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Machine Tools —
Metal-Cutting
and Welding
Equipment
Manufacturing
Industry

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1. Global Macro-Economic Outlook

1.1 Global GDP Growth Scenario

As per the IMF's World Economic Outlook (WEO) Update published in July 2026, global growth is projected to slow to 3.0% in CY 2026, down from 3.5% in CY 2025, before recovering to 3.4% in CY 2027. This is broadly unchanged on a cumulative basis compared with the April 2026 WEO, though it conceals sharp divergence across countries. The moderation reflects the negative supply shock from the conflict in the Middle East and associated disruptions to energy flows through the Strait of Hormuz, which is being partly offset by an accelerating global technology cycle driven by artificial intelligence (AI)-related investment and adoption. Economies well integrated into the AI/technology value chain — including Taiwan, Korea, Thailand and Malaysia — have significantly outperformed expectations, while energy-importing economies with limited exposure to the technology upturn, including many low-income countries, continue to face a more pronounced drag.

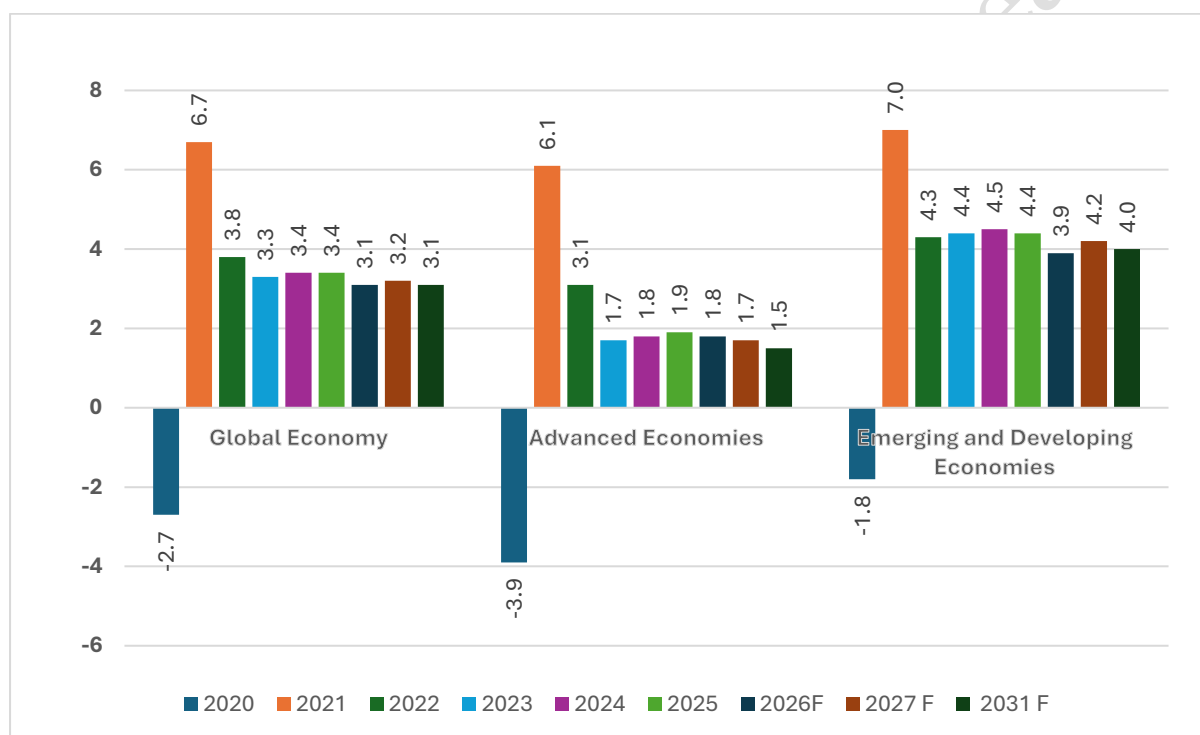
Global headline inflation is projected to rise from 4.1% in CY 2025 to 4.7% in CY 2026, before easing to 3.9% in CY 2027, marking a stalling of the disinflation trend that had been in place since early 2024. The upward revision (0.3 percentage point higher than the April 2026 WEO for 2026) reflects higher energy and food prices, with crude oil prices projected to rise by approximately 32% and natural gas prices by about 22% in 2026 relative to 2025. World trade volume growth is projected to slow sharply from 5.0% in 2025 to 3.5% in 2026, before recovering to 4.3% in 2027, reflecting tariff-related drag and the gradual adjustment of global trade and production linkages.

In China, growth is projected to slow to 4.6% in CY 2026 (down from 5.0% in CY 2025) and further to 4.1% in CY 2027, as elevated global oil prices, structural headwinds and continued property sector weakness weigh on activity, notwithstanding stronger-than-expected exports and high-tech manufacturing. In the Euro Area, growth is projected to slow to 0.9% in CY 2026 before improving to 1.2% in CY 2027, weighed down by higher energy prices, soft first-quarter momentum and weak consumer confidence; Germany's growth is projected at 0.7% in CY 2026, improving to 1.0% in CY 2027, supported by net exports and fiscal measures.

Meanwhile, India is expected to remain among the fastest-growing major economies despite an increasingly uncertain global environment. According to the IMF, real GDP growth is projected at 6.4% in FY2026–27, improving to 6.7% in FY2027–28, supported by resilient domestic demand, private consumption and services activity. On a calendar-year basis, the IMF projects India's economy to expand by 7.0% in 2026 and 6.4% in 2027. Consumer price inflation is expected to remain broadly contained, supporting macroeconomic stability even as global inflationary pressures persist.

Overall, while global growth in CY 2025 remained resilient, the outlook for CY 2026 reflects a genuine crosscurrent — a war-driven supply shock pulling growth down, countered by an AI/technology-led investment boom pushing growth up in select economies. Risks to the outlook remain tilted to the downside, with renewed Middle East conflict, trade fragmentation, and a potential correction in AI-driven valuations as the key threats, while a swifter energy-market normalisation and stronger technology investment present the main upside. India's relative macroeconomic stability, resilient domestic demand, and continued investment momentum position it favourably amid these global crosscurrents.

1.2 Historical GDP Growth Trends



F – Forecast, Source – IMF World Economic Outlook April 2026

Note: Advanced Economies and Emerging & Developing Economies are as per the classification of the World Economic Outlook (WEO). This classification is not based on strict criteria, economic or otherwise, and it has evolved over time. It comprises of 40 countries under the Advanced Economies including the G7 (the United States, Japan, Germany, France, Italy, the United Kingdom, and Canada) and selected countries from the Euro Zone (Germany, Italy, France etc.). The group of emerging market and developing economies (156) includes all those that are not classified as Advanced Economies (India, China, Brazil, Malaysia etc.)

The global economy began recovering from its lowest levels following the easing of pandemic-related lockdowns in CY 2020 and CY 2021. The pandemic-induced disruption severely affected economic activity, resulting in a contraction of -2.7% in global GDP in CY 2020, with

advanced economies contracting more sharply by -3.9%, while emerging and developing economies declined by -1.8%.

In CY 2021, global growth rebounded strongly to 6.7%, driven by reopening-led recovery, fiscal stimulus, and pent-up demand. Advanced economies grew by 6.1%, supported by policy stimulus and vaccination progress, while emerging and developing economies recorded stronger growth of 7.0%.

Global economic activity moderated in CY 2022, with growth slowing to 3.8%, as elevated inflation and monetary tightening weighed on demand. Advanced economies expanded by 3.1%, while emerging and developing economies grew by 4.3%.

Growth softened further to 3.3% in CY 2023, reflecting the lagged impact of tighter financial conditions and weaker trade momentum. Advanced economies recorded slower growth of 1.7%, while emerging and developing economies remained relatively resilient at 4.4%.

In CY 2024, global growth remained stable at 3.4%, supported by easing inflation and improved supply chain conditions. However, advanced economies slowed to 1.8%, while emerging and developing economies grew by 4.5%, highlighting continued divergence.

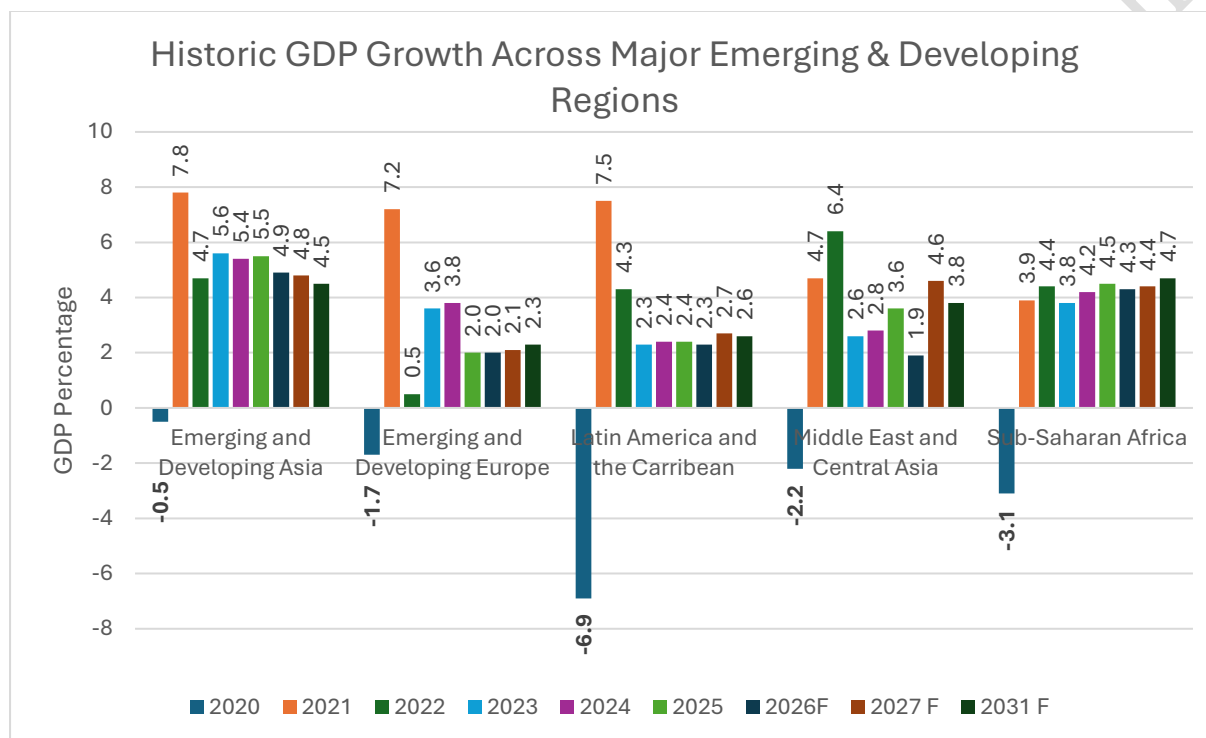
In CY 2025, global GDP growth stood at 3.4%, indicating relative stability compared to the previous year despite ongoing geopolitical tensions and structural challenges. Advanced economies expanded by 1.9%, while emerging and developing economies maintained stronger growth at 4.4%.

Global growth is projected to remain steady at 3.1% in CY 2026, supported by resilient demand and investment trends, although risks from geopolitical disruptions and commodity price volatility persist. Advanced economies are expected to grow at 1.8%, while emerging and developing economies are projected at 3.9%.

Over the medium term, global growth is expected to moderate slightly to 3.2% in CY 2027 and 3.1% by CY 2031. Advanced economies are forecast to grow at 1.7% in CY 2027 and 1.5% by CY 2031, while emerging and developing economies are projected at 4.2% and 4.0%, respectively, reflecting structural constraints alongside continued resilience in developing markets.

1.3 GDP Growth Across Major Regions

GDP growth across major global regions—including Europe, Latin America & the Caribbean, Middle East & Central Asia, and Sub-Saharan Africa—continues to display varied trajectories. While some regions are stabilizing post-pandemic, others remain challenged by structural and cyclical issues. The global outlook presents a mixed scenario, with emerging economies continuing to outperform advanced economies.



Source-IMF World Economic Outlook April 2026 update.

In Emerging and Developing Asia, growth stood at 5.5% in CY 2025 and is projected to moderate to 4.9% in CY 2026 and 4.8% in CY 2027, before easing further to 4.5% by CY 2031. The moderation reflects weaker external demand, trade-related uncertainty, and spillovers from slower growth in China, partly offset by resilience in domestic demand across major economies, with India continuing to act as a key growth driver.

Emerging and Developing Europe recorded growth of 2.0% in CY 2025 and CY 2026, improving marginally to 2.1% in CY 2027 and 2.3% by CY 2031. The region continues to face structural manufacturing weakness, geopolitical spillovers and subdued external demand, although gradual stabilization in trade and domestic demand is expected to support recovery.

For Latin America and the Caribbean, growth stood at 2.4% in CY 2025, moderating to 2.3% in CY 2026 and improving to 2.7% in CY 2027, before easing to 2.6% by CY 2031. The modest outlook reflects weak productivity trends, fiscal constraints, and subdued external demand, partially supported by improving macroeconomic stability and policy credibility.

In the Middle East and Central Asia, growth stood at 3.6% in CY 2025, declining sharply to 1.9% in CY 2026 before recovering to 4.6% in CY 2027 and moderating to 3.8% by CY 2031. This volatility reflects geopolitical disruptions, particularly conflicts affecting energy markets, alongside fluctuations in commodity prices and regional uncertainty.

Sub-Saharan Africa recorded growth at 4.5% in CY 2025 and is projected to moderate slightly to 4.3% in CY 2026 and improving to 4.4% in CY 2027, with further strengthening to 4.7% by CY 2031. Growth is supported by improving domestic demand and supply conditions, although structural constraints, high debt levels and commodity price volatility continue to pose risks.

Overall, while regional growth trajectories remain uneven, emerging and developing economies are expected to continue outperforming advanced economies, supported by relatively stronger domestic demand and favourable demographics. However, disparities persist due to structural challenges, geopolitical tensions, and commodity market volatility.

1.4 Global Economic Outlook

At the current juncture in CY 2026, the global economy continues to exhibit mixed performance, with divergence in outcomes across regions driven by differences in growth dynamics, inflation trends, geopolitical exposure, and policy responses. While the global economy had shown resilience through technology-led investment, accommodative financial conditions, and reduced tariff pressures, the broader outlook has weakened due to the outbreak of conflict in the Middle East, disruptions in energy markets, and elevated geopolitical risks. Structural headwinds, including tighter financial conditions, geoeconomic fragmentation, and subdued productivity growth, continue to keep global growth below historical averages.

