expected to boost steel consumption.

- About 650 km national highways have been built between FY18 and FY23.[186]
- 82 km rail network has been built between FY13 and FY23.[187]
- One new airport under UDAN Scheme has been operationalised.[188]

Figure 30: Consumption of longs and flats in Haryana (in KT)



Source: JPC

[186] Handbook of Statistics on Indian States
[187] Handbook of Statistics on Indian States
[188] https://pib.gov.in/PressReleasePage.aspx?PRID=1898741

Table 6: Consumption of steel product categories in Haryana

Product category	Consumption in FY18 (Thousand tonnes)	Consumption in FY23 (Thousand tonnes)	Growth (CAGR)
Bars and rods	653	1015	9.22%
Structurals	50	118	18.74%
HR Coils/Sheets	2709	2268	-3.49%
CR Coils/Sheets	2050	1094	-11.80%
GP/GC sheets	305	318	0.84%
Others	421	362	-2.97%

Source: JPC

End-use industries in Haryana[189]

Automobile sector

Presence of auto manufacturers have led to large number of ancillaries in the sector. The government has identified Gurgaon-Manesar-Bawal Region as an auto-hub.

Food processing

Haryana is an agrarian state and is a major contributor to the national foodgrains pool. To promote skill development and infrastructure, the Haryana State Industrial Development Corporation has allotted 100 acres of land at Kundli (Sonipat) for setting up National Institute of Food Technology.

The end-use industries in Haryana, including the automobile and food processing, drive substantial demand for various finished steel products. The automobile sector necessitates flat steel products such as plates, sheets, coils and pipes for vehicle bodies, chassis, and exhaust systems. Meanwhile, the food processing industry, supported by Haryana's agrarian base and infrastructure investments, requires both long products such as bars and structural steel for facility construction and flat products such as stainless steel sheets, tubes, and tanks for food processing equipment and storage solutions.[190]

Historical steel production and planned capacities

Crude steel production in Haryana has increased from 0.80 MT in FY19 to 0.83 MT in FY23[191] at a CAGR of 0.92 percent. However, the finished steel consumption (5.17 MT) is more than the production that can be attributed to the presence of significant end-use industries.

India's first green hydrogen project in the stainless-steel sector was set up in Hisar, Haryana. Other steel players in the state include Jindal Stainless (Hisar), Hero Steel and Shine Steels.

Macroeconomic and steel demand outlook

The Haryana government has prioritised key infrastructure projects to bolster connectivity within the state and beyond. Some of the key initiatives are mentioned below:

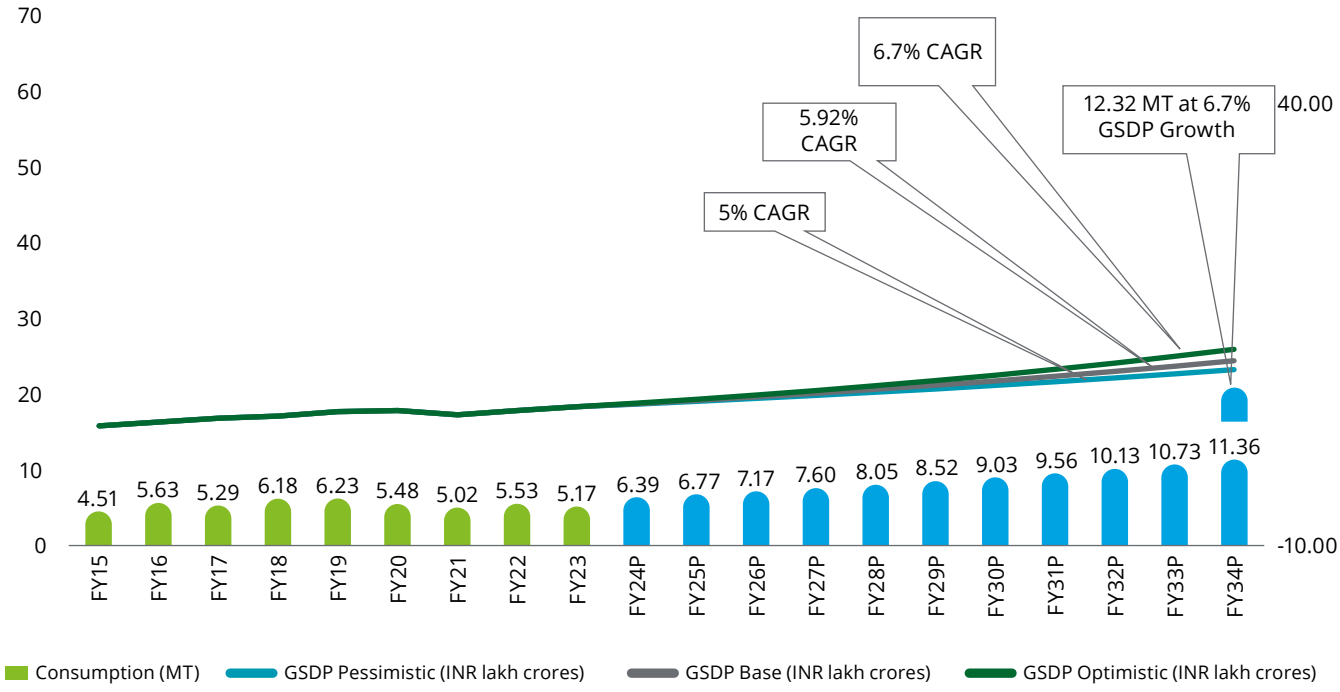
- One of the key projects to be inaugurated is the Gurugram Metro Rail project, with an investment of ~INR5,450 crore and a length of 28.5 km.[192]
- In FY25, a budget of ~INR3,000 crore has been kept for railways in Haryana.[193]
- The foundation stone of multiple development projects worth INR9,750 crore were laid in 2024 that

[189] https://abhipedia.abhimanu.com/Article/State/NDg3MgEEQQVVEEQQVV/Key-Industries-of-Haryana-Haryana-State
[190] Industry Interviews
[191] JPC
[192] https://www.financialexpress.com/business/infrastructure-pm-modi-affirms-commitment-to-haryanas-infrastructure-development-3396378/
[193] https://www.financialexpress.com/business/railways-pm-modi-lays-foundation-stone-of-many-railway-projects-in-haryana-saysnbsplakhs-of-people-will-benefit-3396884/

includes new railway lines such as Rohtak, Meham, Hansi, Jind and Sonipat and doubling of lines such as Ambala Cantt and Dappar.[194]

With all these investments and policy measures, the state's GDP is expected to post a CAGR of 5-7 percent over the next decade. Based on the regression analysis (a high correlation was not observed between GSDP and steel consumption but after removing outliers, the analytical model gave reasonable accuracy) and the macroeconomic outlook, the steel consumption by Haryana is projected to register a CAGR of 6.5 -8.2 percent to reach about 10.32-12.32 MT by FY34.

Figure 31: Steel consumption and GSDP growth outlook - Haryana



Source: JPC, MoSPI, Deloitte analysis

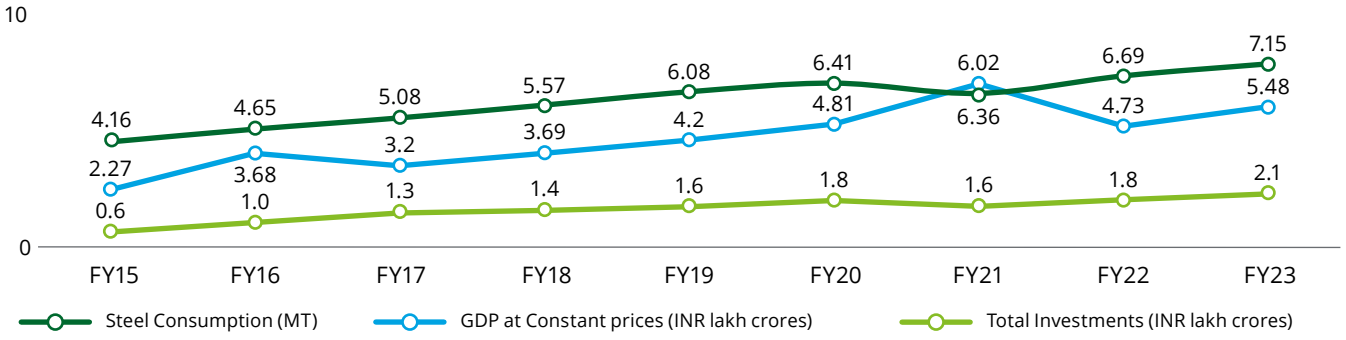
[195] Directorate of Economics & Statistics of states
[196] Directorate of Economics & Statistics of states
[197] JPC

5.7 Telangana

Overview

Telangana, a state formed in 2014, has made significant strides in various sectors. The capital city of Hyderabad, ranked second among the top 20 global cities according to the CMI index, is a major hub for the IT and pharmaceutical industries. Telangana's GSDP at constant prices has increased by 172 percent from FY15 to FY24.[195] In FY24, its GSDP was INR7.68 lakh crore at constant prices.[196] Aligned with the GDP growth and rapidly expanding economy, the contribution of the primary sector to the GSVA of Telangana has consistently improved, rising from 19.5 percent in FY15 to 19.8 percent in FY23, significantly contributing to high steel consumption from the overall development of the state. In FY23 the state consumed a total of 5.48 MT[197] of finished steel, with a CAGR of 5.1 percent in the last eight years. Based on the historical data analysis, it was observed that steel has a correlation of 0.95 with GSDP and 0.81 with investment.

Figure 32: Historical steel consumption, GSDP and investment trends in Telangana



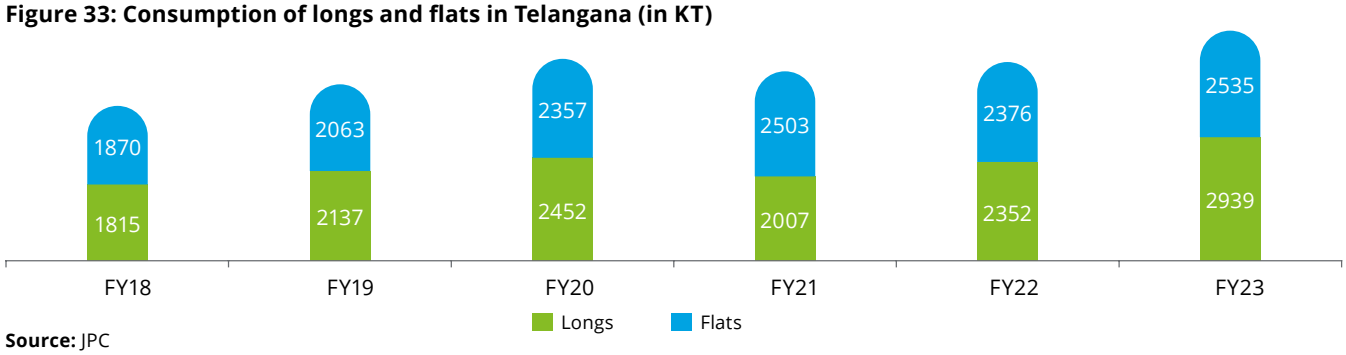
Source: JPC, Annual Budgets, Directorate of Economics & Statistics of states

Historical demand trends

In Telangana, traditionally, flats and longs products have almost shared the market equally with 53.7 percent of products being longs and 46.3 percent of products being flats in FY23. But for the last five years, the demand for long products has been increasing gradually, whereas that of flats has dipped marginally. The share of long products increased from 49.3 percent in FY18 to 53.7 percent in FY23. The overall steel consumption in the state is being driven by the government's significant investments in the infrastructure sector in the last decade, as mentioned below:

- A total of ~180 km of railway line had been laid in the last 10 years.[198]
- The Telangana government had spent ~INR1.2 lakh crore on infrastructure in last nine years.[199]
- The state's highway network has seen a two-fold rise from 2,500 km to 5,000 km.[200]

Figure 33: Consumption of longs and flats in Telangana (in KT)



Source: JPC

[195] Directorate of Economics & Statistics of states
[196] Directorate of Economics & Statistics of states
[197] JPC
[198] Handbook of statistics on Indian States
[199] https://timesofindia.indiatimes.com/city/hyderabad/state-spent-rs-1-2l-crore-on-infra-in-nine-years/articleshow/101528692.cms
[200] https://www.narendramodi.in/prime-minister-narendra-modi-lays-foundation-stone-for-several-infrastructure-development-projects-in-warangal-telangana-571916

Table 7: Consumption of steel product categories in Telangana

Product category	Consumption in FY18 (Thousand tonnes)	Consumption in FY23 (Thousand tonnes)	Growth (CAGR)
Bars and rods	1328	2355	12%
Structurals	431	523	4%
HR Coils/Sheets	658	948	8%
CR Coils/Sheets	211	259	4%
GP/GC Sheets	218	281	5%
Others	839	1108	6%

Source: JPC

End-use industries in Telangana:

Infrastructure and construction

Infrastructure development projects worth ~INR6,100 crore in Warangal district. Additionally, the development of 176 km national highway projects worth over INR5,550 crore and the development of railway manufacturing unit in Kazipet worth over INR500 crore.[201]

Pharma

Hyderabad serves over 1000 life sciences companies globally, including the top 10 pharma companies, in their innovation journey. This sector primarily uses stainless steel.

Food processing

Telangana has approved 22,745 projects in the sector, with ~3,800 units in operation in the state.[202]

Aerospace and defence

Telangana has witnessed a spectacular growth in the aerospace and defence sector in the past nine years. Hyderabad is the most preferred investment destination for US and European aerospace and defence corporations.

Historical steel production and planned capacities

Telangana's crude steel production has grown from 1.3 MT in FY19 to 1.8 MT in FY23 at a CAGR of 7.28 percent. Therefore, Telangana has exhibited strong growth in steel production. However, it still consumes more steel than it produces which can be attributed to the presence of significant end-use industries as mentioned earlier.

