Crisil
Intelligence

# Assessment of heavy engineering, capital goods, elevators & escalators and selected motors industries in India

Final report

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by S&P Global

Crisil
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# Contents

# 1. Macroeconomic overview

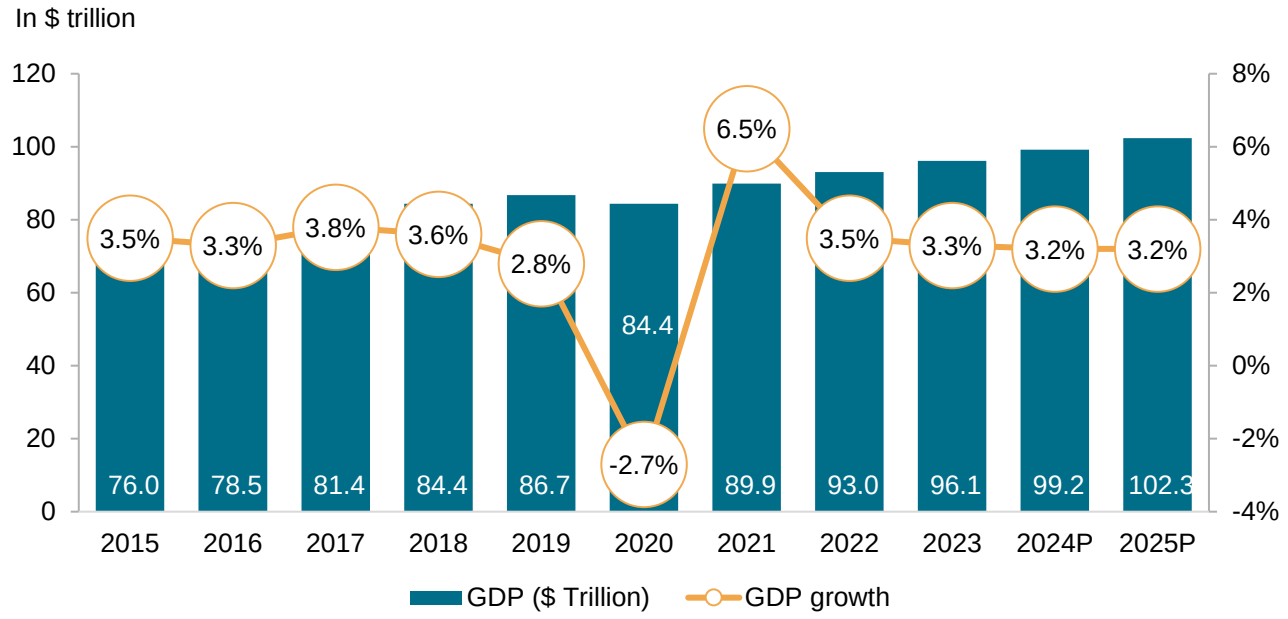
## 1.1. Global Macroeconomic assessment

Global GDP is estimated to grow at 3.2% in CY24 and CY25 amid moderating inflation and steady growth in key economies

As per the International Monetary Fund's (IMF) October 2024 update, global gross domestic product (GDP) growth is projected at 3.2% in 2024 and 2025 respectively. The latest estimate for 2024 is in line with IMF's previous forecast in July 2024. This growth going forward is majorly propelled by the emerging and developing economies with regional differences on account of global economic tensions and extreme weather events.

With disinflation and steady growth, the likelihood of a hard landing has receded, and risks to global growth are broadly balanced. Amid favourable global supply developments, inflation has been falling faster than expected with advanced economies leading the change. However, service inflation is holding up the progress on disinflation. On the upside, faster disinflation could lead to further easing of financial conditions. On the downside, new commodity price spikes from geopolitical shocks and supply disruptions or more persistent underlying inflation could prolong tight monetary conditions.

**Trend and outlook for global GDP (2015-2025P)**




*Note: E: Estimated, P: Projection*
*Source: IMF economic database, Crisil Market Intelligence and Analytics (Intelligence)*

## Global per capita GDP

Global GDP per capita logged 3.4% compound annual growth rate (CAGR) between 2017 and 2023, as per IMF data while India's GDP expanded at ~4.1% CAGR between 2017 and 2023.

**Per capita GDP at current prices for key economies- $ per capita**

| Regions | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024P | CAGR 2017-2023 |
|---|---|---|---|---|---|---|---|---|---|
| US | 60,293 | 63,165 | 65,561 | 64,462 | 71,258 | 77,980 | 82,715 | 86,601 | 5.4% |
| Euro area | 37,208 | 40,138 | 39,261 | 38,167 | 42,939 | 41,493 | 44,851 | 46,635 | 3.2% |
| UK | 40,618 | 43,275 | 42,713 | 40,231 | 46,731 | 46,103 | 49,648 | 52,423 | 3.4% |
| China | 8,760 | 9,849 | 10,170 | 10,525 | 12,572 | 12,643 | 12,597 | 12,969 | 6.2% |
| Japan | 38,903 | 39,850 | 40,548 | 40,160 | 40,161 | 34,158 | 33,899 | 32,859 | -2.3% |
| India | 1,958 | 1,974 | 2,050 | 1,916 | 2,250 | 2,366 | 2,497 | 2,698 | 4.1% |
| World | 10,934 | 11,484 | 11,530 | 11,126 | 12,566 | 12,976 | 13,400 | 13,898 | 3.4% |

*Source: IMF, Crisil Intelligence*

## India among the world's fastest-growing key economies

Following the recovery from the COVID-19 pandemic, India exhibited a faster growth rate of 7.0% in FY2023, surpassing both advanced economies at 2.9% and emerging and developing economies at 4.0%. This trend is expected to continue, with India leading the growth compared to its key counterparts

**Real GDP growth by geographies (%)**

| Regions | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024P | 2025P |
|---|---|---|---|---|---|---|---|---|
| US | 3.0 | 2.6 | -2.2 | 6.1 | 2.5 | 2.9 | 2.8 | 2.2 |
| Euro area | 1.8 | 1.6 | -6.1 | 6.2 | 3.3 | 0.4 | 0.8 | 1.2 |
| Canada | 2.7 | 1.9 | -5.0 | 5.3 | 3.8 | 1.2 | 1.3 | 2.4 |
| UK | 1.4 | 1.6 | -10.3 | 8.6 | 4.8 | 0.3 | 1.1 | 1.5 |
| China | 6.7 | 6.0 | 2.2 | 8.4 | 3.0 | 5.2 | 4.8 | 4.5 |
| Japan | 0.6 | -0.4 | -4.2 | 2.7 | 1.2 | 1.7 | 0.3 | 1.1 |
| India* | 6.5 | 3.9 | -5.8 | 9.8 | 7.0 | 8.2 | 6.8 | 6.9 |
| World | 3.6 | 2.9 | -2.7 | 6.6 | 3.6 | 3.3 | 3.2 | 3.2 |

*Note: P: Projected.*
** Numbers for India are for financial year (2020 is FY2021 and so on) and as per the MOSPI. 2025 (FY2026) is as per Crisil Intelligence estimates*
*P: Projection as per IMF update except for India*
*Source: IMF economic database, Crisil Market Intelligence and Analytics (Intelligence)*

## 1.2. India's macroeconomic assessment

### India's real GDP grew at 5.9% CAGR between FY12 and FY24

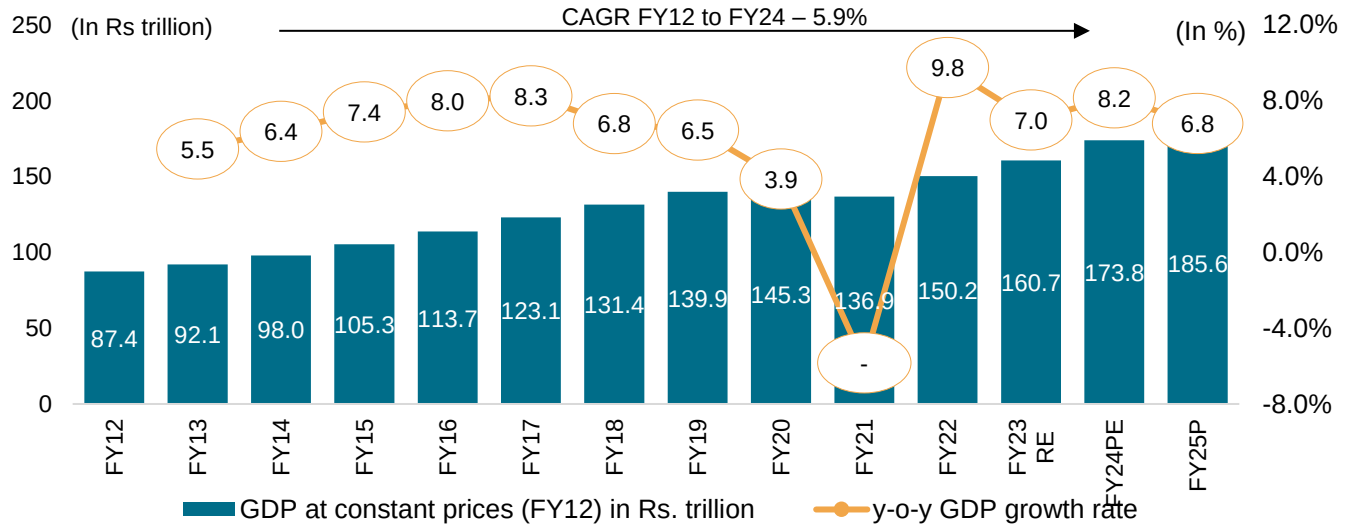
India's GDP grew at 5.9% compounded annual growth rate (CAGR) between FY12 and FY24 to Rs 173.8 trillion in FY24. A large part of the lower growth rate was because of challenges heaped by the Covid-19 pandemic in FY20 and FY21. In FY22, the economy recovered with abating of the pandemic and subsequent easing of restrictions and resumption in economic activity.

In FY23, GDP rose 7% on continued strong growth momentum, propelled by investments and private consumption. The share of investments in GDP was at 33.3% and that of private consumption was at 58.0%.

The National Statistics Office (NSO) in its provisional estimates of Annual Gross Domestic Product (GDP) for FY24, estimated India's real GDP growth to be 8.2% which is higher than its Second Advanced Estimate of 7.6%. Even as the agricultural economy slowed sharply following a weak monsoon, the surge in non-agricultural economy has more than made up for it. The government's investment push, along with easing input cost pressures for industry, has also played a major role in shoring up growth. However, services have been slowing owing to waning pent-up demand (post the pandemic), with the exception of financial, real estate and professional services, which has powered ahead on the back of robust growth in banking and real estate sectors.

Analysis of the FY24 year's growth reveal notable dichotomies. Growth has primarily been fueled by fixed investments, exhibiting a robust 9% expansion, while private consumption growth lagged at 4%, trailing overall GDP growth. On the supply side, the manufacturing sector experienced the most substantial growth at ~9.9%, while agriculture exhibited more modest growth rate of 1.4%. These trends underscore the varied performance across sectors, highlighting the nuanced dynamics shaping India's economic landscape in FY24. Overall, real GDP of India is estimated to have grown at 8.2% in FY24 compared with 7.0% in FY23.

**Real GDP growth in India (new series)**




*RE – revised estimates, PE – Provision estimates, P – projection*
*Notes: The values are reported by the government under various stages of estimates*
*Actuals, estimates and projected data of GDP are provided in the bar graph*
*Source: Ministry of Statistics and Programme Implementation (MoSPI), Crisil Intelligence*

### Crisil forecasts India's real GDP to grow 6.8% in FY25

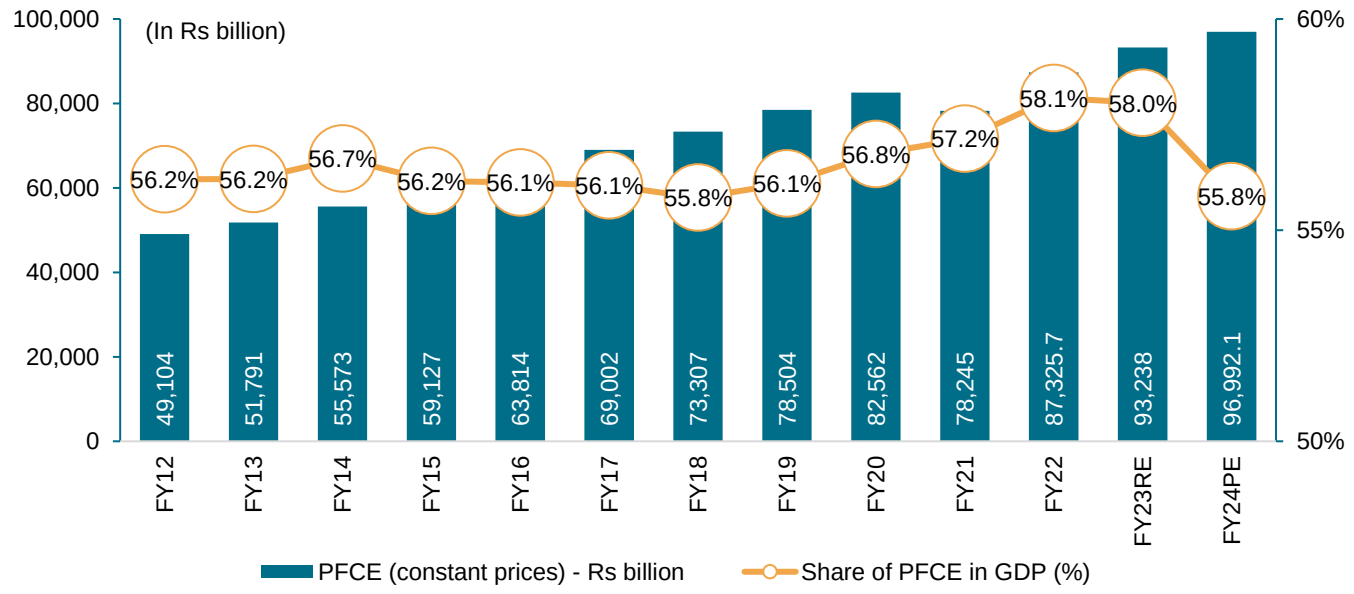
After a strong GDP print in the past three fiscals, Crisil expects GDP growth to moderate in FY25 as fiscal consolidation will reduce the fiscal impulse to growth, rising borrowing costs and increased regulatory measures could weigh on demand, net tax impact on GDP is expected to normalize, and exports could be impacted due to uneven growth in key trade partners and any escalation of the Red Sea crisis. On the other hand, another spell of normal monsoon and easing inflation could revive rural demand.

At an overall level, India's real GDP is expected to be 6.8% in FY25. This slower growth rate vs. FY24 will be because of slowing global growth, impact of rising interest rates, waning of pent-up demand for services and increasing geopolitical uncertainty. Still, the manufacturing sector, investments and domestic demand will remain resilient.

## 1.3. PFCE to maintain dominant share in India's GDP

Private final consumption expenditure (PFCE) at constant prices clocked 6% CAGR between FY12-23, maintaining its dominant share of ~58.0% in FY23 (~Rs 93,238 billion in absolute terms, up 6.8% year-on-year). Growth was led by healthy monsoon, wage revisions due to the implementation of the Seventh Central Pay Commission's (CPC) recommendations, benign interest rates, growing middle age population and low inflation. As of FY24PE, PFCE is estimated to have further increased to Rs 96,992 billion, registering a y-o-y growth of ~4% and forming 56% of India's GDP. The share of PFCE declined in FY24 indicating slower growth for PFCE at 4% compared to overall GDP growth of 8.2%

**PFCE at constant prices**

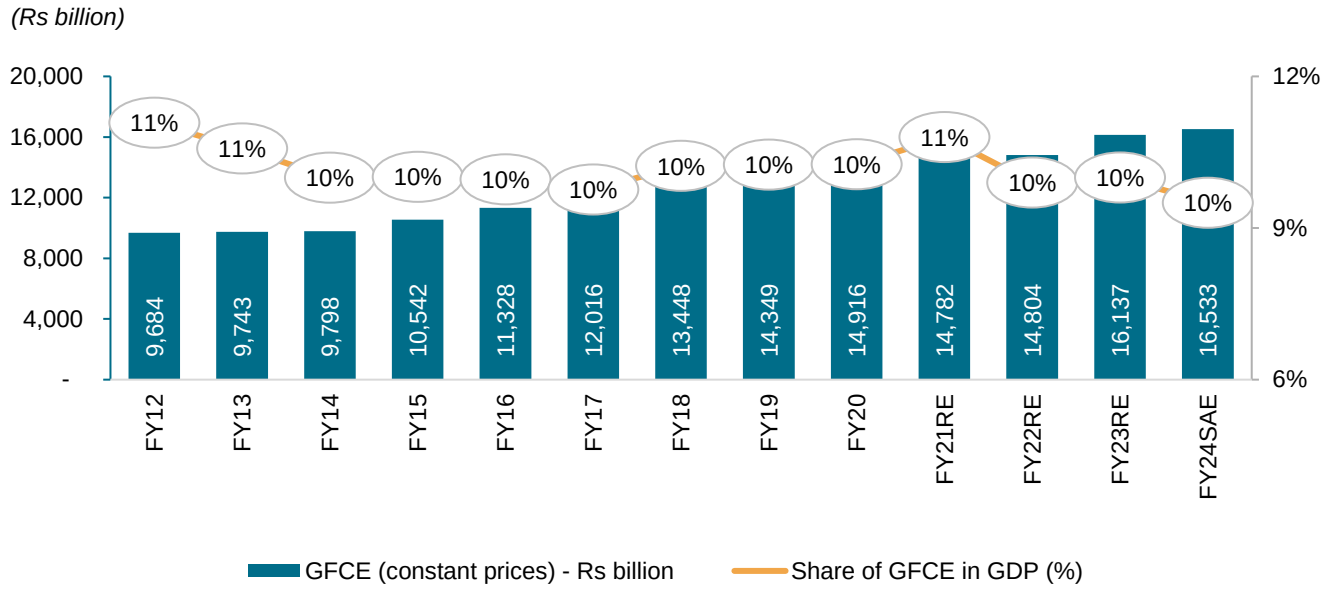



*Note: RE: revised estimates; PE: Provisional estimates*
*Source: MoSPI, Crisil Intelligence*

## 1.4. GFCE maintains ~10-11% share in India's GDP

Government final consumption expenditure (GFCE) at constant prices clocked 4.6% CAGR between fiscal 2012 and 2024, maintaining ~10% share in the GDP pie, or ~Rs 16,533 billion. It grew 2.5 % on-year in fiscal 2024.

**GFCE (at constant prices)**




*Note: PE: provisional estimates; RE: revised estimates*
*Source: MoSPI, Crisil Intelligence*

## Robust growth in per capita income over FY12-24

India's per capita income, a broad indicator of living standards, rose from Rs 63,462 in FY12 to Rs 99,404 in FY23, logging 4.2% CAGR. Growth was led by better job opportunities, propped up by overall GDP growth. Moreover, population growth remained stable at ~1% CAGR. Furthermore, according toFY24PE, per capita net national income (constant prices) is estimated to have increased to Rs 106,774; thereby registering a year-on-year growth of ~7.4%.

**Per capita net national income at constant prices**

| | FY12 | FY13 | FY14 | FY15 | FY16 | FY17 | FY18 | FY19 | FY20 | FY21RE | FY22RE | FY23RE | FY24PE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Per-capita NNI (Rs) | 63,462 | 65,538 | 68,572 | 72,805 | 77,659 | 83,003 | 87,586 | 92,133 | 94,270 | 86,054 | 94,054 | 99,404 | 106,744 |
| Y-o-Y growth (%) | | 3.3 | 4.6 | 6.2 | 6.7 | 6.9 | 5.5 | 5.2 | 2.3 | -8.7 | 9.3 | 5.7 | 7.4 |

*Note: RE: revised estimates, PE: provisional estimates*
*Source: Provisional Estimates of Annual National Income, 2022-23, CSO, MoSPI, Crisil Intelligence*

**India's per capita GDP grows faster than global average**

Global GDP per capita clocked 2.0% CAGR between 2012 and 2023, as per World Bank data. Meanwhile, India's corresponding figure registered 5.2% CAGR.

**Per capita GDP at current prices**

| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | CAGR 2012-2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| India per capita GDP at current prices ($) | 1,434 | 1,438 | 1,560 | 1,590 | 1,714 | 1,958 | 1,974 | 2,050 | 1,916 | 2,250 | 2,366 | 2,497 | 5.2% |
| World per capita GDP at current prices ($) | 10,767 | 10,947 | 11,103 | 10,356 | 10,401 | 10,934 | 11,484 | 11,530 | 11,126 | 12,566 | 12,976 | 13,400 | 2.0% |

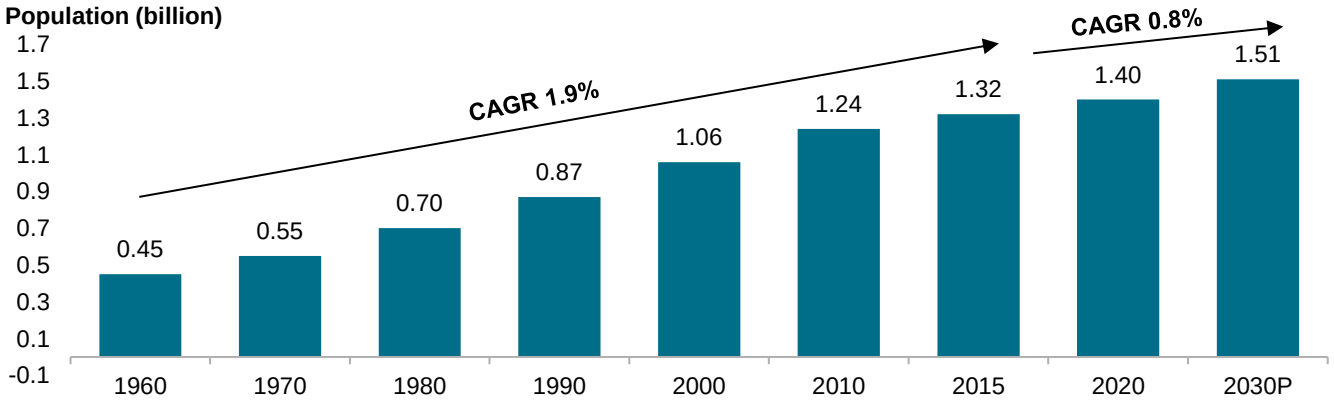
*Source: World Bank, Crisil Intelligence*

## 1.5. India's population is projected to log 0.8% CAGR between 2020 and 2030

India's population grew to ~1.2 billion according to Census 2011, at 1.9% CAGR during 2001-2011. As per the 2010 Census, the country had ~246 million households.

According to the United Nation's (UN) World Urbanization Prospects, 2022 revision, India and China, two of the most populous countries, accounted for nearly 36% of the world's population in 2021. The report projects India's population to increase at 0.8% CAGR from 2020 to 2030 to reach 1.5 billion. According to the UN estimate, India surpassed China to become the most populous country in April 2023 with 1.425 billion people.

**India's population growth**




*Note: P: projected*

*Source: UN Department of Economic and Social Affairs, World Population Prospects 2022, Crisil Intelligence*

As per the United Nations' 2022 Revision of World Population Prospects, India's youth (0-24 years) accounted for nearly half its population in 2010, significantly higher than that for some of its peers (Brazil at 42.97%, China at 35.40% and the

Russian Federation at 30.25%). The fact that 31.28% of the population is aged below 15 indicates the high proportion of the country's young population is expected to remain so in the coming years.

This share (0-24 years) is, in fact, expected to reach 39.00% by 2030, and remain significantly higher than that of its peers (Brazil at 32.00%, China at 25.4% and the Russian Federation at 25.77%). This also indicates a higher proportion of the population entering the workforce.

**Age-wise population break-up (%) for key countries**

| Country | 0-14 years | 15-24 years | 25-49 years | 50-69 years | 70+ | Total |
|---|---|---|---|---|---|---|
| Brazil | | | | | | |
| CY2010 | 25.04% | 17.93% | 37.99% | 14.63% | 4.41% | 100.00% |
| CY2020 | 21.09% | 15.79% | 38.79% | 18.49% | 5.84% | 100.00% |
| CY2030P | 18.46% | 13.54% | 37.98% | 21.49% | 8.53% | 100.00% |
| China | | | | | | |
| CY2010 | 18.64% | 16.76% | 40.68% | 18.17% | 5.76% | 100.00% |
| CY2020 | 18.35% | 11.56% | 38.27% | 24.15% | 7.67% | 100.00% |
| CY2030P | 13.25% | 12.51% | 34.48% | 27.63% | 12.12% | 100.00% |
| India | | | | | | |
| CY2010 | 31.28% | 19.29% | 34.23% | 12.06% | 3.14% | 100.00% |
| CY2020 | 26.39% | 18.40% | 36.61% | 14.61% | 3.98% | 100.00% |
| CY2030P | 22.59% | 16.41% | 38.48% | 16.92% | 5.59% | 100.00% |
| Russian Federation | | | | | | |
| CY2010 | 15.42% | 14.83% | 37.88% | 21.86% | 10.00% | 100.00% |
| CY2020 | 17.91% | 9.88% | 37.89% | 24.49% | 9.83% | 100.00% |
| CY2030P | 15.61% | 12.56% | 34.38% | 23.99% | 13.46% | 100.00% |
| UK | | | | | | |
| CY2010 | 17.87% | 13.23% | 35.30% | 21.80% | 11.80% | 100.00% |
| CY2020 | 18.03% | 11.77% | 32.97% | 23.33% | 13.89% | 100.00% |
| CY2030P | 15.60% | 12.39% | 32.35% | 23.54% | 16.12% | 100.00% |
| US | | | | | | |
| CY2010 | 20.17% | 14.36% | 34.58% | 21.67% | 9.22% | 100.00% |
| CY2020 | 18.76% | 13.23% | 33.40% | 23.72% | 10.89% | 100.00% |
| CY2030P | 16.65% | 12.69% | 33.63% | 22.03% | 15.00% | 100.00% |

*P: Projected*

*Source: United Nations, Department of Economic and Social Affairs, Population Division (2022); World Population Prospects 2022, Crisil Intelligence*

# 2. Assessment of Heavy-Engineering capital goods industry

## 2.1. Review of heavy engineering capital goods industry in India

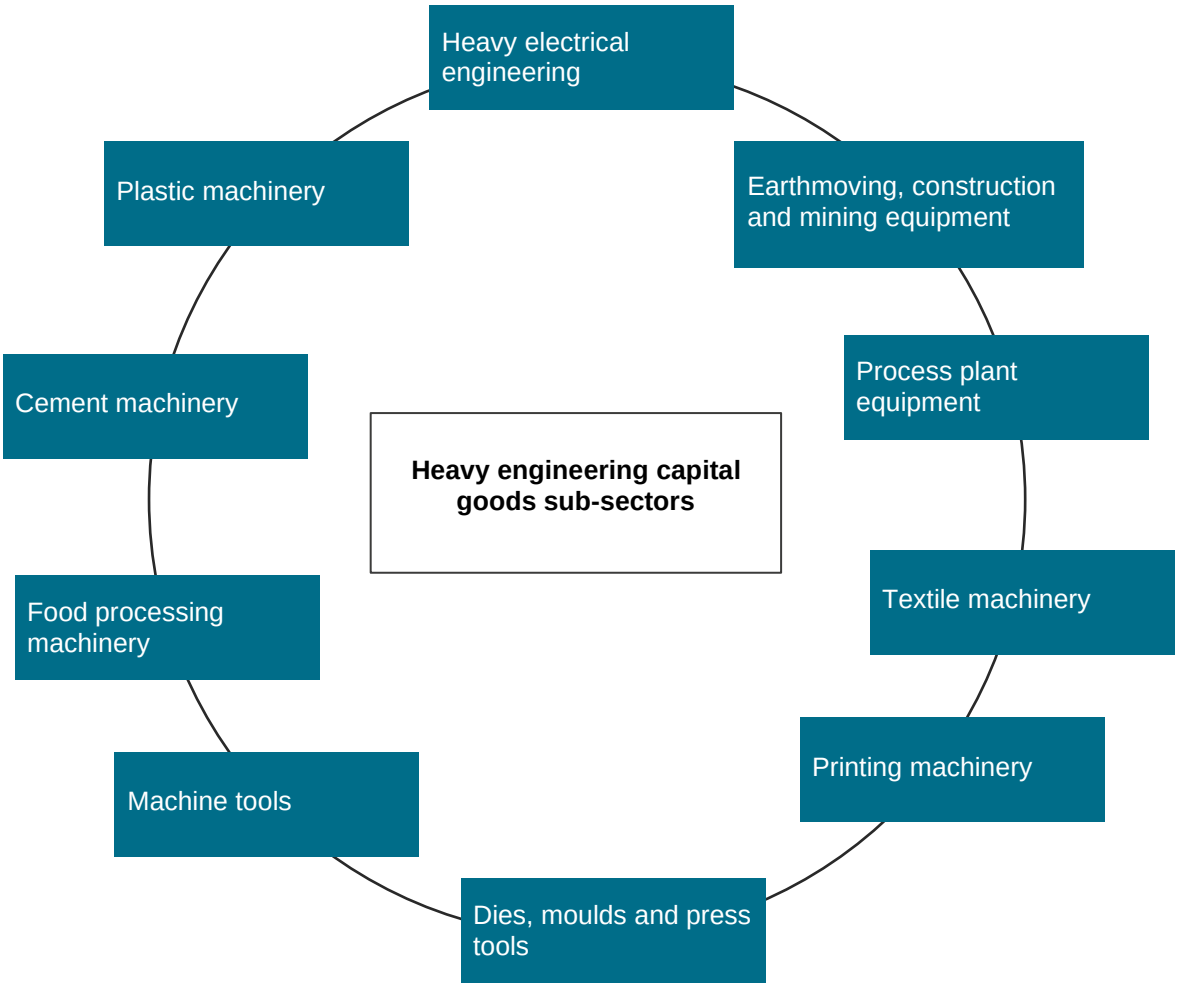
### Domestic heavy engineering capital goods industry estimated at Rs 3,100-3,200 billion as of fiscal 2024

India's engineering sector is divided into two segments: heavy and light engineering. This classification is based on the nature of the product and the technology used for processing. Heavy engineering includes manufacturing and assembly of industrial machinery and plant equipment for various end-use sectors.

Equipment's are designed and manufactured to suit end-use applications for industries such as fertilizer, textile, chemical, refinery, petrochemical, and oil and gas, as well as for the thermal and nuclear power sector.

On the other hand, light engineering includes sub-sectors, manufacturing everything from basic to sophisticated equipment. Light engineering products (components, parts, and small equipment) find application in automobiles, industrial machinery, power, oil and gas, fertilizers, steel, refineries, petrochemicals, cement, and railways sectors; and serve as inputs for the heavy engineering capital goods sectors.