The United States continues to demonstrate relative resilience among advanced economies, though growth is moderating as the economy absorbs the lagged effects of prior policy tightening and softer labour market conditions. Across advanced economies, growth is projected at 1.8% in CY 2026, constrained by weak industrial activity, lower productivity growth, and cautious business investment. In Europe, growth conditions remain subdued, with persistent manufacturing weakness, energy-related uncertainties, and weak external demand weighing on activity, although gradual monetary easing and fiscal support may provide some stabilization.

In China, growth prospects remain constrained by continued property sector stress, weak domestic demand, and changing trade dynamics, although export-oriented sectors and technology-linked investment continue to provide support. In contrast, India remains among the strongest-performing major economies, with GDP growth projected at 6.5% in CY 2026, supported by resilient domestic demand, sustained infrastructure investment, digitalisation,

and structural reforms. Broader Emerging and Developing Asia continues to outperform other regions, although growth is moderating amid weaker global trade momentum.

In Latin America and the Caribbean, growth remains modest amid fiscal constraints, weak productivity trends, and subdued external demand, although improving macroeconomic management in some economies provides support. Sub-Saharan Africa is expected to see gradual strengthening supported by improving supply conditions and domestic demand recovery, while the Middle East and Central Asia face a more volatile outlook due to direct spillovers from conflict-related disruptions and uncertainty in commodity markets. The impact of energy supply risks, including disruptions related to the Strait of Hormuz, has increased downside risks for commodity-importing economies and vulnerable emerging markets.

Globally, inflation dynamics have become more challenging. Global headline inflation is projected to rise to 4.4% in CY 2026 from 4.1% in CY 2025, reflecting the inflationary effects of higher energy prices, supply-side disruptions, and second-round pressures. Central banks are therefore expected to remain vigilant, with policy responses remaining cautious and data dependent. While monetary easing had been expected to support demand, renewed inflation risks may delay or moderate the pace of policy normalization in several economies.

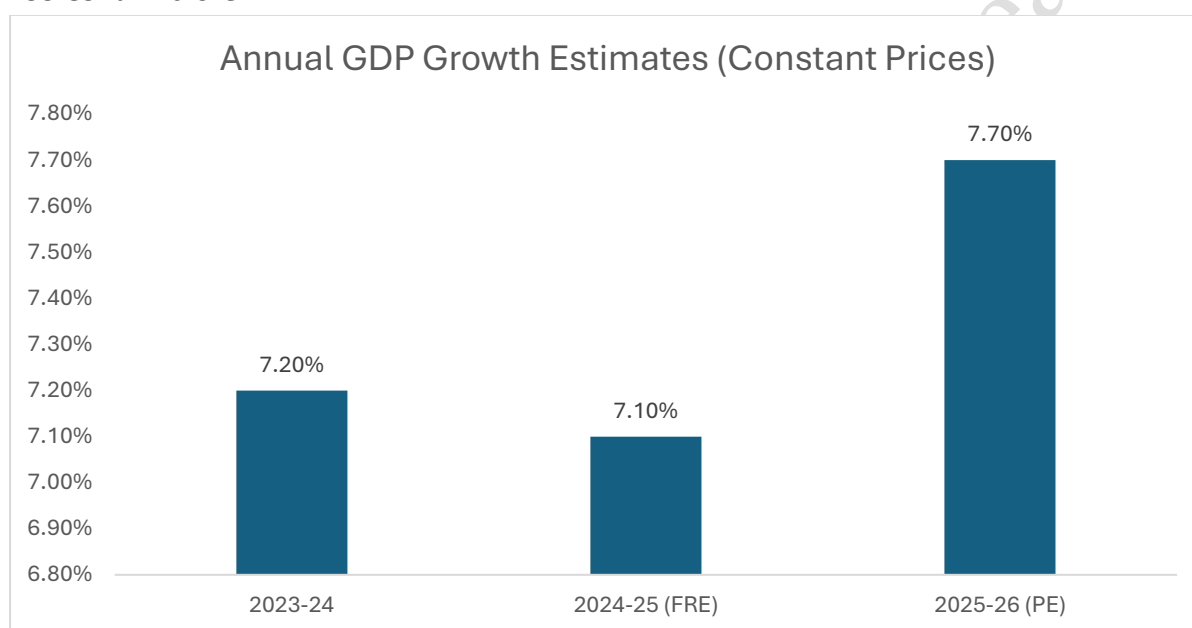
Looking ahead, the medium-term outlook remains one of slower but stable growth, with global GDP projected at 3.2% in CY 2027 and 3.1% by CY 2031, below the long-term historical average. Advanced economies are expected to remain on a structurally lower growth path, while emerging and developing economies continue to provide the primary engine of global growth. Future prospects will depend significantly on the evolution of geopolitical tensions, the normalization of energy markets, progress in restoring trade stability, and the extent to which productivity gains from technological innovation, including artificial intelligence, translate into broader economic growth. The IMF also highlights that structural reforms, multilateral coordination, and strengthened macroeconomic resilience will be critical to sustaining growth momentum over the medium term.

Overall, while the global economy remains resilient, the outlook has become more fragile amid elevated downside risks. Growth in CY 2026 and beyond is expected to remain below historical averages, shaped by geopolitical uncertainty, tighter financial conditions, and structural constraints, although emerging economies—particularly India and broader Asia—continue to provide relative support to global growth.

2. India's Macroeconomic Scenario

2.1 Gross Domestic Product (GDP)

According to the latest Provisional Estimates by MOSPI, GOI (05 June 26), Real GDP has been estimated to grow by 7.7% in FY 2025-26. Nominal GDP has witnessed a growth of 8.9%. Real GDP or GDP at Constant Prices is estimated to attain a level of INR 323.12 lakh crore in the FY 2025-26, against the First Revised Estimate (FRE) of GDP for the year 2024-25 of INR 299.89 lakh crore.



Note: FRE - First Revised Estimates; PE – Provisional Estimate

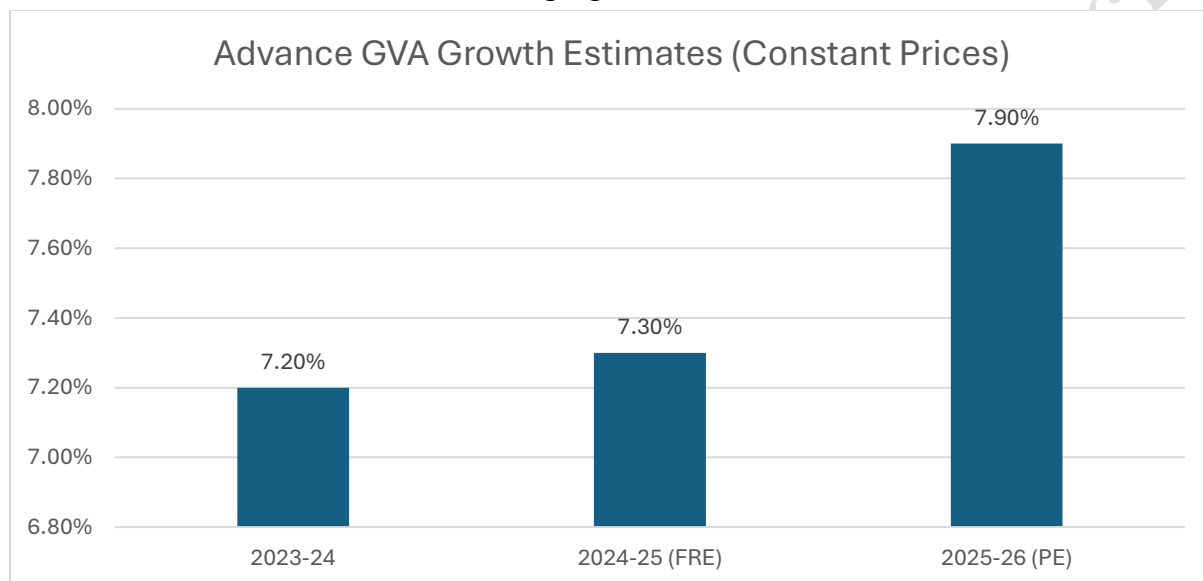
Source: New Series of Gross Domestic Product (GDP) Estimates with Base Year 2022-23 by MOSPI, PIB Press Release dated 05 June 2026).

According to the International Monetary Fund (IMF) World Economic Outlook Database (April 2026), India is estimated to be the sixth-largest economy in the world in 2026, with a Gross Domestic Product (GDP) of approximately USD 4.15 trillion at current prices. India's ranking reflects the latest national accounts data, including the revised GDP series released by the Government of India, which changed the base year from FY 2011-12 to FY 2022-23. India's position in the global ranking is influenced by the revised GDP estimates and the depreciation of the Indian Rupee against the U.S. Dollar.

The economies ranked ahead of India are the United States (USD 32.38 trillion), China (USD 20.85 trillion), Germany (USD 5.45 trillion), Japan (USD 4.38 trillion), and the United Kingdom (USD 4.26 trillion).

2.2 Gross Value Added (GVA)

According to the Provisional Estimate of GDP for 2025-26 by MOSPI, Govt. of India (GoI), Real GVA is estimated at INR 294.91 lakh crore in the year 2025-26, against INR 273.36 lakh crore in FY 2024-25, registering a growth rate of 7.9% as compared to 7.3% growth rate in 2024-25. Nominal GVA is estimated to attain a level of INR 314.87 lakh crore during FY 2025-26, against INR 288.54 lakh crore in 2024-25, showing a growth rate of 9.1%.

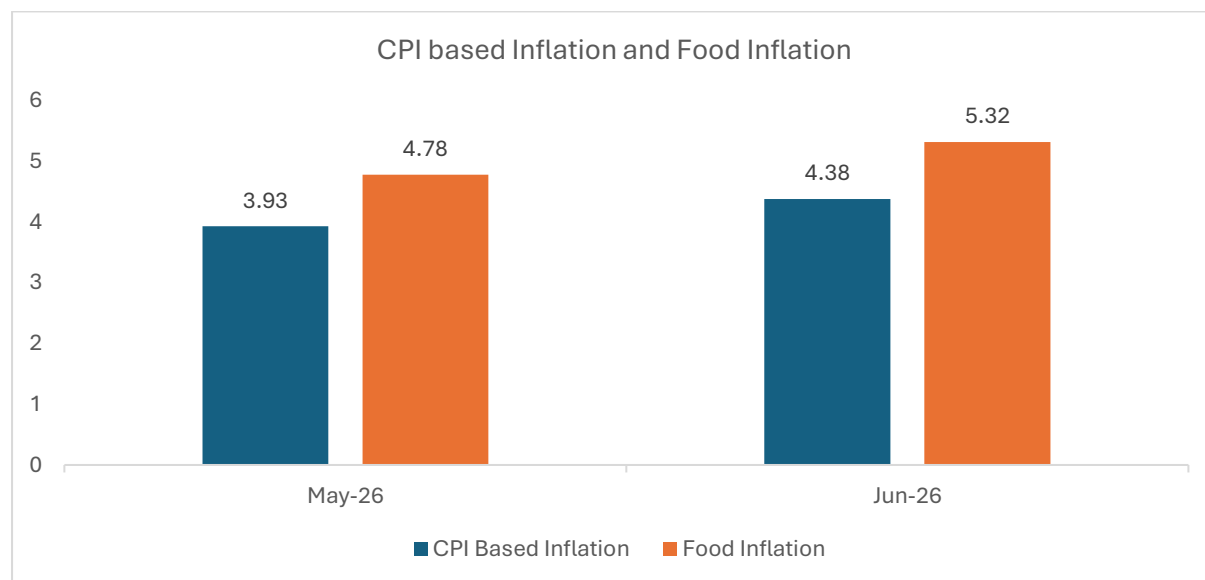


Note: FRE - First Revised Estimates; PE – Provisional Estimate

Source: New Series of Gross Domestic Product (GDP) Estimates with Base Year 2022-23 by MOSPI, PIB Press Release dated 05 June, 2026)

2.3 Consumer Price Index (CPI)

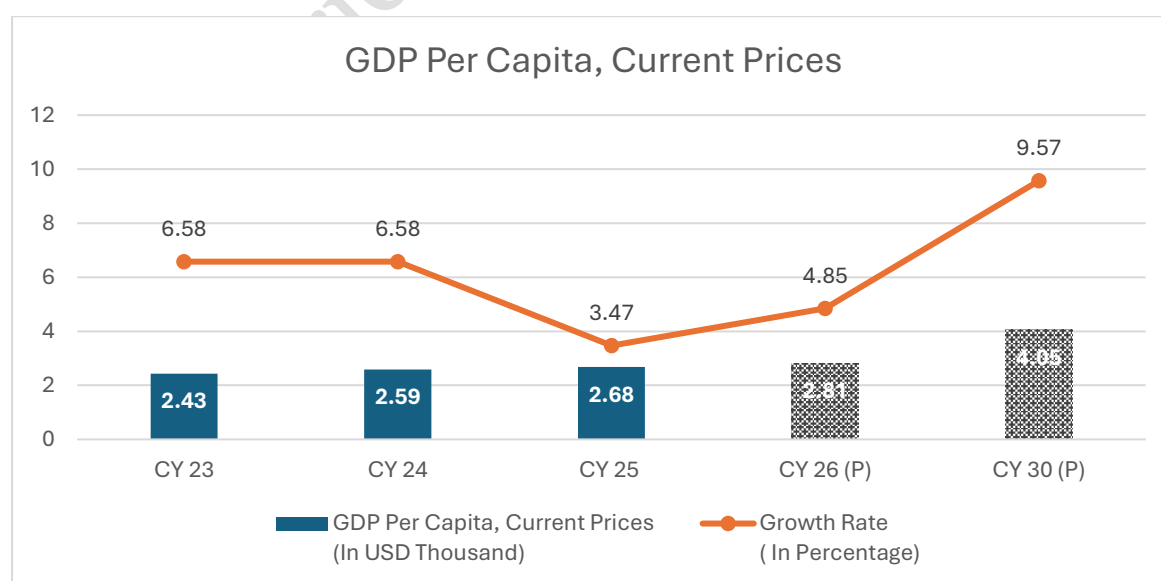
Year-on-year inflation rate based on All India Consumer Price Index (CPI) with base year 2024 for the month of June 2026 over June, 2025 is 4.38%(Provisional). Corresponding inflation rates for rural and urban are 4.74% and 3.92%, respectively.



Source: MOSPI, GOI, 13 July 2026

2.4 India Per Capita GDP Forecast

Per capita GDP growth for India is estimated at 9.57 % CAGR between FY 2026-FY 2030. Increased individual incomes are expected to create additional discretionary spending, which may be beneficial for the sector.