A major manufacturer of railway components is expanding in Telangana. Another steel player is also expanding its steel plant, such as a pipe mill with a capacity of 290,000 TPA, a cold rolling mill with a capacity of 260,000 TPA, and a hot dip galvanising unit with a capacity of 50,000 TPA .[203]

Macroeconomic and steel demand outlook

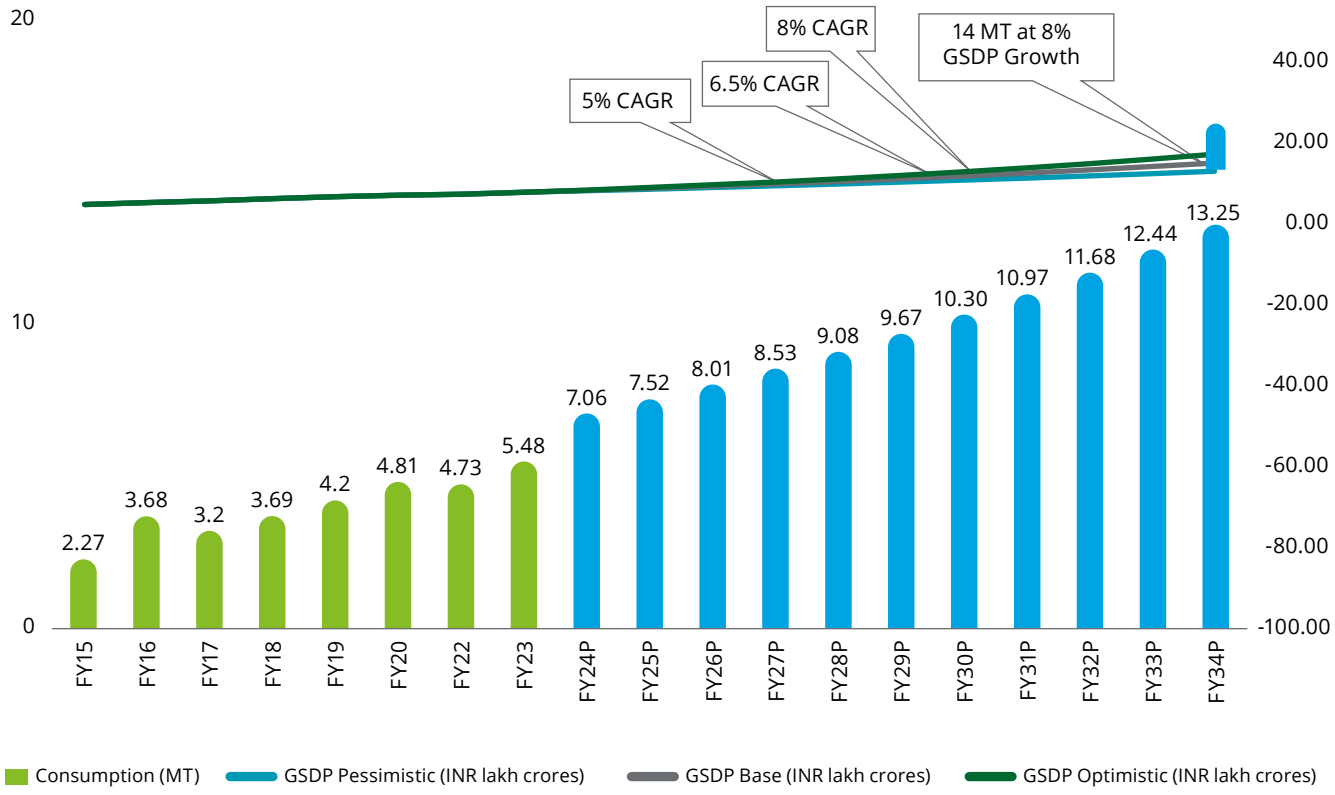
The government of Telangana is aiming to become a US$3 trillion[204] economy by 2035. The Telangana State Industrial Infrastructure Corporation (TSIC), the Telangana government's nodal agency for developing industrial infrastructure, has allocated ~INR63,125 crore for industrial infrastructure development.[205] Some of the key initiatives include:

- Developing IT hubs/towers and plug and play facilities in Tier-II cities to promote balanced rural development.
- TSIIC is developing 70 new industrial parks, that are expected to be completed within the next two years.

[201] https://www.narendramodi.in/prime-minister-narendra-modi-lays-foundation-stone-for-several-infrastructure-development-projects-in-warangal-telangana-571916
[202] Directorate of Economics & Statistics of states
[203] https://www.projectstoday.com/News/MPL-Steel-Industries-to-expand-its-manufacturing-capacity-in-Telangana
[204] https://www.deccanchronicle.com/southern-states/telangana/congress-govt-aims-to-make-telangana-3-trillion-economy-in-next-10-yrs-says-minister-sridhar-babu-896854
[205] Industry report Govt. of Telangana

With these investments and policy measures, the state's GDP is expected to register a CAGR of 5-8 percent over the next decade. The steel demand is projected to post a CAGR of 5.7-8.9 percent to reach ~10-14 MT by FY34, based on regression analysis and the macroeconomic outlook. This surge in steel demand will be primarily driven by the product portfolio of bars and rebars.

Figure 34: Steel consumption and GSDP growth outlook - Telangana



Source: JPC, MoSPI, Deloitte analysis

5.8 Andhra Pradesh

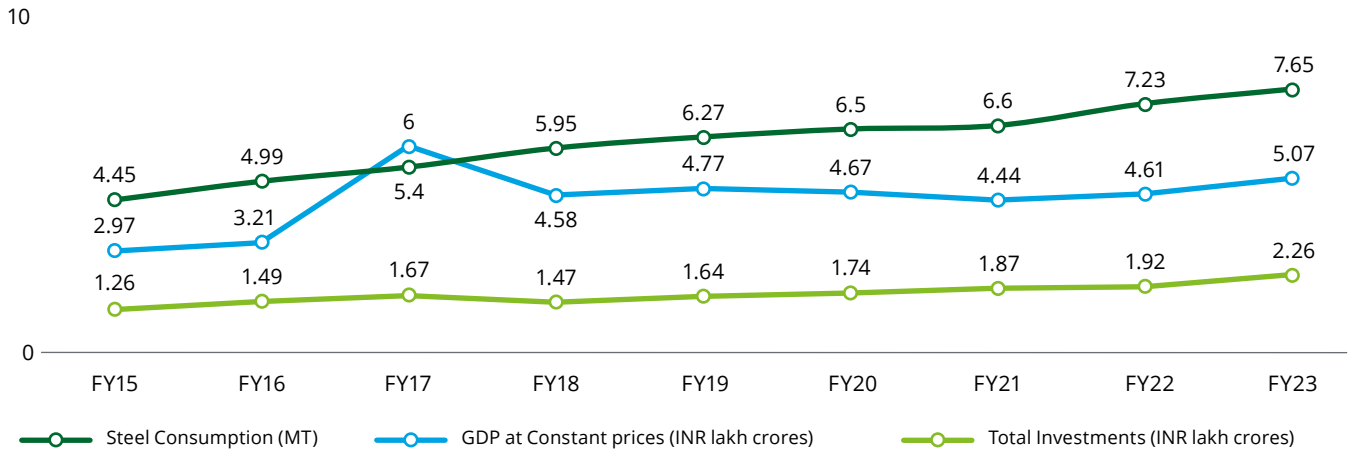
Overview

Andhra Pradesh boasts well-developed social, physical, and industrial infrastructure. The state also has strong power, airport, IT, and port infrastructure. At constant prices, its GSDP for FY24 stood at INR8.21 lakh crore.[206] The GSDP increased at a CAGR of 6.5 percent between FY16 and FY24.[207]

Andhra Pradesh has been one of the leading states in developing sector-specific policies. The state's key strategy to attract investments has involved forming industrial clusters and developing infrastructure such as biotech parks, textile parks and hardware parks. The state has 47 Special Economic Zones (SEZs). These include 10 SEZs with formal approvals, five with in-principal approvals, and 32 notified SEZs. The SEZs span diverse sectors such as textiles and apparel, food processing, footwear and leather products, multi-products, pharmaceuticals, and IT.[208] These developments are driving steel consumption in the state. In FY23, the state consumed 5.07 MT[209] of finished steel, at a CAGR of 6.91 percent in the last eight years. Based on the historical data analysis, it was observed that steel has a correlation of 0.91 with GSDP and 0.75 with investment.

[206] Directorate of Economics & Statistics of states
[207] Directorate of Economics & Statistics of states
[208] Industrial Infrastructure Corporation
[209] JPC

Figure 35: Historical steel consumption, GSDP and investment trends in Andhra Pradesh



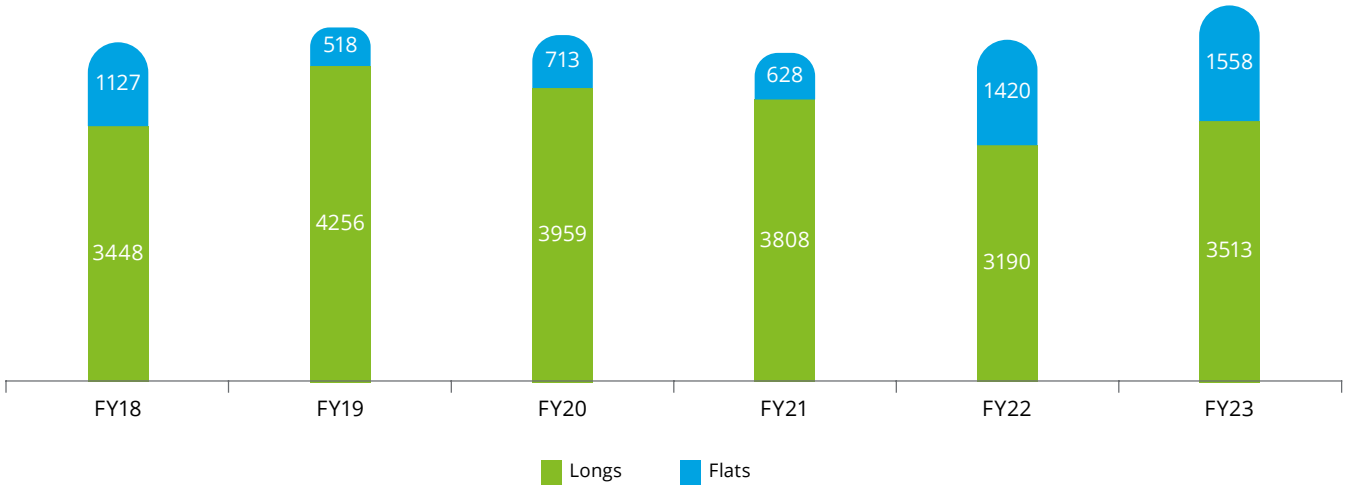
Source: JPC, Annual Budgets, Directorate of Economics & Statistics of states

Historical demand trends

In Andhra Pradesh, longs products have traditionally dominated the market, with a 69 percent share in FY23. But in the past five years, the demand for flat products has been increasing gradually after a sudden dip in FY19 to just ~11 percent of the overall market share. The share of flat products grew from 24.6 percent in FY18 to 30.7 percent in FY23. This significant dominance of the long products in the market share is attributed to the government's significant investments in the infrastructure sector in the last decade as mentioned below:

- Development of the Bhogapuram Greenfield International Airport.
- Construction of ~450 Km of rail route in the last ten years.[210]
- Development of the Greenfield Mulapeta Port, with a capacity of 23.53 MTPA in Phase I and 83.3 MTPA in Phase II.[211]
- Ongoing development of the Visakhapatnam-Chennai Industrial Corridor (VCIC).

Figure 36: Consumption of longs and flats in Andhra Pradesh (in KT)



Source: JPC

[210] Handbook of statistics on Indian States
[211] https://indiainfrahub.com/featured/andhra-pradesh-chief-minister-y-s-jagan-mohan-reddy-lays-foundation-stone-of-greenfield-mulapeta-port/

Table 8: Consumption of steel product categories in Andhra Pradesh

Product category	Consumption in FY18 (Thousand tonnes)	Consumption in FY23 (Thousand tonnes)	Growth (CAGR)
Bars and rods	3245	3005	-1.53%
Structurals	177	415	18.58%
HR Coils/Sheets	474	987	15.80%
CR Coils/Sheets	240	257	1.38%
GP/GC Sheets	175	183	0.90%
Others	264	224	-3.23%

Source: JPC

End-use industries in Andhra Pradesh:

Energy

Between October 2019 and June 2023, FDI inflows totalled US$850.38 million, ranking the state 13th in India for FDI inflows. In September 2022, the State Investment Promotion Board (SIPB) approved investment proposals worth INR126,622 crore (US$15.5 billion). Of this amount, INR81,000 crore (US$9.92 billion) are earmarked for investment in the green energy sector.[212]

Automobile and EV

Andhra Pradesh is the home of largest FDI in the sector from South Korea, Japan, and Taiwan, with the presence of 35 large projects and 20,000+ MSMEs.[213]

Pharmaceutical

The state is home to 250+ APIs and bulk drug units and is the home of Asia's first medical device park.[214]

Infrastructure and Development

At present, the state has three industrial corridors, three proposed greenfield airports and four upcoming ports. The state also has 25 operational SEZ and several national investment and manufacturing zone.

Historical steel production and planned capacities

Crude steel production in Andhra Pradesh has increased from 6.9 MT in FY19 to 7.09 MT in FY22, reflecting a CAGR of 0.73 percent. The production of Rashtriya Ispat Nigam Limited (RINL) declined from 5.14 MT in FY22 to 4.41 MT in FY23, causing the state's overall steel production to drop to 6.3 MT.[215] Therefore, the state's steel production is highly dependent on RINL Vizag.

The major steel player present is RINL, with a capacity of 7.3 MTPA. RINL plans to enhance its production capacity to 12 MTPA with a total capex of INR20,000 crore. The state also has other smaller steel players such as Maa Mahamaya Steels and Gangaraju Steel.