**Heavy engineering capital goods industry in India includes the following sub-sectors, as per Crisil**



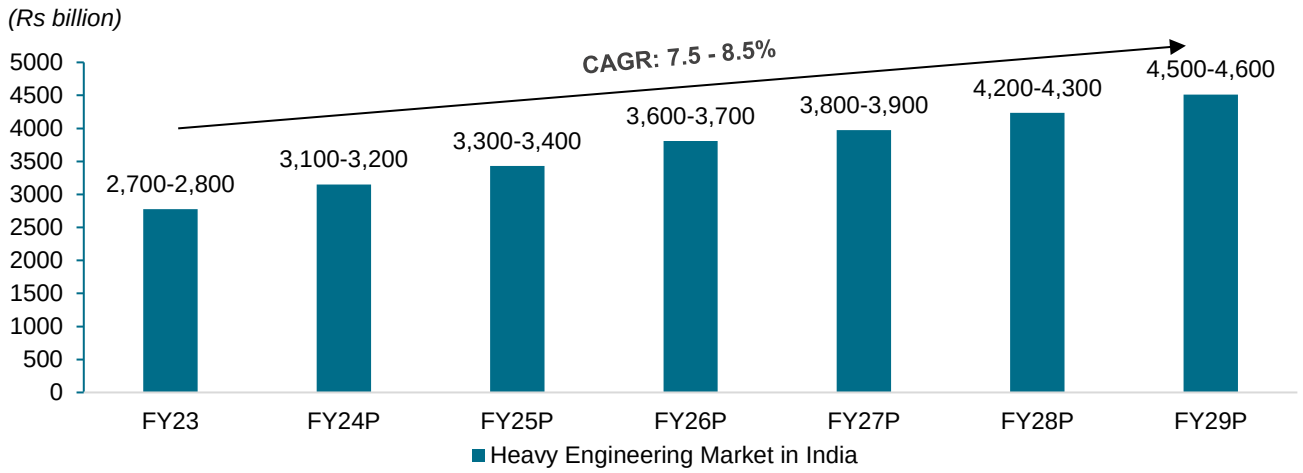
**Overview of key sub-sectors**

| Sub-sector | Overview |
|---|---|
| Heavy electrical engineering | A key manufacturing sector, catering to the needs of the energy, power and other industrial sectors<br>Major equipment, like boilers, generators, turbines, transformers, and switch gears and related accessories, are manufactured in this sector<br>The performance of this sector is closely linked to the country's power capacity addition programme |
| Earthmoving, construction and mining equipment | Manufactures backhoe loaders, compactors, mobile cranes, pavers, batching plants, crawler crane, transit mixer, concrete pump, tower cranes, hydraulic excavators, dumpers, mining shovel, walking draglines, dozers, wheel loaders, graders, drilling equipment, tunnelling machine, etc |
| Process plant equipment | Caters to industries such as oil and gas, chemical, pharmaceuticals, fertilisers, etc |
| Textile machinery | Majority of textile machinery manufacturers in the country are small and medium enterprises (SMEs)<br>Key textile machines: weaving, spinning, winding, processing and synthetic fibre machines<br>High-end technology machines other than in the spinning segment are mostly imported |
| Printing machinery | Majority of printing machinery manufacturers are SMEs<br>Key printing machines: web offset printing, UV coating curing, flexographic printing, screen printing, wire stitching and lamination machines |
| Dies, moulds, and press tools | Consists of commercial tool makers engaged in design, development, and manufacturing of tooling in the country. Along with commercial tool makers, several government tool rooms-cum-training centres are also operational<br>Key tool room locations: Mumbai, Bengaluru, Chennai, Pune, Hyderabad, and Delhi NCR |
| Machine tools | Supplies machinery to the entire manufacturing sector. It is dominated by SMEs with an annual turnover ranging Rs 3-5 billion<br>Machine tools currently manufactured are general/special purpose machines, standard computer numerical control (CNC) machines, gear cutting, grinding, medium size machines, electrical discharge machining (EDM), presses, press brakes, pipe bending, rolling, and bending machines |
| Food processing machinery | Dominated by SMEs<br>Key machines: peelers, sorters, graders, pulpers, grinders, mixers, cookers, fryers, dryers, pulverisers, soymilk machines, food grain and coffee millers, ovens, forming-filling- sealing machine, milking and dairy machines, and juicers |
| Cement machinery | India is the world's second-largest cement producer after China, with ~8% share in global cement production and cement capacity of ~569 million tonne as of fiscal 2022<br>Cement manufacturing machines include raw mill, cement crusher, cement mill, cement kiln, cement cooler, cement dryer, cement silo, and cement packer |
| Plastic machinery | Key machines: injection moulding, blow moulding and extrusion moulding machines |

*Source: Ministry of Heavy Industries, Crisil Intelligence*

## Domestic Heavy engineering capital goods industry projected to grow 7.5-8.5% over fiscals 2023-29

**Market size of Heavy engineering capital goods Industry in India, FY23 to FY29**

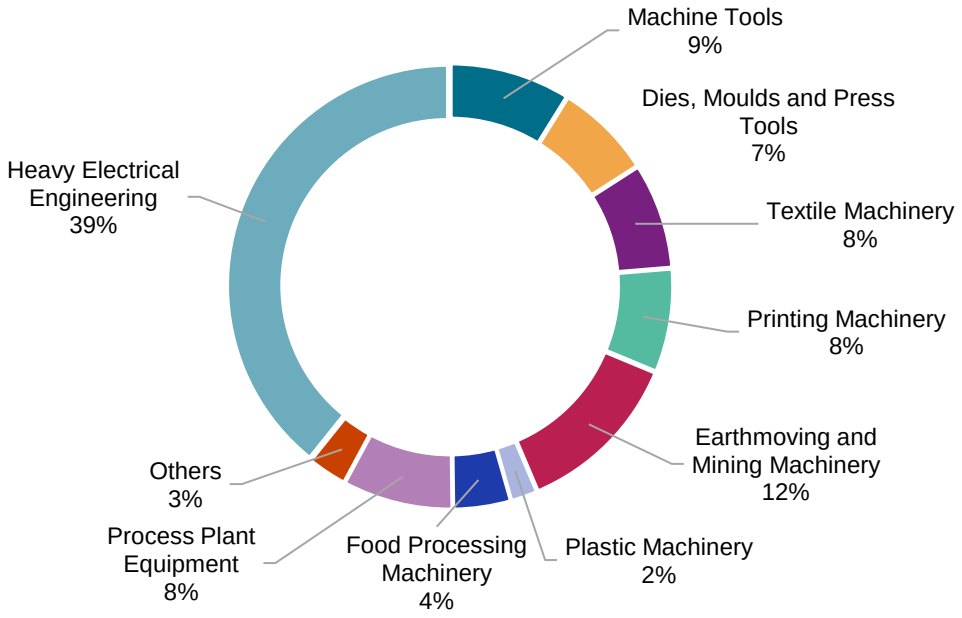



*E: Estimated; P: Projected*
*Source: Ministry of Heavy Industries, IEEMA, Crisil Intelligence*

India's heavy engineering capital goods industry is estimated to be Rs 3,100-3,200 billion as of fiscal 2024,and is projected to clock a CAGR of 7.5-8.5% over fiscals 2023-29 to reach Rs 4,500-4,600 billion. Heavy electrical engineering, earthmoving, construction and mining machinery, and machine tools are the largest segments. The industry is expected to continue to expand on the back of rising manufacturing and construction activities.

Technological advancements, foreign direct investment (FDI), and strong government initiatives are the key growth drivers of the manufacturing sector, which will propel the heavy engineering capital goods industry as well. Crisil Intelligence expects demand for heavy engineering components to get a boost from end-use sector growth on account of improvement in the ease of doing business, the Production Linked Incentive (PLI) scheme, as well as investments in infrastructure and supportive government policies. Rising demand from key end-use sectors and material capacity addition in the cement sector will further support growth.

**Percentage share of subsegments in the heavy engineering industry of India (FY23)**




*Source: Ministry of Heavy Industries, IEEMA, Crisil Intelligence*

In fiscal 2023, the heavy engineering industry was dominated by heavy electrical subsegment at 39% followed by earthmoving and mining machinery at 12%. This was followed by machine tools segment at 9%.

## 2.2. Overview of key policy initiatives from the government to boost heavy engineering capital goods industry in India

**Positive policy and robust FDI support India's engineering and manufacturing industries**

The domestic engineering and manufacturing industries have attracted the interest of foreign players, as these enjoy advantages in terms of production cost, technology and innovation, as well as consumer demand. FDI in India has risen over the past five years. FDI, which brings in long-term capital for capex and supports revenue growth, increased 2.5 times over fiscal 2018-24 compared with fiscal 2013-17.

The government has encouraged foreign investments by permitting 100% FDI under the automatic route for the heavy engineering industry (expect for countries with land borders with India). FDI in manufacturing segments will strengthen demand for heavy engineering capital goods. Further, the sector does not require an industrial license. Quantum of payment for technology transfer, design and drawing, royalty, etc. to the foreign collaborator is not restricted. There are no restrictions on imports-exports as well.

**FDI inflows (Rs billion) – fiscal 2013 to 2024**

| Sector | FY13-17 | FY18-24 | Increase in FDI inflows (times) |
|---|---|---|---|
| Construction (infrastructure) activities | 81 | 1,792 | 22.1 |
| Electrical equipment | 232 | 452 | 2.0 |
| Power | 269 | 489 | 1.8 |
| Food processing | 386 | 371 | 1.0 |
| Industrial machinery | 160 | 180 | 1.1 |
| Textiles | 86 | 145 | 1.7 |
| Mining | 83 | 91 | 1.1 |
| Cement and gypsum products | 173 | 65 | 0.4 |
| Machine tools | 21 | 27 | 1.3 |
| Earthmoving machinery | 14 | 15 | 1.0 |
| Sugar | 10 | 3 | 0.3 |
| Total FDI inflows1 | 10,125 | 25,600 | 2.5 |

*Note: Total FDI inflows across all industries*
*Source: DPIIT, Crisil Intelligence*

## Supportive government schemes and policy intervention to boost heavy engineering sector

### Overview of Production Linked Incentive (PLI) Scheme

Launched in March 2020, the PLI scheme focuses on 14 sectors with an incentive outlay of Rs 1.97 trillion (~$ 26 billion) to strengthen the production capabilities of the economy. These sectors include auto components, automobile, aviation, chemicals, electronic systems, medical devices, metal and mining, pharmaceuticals, renewable energy, specialty steel, telecom, textiles and apparel, food processing, and white goods.

As many as 176 MSMEs – in sectors such as bulk drugs, medical devices, pharmaceuticals, telecom, white goods, food processing, textiles, and drones – have benefited from the PLI scheme.

Sectors that are covered by the PLI scheme and have seen an increase in FDI inflows over fiscals 2022-23 are drugs and pharmaceuticals (+46%), food processing (+26%), and medical devices (+91%). As of July 2024, 755 applications have been approved in 14 sectors. As per the economic survey 2023-24, investments worth of over Rs. 1.28 trillion were realized till May 2024, which has led to production/sales of Rs 10.8 trillion and employment generation (direct & indirect) of over 8.5 Lakh. Survey states that the exports were boosted by Rs. 4 trillion, with significant contributions from sectors such as large-scale electronics manufacturing, pharmaceuticals, food processing, and telecom & networking products.

**Overview of key schemes for the heavy engineering capital goods industry**

| Scheme | Overview |
|---|---|
| Scheme for Enhancement of Competitiveness in the Indian Capital Goods Sector - Phase I | • Launched in November 2014, the objective of the scheme was to address various constraints faced by the sector<br>• Advanced Centres of Excellence were set up at IITs, IISc and CMTI in partnership with the industry to develop strategic technology and machinery<br>• 4 Industry 4.0 Centres are imparting awareness and support to MSMEs for smart manufacturing capabilities, 15 common engineering facilities centres have been created for high tech-skilling and a 530-acre specialized Machine Tool Industrial Park has been established<br>• Under this scheme, 33 projects with budgetary support of Rs 5.83 billion and a total outlay of Rs 9.96 billion were sanctioned. These aimed at addressing technology gaps, infrastructural requirements, and developmental needs of the sector |
| Scheme for Enhancement of Competitiveness in the Indian Capital Goods Sector - Phase II | • The phase II was launched for aiding Common Technology Development and Services Infrastructure. The scheme has a financial outlay of Rs 12.07 billion with budgetary support of Rs 9.75 billion, and industry contribution of Rs 2.32 billion<br>• The scheme is an extension of phase I. A total of 27 projects with project cost of Rs 9.1 billion have been approved so far under the Phase-II<br>• This phase has the following six components:<br>– Identification of technologies through technology innovation portals (TIPs)<br>– Setting up of new advanced CoEs and augmentation of the existing centres<br>– Promotion of skilling in the capital goods sector – creation of skilling packages<br>– Setting up of common CEFCs and expansion of the existing centres<br>– Expansion of the existing testing and certification centres<br>– Setting up of industry accelerators for technology development |

*Source: Ministry of Heavy Industries, Crisil Intelligence*

## 2.3. Key growth drivers supporting the heavy engineering equipment industry in India

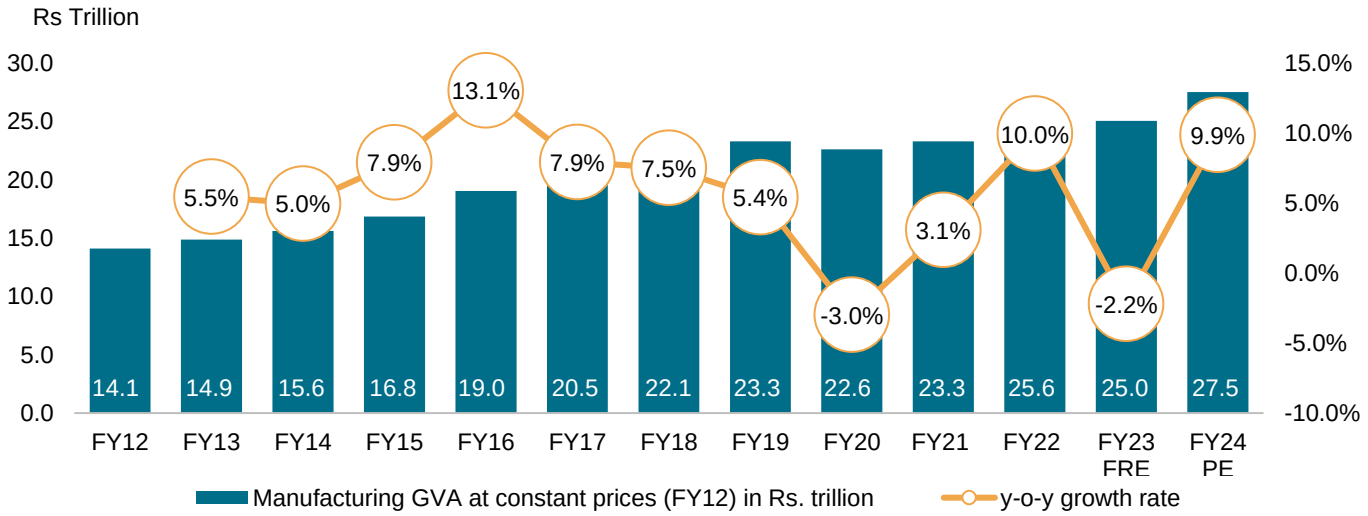
**Stable contribution of manufacturing sector in overall GVA to support growth of heavy engineering capital goods, welding consumables and wear plates industries in India**

Contribution from the manufacturing sector in total GVA at basic prices decreased slightly from 17.4% in fiscal 2012 to 17.3% in fiscal 2024, logging a CAGR of 5.7% from fiscal 2012 to fiscal 2024. Domestic demand remains the primary driver of the growth in manufacturing, supported by capex push and easing inflationary pressures on consumers.

| Manufacturing | FY12 | FY13 | FY14 | FY15 | FY16 | FY17 | FY18 | FY19 | FY20 | FY21 | FY22 | FY23FRE | FY24PE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Manufacturing contribution (% of GVA) | 17.4 % | 17.4 % | 17.2 % | 17.3 % | 18.1 % | 18.1 % | 18.4 % | 18.3 % | 17.1 % | 18.4 % | 18.5 % | 16.9% | 17.3% |

*FRE: First revised estimate, PE: provisional estimate*
*Source: MOSPI, Crisil Intelligence*

**Manufacturing GVA at constant prices (FY12 base year)**




*Source: MOSPI, Crisil Intelligence*

**Rising demand from key end-use industries to support demand for heavy engineering equipments**

| Sector | Key trends |
|---|---|
| Crude Oil | In 2024, oil demand in India is expected to reach an all-time high of approximately 5.7-5.8 million barrels per day (mbpd), owing to healthy economic growth coupled with steady demand from the transportation segment, with improved automobile sales adding to consumption.<br>Growth in crude oil demand is expected to slow down to 2-4% CAGR up to 2028, reaching 5.7-5.9 mbpd in 2028. |
| Power | In fiscal 2024, power demand surged by 7.4% despite a high base of 9.6% recorded in fiscal 2023.The growth was driven by El-Nino led warmer temperatures along with a 7.6% growth in GDP.<br>Power demand is projected to clock a CAGR of 5-7% between fiscal 2024-2029, supported by economic growth recovery and improved reach and quality of power supply |
| Natural gas | In fiscal 2024, demand from natural gas is estimated to have increased by ~15-20% driven by Power (18-23%), Refinery (40-45%) and Petrochemicals (45-50%). Power demand which gave negative growth in previous fiscal also supported demand growth owing to reduced hydropower generation.<br>In fiscal 2025, demand from natural gas is projected to grow at 5-10% driven by continued demand from Power (4-9%), CGD (8-13%) and Petrochemicals (10-15%). The growth will also be supported by lower gas prices owing to ample inventory levels. |
| Defence | Defence production in India totalled Rs 1,269 billion in fiscal 2024, up at a CAGR 8.0% over fiscals 2017-24. The growth was supported by policy reforms like raising the FDI limit to 74% from 49%, DAP-2020 (which focuses on domestic procurement), PILs, simplification of industrial licensing, the iDEX scheme, SRIJAN portal, reforms in the offset policy, transfer of technologies, strong impetus on the private sector's involvement, and infrastructure development |

## Key government initiatives to further support growth in heavy engineering and capital goods

National Infrastructure Pipeline (NIP) - The National Infrastructure Pipeline (NIP) planned for fiscals 2019-2025 is a government initiative to provide world-class infrastructure to citizens in a bid to improve their quality of life. It aims to improve project preparation and attract investments into the infrastructure sector. To draw up the NIP, a high-level task force was constituted under the chairmanship of the Secretary, Department of Economic Affairs (DEA), Ministry of Finance.

Lack of robust infrastructure is often recognised as the primary constraint to a developing nation's growth. In India, the government is taking various steps to forge partnerships between the public and private sectors to build infrastructure. The NIP is a step in that direction. To achieve seamless working and productivity in other business sectors and India's ambitious goal to be a $5 trillion economy by 2025, strong infrastructure growth is essential. In particular, the success of India's manufacturing sector and the focus on Make in India are directly influenced by how strong the backbone of India's infrastructure is. There is a constant need for government intervention, solid funding and constant monitoring of projects. Growing urbanisation, increasing working-age population, shift to a services-based economy and climate change are some of the factors that will give a further boost to India's infrastructure sector, in turn, amplifying the need for the NIP.

NIP was launched with 6,835 projects and has expanded to capture over 9,831 projects as of August 2024, with a total project outlay of $ 2041.58 billion. Currently there are 1,992 projects under development spread across 59 sub-sectors.

**Overview of NIP opportunities in select sectors**

| Sector | Number of opportunities / projects | Total worth of opportunities (USD billion) |
|---|---|---|
| Inland waterways  | 31 | USD 13.75 billion |
| Logistics infrastructure  | 29 | USD 5.26 billion |
| Electricity generation  | 378 | USD 259.4 billion |
| Telecommunication  | 30 | USD 34.19 billion |
| Steel  | 6 | USD 2.86 billion |
| Oil & gas  | 156 | USD 51.68 billion |
| Roads & highways  | 3,624 | USD 404.83 billion |

*Source: NIP website as assessed on August 2024, Crisil Intelligence*

## 2.4. Key risks and challenges face by the heavy engineering industry in India

- **Economic Volatility and Market Cycles:** India's economy is prone to fluctuation influenced by both domestic and global factors. Changes in interest rates can have a profound impact on the heavy engineering sector. For instance, a weakening rupee raises the cost of imported raw materials such as metals and machinery, which are crucial for production. Also, the industry is highly dependent on raw materials like steel, aluminium, and copper. Disruptions in their supply-due to mining restrictions, logistics challenges, or price volatility- pose significant risks. India's limited domestic supply of some of these materials forces the industry to rely on imports, which can be affected by global supply chain bottlenecks or geopolitical factors. Additionally, global recessions or trade disruptions can reduce demand for Indian heavy engineering exports, impacting profitability and growth.
- **Technological Lag:** Compared to advanced economies, India's heavy engineering industry has been slow to adopt new technologies such as robotics, automation, and industry 4.0 practices. Many small and medium enterprises (SMEs), Which form a large part of this sector, lack the capital and technical expertise to modernize.
- **Skill Gaps:** While India has a large labour force, the heavy engineering industry faces a shortage of workers with advanced technical skills in areas such as precision engineering, design and digital manufacturing. Attracting and retaining talent in key sectors like R&D, engineering design, and advanced manufacturing remains a key challenge
- **Regulatory and Policy uncertainty:** Policy unpredictability is a significant risk for the heavy engineering sector in India. Frequent changes in tax laws, import/export duties, and regulatory frameworks can disrupt long-term business planning. Delays in government approvals for large infrastructure projects, which are a major source of demand for heavy engineering product, can further constrain industry growth.

## 2.5. of Eco Pickled Surface (EPS) in India

Pickling process is a crucial process in the steel industry. It involves using an acidic solution, typically hydrochloric or sulfuric acid, to remove surface oxides and impurities from steel. This dissolves the scale that forms during the processes like hot rolling or heat treatment. By doing so, The steel achieves a cleaner smoother surface, enhancing its appearance. This process also improves the steels adhesion properties for subsequent coating or painting, ensuring better corrosion resistance and increasing its overall durability for industrial applications

Eco Pickled Surface (EPS) is a sustainable process designed to clean and prepare the surface of hot-rolled steel as an alternative to traditional acid pickling. Unlike conventional methods that rely on acids to remove mill scale and contaminants, EPS uses mechanical brushing and a mild, water-based solution, making it a more ecofriendly option. This process not only delivers a smooth, clean surface suitable for subsequent treatments like coating or painting but also eliminates hazardous waste, reducing the environments footprint of steel production.

The EPS process is gaining increasing importance in India's industrial landscape, particularly as the country pushes for more sustainable and environmentally friendly manufacturing solutions. In response to growing focus on green technologies and reducing industrial pollution, the EPS process has emerged as a key innovation. For Indian industries such as automotive, construction and manufacturing, the EPS process offers several advantages. The Indian governments initiatives such as "Make in India" and its push for cleaner technologies, further support the adoption of such processes.

# 3. Overview of key end-use industries

## 3.1. Natural gas industry in India

Crisil Intelligence expects natural gas demand to increase at a compound annual growth rate (CAGR) of 7-9% to 280-290 million metric standard cubic meter per day (mmscmd) over fiscals 2024-29. We expect CGD, refineries and petrochemicals to fuel demand, led by improved domestic gas supply and governmental policy/financial support and increased imports. In our opinion, demand growth would have been higher had there been a firm policy for gas usage in the power sector and adequate supply of domestic gas.

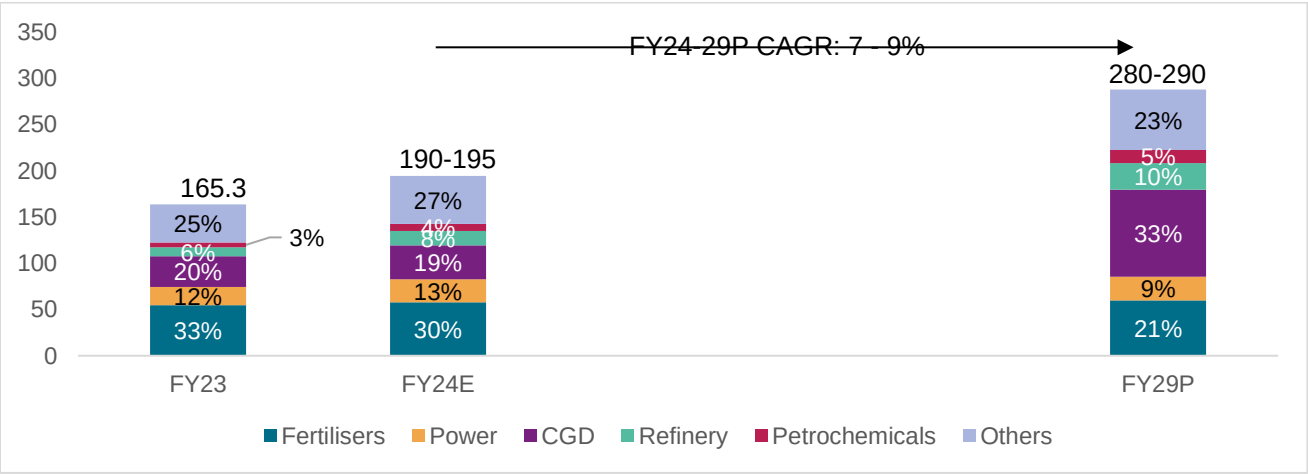
The fertilizer, CGD, and power sectors accounted for ~60% of total gas consumption of ~118 mmscmd in fiscal 2024. We expect the share of CGD in overall gas demand to increase to 33% in fiscal 2029 from 20% in fiscal 2023. The sector's priority in domestic gas allocation, CNG price competitiveness vis-a-vis petrol and regulatory changes, in terms of fuel oil, petcoke and coal gasifier bans will drive demand.

After healthy growth in fiscal 2021, demand growth from fertilizers segment slowed down and increased by mere ~1% on-year in fiscal 2022. In fiscal 2023, demand from fertilizers segment grew at a healthy pace of 9-11%, driven by the rise in urea production led by revival of two natural gas-based urea plants (2.6 million tonne) and ramping up of Ramagundam and Gorakhpur urea plants. Moreover, expectation of normal monsoon leading to good crop output and thus higher urea production, also supported growth. Going forward in fiscal 2024, demand is estimated to have grown by 5-10% with rise in consumption owing to India's impetus to phase out urea imports by 2025.

Over the next five years, the ongoing shift to gas feedstock is expected to be the key demand driver as no major Greenfield expansions in urea are expected over the period. Growth will be driven by increase in agricultural activity in terms of increase in sown area and monsoon, which remain key monitorables.

As a result, Crisil Intelligence forecasts natural gas demand from the fertilizers sector to grow at a compound annual growth rate (CAGR) of 1-5% between fiscals 2024 and 2029 to reach 60-62 million metric standard cubic meter per day (mmscmd) until fiscal 2029.

**Natural gas consumption (mmscmd) (FY23-28P)**




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

**Key drivers in the natural gas industry**

- **Players shift to natural gas feedstock:** All fertilizers units including Mangalore Chemicals & Fertilizers Ltd and Southern Petrochemicals Industries Corporation, Tuticorin, (combined: ~1.5 million tonne per annum, or MTPA), are either running on gas or have converted to gas-based units and are awaiting gas pipeline connectivity. Also, as Ennore LNG terminal commissioned in fiscal 2020, Manali plant also started running on gas. MFL converted to a gas-based unit in fiscal 2019. Pipeline connectivity to its Mangaluru plant was completed in fiscal 2021.
- **Revival of old urea plants:** The government has put a lot of thrust on revival of old urea units lying idle owing to unavailability of feedstock, resulting in huge dependence on urea imports. The revival of the urea units is expected to drive the demand for natural gas in the country.
- **New Urea Investment Policy:** Under the New Urea Investment Policy, the difference between the selling price and the cost of production/imported price is reimbursed by the government. Hence, urea manufacturers would continue to rely on gas, thereby boosting demand for gas from the fertilizers sector. Furthermore, under the direct benefit transfer scheme, the government provides subsidy directly to farmers, which will improve their ability to invest. This policy also enabled urea manufacturers to use any combination of domestic natural gas and re-gasified liquefied natural gas (R-LNG) for urea production if domestic natural gas was not available.
- **Regulatory push for cleaner fuels:** The government has provided increased impetus to replace polluting fuel sources with cleaner sources. The regulatory ban on petcoke and fuel oil is expected to extend to more states, which would become easier with extensive city gas infrastructure. Along with the regulatory push for cleaner fuels, lower spot LNG prices are expected to boost the shift from FO to industrial PNG in the long term.

**Key risks and challenges impacting the natural gas industry in India**

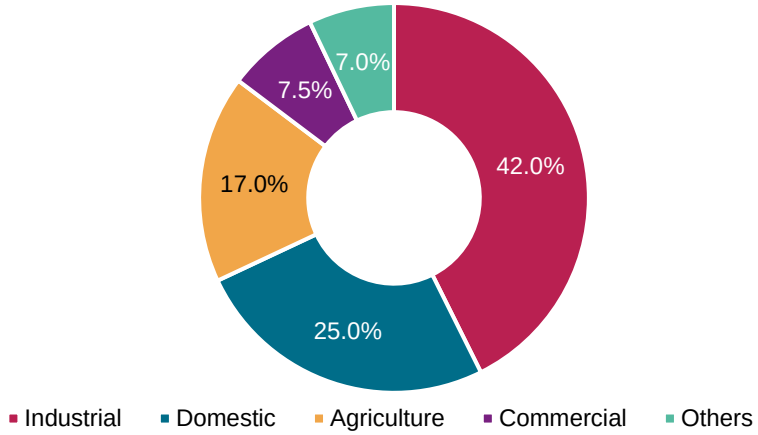
- **Infrastructure deficiencies:** The natural gas infrastructure in India, including pipelines, processing facilities, and distribution networks, is underdeveloped. This limits the reach and accessibility of natural gas, particularly in rural and remote areas. The lack of extensive pipeline network constrains the effective transportation of natural gas across the country.
- **Regulatory and policy issues:** The natural gas sector in India is affected by regulatory uncertainties and policy inconsistencies. Changes in regulations, tariffs, and subsidies can impact the investment climate and operational stability of companies in the sector. Additionally, the policy framework often lacks coherence, which can hinder long-term planning and development.
- **Technological challenges:** The natural gas industry requires advanced technologies for exploratrion, extraction, processing, and transportation. Keeping up with technological advancements and integrating them into existing operations can be challenging, especially for smaller companies or those with limited resources.