Note: E = Estimated, P = Projected

Source: IMF Data Mapper, World Economic Outlook April 2026, India, GDP Per Capita

2.5 Private Final Consumption Expenditure (PFCE)

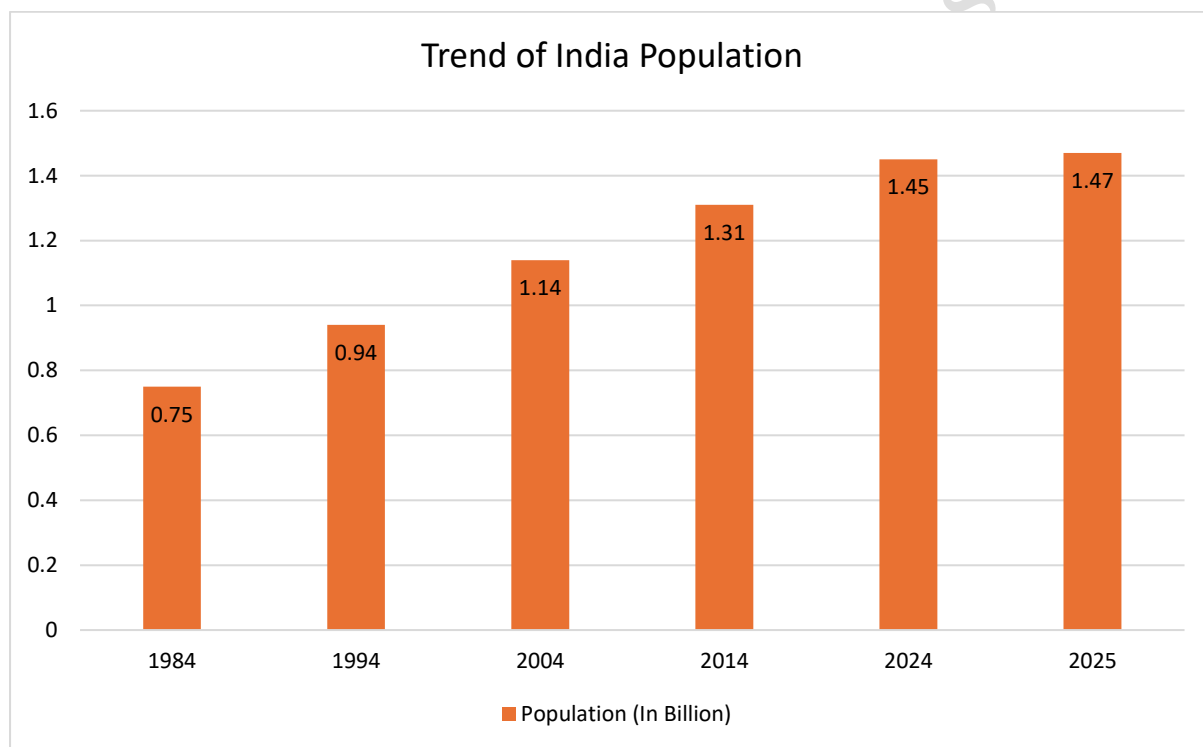
Private Final Consumption Expenditure (PFCE) represents the total spending by resident households on final consumption of goods and services, serving as a key indicator of consumer demand and overall economic well-being. It reflects the extent of household consumption and plays a crucial role in driving GDP growth. PFCE, at constant prices, accounted for 55.7% of GDP in FY2026 (same as FY2025). This marks a gradual moderation from 56.4% in FY2024 and 57.1% in FY2023, indicating a relative shift in the composition of economic growth. The decline is primarily attributable to higher changes in stocks (inventory build-up), which increased the share of investment components in GDP, even as household consumption continues to remain a key driver of the economy.

Source: - MOSPI, Press Note on New Series of GDP Estimates with Base Year 2022-23, Provisional Estimates of Annual Gross Domestic Product For 2025-26 released on June 05th, 2026.

2.6 Overview on Key Demographic Parameters

2.6.1 Population growth

India's economic trajectory and consumption dynamics are closely tied to its demographic shifts. India's population expanded from approximately 0.75 billion in 1984 to 1.45 billion in 2024 and is further reached around 1.47 billion in 2025, consolidating its position as the world's most populous nation. This sustained growth underlines the emergence of a vast labour force and consumer base, which is essential for driving long-term economic growth, supporting rising consumption demand and strengthening the country's overall economic potential.



Source: World Bank Database. Population Data 2025 - Worldometer, Infomerics Analytics & Research

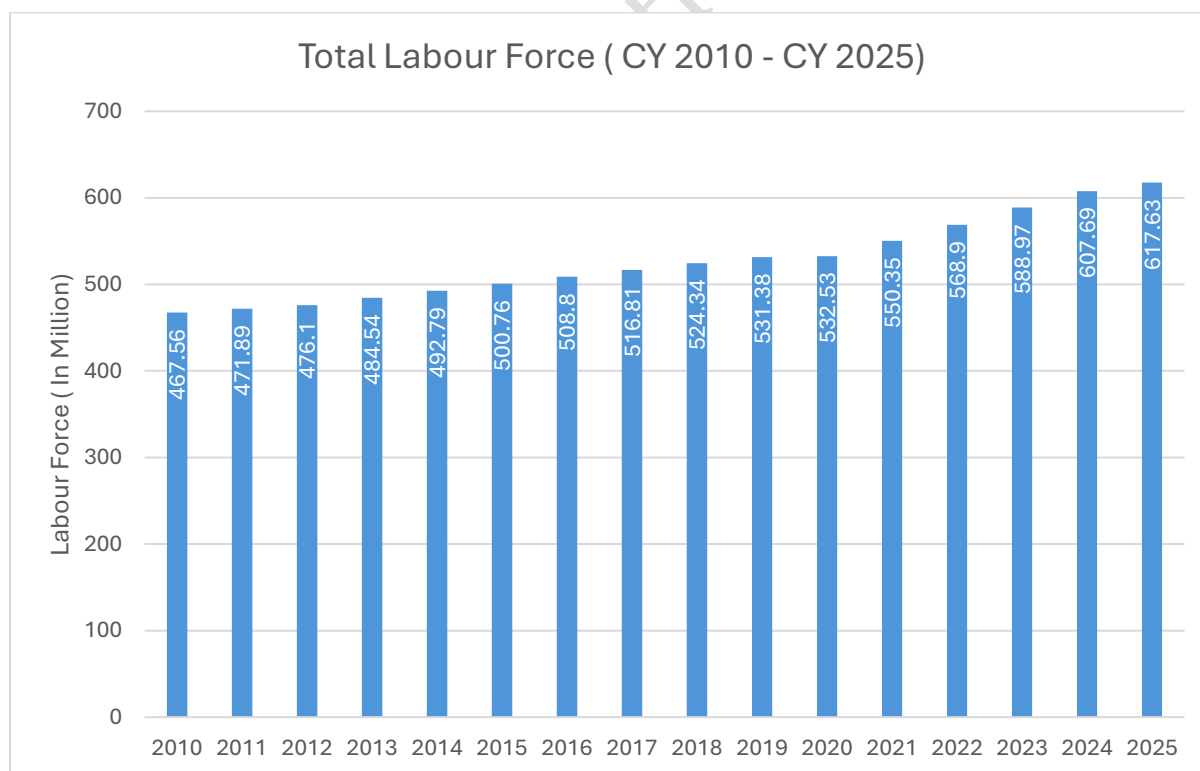
2.6.2 Labour Force in India

India's labour force has experienced steady growth over the past decade. In 2010, the total labour force was approximately 467.56 million. By 2025, this number had increased to 617.63 million.

This upward trend underscores the expanding working-age population, improving labour force participation and gradual recovery in employment post the pandemic period. The sharp increase observed after 2020 highlights the rebound in economic activity and rising workforce engagement across sectors. However, it also emphasizes the need for sustained job creation to effectively absorb the growing labour pool.

The labour force participation rate (LFPR) has also witnessed variations over time due to changing socio-economic conditions, including urbanization, education levels and sectoral employment shifts.

These trends highlight the importance of implementing policies that not only generate employment opportunities but also improve job quality, productivity and inclusivity across key sectors of the economy.



Source: World Bank Database

2.6.3 Labour Laws in India

Labour is a subject under the Concurrent List of the Indian Constitution, enabling both the Central and State Governments to frame relevant legislation. In a major reform initiative, the Government of India has consolidated 29 existing central labour laws into four comprehensive Labour Codes to simplify compliance, reduce multiplicity of definitions, and promote transparency. These include:

- The Code on Wages, 2019
- The Industrial Relations Code, 2020
- The Code on Social Security, 2020
- The Occupational Safety, Health and Working Conditions Code, 2020

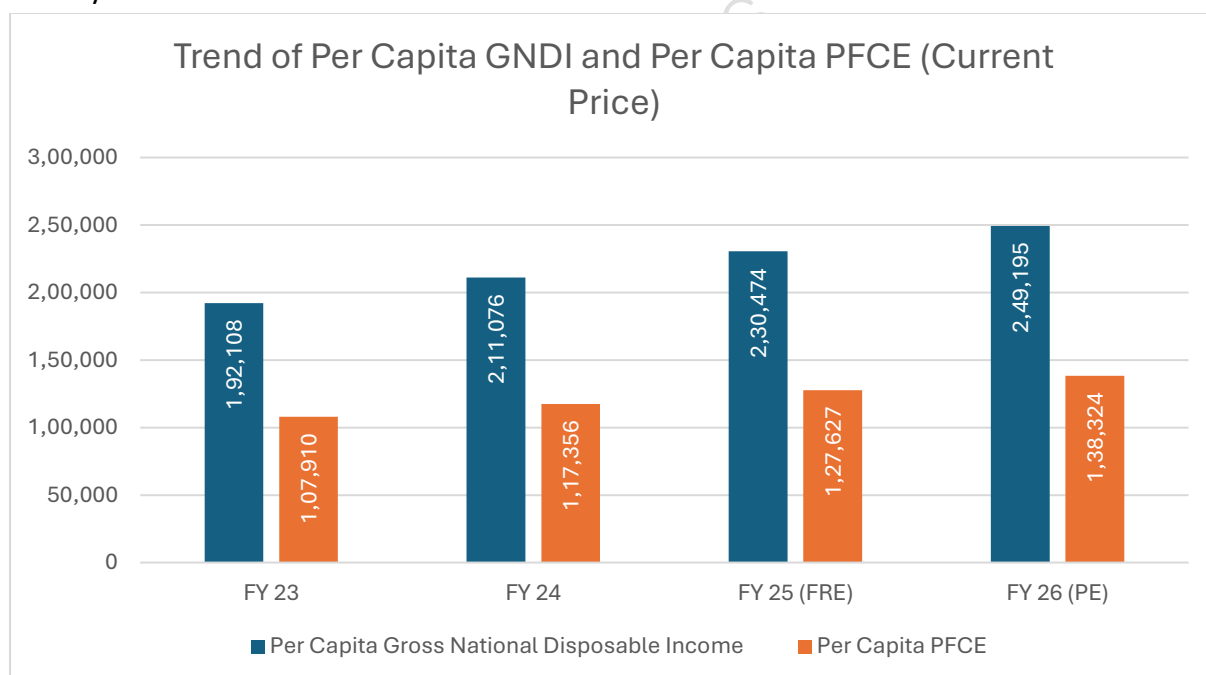
As of 31st December 2024, the Central Government and most States/Union Territories had pre-published draft rules under all four Labour Codes. Regional consultations were held to align state-level rules with the central framework. Once fully implemented, these Codes are expected to harmonize the needs of workers and industry, facilitate ease of doing business, and support employment generation.

Additionally, the Ministry of Labour & Employment is revamping the Shram Suvidha Portal to improve regulatory compliance and has launched the e-Shram Portal to register workers from the unorganised sector. Over 30 crore registrations have been completed, and the portal has been integrated with 12 key social welfare schemes, enabling targeted delivery of benefits.

2.6.4 Disposable Income and Consumer Spending

Gross National Disposable Income (GNDI) represents the total income available to a nation's residents for consumption and saving after accounting for income transfers with the rest of the world. Per Capita GNDI has exhibited a steady upward trend over the recent years, increasing from approximately INR1,92,108 in FY23 to INR 2,11,076 in FY24 and further to INR 2,49,195 in FY26 (PE). It reflects the continued growth in income available to households and businesses, supporting consumption and savings activities within the economy.

The rise in disposable income has been accompanied by higher consumer spending, as reflected in the growth of Private Final Consumption Expenditure (PFCE), which measures the total value of goods and services consumed by households. Per Capita PFCE increased from approximately INR 1,07,910 in FY23 to INR 1,38,324 in FY26 (PE). The growth of approximately 8.0% in FY26 over FY25 indicates sustained consumer demand and continued expansion in household consumption expenditure, supported by rising income levels and economic activity.



Note: Data mentioned is in INR, FRE – First Revised Estimates, PE – Provisional Estimates.

Source: PIB, New Series of Gross Domestic Product (GDP) release date on 5th June 2026. Estimates with Base Year 2022-23

2.7 Union Budget FY26-27 Highlights

The Union Budget FY 2026–27, presented by Finance Minister Nirmala Sitharaman, introduces a comprehensive set of measures aimed at stimulating economic growth, enhancing infrastructure and fostering inclusive development. With a focus on sectors such as agriculture, MSMEs, infrastructure, innovation and exports, the budget seeks to create a conducive environment for sustained economic expansion.

- **Capital Expenditure and Infrastructure Development**

In FY2026-27, the Union Budget has increased the public capex towards to INR 12.2 lakh crore from the previous INR 11.21 lakh crore (3.1% of GDP) which was earmarked in FY 2025–26. To strengthen the confidence of private developers regarding risks during infrastructure development and construction phase, the budget proposed to set up an Infrastructure Risk Guarantee Fund to provide prudently calibrated partial credit guarantees to lenders.

- **Support for MSMEs**

Recognizing the pivotal role of Micro, Small and Medium Enterprises (MSMEs) in India's economic landscape, the budget introduced a three-pronged approach to support the sector. The budget introduced a dedicated INR 10,000 crore SME Growth Fund as well as proposed to top up the Self-Reliant India Fund set up in 2021, with INR 2,000 crore to continue support to micro enterprises and maintain their access to risk capital. With TReDS, more than INR 7 lakh crore has been made available to MSMEs. To leverage its full potential, the budget further proposed four measures: (i) mandate TReDS as the transaction settlement platform for all purchases from MSMEs by CPSEs, serving as a benchmark for other corporates; (ii) introduce a credit guarantee support mechanism through CGTMSE for invoice discounting on TReDS platform; (iii) link GeM with TReDS for sharing information with financiers about government purchases from MSMEs, encouraging cheaper and quicker financing; (iv) introduce TReDS receivables as asset-backed securities, helping develop a secondary market, enhancing liquidity and settlement of transactions. Moreover, Government will facilitate Professional Institutions such as ICAI, ICSI, ICMAI to design short-term, modular courses and practical tools to develop a cadre of 'Corporate Mitras', especially in Tier-II and Tier-III towns, which will help MSMEs meet compliance requirements at affordable costs.