Macroeconomic and Steel demand outlook

Andhra Pradesh aims to become a US$243 billion economy by 2027 and a US$1 trillion economy in the future.[216] Overall, several transformative infrastructure projects are under various stages of implementation. Some of the key initiatives are mentioned below:

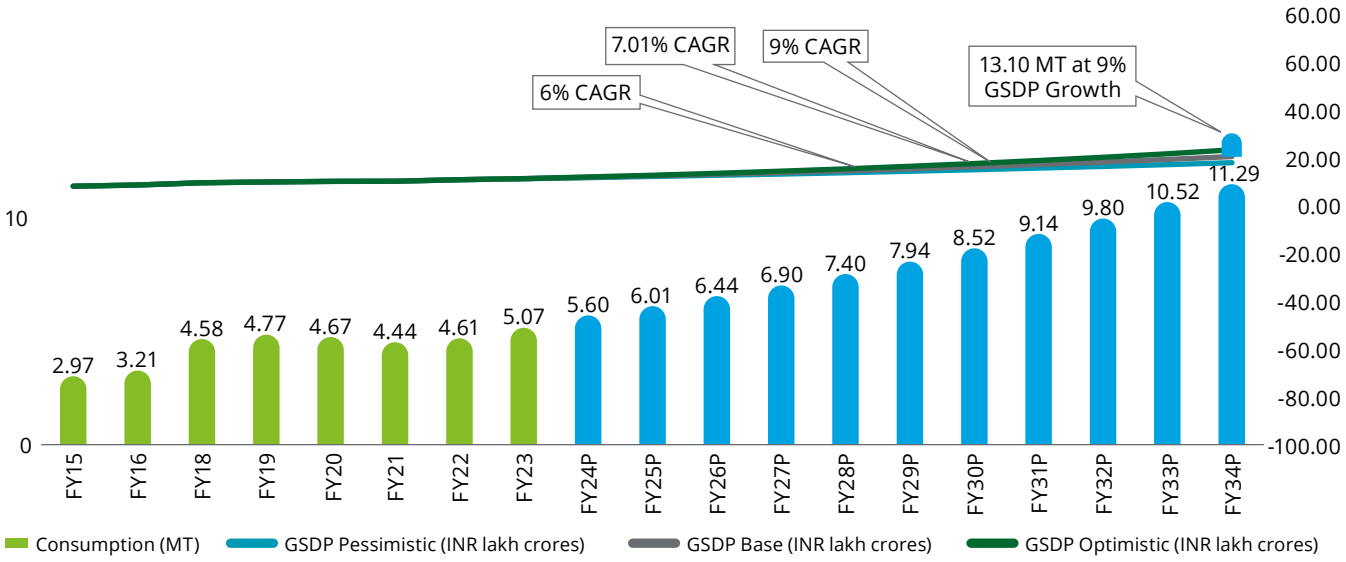
- The 465 km Visakhapatnam-Chennai Industrial Corridor (VCIC), is a key component of the East Coast Economic Corridor (ECEC). It is expected to attract over US$100 billion in investment and create over 1 million jobs.[217]
- The Ramayapatnam Port, a significant port project, is being developed on EPC model at a cost of INR3,736 crore.[218]

[212] IBEF
[213] Invest India
[214] Invest India
[215] MoS
[216] https://timesofindia.indiatimes.com/city/visakhapatnam/ap-to-emerge-as-a-243-bn-economy-by-2027-report/articleshow/102221820.cms#:~:text=Visakhapatnam%3A%20Andhra%20Pradesh%20is%20estimated,the%20biggest%20economies%20of%20Africa.
[217] https://www.narendramodi.in/andhra-pradesh-the-corridor-to-development-and-economic-boost-579753
[218] https://www.narendramodi.in/andhra-pradesh-the-corridor-to-development-and-economic-boost-579753

- The Visakhapatnam Light Metro (VLM) project encompasses four corridors totalling 79.91 km and 31 stations. The first phase, comprising two corridors with a combined length of 42.55 km, is anticipated to be completed by 2028. Furthermore, the state has witnessed proposals and is planning the Visakhapatnam-Kurnool high-speed corridor.[219]

With these investments and policy measures, the state's GDP is expected to post a CAGR of 6-9 percent over the next decade. Based on the regression analysis and the macroeconomic outlook, the steel demand in Andhra Pradesh is projected to reach about 10-13 MT by FY34. The product portfolio of HR and CR coils and sheets is expected to drive this demand for steel.

Figure 37: Steel consumption and GSDP growth outlook – Andhra Pradesh



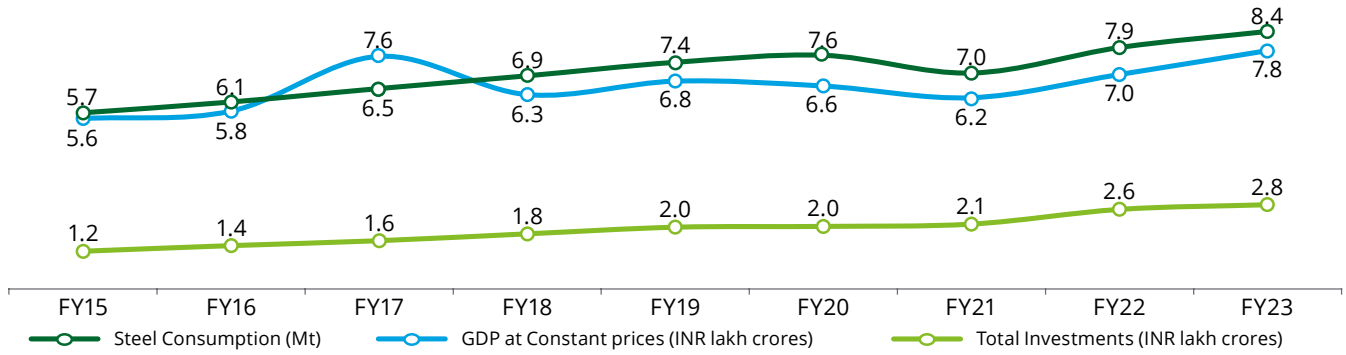
Source: JPC, MoSPI, Deloitte analysis

5.9 West Bengal

Overview

West Bengal is the sixth largest state in India in terms of economy. Its GDP was estimated to be ~INR9 lakh crore[220] in FY24, and it has registered a CAGR of ~5 percent in the past 10 years. It has abundant natural resources, and it is in proximity to mineral rich states such as Odisha and Jharkhand. It is also the fifth largest steel consuming state in India. In FY23, it consumed 7.78 MT[221] of finished steel, at a CAGR of ~4 percent in past eight years. Based on the historical data analysis, it was observed that steel has a correlation of 0.98 with GSDP and 0.96 with investment.

Figure 38: Historical steel consumption, GSDP and investment trends in West Bengal



Source: JPC, Annual Budgets, Directorate of Economics & Statistics of states

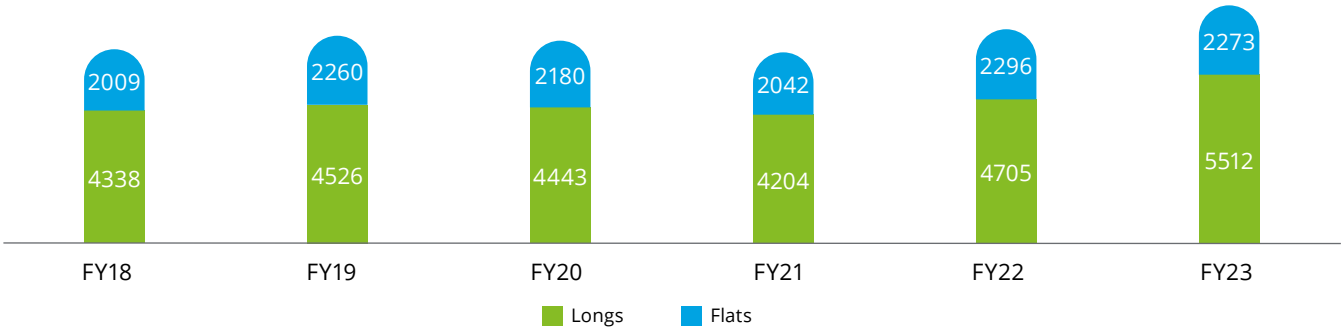
[219] https://www.narendramodi.in/andhra-pradesh-the-corridor-to-development-and-economic-boost-579753
[220] Directorate of Economics & Statistics
[221] JPC

Historical demand trends

In West Bengal, traditionally, long products have dominated the market, having ~70 percent share in FY23. However, for the last 5 years, the demand for flat products has increased from 2 MT in FY18 to 2.3 MT in FY23 at a CAGR of 2.5 percent.[222] This surge can be attributed to the government's significant investments in the infrastructure sector in the last decade as mentioned below:

- 1,100 km of railway sections have been commissioned in last 10 years.[223]
- 21,000 km of rural roads have been constructed. NHAI has constructed over 1200 km of highways and 2200 km of highways have been upgraded.[224]
- Number of MSME clusters have been increased from 49 to 550.[225]

Figure 39: Consumption of longs and flats in West Bengal (in KT)



Source: JPC

Table 9: Consumption of steel product categories in West Bengal

Product category	Consumption in FY18 (Thousand tonnes)	Consumption in FY23 (Thousand tonnes)	Growth (CAGR)
Bars and rods	3066	4361	7%
Structurals	1144	1044	-2%
HR coils and sheets	1015	1224	4%
CR Coils/Sheets	414	367	-2%
GP/GC Sheets	280	361	5%
Others	428	428	0%

Source: JPC

End-use industries in West Bengal:

Railway equipment manufacturing

West Bengal has a large railway equipment manufacturing industry that produces variety of products such as locomotives and wagons.

MSME and engineering goods

There are 90 lakh MSMEs[226] in the state that employ about 1.35 crore people. The state has traditionally been a large producer of engineering goods such as industrial and construction machinery.

Automotive

West Bengal's automotive industry is dominated by Original Equipment Manufacturers (OEMs) that produce simple nuts and bolts to complex parts such as shafts, radiators, and axles.[227]

[222] JPC
[223] https://www.narendramodi.in/charting-west-bengal-s-growth-trajectory-under-pm-modi-579756
[224] https://www.narendramodi.in/charting-west-bengal-s-growth-trajectory-under-pm-modi-579756
[225] https://www.bengalglobalsummit.com/bengal-at-a-glance/
[226] https://economictimes.indiatimes.com/small-biz/sme-sector/et-make-in-india-sme-regional-summit-in-kolkata-to-look-at-bengals-potential-and-opportunities-to-uplift-msmes/articleshow/110760504.cms?from=mdr
[227] https://wb.gov.in/business-engineering-industry.aspx

Historical steel production & planned capacities

Crude steel production in West Bengal has grown from 7.4 MT in FY19 to 10 MT[228] in FY23 at a CAGR of ~8 percent. SAIL's Durgapur Steel Plant has an installed crude steel making capacity of 2.2 MTPA.[229] IISCO Steel Plant (another unit of SAIL) has a capacity of 2.5 MTPA . There are other small pig and sponge iron plants in the state, such as Shyam Metallics & Energy Ltd., Rashmi Metaliks Ltd., Super Smelters Ltd., Jai Balaji Industries Ltd. A major steel PSU has plans to increase the capacity of Durgapur Steel Plant by 2.5 MTPA and IISCO Steel Plant by 4.5 MT by FY31.[230]

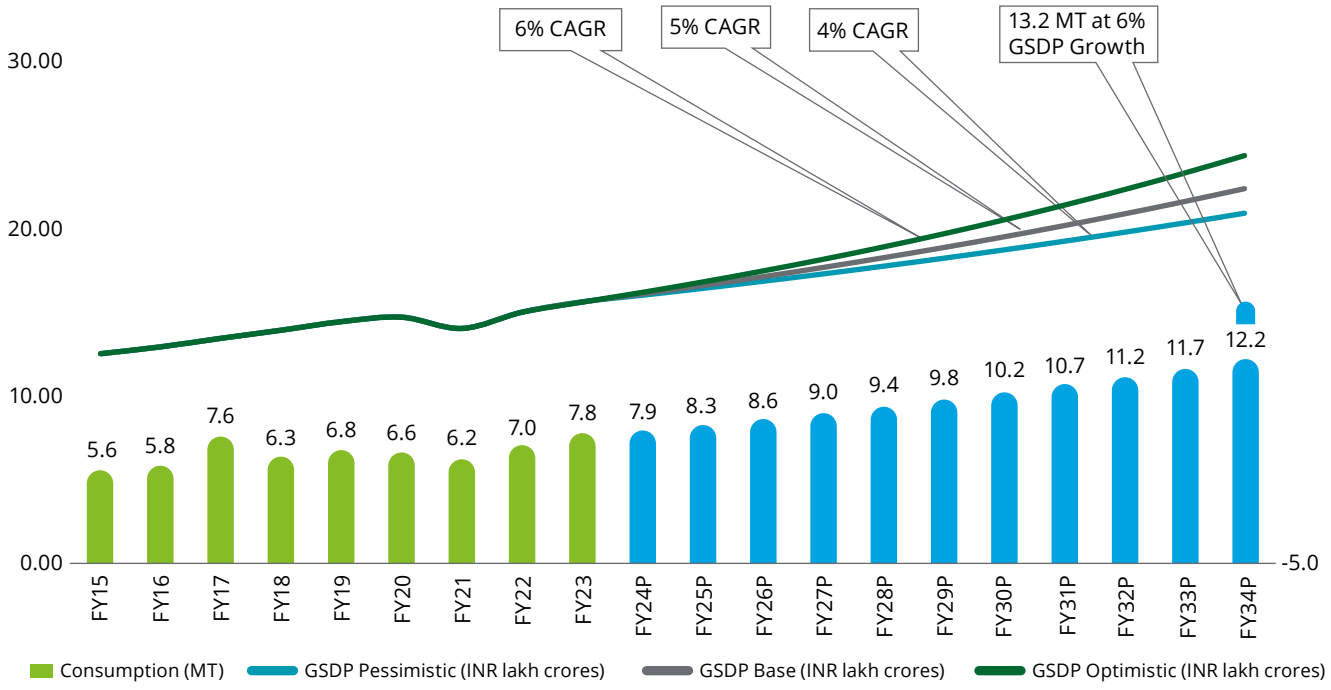
Macroeconomic & Steel demand outlook

West Bengal has a key role in India's pursuit of becoming a developed nation by 2047.The government plans to carry out many infrastructure projects in the upcoming years. Some of India's leading industrialists have also decided to invest in West Bengal. Some of the initiatives are mentioned below:

- The Bengal Global Business Summit (BGBS) which was held in 2023, attracted investments worth INR3.75 lakh crore involving 188 MoUs and LoI across various sectors.[231]
- An investment of ~INR80,000 crore has been planned for constructing the Kolkata-Siliguri Expressway and Raxaul Haldia Expressway (1400 km).[232]
- The Kalyani Airport Projesct and Tajpur Sea Port projects are also under planning. The Kolkata Metro network is expected to grow by ~100 kilometers during the next few years.[233]

With these investments and policy measures, the state's GDP is expected to register a CAGR of 4-6 percent over the next decade. Based on the regression analysis and the macroeconomic outlook, the steel consumption in West Bengal is projected to reach about 11-13.2 MT by FY34[234] at a CAGR of 3-5 percent.