## 3.2. Power industry in India

For India to sustain its economic growth trajectory, sufficient generation capacity and well-developed power infrastructure are critical. Power demand is closely linked to GDP growth where historically power consumption largely follows economic cycles. Power demand has historically lagged GDP growth by 1-2 percentage points but has bucked the trend consistently over fiscals 2021 to 2024, indicating the sustained momentum in consumption trends. In fiscal 2024, power demand surged by 7.4% driven by El-Nino led warmer temperatures along with a 7.6% increase in GDP growth despite a high base of 7.2% in fiscal 2023. Crisil Intelligence expects power demand to increase by 5.5-6.5% in fiscal 2025. This is expected to be driven by severe weather along with increase in economic output. Power demand is expected to reach 1,720-1,730 BU in fiscal 2025 after reaching 1,626 BU in fiscal 2024.

In terms of consumption, Commercial and industrial consumers dominate the power consumption in India accounting for nearly 50% of the total electricity consumed.

**Segment-wise power consumption in fiscal 2023E**




*Note: Industrial share includes captive power consumption by industrial units*
*Source: CEA, Crisil Intelligence*

In fiscal 2023, power consumption was dominated by the Industrial segment with a share of 42%. This was followed by domestic consumption at 25% and agriculture consumption at 17%.

**Capital expenditure in Indian power industry**

Crisil Intelligence expects investments of Rs 23-24 trillion in the power sector between fiscal 2025-2029. Investments in power generation are expected to increase ~2.1 times from Rs ~7.7 trillion between fiscals 2019-2024 to Rs 16.5-17.5 trillion between fiscals 2025-2029. Investments in renewable energy generation capacity are expected to account for ~75% of these investments over the same period as India seeks to achieve its 500 GW of non-fossil energy capacity announced in COP26.

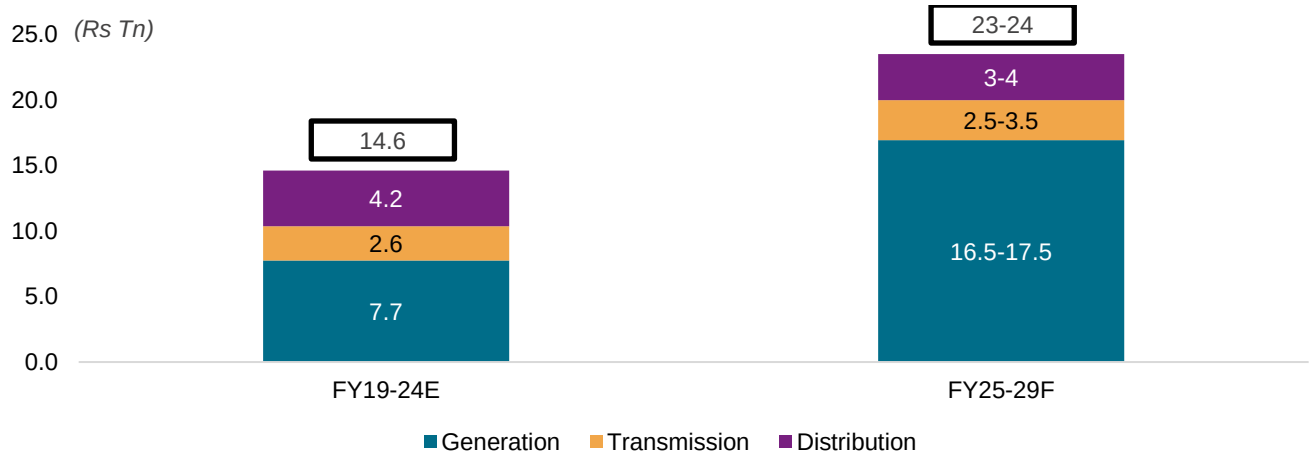
To achieve the RE generation target, strong transmission infrastructure is needed so as to integrate large scale RE capacities into the grid. This is expected to lead to transmission investments of Rs 2.5-3.5 trillion between fiscals

2025-2029 from ~Rs 2.6 trillion between fiscals 2019-2024 led by upcoming Inter State Transmission System projects.

Additionally, Rs 3-4 trillion worth of investments in the distribution segment is expected between fiscal 2025-2029 driven by upgradation of distribution infrastructure along with installation of smart meters as India focuses on reduction of its carbon emission.

Nuclear capacities, which are considered a clear source of energy due to lower emissions compared to coal, are expected to attract investments worth Rs 0.42 trillion between fiscal 2025-2029 driven by capacity additions. Moreover, nuclear power plants aggregating 4.5-5.5 GW (Kalpakkam and extension projects at Kakrapar, Rajasthan, and Kudankulam, Kaiga) of Nuclear Power Corporation of India (NPCIL) and 7.5-8.5 GW of hydro plants are also expected to be commissioned over fiscals 2025-29.

**Segment-wise break-up of total investments**




*E: Estimated, P: Projected*
*Source: Crisil Intelligence*

**Renewable energy to account for majority share of power generation investments**

Over the next six years, investments in generation will be led by renewable energy capacity additions, followed by conventional generation and flue gas desulfurization (FGD) installations, as the shift towards clean energy generation gains momentum.

Capacity addition from renewable energy sources is expected to be 215-225 GW over fiscals 2025 to 2029, and 23-24 GW from coal based plants sources over the same period. Investments in RE capacity, which are expected to double over the next five years, in line with capacity additions, will constitute over 70% of overall generation investments. Total generation investments are expected to grow ~2x over fiscals 2025 to 2029 compared with fiscals 2019 to 2024.

**Key trends and drivers in India's power industry**

- **Macroeconomic factors:** Aatmanirbhar Bharat relief package, government spending on infrastructure through the National Infrastructure Pipeline, commissioning of dedicated freight corridors, expansion of the services industry, rapid urbanisation, and rising farm incomes from agriculture-related reforms are key factors increasing power demand. Also, policy initiatives, such as the PLI scheme and low corporate tax rates, among others, have supported large scale manufacturing in the country, further boosting power demand.
- **Railway electrification:** Indian Railways (IR) is one of the world's largest rail networks. In a bid to become net zero emitter by 2030 the government aimed to achieve 100%. By March 2023, electrification on Indian Railways has been extended to 57,067 Route kilometre (RKMs) excluding Konkan Railway. This constitutes 88% of the total broad gauge Railway Network. Achieving 100% electrification is expected to lead to an incremental power demand of approximately 23 BUs on an average every year between fiscal 2025 to 2029, also driven by new track laying by the IR which is already electrified. Ministry of Railways has been allocated a capital outlay of Rs 2.52 trillion in the Union Budget 2024-25.
- **Metro projects:** The electricity consumption of the urban metro system mainly comes from electricity consumption for train traction and the electricity consumption for station operation. Metro rail has seen substantial growth in India in recent years, and the rate of growth is going to become twice or thrice in the coming years with multiple cities requiring the need for metro rail to meet daily mobility requirements.

- **Electric vehicles:** Under the National Electric Mobility Mission plan, the government is promoting EVs through demand-side incentives, in terms of subsidies, promoting setting up of charging infrastructure, and encouraging research and development in battery technology, power electronics, battery management, system integration, etc.

**Key risks and challenges impacting the power industry in India**

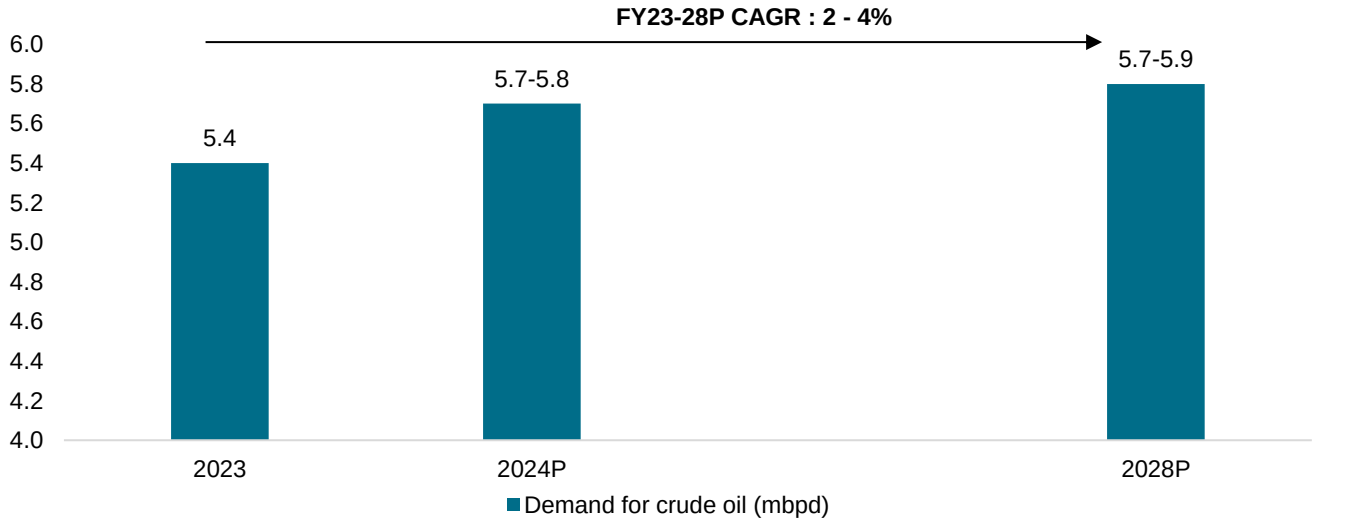
- **Reduction in demand due to increase in off grid/rooftop projects:** With boost to rooftop solar and declining cost of renewable energy generation, the off-grid solar generation is expected to increase, reducing power demand from grid. By fiscal 2029, installed capacity is expected to be 32-33 GW resulting in diversion of 2-3% of the power demand being met directly at consumer site.

## 3.3. Crude Oil industry in India

In 2024, oil demand in India is expected to reach an all-time high of approximately 5.7-5.8 million barrels per day (mbpd), owing to healthy economic growth coupled with steady demand from the transportation segment, with improved automobile sales adding to consumption. The demand growth of 0.2 mbpd year-on-year is attributed to improving operating rates, which are returning to pre-COVID-19 levels for refineries, leading to growth in production.

In 2023, demand growth was favourably supported by healthy demand growth in the automobiles segment, resulting in higher consumption. Improving mobility, coupled with improving production from the Industrial Fuels and Petrochemicals units, resulted in a healthy demand growth of 0.2 mbpd to 5.4 mbpd in 2023.

**Demand for crude oil (mbpd) (FY23-28P)**




*Note: P: Projected*
*Source: BP Stats, Crisil Intelligence*

Crisil Intelligence expects India's crude oil demand to increase moderately going forward. Domestic capacity addition of refineries would likely increase at a compound annual growth rate (CAGR) of ~5-7% from 2023-28, reaching ~340 million tonnes. Growth in crude oil demand is expected to slow down to 2-4% CAGR up to 2028, reaching 5.7-5.9 mbpd, due to reasons such as gradual recovery in economy post the pandemic, regulatory ban on polluting fuels such as fuel oil and pet coke, lower liquefied natural gas prices to accelerate switchover to industrial piped natural gas, city gas distribution segment to eat away share in the transport and household segment, government push for electric vehicles (EVs), compressed natural gas (CNG), ethanol blending and cleaner fuel such as hydrogen, increase in naphtha based petrochemicals capacities etc.

Crisil Intelligence expects domestic petroleum product demand to grow at a 4-6% CAGR from fiscals 2023-28, reaching 275-280 million tonnes. This is against 2% from fiscals 2018-23. The petrol demand is forecasted to increase at a 5-7% CAGR to ~34-36 million tonnes, compared with ~6% CAGR from fiscals 2018-23. A higher growth trajectory is unlikely due to the huge government push for EVs and CNG, and improving fuel efficiencies, ethanol blending, and urban infrastructure projects such as metro, as well as cab aggregation. In fact, electric two-wheeler penetration would eat away a bigger pie of petrol consumption, with electric two-wheeler sales growth expected to reach ~40-45% during the forecast period. Similarly, demand for diesel is expected to increase at a 4-6% CAGR from fiscals 2023-28, against ~1% CAGR from fiscals 2018-23. The slower growth between was due to the degrowth of ~12% in fiscal 2021.

**Key trends and drivers of the crude oil industry in india**

- **Growing energy demand:** As India's economy continues to expand, energy consumption is expected to rise simultaneously. A growing population, increased urbanization, and industrialization are driving the demand for crude oil, particularly in sectors such as transportation, manufacturing and petrochemicals.
- **Rising refining capacity:** India has emerged as a global refining hub, with significant investments in increasing its capacity. Some of the top refining companies of the country have expanded their operations, thereby enabling India to not only meet the domestic demand but also export refined product to global markets. This trend has made India one of the largest exporters of refined petroleum in Asia, with refining capacity of ~250 million tonnes per annum (MTPA)
- **Diversification of oil imports:** Traditionally dependent on the middle eastern countries for crude, India has been diversifying its sources by importing from countries like the United states, Russia and various African countries. This move will help in mitigating the risks related to supply chain disruptions and price fluctuations driven by geopolitical tensions.
- **Domestic exploration and production efforts:** Despite India's large energy demand, domestic oil production has lagged. Factors such as technical challenges, geological complexities and a lack of significant discoveries have hindered growth. To reduce dependency on imports, India has been promoting initiatives like the Open Acreage Licensing Policy (OALP) and Discovered Small Fields (DSF) auctions to boost domestic exploration and production.

**Key risks and challenges impacting the crude oil industry in india**

- **Heavy reliance on imports for crude oil:** India imports about 85% of its crude oil, making the country highly dependent on external sources for it energy needs. This reliance on imports leaves India vulnerable to global supply chain disruptions, geopolitical tensions, and price fluctuations, Any major event such as conflict in the middle east or sanctions on oil-producing countries can lead to a sharp increase in oil prices, driving up the cost of imports.

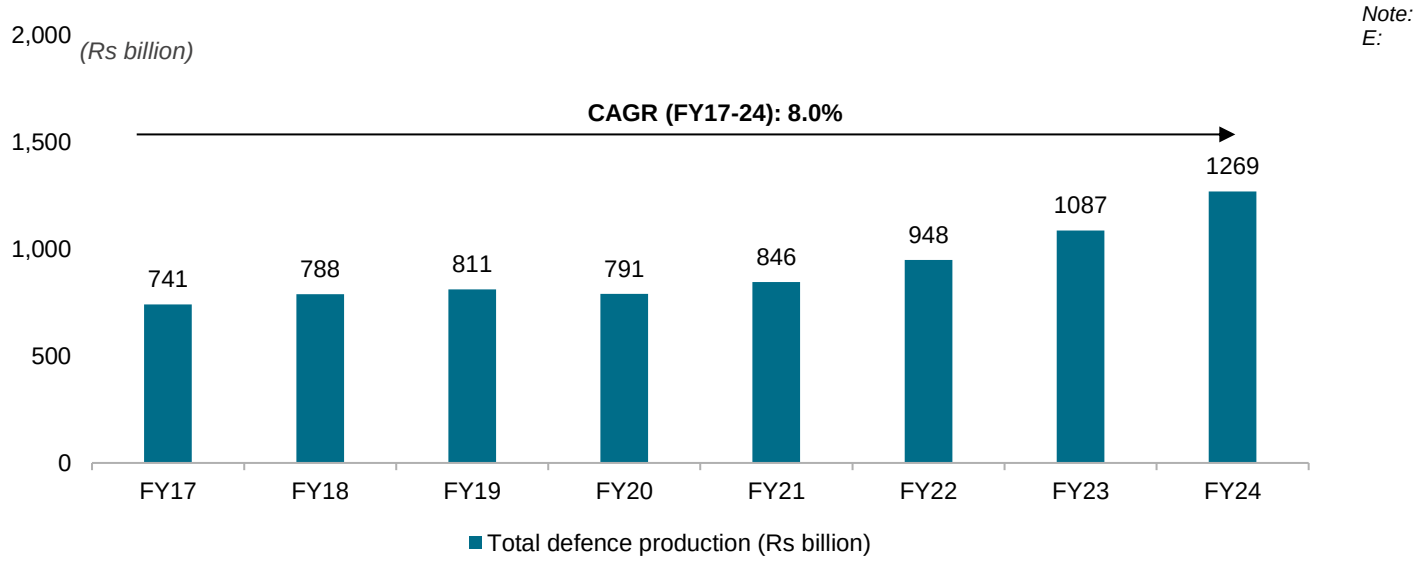
- **Global oil price fluctuability:**
  - **Susceptibility to price fluctuations:** As a major oil importer, India is highly exposed to fluctuations in the global oil prices. Any significant rise in prices can directly impact the country's economy by increasing inflation, raising transportation costs, and driving up the prices of essential goods and services. The volatility in oil prices, driven by factors such as OPEC production cuts, geopolitical tensions and global economic downturns, creates uncertainty for the Indian crude oil industry.
  - **Strain on government finances:** When global prices surge, the Indian government faces pressure to manage fuel prices domestically. To shield consumers from price hikes, the government may resort to subsidies or reduce taxes on fuel, which puts a strain on public finances. Thid fiscal pressure can impact other critical sectors like healthcare, education and infrastructure.

– **Push towards renewables:** The global energy transition towards renewable energy sources such as solar, wind, and hydropower is gaining momentum. India, too has committed to reducing its carbon emissions and expanding its renewable energy capacity. However, this shift poses a challenge to the crude oil industry, as it reduces the long-term demand for fossil fuels.

## Defence industry in India

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

**Total defence production in India, FY17-24**



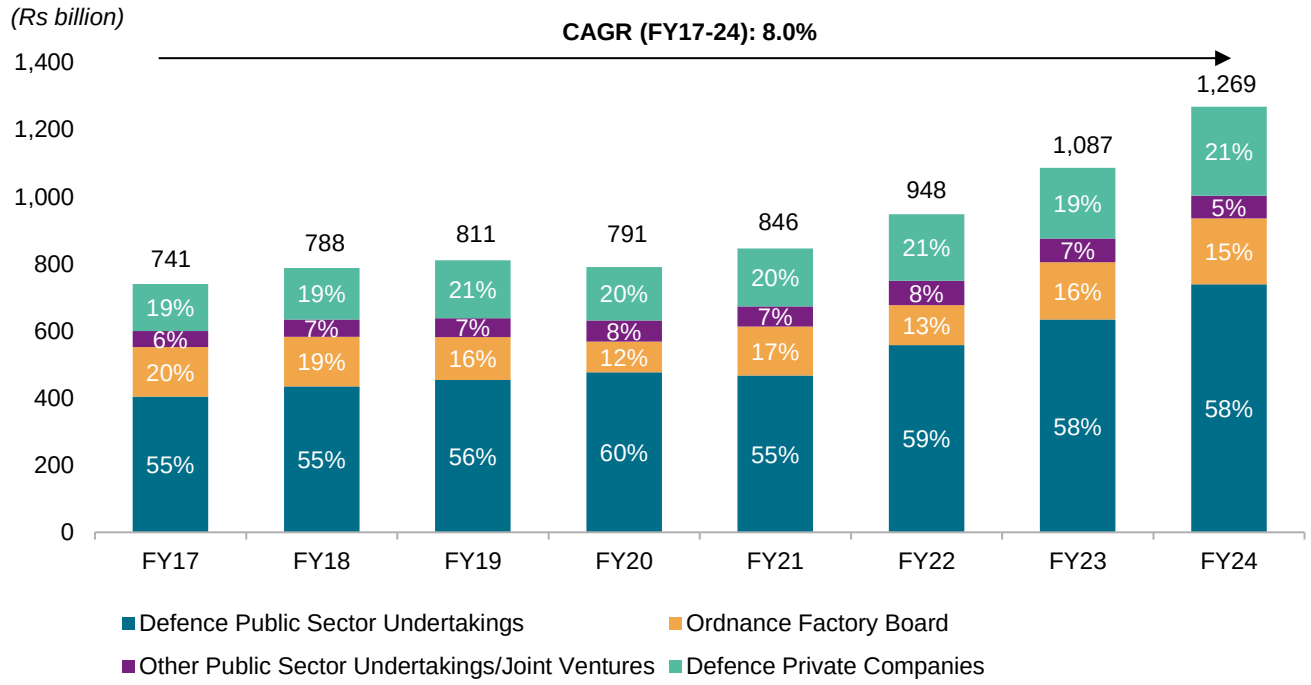

*Note: E: estimated, P: projected*
*Source: MoD, Crisil Intelligence*

Defence production in India totalled Rs 1,269 billion in fiscal 2024, up at a CAGR 8.0% over fiscals 2017-24. The growth was supported by policy reforms like raising the FDI limit to 74% from 49%, DAP-2020 (which focuses on domestic procurement), PILs, simplification of industrial licensing, the iDEX scheme, SRIJAN portal, reforms in the offset policy, transfer of technologies, strong impetus on the private sector's involvement, and infrastructure development (defence corridors in Uttar Pradesh and Tamil Nadu). The government has set a target of $5 billion exports and corresponding $22 billion defence production by 2025. The capital expenditure (capex) planned by the DPSUs will also boost domestic production.

**Private sector in defence production**

As of FY24, DPSUs held the largest share in the defence production at 58%, followed by private companies (21%), Ordnance Factory Board (OFB; 15%), and other PSUs/ JVs (5%).

**Segment-wise share of total defence production in India**




*Source: MoD, Crisil Intelligence*

Supported by policy support, the private sector has been growing at a slightly higher growth rate (9.4% over fiscals 2017-24) than DPSUs (9.0%). Over fiscals 2021-22, 85 new defence industrial licences were issued to the private sector. As of April 2023, the government has issued 606 industrial licences to 369 companies operating in the defence sector. Validity of the licences has been increased from 3 years to 15 years. PILs have opened new avenues of defence production for private companies and widened their scope to capture market share. In fiscal 2024, defence exports have reached an all-time high of $ 2.63 billion.

**Key drivers in the defence industry**

- **Geopolitical tensions:** India's strategic location and regional tensions with neighbouring countries, significantly influence defence procurement and development. The need for advanced defence systems to address these threats drives investment and innovation in the sector.
- **Modernization and Self-Reliance:** The Indian government has prioritized modernizing the armed forces and reducing dependence on foreign defence equipment manufacturers. This push towards self reliance is guided by "Make in India" initiative, which aims to boost domestic manufacturing and technology development in defence.
- **Private sector participation:** The increasing participation of the private sector companies in defence production and research is transforming the industry. The Indian government has opened more opportunities for the private firms to participate in defence contracts and projects. Additionally, the government has banned the imports of some defence equipments which can be procured locally thereby providing an opportunity for local firms to develop such critical technologies in the country.

- **Increasing focus on defence exports:** Defence exports are a crucial growth driver for the Indian defence industry, significantly impacting its economic, technological and strategic dimensions. By generating revenue through international sales, defence exports provide financial resources that support domestic projects and further R&D efforts. Defence exports foster strategic partnerships, enhancing India's geopolitical influence and regional stability. This growth area also contributes to job creation, infrastructure improvements and skill development, While government initiatives help streamline export processes and promote international market access. Collectively, these factors bolster the industry's global position and drive its overall expansion. In FY24 India exported a record Rs. 210.83 billion worth of defence products registering a growth of 32.5% over FY23. The exports have grown by 31 times in the last 10 years as compared to FY14. In addition, there has been a rise in the number of export authorisations issued to the defence exporters during FY24. From 1,414 export authorisations in FY23, the number jumped to 1,507 in FY24.

**Key risks and challenges impacting the defence industry in India**

- **Complex procurement:** The complex procurement process in the Indian defence industry impacts its efficiency and overall effectiveness. The process generally involves multiples levels of approvals from various government departments and agencies, each with its own set of requirement and timelines.
- **Budget constraints:** Although the defence budget is substantial, it often faces constraint due to competing national priorities such as social welfare, infrastructure, and economic development. This budgetary pressure can lead to limited financial resources allocated for defence modernization and procurement, constraining the acquisition of advanced technologies and the upgrading of existing systems.

# 4. Assessment of Elevator and Escalator industry in India

## 4.1. Overview

An elevator is a vertical transportation system commonly used in buildings to move people and goods between different floors efficiently. It is essential in high-rise structures, ensuring quick and convenient access. On the other hand, escalators provide both vertical and horizontal movement, utilizing moving staircases and walkways, making them ideal for high-traffic areas like shopping malls and airports.

The elevator and escalator market in India encompasses both new installations and existing systems undergoing maintenance or modernization.

**Major types of elevators and escalators**

### Elevators

**Passenger elevator**

- A passenger elevator is an elevator designed to transport people within a building. These elevators can differ significantly in size, speed, and interior features based on their intended purpose.

**Service elevator**

- A service elevator is commonly found in commercial buildings and is used by employees to transport goods, such as housekeeping staff moving cleaning carts in a hotel. In hospitals, these elevators are also used to move patients on hospital beds. To meet code requirements, service elevators are generally sturdier and deeper than standard passenger elevators, allowing them to accommodate larger items throughout the building..

**Freight elevator**

- Designed for heavy-duty use, freight elevators are built to transport massive loads, including vehicles and cargo, within industrial settings. Unlike passenger elevators, they are not intended for human transport and are constructed to endure harsher operating conditions

**Dumbwaiter**

- A dumbwaiter is a small freight elevator. It is often used for the transport of food in restaurants.

*Source: Crisil Intelligence*

### Escalators

**Vertical Escalator**

- An escalator is a power-driven, continuous moving stairway intended to transport passengers up and down short vertical distances.

**Moving Walkway**

- A moving walkway also known as an autowalk, travellator, or travelator, is a horizontal conveyor belt that transports people. They are similar to escalators, but they transport people over long distances at a slower speed.

*Source: Crisil Intelligence*

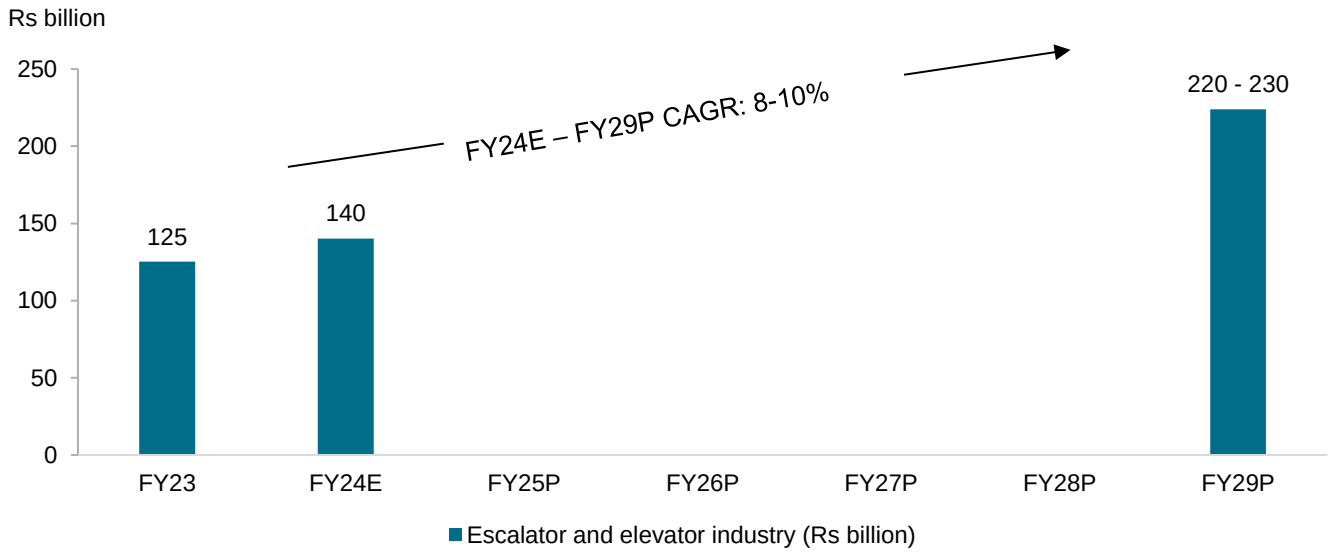
## Elevator and escalator industry is expected to grow by 8-10% between fiscal 2024 and 2028

In 2024, the Indian elevator and escalator market is estimated to have grown by ~12% to reach Rs 140 billion. This growth is largely driven by the increasing demand from residential real estate construction.

Going ahead, the industry is expected to grow at a 8-10% CAGR from 2024 to 2028. The growth of the elevators and escalators industry in India is driven by rapid urbanization, increasing high-rise residential and commercial buildings, and government initiatives like Smart Cities and affordable housing projects. The rise in infrastructure development, including metro stations, airports, and malls, further boosts demand.

Furthermore, the growing focus on modernizing existing systems also contributes to market expansion.

**Indian elevator and escalator industry**



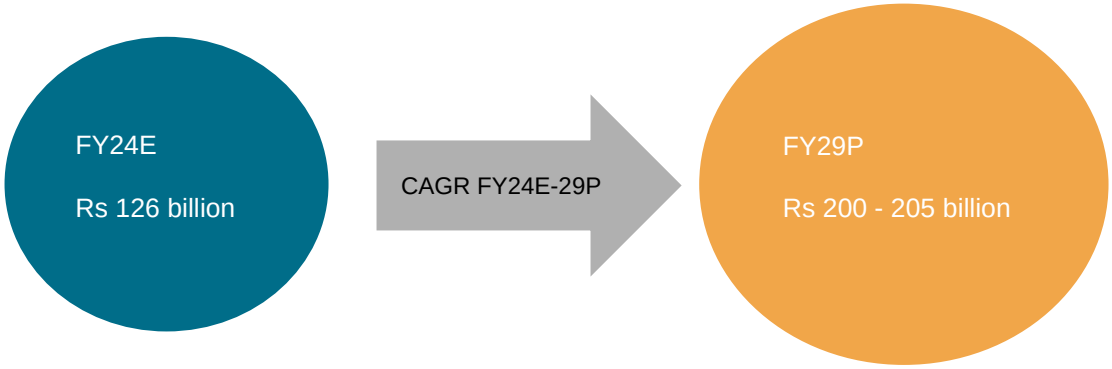

*Note: E: Estimated. P : Projected*
*Source: Crisil Intelligence*

## Elevators occupy the larger share in the overall industry in value terms

Elevators dominate the elevator and escalator industry due to their widespread use across various sectors. As of fiscal 2024, elevators are estimated to occupy 90% of the industry. While escalators are mostly found in commercial spaces like malls and transit hubs, elevators are essential in residential, healthcare, hospitality, and industrial settings. They efficiently transport both people and goods, especially in high-rise buildings, and are crucial for accessibility and fast movement in places like hospitals.