- **Establishment of dedicated Rare Earth Corridors**

A Scheme for Rare Earth Permanent Magnets was launched in November 2025. In line with that, the budget proposed to support the mineral-rich States of Odisha, Kerala andhra Pradesh and Tamil Nadu to establish dedicated Rare Earth Corridors to promote mining, processing, research and manufacturing.

- **Integrated Programme for the Textile Sector**

The following Schemes have been announced:

- (a) The National Fibre Scheme for self-reliance in natural fibres such as silk, wool and jute, man-made fibres and new-age fibres.
- (b) Textile Expansion and Employment Scheme to modernise traditional clusters with capital support for machinery, technology upgradation and common testing and certification centres.
- (c) A National Handloom and Handicraft programme to integrate and strengthen existing schemes and ensure targeted support for weavers and artisans.
- (d) Tex-Eco Initiative to promote globally competitive and sustainable textiles and apparels.
- (e) Samarth 2.0 to modernize and upgrade the textile skilling ecosystem through collaboration with industry and academic institutions.

- **Carbon Capture Utilization and Storage (CCUS)**

Aligning with the roadmap launched in December 2025, CCUS technologies at scale will achieve higher readiness levels in end-use applications across five industrial sectors, including, power, steel, cement, refineries and chemicals. An outlay of INR 20,000 crore is proposed over the next 5 years.

- **Municipal Bonds**

To encourage the issuance of municipal bonds of higher value by large cities, the budget proposed an incentive of INR 100 crore for a single bond issuance 10 of more than INR 1000 crore. The current scheme under AMRUT which incentivises issuances up to INR 200 crore, will also continue to support smaller and medium towns.

- **Ease of Doing Business**

Individual Persons Resident Outside India (PROI) will be permitted to invest in equity instruments of listed Indian companies through the Portfolio Investment Scheme. It is also proposed to increase the investment limit for an individual PROI under this scheme from 5% to 10%, with an overall investment limit for all individual PROIs to 24%, from the current 10%.

- **Hubs for Medical Value Tourism**

To promote India as a hub for medical tourism services, the budget proposed to launch a Scheme to support States in establishing five Regional Medical Hubs, in partnership with the private sector. These Hubs will serve as integrated healthcare complexes that combine medical, educational and research facilities. They will have AYUSH Centres, Medical Value Tourism Facilitation Centres and infrastructure for diagnostics, post-care and rehabilitation. These Hubs will provide diverse job opportunities for health professionals including doctors and AHPs.

- **Agriculture Related Schemes**

To diversify farm outputs, increase productivity, enhance farmers' incomes and create new employment opportunities, the budget announced support schemes related to high value crops such as coconut, sandalwood, cocoa and cashew in coastal areas. Agar trees in Northeast and nuts such as, almonds, walnuts and pine nuts in hilly regions will also be supported. India is the world's largest producer of coconuts.

About 30 million people, including nearly 10 million farmers, depend on coconuts for their livelihood. To further enhance competitiveness in coconut production, the Budget proposed a Coconut Promotion Scheme to increase production and enhance productivity through various interventions including replacing old and non-productive trees with new saplings/plants/varieties in major coconut growing States. A dedicated programme is proposed for Indian cashew and cocoa to make India self-reliant in raw cashew and cocoa production and processing, enhance export competitiveness and transform Indian Cashew and Indian Cocoa into premium global brands by 2030.

Further, the Central Government will partner with State Governments to promote focused cultivation and post-harvest processing to restore the glory of the Indian Sandalwood ecosystem. To rejuvenate old, low-yielding orchards and expand high-density cultivation of walnuts, almonds and pine nuts, the budget announced to support a dedicated programme to enhance farmer incomes and in bringing value addition by engaging youth.

The Union Budget FY 2026–27 presents a balanced approach to economic growth by addressing immediate consumption needs and laying the foundation for long-term sustainability. Through targeted investments in infrastructure, support for MSMEs and sector-specific initiatives, the budget aims to foster an inclusive and resilient economy. These measures are expected to create new opportunities for financial institutions, as the growing demand for investment products will provide avenues for expansion and innovation in the financial services sector.

2.8 Concluding Remarks about Macroeconomic Scenario

The major headwinds to global economic growth remain significant, including escalating geopolitical tensions, volatility in global energy and commodity markets, persistent inflationary pressures, tighter financial conditions, geoeconomic fragmentation, rising public debt, climate-related disruptions, and uncertainty surrounding the pace and impact of technological transformation. In particular, the ongoing Middle East conflict and associated risks to energy supply chains have heightened downside risks to the global outlook, while weaker trade momentum and structural productivity challenges continue to weigh on medium-term growth prospects.

Despite these challenges, India's economy remains relatively well-positioned compared to other major emerging markets. According to the IMF's April 2026 WEO, India's GDP growth is projected at 6.5% in CY 2026, maintaining its position as one of the fastest-growing major economies globally and significantly above the global growth projection of 3.1%. Key positive factors supporting India's growth include resilient domestic demand, sustained public infrastructure spending, a strengthening investment cycle, expanding digital infrastructure, and continued progress in structural reforms. Inflation, as measured by the Consumer Price Index (CPI), remained contained at 3.4% in March 2026 under the revised base year, supporting household purchasing power, although rising global oil prices and supply disruptions may pose upside risks.

India's strategic position as a manufacturing and investment destination continues to strengthen, supported by government initiatives, supply chain diversification trends, a skilled labour force, and a dynamic innovation ecosystem. Public investment is expected to remain a critical growth driver, with the Union Budget FY 2026–27 increasing capital expenditure to INR 12.21 lakh crore from INR 11.21 lakh crore in the previous year, reinforcing the government's investment-led growth strategy. In addition, the proposed Infrastructure Risk Guarantee Fund is aimed at improving private sector participation in infrastructure by mitigating project-related risks, which is expected to crowd in private investment, enhance infrastructure capacity, and support long-term productivity growth.

Private sector investment intentions are also expected to strengthen alongside public capex, while rising disposable incomes, improving rural demand, and continued policy support are likely to reinforce consumption momentum. Strengthening supply chains, expanding infrastructure capacity, and sustaining inflation stability will be critical in supporting resilience against external shocks. These factors are expected to support India's medium-term growth momentum and strengthen its ability to navigate global uncertainties.

3. Industry Definition and Scope

The Machine Tools — Metal-Cutting and Welding Equipment Manufacturing Industry forms a specialized sub-segment of India's Capital Goods sector, under the broader Engineered Goods domain, and is classified under Special-Purpose Machinery (NIC 28299). This industry designs, engineers, and manufactures precision equipment used in metal cutting, joining, forming, and fabrication, serving as a foundational enabler of India's industrial production, engineering exports, and infrastructure expansion.

The segment encompasses a comprehensive range of systems, including CNC plasma and gas profile cutting machines, pipe and plate profiling equipment, arc and plasma welding power sources, automation-based robotic welding systems, and special-purpose machinery (SPMs). Complementary offerings such as cutting torches, welding electrodes, nozzles, and consumables ensure operational reliability, accuracy, and continuity in production.

Within the Capital Goods value chain, these products contribute directly to engineering-intensive sectors such as structural steel fabrication, heavy machinery, shipbuilding, automotive components, process equipment manufacturing, and general fabrication industries. The industry's evolution is marked by increasing automation, the adoption of inverter-based digital controls, and integration of CNC and robotic technologies—driving India's transition toward intelligent and standardized manufacturing systems.

The equipment is engineered for operational resilience—withstanding fluctuating power quality, high ambient temperatures, dust exposure, and prolonged duty cycles—while adhering to domestic and international safety and quality benchmarks. This ensures consistent cutting precision, superior weld integrity, and enhanced operator safety.

Catering to both high-volume fabrication and customized prototyping or maintenance operations, the segment emphasizes energy efficiency, durability, and environmental robustness. By integrating CNC plasma cutting, welding automation, and metal fabrication solutions, this industry not only fortifies India's Capital Goods manufacturing base but also enhances its global competitiveness in engineered products.

4. Market Segmentation

The machine tools industry, specifically within metal-cutting and welding equipment manufacturing, is characterized by a well-defined segmentation structure that aids in demand analysis, capacity planning, and targeted product development across diverse user sectors.

Category	Sub-Category / Segment	Description / Insights
By Equipment Type	CNC Cutting Systems (Gantry, Miniature, Pipe Profile, Customized)	Advanced computer-controlled machines ensuring high-speed, high-precision cutting of plates, pipes, and structural profiles; essential for process optimization and repeatability in fabrication setups.
	Plasma Cutting Machines (CNC, Manual, Portable, Automation-Integrated)	Utilizes plasma arc technology for efficient and accurate cutting of conductive metals; available in stationary CNC tables or portable, semi-automatic variants to suit varying production scales.
	Gas Cutting Machines (Semi-Automatic, Portable, Shape-Cutting)	Oxy-fuel-based systems designed for thick-section steel and heavy fabrication; extensively used in shipbuilding, infrastructure, and process industry applications.
	Laser Metal Cutting Systems (Fiber, CO ₂ , CNC-Integrated)	High-precision, non-contact cutting systems enabling clean edges, minimal material distortion, and high repeatability; widely used for sheet metal, intricate profiles, and automated fabrication environments.
	Combined Fiber Laser + Plasma + Oxy-Fuel Cutting Systems (Integrated Platform)	Integrated CNC thermal cutting systems combining fiber laser, plasma, and oxy-fuel cutting heads on a common platform, enabling processing from thin sheets to ultra-thick plates without inter-asset changeover and supporting rule-based selection of cutting processes based on application requirements.
	Welding Machines (MMA, TIG, MIG/MAG CO ₂ , Submerged Arc)	Covers diode-based, thyristor-based, and inverter-driven power sources for manual and automated welding operations; adaptable across fabrication intensities and industry quality standards.

	Plasma Welding Systems (Micro Plasma, Automated, SPM-Integrated)	Precision welding systems for thin materials, pipes, and tanks, minimizing heat distortion and ensuring weld integrity; widely used in process equipment and pressure vessel manufacturing.
	Laser Welding Equipment (Fiber Laser, Robotic, Automation-Integrated)	Advanced welding solutions delivering deep penetration, narrow heat-affected zones, and high-speed operation; suited for precision assemblies, automotive components, and high-quality fabrication requirements.
	Automation & Robotic Systems (Tank Welding, H-Beam, Penstock, Rail Wagons, Tube Bends)	Automated and programmable setups integrating manipulation, seam tracking, and synchronized control; includes girth welders, longitudinal and transverse systems, and custom SPMs for complex fabrication.
	Self-Powered Next-Generation Machines	Compact, energy-efficient hybrid systems combining cutting and welding capabilities; ideal for mobile, on-site fabrication in remote or large-scale projects.
	Consumables & Accessories	Torches, electrodes, nozzles, oscillators, and related components ensuring operational continuity, reduced downtime, and consistent process quality.
By End-User Industry	Automotive & Auto Components	Automated and precise cutting and welding systems for lightweight materials and productivity improvement.
	Infrastructure & Construction	Structural steel fabrication for bridges, buildings, and urban development; focused on throughput and durability.
	Heavy Engineering & Shipbuilding	Large-format fabrication requiring integrated cutting and welding solutions for pipes and plates.
	Process Equipment & Manufacturing	Precision-driven production emphasizing configurability, process control, and strict quality compliance.
	Other Industrial Sectors	Includes consumer goods, electrical equipment, agricultural machinery, and maintenance operations using modular and portable systems.
By Geography	Western India	Strong base across Maharashtra, Gujarat, and Goa with concentration in fabrication and heavy engineering.

	Southern India	Expanding ecosystems in Chennai, Bengaluru, and Hyderabad with high demand from automotive and machinery clusters.
	Northern India	Significant manufacturing and infrastructure activity in Delhi NCR, Haryana, Punjab, and Rajasthan.
	Eastern & Central India	Emerging industrial centres driven by infrastructure expansion and manufacturing growth.
	Global / Export Markets	Market presence across South Asia, the Middle East, Africa, and Southeast Asia, reflecting growing export demand.
By Project Type	Large-Scale Production	Continuous, high-volume manufacturing typical in automotive sub-assemblies and structural steel fabrication.
	Customized / Prototype Work	Low-volume, high-precision production for aerospace, defense, and specialized machinery applications.
	Maintenance & Repair	Portable and service-oriented cutting and welding systems supporting field maintenance and equipment refurbishment.

5. Global and Indian Industry Outlook

The machine tools industry consists of metal-cutting equipment and welding systems used for precision manufacturing, operating through a value chain that includes raw materials and components, machine production, structured OEM and distributor networks, and end-use across automotive, engineering, fabrication, and general industrial applications. The product scope covers CNC and conventional metal-cutting machines—turning, milling, drilling, laser, plasma, waterjet, and EDM—along with welding technologies such as arc, MIG/MAG, TIG, laser, and automated systems. The industry is classified under NAICS 333517 (Machine Tool Manufacturing), SIC 3541 (Metal Cutting Machine Tools), and NIC 28299 (Other Special-Purpose Machinery), establishing a defined framework for assessing global and Indian market size and related import–export dynamics.