Figure 40: Steel consumption and GSDP growth outlook – West Bengal



Source: JPC, MoSPI, Deloitte analysis

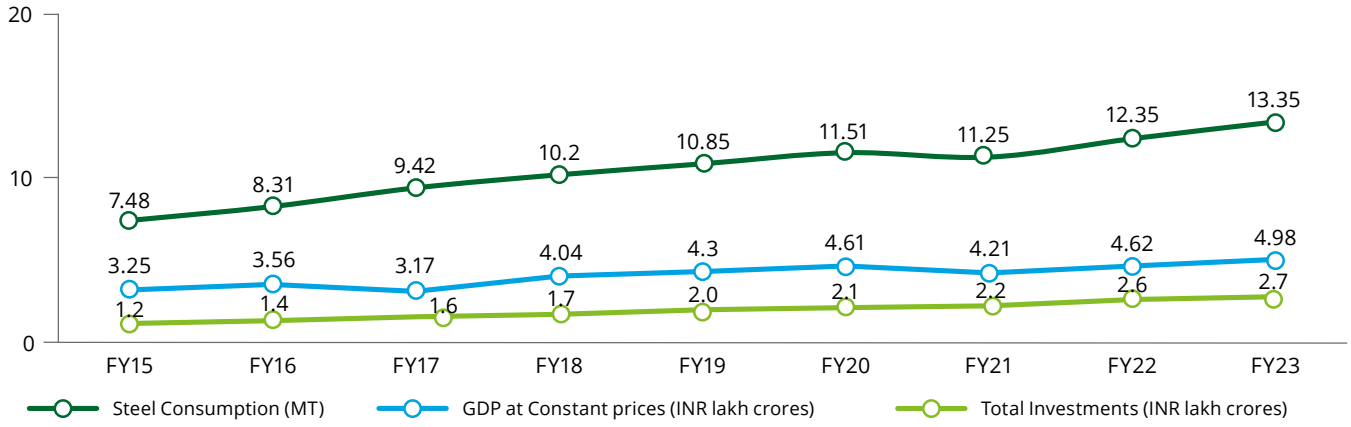
[228] JPC
[229] Company website
[230] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1913865
[231] https://economictimes.indiatimes.com/news/india/bengal-business-summit-attracts-investment-proposals-worth-rs-3-76-lakh-crore-mamata/articleshow/105418903.cms?from=mdr
[232] https://infrainfohub.com/top-upcoming-mega-projects-in-west-bengal/#google_vignette
[233] Secondary research
[234] Deloitte Analysis

5.10 Karnataka

Overview

In FY24, Karnataka's GSDP stood at INR14.23 lakh crore at constant prices.[235] Aligned with its GDP growth and rapidly expanding economy, the state has become a hub for over 695 large and mega industries. It's rapid industrial and infrastructural development has made it one of the major steel-consuming states in India. In FY23, the state consumed 4.98 MT of finished steel. Steel consumption in the state has posted a 5.49 percent CAGR growth in the past few years. Based on the historical data analysis, it was observed that steel has a correlation of 0.93 with GSDP and 0.78 with investment.

Figure 41: Historical steel consumption, GSDP and investment trends in Karnataka



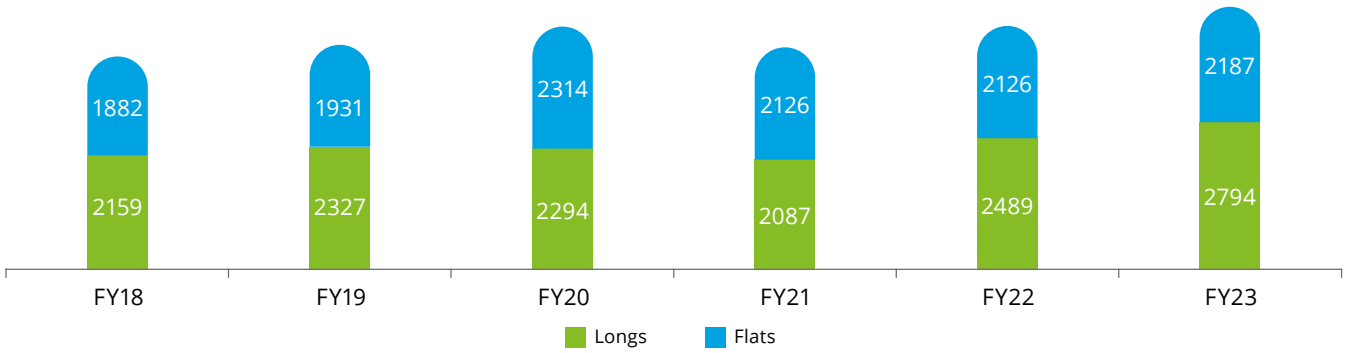
Source: JPC, Annual Budgets, Directorate of Economics & Statistics of states

Historical demand trends

In Karnataka, traditionally, flats and longs products have almost shared the market equally with 56.1 percent of products being longs and 43.9 percent of products being flats in FY23.[236] But for the last five years, the demand for long products has been increasing gradually, with a dip in FY20. The share of long products grew from 53.4 percent in FY18 to 56.1 percent in FY23.[237] This surge can be attributed to the government's significant investments in the infrastructure sector in the last decade, as mentioned below:

- Karnataka has 34 operational SEZs, 61 SEZs with formal approvals and 50 notified SEZs.[238]
- The state has commissioned ~300 Km of rail route in the last 10 years.[239]
- About 50,000 Km of road has been constructed in the last 10 years.[240]

Figure 42: Consumption of longs and flats in Karnataka (in KT)



Source: JPC

[235] Directorate of Economics & Statistics of states
[236] JPC
[237] JPC
[238] IBEF
[239] Handbook of statistics on Indian States
[240] Handbook of statistics on Indian States

Table 10: Consumption of steel product categories in Karnataka

Product category	Consumption in FY18 (Thousand tonnes)	Consumption in FY23 (Thousand tonnes)	Growth (CAGR)
Bars and rods	1863	2562	6.58%
Structurals	114	177	9.20%
HR Coils/Sheets	977	951	-0.54%
CR Coils/Sheets	434	543	4.58%
GP/GC sheets	271	550	15.21%
Others	382	198	-12.32%

Source: JPC

End-use industries in Karnataka:

Construction

Karnataka has 37 operational SEZs, with 29 dedicated to the IT/ITES sector. The state also has sector specific SEZs for industries such as IT, biotechnology, engineering, defence, pharmaceuticals and textiles. The Karnataka Industrial Areas Development Board (KIADB), the state government's infrastructure agency, has developed 199 industrial areas across the state, providing robust infrastructure and facilities to attract domestic and foreign investors. This has led to increased capital inflows and the development of adjacent towns and cities. Karnataka is home to 17,857 registered factories employing 1,753,327 workers.[241]

Automobile

Karnataka accounts for ~8.5 percent of India's total vehicle production, making it the fourth-largest automobile-producing state in the country.[242]

Food processing

It has a strong ecosystem of the food processing industry and a well-established infrastructure of food parks and cold chain infrastructure. It has 2,361 food processing units.[243]

Aerospace and defence

Karnataka has more than 2,000 SMEs and 70 percent of India's supplier base, that conduct specialised subcontracting work for defence PSUs.[244]

Historical steel production and planned capacities

Crude steel production in Karnataka has grown from 13.33 MT in FY19 to 13.40 MT in FY23 at a CAGR of 0.10 percent. The steel production has almost remained constant between FY19 and FY23, however, the net steel production has almost been 2.5 times of the total consumption, making it a state producing surplus steel in the country, which can be attributed due to the presence of major steel producing players.

A major Indian steel player and a Japanese steel company have entered into a joint venture in Bellary, Karnataka, with an investment of INR5,500 crore. The venture aims to manufacture grain oriented electrical steel and is scheduled to start production in FY27.[245]

[241] Deloitte Report
[242] Deloitte Report
[243] Deloitte Report
[244] Karnataka Powering India's Growth, a Deloitte Report
[245] https://economictimes.indiatimes.com/industry/indl-goods/svs/steel/jsw-steel-jfe-steel-jv-to-set-up-electrical-steel-facility-with-5500-crore-investment/articleshow/107663396.cms?from=mdr

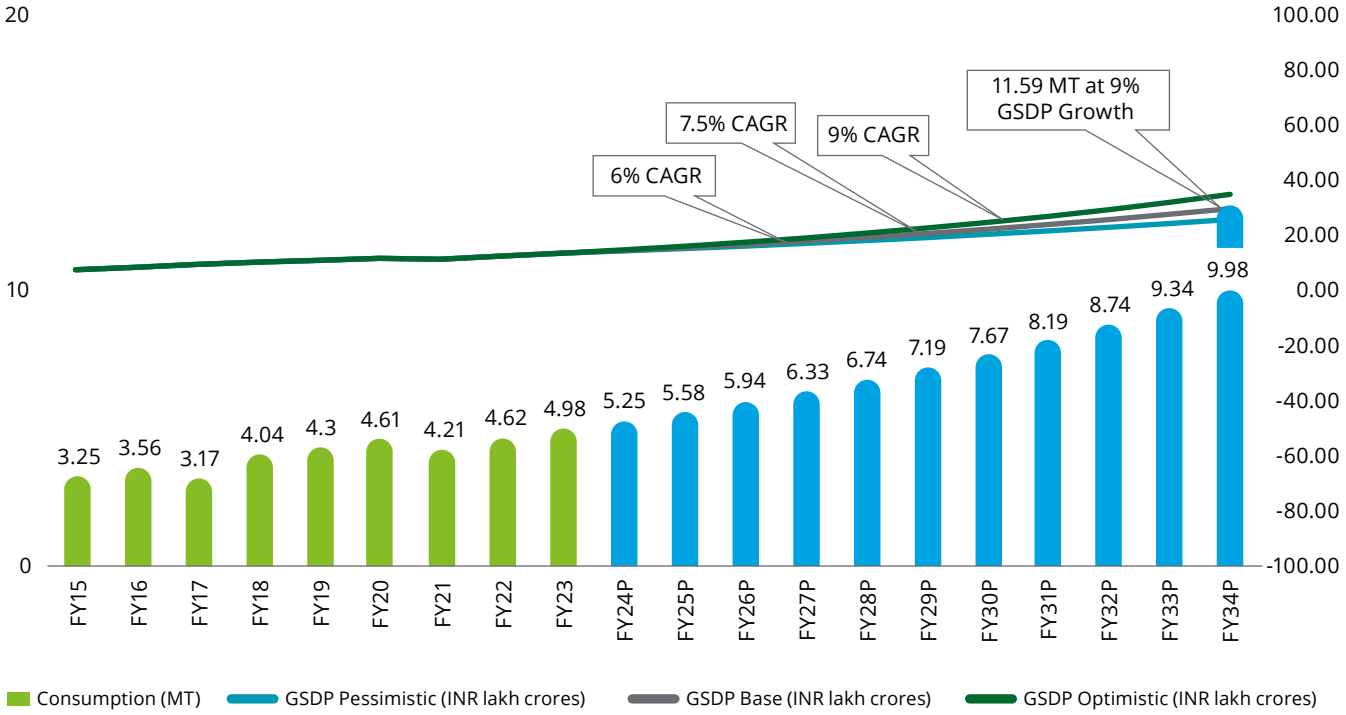
Macroeconomic and steel demand outlook

Karnataka aims to become a $1 trillion[246] economy by 2032. It boasts well-developed social, physical, and industrial infrastructure. By using public-private partnerships and attracting private sector investment, the government has accelerated the completion of infrastructure projects. Bengaluru's status as a global IT hub has generated high demand for office spaces, co-working facilities, and commercial infrastructure due to its thriving start-up ecosystem. Additionally, rising consumer spending and changing shopping habits are driving demand for shopping malls, high-street stores, and e-commerce fulfilment centres. By capitalising on these drivers, Karnataka can secure its position as a thriving industrial and trade hub in India. Some of the key initiatives are mentioned below:

- **Housing:** Allocation of INR24.5 billion to complete 0.3 million homes under various housing programmes that are in various phases of construction.[247]
- **Metro expansion:** Expansion of the metro network from 70 km to 176 km in the next three years.[248]
- **Airstrip development:** Development of airstrips at Dharmasthala, Kodagu, and Chikkamagalur.[249]
- **Road development:** Allocation of INR40.8 billion for developing 2,000 km of state highways and 2,400 km of major district roads.[250]
- **Industrial facilities:** Construction of multistorey/ flatted factories by KIADB with plug-and-produce facilities.

With all these investments and policy measures, the state's GDP is expected to post a CAGR of 6-9 percent over the next decade. Based on the regression analysis and the macroeconomic outlook, the steel demand in Karnataka is projected to register a CAGR of 5-8 percent to reach about 9-12 MT by FY34. This surge in steel demand will be primarily driven by the product portfolio of HR coils, sheets, bars and rebars.

Figure 43: Steel consumption and GSDP growth outlook - Karnataka



Source: JPC, MoSPI, Deloitte analysis

[246] News Article
[247] Karnataka Powering India's Growth, a Deloitte Report
[248] Karnataka Powering India's Growth, a Deloitte Report
[249] Karnataka Powering India's Growth, a Deloitte Report
[250] Karnataka Powering India's Growth, a Deloitte Report

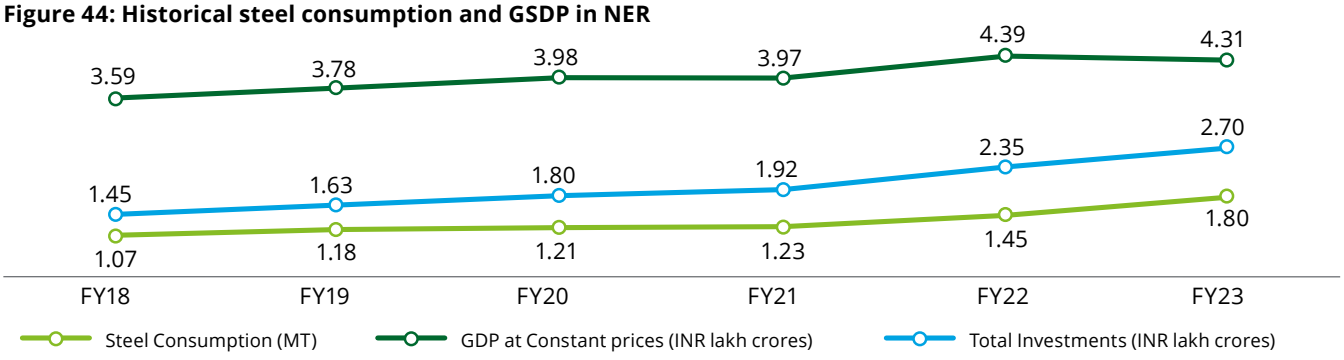
5.11 North-eastern region

Overview

Northeast India, officially the North-eastern Region (NER), consists of eight states: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, and Sikkim. These states have historically served as a point of contact for the country's long-standing cultural ties to East Asia. They will likely continue to be crucial in advancing trade, travel, and tourism there in the future.

The GSDP for all states of the NER has increased from FY18 from INR3.59 lakh crore (in FY18) to INR4.31 lakh crore[251] (in FY23), at a CAGR of 3.8 percent. Steel consumption has also witnessed a steady increase over the years, growing from 1.07MT[252] in FY18 to 1.80MT in FY23[253] at an 11 percent CAGR.