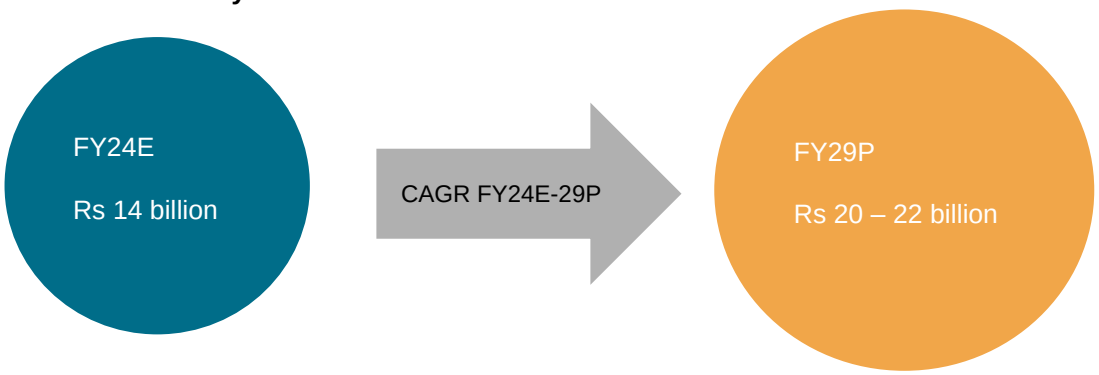
Moreover, elevators offer more flexibility escalators. Escalators are limited to shorter vertical distances, while elevators can handle tall buildings and heavy loads, making them ideal for both commercial and industrial environments. Their ability to be customized for specific needs, such as freight or service elevators, is further reflected in market share.

**Overview of elevators industry**




*Note: E: Estimated., P: Projected*
*Source: Crisil Intelligence*

**Overview of escalator industry**




*Note: E: Estimated., P: Projected*
*Source: Crisil Intelligence*

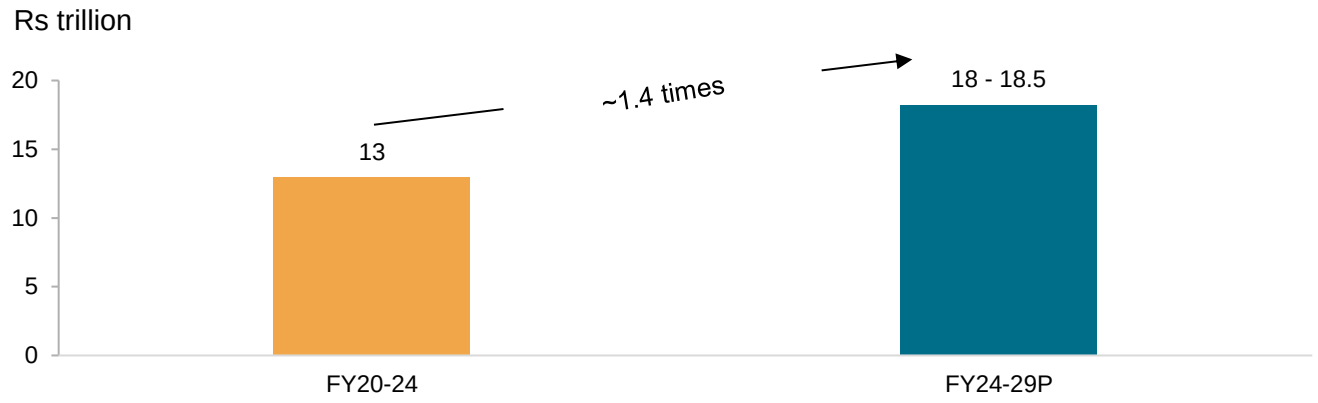
## 4.2. Key growth drivers, trends and challenges in the industry

**Rise in building construction investments to propel the industry growth**

The rising investment in building construction, particularly in urban areas, aids in boosting the elevator and escalator industry. As cities expand vertically to accommodate growing populations and limited land, demand for high-rise residential, commercial, and office buildings surges. These buildings require efficient vertical transportation systems, driving the need for elevators and escalators. Furthermore, modernization projects in aging structures and the construction of infrastructure such as shopping malls, airports, and metro stations are contribute to the growth.

During the medium term, between fiscals 2025 and 2029, the investments in building construction are expected to rise to Rs 18-18.5 trillion from an investment of Rs 13 trillion between fiscals 2020 and 2024 thereby showing a rising ~1.4 times. This growth also necessitates the need for elevators and escalators bolstering the industry demand.

**Investments in building construction industry**

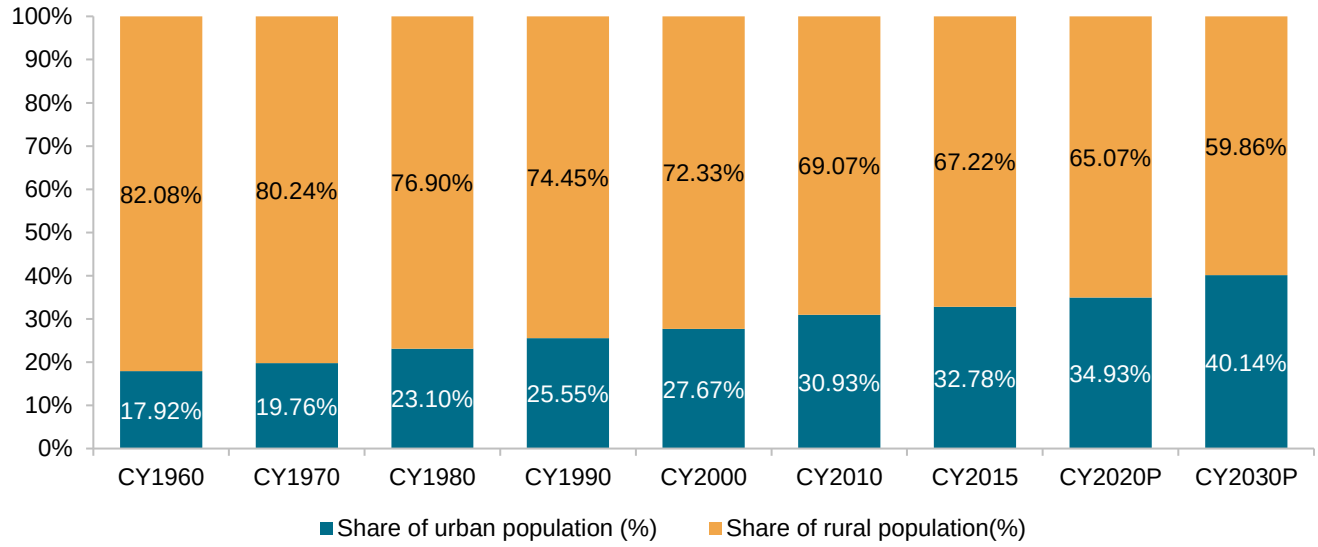



*P: Projected*
*Source: Crisil Intelligence*

**Growth in population and urbanisation to aid the industry growth**

As more people migrate to cities in search of better economic opportunities, urban areas are experiencing increased demand for high-rise residential and commercial buildings. This vertical growth necessitates efficient transportation systems within buildings, making escalators and elevators essential. The growing need for space optimization and quick, convenient mobility in densely populated areas further accelerates the demand for these systems.

**India's urban vs. rural population (% share)**




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

**Government initiatives**

Government initiatives like the Smart Cities Mission and Pradhan Mantri Awas Yojana (PMAY) are playing a crucial role in driving market growth, particularly in the construction and real estate sectors. The Smart Cities Mission focuses on modernizing urban infrastructure, making cities more efficient, sustainable, and livable through the use of technology and smart solutions. As part of this initiative, the development of public spaces, and transportation networks often includes the need for elevators and escalators to improve mobility and accessibility.

On the other hand, PMAY is aimed at providing affordable housing to millions of people across India. The program targets both urban and rural areas, encouraging the construction of housing projects that require modern facilities. As these housing developments grow, the demand for elevators, especially in multi-story buildings, rises. Together, these programs stimulate an increase in construction activities, further driving the need for elevators and escalators.

**Development of Innovative technologies**

Manufacturers are focused on creating innovative technologies to differentiate their products and stay competitive. Smart elevators, equipped with advanced hardware and software, are the next step in vertical transportation. These systems enhance efficiency and user experience by integrating features like real-time monitoring and automated control. As buildings grow taller, elevator speed becomes crucial to reduce waiting times, especially in high-rises. Future projects such as 'housing for all' and smart city developments will require taller buildings and more efficient mobility solutions, emphasizing the need for ongoing advancements in elevator technology.

**Maintenance and Safety Regulations**

One of the major challenges in the elevator and escalator industry is ensuring compliance with safety regulations. Elevators and escalators are crucial for vertical transportation in buildings, and their failure can lead to serious accidents or disruptions. Adhering to varying regional safety standards adds complexity, as companies must continuously update their practices to meet local regulations. Further, maintenance challenges, including cost and complexity, are significant obstacles. Identifying aging equipment and non-compliant products is vital, but the associated costs being high acts as a challenge for the industry.

## 4.3. Key government regulations and policies governing the industry

In India, the installation and operation of elevators and escalators are subject to a range of regulations and policies. The Bureau of Indian Standards (BIS) plays a key role in setting national standards for elevators, outlining the types of lifts, recommended dimensions, technical specifications, and testing methods. Additionally, BIS provides a code of practice for the installation, operation, and maintenance of passenger, goods, and service lifts.

The Indian Standards (IS) 14665 and the National Building Code (NBC) of India 2016 offer guidelines for traffic analysis calculations, which determine the handling capacity and response time of elevators in different types of buildings. While BIS standards apply nationwide, Lifts Acts vary by state, with each state having its own set of rules and regulations governing lifts.

The primary focus of these regulations is safety, encompassing various aspects of lift design, installation, and maintenance to ensure that elevators are safe for passengers and comply with industry standards.

Notably, there are no regulations that specify a mandatory requirement for the number of lifts in a building.

# 5. Assessment of Induction motor and single phase motor industry in India

The induction motor and single-phase motor industry in India is integral to numerous sectors, including manufacturing, agriculture, and domestic appliances. Induction motors, are a preferred choice for industrial use due to their robustness, efficiency, and low maintenance needs. They are commonly used in equipment such as pumps, compressors, and various forms of industrial machinery. The growing pace of industrialization, infrastructure development, and automation in India has significantly driven demand for these motors, positioning the country as a key manufacturer in this space.

Meanwhile, single-phase motors are more commonly used in residential and smaller commercial applications, such as fans, home appliances, and small-scale machinery. This segment has witnessed growth due to increasing demand across regions, spurred by electrification efforts and the rise in energy-efficient appliances.

India's motor industry is composed of both domestic companies and multinational corporations, offering a wide range of motors for both domestic consumption and export.

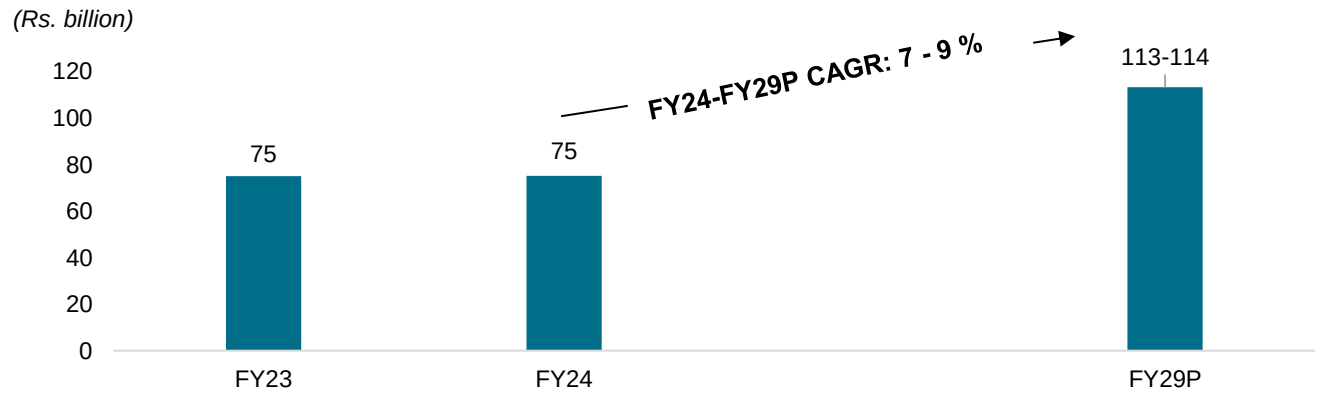
## 5.1. Overview of LT and FHP motor industry

Low tension (LT) motors are designed for low voltage applications making them suitable for industrial equipment's like fans, pumps and compressors, as well as in commercial settings for driving machinery and HVAC systems. Fractional Horsepower (FHP) motors on the other hand, are used in applications needing less than one horsepower, such as household appliances like washing machines, refrigerators, and small machinery including ventilators and small pumps.

LT motor production in value terms has remained stagnant in FY24 increasing by 0.2% over FY23, this is mainly attributed to the higher base in FY23. The production value saw a considerable jump of more than 50% in FY22 owing to the pent-up demand and high raw material prices that arised due to supply chain disruptions.

From FY24 to FY29, Crisil Intelligence expects the LT motor production to increase at a CAGR of 7-9% and reach Rs. 113 – 114 billion in value in FY29. The growth is expected to be led by increased automation in the manufacturing sector and the focus of the companies in improving the manufacturing efficiency.

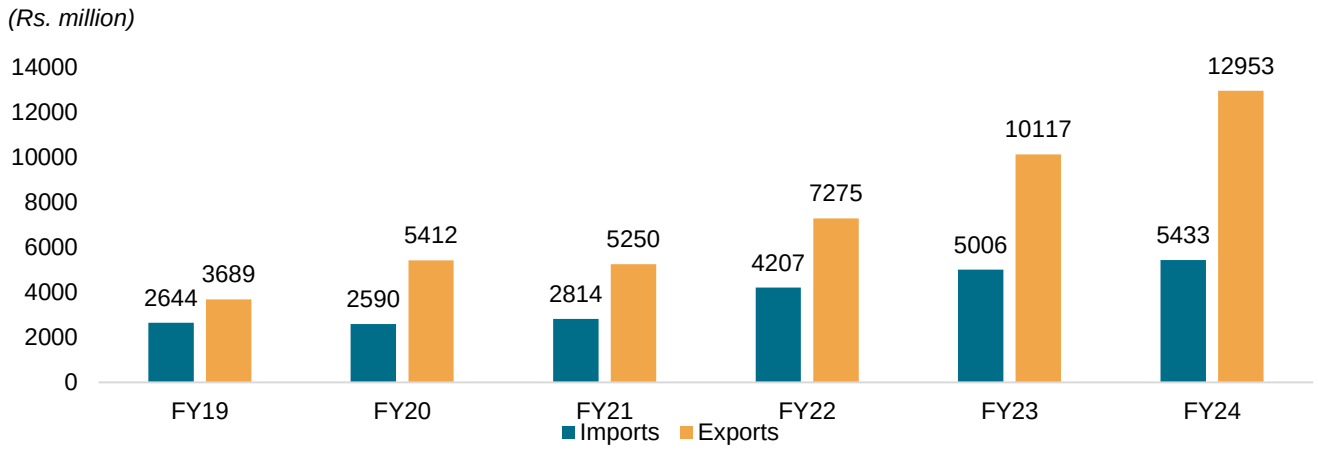
**Low Tension (LT) motor production in India (FY23 – FY29P) (Rs billion)**




*Source: Crisil Intelligence*

The export of LT motor which includes AC Squirrel cage induction motors and AC Slipring motors has increased at a CAGR of 28.6% from FY19 to FY24. The imports have risen at a CAGR of 15.5% during the same period.

**Import-export data for LT motors (FY19-FY24) (Rs million)**



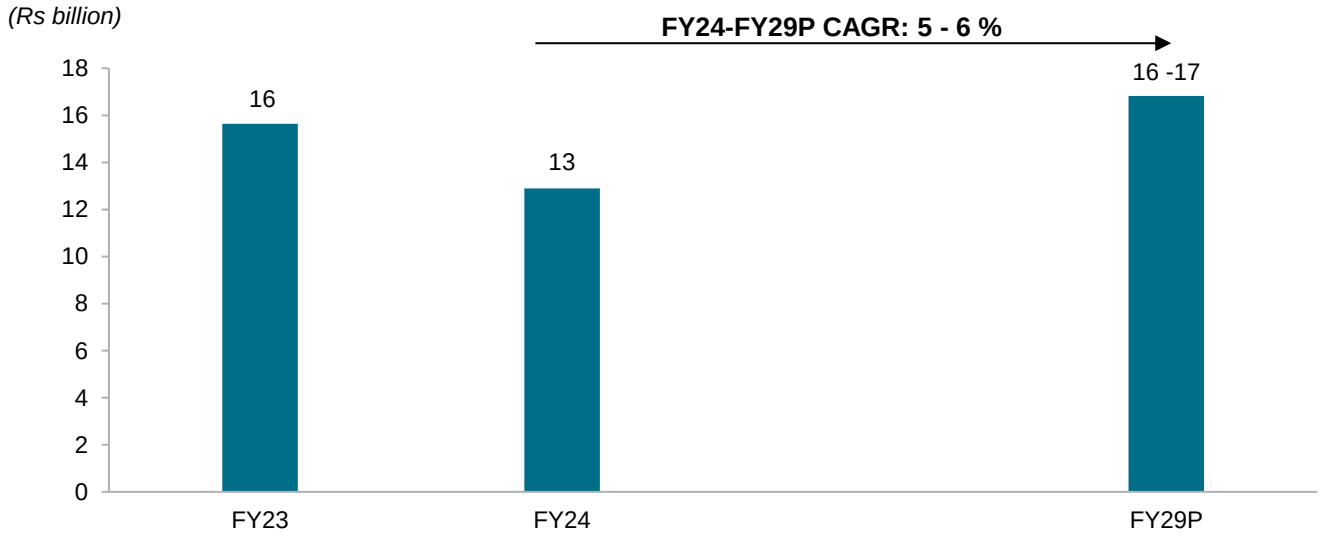

*Note: AC Squirrel cage induction motors(HS Code – 85015110, 85015210 and 85015310) and AC Slipring Motors(HS Code – 85015120, 85015220 and 85015320) have been considered*

*Source: Ministry of Commerce, Crisil Intelligence*

**FHP motor production value expected to grow at a CAGR of 5-6% from FY24 to FY29P**

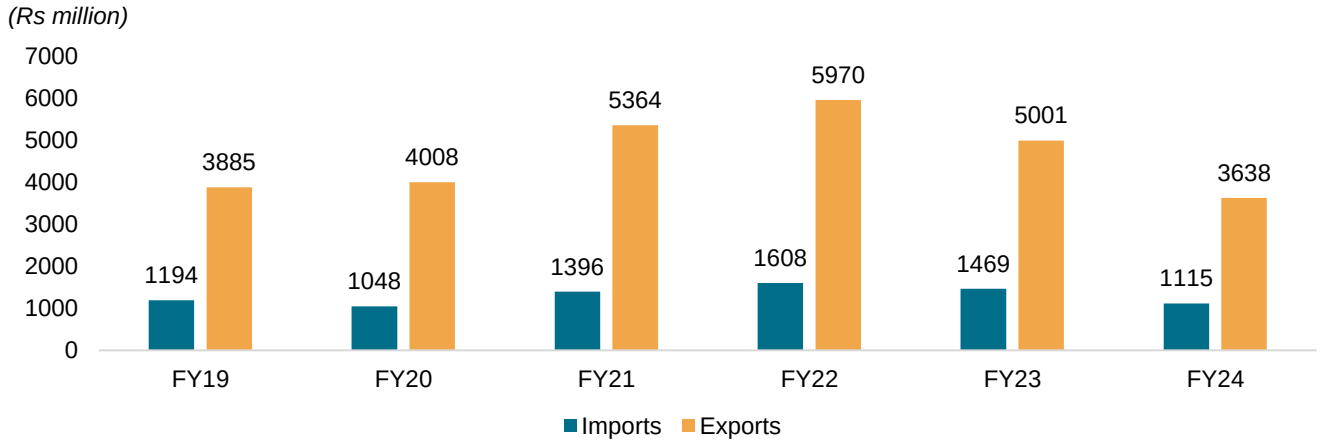
The FHP motor production is expected to grow at a CAGR of 5-6% from FY24 to FY29 to Rs. 16 – 17 billion in FY29.The growth is expected to be driven by household appliances, electronic systems etc. In FY24, the production has declined of 17.6% from Rs 16 billion in FY23 to Rs. 13 billion in FY24. This decline is mainly due to the high inventory held from the previous year.

**Fractional Horsepower (FHP) motor production in India (FY23 – FY29P) (Rs billion)**




*Source: Crisil Intelligence*

**Import-export data for FHP motors (FY19-FY24) (Rs million)**




*Note: Other FHP motors (HS Code – 85014010) has been considered*
*Source: Ministry of Commerce, Crisil Intelligence*

From FY19 to FY22, the FHP motors exports has grown at a CAGR of 15.3% to reach Rs 5,970 million. The huge increase in FY22 is attributed to the pent-up demand. From FY22 to FY24, the export have degrown at a CAGR of 21.9% to reach Rs 3,638 million in FY24. The imports have been range bound in the last six years topping at Rs 1,608 million in FY22.

## 5.2. Overview of key trends, drivers and challenges impacting the L.T Induction and FHP Motor segments in India

The growth in the Indian induction motor industry has been by increased consumption by the end use sectors and trend is expected to continue in the medium term backed by the following:

- **Industrial Sector:** Use cases across the industrial sector including machinery and equipment is expected to support demand in the coming years. The GVA (Gross Value Added) at current prices from manufacturing activities has grown at a CAGR of 8.7% supporting demand from manufacturing sector including machinery and equipment.

**Manufacturing GVA Trend (In current prices, Rs Billion)**

| 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | CAGR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14,100 | 15,728 | 17,135 | 18,784 | 21,462 | 23,337 | 25,666 | 28,126 | 27,051 | 28,035 | 33,926 | 35,365 | 8.7% |

*Source: MoSPI, Crisil Intelligence*

- **Consumer electronics:** L.T and FHP motors are used in various applications in the consumer electronics sector in India. Consumer electronics including air conditioners, washing machines among other consumer electronics are expected to drive demand in the medium term. Additionally, rising share of demand for higher energy efficiency is further driving demand for induction motors.

**Trend in key home appliances categories supporting demand:**

| Appliance category | 2020-21 | 2023-24 | CAGR (FY21-24) |
|---|---|---|---|
| Room Air conditioners (units in Millions) | 4 | 7 | 21% |
| Refrigerator (units in Millions) | 11.2 | 14.9 | 10% |

*Source: Crisil Intelligence*

- **Support from government initiatives and other key end use industries:** Government initiatives such as make in India is expected to support manufacturing across sectors driving demand for LT and FHP motors. Additionally, rising demand from automotive sector including electric vehicles is expected to aid demand over the medium to long term.
- **Fluctuation in raw material prices remains a key challenge:** The L.T Induction and FHP Motor production price is dependent on key input raw materials. Upward fluctuations in raw material prices may impact the unit price and in result the demand dynamics

## 5.3. Overview of solar pump industry in India

Solar pumps are an innovative and eco-friendly solution that harnesses solar energy to power water pumps, primarily used fort irrigation and water supply. These pumps operate on photovoltaic technology, converting sunlight into electricity- to draw water from the ground or other sources. They offer a sustainable alternative to conventional diesel or electric pumps, significantly reducing operating costs and environmental impact.

In India, the solar pumps industry has witnessed rapid growth, driven by the need for sustainable irrigation solutions and the country's push toward renewable energy. With over 50% of India's population dependent on agriculture, solar pumps have become a viable alternative, especially in regions lacking reliable power supply. Government scheme like the Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM) scheme have further accelerated adoption by offering subsidies to farmer. As a result, the industry is playing a critical role in reducing carbon emissions, enhancing water access and promoting rural economic development

**PM KUSUM scheme**

The Government launched PM-KUSUM scheme in March, 2019, which has been scaled-up in January 2024 with the objective to provide energy and water security to farmers, enhance their income, de-dieselize the farm sector, and reduce environmental pollution.

The following are the three components under the PM-KUSUM scheme benefiting the farmers:

- Component-A: Farmers can set-up Decentralized Ground/ Stilt Mounted Grid Connected Solar or other Renewable Energy based Power Plants on their land up to the capacity of 2MW. The Renewable Energy Power Plant (REPP) can be installed by the farmers on their own land either directly by themselves or in partnership with group of farmers/ cooperatives/ panchayats/ Farmer Producer Organisations (FPO)/Water User associations (WUA), or through a developer. The renewable power generated from these power-plant is purchased by DISCOMs at the pre-fixed levelized tariff. In case farmers lease their land to the developer they are also eligible for lease rent. As on 31st August 2024, Component-A has a total sanctioned capacity of 9,110 MW and a total installed capacity of 292.33MW

DISCOM are eligible to get a Performance Based Incentive (PBI) @ Rs. 0.40 per unit purchased or Rs. 6.6 lakh per MW of capacity installed, whichever is less, for a period of five years from the Commercial Operation Date. The DISCOMs can, if they desire so, pass on the PBI given to them by the Central Government under this component, to the REPP owner to get a more competitive tariff of RE Power.

- Component-B: Under this Component farmers can install the Stand-alone Solar Agriculture Pumps for irrigation. The Government provides the Central Financial Assistance (CFA) of 30% (or 50% for North Eastern Region/Hilly region/Islands) for the stand-alone solar Agriculture pump. Individual farmers will be supported to install standalone solar Agriculture pumps of capacity up to 15 HP in off-grid areas, where grid supply is not available. As on 31st August 2024, Component-B has total sanctioned standalone pumps of 13,42,327 and total installed standalone pumps of 4,64,843.
- Component-C: This Component enables solarisation of grid-connected Agriculture Pumps under its Individual Pump Solarisation (IPS) mode & also Feeder Level Solarisation (FLS) of agricultural load. The Government provides the Central Financial Assistance (CFA) of 30% (or 50% for the North Eastern Region/Hilly region/Islands) under Component-C for both IPS & FLS. This enables the farmers to access day-time assured solar energy. Individual farmers having grid connected agriculture pump will be supported to solarise pumps. Solar PV capacity up to two times of pump capacity in kW is allowed under the scheme. The farmer will be able to use the generated solar power to meet the irrigation needs and the excess solar power will be sold to DISCOMs. As on 31st August 2024, Component-C has a total sanctioned individual pump Solar- IPS of 1,71,640, total installed individual pump solar- IPS of 4,715, Total pumps sanctioned feeder level solar – FLS of 33,85,494 and total pumps solarised under – FLS of 18,546.

The total numbers of farmers benefited in the country through the PM-KUSUM scheme as on 30.06.2024 is 4,11,222. Under the Component-B and Component-C of the PM-KUSUM scheme, Government of India provides the Central Financial Assistance (CFA) of 30% (or 50% for the North Eastern Region/Hilly region/Islands) for the installation of the Standalone agriculture pumps and solarisation of the grid-connected agriculture pumps.

# 6. Overview of steel industry in India

## 6.1. Overview of steel industry

### Alloyed and non-alloyed steel

These are two fundamental categories within the broader spectrum of steel materials, each possessing distinct properties, applications and manufacturing processes.

Non-alloyed steel, often referred to as carbon steel, is primarily composed of iron and carbon, with trace amounts of other elements. Carbon steel is known for its strength, hardness, and affordability, making it suitable for a wide range of applications, including structural components, machinery parts and automotive components. Its versatility and ease of fabrication have contributed to its widespread use across various industries.

In contrast, alloyed steels contain additional alloying elements beyond carbon, such as chromium, nickel, manganese, and molybdenum, among others. These alloying elements are added to modify steel's properties, such as strength, hardness, corrosion resistance and heat resistance, to meet specific application requirements. Alloyed steels can be further categorised into several subtypes based on their composition and intended use, including stainless steel, tool steel, and high-strength low-alloy (HSLA) steel.

Stainless steel, for example, is alloyed with chromium and often nickel to enhance corrosion resistance and provide a lustrous appearance. It is commonly used in applications requiring resistance to corrosion, such as kitchen utensils, cutlery, and medical instruments. Tool steel, on the other hand, is alloyed with elements, such as tungsten, vanadium and cobalt, to improve wear resistance, toughness and heat resistance, making it suitable for cutting, drilling and forming tools. HSLA steel is alloyed with elements, such as niobium, titanium and copper, to enhance strength and toughness while maintaining weldability and formability, making it ideal for structural and automotive applications.

### Finished steel products

Flat and long steel products are essential components of the global steel industry, serving diverse applications across various sectors, including construction, automotive, manufacturing, infrastructure and engineering. These products are manufactured through a series of processes, including rolling and finishing, resulting in a wide range of shapes, sizes and specifications tailored to meet specific customer requirements.

### Flat steel

Flat steel products are characterised by their flat and thin shape, making them ideal for applications requiring strength, durability and surface quality. One of the major flat steel products is hot-rolled coils (HRCs), which are produced by hot rolling steel slabs or billets at high temperatures, followed by rapid cooling. HRCs are widely used in structural applications such as buildings, bridges and pipelines, as well as in the manufacturing sector for machinery parts, automotive components and appliances.

Another important flat steel product category is cold-rolled coils (CRCs), which are produced by cold-rolling HRCs to achieve smoother surface finish, tighter dimensional tolerances and improved mechanical properties. CRCs are commonly used in applications requiring superior surface quality and dimensional accuracy, such as automotive body panels, electrical enclosures and consumer goods.

Hot-dip galvanised (HDG) sheets are CRCs coated with a layer of zinc through a hot-dip galvanising process. This coating provides corrosion resistance and durability, making HDG sheets suitable for outdoor structures, roofing, fencing and automotive components. In addition, coated steel products such as galvanised and galvannealed sheets offer enhanced corrosion protection and are widely used in construction, infrastructure and manufacturing sectors.