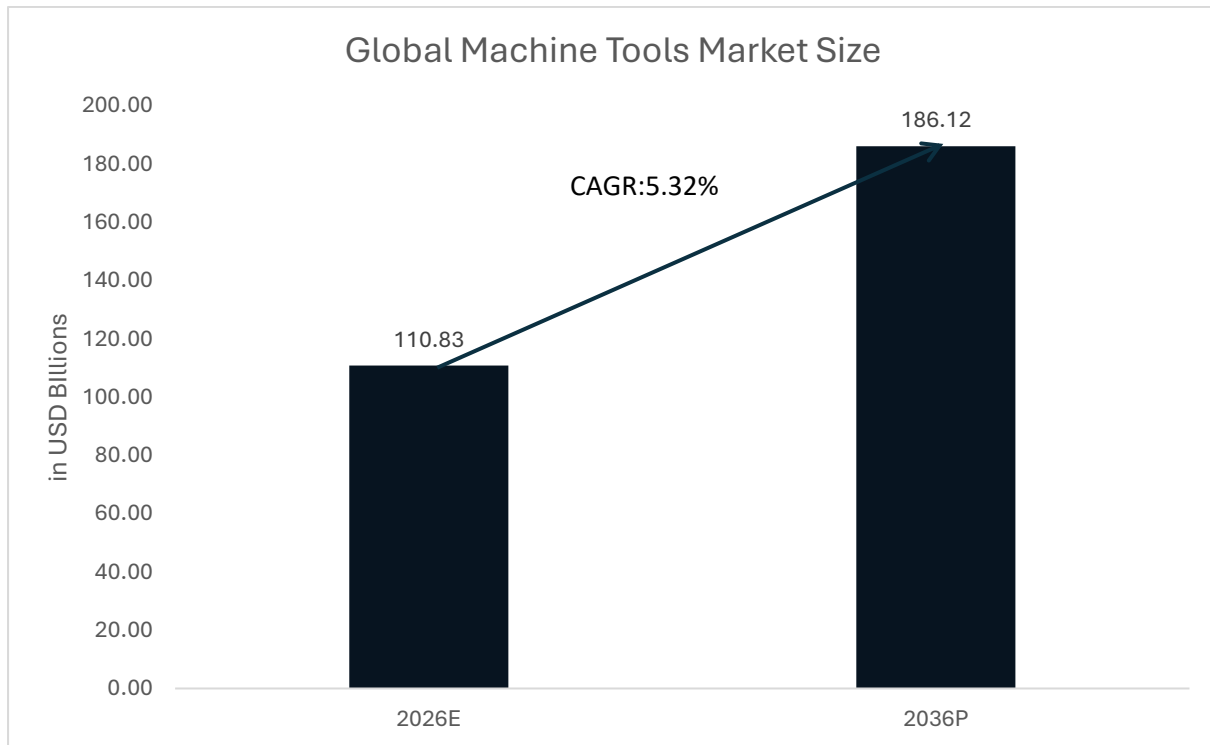
Impact of Raw Material and Component Price Fluctuations

In addition to its diversified product scope and end-use applications, the machine tools industry is sensitive to fluctuations in prices of key raw materials and components. Steel and cast-iron form a significant part of machine frames, fabricated structures, and critical assemblies, and volatility in global steel prices can directly impact manufacturing costs. In periods of elevated input prices, manufacturers may experience margin pressure, particularly where pricing revisions are constrained by competitive intensity, fixed-price contracts, or customer sensitivity to capital expenditure costs.

Further, the industry depends on electronic components such as CNC controllers, servo motors, drives, sensors, and power electronics, which are influenced by global supply–demand cycles, currency movements, and geopolitical factors. Disruptions or price increases in such components may result in cost escalation, production delays, and increased working capital requirements. While industry participants may adopt mitigation measures such as supplier diversification, selective inventory buffering, and calibrated price pass-through mechanisms, there can be no assurance that increases in input costs will be fully absorbed or passed on to customers in a timely manner.

5.1. Global Machine Tools Industry

The global machine tools market is estimated to grow from USD 110.83 billion in 2026 to approximately USD 186.12 billion by 2036, registering a compound annual growth rate (CAGR) of roughly 5.32% over the forecast period. Growth is supported by steady replacement cycles in mature markets, higher capital expenditure and automation in emerging manufacturing hubs, and broader adoption of Industry 4.0 systems.



Source: Infomerics Analytics & Research

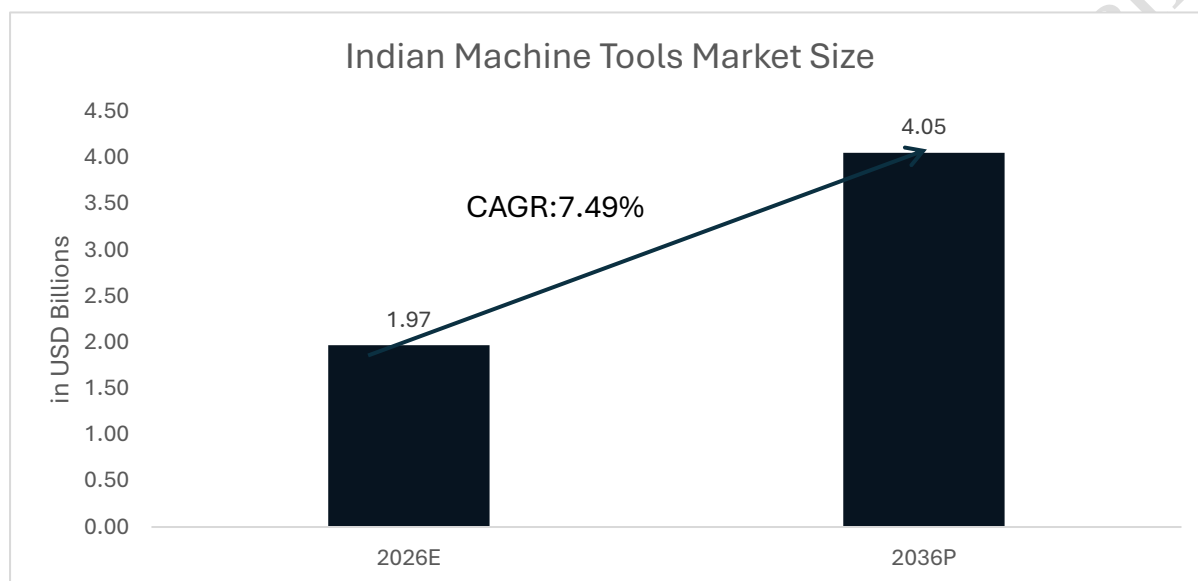
The transition toward digitally enabled, software-integrated machines is raising average unit values through enhanced controls, connectivity and data-driven productivity improvements. The industry continues to benefit from supply-chain realignments that encourage regionalised production and localized machining capabilities. Increasing demand for precision components across automotive, aerospace, electronics and capital goods further reinforces the long-term growth outlook for advanced machine-tool technologies.

Regional Analysis

- **Asia-Pacific:** The Asia-Pacific region commands the largest global share by both value and volume. China dominates installed base capacity, with Japan and Korea specializing in high-accuracy, high-value equipment. India and Southeast Asia exhibit the fastest incremental growth, underpinned by ongoing capacity expansions and localization incentives.
- **Europe:** Characterized by high unit-value sales centered in advanced technology segments—such as aerospace, medical devices, and luxury automotive. Growth remains steady and predominantly substitution-driven, with high rates of equipment replacement.
- **North America:** Growth is fueled by strategic reshoring, upgrades in defense and aerospace manufacturing, and increased adoption of flexible automation for high-mix production environments.
- **Latin America:** The market is fragmented and cyclical, closely tracking commodity price movements and infrastructure investments. Penetration of advanced machine tools remains below global averages, with sporadic growth.
- **Middle East & Africa:** Market expansion is linked to large industrial projects and diversification strategies among energy-exporting nations. While Industry 4.0 adoption lags, select strategic projects can trigger pockets of advanced demand.

5.2. Indian Machine Tools Industry

The Indian machine tools sector is entering a high-growth phase supported by sustained industrial expansion and the increasing adoption of advanced manufacturing technologies. The industry, estimated at approximately USD 1.97 billion in 2026, is projected to scale up to around USD 4.05 billion by 2036, implying a healthy CAGR of 7.49% (IBEF). Demand is being reinforced by capex revival across automotive, precision engineering, capital goods, railways, defence, and the rapidly scaling EV and component ecosystems.



Source: IBEF, Infomerics Analytics & Research

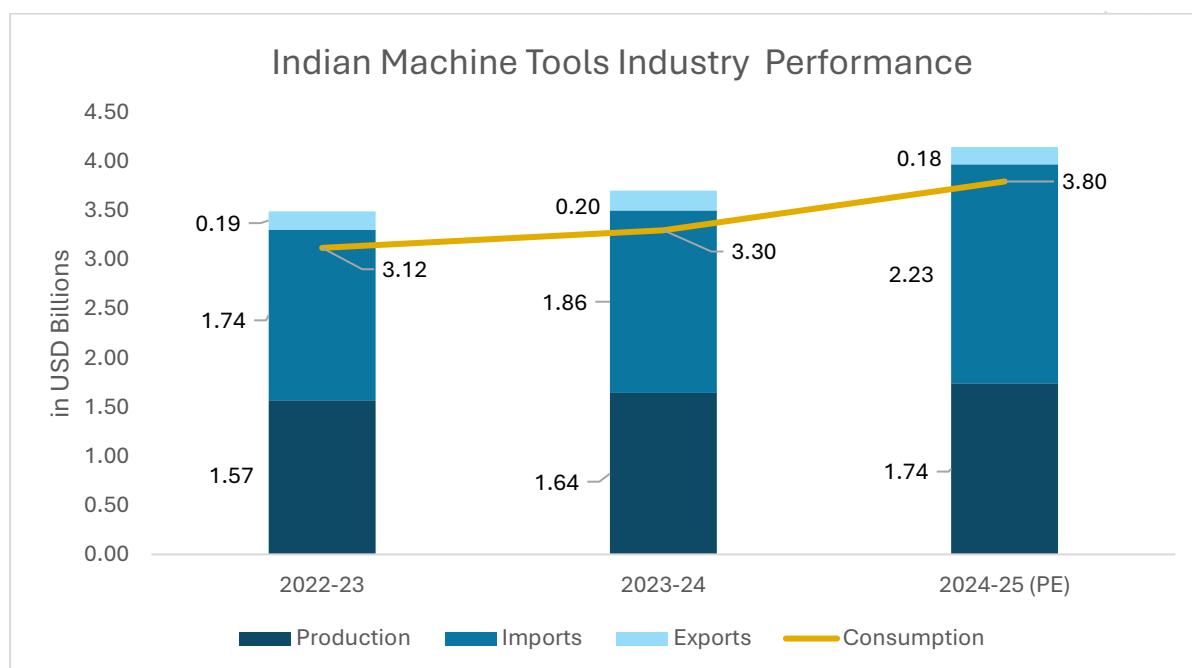
A transition is underway from legacy machinery to CNC, automated, and digitally integrated systems, reflecting rising quality benchmarks, higher throughput requirements, and the spread of Industry 4.0 solutions into both OEMs and MSMEs. This shift is being further supported by stronger domestic supply chains, indigenisation initiatives, and policy-driven incentives such as PLI schemes, duty rationalisation on machinery, and large public-sector investments in infrastructure and manufacturing capacity. These developments are enabling a steady movement toward precision-oriented, technology-intensive production, strengthening India's position in the global machining value chain. As industries pursue tighter tolerances and greater efficiency, the machine tools segment is evolving into a pivotal backbone for India's broader industrial and export competitiveness.

Regional Analysis:

- **Western and Southern Clusters:** Gujarat, Maharashtra, Tamil Nadu and Karnataka remain the core demand centres, supported by strong automotive, engineering and electronics ecosystems.
- **Northern Region:** Haryana, Punjab and Uttar Pradesh are witnessing increasing demand from auto-components, farm equipment and general engineering, supported by new industrial corridors and vendor-base expansion.

- **Emerging Tier-2/3 Locations:** Smaller industrial towns across central and northern India are upgrading conventional machinery through CNC conversions and sensor-based monitoring systems, though adoption varies with financing availability and technical capability.

Trade, Production and Consumption Trends:



Source: IMTMA Note: *PE: Provisional Estimates

The Indian machine tools market continues to strengthen, with production rising from USD 1.57 billion in 2022–23 to an estimated USD 1.74 billion in 2024–25 (PE), while consumption expanded from USD 3.12 billion to USD 3.80 billion during the same period, reflecting increased industrial automation and demand for precision machining. This persistent production–consumption gap is largely bridged through imports, which are projected to reach USD 2.23 billion in 2024–25 (PE), while exports remain relatively limited. The broader industry outlook, aligning with IBEF’s high-growth projections, reinforces these trends: total consumption stood at USD 3.30 billion in 2023–24 against domestic production of USD 1.64 billion. The resulting gap—primarily filled through imports; highlights the sector’s ongoing reliance on overseas high-precision equipment, while there is a modest export surplus of around USD 0.20 billion.

Top Importers and Exporters of Indian Machine Tools of FY'26:

Country /Region	Export Value (USD \$ Millions)	Share (%)	Country /Region	Import Value (USD \$ Millions)	Share (%)
 UAE	3.56	18.80%	 China	97.61	35.02%
 U S A	2.17	11.46%	 Germany	34.35	12.32%
 Russia	2.14	11.30%	 Japan	26.64	9.56%
 Turkey	1.61	8.50%	 Singapore	17.67	6.34%
 Japan	1.19	6.28%	 Thailand	15.64	5.61%

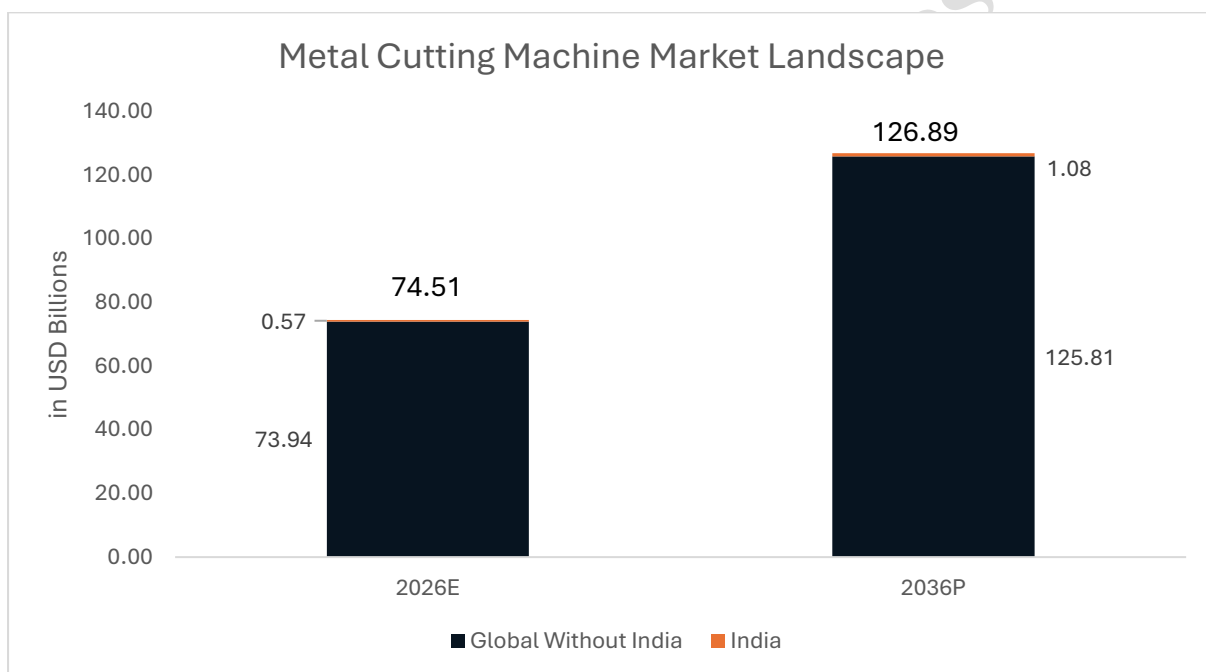
Source: MEIDB, Infomerics Analytics & Research

India's machine tool trade structure continues to exhibit a clear asymmetry between its import and export bases. Imports remain highly concentrated, with China accounting for 35.02% of total import value (USD 97.61 million), followed by Germany (12.32%) and Japan (9.56%), reflecting the country's dependence on technologically advanced and high-precision machine tools. Exports, in contrast, are relatively modest and more geographically diversified, led by the UAE with an 18.80% share (USD 3.56 million), followed by the USA (11.46%) and Russia (11.30%). This trade pattern underscores India's continued reliance on imports for sophisticated machine tools, while maintaining a diversified, albeit smaller, export presence across key international markets.