Figure 44: Historical steel consumption and GSDP in NER



Source: JPC, Annual Budgets, Directorate of Economics & Statistics of states

Historical demand trends

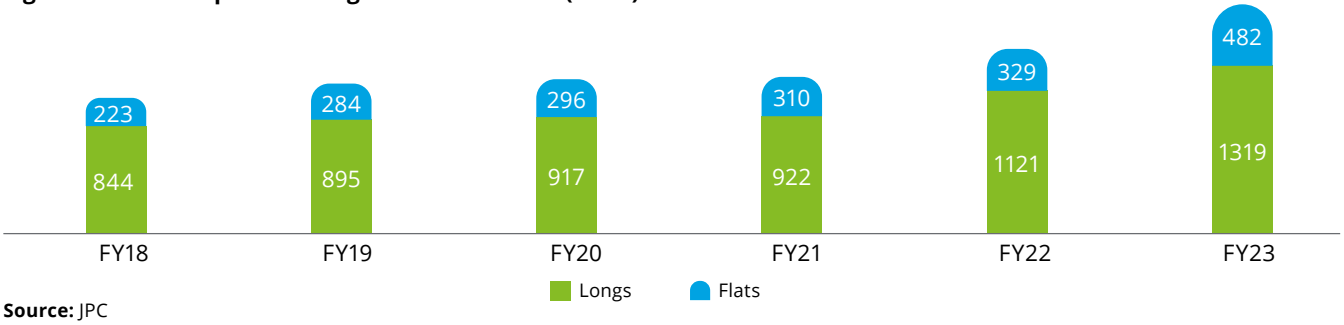
The consumption of longs and flats in NER has grown consistently from FY18 to FY23. Longs steel consumption experienced a CAGR of **~10.5 percent** during the period. Flats steel consumption posted a CAGR of **~16.8 percent** during the same period.

This surge can be attributed to the government's significant investments in the infrastructure sector in the last decade. INR3.84 lakh crore[254] has been spent on several infrastructure development projects since FY15 in the region to improve road connectivity, air connectivity, railway network, waterways, telecom and power.

Some key infrastructure projects in the last decade:[255]

- A total of 4,121 km of road projects have been completed by the Ministry of Road Transport and Highways in the region in the last seven years.
- Since FY15, the government has spent INR19,855 crore for the development of new tracks and doubling the existing ones.
- There are 17 operational airports in the region.

Figure 45: Consumption of longs and flats in NER (in KT)



Source: JPC

[251] Handbook of statistics on Indian state
[252] JPC report
[253] JPC report
[254] https://www.financialexpress.com/business/infrastructure-infra-boon-in-north-east-heres-how-much-the-government-spent-in-developing-the-infrastructure-of-ne-states-3008600/
[255] https://www.financialexpress.com/business/infrastructure-infra-boon-in-north-east-heres-how-much-the-government-spent-in-developing-the-infrastructure-of-ne-states-3008600/

Table 11: Consumption of steel product categories in NER

Product category	Consumption in FY'18 (Thousand tonnes)	Consumption in FY'23 (Thousand tonnes)	Growth (CAGR)
Bars and rods	837	1296	9%
Structurals	5	12	19%
HR Coils/Sheets	110	196	12%
CR Coils/Sheets	16	27	11%
GP/GC sheets	85	199	19%
Others	14	71	38%

Source: JPC

End-use industries in NER:

Infrastructure and construction

The infrastructure and construction sectors are major consumers of steel in the region. Government initiatives such as the Pradhan Mantri Awas Yojana (PMAY) focus on constructing affordable housing units, heavily relying on steel for structural frameworks. Commercial real estate development also drives steel demand for shopping complexes and office buildings.

Industrial and manufacturing

Resource-based industries, including oil refineries and natural gas processing plants, rely on steel for construction and machinery. The cement industry uses steel in plant construction and machinery, and the food processing industry, driven by the region's agricultural base, requires steel for processing facilities and equipment.

Energy

Hydropower projects demand a significant amount of steel for constructing dams and powerhouses. Emerging solar power projects also use steel for mounting structures and frames.

Telecommunications

The expansion of telecommunications infrastructure, including towers and 4G/5G networks, depends heavily on steel.

Historical steel production and planned capacities

The steel production data for the NER from FY19 to FY23 reveals fluctuations in production levels. In FY19, production stood at 194,000 tonnes increasing slightly to 200,000 tonnes in FY20.[256] However, a sharp decline was observed in FY21, followed by a significant recovery in FY22, with production soaring to 250,000 tonnes before decreasing marginally to 191,000 tonnes in FY23.[257]

The region consumes more steel than it produces that can be attributed to the high steel demand due to presence of end-use industries as mentioned above.

Currently, there are no apparent plans for major capacity expansion in the state, yet the existing facilities are operating at a utilization rate of ~36 percent,[258] indicating ample room for improvement. It is imperative to enhance utilisation figures to reduce reliance on imports.

Macroeconomic and steel demand outlook

The steel demand in the region is expected to have a robust trajectory mainly due to the various government-led infrastructure projects planned in the pipeline in the next decade.

[256] JPC report
[257] JPC report
[258] JPC report

The government recently launched multiple development projects for the states worth INR83,000 crore.[259]

Some key mega projects planned in the NER over the next decade:[260]

- The Assam government plans to construct an 890 km expressway that will run the entire length of the Brahmaputra in the state
- In Assam, a major Indian conglomerate plans to establish a semiconductor processing facility.
- The Airport Authority of India plans to develop Lokpriya Gopinath Bordoloi International Airport in Guwahati with a new terminal building.

Government-led initiatives that will contribute to steel demand in the region:

- The Bharatmala Pariyojana is a significant project driving steel demand through extensive road and highway development.
- The Smart Cities Mission aims to develop cities such as Imphal, Agartala, and Guwahati, driving demand for steel in modern urban infrastructure.
- Hydropower projects, such as the Subansiri Lower Hydro Project, will be significant contributors to steel demand for building dams and related infrastructure.
- Prime Minister's Development Initiative for North East Region (PM-DevINE) was announced as a new Central Sector scheme, with 100 percent central funding, in the Union Budget FY23 with a total outlay of INR6,600 crore for the 4-year period from FY23 to FY26. The scheme will fund the infrastructure development in the state, which will be a key driver for steel demand.[261]
- Continuation of the North East Special Infrastructure Development Scheme (NESIDS) with an approved outlay of INR8139.50 crore from FY23 to FY26 was approved by the cabinet, with two components: NESIDS-Road and NESIDS-Other Than Road Infrastructure (OTRI). The scheme is a central sector scheme with 100 percent central funding.[262]

The steel consumption in the NER has registered a CAGR of 11 percent from FY19 to FY24.[263] Given the national projected growth rate of 5.5-6 percent over the next decade,[264] the higher growth rate signifies the opportunity for enhanced steel usage in the region compared with other regions.

With government's commitments to strengthen its borders and develop the North East, steel consumption is expected to see an uptick. However, supply chain is a challenge in these areas as the costs of transportation are too high and not profitable. In addition, customers in the region need to be made more aware about the benefits of using steel. Then only per capita consumption can increase.

Considering an 8-10 percent growth rate in steel consumption over the next decade, it is expected that the per capita steel consumption to grow from current level of ~42kg[265] to ~50–54kg[266] by FY34. Based on the same, expected steel demand in the region is expected to reach close to between 4.5-4.75MT by FY34.

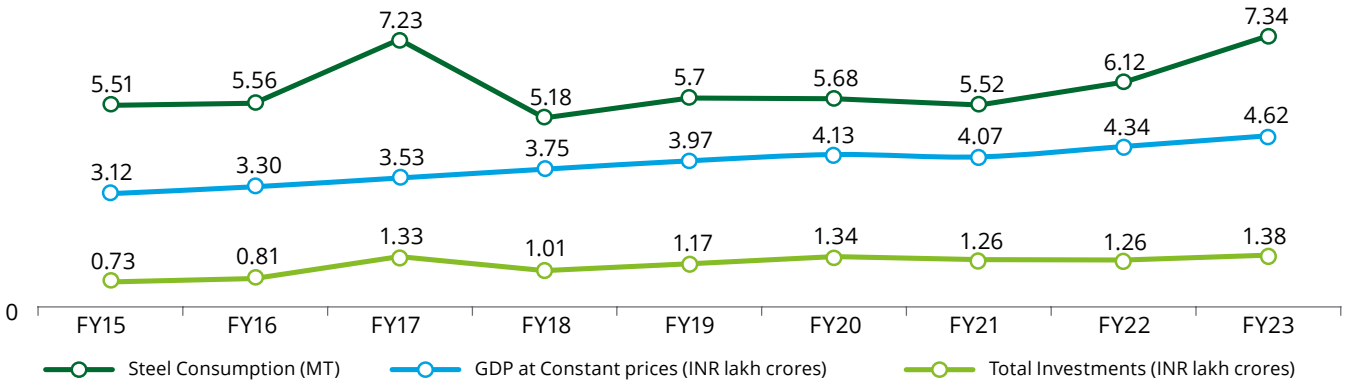
[259] https://timesofindia.indiatimes.com/city/guwahati/pm-to-launch-83000-crore-projects-for-northeast-today/articleshow/108339970.cms
[260] https://infrainfohub.com/future-upcoming-north-east-india-mega-projects/
[261] Press information bureau
[262] Press information bureau
[263] Deloitte analysis
[264] Deloitte analysis
[265] Deloitte analysis
[266] Deloitte analysis

5.12 Punjab

Overview

Punjab is a significant contributor to India's agricultural and industrial sectors. With a GSDP of INR4.93 lakh crore in FY24, it ranks 16th in terms of GSDP among Indian states. The state's economy has been growing rapidly at 8.55 percent in the last 10 years. Punjab is home to about 3.1 crore[267] people and has a diversified economy based on agriculture, industry, services, and a rich cultural heritage. Punjab is also a significant player in the steel industry with finished steel consumption of 7.34 MT[268] in FY23, a 3.65 percent CAGR in the last eight years. Based on the historical data analysis, after removing the outliers, it was observed that steel has a correlation of 0.83 with GSDP and 0.79 with investment.

Figure 46: Historical steel consumption, GSDP and investment trends in Punjab



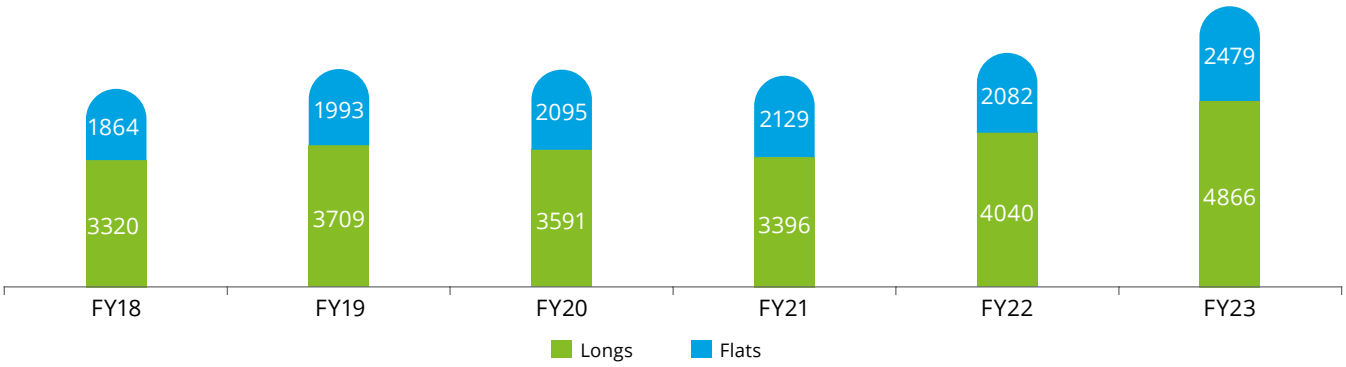
Source: JPC, Annual Budgets, Directorate of Economics & Statistics of states

Historical demand trends

In Punjab, long products have dominated the market, having a share of about 66 percent in FY23. However, for the last five years, the demand for flat products has also been increasing gradually. The consumption of long products has witnessed a CAGR of 7.96 percent from 3.32 MT in FY18 to 4.87 MT in FY23. This surge can be attributed to the government's significant investments in the infrastructure sector as mentioned below:

- About 1011 km national highways have been built between FY18 and FY23.[269]
- 50 kms of railway network have been built from FY 13 to FY 22[270]
- Four new airports under UDAN Scheme have been operationalised.[271]

Figure 47: Consumption of longs and flats in Punjab (in KT)



Source: JPC

[267] https://statisticstimes.com/demographics/india/punjab-population.php#:~:text=As%20per%20the%20report%20of,reach%203.27%20crore%20in%202036.
[268] JPC
[269] Handbook of Statistics on Indian States
[270] Handbook of Statistics on Indian States
[271] https://pib.gov.in/PressReleasePage.aspx?PRID=1898741

Table 12: Consumption of steel product categories in Punjab

Product category	Consumption in FY18 (Thousand tonnes)	Consumption in FY23 (Thousand tonnes)	Growth (CAGR)
Bars and rods	2333	3697	9.64%
Structurals	966	1132	3.22%
HR Coils/Sheets	1378	1846	6.02%
CR Coils/Sheets	261	203	-4.90%
GP/GC sheets	113	264	18.50%
Others	102	135	5.77%

Source: JPC

End-use industries in Punjab:

Food processing

Punjab is the food bowl of India with a contribution of more than 40 percent of the central pool of wheat and 26 percent of rice and has a robust infrastructure in place for Agro and food processing. Agriculture contributes to the economy with ~21 percent of GSDP against an all India figure of 14 percent.[272] The agricultural equipments are manufactured majorly in cities such as Ludhiana, which is a major hub for agricultural machinery production.

Automobile

Punjab has a strong presence of the automobile industry, with several major manufacturers and suppliers based in the state. The sector is driven by the state's strategic location and the presence of several major industrial hubs.

Aerospace and defence

Punjab has a growing aerospace and defence sector, driven by its strategic location and key defence establishments. Notable companies include Bharat Electronics Limited, and Ordnance Factory Chandigarh, which manufacture defence equipment. Research institutions such as Terminal Ballistics Research Laboratory, Punjab Engineering College, and Chandigarh University also contribute to the sector's growth.

The end-use industries in Punjab, such as food processing, automotive, and aerospace and defence, drive the demand for various finished steel products. Long products such as bars, rods, rebars and structural steel are essential for constructing food processing facilities and agricultural machinery. Meanwhile, flat products such as plates, sheets, coils, pipes and specialty steel for vehicle armour and weaponry are crucial for manufacturing automobile parts and defence equipment.[273]

Historical steel production & planned capacities

Crude steel production of Punjab has increased from 3.61 MT in FY19 to 4.06 MT in FY23 at a CAGR of 2.98 percent. However, the finished steel consumption (7.34 MT) is more than the production, which can be attributed to the presence of significant end-use industries.