## Long-steel (non-flat steel)

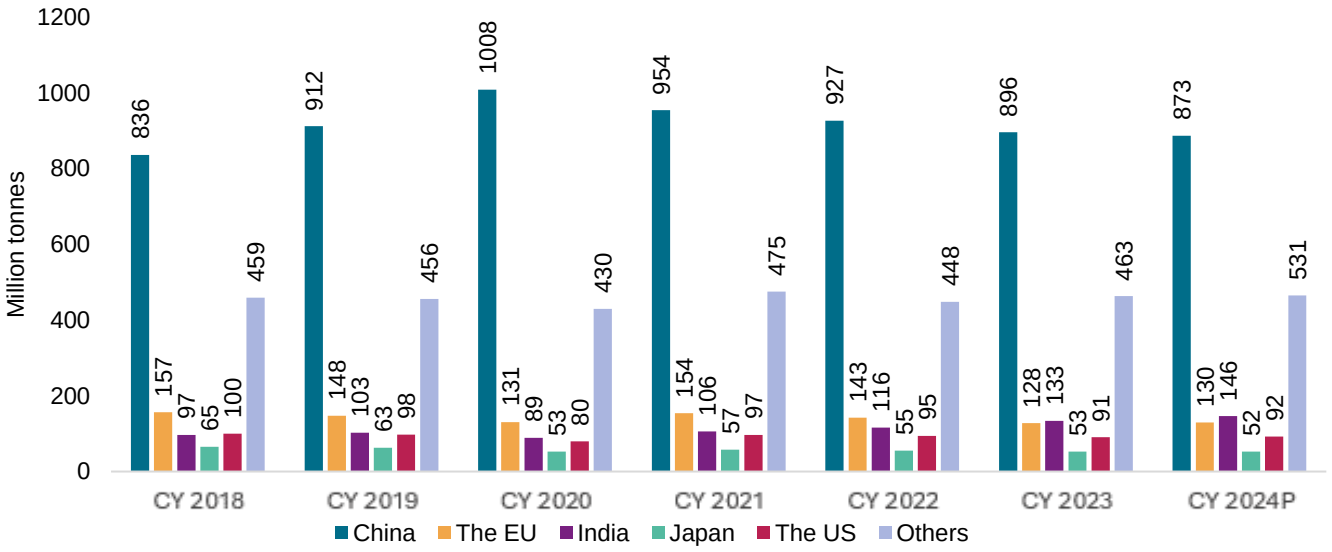
Long steel products, characterised by their elongated shape, play a critical role in various industries, including construction, infrastructure, manufacturing and engineering. These products are manufactured through processes such as steelmaking, casting, rolling and finishing, resulting in a diverse range of shapes, sizes and specifications tailored to meet specific customer requirements.

One of the most common long steel products is reinforcement bars (rebars), which are widely used in construction projects to reinforce concrete structures and provide tensile strength. Rebars are typically made from carbon steel and have a ribbed surface to improve bonding with the concrete. They come in various grades, sizes and configurations to meet different structural requirements. For example, high-strength rebars are used in seismic zones or high-rise buildings, while epoxy-coated rebars offer corrosion resistance in harsh environments.

Wire rods are another essential long steel product category with a circular cross-section, typically produced from low-carbon steel billets through hot rolling. They serve as feedstock for various wire products used in construction, manufacturing and automotive industries. They are drawn through a series of dies to reduce their diameter and improve surface finish, producing wires of different gauges and properties. Wire products manufactured from wire rods include wire ropes, nails, screws, fences, cables, springs and wire mesh, among others.

Structural sections, also known as structural steel shapes, are long steel products used in a wide range of structural applications. They include beams, channels, angles and rails. Beams, also called I-beams or H-beams, are characterised by their H-shaped cross-section and are commonly used in building construction for framing and supporting structures. Channels, with a C-shaped cross-section, are used for similar purposes as beams but offer different load-bearing characteristics. Angles are L-shaped structural steel sections used for bracing, framing and decorative applications. Rails, on the other hand, are long steel sections used in railway tracks to provide support and guidance for trains, ensuring safe and efficient transportation of goods and passengers.

**Global steel consumption (CY2018-2024)**




**2024 numbers are projected*
*CY means Calendar Year*
*Source: WSA, Crisil Intelligence*

**Global finished steel consumption growth (2018-2024)**

| Global demand growth % | CY 2018 | CY 2019 | CY 2020 | CY 2021 | CY 2022 | CY 2023 | CY 2024*P |
|---|---|---|---|---|---|---|---|
| Total | 5% | 4% | 1% | 3% | -4% | -1% | 0-0.5% |
| China | 8% | 9% | 11% | -5% | -3% | -3% | -3.0% |
| The EU | -4% | -6% | -12% | 18% | -10% | -11% | 1% |
| India | 9% | 6% | -13% | 19% | 8% | 15% | 9-10% |
| Japan | 2% | -3% | -17% | 9% | -4% | -3% | 0% |
| The US | 2% | -2% | -18% | 21% | -3% | -4% | 2% |
| Others | 3% | -1% | -8% | 12% | -6% | 3% | 3% |

**2024 numbers are projected*
*CY means Calendar Year*
*Source: WSA, Crisil Intelligence*

According to WSA, global finished steel consumption declined 0.29% on-year to 1,763 MT, on a 1% slowdown in demand in Europe due to the impact of geopolitical uncertainty, inflationary pressures and above-average energy prices on end-user segments. There was a 4% demand squeeze in major economies such as the US and Japan due to recessionary pressures, labour shortage and cost pressures. Demand in China, which has a major share in global steel demand, too, was less than expected and fell 3% due to the country's ailing property sector. However, Indian demand grew 16% on-year with robust demand from allied sectors. Over 2018-2023, finished steel consumption grew at a 0.5% CAGR.

Indian steel demand growth has outpaced the global demand growth rate for the last five years, it is expected to grow at more than 3x the global steel demand growth rate in the next five years.

**Outlook**

Global steel consumption is likely to increase 1-2% on-year in 2024 as demand growth rates in the US and the European Union (EU) are expected to be positive. In the EU, the effects of geopolitical uncertainty, inflation and energy prices are expected to subside in 2024 and steel demand is expected to improve in the second half of 2024. Also, the US Federal Reserve is expected to announce a series of interest rate cuts this year that could help revive the housing sector. Various policies promoting clean infrastructure projects will drive demand after two years of de-growth.

The revival of China's property sector will hinge on the government's actions. The results of a series of stimulus announcements announced in 2023 are expected to emerge this year. India's consistent healthy growth rates make it stand out among its global peers. With moderation in segmental growth, demand is expected to grow 6-7% on-year in 2024.

**Crude steel per capita consumption (finished steel products)**

| in kg | CY 2018 | CY 2019 | CY 2020 | CY 2021 | CY 2022 | CY 2023 |
|---|---|---|---|---|---|---|
| China | 590 | 641.3 | 707.6 | 669 | 645.8 | 628.3 |
| The US | 300.4 | 291.9 | 238.2 | 288 | 279.4 | 266.3 |
| India | 70.7 | 74.2 | 64 | 75.5 | 81.1 | 93.4 |
| Japan | 518.1 | 502.5 | 420.3 | 460.7 | 443.6 | 432.5 |
| Russia | 283.7 | 298.6 | 290.6 | 302.7 | 288.3 | 309.1 |
| South Korea | 1039.3 | 1027.5 | 948.9 | 1081.2 | 988 | 1056.6 |
| World | 223.2 | 229.2 | 228.4 | 233 | 221.8 | 219.3 |

*CY means Calendar Year*
*Source: WSA, Crisil Intelligence*

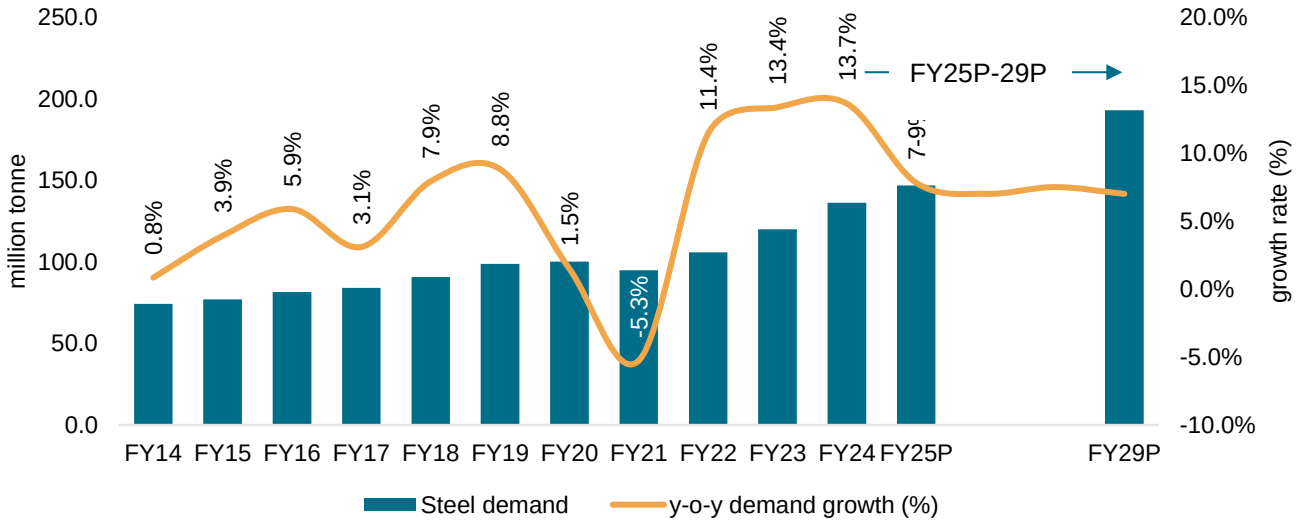
South Korea, a developed country with high per capita income, had the highest per capita steel consumption of 1056.6 kg in 2023 amongst the major steel consuming nations, due to its enormous automobile and ship building sectors. It has surpassed China and Japan, which are major steel producers, in terms of per capita consumption of steel.

Currently, India's per capita consumption of steel, a key developmental indicator, is still significantly small compared with developed countries. India had the lowest per capita steel consumption of 93.4 kg in 2023, a rise from 75.5 kg in 2021. India's low steel per capita consumption is due to its lower per capita income. However, the National Steel Policy aims to increase per capita consumption of steel to 160 kg by 2030, which indicates a positive outlook for the domestic steel industry.

## 6.2. Overview of Indian steel industry

**Domestic steel demand – review and outlook**

**Steel demand – review and outlook**




*Source: JPC, Crisil Intelligence*

Domestic steel demand grew at a healthy CAGR of 6.7% between fiscals 2019 and 2024 despite the pandemic impact, wherein domestic demand momentum declined to 1% in fiscal 2020 and -5% in fiscal 2021.

In the post-pandemic era, rapid recovery due to pent-up demand and increased government spending on infra and related sectors led to three consecutive years of double-digit demand growth. Demand rose 11.4% in fiscal 2022, 13.4% in fiscal 2023 and 13.7% in fiscal 2024. While growth momentum is expected to moderate in fiscal 2025 to 7-9%, it should remain above the decadal average at a 6-8% CAGR over fiscals 2025 to 2029.

Fiscal 2023 was a volatile year for the commodity market due to supply-chain disruptions induced by geopolitical uncertainty, leading to prices of coking coal, iron ore, pig iron and steel rallying to new highs. The effect of elevated prices directly impacted procurement decisions among end-use segments in the first quarter of fiscal 2023. To control soaring steel and raw material prices, the Government of India imposed export duty on steel and its raw materials in May 2022. Consequently, export volumes declined from 13.5 MT to 6.7 MT. Demand from the automobile sector was robust across sub-segments. Sales increased 27% for passenger vehicles (PVs; crossed the pre-pandemic mark), 19% for two-wheelers, 12% for tractors and 34% for commercial vehicles (CVs). Post-monsoon demand revival and the festive season ensured demand growth, with the flat steel segment growing 16.6% and the non-flat steel segment increasing 10.6% during the year.

Fiscal 2024 experienced strong demand from allied sectors. Building, construction and infrastructure, which account for more than 60% of domestic steel demand, remained the key drivers due to increasing spending by central government on infra heavy sectors, ahead of elections. From April-December 2023, the central government's capital expenditure rose ~47%

for road ministry and ~52% for railways compared with the same period the previous fiscal. Steel demand from the automobile sector also remained healthy. Steel demand from automobile sector moderated on a higher base of fiscal 2023 with PV and two-wheeler sales estimated to be 8.4% and 13.3%, respectively.

Fiscal 2025 outlook: Given the high base of fiscal 2024, demand momentum is expected to decline in fiscal 2025. Above long period average rainfall and general elections during the first half of the fiscal year had an impact on the construction activities and in turn on steel demand. As per the India Meteorological Department (IMD), the 2024 southwest monsoon rainfall (June to September) averaged 8% above the long-term average (LTA). Subsequent demand recovery in the third and fourth quarter will result in a cumulative demand growth of 7-9% in fiscal 2025.

Over the next five fiscals, i.e., fiscal 2025 to fiscal 2029, Crisil Intelligence Research expects steel demand to grow at a CAGR of 6-8%, well supported by end-use sectors and government spending and complemented by capacity addition by large integrated steel producers.

## Major demand drivers for the steel sector

Based on end use, steel demand can be attributed to the following four major demand buckets for fiscal 2024:

- Infrastructure (30-35%)
- Building and construction (25-35%)
- Automobile (11-13%)
- Engineering, fabrication and others (25-30%)

### Engineering, fabrication and others

This segment comprises a wide range of end-use sectors such as general engineering, capital goods, consumer durables, electrical goods, industrial bodies, and fabrication. According to Crisil Intelligence Research estimates, the sectors account for 25-30% of total steel demand. Cumulatively, growth in steel demand from the sub-segment is estimated to have been 10% in fiscal 2023, increasing to 13% in fiscal 2024. For fiscal 2025, in line with the anticipated slowdown in the overall demand growth rate, demand from engineering, packaging and others will increase 6-8%. Between fiscals 2025 and 2028, Crisil Intelligence Research expects the segment to clock a CAGR of 6-8%.

### Indian steel capacity

As India’s demand for steel is increasing, its steelmaking capacity is also expanding. Major integrated players have undertaken both brownfield and greenfield projects to expand capacities. This is also in line with the target of achieving 300 MT of operational crude steel capacities by fiscal 2031 under the National Steel Policy (NSP) 2017.

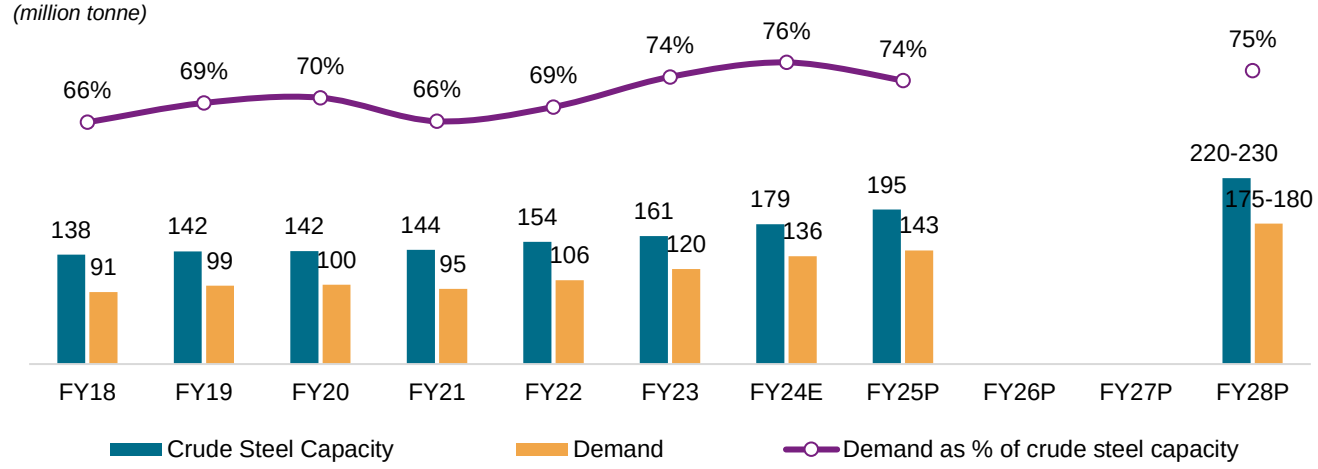
### Capacity growth vs demand growth

Crude steel capacity over fiscals 2019-2023 logged 3.2% CAGR to reach 161 MT. By end-fiscal 2024, the capacity is estimated to have reached ~176 MT. This is expected to increase to 234 MT by fiscal 2028, clocking 7.8% CAGR.

Still, capacity additions will lag demand. Demand growth, which was higher than capacity growth over fiscals 2019-2023 (5.7% CAGR), is expected to continue to outpace capacity additions until fiscal 2028, logging an 8.1% CAGR.

Capacity vs. demand

*(million tonne)*




*Source: JPC, Crisil estimates*

The domestic steel industry grew rapidly in 2000s. However, there was a significant decline in global steel demand after the Global Financial Crisis of 2008, which eventually led to global overcapacity and resulted in a significant price fall and generation of some non-performing assets (NPAs) in the industry.

The domestic steel sector's struggle with NPAs became particularly pronounced around fiscals 2013-2016 when global steel prices plummeted and domestic overcapacity exacerbated financial stress. During this period, major steel companies such as Essar Steel and Bhushan Steel accounted for a significant portion of the sector's NPAs, reflecting the challenges of high operational costs and reduced market prices. It was at that time the government passed the Insolvency and Bankruptcy Code (IBC) to address and restructure the mounting bad debts of the banking sector. The law was aimed at streamlining debt resolutions and revitalise businesses by improving operational efficiencies and financial health. With the restructuring of the major steel NPAs and implementation of protective tariffs to shield domestic steel producers, the sector has seen gradual improvements in financial stability, paving the way for recovery and sustainable growth.

After their experience with high NPAs, steel makers have become more cautious about capacity expansions. Consequently, there was a notable slowdown in the pace of capacity additions between fiscals 2018 and 2021 — from 138 million tonne to 144 million tonne. The cautious approach prompted a more measured strategy towards growth to ensure financial sustainability and operational efficiency.

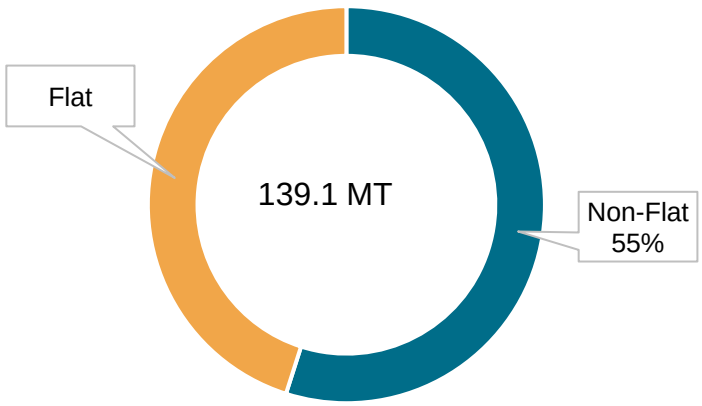
During this period, major players grew inorganically, strategically acquiring stressed assets, leading to a more concentrated industry landscape. The consolidation was facilitated by the IBC, which helped streamline the process of restructuring bad debts and enabled healthier steel companies to acquire underperforming ones. Notable acquisitions include Tata Steel's acquisition of Bhushan Steel Ltd and JSW Steel's acquisitions of Monnet Ispat and Bhushan Power and Steel Ltd (BPSL). Additionally, the acquisition of Essar Steel by ArcelorMittal Nippon Steel JV marked a significant reshaping of the industry, with major global players entering the Indian market. These moves not only helped stabilise the industry by reducing excess capacity but also allowed dominant companies to leverage economies of scale and improve competitive positioning both domestically and globally.

## Capacity expansion by integrated steel players

Indian steelmakers have a robust pipeline of capacity expansion across the steel value chain. They have started sourcing the key ingredient for production, iron ore, domestically which is cheaper than imports. This has worked in favour steelmakers, who enjoy a price advantage. To realise this advantage, many steel mills have planned expansions through the BF-BOF route. Although, this will sustain India's dependence on coking coal imports, procuring or sourcing steel scrap would be a bigger challenge, which is more conducive for EAF-based steelmaking.

### Non-flat and flat-steel mix in domestic production

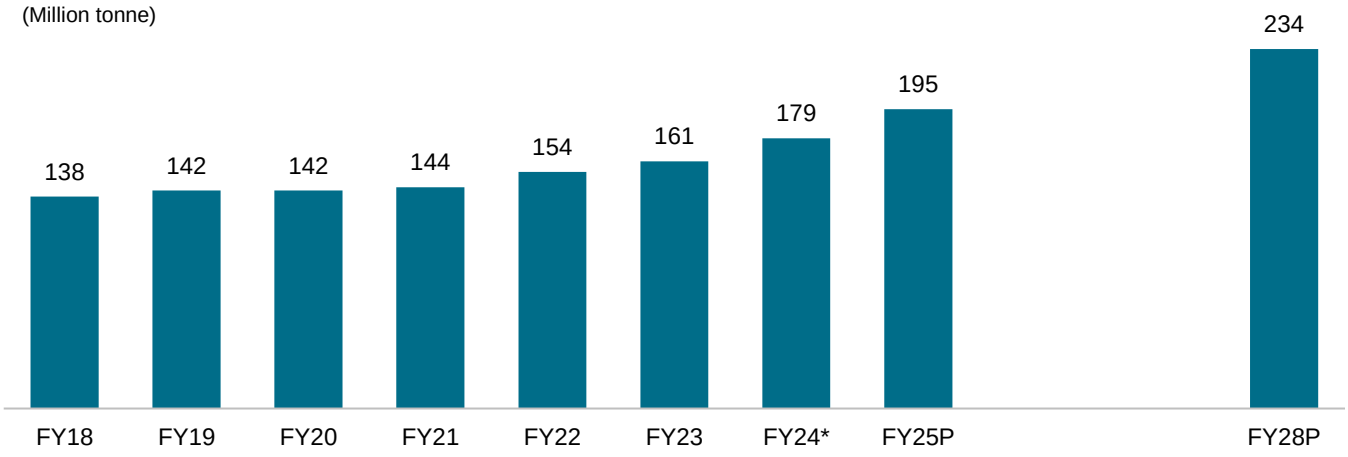
**Non-flat (long) and flat steel production in fiscal 2024**




*Source: JPC, Crisil Intelligence*

In fiscal 2024, 55% of the finished steel produced in India was non-flat steel and the balance 45% was flat. The share of the non-flat segment remained at ~52% on average between fiscals 2019 and 2024

**Current crude steel capacity and expansion estimates**




*Source: JPC, Crisil Intelligence*

## 6.3. Finished steel production

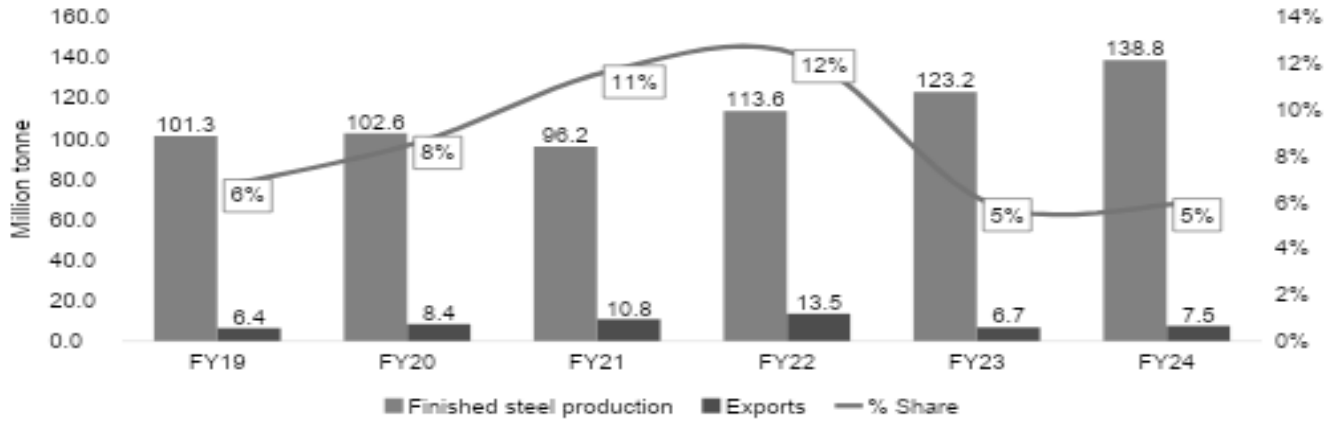
### Review and outlook

According to the Union Ministry of Steel, finished steel products are obtained after hot rolling/ forging of semi-finished steel (booms/ billets/ slabs). Finished steel products are classified into non-flat and flat products.

Indian finished steel production in fiscal 2023 was 123.2 MT. Between fiscals 2019 and 2023, the country's finished steel production logged ~5% CAGR (including pandemic-hit fiscals 2020 and 2021). Apart from domestic consumption, a small portion of the finished steel produced is also exported, mostly flat products.

As per the recent JPC report, finished steel production (provisional) in fiscal 2024 was 138.8 MT, up ~12.7% on year. Robust demand from end-user segments supported production.

**Finished steel production and exports in percentage terms**

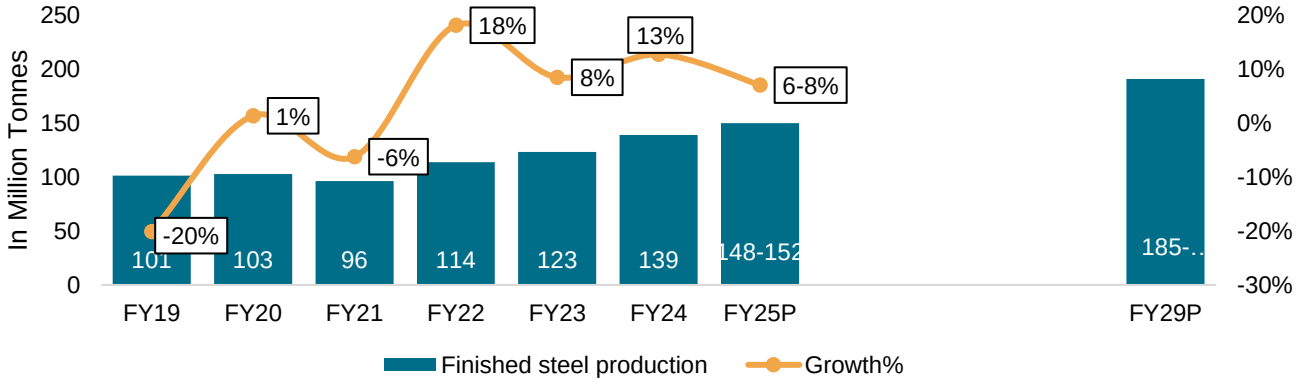



*Source: JPC*

Outlook: Increased government spending on infrastructure and related sectors boosted domestic demand 13.6% (provisional) in fiscal 2024. Finished steel production grew 12.7% on-year. With the share of exports on the lower side, domestic demand has played a vital role in driving production.

Crisil Intelligence Research expects finished steel production to log 6-8% CAGR between fiscals 2024 and 2029, with support from the allied sectors in the domestic market and government spending

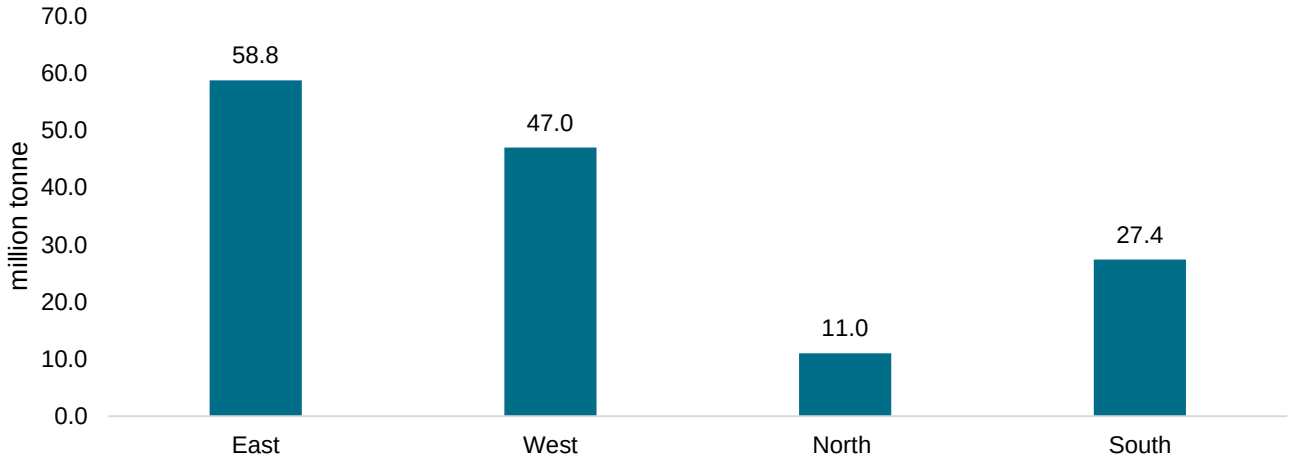
**Finished steel production trend**




*Source: JPC, Crisil Intelligence*

**Region-wise finished steel production**

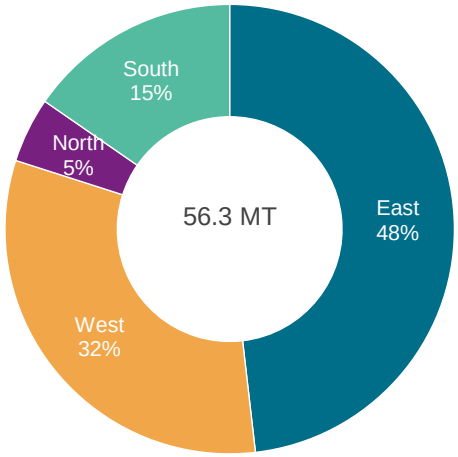
**Finished steel production — region-wise in fiscal 2024**

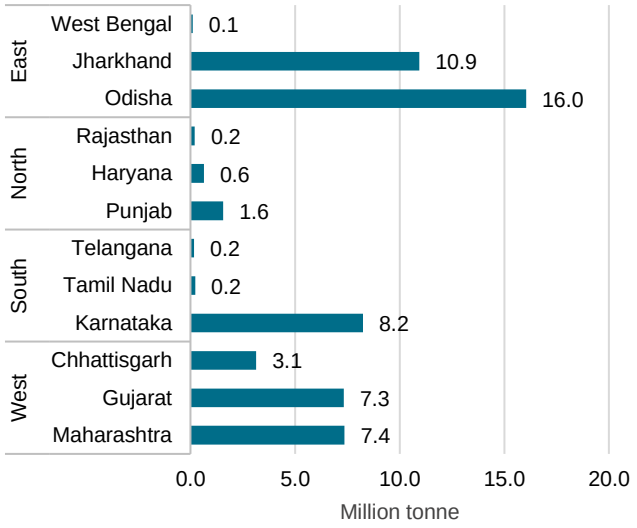



*Source: JPC, Crisil Intelligence Research*

In fiscal 2024, the eastern region accounted for 41% of the total domestic finished steel production. It was followed by the west (33%), south (19%) and the north.