5.2 Metal Cutting Machine Market Landscape

Metal cutting technologies encompass plasma cutting machines, CNC plate- and pipe-cutting systems, laser cutting machines and integrated automation platforms that enable high-precision fabrication. These systems form a critical layer of advanced manufacturing, delivering accuracy, repeatability and throughput required across automotive, engineering, rail, defence, construction equipment and wider industrial applications.

The global metal-cutting machine market is projected to increase from USD 73.94 billion in 2026 to USD 125.81 billion in 2036, at a 5.47% CAGR. Growth continues to be anchored in rising automation intensity, precision manufacturing requirements, and wider adoption of CNC-enabled cutting solutions across major production economies.



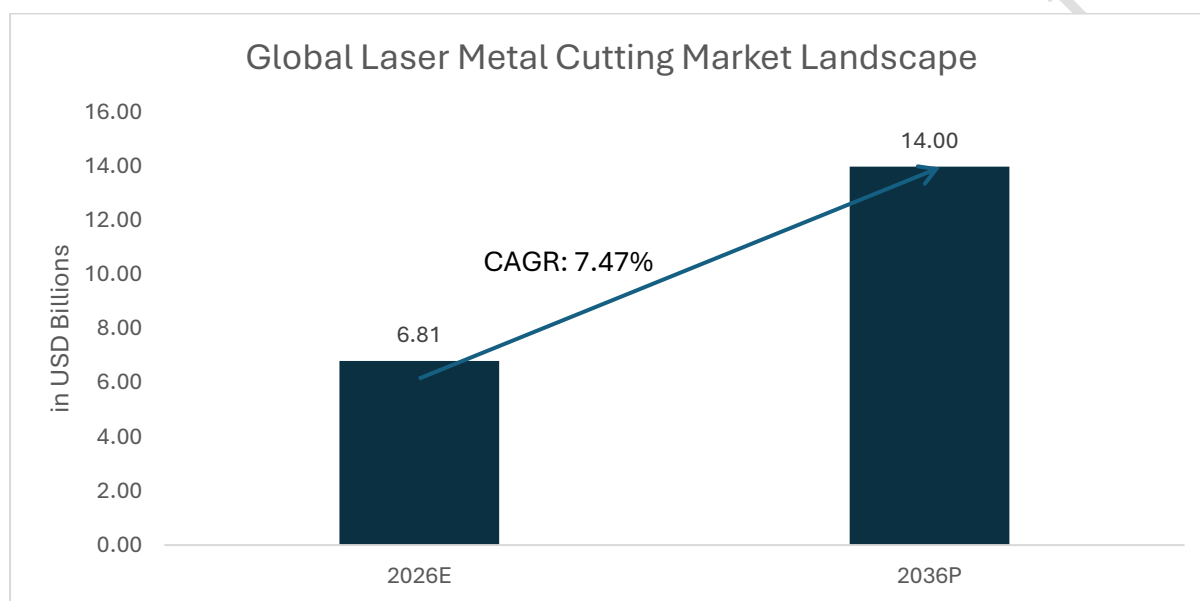
Source: Infomerics Analytics & Research

India's metal-cutting machine market is expected to expand from USD 0.57 billion in 2026 to USD 1.08 billion in 2036, recording a 6.61% CAGR. Growth is driven by capacity additions in fabrication clusters, increased adoption of CNC and digital cutting systems, and higher precision requirements in automotive, engineering, and capital goods manufacturing. The sector is witnessing a gradual shift from conventional cutting platforms toward CNC plasma, laser and hybrid systems as industrial users upgrade throughput, accuracy, and automation levels.

Across both global and domestic markets, the segment continues to evolve toward digitally integrated, energy-efficient, and high-precision cutting solutions. Differentiation increasingly arises from process automation, accuracy, and system reliability, with advanced laser and multi-axis systems representing the technologically intensive tier, while plasma and mid-range CNC systems reflect broader adoption in volume-oriented fabrication.

5.2.1. Laser-Metal Cutting Market Landscape

The global laser metal-cutting equipment market is expected to expand from USD 6.81 billion in 2026 to USD 14.00 billion by 2036, reflecting a 7.47% CAGR. Growth is supported by rising precision-fabrication requirements, automation-led manufacturing upgrades, and increasing deployment of high-speed cutting systems across automotive, electronics, capital goods, and engineered components. The move toward thin-gauge materials, complex geometries, and higher dimensional accuracy continues to strengthen the preference for fiber-laser cutting over mechanical and conventional thermal alternatives.



Source: Infomerics Analytics & Research

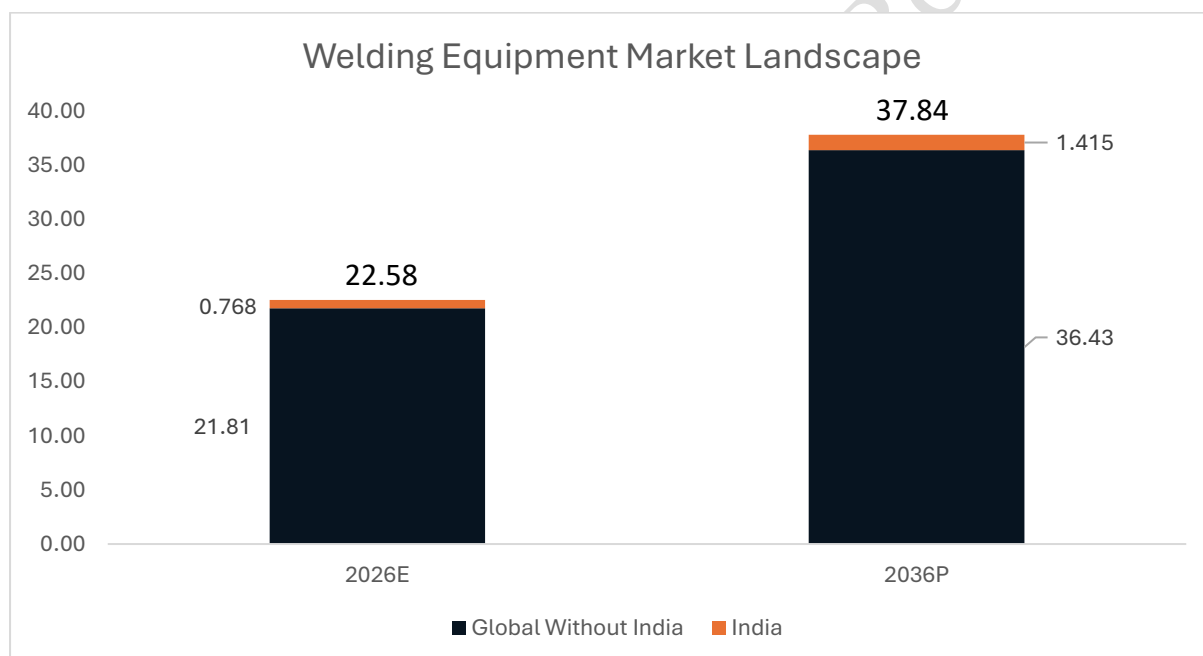
In India, demand is being driven by policy-led industrial expansion, including PLI schemes in electronics, automotive components, and advanced manufacturing. Tier-1 and Tier-2 suppliers are adopting laser cutting for EV assemblies, chassis structures, electronic housings, appliance enclosures, and customised sheet-metal fabrication. Benefits such as higher throughput, improved edge quality, reduced finishing, and better material utilization are accelerating the transition from conventional cutting systems.

Modernization among MSMEs and investment in automated fabrication lines are broadening adoption across job shops and mid-sized manufacturers. Usage is increasing in engineering equipment, white goods, metal furniture, infrastructure components, and export-oriented fabrication. Growing domestic integration of CNC controls, motion systems, and optical subsystems is enhancing ecosystem capability and gradually supporting import substitution in critical laser-cutting technologies.

5.3 Welding Equipment Market Landscape:

Welding equipment comprises welding machines, laser welding systems and automation platforms used across multiple welding technologies, including MIG, TIG, arc, plasma and laser welding. These systems support structural fabrication, component joining and high-volume production requirements in automotive, engineering, construction, shipbuilding, petrochemicals, heavy machinery and broader industrial applications.

The global welding equipment market is estimated to expand from USD 22.58 billion in 2026 to USD 37.84 billion in 2036, reflecting a 5.30% CAGR. Market growth is supported by increasing welding intensity in infrastructure, industrial manufacturing and engineered products, alongside wider adoption of automated and high-precision welding systems across major production economies.



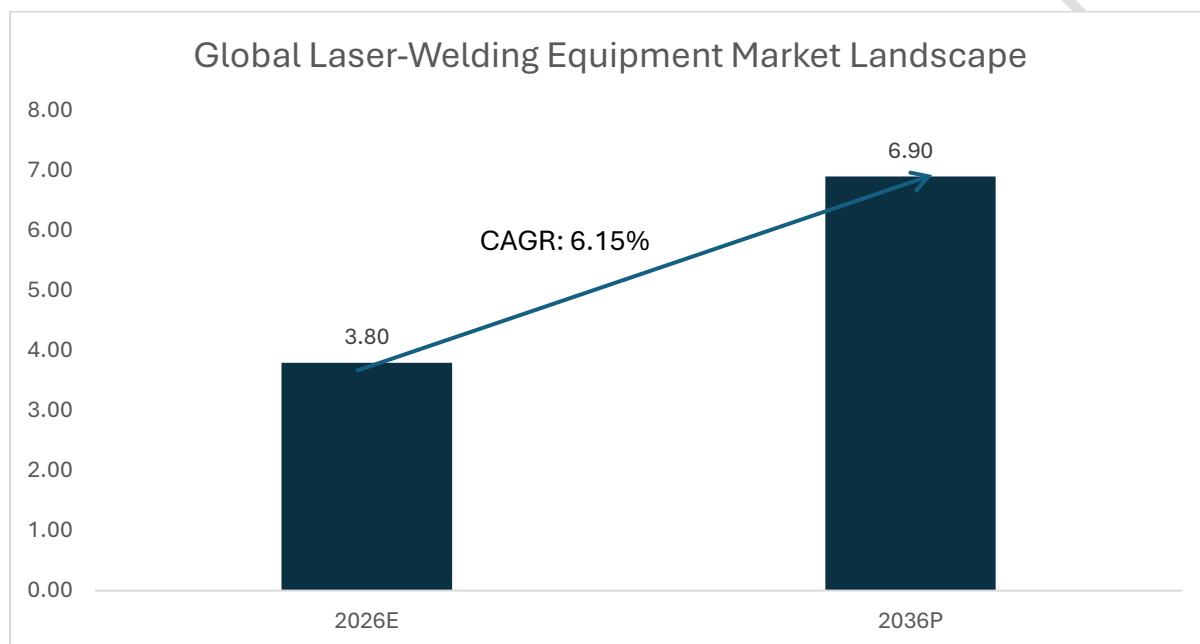
Source: Infomerics Analytics & Research

India's welding equipment market is projected to increase from USD 0.77 billion in 2026 to USD 1.42 billion in 2036, at a 6.30% CAGR. Growth is driven by capacity additions in infrastructure, transport equipment, automotive, capital goods and industrial fabrication, as end users adopt higher-throughput and precision-oriented welding systems in line with expanding project and manufacturing requirements.

The welding equipment segment is witnessing a gradual shift toward higher-accuracy and automation-enabled platforms, supported by requirements for consistency, productivity and quality in industrial fabrication. Advancements in welding processes and equipment design are broadening applicability across sectors and strengthening performance in complex and large-scale manufacturing environments.

5.3.1 Laser-Welding Equipment Market Landscape

The global laser-welding equipment market is expected to expand steadily, increasing from USD 3.80 billion in 2026E to USD 6.90 billion by 2036P, implying a 6.15% CAGR. Growth is supported by rising precision-manufacturing needs, automation-led productivity requirements, and long-term industrial capex cycles. Laser-welding systems are gaining wider application across automotive, electronics, capital goods, engineered components, and advanced material processing due to their accuracy, thermal efficiency, and suitability for high-volume operations.



Source: Infomerics Analytics & Research

In India, demand is being accelerated by policy-driven industrial expansion. Production-Linked Incentive (PLI) schemes across electronics, automotive components, EVs, and specialty materials are prompting Tier-1 and Tier-2 suppliers to adopt high-precision welding technologies. The shift toward lighter materials, complex geometries, and standardized component platforms is further supporting the transition from conventional arc and resistance welding to laser-based solutions.

Industry modernization, particularly within MSMEs, is also strengthening adoption. Use cases are increasing in automotive assemblies, battery enclosures, electronic housings, white goods, and engineered structures, where laser welding enables narrow heat-affected zones, strong joint integrity, and reduced finishing requirements. Domestic integration of CNC controls, optics, and motion systems, along with ongoing import substitution, is gradually enhancing the local ecosystem.

6. Market Dynamics

6.1 Key Growth Drivers

The Machine Tools — Metal-Cutting and Welding Equipment Manufacturing Industry is positioned for sustained growth, underpinned by increasing industrialization, infrastructure expansion, and adoption of advanced manufacturing technologies. Demand is shaped by both structural enablers and market-specific drivers, encompassing domestic fabrication needs, global export opportunities, and technological evolution toward automation and process efficiency.