[272] https://pbindustries.gov.in/static/manufacture_industry;Key=Food_Processing_Industries
[273] Industry Interviews
[274] https://projxnews.com/blog/sharu-industries-forges-ahead-steel-plant-project-set-for-punjab?type=section_1

Punjab is home to steel plants such as Vardhaman Special Steel, Punjab Steels and ST Steels. The Punjab government has approved the establishment of North India's first Green Steel Plant by a major Indian steel player, with an investment of INR2600 crore. Another steel player is set to construct a new steel plant in Nichi Mangali, Ludhiana, with capacity of 76,800 tonnes and an investment of INR29 crore.[274]

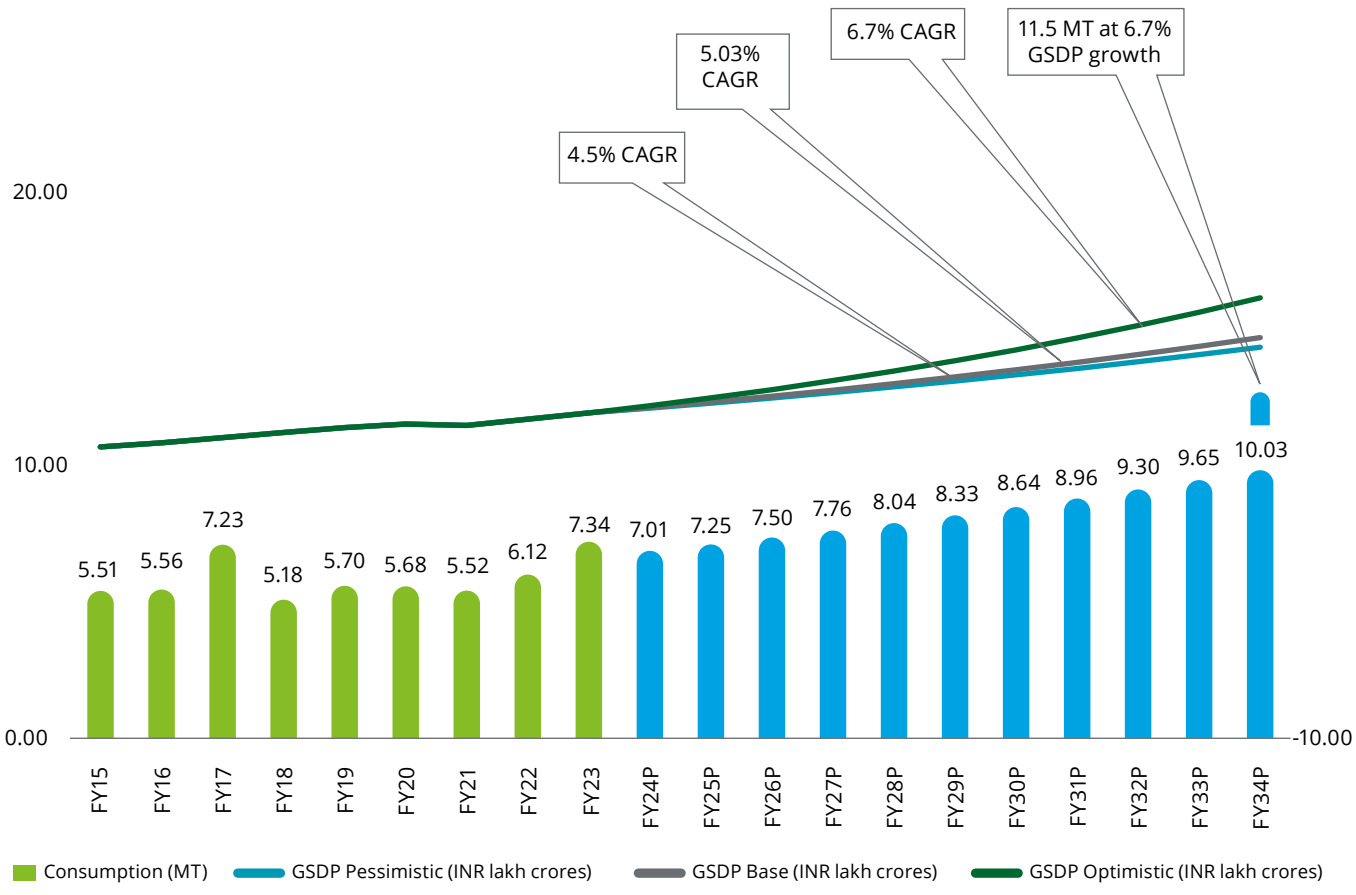
Macroeconomic & Steel demand outlook

The Punjab government has prioritised key infrastructure projects to bolster connectivity within the state and beyond. Some of the key initiatives[275] are mentioned below:

- The 1,257 km Amritsar-Jamnagar Expressway (NH-754) is under development in north-west India, reducing the distance between Amritsar and Jamnagar from 1,430 km to 1,316 km and travel time from 26 hours to under 13 hours.
- The Ludhiana International Airport is being built near Halwara, 32 km from Ludhiana City, on 161.27 acres of land purchased by GLADA.
- The 670 km (420 mi), 4-lane (extendable to 8 lanes), controlled-access Delhi-Amritsar-Katra Expressway is an under-construction mega project in Punjab.

With all these investments and policy measures, the state GDP is expected to post a CAGR of 4.5-6.7 percent over the next decade. Based on the regression analysis (after removing the outliers) and the macroeconomic outlook, the steel consumption is projected to grow at a CAGR of 2.5-4.2 percent to reach about 9.6-11.5 MT by FY34.

Figure 48: Steel consumption and GSDP growth outlook - Punjab



Source: JPC, MoSPI, Deloitte analysis

[274] https://projxnews.com/blog/sharu-industries-forges-ahead-steel-plant-project-set-for-punjab?type=section_1
[275] https://indianconstructioninfo.com/upcoming-mega-projects-in-punjab/

5.13 Other states

Madhya Pradesh

Madhya Pradesh had a GSDP of INR6.60 lakh crore (constant prices)[276] in FY24, and it has been growing at a CAGR of ~6.10 percent in the previous 10 years. In FY23, the total steel consumption was 3.64 MT,[277] with a 7.61 percent CAGR growth in the last eight years, while the steel consumption and GSDP correlate at 0.93, after removing outliers.

The contribution to Madhya Pradesh's GDP corresponds primarily to the end-use industries such as automobile (Asia's largest auto testing track; the state also houses over 10 OEMs with over 200 auto component manufacturers).[278] Food processing (with two private mega food parks, eight government food parks, and four agro-processing clusters).[279] Additionally, the state hosts historical ordnance manufacturing sites and is home to major manufacturing companies in the construction and power sector.[280] In the last nine years, ~233 km of rail line and more than 135,000 km of roads have been built.[181]

The state aims to become an INR45 lakh crore[282] economy by 2030. Some of the key initiatives are mentioned below:

- Sanctioned INR1,881 crore to construct roads and flyovers across the state.[283]
- Development of two metro rail corridors in Bhopal with an estimated cost of INR6,491.40 crore.[284]
- Development of ring metro line in Indore with an investment of INR7,500.80 crore.[285]
- Housing projects with a total investment of INR45,000 crore have been approved under PMAY.[286]

With all these investments and policy measures, the state GDP is expected to grow at a CAGR of 5–7 percent till FY34. Steel consumption in Madhya Pradesh is projected to grow at a CAGR of 6.5–8.8 percent, reaching about 7.3 to 9.3 MT by FY34.[287]

[276] Directorate of Economics & Statistics of respective State Governments
[277] JPC
[278] Invest India
[279] Invest India
[280] Invest India
[281] Handbook of statistics on Indian States
[282] https://www.ndtv.com/india-news/madhya-pradesh-economy-will-be-rs-45-lakh-crore-by-2030-shivraj-chouhan-4300322
[283] https://www.outlookindia.com/national/madhya-pradesh-1881-crores-sanctioned-for-the-construction-of-roads-and-fly-overs-in-the-state-news-304000
[284] https://invest.mp.gov.in/wp-content/uploads/2023/01/urban-development.pdf
[285] https://invest.mp.gov.in/wp-content/uploads/2023/01/urban-development.pdf
[286] https://invest.mp.gov.in/wp-content/uploads/2023/01/urban-development.pdf
[287] Deloitte Analysis

Bihar

Bihar's GSDP in FY24 was estimated to be INR4.6 lakh crore (constant prices)[288] It has grown at a CAGR of ~5.5 percent for the last 10 years. After being granted a special package by the Government of India in 2015, steel consumption in the state has been increasing rapidly. In FY23, the state consumed ~4.72 MT[289] of finished steel with a CAGR of ~21 percent in the last eight years. In Bihar, long products have dominated the market, having a share of ~95.5 percent in FY23.

The contribution to Bihar's GDP corresponds primarily to the end-use industries such as petrochemicals, paper, cement, light manufacturing, and agro-based industries such as sugar refining, tobacco processing, silk production, and jute milling.[290] Bihar also has electric and diesel railway locomotive manufacturing facilities. In the last 10 years, ~1300 km of railway tracks have been commissioned, and ~2300 km of highways have been built in the previous 5 years[274]. The construction of 36 lakh houses has been completed under PMAY.

Bihar has a significant growth potential in the next decade. The central government plans to invest around INR35,000 crore in various development projects in the next few years. Around INR1.5 lakh crore of investments have been planned for the oil and gas sector.[284] Some of the key initiatives are mentioned below:

- Through the Invest Bihar Summit in 2023, the state secured an investment of INR50,500 crore across diverse sectors, attracting 278 investors.[291]
- Investment of around INR13,000 crore in the Patna Metro Rail Project.
- Patna Outer Ring Road Project, Patna-Kolkata Expressway, Buxar-Bhagalpur Expressway and other highway projects (~1600 km combined length) are underway.[292]
- AIIMS Darbhanga, Nalanda Cricket Stadium, Mahatma Gandhi Setu Parallel Bridge and Vikramshila Setu Parallel Bridge are the major infrastructure projects under construction.

With all these investments and policy measures, the state GDP is expected to grow at a CAGR of 4.9–6.2 percent till FY34. Steel consumption in Bihar is projected to grow at a CAGR of 8.3–10.2 percent, reaching about 11.3 to 13.8 MT by FY34.[293]

Jharkhand

Jharkhand's GSDP in FY24 was estimated to be INR2.7 lakh crore (constant prices)[294] It has grown at a CAGR of ~4.7 percent for the last ten years. In FY24, around 4.56 MT[295] of finished steel was consumed in the state. In Jharkhand, traditionally flat products have a more significant share in the market (52 percent in FY23), but in recent years, the consumption of long products has been on the rise (share of longs grew from 41 percent in FY18 to 48 percent in FY23).

Jharkhand is one of the richest mineral zones in India (iron ore, coal, and copper), and it has become a hub for mining and mineral extraction industries. Some of the significant sectors of Jharkhand include iron and steel, engineering, chemicals, handloom, food and beverages, automotive, and cement.[296] Over 2,250 km of national highways have been constructed in Jharkhand in the last decade, and electrification of over 2,500 km of railway tracks (cumulative) has been completed. Further, two airports (Deogarh and Jamshedpur) have been operationalised.[297] In the future, Jharkhand has the potential to contribute significantly towards India's development targets. Some of the key initiatives planned by the central and state governments are mentioned below:

- Prime Minister has laid the foundation for development projects in Jharkhand worth INR35,700 crore. Railway Projects worth INR17,600 crore are under planning.[298]
- The central government has planned to invest over 2 lakh crore to develop a highway network.[299]
- Mega infrastructure projects, such as expressways, bridges, flyovers and a proposal for a new airport near Jamshedpur, are also underway.

[288] Deloitte Analysis
[289] JPC
[290] https://unacademy.com/content/bank-exam/study-material/general-awareness/bihar-economy/
[291] https://www.investbihar.co.in/#:~:text=In%20the%20Bihar%20Business%20Summit,more%20jobs%20within%20the%20state.
[292] https://infrainfohub.com/future-upcoming-bihar-megaprojects/
[293] Deloitte Analysis
[294] Deloitte Analysis
[295] JPC
[296] https://testbook.com/jharkhand-gk/list-of-industries-in-jharkhand
[297] https://www.narendramodi.in/jharkhand-s-trajectory-to-growth-581371
[298] https://www.narendramodi.in/prime-minister-narendra-modi-inaugurates-dedicates-and-lays-foundation-stone-of-various-projects-in-sindri-jharkhand-580070
[299] Secondary research

Steel consumption has historically grown by 0.94 percent and shows very little correlation with the GSDP of states. However, considering the initiatives in developing highways and other infrastructure projects, the steel consumption in Jharkhand is projected to grow at a CAGR of 1.5–2.5 percent to reach about 5.3 to 6 MT by FY34.[300]

Goa

Goa had a GSDP of INR0.60 lakh crore (constant prices)[301] in FY23, and it has been growing at a CAGR of ~5.26 percent in the last 10 years. In FY23, the total steel consumption by the state was 0.59 MT,[302] with an 8.23 percent CAGR growth in the last four years. A correlation of 0.88 (after removing outliers) was observed between steel consumption and GSDP.

The contribution to Goa's GDP corresponds primarily to the end-use industries such as agro and food processing (contributing approximately 7 percent to Goa's GDP), tourism and hospitality developments and the IT and ITeS sector (with ~100 IT and ITeS companies planned to be developed).[303] It has also emerged as a hub for pharmaceutical companies, producing 12 percent of the total medicines manufactured in India.[304] In the last nine years, 30 km of National Highways have been built.[305]

Several infrastructure projects have been announced in Goa, worth about INR15,000 crore, as below:

- Projects worth over INR1,330 crore in Viksit Bharat- Viksit Goa 2047 program, which will boost infrastructure in sectors like education, sports, waste management, and tourism.[306]
- INR1,000 crore has been allocated to improve Riding quality surface, State highways, Major district roads and village roads totalling 1,700 km.[307]
- INR343.62 crore has been allocated to repair and maintain of all government buildings.[308]

With all these investments and policy measures, steel consumption in Goa is projected to grow at a CAGR of 4.8 - 6.4 percent to reach approximately 1 to 1.18 MT by FY34.[309]

Himachal Pradesh

Himachal Pradesh had a GSDP of INR1.43 lakh crore (constant prices)[310] in FY24, and it has been growing at a CAGR of ~5.60 percent in the last 10 years. In FY23, the total steel consumption was 1.21 MT,[311] with a 7.87 percent CAGR growth in the last eight years.