**Region-wise flat steel production fiscal 2024**

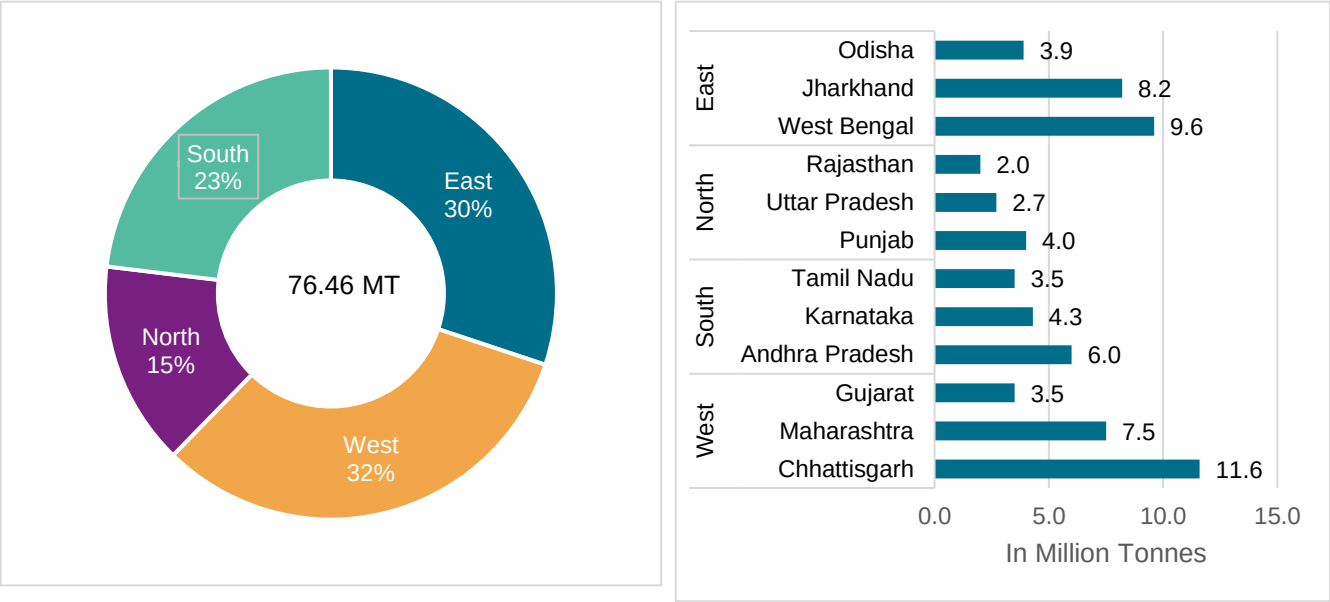



*Source: JPC*

In flat-steel production, the eastern region dominated with ~27 MT in fiscal 2024. It was followed by the western region ~18 MT. Among the states, Odisha was the top producer, followed by Jharkhand in the eastern region. It was followed by Karnataka in the southern region and Maharashtra and Gujarat in the western region

**Region-wise non-flat (long) steel production in fiscal 2024**




*Source: JPC, Crisil Intelligence*

In non-flat products, the western region dominated, producing ~24.5 MT in fiscal 2024. It was followed by the eastern region, producing ~23 MT. Among the states, Chhattisgarh was the top non-flat-steel producer, followed by Maharashtra in the west. In the east, West Bengal followed by Jharkhand were the major producers during the fiscal.

## 6.4. Government regulations and policies in the Indian steel sector

**NSP 2017**

The policy is an effort to steer the industry towards achieving its full potential and enhance steel production with a focus on high-end value-added steel while being globally competitive.

**Vision:** To develop a technologically advanced and globally competitive steel industry that promotes economic growth.

**Key targets:**

- Self-sufficiency in steel production by providing policy support and guidance to private manufacturers, MSME steel producers, central public sector enterprises and encourage adequate capacity additions
- Cost-efficient production and domestic availability of iron ore, coking coal and natural gas
- ncrease per capita steel consumption to 160 kg by fiscal 2031
- Meet the domestic demand for high-grade automotive, electrical and special steel and alloys for strategic applications by fiscal 2031
- Increase domestic availability of washed coking coal to reduce the reliance of import on coking coal from ~85% to ~65% by fiscal 2031

**PLI scheme**

The Production Linked Incentive (PLI) Scheme for Specialty Steel was launched by the Indian government on July 22, 2021, with a financial outlay of Rs 6,322 crores. The scheme's primary objective is to boost the domestic production of high-quality, value-added steel, reduce dependency on imports, and enhance India's standing in the global steel market. By focusing on the specialty steel segment, the scheme encourages the production of steel with advanced properties, such as corrosion resistance and high strength, which are vital for industries like defense, aerospace, and power generation.

To benefit from the PLI scheme, companies must meet specific investment and production thresholds. The scheme incentivizes domestic manufacturers through three slabs of incentives, which are tied to incremental production and capital investment. As of 2022, the government had received applications from 35 companies, and 67 projects were selected for participation, attracting over Rs 42,500 crores in investments. This initiative is expected to add 26 million tonnes of specialty steel capacity and create 70,000 jobs by 2030.

The scheme is part of the broader strategy to elevate India's steel sector, which has been growing rapidly. India has been the second-largest crude steel producer globally since 2018. However, there has been a notable gap in the production of specialty steel, which is critical for high-end applications. By promoting the domestic production of these advanced materials, the PLI scheme aims to position India as a global hub for specialty steel manufacturing.

Through this initiative, the government not only seeks to enhance the technological capabilities of the domestic steel sector but also to make it globally competitive. This focus on high-value steel products will help the country move up the value chain, ensuring that Indian manufacturers meet both domestic demand and increase exports to international markets.

In 2021, the PLI scheme for specialty steel was approved by the union cabinet with a five-year financial outlay of Rs 6,322 crore to promote the manufacturing of specialty steel. In 2022, 67 applications from 30 companies were selected with a committed investment of Rs 42,500 crore.

**Steel import monitoring system**

The Steel Import Monitoring System (SIMS) in India was launched by the Ministry of Commerce and Industry to track and regulate the import of steel products. This system, which became operational in 2019, requires importers to register their steel imports in advance and obtain a license before bringing steel products into the country. The purpose of SIMS is to monitor the quantity and quality of steel imports, ensuring transparency and providing crucial data for policy-making.

Importers must submit information regarding the steel products they intend to import, such as product description, country of origin, and quantity, through the SIMS online portal. This system helps the government keep track of imported steel, prevent any surge in low-quality or underpriced imports, and ensure that the domestic steel industry is not adversely affected by unfair trade practices. Additionally, SIMS assists in monitoring import trends, supporting India's broader aim of achieving self-sufficiency in steel production.

**Steel and steel products (quality control) orders:**

The Quality Control Orders (QCOs) for the steel industry in India are part of the government's broader initiative to ensure the production and importation of steel products that meet stringent quality standards. These orders are issued by the Ministry of Steel in accordance with the Bureau of Indian Standards (BIS) Act, 2016, and they require both domestic manufacturers and importers to adhere to the relevant BIS specifications for a variety of steel products.

The first significant notification for steel QCOs was issued in 2017, covering several essential steel products like billets, bars, rods, plates, and flat products. Over the years, additional QCOs have been notified, expanding the range of covered products. As of 2023, the QCOs cover more than 145 steel products, including alloy and non-alloy steels, galvanized products, and special steels used in critical industries such as construction, automotive, and infrastructure. The BIS marks are mandatory for all covered products, ensuring that only certified, high-quality steel can be manufactured, imported, or sold in the Indian market.

The implementation of QCOs follows a phased timeline. Typically, once a QCO is notified, the industry is given a transition period—usually six months—to comply with the BIS certification requirements. This allows manufacturers and importers to adjust their production or supply chains to meet the required standards. Any steel products that do not meet the certification requirements after the given timeline are not allowed to be sold, used, or imported in India. Non-compliance may result in penalties, product recalls, or import restrictions.

In terms of scope, the QCOs apply to all producers, whether foreign or domestic, which helps ensure that substandard or low-cost steel does not undermine the quality and safety of infrastructure projects in India. These orders are regularly updated to include new categories of steel products, reflecting the evolving needs of the industry and government objectives related to the “Atmanirbhar Bharat” initiative, aiming for self-reliance in steel production.

**Steel scrap recycling policy (2019)**

The policy was introduced to facilitate and promote the establishment of metal scrapping centres and ensures that quality scrap is available for the steel industry.

The objective of the policy is to promote a formal and scientific collection, dismantling and processing activities for end-of-life products that are sources of recyclable (ferrous, non-ferrous and other non-metallic) scraps, which will lead to resource conservation and energy savings and setting up of an environmentally sound management system for handling ferrous scrap.

**DMI&SP policy**

The policy mandates preference to locally manufactured iron and steel products with a minimum of 15–50% value addition in government procurement. This also supports value-added steel production.

The policy is envisaged to promote growth and development of the domestic steel industry and reduce the inclination to use low-quality and low-cost imported steel in government-funded projects.

# 7. Competitive landscape assessment

In this section, Crisil Intelligence has compared key players in the domestic heavy engineering, wear plates and welding consumable industries. Data has been sourced from publicly available information, including annual reports and investor presentations of listed players, regulatory filings, rating rationales, and/or company websites. The financials in the competitive section have been re-classified by Crisil Intelligence, based on annual reports and filings by the players may not match with the reported financials by the players.

## 7.1 Overview of key players in heavy engineering capital goods industry

| Company name | Year established | No. of years of operation* |
|---|---|---|
| The Anup Engineering | 1962 | 62 years |
| ISGEC Heavy Engineering | 1933^ | 91 years |
| Lloyds Engineering | 1974 | 50 years |
| Praj Industries | 1983 | 41 years |
| Thermax | 1966 | 58 years |

*Note:*
** As 2024*
*Established as Saraswati Sugar Syndicate Ltd.*
*Source: Crisil Intelligence, company website and annual reports, secondary research*

### Key financial parameters

#### Operating Income

| Operating Income (Rs Million) | FY21 | FY22 | FY23 | FY24 | CAGR (FY21-24) |
|---|---|---|---|---|---|
| The Anup Engineering* | 2791.30 | 2882.42 | 4113.38 | 5503.85 | 25.40% |
| ISGEC Heavy Engineering^ | 54015.25 | 54762.82 | 63730.56 | 62072.10 | 4.74% |
| Lloyds Engineering* | 700.51 | 500.97 | 3126.10 | 6242.36 | 107.32% |
| Praj Industries^ | 13046.69 | 22228.16 | 35817.61 | 33913.50 | 37.50% |
| Thermax^ | 47683.20 | 61250.90 | 81246.40 | 93346.10 | 25.10% |

*Note:*
** Standalone*
*^ Consolidated*
*Source: annual reports, Crisil Intelligence*

### Operating profit before depreciation, interest, and tax (OPBDIT)

| OPBDIT (Rs Million) | FY21 | FY22 | FY23 | FY24 | CAGR (FY21-24) |
|---|---|---|---|---|---|
| The Anup Engineering* | 701.00 | 700.04 | 838.81 | 1267.71 | 21.83% |
| ISGEC Heavy Engineering^ | 5015.39 | 3161.08 | 4854.51 | 5467.46 | 2.92% |
| Lloyds Engineering* | -100.35 | 47.17 | 528.25 | 1009.97 | NM |
| Praj Industries^ | 1093.40 | 1475.70 | 3183.37 | 3878.06 | 52.50% |
| Thermax^ | 3581.00 | 4027.50 | 6481.10 | 8759.30 | 34.74% |

*Note: NM: Not meaningful*
** Standalone*
*^ Consolidated*
*OPBDIT = Operating income - total expenses before interest tax, depreciation and extraordinary items*
*Source: annual reports, Crisil Intelligence*

### Earnings before interest, tax, depreciation, and amortisation (EBITDA)

| EBITDA (Rs Million | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| The Anup Engineering* | 729.73 | 745.44 | 879.88 | 1357.56 |
| ISGEC Heavy Engineering^ | 5116.39 | 3224.64 | 4962.73 | 5657.13 |
| Lloyds Engineering* | -29.29 | 142.76 | 580.35 | 1084.36 |
| Praj Industries^ | 1191.53 | 1655.46 | 3323.79 | 4161.29 |
| Thermax^ | 4440.70 | 4807.90 | 7335.90 | 11132.30 |

*Note:*
** Standalone*
*^ Consolidated*
*EBITDA = OPBDIT + non-operating income*
*Source: annual reports, Crisil Intelligence*

### Profit After Tax (PAT)

| PAT (Rs Million) | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| The Anup Engineering* | 537.64 | 628.52 | 514.30 | 1034.75 |
| ISGEC Heavy Engineering^ | 2530.72 | 1149.85 | 2055.41 | 2548.72 |
| Lloyds Engineering* | 5.04 | 59.47 | 368.23 | 798.38 |
| Praj Industries^ | 810.59 | 1502.42 | 2398.18 | 2833.91 |
| Thermax^ | 2065.80 | 3123.10 | 4507.00 | 6431.90 |

*Note:*
** Standalone*
*^ Consolidated*
*Source: annual reports, Crisil Intelligence*

### OPBDIT Margin (%)

| OPBDIT Margin (%) | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| The Anup Engineering* | 25.11 | 24.29 | 20.39 | 23.03 |
| ISGEC Heavy Engineering^ | 9.29 | 5.77 | 7.62 | 8.81 |
| Lloyds Engineering* | -14.33 | 9.42 | 16.90 | 16.18 |
| Praj Industries^ | 8.38 | 6.64 | 8.89 | 11.44 |
| Thermax^ | 7.51 | 6.58 | 7.98 | 9.38 |

*Note:*
** Standalone*
*^ Consolidated*
*Operating margin = OPBDIT / Operating Income*
*Source: annual reports, Crisil Intelligence*

### EBITDA Margin (%)

| EBITDA Margin(%) | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| The Anup Engineering* | 25.88 | 25.46 | 21.18 | 24.27 |
| ISGEC Heavy Engineering^ | 9.45 | 5.88 | 7.77 | 9.09 |
| Lloyds Engineering* | -3.80 | 23.93 | 18.26 | 17.17 |
| Praj Industries^ | 9.06 | 7.39 | 9.24 | 12.17 |
| Thermax^ | 9.15 | 7.75 | 8.94 | 11.63 |

*Note:*
** Standalone*
*^ Consolidated*
*EBITDA margin =EBITDA / Total Income*
*Total Income = Operating Income + Non-Operating Income*
*Source: annual reports, Crisil Intelligence*

### PAT Margin (%)

| PAT Margin(%) | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| The Anup Engineering* | 19.26 | 21.81 | 13.28 | 18.80 |
| ISGEC Heavy Engineering^ | 4.69 | 2.10 | 3.23 | 4.11 |
| Lloyds Engineering* | 0.72 | 11.87 | 11.78 | 12.51 |
| Praj Industries^ | 6.21 | 6.76 | 6.70 | 8.36 |
| Thermax^ | 4.33 | 5.10 | 5.55 | 6.89 |

*Note:*
** Standalone*
*^ Consolidated*
*PAT margin = PAT / Operating Income*
*Source: annual reports, Crisil Intelligence*

### Gearing Ratio

| Gearing Ratio | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| The Anup Engineering* | 0.00 | 0.00 | 0.00 | 0.04 |
| ISGEC Heavy Engineering^ | 0.47 | 0.56 | 0.52 | 0.31 |
| Lloyds Engineering* | 0.01 | 0.16 | 0.24 | 0.15 |
| Praj Industries^ | 0.00 | 0.00 | 0.00 | 0.00 |
| Thermax^ | 0.10 | 0.11 | 0.21 | 0.29 |

*Note:*
** Standalone*
*^ Consolidated*
*Gearing Ratio = Total Debt / Tangible Networth*
*Source: annual reports, Crisil Intelligence*

### Current Ratio

| Current Ratio | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| The Anup Engineering* | 2.67 | 2.37 | 2.14 | 1.44 |
| ISGEC Heavy Engineering^ | 1.28 | 1.28 | 1.32 | 1.27 |
| Lloyds Engineering* | 3.43 | 4.24 | 1.54 | 3.08 |
| Praj Industries^ | 1.59 | 1.45 | 1.43 | 1.48 |
| Thermax^ | 1.45 | 1.21 | 1.23 | 1.30 |

*Note:*
** Standalone*
*^ Consolidated*
*Current Ratio = Current assets / Current liabilities*
*Source: annual reports, Crisil Intelligence*

### Return on Capital Employed (ROCE)

| ROCE (%) | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| The Anup Engineering* | 22.03 | 17.68 | 13.99 | 24.06 |
| ISGEC Heavy Engineering^ | 14.47 | 7.77 | 11.09 | 12.78 |
| Lloyds Engineering* | 1.39 | 10.19 | 27.15 | 29.15 |
| Praj Industries^ | 16.86 | 25.94 | 34.97 | 36.07 |
| Thermax^ | 9.17 | 12.31 | 15.57 | 18.92 |

*Note:*
** Standalone*
*^ Consolidated*
*RoCE = Profit before interest and tax (PBIT)/ (Average total debt + average tangible networth + average deferred tax liability)*
*Source: annual reports, Crisil Intelligence*

## 7.2. Overview of key players in elevator and escalator Industry in India

In this section, Crisil Intelligence has compared key players in the domestic elevator and escalator industry. Data has been sourced from publicly available information, including annual reports and investor presentations of listed players, regulatory filings, rating rationales, and/or company websites. The financials in the competitive section have been re-classified by Crisil Intelligence, based on annual reports and filings by the players.

| Company name | Year of incorporation | No. of years of operation* |
|---|---|---|
| KONE Elevator India Private Limited | 1984 | 40 years |
| Otis Elevator Company (India) Limited | 1953 | 71 years |
| Schindler India Private Limited | 1997 | 27 years |
| Techno Industries Private Limited | 2000 | 24 years |

*Note:*
** years of operation is based on year of incorporation*
** As on September 2024*
*Source: Ministry of Corporate Affairs, Crisil Intelligence*

### Key financial parameters

#### Operating Income

| Operating Income (Rs Million) | FY21 | FY22 | FY23 | CAGR (FY21-23) |
|---|---|---|---|---|
| KONE Elevator India Private Limited | 16,757.00 | 21,751.00 | 27,172.00 | 27.34% |
| Otis Elevator Company (India) Limited^ | 17,100.90 | 19,472.80 | 24,350.00 | 19.33% |
| Schindler India Private Limited | 17,712.90 | 21,022.60 | 26,379.80 | 22.04% |
| Techno Industries Private Limited | 653.70 | 1,318.40 | 1,486.50 | 50.80% |

*Note:*
*^ Consolidated*
*Source: Company filings, Crisil Intelligence*

#### Operating profit before depreciation, interest, and tax (OPBDIT)

| OPBDIT (Rs Million) | FY21 | FY22 | FY23 | CAGR (FY21-23) |
|---|---|---|---|---|
| KONE Elevator India Private Limited | 3,758.00 | 3,145.00 | 3,722.00 | -0.48% |
| Otis Elevator Company (India) Limited^ | 1,925.20 | 1,871.60 | 2,008.30 | 2.14% |
| Schindler India Private Limited | 701.60 | (547.00) | (1,269.70) | N.M |
| Techno Industries Private Limited | 33.10 | 113.90 | 153.50 | 115.35% |

*Note:*
*N.M: Not Meaningful*
*^ Consolidated*
*OPBDIT = Operating income - total expenses before interest tax, depreciation and extraordinary items*
*Source: Company filings, Crisil Intelligence*

### Earnings before interest, tax, depreciation, and amortisation (EBITDA)

| EBITDA (Rs Million) | FY21 | FY22 | FY23 | CAGR (FY21-23) |
|---|---|---|---|---|
| KONE Elevator India Private Limited | 3,864.00 | 4,308.00 | 4,259.00 | 4.99% |
| Otis Elevator Company (India) Limited^ | 2,269.70 | 2,208.90 | 2,400.30 | 2.84% |
| Schindler India Private Limited | 1,710.40 | 809.90 | 92.80 | -76.71% |
| Techno Industries Private Limited | 37.90 | 118.50 | 158.90 | 104.76% |

*Note:*
*^ Consolidated*
*EBITDA = OPBDIT + non-operating income*
*Source: Company filings, Crisil Intelligence*

### Profit After Tax (PAT)

| PAT (Rs million) | FY21 | FY22 | FY23 | CAGR (FY21-23) |
|---|---|---|---|---|
| KONE Elevator India Private Limited | 3,508.00 | 3,027.00 | 2,490.00 | -15.75% |
| Otis Elevator Company (India) Limited^ | 1,637.50 | 1,464.20 | 1,547.10 | -2.80% |
| Schindler India Private Limited | 412.80 | 22.50 | (450.40) | N.M |
| Techno Industries Private Limited | 3.20 | 63.00 | 86.20 | 419.01% |

*Note:*
*N.M: Not Meaningful*
*^ Consolidated*
*Source: Company filings, Crisil Intelligence*

### OPBDIT Margin (%)

| OPBDIT margin (%) | FY21 | FY22 | FY23 |
|---|---|---|---|
| KONE Elevator India Private Limited | 22.43 | 14.46 | 13.70 |
| Otis Elevator Company (India) Limited^ | 11.26 | 9.61 | 8.25 |
| Schindler India Private Limited | 3.96 | (2.60) | (4.81) |
| Techno Industries Private Limited | 5.06 | 8.64 | 10.33 |

*Note:*
*^ Consolidated*
*Operating margin = OPBDIT / Operating Income*
*Source: Company filings, Crisil Intelligence*

### EBITDA Margin (%)

| EBITDA margin (%) | FY21 | FY22 | FY23 |
|---|---|---|---|
| KONE Elevator India Private Limited | 22.91 | 18.80 | 15.37 |
| Otis Elevator Company (India) Limited^ | 13.01 | 11.15 | 9.70 |
| Schindler India Private Limited | 9.14 | 3.62 | 0.33 |
| Techno Industries Private Limited | 5.76 | 8.96 | 10.65 |

*Note:*
*^ Consolidated*
*EBITDA margin =EBITDA / Total Income*
*Total Income = Operating Income + Non-Operating Income*
*Source: Company filings, Crisil Intelligence*

### PAT Margin (%)

| PAT margin (%) | FY21 | FY22 | FY23 |
|---|---|---|---|
| KONE Elevator India Private Limited | 20.93 | 13.92 | 9.16 |
| Otis Elevator Company (India) Limited^ | 9.58 | 7.52 | 6.35 |
| Schindler India Private Limited | 2.33 | 0.11 | (1.71) |
| Techno Industries Private Limited | 0.49 | 4.78 | 5.80 |

*Note:*
*^ Consolidated*
*PAT margin = PAT / Operating income*
*Source: Company filings, Crisil Intelligence*

### Gearing Ratio

| Gearing (times) | FY21 | FY22 | FY23 |
|---|---|---|---|
| KONE Elevator India Private Limited | 0.00 | 0.00 | 0.00 |
| Otis Elevator Company (India) Limited^ | 0.00 | 0.00 | 0.00 |
| Schindler India Private Limited | 0.00 | 0.00 | 0.00 |
| Techno Industries Private Limited | 0.32 | 0.46 | 0.38 |

*Note:*
*^ Consolidated*
*Gearing Ratio = Total Debt / Tangible Networth*
*Source: Company filings, Crisil Intelligence*

### Current Ratio

| Current ratio (times) | FY21 | FY22 | FY23 |
|---|---|---|---|
| KONE Elevator India Private Limited | 1.31 | 1.27 | 1.16 |
| Otis Elevator Company (India) Limited^ | 1.09 | 1.08 | 1.05 |
| Schindler India Private Limited | 1.06 | 0.91 | 0.87 |
| Techno Industries Private Limited | 2.01 | 1.77 | 1.74 |

*Note:*
*^ Consolidated*
*Current Ratio = Current assets / Current liabilities*
*Source: Company filings, Crisil Intelligence*

### Return on Capital Employed (ROCE)

| RoCE (%) | FY21 | FY22 | FY23 |
|---|---|---|---|
| KONE Elevator India Private Limited | 64.02 | 36.93 | 28.36 |
| Otis Elevator Company (India) Limited^ | 133.82 | 126.66 | 143.40 |
| Schindler India Private Limited | 7.60 | (1.27) | (14.11) |
| Techno Industries Private Limited | 3.61 | 15.66 | 18.98 |

*Note:*
*^ Consolidated*
*RoCE = Profit before interest and tax (PBIT)/ (Average total debt + average tangible networth + average deferred tax liability)*
*Source: Company filings, Crisil Intelligence*

## 7.3. Overview of key players in induction motor and single phase motor Industry in India

| Company name | Year established | No. of years of operation* |
|---|---|---|
| Bharat Bijlee | 1946 | 78 years |
| Kirloskar Brothers | 1888 | 136 years |
| KSB | 1960 | 64 years |
| Roto Pumps | 1968 | 56 years |
| Shakti Pumps | 1982 | 42 years |
| Techno Industries | 1995 | 29 years |
| WPIL | 1952^ | 72 years |

*Note:*
*^ Incorporation year*
** As on 2024*
*Source: Crisil Intelligence, company website and annual reports, secondary research*

## Key financial parameters

### Operating Income

| Operating Income (Rs Million) | FY21 | FY22 | FY23 | FY24 | CAGR (FY21-24) |
|---|---|---|---|---|---|
| Bharat Bijlee* | 7310.49 | 12657.40 | 14184.96 | 18767.22 | 36.93% |
| Kirloskar Brothers^ | 27182.77 | 30590.65 | 37322.88 | 40023.40 | 13.76% |
| KSB^@ | 12134.39 | 15053.70 | 18326.50 | 22565.29 | 22.97% |
| Roto Pumps^ | 1285.77 | 1773.97 | 2275.49 | 2744.96 | 28.76% |
| Shakti Pumps^ | 9317.67 | 11814.32 | 9701.07 | 13707.39 | 13.73% |
| Techno Industries* | 653.70 | 1318.40 | 1486.50 | 1675.50 | 36.85% |
| WPIL^ | 9948.31 | 11812.78 | 17847.99 | 16653.53 | 18.74% |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December*
*Source: annual reports, Crisil Intelligence*

### Operating profit before depreciation, interest, and tax (OPBDIT)

| OPBDIT (Rs Million) | FY21 | FY22 | FY23 | FY24 | CAGR (FY21-24) |
|---|---|---|---|---|---|
| Bharat Bijlee* | 392.18 | 873.57 | 1206.44 | 1795.08 | 66.04% |
| Kirloskar Brothers^ | 2591.16 | 2075.42 | 4024.25 | 5065.90 | 25.04% |
| KSB^@ | 1754.62 | 2241.41 | 2669.76 | 3087.42 | 20.73% |
| Roto Pumps^ | 313.57 | 480.98 | 577.79 | 655.50 | 27.86% |
| Shakti Pumps^ | 1441.57 | 1133.48 | 689.84 | 2248.32 | 15.97% |
| Techno Industries* | 33.10 | 113.90 | 153.50 | 156.30 | 67.77% |
| WPIL^ | 1565.83 | 2102.40 | 3420.36 | 3042.09 | 24.78% |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December*
*OPBDIT = Operating income - total expenses before interest tax, depreciation and extraordinary items*
*Source: annual reports, Crisil Intelligence*

### Earnings before interest, tax, depreciation, and amortisation (EBITDA)

| EBITDA (Rs Million) | FY21 | FY22 | FY23 | FY24 | CAGR (FY21-24) |
|---|---|---|---|---|---|
| Bharat Bijlee* | 649.50 | 1109.29 | 1481.72 | 2086.35 | 47.55% |
| Kirloskar Brothers^ | 3010.58 | 2513.09 | 4369.70 | 5686.01 | 23.61% |
| KSB^@ | 1991.96 | 2497.68 | 2955.28 | 3347.00 | 18.88% |
| Roto Pumps^ | 320.31 | 492.21 | 580.47 | 700.12 | 29.78% |
| Shakti Pumps^ | 1458.22 | 1165.93 | 698.13 | 2283.95 | 16.13% |
| Techno Industries* | 37.90 | 118.50 | 158.90 | 161.00 | 61.96% |
| WPIL^ | 1645.29 | 2195.52 | 3548.97 | 3318.07 | 26.34% |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December*
*EBITDA = OPBDIT + non-operating income*
*Source: annual reports, Crisil Intelligence*

### Profit After Tax (PAT)

| PAT (Rs Million) | FY21 | FY22 | FY23 | FY24 | CAGR (FY21-24) |
|---|---|---|---|---|---|
| Bharat Bijlee* | 260.50 | 555.79 | 832.23 | 1314.41 | 71.52% |
| Kirloskar Brothers^ | 1607.45 | 943.77 | 2357.66 | 3496.80 | 29.57% |
| KSB^@ | 937.84 | 1493.89 | 1827.41 | 2087.33 | 30.56% |
| Roto Pumps^ | 183.31 | 302.41 | 331.15 | 394.15 | 29.07% |
| Shakti Pumps^ | 755.86 | 648.16 | 241.32 | 1417.09 | 23.31% |
| Techno Industries* | 3.20 | 63.00 | 86.20 | 87.80 | 201.61% |
| WPIL^ | 986.89 | 1182.18 | 2196.77 | 6837.66 | 90.64% |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December*
*Source: annual reports, Crisil Intelligence*

### OPBDIT Margin (%)

| OPBDIT Margin (%) | FY21 | FY22 | FY23 | FY24 | OPBDIT Margin (%) |
|---|---|---|---|---|---|
| Bharat Bijlee* | 5.36 | 6.90 | 8.51 | 9.56 | Bharat Bijlee* |
| Kirloskar Brothers^ | 9.53 | 6.78 | 10.78 | 12.66 | Kirloskar Brothers^ |
| KSB^@ | 14.46 | 14.89 | 14.57 | 13.68 | KSB^@ |
| Roto Pumps^ | 24.39 | 27.11 | 25.39 | 23.88 | Roto Pumps^ |
| Shakti Pumps^ | 15.47 | 9.59 | 7.11 | 16.40 | Shakti Pumps^ |
| Techno Industries* | 5.06 | 8.64 | 10.33 | 9.33 | Techno Industries* |
| WPIL^ | 15.74 | 17.80 | 19.16 | 18.27 | WPIL^ |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December*
*Operating margin = OPBDIT / Operating Income*
*Source: annual reports, Crisil Intelligence*

### EBITDA Margin (%)

| EBITDA Margin (%) | FY21 | FY22 | FY23 | FY24 | EBITDA Margin (%) |
|---|---|---|---|---|---|
| Bharat Bijlee* | 8.58 | 8.60 | 10.25 | 10.95 | Bharat Bijlee* |
| Kirloskar Brothers^ | 10.91 | 8.10 | 11.60 | 13.99 | Kirloskar Brothers^ |
| KSB^@ | 16.10 | 16.31 | 15.88 | 14.66 | KSB^@ |
| Roto Pumps^ | 24.78 | 27.57 | 25.48 | 25.10 | Roto Pumps^ |
| Shakti Pumps^ | 15.62 | 9.84 | 7.19 | 16.62 | Shakti Pumps^ |
| Techno Industries* | 5.76 | 8.96 | 10.65 | 9.58 | Techno Industries* |
| WPIL^ | 16.41 | 18.44 | 19.74 | 19.60 | WPIL^ |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December*
*EBITDA margin =EBITDA / Total Income*
*Total Income = Operating Income + Non-Operating Income*
*Source: annual reports, Crisil Intelligence*