Market Drivers and Impact Assessment

(All values represent directional impact based on industry estimates and qualitative analysis)

Drivers	Impact		
	1-2 Years	3-4 Years	5-7 Years
1. Technological innovation and automation integration	Medium	High	High
2. Rapid infrastructure and industrial expansion	High	High	High
3. Adoption of lightweight and high-strength materials	Medium	High	High
4. Policy support and Make in India initiatives	High	High	High
5. Skilled labor shortage driving automation	Medium	High	High
6. Expansion of aftermarket services and consumables	Medium	Medium	High

Source: Infomerics Analytics and Research

Detailed Commentary on Key Growth Drivers

1. Technological Innovation and Automation Integration

The segment is experiencing rapid adoption of advanced technologies, including inverter-based welding power sources, robotic welding systems, CNC plasma cutting machines, laser cutting, and integrated automation cells. These innovations increase precision, reduce cycle times, and enhance operational reliability. Integration of Industry 4.0 technologies, such as IoT-enabled real-time monitoring, AI-based predictive maintenance, and digital process controls, allows manufacturers to optimize throughput and minimize downtime. Over the medium term, equipment with automation and digital capabilities is expected to capture higher market share as fabrication units seek efficiency gains and reduced dependence on operator skill variability.

2. Rapid Infrastructure and Industrial Expansion

Growth in urbanization, construction projects, and industrial corridors across India and emerging economies continues to drive demand for welding and cutting machinery. Structural steel fabrication for buildings, bridges, transportation infrastructure, and heavy machinery manufacturing represents a sustained volume-driven market. Concurrently, expansion in automotive, shipbuilding, and process equipment industries fuels demand for high precision cutting and welding equipment. The domestic and global market outlook is shaped by capital investments, industrial diversification, and the replacement of aging equipment.

3. Adoption of Lightweight and High-Strength Materials

Automotive, aerospace, and energy sectors increasingly employ advanced alloys and composites to meet fuel efficiency, safety, and performance standards. These materials require specialized welding and cutting solutions capable of maintaining dimensional accuracy, reducing thermal distortion, and optimizing joint integrity. Demand for CNC plasma cutting, robotic welding, and precise arc welding systems is consequently rising, positioning technologically sophisticated equipment as a preferred choice among end-users focused on quality and productivity.

4. Policy Support and Make in India Initiatives

Government programs such as Make in India, defense modernization, and domestic industrial capacity-building schemes support localized manufacturing and equipment adoption. Regulatory focus on industrial safety, quality standards, and environmental compliance further reinforces demand for welding and fabrication machinery that aligns with domestic certifications and international norms. Over the medium term, policy-driven procurement in public infrastructure, defense, and industrial sectors is expected to maintain high industry growth momentum.

5. Skilled Labor Shortage Driving Automation

Shortages of qualified welders and fabricators, both in India and globally, create pressure for automation adoption. Semi-automatic and fully automated welding and cutting solutions allow companies to maintain consistent quality and productivity while mitigating the risk of operator errors. User-friendly interfaces, guided workflows, and process automation reduce dependency on operator skill levels, enabling faster deployment and scalability across fabrication facilities. This trend also supports a shift toward solutions offering integrated cutting and welding operations, enhancing overall shop-floor efficiency.

6. Expansion of Aftermarket Services and Consumables

The growing installed base of welding and cutting equipment generates recurring demand for consumables—plasma torches, welding electrodes, nozzles—and services such as maintenance, retrofits, and upgrades. Manufacturers emphasizing durability, operational reliability, and robust service networks can strengthen customer retention and revenue streams. Integration of consumable supply and service capabilities within vendor offerings enhances total cost of ownership (TCO) propositions, particularly for high-throughput industrial clients.

6.2 Market Restraints

The Machine Tools — Metal-Cutting and Welding Equipment Manufacturing Industry faces several structural, operational, and regulatory challenges that may moderate growth, profitability, and adoption timelines. These constraints span financial intensity, industry fragmentation, workforce availability, and compliance requirements.

Market Restraints and Impact Assessment

(All values represent directional impact based on industry estimates and qualitative analysis)

Restraint	Impact		
	1-2 Years	3-4 Years	5-7 Years
1. High Capital Investment and Upfront Costs	High	Medium	Medium
2. Fragmented Industry Structure and Standardization Gaps	Medium	High	High
3. Skilled Labor Shortages and Training Gaps	Medium	High	High
4. Regulatory Compliance and Environmental Challenges	High	High	Medium

Source: Infomerics Analytics and Research

Detailed Restraint Commentary

1. High Capital Investment and Upfront Costs

Advanced machinery—including CNC cutting systems, plasma and gas profile machines, integrated automation cells, and robotic welders—requires significant upfront investment. Small and medium enterprises (SMEs) may find these costs prohibitive, constraining near-term adoption and slowing overall market expansion.

2. Fragmented Industry Structure and Standardization Gaps

The fabrication industry, particularly in India, is highly fragmented with numerous small-scale operators using older or semi-manual equipment. This results in variability in product quality, pricing, and process efficiency, limiting the widespread adoption of modern welding and cutting technologies and compliance with international standards.

3. Skilled Labor Shortages and Training Gaps

Despite increasing automation, operating, maintaining, and optimizing sophisticated machinery demands skilled personnel. Shortages of trained welders, operators, and service engineers, both domestically and globally, restrict operational efficiency, productivity, and uptime.

4. Regulatory Compliance and Environmental Challenges

Evolving industrial safety, energy efficiency, and environmental standards impose additional costs on manufacturers and end-users. Compliance requirements, including safe handling of equipment, emissions control, and energy-efficient operation, can delay technology upgrades, replacement cycles, and expansion, especially among smaller or resource-constrained enterprises.

7. Government Initiatives and Policy Support

The Indian Machine Tools—Metal-Cutting and Welding Equipment Manufacturing Industry operates within a policy framework focused on strengthening the capital goods sector, promoting domestic manufacturing, encouraging technology adoption, facilitating exports, enhancing product quality and standardisation, and developing a skilled manufacturing workforce. Government initiatives led by the Ministry of Heavy Industries (MHI), Ministry of Commerce & Industry, Directorate General of Foreign Trade (DGFT), Ministry of Skill Development & Entrepreneurship (MSDE), and the Bureau of Indian Standards (BIS) continue to support investment, industrial modernisation, technology upgradation, product quality and standardisation, and export competitiveness across the capital goods and engineering sectors. At the same time, the regulatory framework emphasises product quality and standardisation, occupational safety, environmental compliance, labour welfare, and trade facilitation. Manufacturers of CNC machine tools, plasma and laser cutting systems, welding equipment, robotic welding cells, and fabrication machinery are required to comply with applicable quality standards, environmental regulations, labour laws, and export requirements to remain competitive in both domestic and international markets.

Key Government Initiatives and Policy Support

Policy / Initiative	Policy Details	Industry Impact
Make in India Initiative	Launched in 2014, the Make in India Initiative promotes domestic manufacturing, investment, innovation, technology transfer, and ease of doing business across priority manufacturing sectors, including capital goods and heavy engineering.	- Encourages domestic manufacturing of machine tools, welding equipment, and fabrication machinery. - Supports localisation, capacity expansion, investment, and import substitution across the engineering sector.
National Capital Goods Policy, 2016	The National Capital Goods Policy seeks to strengthen India's capital goods manufacturing ecosystem by increasing domestic production, improving technology depth, promoting exports, encouraging research and development, and	- Supports indigenous development of advanced machine tools and welding equipment. - Promotes technology upgradation, higher value addition, export

	enhancing skill development to improve global competitiveness.	competitiveness, and expansion of domestic manufacturing capabilities.
Scheme for Enhancement of Competitiveness in the Indian Capital Goods Sector	Implemented by the Ministry of Heavy Industries, the scheme supports Common Engineering Facility Centres (CEFCs), Centres of Excellence, technology acquisition, testing infrastructure, and advanced manufacturing capabilities to improve the competitiveness of the capital goods sector.	- Facilitates technology upgradation, precision manufacturing, product development, and access to common testing and design infrastructure. - Strengthens innovation and manufacturing capabilities across the machine tools ecosystem.
SAMARTH Udyog Bharat 4.0	Promoted by the Ministry of Heavy Industries, SAMARTH Udyog Bharat 4.0 encourages adoption of Industry 4.0 technologies through Smart Advanced Manufacturing and Rapid Transformation Hubs (SAMARTH), demonstration centres, and digital manufacturing initiatives supporting automation, Industrial Internet of Things (IIoT), artificial intelligence (AI), robotics, and smart manufacturing practices.	- Accelerates adoption of automation, smart manufacturing, and digital production technologies. - Improves manufacturing precision, productivity, operational efficiency, and product quality.
Skill India Mission & National Apprenticeship Promotion Scheme (NAPS)	Implemented by the Ministry of Skill Development & Entrepreneurship, these initiatives promote industry-oriented skill development, apprenticeship training, and workforce development across manufacturing and engineering sectors.	- Enhances the availability of skilled welders, machinists, CNC operators, fabrication technicians, and maintenance personnel. - Supports higher productivity, operational efficiency, and safe operation of advanced manufacturing equipment.
Foreign Trade Policy (FTP) 2023 & Export	The Foreign Trade Policy (FTP) 2023 promotes export competitiveness and	Facilitates technology upgradation through

Promotion Capital Goods Scheme (EPCG)	trade facilitation. Under the Export Promotion Capital Goods (EPCG) Scheme, manufacturers may import capital goods at concessional customs duty, subject to prescribed export obligations under the policy.	access to advanced manufacturing equipment. • Supports export-oriented manufacturing, productivity enhancement, and international competitiveness.
Quality Control Orders (QCOs) & Bureau of Indian Standards (BIS)	Quality Control Orders (QCOs) issued under the BIS Act, 2016 prescribe mandatory quality standards for notified products to improve manufacturing quality, standardisation, consumer safety, and product reliability.	• Promotes product quality, standardisation, and regulatory compliance. • Enhances product reliability, customer confidence, and competitiveness in domestic and export markets.

Regulatory and Compliance Framework

Regulatory Area	Regulatory Details	Industry Relevance
Bureau of Indian Standards (BIS) Act, 2016	Provides the legal framework for the formulation and enforcement of Indian Standards and implementation of Quality Control Orders (QCOs) for notified products.	• Supports product quality, standardisation, testing, and regulatory compliance across manufacturing operations.
Foreign Trade Policy (FTP) 2023	Provides the framework governing India's exports, imports, export promotion schemes, trade facilitation measures, and export authorisations administered by the Directorate General of Foreign Trade (DGFT).	• Supports export competitiveness and facilitates access to imported capital goods and advanced manufacturing technologies.
Environment (Protection) Act, 1986; Air	Establish the environmental regulatory framework governing industrial emissions, waste	• Promotes environmentally responsible manufacturing practices and compliance with

(Prevention and Control of Pollution) Act, 1981; and Water (Prevention and Control of Pollution) Act, 1974	management, hazardous substances, pollution control, and environmental compliance applicable to manufacturing facilities.	applicable pollution control requirements.
Factories Act, 1948 / Occupational Safety, Health and Working Conditions Code, 2020	Governs occupational safety, health, welfare, and working conditions in manufacturing establishments. The Occupational Safety, Health and Working Conditions Code, 2020 has been enacted and will become operational upon notification by the appropriate governments.	Establishes workplace safety requirements for machine tool manufacturing, welding operations, fabrication activities, and industrial production facilities.
Labour Codes	India's labour regulatory framework has been consolidated through the Code on Wages, 2019, the Industrial Relations Code, 2020, the Code on Social Security, 2020, and the Occupational Safety, Health and Working Conditions Code, 2020 to simplify labour compliance, strengthen worker protection, and promote efficient industrial relations upon implementation.	Supports workforce welfare, labour compliance, and efficient industrial operations.
Regulation (EU) 2023/1230 on Machinery (Export Market Relevance)	Regulation (EU) 2023/1230 establishes harmonised health and safety requirements for the design and construction of machinery, including requirements relating to software, cybersecurity, and digital technologies, for products placed on the European Union market. It replaces Machinery Directive 2006/42/EC with effect from 20 January 2027.	Relevant for Indian manufacturers exporting CNC machine tools, automated cutting systems, welding equipment, and industrial machinery by supporting compliance with applicable European Union market access, product safety, and conformity assessment requirements.

The policy environment for the Indian Machine Tools—Metal-Cutting and Welding Equipment Manufacturing Industry remains supportive, with continued emphasis on strengthening domestic manufacturing, encouraging technology adoption, improving product quality and standardisation, promoting exports, and developing a skilled manufacturing workforce. Initiatives such as the Make in India Initiative, the National Capital Goods Policy, 2016, the Scheme for Enhancement of Competitiveness in the Indian Capital Goods Sector, SAMARTH Udyog Bharat 4.0, the Skill India Mission, and the Foreign Trade Policy (FTP) 2023 collectively support industrial modernisation and enhance the competitiveness of India's capital goods manufacturing ecosystem.

At the same time, manufacturers operate within an evolving regulatory framework governing product quality, occupational safety, environmental compliance, labour welfare, and international market access. Industry participants that invest in advanced manufacturing technologies, maintain robust quality management systems, comply with applicable regulatory requirements, and strengthen export capabilities are generally better positioned to benefit from increasing demand across domestic and international industrial markets.

Sources: Ministry of Heavy Industries (National Capital Goods Policy, Scheme for Enhancement of Competitiveness in the Indian Capital Goods Sector, SAMARTH Udyog Bharat 4.0); Department for Promotion of Industry and Internal Trade (Make in India Initiative); Directorate General of Foreign Trade (Foreign Trade Policy 2023, Export Promotion Capital Goods Scheme); Ministry of Skill Development & Entrepreneurship (Skill India Mission, National Apprenticeship Promotion Scheme); Bureau of Indian Standards (BIS Act, 2016); Ministry of Labour & Employment (Labour Codes, Occupational Safety, Health and Working Conditions Code, 2020); Ministry of Environment, Forest and Climate Change; Official Journal of the European Union (Regulation (EU) 2023/1230).

8. Technology & Digital Transformation

The Machine Tools — Metal-Cutting and Welding Equipment Manufacturing Industry is increasingly integrating advanced manufacturing and digital technologies to enhance operational precision, efficiency, and global competitiveness. These transformations encompass smart factory adoption, automation innovations, AI-driven quality assurance, digital simulation, energy efficiency, and digital compliance, enabling manufacturers to meet evolving domestic and international requirements.

1. Industry 4.0 and Smart Factory Adoption

Integration of IoT, AI, machine learning, and cloud-based solutions enables interconnected manufacturing ecosystems with real-time production monitoring, predictive maintenance, and process optimization.