The contribution to Himachal Pradesh's GDP corresponds primarily to the end-use industries such as hydropower, food processing and pharmaceuticals. The state has shown a shift from the agriculture sector to industries and services as the percentage contribution of agriculture in total Gross State Domestic Product has declined from 26.5 percent in 1991-92 to 9.50 percent in FY22.[312] In the last nine years, 411 km of national highways and 16 km of railway network have been built.[313]

Himachal Pradesh is set for a development boost, with the state government aiming to invest about INR20,000 crore in manufacturing, tourism, energy, construction and housing sectors.[314]

- INR9,560 crore outlay is planned for education, focusing on developing 850 institutions as Institutions of Excellence (IOE).[315]
- With a commitment to making Himachal Pradesh the first "Green Energy" state by 2026, a 32-MW solar power plant in Una and another 10-MW plant have been planned for commissioning.[316]
- Railway projects worth INR13,168 crore are currently in progress. An allocation of INR2,081 crore has been earmarked in the Budget for FY25 for railway development.[317]

[300] Deloitte Analysis
[301] Deloitte Analysis
[302] JPC
[303] https://www.goaipb.goa.gov.in/wp-content/uploads/2024/01/Goa-Industrial-Growth-And-Investment-Promotion-Policy-2022.pdf
[304] https://businessgoa.in/goa-has-emerged-as-a-hub-for-pharmaceutical-companies-it-is-the-sunrise-industry-of-the-state/
[305] Handbook of Statistics on Indian States
[306] https://www.financialexpress.com/business/infrastructure-pm-modis-goa-visitpm-dedicates-rs-1330-crores-under-viksit-bharat-viksit-goa-2047-programme-and-state-of-the-art-nit-campus-3384766/
[307] https://goaonline.gov.in/goabudget.pdf
[308] https://goaonline.gov.in/goabudget.pdf
[309] Deloitte Analysis
[310] Deloitte Analysis
[311] JPC
[312] https://himachalservices.nic.in/economics/en-IN/eco-survey-2022-23.html
[313] Handbook of Statistics on Indian States
[314] https://www.millenniumpost.in/nation/himachal-pradesh-plans-to-attract-rs-20000-cr-worth-of-investments-518567?infinitescroll=1
[315] https://www.hindustantimes.com/cities/chandigarh-news/himachals-budget-lays-road-map-for-selfreliance-101708233425946.html
[316] https://www.hindustantimes.com/cities/chandigarh-news/himachals-budget-lays-road-map-for-selfreliance-101708233425946.html
[317] https://www.financialexpress.com/business/railways-himachal-pradesh-rail-infrastructure-projects-worth-rs-13168-crore-in-progress-aims-to-give-new-impetus-to-railway-infrastructure-3406243/

With all these investments and policy measures, the state GDP is expected to grow at a CAGR of 5.1–6.1 percent till FY34. The steel consumption in Himachal Pradesh is projected to grow at a CAGR of 1.7–3 percent to reach about 1.5[318] to 1.7 MT by FY34.[319]

Rajasthan

Rajasthan had a GSDP of INR7.99 lakh crore (constant prices)[320] in FY23, and it has been growing at a CAGR of ~5.8 percent in the last 10 years. In FY23, the total steel consumption was 4.03 MT,[321] with a 2.53 percent CAGR growth in the last eight years. A correlation of 0.93 (after removing outliers) was observed between steel consumption and GSDP.

The contribution to Rajasthan's GDP corresponds primarily from end-use industries such as mining and minerals (having the 2nd highest number of mines in India)[322] cement (3rd largest cement-producing state in India)[323] and the auto and auto components (with over 100 units currently operational in the Alwar district). It has also emerged as a hub for vehicle plants in India, with major private automobile players setting up their plants.[324] In the last five years, 1,734 km of national highways and 152 km of railway routes have been built.[325]

The state aims to become an INR30 lakh crore economy by 2030.[326] Significant infrastructure development is underway, as shown below:

- The Rajasthan government is set to invest INR400 crore in infrastructure development, with INR200 crore for industrial areas in districts such as Sirohi, Chittorgarh, Barmer Jaipur and Jodhpur.[327]
- An additional INR100 crore will be allocated for environmental and infrastructure improvements in the industrial hubs of Bhiwadi, Neemrana and Bharatpur.[328]
- A leading infrastructure financing company has signed an MoU with the Rajasthan government to finance power and non-power infrastructure projects, with an annual investment of up to INR200 billion annually for six years, extending up to 2030.[329]

With all these investments and policy measures, the state GDP is expected to grow at a CAGR of 4.2–6.2 percent till FY34. Steel consumption in Rajasthan is projected to grow at a CAGR of 5.6–8 percent reaching about 7.4 to 9.3 MT by FY34.[330]

Uttarakhand

Uttarakhand had a GSDP of INR2.13 lakh crore (constant prices)[331] in FY24, and it has been growing at a CAGR of ~4.75 percent in the last 10 years. In FY23, the total steel consumption was 1.80 MT,[332] with a 13.20 percent CAGR growth in the last eight years. A correlation of 0.88 (after removing outliers) was observed between steel consumption and GSDP.

The contribution to Uttarakhand's GDP corresponds primarily to the end-use industries such as the Pharmaceutical Industry (three significant clusters with more than 300 units, catering ~20 percent of the domestic requirements) and Industrial Estates (well-developed Integrated Industrial Estates (IIEs), IT Parks and growth centre).[333] Uttarakhand is one of the country's favourite tourist destinations, and to further enhance its appeal in this field, the state has developed pilgrimage sites, wildlife parks and infrastructure for trekking and other adventure sports. In the last 10 years, ~ 10,000 km of roads have been built.[334]

[318] Growth forecast corresponding to base case is considered
[319] Deloitte Analysis
[320] Handbook of Statistics on Indian States
[321] JPC
[322] https://rajras.in/key-industriesrajasthan/#:~:text=Rajasthan%20is%20home%20to%20several,%2C%20salt%2C%20copper%20cathodes%20etc
[323] https://www.indiainputs.com/highest-cement-producing-states-in-india/16271/
[324] https://foundation.rajasthan.gov.in/investAutoAndAutoComponents.aspx#:~:text=Many%20of%20the%20well%2Dknown,for%20vehicle%20plants%20in%20India.
[325] Handbook of Statistics on Indian States
[326] https://www.deccanherald.com/india/rajasthan/rajasthan-targets-rs-30-lakh-crore-economy-size-by-2030-cm-gehlot-2703635
[327] https://www.business-standard.com/economy/news/rajasthan-govt-to-spend-rs-200-crore-to-ramp-up-infra-in-industrial-hubs-123070701024_1.html
[328] https://www.business-standard.com/economy/news/rajasthan-govt-to-spend-rs-200-crore-to-ramp-up-infra-in-industrial-hubs-123070701024_1.html
[329] https://powerline.net.in/2024/03/13/rec-signs-mou-with-rajasthan-government-to-finance-power-and-infrastructure-projects-worth-rs-200-billion/
[330] Deloitte Analysis
[331] Directorate of Economics & Statistics of respective State Governments
[332] JPC
[333] Invest India
[334] Handbook of statistics on Indian States

The state aims to double its SGDP in the next five years.[335] Overall, various infrastructure projects are under implementation in the state, as shown below:

- The Ministry of Minority Affairs has allocated INR101.27 crore for the development of educational infrastructure at various institutes.[336]
- In the state budget of FY25, INR1,955 crore allocated towards development of bridges and roads.[337]
- Additionally, INR2,217 crore had been allocated for community development, which includes schemes such as the Pandit Deendayal Upadhyay Rural Skill Scheme, PMAY and PMGSY Parks.[338]

With all these investments and policy measures, the state GDP is expected to grow at a CAGR of 4.3–5.3 percent till FY34. The steel consumption in Uttarakhand is projected to grow at a CAGR of 7.6–11.4 percent to reach about 4 to 6 MT by FY34.[339]

Kerala

Kerala has a GSDP of INR6.16 lakh crore (constant prices)[340] in FY23, and it has been growing at a CAGR of ~4.75 percent in the last 10 years. In FY23, the total steel consumption by the state was 1.44 MT,[341] with a 1.05 percent CAGR growth in the last eight years. A correlation of 0.94 (after removing outliers) was observed between steel consumption and GSDP.

The contribution to Kerala's GDP corresponds primarily to the end-use industries such as the electronic manufacturing industry and food processing (with the highest number of EU-approved fishery products processing plants in India and five food processing plants, including two mega food parks[338]). It is also the hub of IT industries, with more than 1,200 IT companies leading the development of IT parks and notified SEZ areas[339]. In the last 10 years, more than 70,000 km of roads have been built.[339]

Overall, various infrastructure projects are under implementation in the state, as mentioned below:

- 12 national highway projects with a total length of 105 km worth over INR1,464 Crore.[342]
- KINFRA is setting up a land bank of 4,896 acres in 11 parcels in the Kannur district to develop industrial parks.[343]
- Kerala is poised to attract investments totalling INR3 trillion over the next three years, strongly emphasising sectors such as tourism, ports, industrial corridors and information technology.[344]

With all these investments and policy measures, the state GDP is expected to grow at a 3.9–5.9 percent CAGR until FY34. The steel consumption in Kerala is projected to grow at a CAGR of 6–8.7 percent to reach about 2.7 to 3.6 MT by FY34.[345]

Chhattisgarh

Chhattisgarh's GSDP in FY24 was estimated to be INR3.2 lakh crore (constant prices)[346] It has grown at a CAGR of ~6.1 percent for the last 10 years. Although Chhattisgarh produces more steel than it consumes, the steel consumption in the state in FY23 stood at 2.84 MT.[347] In Chhattisgarh, long products have traditionally dominated the market with a 78 percent share in FY23.

Chhattisgarh is another state with abundant mineral resources such as iron ore, coal and dolomite. Some major industries in Chhattisgarh include mining, energy production, and manufacturing. Many large to medium-scale industries also produce steel, sponge iron, and cement. Nearly 10 lakh houses have been constructed in Chhattisgarh under PMAY.[348] In the last decade, over 1,300 km[349] of national highways have been constructed in Chhattisgarh. Additionally, two airports (Bilaspur and Jagdalpur) have been operationalised.

[335] https://economictimes.indiatimes.com/news/politics-and-nation/uttarakhand-is-fast-emerging-as-a-young-state-where-there-are-vast-opportunities-for-industries-pushkar-singh-dhami/articleshow/103668958.cms?from=mdr
[336] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=2015190#:~:text=In%20spirit%20with%20Honorable%20Prime,Infrastructure%20for%20at%20different%20institutes.
[337] https://prsindia.org/budgets/states/uttarakhand-budget-analysis-2024-25
[338] https://prsindia.org/budgets/states/uttarakhand-budget-analysis-2024-25
[339] Deloitte Analysis
[340] Directorate of Economics & Statistics of respective State Governments
[341] JPC
[342] https://static.investindia.gov.in/s3fs-public/2024
[343] Secondary research
[344] https://www.business-standard.com/budget/news/kerala-to-see-rs-3-trn-investment-in-three-years-state-fm-k-n-balagopal-124020500888_1.html
[345] Deloitte Analysis
[346] Directorate of Economics & Statistics
[347] JPC
[348] https://www.narendramodi.in/chhattisgarh-stepping-towards-transformative-development-579760
[349] Handbook of Statistics on Indian States

The Chhattisgarh government has set an ambitious target to double its GDP in the next five years,[350] with some critical initiatives as mentioned below:

- Multiple development projects worth over INR34,000 crore[351] including roads, railways, coal, power and solar energy.
- In the State Budget FY25, INR6,800 crore was allocated to develop roads and bridges.
- Provisioned INR8,000 crore[352] for the construction of 18 lakh houses under the PMAY.
- The government has planned to develop an Aerocity near Raipur Airport to facilitate international aviation connectivity and promote commercial development.

With all these investments and policy measures, the state GDP is expected to grow at a CAGR of 5.2–6.8 percent till FY34. The steel consumption in Chhattisgarh is projected to grow at a CAGR of 4.8–6.3 percent to reach about 4.7 to 5.6 MT by FY34.

Summary of state-wise analysis

Based on the regression analysis and macroeconomic outlook, the steel consumption of 28 Indian states is make forecast to reach 213–263 MT by FY34 from 113 MT in FY23. About 8 to 11 MT of steel consumption is anticipated to be driven by eight union territories.

Table 13: State-wise steel consumption outlook

State	Consumption in FY23 (MT)	FY34 pessimistic forecast (MT)	FY34 base forecast (MT)	FY34 optimistic forecast (MT)
Andhra Pradesh	5.07	9.70	11.29	13.10
Gujarat	9.06	25.50	27.80	28.30
Haryana	5.17	10.32	11.36	12.32
Karnataka	4.98	8.73	9.98	11.59
Maharashtra	16.48	26.00	31.40	38.50
Odisha	7.05	19.10	21.70	22.30
Tamil Nadu	8.71	13.90	15.01	15.90
Telangana	5.48	10.04	13.25	14.00
Uttar Pradesh	9.62	19.60	21.97	22.70
West Bengal	7.78	11.00	12.20	13.20
NER	1.80	4.00	4.50	4.75
Punjab	7.34	9.60	10.03	11.50
Madhya Pradesh	3.64	7.30	8.24	9.02
Bihar	4.73	11.37	13.18	13.83
Jharkhand	4.57	5.38	5.68	5.99
Goa	0.59	1.00	1.14	1.18
Himachal Pradesh	1.21	1.26	1.46	1.68
Rajasthan	4.03	7.38	8.45	9.33
Uttarakhand	1.80	4.06	4.95	5.20
Kerala	1.44	2.71	3.13	3.50
Chhattisgarh	2.84	4.75	5.27	5.60
Others*	5.79	8.31	10.02	11.50
Total	**119.17**	**221.00**	**252.00**	**275.00**

Source: Deloitte Analysis, JPC

*Among others includes eight union territories of India

[350] https://www.hindustantimes.com/india-news/chhattisgarh-has-set-target-to-double-state-gdp-in-5-years-fm-choudhary-101707544735989.html
[351] https://pib.gov.in/PressReleasePage.aspx?PRID=2008574
[352] State budgets

6. Key initiatives for unlocking the potential of India's steel sector

The Indian steel industry is the second largest in the world and has grown by 75 percent since 2008.[353] The Indian government has introduced a host of new schemes such as Pradhan Mantri Awas Yojana, National Infrastructure Pipeline, Make In India, DMISP, etc. To continue this stellar demand growth and promote higher steel production, the government and industry may further collaborate in the following aspects. Below are some recommendations and initiatives (segregated into short-term and medium-to-long-term) that could accelerate the steel sector's growth trajectory.

1. Ensure raw material security

Medium-to-long term: The government may promote the conversion of top-charge coke ovens to stamp charge coke ovens, which will allow the blending of indigenous coking coal, with moderate ash content. This will reduce dependence on imports and save foreign currency.

2. Reduce emissions and carbon footprints by using green steel

India's steel industry contributes to around 2 percent of its GDP, but also accounts for 12 percent of its CO2 emissions.[354] Indian steel manufacturers also have higher specific energy consumption, about 6-6.5 GCal/TCS, compared with world average of 4.5-5.0 GCal/TCS. Therefore, the industry needs to shift to green steel technologies. This will also help to obtain financing from global investors who are aligned with sustainable goals. Globally, companies are moving towards technologies such as ULCOS and electrolytics reduction.