### PAT Margin (%)

| PAT Margin (%) | FY21 | FY22 | FY23 | FY24 | PAT Margin (%) |
|---|---|---|---|---|---|
| Bharat Bijlee* | 3.56 | 4.39 | 5.87 | 7.00 | Bharat Bijlee* |
| Kirloskar Brothers^ | 5.91 | 3.09 | 6.32 | 8.74 | Kirloskar Brothers^ |
| KSB^@ | 7.73 | 9.92 | 9.97 | 9.25 | KSB^@ |
| Roto Pumps^ | 14.26 | 16.98 | 14.55 | 14.36 | Roto Pumps^ |
| Shakti Pumps^ | 8.11 | 5.49 | 2.49 | 10.34 | Shakti Pumps^ |
| Techno Industries* | 0.49 | 4.78 | 5.80 | 5.24 | Techno Industries* |
| WPIL^ | 9.92 | 10.01 | 12.31 | 41.06 | WPIL^ |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December*
*PAT margin = PAT / Operating Income*
*Source: annual reports, Crisil Intelligence*

### Gearing Ratio

| Gearing Ratio | FY21 | FY22 | FY23 | FY24 | Gearing Ratio |
|---|---|---|---|---|---|
| Bharat Bijlee* | 0.24 | 0.25 | 0.21 | 0.08 | Bharat Bijlee* |
| Kirloskar Brothers^ | 0.28 | 0.32 | 0.18 | 0.09 | Kirloskar Brothers^ |
| KSB^@ | 0.07 | 0.00 | 0.00 | 0.00 | KSB^@ |
| Roto Pumps^ | 0.12 | 0.11 | 0.24 | 0.19 | Roto Pumps^ |
| Shakti Pumps^ | 0.23 | 0.27 | 0.18 | 0.11 | Shakti Pumps^ |
| Techno Industries* | 0.32 | 0.46 | 0.38 | 0.34 | Techno Industries* |
| WPIL^ | 0.58 | 0.47 | 0.29 | 0.14 | WPIL^ |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December*
*Gearing Ratio = Total Debt / Tangible Networth*
*Source: annual reports, Crisil Intelligence*

## Current Ratio

| Current Ratio | FY21 | FY22 | FY23 | FY24 | Current Ratio |
|---|---|---|---|---|---|
| Bharat Bijlee* | 1.62 | 1.38 | 1.67 | 1.67 | Bharat Bijlee* |
| Kirloskar Brothers^ | 1.28 | 1.41 | 1.49 | 1.60 | Kirloskar Brothers^ |
| KSB^@ | 1.86 | 2.10 | 2.04 | 2.05 | KSB^@ |
| Roto Pumps^ | 2.29 | 2.42 | 1.73 | 1.69 | Roto Pumps^ |
| Shakti Pumps^ | 1.72 | 1.59 | 1.94 | 1.82 | Shakti Pumps^ |
| Techno Industries* | 2.01 | 1.77 | 1.74 | 1.81 | Techno Industries* |
| WPIL^ | 1.36 | 1.38 | 1.41 | 1.92 | WPIL^ |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December*
*Current Ratio = Current assets / Current liabilities*
*Source: annual reports, Crisil Intelligence*

## Return on Capital Employed (ROCE)

| ROCE (%) | FY21 | FY22 | FY23 | FY24 | ROCE (%) |
|---|---|---|---|---|---|
| Bharat Bijlee* | 5.03 | 7.42 | 8.61 | 10.26 | Bharat Bijlee* |
| Kirloskar Brothers^ | 17.83 | 12.56 | 23.53 | 30.11 | Kirloskar Brothers^ |
| KSB^@ | 15.32 | 21.11 | 23.40 | 23.48 | KSB^@ |
| Roto Pumps^ | 24.54 | 33.27 | 28.98 | 27.16 | Roto Pumps^ |
| Shakti Pumps^ | 28.92 | 21.15 | 10.48 | 31.45 | Shakti Pumps^ |
| Techno Industries* | 3.61 | 15.66 | 18.98 | 16.57 | Techno Industries* |
| WPIL^ | 20.62 | 21.77 | 32.36 | 58.00 | WPIL^ |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December*
*RoCE = Profit before interest and tax (PBIT)/ (Average total debt + average tangible networth + average deferred tax liability)*
*Source: annual reports, Crisil Intelligence*

# 8. Addendum I to the report titled ‘Assessment of heavy engineering, capital goods, elevators & escalators and selected motors industries in India’

## Macroeconomic overview

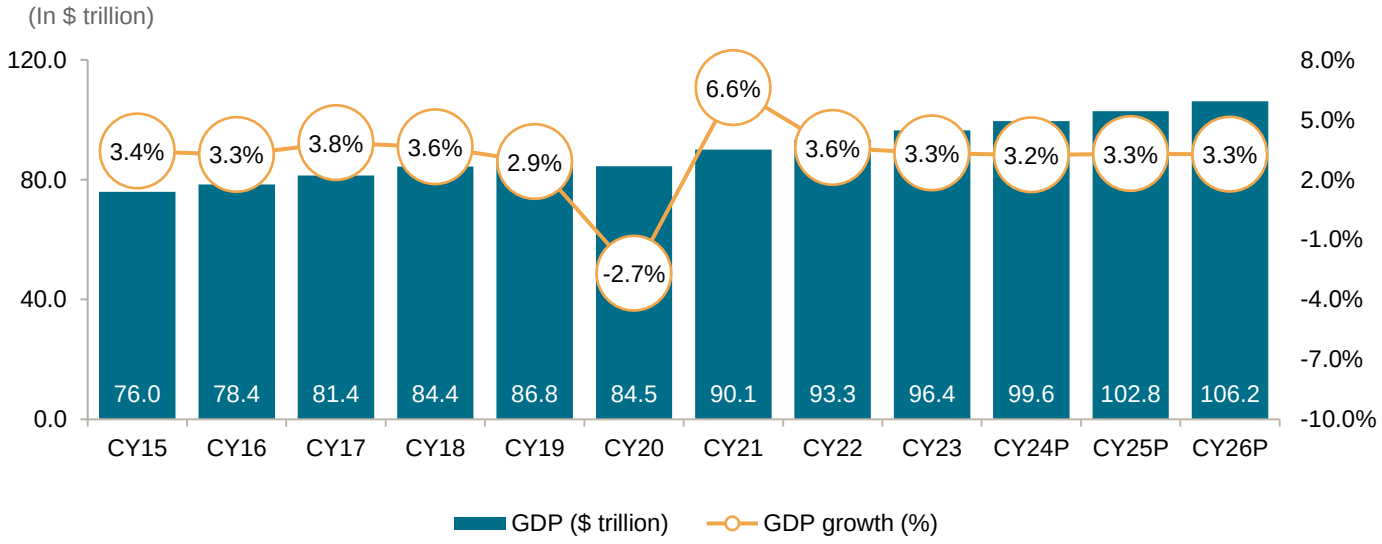
### Global Macroeconomic assessment

**Global GDP is estimated to grow 3.3% in CY25 amid moderating inflation and steady growth in key economies**

The International Monetary Fund (IMF), in its January 2025 update, estimated global gross domestic product (GDP) growth at 3.3% for CY25 and projected the growth rate of 3.3% for CY26. The latest estimate for CY25 is 0.1 percentage point higher than the fund’s forecast in October 2024. This growth going forward is majorly propelled by the emerging and developing economies with regional differences on account of global economic tensions and extreme weather events.

With disinflation and steady growth, the likelihood of a hard landing of the economy has receded, and risks to global growth are broadly balanced. Amid favourable global supply developments, inflation has been falling faster than expected. On the upside, faster disinflation could lead to further easing of financial conditions. On the downside, fresh commodity price increases because of geopolitical shocks and supply disruptions or more persistent underlying inflation could prolong tight monetary conditions. The property sector distress in China or elsewhere and a disruptive turn to tax hikes and spending cuts could also lead to moderation in growth in the near term.

**Trend and outlook for global real GDP (CY15-CY26P)**




*Note: E – estimated; P – projected*
*Sources: IMF economic database, Crisil Intelligence*

### Global per capita GDP

Global GDP per capita logged 3.1% compound annual growth rate (CAGR) between 2018 and 2023, as per IMF data while India's GDP per capita expanded at ~4.8% CAGR between 2017 and 2023.

**Per capita GDP at current prices for key economies- $ per capita**

| Regions | CY2018 | CY2019 | CY2020 | CY2021 | CY2022 | CY2023 | CY2024P | CY2025P | CAGR (2018-23) |
|---|---|---|---|---|---|---|---|---|---|
| China | 9,849 | 10,170 | 10,525 | 12,572 | 12,643 | 12,597 | 12,969 | 13,873 | 5.0% |
| Euro area | 40,138 | 39,261 | 38,167 | 42,939 | 41,493 | 44,851 | 46,635 | 48,516 | 2.2% |
| India | 1,974 | 2,050 | 1,916 | 2,250 | 2,366 | 2,497 | 2,698 | 2,937 | 4.8% |
| Japan | 39,850 | 40,548 | 40,160 | 40,161 | 34,158 | 33,899 | 32,859 | 35,611 | -3.2% |
| United Kingdom | 43,275 | 42,713 | 40,231 | 46,731 | 46,103 | 49,648 | 52,423 | 54,280 | 2.8% |
| United States | 63,165 | 65,561 | 64,462 | 71,258 | 77,980 | 82,715 | 86,601 | 89,678 | 5.5% |
| World | 11,484 | 11,530 | 11,126 | 12,566 | 12,976 | 13,400 | 13,898 | 14,450 | 3.1% |

*Source: IMF, Crisil Intelligence*

### India among the world's fastest-growing key economies

Following the recovery from the COVID-19 pandemic, India exhibited a growth rate of 7.6% in FY23, surpassing both advanced economies at 2.9% and emerging and developing economies at 4.0%.

United States: In the United States, growth is estimated to be 2.9% in CY2023 and 2.8% in CY2024 and the country is projected to grow at 2.7% in CY2025, with the lagged effects of monetary policy tightening, gradual fiscal tightening, and a softening in labour markets slowing the aggregate demand.

United Kingdom: Growth in the United Kingdom is estimated to be 0.3% in CY2023 and 0.9% in CY2024, as the lagged negative effects of high energy prices wane. Then in CY2025, as disinflation allows an easing in financial conditions and permits real incomes to recover, the economy is expected to see a growth of 1.6%.

Euro zone: Growth in the euro area is estimated to have recovered from 0.4% in 2023, which reflected relatively high exposure to the global conflicts, to 0.8% in CY2024 and it is projected to grow 1.0% in CY2025. As per IMF estimates, the growth is driven by strong household consumption as the energy prices subside and inflation falls, supporting the real income growth.

In terms of emerging and developing economies, growth is estimated to have been relatively stable at 4.4% in CY2023 and 4.2% in CY2024. It is projected to grow at 4.2% in CY2025.

**Real GDP growth comparison among India vs Advanced and emerging economies**

| Real GDP growth (Annual % change) | CY2018 | CY2019 | CY2020 | CY2021 | CY2022 | CY2023 | CY2024P | CY2025P |
|---|---|---|---|---|---|---|---|---|
| Canada | 2.7 | 1.9 | -5.0 | 5.3 | 3.8 | 1.5 | 1.3 | 2.0 |
| China | 6.7 | 6.0 | 2.2 | 8.4 | 3.0 | 5.2 | 4.8 | 4.6 |
| Euro Area | 1.8 | 1.6 | -6.1 | 6.2 | 3.3 | 0.4 | 0.8 | 1.0 |
| India* | 6.5 | 3.9 | -5.8 | 9.7* | 7.6* | 9.2* | 6.5* | 6.5 |
| Japan | 0.6 | -0.4 | -4.2 | 2.7 | 1.2 | 1.5 | -0.2 | 1.1 |
| UK | 1.4 | 1.6 | -10.3 | 8.6 | 4.8 | 0.3 | 0.9 | 1.6 |
| USA | 3.0 | 2.6 | -2.2 | 6.1 | 2.5 | 2.9 | 2.8 | 2.7 |
| World | 3.6 | 2.9 | -2.7 | 6.6 | 3.6 | 3.3 | 3.2 | 3.3 |

*Note: P: Projected. * Numbers for India are for financial year (CY2020 is FY21 and so on) and as per the IMF's forecast. ^India GDP estimate for the FY24 is 9.2% according to Second Advance Estimates from MoSPI. Note: Projection as per IMF update*

*Source: IMF economic database, World Bank national accounts data, OECD national accounts data, Crisil Intelligence*

## India's macroeconomic assessment

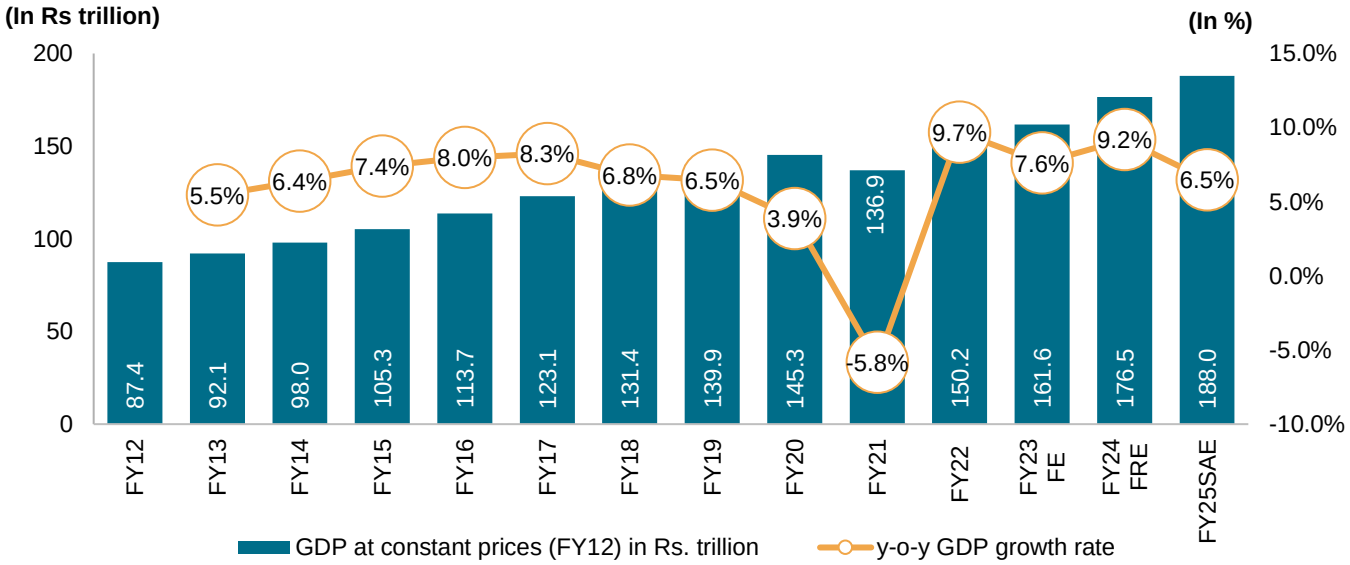
### India's Real GDP registered a CAGR of 6.0% between fiscal 2012 and fiscal 2024

As per the Second advance estimates of GDP for FY25, India's GDP grew 6.5% in FY25 to Rs. 188 trillion. This growth was propelled by growth in private consumption and gross fixed capital formation which grew at 7.6% and 6.1% respectively. India's GDP grew at 6.1% compounded annual growth rate (CAGR) between FY12 and FY25 to Rs. 188 trillion in FY25 from Rs. 87 trillion in FY12. A large part of the lower growth rate was because of challenges heaped by the Covid-19 pandemic in FY20 and FY21. In FY22, the economy recovered with abating of the pandemic and subsequent easing of restrictions and resumption in economic activity.

The National Statistics Office (NSO) in its Second Advance Estimates of Annual Gross Domestic Product (GDP) for FY25, estimated India's real GDP growth in FY24 to be 9.2% which is higher than its earlier Provisional Estimate of 8.2%. Even as the agricultural economy slowed sharply following a weak monsoon, the surge in non-agricultural economy has more than made up for it. The government's investment push, along with easing input cost pressures for industry, has also played a major role in shoring up growth. However, services have been slowing owing to waning pent-up demand (post the pandemic), with the exception of financial, real estate, professional and healthcare services.

Analyses of the FY24 year's growth reveal notable dichotomies. Growth has primarily been fuelled by fixed investments, exhibiting a robust 8.8% expansion, while private consumption growth lagged at 5.6%, trailing overall GDP growth. On the supply side, the manufacturing sector experienced the most substantial growth at 12.3%, while the agriculture and Electricity, Gas, Water Supply & Other Utility services sectors exhibited growth rates of 2.7% and 8.6%, respectively. These trends underscore the varied performance across sectors, highlighting the nuanced dynamics shaping India's economic landscape in FY24. Overall, real GDP of India is estimated to have grown at 9.2% in FY24 compared with 7.6% in FY23.

**Real GDP growth in India (new series) – constant prices**




*Note: FRE: First Revised Estimates, FE: Final Estimates, SAE: Second Advance Estimates, P: Projected*
*These values are reported by the government under various stages of estimates*
*Only actuals and estimates of GDP are provided in the bar graph*
*Source: Central Statistics Office (CSO), Ministry of Statistics and Programme Implementation (MoSPI), Crisil Intelligence*

**Crisil forecasts India's real GDP to grow 6.5% in FY26**

Crisil expects GDP growth to be steady in FY26 at 6.5% despite uncertainties stemming from geopolitical turns and trade-related issues led by US tariff actions. Additionally, cooling food inflation, the tax benefits announced in the Union Budget 2025-2026, and lower borrowing costs are expected to drive discretionary consumption. However, India's current account deficit (CAD) is expected to rise mildly in fiscal 2026. Given the tariff related issues, and the subdued global growth environment, India's goods exports are expected to face further headwinds in fiscal 2026. However, a healthy services trade balance and robust remittances growth will limit the widening.At an overall level, India's real GDP is expected to be 6.5% in FY26.

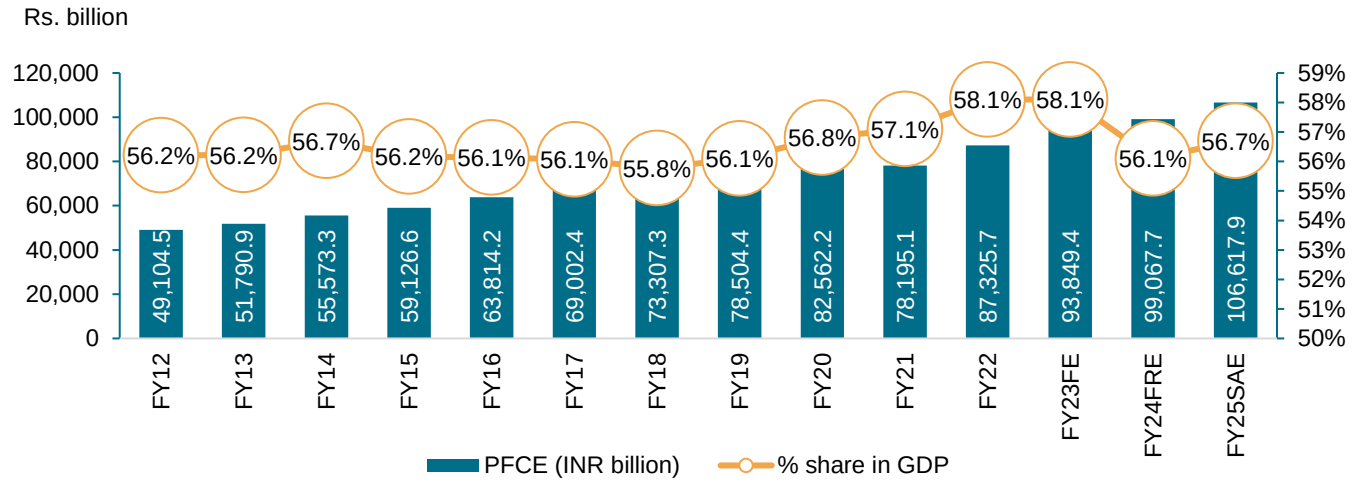
**PFCE to maintain dominant share in India's GDP**

Private final consumption expenditure (PFCE) has been the largest component of India's GDP historically. The PFCE CAGR growth of approximately 6.1% has been in line with India's GDP CAGR growth of 6.1% from FY2012 to FY2025.

Growth was led by healthy monsoon, wage revisions due to the implementation of the Seventh Central Pay Commission's (CPC) recommendations, benign interest rates, growing middle age population and low inflation. As of FY24, PFCE is estimated to have further increased to Rs 99,067.7 billion, registering a y-o-y growth of 5.6% and forming 56.1% of India's GDP. The increasing share of discretionary spending from FY12 suggests rising disposable incomes and spending capacity of households.

As of FY25SAE, PFCE is estimated to have further increased to Rs. 106,617.9 billion, registering a y-o-y growth of 7.6% and forming ~56.7% of India's GDP.

**PFCE at constant prices**

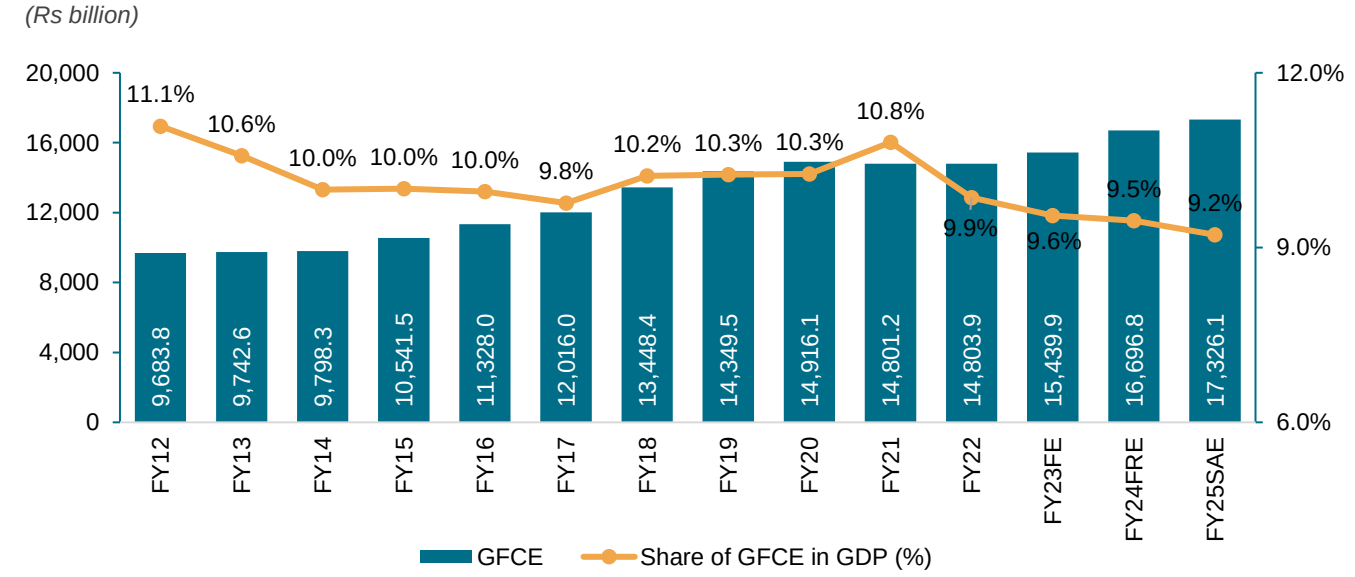



*Note: FE: Final Estimates; FRE: First Revised Estimates; SAE: Second Advance Estimates; P: Projection*
*Source: Second Advance Estimates of Annual GDP for 2024-25, MoSPI, Crisil Intelligence*

**GFCE clocked 4.6% CAGR between fiscal 2012 and 2025**

Government final consumption expenditure (GFCE) at constant prices clocked 4.6% CAGR between fiscal 2012 and 2025, to reach at ~Rs 17,326 billion in FY25 as per second advanced estimates. It grew 3.8 % on-year in fiscal 2025

**GFCE (at constant prices)**




*Note: PE: provisional estimates; RE: revised estimates*
*Source: MoSPI, Crisil Intelligence*

### Robust growth in per capita income over FY12-24

India's per capita income, a broad indicator of living standards, rose from Rs. 63,462 in FY12 to Rs. 108,786 in FY24, logging 4.6% CAGR. Growth was led by better job opportunities, propped up by overall GDP growth. Moreover, population growth remained stable at ~1% CAGR. Furthermore, according to FY25SAE, per capita net national income (constant prices) is estimated to have increased to Rs. 114,705; thereby registering a year-on-year growth of 5.4%.

**Per capita net national income at constant prices**

| | FY12 | FY13 | FY14 | FY15 | FY16 | FY17 | FY18 | FY19 | FY20 | FY21 | FY22 | FY23FE | FY24FRE | FY25SAE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Per-capita NNI (Rs.) | 63,462 | 65,538 | 68,572 | 72,805 | 77,659 | 83,003 | 87,586 | 92,133 | 94,420 | 86,034 | 94,054 | 100,163 | 108,786 | 114,705 |
| Y-o-Y growth (%) | | 3.3% | 4.6% | 6.2% | 6.7% | 6.9% | 5.5% | 5.2% | 2.5% | -8.9% | 9.3% | 6.5% | 8.6% | 5.4% |

*Note: RE: revised estimates, PE: provisional estimates*
*Source: Provisional Estimates of Annual National Income, 2022-23, CSO, MoSPI, Crisil Intelligence*

### India's per capita GDP grows faster than global average

Global per capita GDP clocked a CAGR of 3.8% between 2019 and 2023. Meanwhile, India witnessed a higher per capita GDP CAGR of 5.1% between 2019-2023.

**GDP per capita, current prices ($)- CY basis**

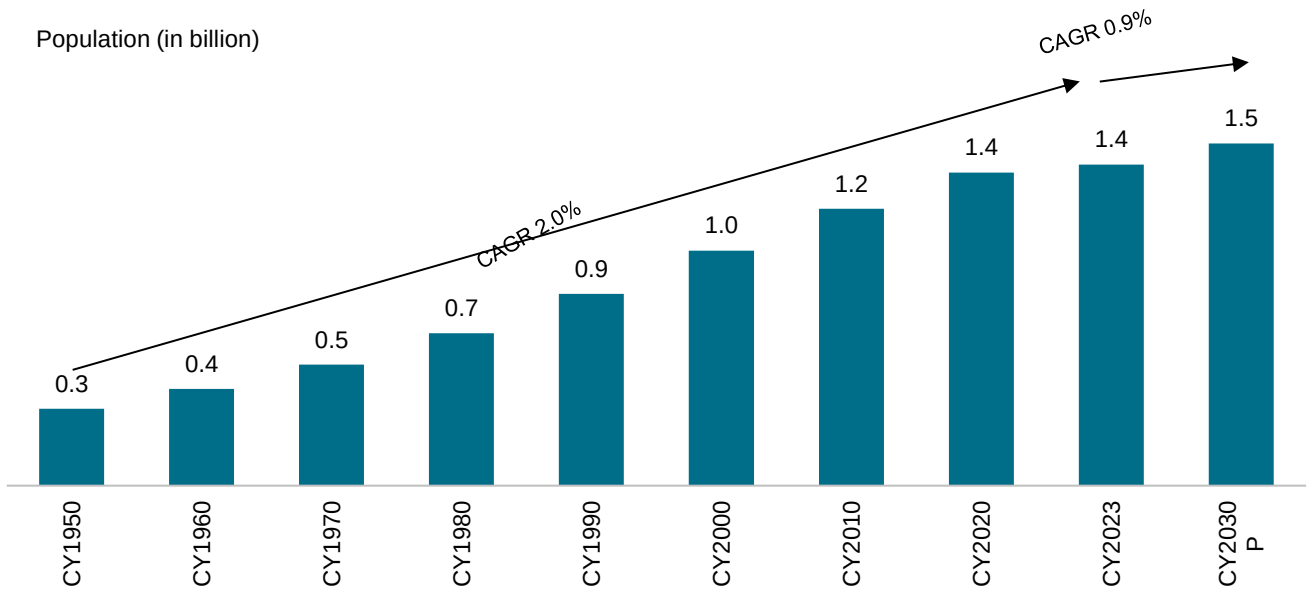
| Regions | 2019 | 2020 | 2021 | 2022 | 2023 | 2024P | 2025P | CAGR (2019-23) |
|---|---|---|---|---|---|---|---|---|
| India | 2,050 | 1,916 | 2,250 | 2,366 | 2,497 | 2,698 | 2,937 | 5.1% |
| World | 11,530 | 11,126 | 12,566 | 12,976 | 13,400 | 13,898 | 14,450 | 3.8% |

*Notes: P – projected*
*Source: IMF, Crisil Intelligence*

### India's population is projected to log 0.9% CAGR between 2023 and 2030

India's population grew to ~1.4 billion in 2023 as per World Population Prospects 2024, compared to just 0.3 billion in 1950, thereby registering a CAGR of ~2.0%. Additionally, as per World Population Prospects 2024, the population of India is expected to remain the world's largest throughout the century and will likely reach its peak in the early 2060s at about 1.7 billion.

**India's population trajectory**




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

As per the United Nations' 2024 Revision of World Population Prospects, India's youth (0-24 years) accounted for nearly half its population in 2010, significantly higher than that for some of its peers (Brazil at ~42%, ~China at 35% and the Russian Federation at ~30%). The fact that ~31% of the population was aged below 15 in 2010 indicates the high proportion of the country's young population is expected to remain so in the coming years.

This share (0-24 years) is expected to reach ~39% by 2030 and remain significantly higher than that of its peers (Brazil at ~31%, China at ~25% and the Russian Federation at ~28%). This also indicates a higher proportion of the population entering the workforce.

**Age-wise population break-up (%) for key countries**

| Country | 0-14 years | 15-24 years | 25-49 years | 50-69 years | 70+ | Total |
|---|---|---|---|---|---|---|
| Brazil | | | | | | |
| CY2010 | 24.71% | 17.69% | 37.73% | 15.67% | 4.20% | 100.00% |
| CY2023 | 19.94% | 14.73% | 38.01% | 20.63% | 6.69% | 100.00% |
| CY2030P | 17.95% | 13.32% | 36.89% | 22.88% | 8.97% | 100.00% |
| China | | | | | | |
| CY2010 | 18.47% | 16.57% | 40.21% | 19.00% | 5.74% | 100.00% |
| CY2023 | 16.59% | 11.35% | 35.85% | 27.27% | 8.95% | 100.00% |
| CY2030P | 12.14% | 12.41% | 34.48% | 28.96% | 12.01% | 100.00% |
| India | | | | | | |
| CY2010 | 31.34% | 19.31% | 33.67% | 12.63% | 3.04% | 100.00% |

| Country | 0-14 years | 15-24 years | 25-49 years | 50-69 years | 70+ | Total |
|---|---|---|---|---|---|---|
| CY2023 | 25.06% | 17.93% | 37.07% | 15.85% | 4.09% | 100.00% |
| CY2030P | 22.39% | 16.25% | 38.33% | 17.70% | 5.34% | 100.00% |
| Russian Federation | | | | | | |
| CY2010 | 15.17% | 14.60% | 37.30% | 23.19% | 9.74% | 100.00% |
| CY2023 | 17.51% | 10.19% | 36.39% | 25.31% | 10.60% | 100.00% |
| CY2030P | 15.03% | 13.01% | 33.15% | 25.07% | 13.75% | 100.00% |
| UK | | | | | | |
| CY2010 | 17.76% | 12.96% | 34.74% | 22.86% | 11.68% | 100.00% |
| CY2023 | 17.41% | 11.62% | 32.52% | 24.44% | 14.01% | 100.00% |
| CY2030P | 15.75% | 12.80% | 32.09% | 24.08% | 15.28% | 100.00% |
| US | | | | | | |
| CY2010 | 19.70% | 14.20% | 34.33% | 22.92% | 8.85% | 100.00% |
| CY2023 | 17.59% | 13.10% | 33.28% | 24.23% | 11.80% | 100.00% |
| CY2030P | 16.26% | 13.06% | 33.10% | 22.95% | 14.62% | 100.00% |

*P: Projected*

*Source: United Nations, Department of Economic and Social Affairs, Population Division (2024); World Population Prospects 2024, Crisil Intelligence*

## Competitive landscape assessment

In this section, Crisil has compared key players in the domestic heavy engineering, wear plates and welding consumable industries. Data has been sourced from publicly available information, including annual reports and investor presentations of listed players, regulatory filings, rating rationales, and/or company websites. The financials in the competitive section have been re-classified by Crisil Intelligence, based on annual reports and filings by the players may not match with the reported financials by the players.

### Overview of key players in heavy engineering capital goods industry

| Company name | Year established | No. of years of operation* |
|---|---|---|
| The Anup Engineering | 1962 | 62 years |
| ISGEC Heavy Engineering | 1933^ | 91 years |
| Lloyds Engineering | 1974 | 50 years |
| Praj Industries | 1983 | 41 years |
| Thermax | 1966 | 58 years |

*Note:*
** As 2024*
*Established as Saraswati Sugar Syndicate Ltd.*
*Source: Crisil Intelligence, company website and annual reports, secondary research*

## Key financial parameters

### Operating Income

| Operating Income (Rs Million) | FY21 | FY22 | FY23 | FY24 | 9MFY25 | CAGR (FY21-24) |
|---|---|---|---|---|---|---|
| The Anup Engineering* | 2,791.30 | 2,882.42 | 4,113.38 | 5,503.85 | 5,030.29 | 25.40% |
| ISGEC Heavy Engineering^ | 54,015.25 | 54,762.82 | 63,730.56 | 6,2072.10 | 46,802.40 | 4.74% |
| Lloyds Engineering* | 700.51 | 500.97 | 3,126.10 | 6,242.36 | 5,772.86 | 107.32% |
| Praj Industries^ | 13,046.69 | 22,228.16 | 35,817.61 | 3,3913.50 | 23,683.61 | 37.50% |
| Thermax^ | 47,683.20 | 61,250.90 | 81,246.40 | 9,3346.10 | 73,037.60 | 25.10% |

*Note:*
** Standalone*
*^ Consolidated*
*Source: annual reports, Crisil Intelligence*

### Operating profit before depreciation, interest, and tax (OPBDIT)

| OPBDIT (Rs Million) | FY21 | FY22 | FY23 | FY24 | 9MFY25 | CAGR (FY21-24) |
|---|---|---|---|---|---|---|
| The Anup Engineering* | 701.00 | 700.04 | 838.81 | 1,267.71 | 1,159.33 | 21.83% |
| ISGEC Heavy Engineering^ | 5,015.39 | 3,161.08 | 4,854.51 | 5,467.46 | 3,820.90 | 2.92% |

| | | | | | | |
|---|---|---|---|---|---|---|
| Lloyds Engineering* | -100.35 | 47.17 | 528.25 | 1,009.97 | 962.69 | NM |
| Praj Industries^ | 1,093.40 | 1,475.70 | 3,183.37 | 3,878.06 | 2,509.01 | 52.50% |
| Thermax^ | 3,581.00 | 4,027.50 | 6,481.10 | 8,759.30 | 6,081.10 | 34.74% |

*Note: NM: Not meaningful*
** Standalone*
*^ Consolidated*
*OPBDIT = Operating income - total expenses before interest tax, depreciation and extraordinary items*
*Source: annual reports, Crisil Intelligence*

### Earnings before interest, tax, depreciation, and amortisation (EBITDA)

| EBITDA (Rs Million) | FY21 | FY22 | FY23 | FY24 | 9MFY25 | CAGR (FY21-24) |
|---|---|---|---|---|---|---|
| The Anup Engineering* | 729.73 | 745.44 | 879.88 | 1357.56 | 1,205.51 | 22.99% |
| ISGEC Heavy Engineering^ | 5,116.39 | 3,224.64 | 4,962.73 | 5,657.13 | 4,188.30 | 3.41% |
| Lloyds Engineering* | -29.29 | 142.76 | 580.35 | 1,084.36 | 1,134.46 | NM |
| Praj Industries^ | 1,191.53 | 1,655.46 | 3,323.79 | 4,161.29 | 2,901.67 | 51.72% |
| Thermax^ | 4,440.70 | 4,807.90 | 7,335.90 | 1,1132.30 | 7,825.30 | 35.85% |

*Note:*
*NM: Not meaningful*
** Standalone*
*^ Consolidated*
*EBITDA = OPBDIT + non-operating income*
*Source: annual reports, Crisil Intelligence*

### Profit After Tax (PAT)

| PAT (Rs Million) | FY21 | FY22 | FY23 | FY24 | 9MFY25 | CAGR (FY21-24) |
|---|---|---|---|---|---|---|
| The Anup Engineering* | 537.64 | 628.52 | 514.30 | 1,034.75 | 875.26 | 24.39% |
| ISGEC Heavy Engineering^ | 2,530.72 | 1,149.85 | 2,055.41 | 2,548.72 | 1,859.70 | 0.24% |
| Lloyds Engineering* | 5.04 | 59.47 | 368.23 | 798.38 | 828.49 | 441.19% |
| Praj Industries^ | 810.59 | 1,502.42 | 2,398.18 | 2,833.91 | 1,791.16 | 51.77% |
| Thermax^ | 2,065.80 | 3,123.10 | 4,507.00 | 6,431.90 | 4,211.50 | 46.02% |

*Note:*
** Standalone*
*^ Consolidated*
*Source: annual reports, Crisil Intelligence*

### OPBDIT Margin (%)

| OPBDIT Margin (%) | FY21 | FY22 | FY23 | FY24 | 9MFY25 |
|---|---|---|---|---|---|
| The Anup Engineering* | 25.11 | 24.29 | 20.39 | 23.03 | 23.05 |
| ISGEC Heavy Engineering^ | 9.29 | 5.77 | 7.62 | 8.81 | 8.16 |
| Lloyds Engineering* | -14.33 | 9.42 | 16.90 | 16.18 | 16.68 |

| | | | | | |
|---|---|---|---|---|---|
| Praj Industries^ | 8.38 | 6.64 | 8.89 | 11.44 | 10.59 |
| Thermax^ | 7.51 | 6.58 | 7.98 | 9.38 | 8.33 |

*Note:*
** Standalone*
*^ Consolidated*
*Operating margin = OPBDIT / Operating Income*
*Source: annual reports, Crisil Intelligence*

### EBITDA Margin (%)

| EBITDA Margin(%) | FY21 | FY22 | FY23 | FY24 | 9MFY25 |
|---|---|---|---|---|---|
| The Anup Engineering* | 25.88 | 25.46 | 21.18 | 24.27 | 23.75 |
| ISGEC Heavy Engineering^ | 9.45 | 5.88 | 7.77 | 9.09 | 8.88 |
| Lloyds Engineering* | -3.80 | 23.93 | 18.26 | 17.17 | 19.08 |
| Praj Industries^ | 9.06 | 7.39 | 9.24 | 12.17 | 12.05 |
| Thermax^ | 9.15 | 7.75 | 8.94 | 11.63 | 10.46 |

*Note:*
** Standalone*
*^ Consolidated*
*EBITDA margin =EBITDA / Total Income*
*Total Income = Operating Income + Non-Operating Income*
*Source: annual reports, Crisil Intelligence*

### PAT Margin (%)

| PAT Margin(%) | FY21 | FY22 | FY23 | FY24 | 9MFY25 |
|---|---|---|---|---|---|
| The Anup Engineering* | 19.26 | 21.81 | 13.28 | 18.80 | 17.40 |
| ISGEC Heavy Engineering^ | 4.69 | 2.10 | 3.23 | 4.11 | 3.97 |
| Lloyds Engineering* | 0.72 | 11.87 | 11.78 | 12.51 | 14.35 |
| Praj Industries^ | 6.21 | 6.76 | 6.70 | 8.36 | 7.56 |
| Thermax^ | 4.33 | 5.10 | 5.55 | 6.89 | 5.77 |

*Note:*
** Standalone*
*^ Consolidated*
*PAT margin = PAT / Operating Income*
*Source: annual reports, Crisil Intelligence*

### Gearing Ratio

| Gearing Ratio | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| The Anup Engineering* | 0.00 | 0.00 | 0.00 | 0.04 |
| ISGEC Heavy Engineering^ | 0.47 | 0.56 | 0.52 | 0.31 |
| Lloyds Engineering* | 0.01 | 0.16 | 0.24 | 0.15 |

| | | | | |
|---|---|---|---|---|
| Praj Industries^ | 0.00 | 0.00 | 0.00 | 0.00 |
| Thermax^ | 0.10 | 0.11 | 0.21 | 0.29 |

*Note:*
** Standalone*
*^ Consolidated*
*Gearing Ratio = Total Debt / Tangible Networth*
*Source: annual reports, Crisil Intelligence*

### Current Ratio

| Current Ratio | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| The Anup Engineering* | 2.67 | 2.37 | 2.14 | 1.44 |
| ISGEC Heavy Engineering^ | 1.28 | 1.28 | 1.32 | 1.27 |
| Lloyds Engineering* | 3.43 | 4.24 | 1.54 | 3.08 |
| Praj Industries^ | 1.59 | 1.45 | 1.43 | 1.48 |
| Thermax^ | 1.45 | 1.21 | 1.23 | 1.30 |

*Note:*
** Standalone*
*^ Consolidated*
*Current Ratio = Current assets / Current liabilities*
*Source: annual reports, Crisil Intelligence*

### Return on Capital Employed (ROCE)

| ROCE (%) | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| The Anup Engineering* | 22.03 | 17.68 | 13.99 | 24.06 |
| ISGEC Heavy Engineering^ | 14.47 | 7.77 | 11.09 | 12.78 |
| Lloyds Engineering* | 1.39 | 10.19 | 27.15 | 29.15 |
| Praj Industries^ | 16.86 | 25.94 | 34.97 | 36.07 |
| Thermax^ | 9.17 | 12.31 | 15.57 | 18.92 |

*Note:*
** Standalone*
*^ Consolidated*
*RoCE = Profit before interest and tax (PBIT)/ (Average total debt + average tangible networth + average deferred tax liability)*
*Source: annual reports, Crisil Intelligence*

## Overview of key players in elevator and escalator Industry in India

In this section, Crisil Intelligence has compared key players in the domestic elevator and escalator industry. Data has been sourced from publicly available information, including annual reports and investor presentations of listed players, regulatory filings, rating rationales, and/or company websites. The financials in the competitive section have been re-classified by Crisil Intelligence, based on annual reports and filings by the players.

| Company name | Year of incorporation | No. of years of operation* |
|---|---|---|
| KONE Elevator India Private Limited | 1984 | 40 years |
| Otis Elevator Company (India) Limited | 1953 | 71 years |
| Schindler India Private Limited | 1997 | 27 years |
| Techno Industries Private Limited | 2000 | 24 years |

*Note:*
** years of operation is based on year of incorporation*
** As on September 2024*
*Source: Ministry of Corporate Affairs, Crisil Intelligence*

## Key financial parameters

### Operating Income

| Operating Income (Rs Million) | FY21 | FY22 | FY23 | FY24 | CAGR (FY21-24) |
|---|---|---|---|---|---|
| KONE Elevator India Private Limited | 16,757.00 | 21,751.00 | 27,172.00 | 33,205.00 | 25.60% |
| Otis Elevator Company (India) Limited^ | 17,100.90 | 19,472.80 | 24,350.00 | 27,706.90 | 17.45% |
| Schindler India Private Limited | 17,712.90 | 21,022.60 | 26,557.40 | 28,826.60 | 17.63% |
| Techno Industries Private Limited | 653.70 | 1,318.40 | 1,486.50 | 1,675.50 | 36.85% |

*Note:*
*^ Consolidated*
*Source: Company filings, Crisil Intelligence*

### Operating profit before depreciation, interest, and tax (OPBDIT)

| OPBDIT (Rs Million) | FY21 | FY22 | FY23 | FY24 | CAGR (FY21-24) |
|---|---|---|---|---|---|
| KONE Elevator India Private Limited | 3,758.00 | 3,145.00 | 3,722.00 | 5,525.00 | 13.71% |
| Otis Elevator Company (India) Limited^ | 1,925.20 | 1,871.60 | 2,006.60 | 2,547.30 | 9.78% |
| Schindler India Private Limited | 701.60 | (547.00) | (1,092.10) | 277.90 | -26.56% |
| Techno Industries Private Limited | 33.10 | 113.90 | 153.50 | 156.30 | 67.77% |

*Note:*
*N.M: Not Meaningful*
*^ Consolidated*
*OPBDIT = Operating income - total expenses before interest tax, depreciation and extraordinary items*
*Source: Company filings, Crisil Intelligence*

### Earnings before interest, tax, depreciation, and amortisation (EBITDA)

| EBITDA (Rs Million) | FY21 | FY22 | FY23 | FY24 | CAGR (FY21-24) |
|---|---|---|---|---|---|
| KONE Elevator India Private Limited | 3,864.00 | 4,308.00 | 4,259.00 | 6,051.00 | 16.13% |
| Otis Elevator Company (India) Limited^ | 2,269.70 | 2,208.90 | 2,443.30 | 3,155.40 | 11.61% |
| Schindler India Private Limited | 1,710.40 | 809.90 | 92.80 | 1,569.50 | -2.83% |
| Techno Industries Private Limited | 37.90 | 118.50 | 158.90 | 161.00 | 61.96% |

*Note:*
*^ Consolidated*
*EBITDA = OPBDIT + non-operating income*
*Source: Company filings, Crisil Intelligence*

### Profit After Tax (PAT)

| PAT (Rs million) | FY21 | FY22 | FY23 | FY24 | CAGR (FY21-24) |
|---|---|---|---|---|---|
| KONE Elevator India Private Limited | 3,508.00 | 3,027.00 | 2,490.00 | 3,719.00 | 1.97% |
| Otis Elevator Company (India) Limited^ | 1,637.50 | 1,464.20 | 1,547.10 | 2,095.90 | 8.57% |
| Schindler India Private Limited | 412.80 | 22.50 | (450.40) | 571.30 | 11.44% |
| Techno Industries Private Limited | 3.20 | 63.00 | 86.20 | 87.80 | 201.61% |

*Note:*
*N.M: Not Meaningful*
*^ Consolidated*
*Source: Company filings, Crisil Intelligence*

### OPBDIT Margin (%)

| OPBDIT margin (%) | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| KONE Elevator India Private Limited | 22.43 | 14.46 | 13.70 | 16.64 |
| Otis Elevator Company (India) Limited^ | 11.26 | 9.61 | 8.24 | 9.19 |
| Schindler India Private Limited | 3.96 | (2.60) | (4.11) | 0.96 |
| Techno Industries Private Limited | 5.06 | 8.64 | 10.33 | 9.33 |

*Note:*
*^ Consolidated*
*Operating margin = OPBDIT / Operating Income*
*Source: Company filings, Crisil Intelligence*

### EBITDA Margin (%)

| EBITDA margin (%) | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| KONE Elevator India Private Limited | 22.91 | 18.80 | 15.37 | 17.94 |
| Otis Elevator Company (India) Limited^ | 13.01 | 11.15 | 9.86 | 11.14 |
| Schindler India Private Limited | 9.14 | 3.62 | 0.33 | 5.21 |
| Techno Industries Private Limited | 5.76 | 8.96 | 10.65 | 9.58 |

*Note:*
*^ Consolidated*
*EBITDA margin =EBITDA / Total Income*
*Total Income = Operating Income + Non-Operating Income*
*Source: Company filings, Crisil Intelligence*

### PAT Margin (%)

| PAT margin (%) | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| KONE Elevator India Private Limited | 20.93 | 13.92 | 9.16 | 11.20 |
| Otis Elevator Company (India) Limited^ | 9.58 | 7.52 | 6.35 | 7.56 |
| Schindler India Private Limited | 2.33 | 0.11 | (1.70) | 1.98 |
| Techno Industries Private Limited | 0.49 | 4.78 | 5.80 | 5.24 |

*Note:*
*^ Consolidated*
*PAT margin = PAT / Operating income*
*Source: Company filings, Crisil Intelligence*

### Gearing Ratio

| Gearing (times) | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| KONE Elevator India Private Limited | 0.00 | 0.00 | 0.00 | 0.00 |
| Otis Elevator Company (India) Limited^ | 0.00 | 0.00 | 0.00 | 0.00 |
| Schindler India Private Limited | 0.00 | 0.00 | 0.00 | 0.00 |
| Techno Industries Private Limited | 0.32 | 0.46 | 0.38 | 0.34 |

*Note:*
*^ Consolidated*
*Gearing Ratio = Total Debt / Tangible Networth*
*Source: Company filings, Crisil Intelligence*

### Current Ratio

| Current ratio (times) | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| KONE Elevator India Private Limited | 1.31 | 1.27 | 1.16 | 0.86 |
| Otis Elevator Company (India) Limited^ | 1.09 | 1.08 | 1.05 | 1.07 |
| Schindler India Private Limited | 1.06 | 0.91 | 0.87 | 0.89 |
| Techno Industries Private Limited | 2.01 | 1.77 | 1.74 | 1.81 |

*Note:*
*^ Consolidated*
*Current Ratio = Current assets / Current liabilities*
*Source: Company filings, Crisil Intelligence*

### Return on Capital Employed (ROCE)

| RoCE (%) | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| KONE Elevator India Private Limited | 64.02 | 36.93 | 28.36 | 53.08 |
| Otis Elevator Company (India) Limited^ | 133.82 | 126.66 | 143.40 | 172.97 |
| Schindler India Private Limited | 7.60 | (1.27) | (14.11) | 19.60 |
| Techno Industries Private Limited | 3.61 | 15.66 | 18.98 | 16.57 |

*Note:*
*^ Consolidated*
*RoCE = Profit before interest and tax (PBIT)/ (Average total debt + average tangible networth + average deferred tax liability)*
*Source: Company filings, Crisil Intelligence*

### Overview of key players in induction motor and single phase motor Industry in India

| Company name | Year established | No. of years of operation* |
|---|---|---|
| Bharat Bijlee | 1946 | 78 years |
| Kirloskar Brothers | 1888 | 136 years |
| KSB | 1960 | 64 years |
| Roto Pumps | 1968 | 56 years |
| Shakti Pumps | 1982 | 42 years |
| Techno Industries | 2000 | 24 years |
| WPIL | 1952^ | 72 years |

*Note:*
*^ Incorporation year*
** As on 2024*
*Source: Crisil Intelligence, company website and annual reports, secondary research*

## Key financial parameters

### Operating Income

| Operating Income (Rs Million | FY21 | FY22 | FY23 | FY24 | 9MFY25 | CAGR (FY21-24) |
|---|---|---|---|---|---|---|
| Bharat Bijlee* | 7310.49 | 12657.40 | 14184.96 | 18767.22 | 12,825.90 | 36.93% |
| Kirloskar Brothers^ | 27182.77 | 30590.65 | 37322.88 | 40023.40 | 32,109.00 | 13.76% |
| KSB^@ | 12134.39 | 15053.70 | 18326.50 | 22565.29 | 25,331.00 | 22.97% |
| Roto Pumps^ | 1285.77 | 1773.97 | 2275.49 | 2744.96 | 2,148.87 | 28.76% |
| Shakti Pumps^ | 9317.67 | 11814.32 | 9701.07 | 13707.39 | 18,509.20 | 13.73% |
| Techno Industries* | 653.70 | 1318.40 | 1486.50 | 1675.50 | N.A. | 36.85% |
| WPIL^ | 9948.31 | 11812.78 | 17847.99 | 16653.53 | 12,350.14 | 18.74% |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December. 9MFY25 numbers of KSB represents CY2024 numbers*
*N.A.: Not available*
*Source: annual reports, Crisil Intelligence*

### Operating profit before depreciation, interest, and tax (OPBDIT)

| OPBDIT (Rs Million) | FY21 | FY22 | FY23 | FY24 | 9MFY25 | CAGR (FY21-24) |
|---|---|---|---|---|---|---|
| Bharat Bijlee* | 392.18 | 873.57 | 1206.44 | 1795.08 | 1,039.40 | 66.04% |
| Kirloskar Brothers^ | 2591.16 | 2075.42 | 4024.25 | 5065.90 | 4,197.00 | 25.04% |
| KSB^@ | 1754.62 | 2241.41 | 2669.76 | 3087.42 | 3,375.00 | 20.73% |
| Roto Pumps^ | 313.57 | 480.98 | 577.79 | 655.50 | 427.05 | 27.86% |
| Shakti Pumps^ | 1441.57 | 1133.48 | 689.84 | 2248.32 | 4,390.10 | 15.97% |
| Techno Industries* | Techno Industries* | 33.10 | 113.90 | 153.50 | 156.30 | N.A. |
| WPIL^ | WPIL^ | 1565.83 | 2102.40 | 3420.36 | 3042.09 | 2,127.10 |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December, 9MFY25 numbers of KSB represents CY2024 numbers*
*OPBDIT = Operating income - total expenses before interest tax, depreciation and extraordinary items*
*N.A.: Not available*
*Source: annual reports, Crisil Intelligence*

### Earnings before interest, tax, depreciation, and amortisation (EBITDA)

| EBITDA (Rs Million) | FY21 | FY22 | FY23 | FY24 | 9MFY25 | CAGR (FY21-24) |
|---|---|---|---|---|---|---|
| Bharat Bijlee* | 649.50 | 1109.29 | 1481.72 | 2086.35 | 1,339.20 | 47.55% |
| Kirloskar Brothers^ | 3010.58 | 2513.09 | 4369.70 | 5686.01 | 4,672.00 | 23.61% |
| KSB^@ | 1991.96 | 2497.68 | 2955.28 | 3347.00 | 3,877.00 | 18.88% |
| Roto Pumps^ | 320.31 | 492.21 | 580.47 | 700.12 | 454.96 | 29.78% |
| Shakti Pumps^ | 1458.22 | 1165.93 | 698.13 | 2283.95 | 4,516.60 | 16.13% |
| Techno Industries* | 37.90 | 118.50 | 158.90 | 161.00 | N.A. | 61.96% |
| WPIL^ | 1645.29 | 2195.52 | 3548.97 | 3318.07 | 2,532.66 | 26.34% |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December, 9MFY25 numbers of KSB represents CY2024 numbers*
*EBITDA = OPBDIT + non-operating income*
*N.A.: Not available*
*Source: annual reports, Crisil Intelligence*

### Profit After Tax (PAT)

| PAT (Rs Million) | FY21 | FY22 | FY23 | FY24 | 9MFY25 | CAGR (FY21-24) |
|---|---|---|---|---|---|---|
| Bharat Bijlee* | 260.50 | 555.79 | 832.23 | 1314.41 | 833.40 | 71.52% |
| Kirloskar Brothers^ | 1607.45 | 943.77 | 2357.66 | 3496.80 | 2,809.00 | 29.57% |
| KSB^@ | 937.84 | 1493.89 | 1827.41 | 2087.33 | 2,475.00 | 30.56% |
| Roto Pumps^ | 183.31 | 302.41 | 331.15 | 394.15 | 210.96 | 29.07% |
| Shakti Pumps^ | 755.86 | 648.16 | 241.32 | 1417.09 | 2,981.40 | 23.31% |
| Techno Industries* | 3.20 | 63.00 | 86.20 | 87.80 | N.A. | 201.61% |
| WPIL^ | 986.89 | 1182.18 | 2196.77 | 6837.66 | 1,503.22 | 90.64% |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December, 9MFY25 numbers of KSB represents CY2024 numbers*
*N.A.: Not available*
*Source: annual reports, Crisil Intelligence*

### OPBDIT Margin (%)

| OPBDIT Margin (%) | FY21 | FY22 | FY23 | FY24 | 9MFY25 |
|---|---|---|---|---|---|
| Bharat Bijlee* | 5.36 | 6.90 | 8.51 | 9.56 | 8.10 |
| Kirloskar Brothers^ | 9.53 | 6.78 | 10.78 | 12.66 | 13.07 |
| KSB^@ | 14.46 | 14.89 | 14.57 | 13.68 | 13.32 |
| Roto Pumps^ | 24.39 | 27.11 | 25.39 | 23.88 | 19.87 |
| Shakti Pumps^ | 15.47 | 9.59 | 7.11 | 16.40 | 23.72 |
| Techno Industries* | 5.06 | 8.64 | 10.33 | 9.33 | N.A. |
| WPIL^ | 15.74 | 17.80 | 19.16 | 18.27 | 17.22 |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December, 9MFY25 numbers of KSB represents CY2024 numbers*
*Operating margin = OPBDIT / Operating Income*
*N.A.: Not available*
*Source: annual reports, Crisil Intelligence*

### EBITDA Margin (%)

| EBITDA Margin (%) | FY21 | FY22 | FY23 | FY24 | 9MFY25 |
|---|---|---|---|---|---|
| Bharat Bijlee* | 8.58 | 8.60 | 10.25 | 10.95 | 10.20 |
| Kirloskar Brothers^ | 10.91 | 8.10 | 11.60 | 13.99 | 14.34 |
| KSB^@ | 16.10 | 16.31 | 15.88 | 14.66 | 15.01 |
| Roto Pumps^ | 24.78 | 27.57 | 25.48 | 25.10 | 20.90 |
| Shakti Pumps^ | 15.62 | 9.84 | 7.19 | 16.62 | 24.24 |
| Techno Industries* | 5.76 | 8.96 | 10.65 | 9.58 | N.A. |
| WPIL^ | 16.41 | 18.44 | 19.74 | 19.60 | 19.86 |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December, 9MFY25 numbers of KSB represents CY2024 numbers*
*EBITDA margin =EBITDA / Total Income*
*Total Income = Operating Income + Non-Operating Income*
*N.A.: Not available*
*Source: annual reports, Crisil Intelligence*

### PAT Margin (%)

| PAT Margin (%) | FY21 | FY22 | FY23 | FY24 | 9MFY25 |
|---|---|---|---|---|---|
| Bharat Bijlee* | 3.56 | 4.39 | 5.87 | 7.00 | 6.50 |
| Kirloskar Brothers^ | 5.91 | 3.09 | 6.32 | 8.74 | 8.75 |
| KSB^@ | 7.73 | 9.92 | 9.97 | 9.25 | 9.77 |
| Roto Pumps^ | 14.26 | 16.98 | 14.55 | 14.36 | 9.82 |
| Shakti Pumps^ | 8.11 | 5.49 | 2.49 | 10.34 | 16.11 |
| Techno Industries* | 0.49 | 4.78 | 5.80 | 5.24 | N.A. |
| WPIL^ | 9.92 | 10.01 | 12.31 | 41.06 | 12.17 |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December, 9MFY25 numbers of KSB represents CY2024 numbers*
*PAT margin = PAT / Operating Income*
*N.A.: Not available*
*Source: annual reports, Crisil Intelligence*

### Gearing Ratio

| Gearing Ratio | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| Bharat Bijlee* | 0.24 | 0.25 | 0.21 | 0.08 |
| Kirloskar Brothers^ | 0.28 | 0.32 | 0.18 | 0.09 |
| KSB^@ | 0.07 | 0.00 | 0.00 | 0.00 |
| Roto Pumps^ | 0.12 | 0.11 | 0.24 | 0.19 |
| Shakti Pumps^ | 0.23 | 0.27 | 0.18 | 0.11 |
| Techno Industries* | 0.32 | 0.46 | 0.38 | 0.34 |
| WPIL^ | 0.58 | 0.47 | 0.29 | 0.14 |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December*
*Gearing Ratio = Total Debt / Tangible Networth*
*Source: annual reports, Crisil Intelligence*

### Current Ratio

| Gearing Ratio | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| Bharat Bijlee* | 1.62 | 1.38 | 1.67 | 1.67 |
| Kirloskar Brothers^ | 1.28 | 1.41 | 1.49 | 1.60 |
| KSB^@ | 1.86 | 2.10 | 2.04 | 2.05 |
| Roto Pumps^ | 2.29 | 2.42 | 1.73 | 1.69 |
| Shakti Pumps^ | 1.72 | 1.59 | 1.94 | 1.82 |
| Techno Industries* | 2.01 | 1.77 | 1.74 | 1.81 |
| WPIL^ | 1.36 | 1.38 | 1.41 | 1.92 |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December*
*Current Ratio = Current assets / Current liabilities*
*Source: annual reports, Crisil Intelligence*

## Return on Capital Employed (ROCE)

| ROCE (%) | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|
| Bharat Bijlee* | 5.03 | 7.42 | 8.61 | 10.26 |
| Kirloskar Brothers^ | 17.83 | 12.56 | 23.53 | 30.11 |
| KSB^@ | 15.32 | 21.11 | 23.40 | 23.48 |
| Roto Pumps^ | 24.54 | 33.27 | 28.98 | 27.16 |
| Shakti Pumps^ | 28.92 | 21.15 | 10.48 | 31.45 |
| Techno Industries* | 3.61 | 15.66 | 18.98 | 16.57 |
| WPIL^ | 20.62 | 21.77 | 32.36 | 58.00 |

*Note:*
** Standalone*
*^ Consolidated*
*@ The company has financial year end of 31st December*
*RoCE = Profit before interest and tax (PBIT)/ (Average total debt + average tangible networth + average deferred tax liability)*
*Source: annual reports, Crisil Intelligence*

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Crisil Intelligence is a leading provider of research, consulting, risk solutions and advanced data analytics, serving clients across government, private and public enterprises. We leverage our expertise in data-driven insights and strong benchmarking capabilities to help clients navigate complex external ecosystems, identify opportunities and mitigate risks. By combining cutting-edge analytics, machine learning and AI capabilities with deep industry knowledge, we empower our clients to make informed decisions, drive business growth and build resilient capacities.

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