The following policies may be implemented to reduce the steel industry's carbon footprint:

Short-term

a. Accelerate green steel consumption

- To drive initial large-scale demand for green products, the government may mandate the procurement of green steel in its tenders.
- Energy efficiency standards for buildings and infrastructure projects may be mandated.
- Detailed carbon emission estimations to be developed. Tax incentives may be provided for houses to promote circular economy; e.g., a lower tax may be charged for a building that uses materials with >70 percent circular economy.

b. Develop green steel standards: Earlier, the MoS introduced a quality control order that prohibits the import, sale and distribution of substandard steel. A similar approach could be taken with green steel standards to gradually reduce the GHG intensity of steel.

c. Fund R&D for innovation: The government may set up dedicated R&D funds to support the installation of demonstration plants focused on new "breakthrough" clean production technologies. Partnerships may be established between GoI, Indian steel companies, technology providers, academia, and international financing institutions.

d. Set up carbon trading mechanisms: India has already achieved significant success with the implementation of the Perform, Achieve and Trade (PAT) scheme, which trades energy efficiency certificates between Designated Consumers (DCs). The government may amend this policy to measure and control carbon emissions and to operate in a comparable manner as EU ETS.

e. Impose carbon based taxes: The government may explore imposing import restrictions (similar to CBAM) on steel imports to India originating from countries with higher steel carbon intensity. The additional revenue collected may be used to promote the use of green steel in India.

Medium-to-long term

f. Financing of green steel projects

- The industry may consider blended financing options that can lower costs of borrowing, supported by public loans domestically, or from international finance through multi-lateral development banks.
- Financing could include direct financial support from the GoI (for example through Carbon Contracts for Difference, which is being explored in Germany) or by offering optimised interest rates for high capex projects.
- Partnerships between companies, as well as between India and other governments (e.g., the U.S. - India Climate and Clean Energy Agenda 2030 Partnership).

[353] IBEF

[354] https://jmkresearch.com/wp-content/uploads/2023/09/Steel-Decarbonisation-in-India_September-2023.pdf

3. Promote steel as a material of choice

The steel consumption may be increased in the following manner:

Short-term

a. **Promote the development of steel-based buildings and structures:**
   - Technologies such as LGSF may be promoted for making low-rise buildings in urban and rural areas. This can cut the construction time by 50 percent and also offer a higher FSI.
   - Steel structures may be mandated in earthquake-prone regions.
   - Steel structures may also be promoted for setting up solar panels, community centres, public libraries, etc.
   - Fire-resistant steel can be mandated in hospitals and high-rise buildings
   - Promoting high rise structures for effective utilisation of land. Modifying the definition of affordable housing under GST so that instead of carpet area, it is based on Floor Space Index (construction density on a plot of land).

b. **Promote steel-based bridges:** Such bridges have more longevity compared with concrete bridges, e.g., Mahatma Gandhi Setu bridge in Bihar was re-built with steel. Steel bridges may be promoted for national highways and expressways.

c. **Promote the use of steel pipes for water and irrigation:** Currently, a significant amount of water is lost in irrigation through the open canal system. To reduce this loss, the government can promote steel piping. This will also unlock large amounts of land, which can be used for alternate purposes.

d. **Life Cycle Cost (LCC) comparison:** This criterion may be used for selecting construction material during government infrastructure projects. The existing GFR 2017 rules may be modified to make LCC computation mandatory. This will establish steel as the material of choice, e.g., LCC of steel bridges will be about 20-25 percent lesser.

Medium-to-long term

e. **Increase steel consumption by developing end-use industries:** The Indian government is already promoting the development of steel intensive industries such as shipbuilding and railways. Domestic manufacturing focus on such industries will help boost the steel consumption. For example, the demand for railway materials is expected to be driven by installation of electrical poles, development of new railway stations and redevelopment of old stations

f. Steel processing parks or hubs may be established closer to the upcoming demand centres.

4. Optimise logistics and transportation

Medium-to-long term: Freight cost of raw materials such as coal and iron ore may be reduced, which in turn will increase the traffic and offset revenue generation. However, a detailed study needs to be conducted before implementing these changes.

5. Rationalise taxes and duties

Having a low import duty encourages importers to dump their steel in the Indian market. The cheaper imports from South Asia are hampering the domestic industry.

Short-term

a. **Quality-based import duty system:** The government may explore the possibility of implementing a quality-based duty system, wherein high-quality steels (which cannot be manufactured in India currently, such as electrical steel or thick plates) can be charged a lower duty to meet the national demand and normal quality steel can be charged a higher duty to boost domestic manufacturing.

b. **Tariff rate quotas:** This will act as an upper limit on steel import from a particular country. Once the exporting country exhausts its limit, a safeguarding duty may be charged. This system is already followed in the US, Canada, the EU and Japan.

c. **Removal of "lesser duty rule" in import duty:** The import duty is currently imposed to the extent of duty margin or injury margin, whichever is lesser. Usually, the impact margin is less than the dumping margin and that gets charged as import duty. The government may consider removing this rule or applying it on a case-to-case basis. The "lesser duty rule" is not mandatory as per the WTO guidelines. Other countries either do not apply it (such as the US) or apply it on a case-to-case basis (such as Australia and the EU).

Medium-to-long term

d. **Faster trade remediation system:** A petition usually takes several months to get a result, and the remediation timelines can be expedited to be at par with other countries. This will help reduce the uncertainties in the domestic steel market.

6. Update designs and standards

Short term: The design standards related to steel may be improved in the following manner:

- Design handbooks to be developed by BIS in line with design handbooks of RCC structures
- Development of designs and drawings for smaller steel-intensive bridges by MoRTH.
- Modular design standards may be developed for facilities such as anganwadis, bio-toilets, community centres, libraries and rehabilitation structures in case of disasters.
- Fire, seismic and weather resistant steel may be included in IS 800 (General Construction in Steel) and the National Building Code.

- The industry should fund the development of software that aids in LCC calculations.
- For ease of doing business, all steel manufacturers may be enrolled automatically (irrespective of brand) for supply in govt projects, if the steel products are of the requisite standard certified by an agency. This will enhance competitiveness and ease of material supply.

7. Enhance awareness through branding of steel

Awareness campaigns may be undertaken (particularly in rural areas) to strengthen the perception of steel, highlighting its beneficial properties such as lesser construction time, minimum requirement of water and sand, cost effectiveness, seismic resistance and weather resistance.

Short term

a. **Government structures built of steel:** Initiatives such as constructing cold storage facilities and houses using steel materials can drive demand. The state governments may construct anganwadis and panchayat offices as an example. In FY24 union budget, there was a proposal for setting up digital public infrastructure for agriculture, warehousing facilities and public libraries at Panchayat and ward levels. Such structures can be made of steel.

b. **Running campaigns on successfully erected steel structures:** Steel can help to reduce the construction time as seen from the Cancer Institute in Varanasi which was built in just five months. Similarly, the Amona Khandola bridge built in Goa highlights the cost effectiveness and adaptability of steel.

Medium-to-long term

c. **Prestige of being associated with steel:** When employed in the fabrication of the steel-engineered structures, workmen should be encouraged to act as local brand ambassadors of steel.

d. **Promoting resale value of steel:** Awareness campaigns may be launched to promote steel's resale value. Gold is traditionally considered as the safest forms of investment. However, the resale of gold fetches only 75-80 percent of its value (remaining is deducted as making charge). On the other hand, steel scrap also fetches 75-80 percent of the existing steel prices. It is pertinent to mention that steel recovery is higher in steel structures than RCC structures. India currently faces a scarcity of scrap, and it is expected that by 2030, India will import about 30 MTPA scrap.[355] This deficit can be reduced if steel structures are promoted.

8. Incentivise the use of digitalisation, automation and AI in construction

Digitalisation plays a key role in improving the efficiency of construction processes, thereby reducing time and cost. AI may be used for design and construction processes. In BIM (Building Information Modelling), AI is helping customers reduce the amount of steel in their houses. Another usage of digitalisation in the construction industry can be through the use of embedded sensors for monitoring static and dynamic data, which is used to develop a digital twin and can help in predictive maintenance.

- **Illustration 1:** The Zuari bridge in Goa involved the fabrication of 11,000 tons of steel using a robotic welding arm. Only 10 workers were required on the factory floor, while others operated arms.
- **Illustration 2:** A major Indian steel player has implemented an IoT framework at its facility in Angul, Odisha, using a network of machines, advanced analytics, and skilled IT professionals.
- **Illustration 3:** A major steel player has implemented end-to-end visibility across its supply chain.

Medium-to-long term

- Promote steel focused research institutes where the applications of digitalisation and AI can be developed.
- Encourage AI simulation in steel design to optimise design parameters and reduce material consumption.

9. Focus on talent development

Short term

a. **Skill development programmes:** Skill centres may be set up (especially in rural areas) to upskill the workforce in terms of steel technology. This can lead to a rise in the number of riveters, welders, fabricators, etc., which are needed in rural areas.

b. **Incentivise education related to steel design:** The industry and government may fund programmes to subsidise the fees for graduate and postgraduate courses. Apprenticeships and placement opportunities in steel companies shall be promoted through industry-academia partnerships.

Medium-to-long term

c. **Capacity building in steel design:** Education institutes can be encouraged to include steel structural design as part of civil, structural and mechanical engineering curriculum. Steel companies may collaborate with leading institutions such as IITs and NITs for this.

d. **Develop centres of excellence:** Centres of excellence can be established in key steel-producing states with a focus on R&D to develop innovative technologies for steel-related construction.

Depending on the fiscal and regulatory structure of government schemes and the future collaborations between steel industry stakeholders, steel consumption is expected to increase significantly in the coming decade. The above-mentioned focus areas will go a long way in re-defining the growth trajectory of the Indian steel industry.

[355] https://www.jindalstainless.com/india-to-import-30-million-tonnes-ferrous-scrap-annually-by-2030-mrai/

7. Conclusion

The growth trajectory until FY34 is expected to play a critical role in shaping the domestic steel industry’s journey. With the country's ambitious infrastructural projects and urbanisation drive, the demand for steel is set to surge significantly in the coming years. This presents a promising outlook for the steel industry, offering abundant opportunities for expansion and innovation.

Moreover, looking at the growth potential of different states in India, it becomes evident that each region brings unique advantages and opportunities to the table. States such as Maharashtra, Gujarat, Karnataka and Odisha have robust industrial ecosystems and strategic geographical locations, positioning them as key players in the steel industry's future growth story. Meanwhile, emerging states such as Uttar Pradesh, Telangana, and Andhra Pradesh have immense untapped potential, presenting fertile grounds for investment and development in the end-user industries, driving significant consumption of steel.

As India charts its path towards becoming a global steel powerhouse, it is imperative for stakeholders to collaborate closely, using technological advancements, sustainable practices, and policy support to drive inclusive growth across the country. By harnessing the collective potential and fostering a conducive environment for innovation and investment, India can meet its infrastructural needs and emerge as a beacon of opportunity and progress in the global steel arena. This transformative journey, coupled with governmental policies to drive end-user industries, will pave the way for a brighter, more resilient future for the steel industry and India.

Glossary

AI	Artificial Intelligence
4G/5G	4th/5th Generation
AMNS	ArcelorMittal Nippon Steel India
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
BF-BOF	Blast Furnace-Basic Oxygen Furnace
CAGR	Compound Annual Growth Rate
CR	Cold Rolled
CRGO	Cold Rolled Grain Oriented Steel
CRNO	Cold Rolled Non-Oriented Steel
EAF	Electric Arc Furnace
FYXX	Financial Year
GDP	Gross Domestic Product
GFR	General Financial Rules
GLADA	Greater Ludhiana Area Development Authority
GP/GC	Galvanised Plain Coils and Sheets
GSDP	Gross State Domestic Product
HR	Hot Rolled
IF	Induction Furnace
IISCO	The Indian Iron & Steel Company
INR	Indian Rupee
IoT	Internet of Things
IT	Information technology
JFE	Japan Future Enterprise
JSW	Jindal South West
Kg	Kilogram
km	Kilometre
LCC	Life-Cycle Costing
LGSF	Light Gauge Steel Framing
MoRTH	Ministry of Road Transport and Highways
MoS	Ministry of Steel
MoU	Memorandum of Understanding
MT	Million Metric Tonnes
MTPA	Million Tonnes per Annum
PEB's	Pre-Engineered Building
PM plates	Mild Steel Prime Plates
PMAY	Pradhan Mantri Awas Yojna
RCC	Reinforced Cement Concrete
TSL	Time-related Supply Limit
UDAN	Ude Desh ka Aam Naagrik
ULCOS	Ultra-Low Carbon Dioxide Steelmaking

JSL	Jindal Stainless Limited
NH	National Highway
RINL	Rashtriya Ispat Nigam Limited
TSDPL	Tata Steel Downstream Products Limited
JSPL	Jindal Steel and Power Limited
ISP	Integrated Steel Plant
GE	General Electric
MW	Megawatt
EV	Electric Vehicles
Tata Steel BSL	Bhushan Steel Limited
JSW BPSL	JSW Bhushan Power & Steel Limited
SAIL	Steel Authority of India Limited
GCal/TCS	Giga Calorie per Tonne of Crude Steel
mi	Miles
SEZs	Special Economic Zones
MSME	Micro, Small, and Medium Enterprises.
MPL	Mahalakshmi Profiles Pvt. Ltd
US$	United States Dollar
ITES	Information Technology Enabled Services
EPC	Engineering, Procurement and Construction
TMT	Thermo-Mechanically Treated
TPA	Tons Per Annum
KIADB	Karnataka Industrial Areas Development Board
IMT	Industrial Management Town
CMI	Case Mix Index
GSVA	Gross State Value Added
BIS	Bureau of Indian Standards
CBAM	Carbon Border Adjustment Mechanism
WTO	World Trade Organisation
MoSPI	Ministry of Statistics and Programme Implementation
PSU	Public Sector Undertaking
US	United States
MMTPA	Million Metric Tonnes per Annum
BIM	Building Information Modelling
NSP	National Steel Policy
SS	Stainless Steel
EU	European Union
INSDAG	Institute for Steel Development and Growth
DRI	Direct Reduced Iron
GoI	The Government of India

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The Indian Steel Association (ISA) is the voice of the Indian Steel Industry in both domestic and global forums. As a not-for-profit society, ISA has been entrusted with the responsibility of communicating the viewpoints of its constituents to all stakeholders. ISA is, therefore, at the forefront of all deliberations pertaining to matters of public and regulatory policy, raw materials, international trade, logistics, environmental concerns, technology, and all other related aspects of steel-making. The Indian Steel Industry looks to ISA to further its critical agenda of sustained growth in both steel production and generating domestic demand. With this in focus, ISA is organizing the 2nd edition of the ISA Steel InfraBuild Summit, with Deloitte as its Knowledge Partner. The summit will discuss the current scenario of steel construction, highlight the challenges, and explore the solutions, advancements, and benefits of further adopting the use of steel in the Construction and Infrastructure Sector.Infrastructure Sector.

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