Industry Impact: Facilitates adoption of advanced manufacturing processes, improves production planning and efficiency, and prepares the workforce for high-technology operations.

2. Advanced Automation and Robotics

Automated robotic welding, plasma cutting, and material handling systems enhance throughput, consistency, and workplace safety. Collaborative robots (cobots) allow SMEs to deploy flexible and cost-effective automation solutions.

Industry Impact: Reduces process variability, increases operational efficiency, and enables scalable, high-quality production for domestic and export markets.

3. Artificial Intelligence and Machine Vision for Quality Assurance

AI-powered inspection systems and machine vision technologies detect weld defects and monitor critical process parameters in near real-time, minimizing waste, rework, and machine downtime.

Industry Impact: Strengthens quality assurance, ensures compliance with domestic and global standards, and improves product reliability and competitiveness.

4. Digital Twins and Welding Simulation Technologies

Digital twin technologies create virtual replicas of welding and cutting processes, allowing pre-production simulation and parameter optimization. Augmented reality-based welding simulators enable safe, repeatable operator training.

Industry Impact: Enhances operational efficiency, reduces trial-and-error costs, accelerates workforce competency, and optimizes production setups.

5. Sustainability and Energy-Efficient Technologies

Adoption of energy-efficient welding equipment, low-carbon manufacturing practices, and waste-minimizing process optimization aligns industry operations with global sustainability standards. Integration of renewable energy solutions and eco-friendly automation further supports compliance.

Industry Impact: Lowers operational costs, reduces environmental footprint, and ensures alignment with tightening environmental regulations globally.

6. Digital Compliance Platforms and Export-Ready Certification

Manufacturers leverage digital platforms to manage regulatory certifications, including CE, ISO 9001, and EU Machinery Regulations, streamlining compliance workflows and maintaining transparent documentation.

Industry Impact: Facilitates smooth export operations, strengthens market access, and ensures adherence to international quality and safety standards.

9. PESTLE Analysis of the Industry

A comprehensive PESTLE (Political, Economic, Social, Technological, Legal, and Environmental) analysis evaluates the external macro-environmental factors Machine Tools — Metal-Cutting and Welding Equipment Manufacturing Industry. These dimensions collectively shape demand outlook, policy direction, investment flows, and competitive positioning in both domestic and international markets.

Factor	Description	Impact on the Industry
Political	- Government programs like Make in India, Atmanirbhar Bharat, and PLI schemes promote domestic capital goods manufacturing. - SAMARTH Udyog Bharat 4.0 and Centres of Excellence facilitate Industry 4.0 adoption. - Export promotion schemes, anti-dumping duties, and trade safeguards protect domestic manufacturers. - Geopolitical trade policies and international regulatory frameworks (EU Machinery Regulations, US OSHA standards) influence market access and compliance.	- Provides long-term order visibility and investment confidence. - Encourages capacity expansion, modernization, and localization. - Mitigates import dependency and trade-related risks. - Supports global market access and competitiveness.
Economic	- GDP growth, industrial expansion, and infrastructure projects drive demand for metal fabrication equipment. - Investment in automotive, shipbuilding, heavy machinery, and structural steel sectors fuels capital goods consumption. - Currency volatility, inflation, and raw material price fluctuations (steel, copper, aluminum) affect production costs. - Export potential exists in the Middle East, Africa, Southeast Asia, and Latin America.	- Expands domestic and export market opportunities. - Requires financial resilience to manage raw material cost volatility. - Favors capacity scaling, modernization, and cost optimization for international competitiveness.

Social	• Workforce skill diversity, labor availability, and training initiatives (Skill India, PMKVY) influence adoption of advanced machinery. • Growing emphasis on occupational safety and ESG standards raises demand for ergonomic and compliant equipment. • Industrialization, urbanization, and organized manufacturing growth increase demand for metal fabrication solutions.	• Supports adoption of automation and smart factory technologies. • Enhances workforce productivity, safety, and operational efficiency. • Encourages socially responsible and compliant manufacturing practices.
Techno-logical	• Adoption of Industry 4.0 technologies, IoT, AI, machine learning, digital twins, and robotics enhances productivity, process reliability, and predictive maintenance. • Advanced welding and cutting automation, including collaborative robots, improve consistency and throughput. • AI-driven quality control and machine vision systems optimize process accuracy and reduce rework. • Digitization of compliance, simulation, and training improves operational efficiency.	• Improves product quality, operational efficiency, and global competitiveness. • Enables entry into high-value automated and export-ready segments. • Creates barriers for non-digitized players.
Legal	• Compliance with domestic labor, industrial safety, and environmental regulations is mandatory. • International standards such as CE, ISO 9001, EU Machinery Regulations, and US OSHA welding and cutting standards govern export readiness. • Intellectual property rights protect proprietary manufacturing processes and machinery designs.	• Ensures standardized production and legal compliance. • Reduces regulatory and litigation risks. • Strengthens credibility and facilitates international market penetration.
Environmental	• Increasing focus on ESG, energy efficiency, and low-carbon manufacturing practices. • Equipment designed for minimal waste, renewable energy integration, and optimized energy consumption. • Compliance with global sustainability standards and circular economy	• Encourages adoption of sustainable, energy-efficient, and low-emission machinery. • Reduces operational costs and environmental footprint. • Positions manufacturers favourably for financing,

	principles (e.g., recycling consumables, minimizing scrap).	tenders, and global market acceptance
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The Machine Tools — Metal-Cutting and Welding Equipment Manufacturing Industry operates within a dynamic macro-environment shaped by government policy, economic growth, workforce factors, technological advances, regulatory frameworks, and sustainability imperatives. The sector benefits from supportive political and economic initiatives while facing challenges from raw material price volatility, global competition, and compliance obligations. Technological adoption, workforce skill development, and sustainable practices remain key drivers of competitiveness and long-term growth for both domestic and international markets.

10. Competitive Landscape

The Machine Tools — Metal-Cutting and Welding Equipment Manufacturing industry supports key metal fabrication industries such as structural steel, process equipment, shipbuilding, heavy machinery, automotive, and general engineering. The competition in this industry is shaped by continuous technological innovation, operational excellence, regulatory compliance, strategic market presence, and adaptation to complex operating environments. Equipment is engineered to withstand Indian conditions (power variability, heat, dust, operator variability) and meet global standards crucial for international markets.

10.1 Key Factors Shaping Competition

- **Technological Innovation and Product Differentiation:**
The segment relies heavily on advanced technologies to differentiate products. Cutting-edge inverter-based power sources, CNC and PLC automation, robotic welding cells, and AI-driven quality monitoring systems enhance performance and operational reliability. Emphasis on equipment robustness and adaptability ensures dependable operation under challenging Indian conditions, while supporting competitiveness in export markets. Innovation in consumables, including long-life electrodes and precision nozzles, further influences user preference and operational efficiency.
- **Operational and Supply Chain Efficiency**
Strong vendor and supplier networks guarantee consistent availability of critical raw materials such as specialty steels and electronic components. A combination of local sourcing and global procurement strategies helps reduce lead times and mitigates currency exposure. Modular and lean manufacturing approaches optimize cost structures and allow flexible production, ensuring responsiveness to fluctuating demand.
- **Compliance and Certification Strength**
Compliance with certifications such as CE, ISO 9001, EU Machinery Regulations, and OSHA standards is essential for export readiness and regulatory approvals. Firms maintaining comprehensive compliance programs benefit from faster regulatory clearance, enhanced market reputation, and stronger customer trust. Additionally, environmental certifications and adherence to sustainability standards are increasingly influencing procurement decisions among institutional buyers.

- **Customer-Centric Solutions and Aftermarket Services**

Companies offering tailored customization for complex fabrication requirements foster deep client relationships, particularly in defense, aerospace, and automotive sectors. Robust aftermarket networks—including spare parts supply, maintenance contracts, and technical training—support recurring revenue streams and enhance customer loyalty. Digital customer support, including remote diagnostics and predictive maintenance, is emerging as a key differentiator.

- **Pricing, Government Incentives, and Market Reach**

Competitive pricing, optimized through cost management, government incentives (Make in India, PLI, EPCG), and economies of scale, strengthens market share. Expanding dealership and distribution networks enhances reach to tier 2 and tier 3 cities and export geographies across the Middle East, Southeast Asia, Africa, and Latin America. Strategic pricing aligned to quality and service excellence enables firms to compete effectively across both premium and value segments.

- **Brand Equity and Market Reputation**

Established brand presence and proven project track records foster customer trust and facilitate entry into new domestic and international markets. Participation in industry forums, exhibitions, and quality benchmarking programs further reinforces brand prestige and supports customer acquisition.

10.2 Competitive Strategies

- **Vertical Integration and Value Chain Control**

Leading players in the segment maintain end-to-end capabilities encompassing R&D, engineering, component manufacturing, assembly, and aftersales support. This integration ensures superior quality control, faster delivery timelines, and enhanced time-to-market advantages. Robust internal testing and certification laboratories accelerate product innovation and ensure compliance with domestic and international standards.

- **Global Strategic Alliances and Joint Ventures**

Partnerships with global OEMs, technology innovators, and automation providers enable access to advanced technologies in AI, robotics, and material science. Joint ventures facilitate technology transfer, localization of manufacturing, and enhanced export capabilities, while promoting the development of sector-specific solutions for high-precision applications in aerospace, defense, energy, and renewable industries.

- **Digital Transformation and Industry 4.0 Adoption**

Companies are increasingly adopting IoT-enabled manufacturing, digital twins, predictive analytics, and cloud-based production monitoring to improve factory flexibility, operational efficiency, and downtime reduction. AI-driven supply chain management and ERP integration optimize inventory, resource utilization, and real-time decision-making. Digitization also strengthens customer support through data-driven diagnostics and predictive maintenance.

- **Sustainability and Green Manufacturing Focus**

Implementation of energy-efficient processes, low-emission equipment, waste recycling, and sustainability-linked financing enhances regulatory compliance and corporate responsibility profiles. These practices support environmentally conscious manufacturing and align with evolving global ESG standards.

- **Research, Development, and Workforce Skill Enhancement**

Continuous investment in R&D emphasizes new welding technologies, energy-efficient processes, and equipment miniaturization. Workforce development programs, including certified training, virtual and augmented reality simulators, and apprenticeships, improve operational proficiency, reduce rework, and ensure optimal machine utilization.

10.3 Barriers to Entry

- **Capital and Technological Expertise**

Establishing advanced manufacturing capabilities necessitates substantial upfront investment in factory infrastructure, R&D, and certification processes. The development of sophisticated inverter-based power sources, CNC and robotic automation, and AI-driven quality monitoring requires domain-specific engineering expertise. These high technical barriers restrict new entrants primarily to financially strong and technologically capable firms.

- **Regulatory and Certification Challenges**

Compliance with international and domestic standards such as CE, ISO 9001, EU Machinery Regulations, and OSHA are mandatory prerequisites for market access, especially for exports. Obtaining these certifications demands well-organized documentation, ongoing compliance efforts, and extensive testing resources. Environmental and sustainability certifications are increasingly important, adding to the compliance complexity and operational costs.

- **Supply Chain Dependence and Customer Loyalty**

Incumbents benefit from long-term agreements with specialty steel, electronic component, and automation hardware suppliers, ensuring supply stability and cost advantages. Furthermore, existing players maintain strong relationships with customers through comprehensive service networks, training, and aftermarket support, creating deep loyalty and recurring revenue streams. For newcomers, securing reliable supplier partnerships and achieving customer trust, especially in sectors like aerospace, defense, and renewables requiring high precision, is a significant challenge.

- **Digital and Operational Maturity**

Increasing adoption of Industry 4.0 technologies, including IoT integration, predictive maintenance, and digital manufacturing systems, is becoming a baseline requirement for competitiveness. Firms lacking digital infrastructure face difficulties scaling operations, meeting quality benchmarks, and maintaining compliance with global standards.

- **Market Scale and Financial Resources**

Meeting the variable demand cycles in India and simultaneously competing in the export market necessitates robust financial health and operational scale. Limited access to capital or scale constrains smaller or less-established firms from competing effectively, leading to prolonged gestation periods before market penetration.

- **Institutional and Policy-Related Barriers**

Multiple-tier regulatory approvals and bureaucratic complexities, including environmental clearances, labour laws, and land acquisition, pose significant hurdles. Delays in approvals can stall market entry or project execution, particularly for foreign or new investors unfamiliar with local administrative processes.

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10.4 Consolidation Trend

- **Mergers, Acquisitions, and Portfolio Expansion**

Leading players are pursuing mergers and acquisitions of regional, niche, and technologically specialized manufacturers to diversify product portfolios, enhance manufacturing capacities, and expand geographic presence. This inorganic growth enables faster access to advanced technologies such as AI-based process control, robotics, and energy-efficient systems. Acquiring firms with established local networks strengthens distribution channels and responsiveness to both domestic and international demand.

- **Strategic Alliances Enhancing Innovation Capacity**

Joint ventures and strategic partnerships with global OEMs, automation providers, and material science innovators are facilitating technology transfer and co-development of sector-specific solutions for aerospace, defense, renewable energy, and high-precision automotive applications. These alliances improve innovation velocity and support faster entry into regulated global markets.

- **Economies of Scale and Risk Diversification**

Consolidation allows firms to achieve economies of scale across procurement, production, logistics, and marketing. Larger entities leverage supplier negotiations for cost efficiency and enhanced price competitiveness. Broader client and geographic diversification mitigate concentration risks and enhances resilience against cyclical demand fluctuations or regional disruptions.

- **Specialization and Market Segmentation**

With increasing commoditization in base welding and cutting equipment, firms are emphasizing specialization in high-precision, customized systems for demanding sectors such as aerospace fabrication, defense manufacturing, and renewable infrastructure. This technological specialization mitigates pricing pressure and strengthens entry barriers for competitors.

- **Financial Strength and Investor Confidence**

Consolidated companies exhibit stronger balance sheets, higher liquidity, and improved credit profiles, enabling sustained R&D investment, capacity expansion, and compliance adherence. Enhanced financial stability attracts institutional investors and supports participation in large-scale government and export projects requiring significant guarantees.

- **Digital and Operational Integration**

Industry consolidation accelerates integration of digital transformation initiatives across facilities, promoting uniform adoption of Industry 4.0 systems, predictive maintenance, and data analytics frameworks. Standardized digital operations improve efficiency, reduce downtime, and enhance service consistency, offering a competitive edge in executing complex, high-volume projects on time and within cost.

The Machine Tools — Metal-Cutting and Welding Equipment Manufacturing Industry operates in a complex and competitive environment shaped by continuous technological innovation, operational efficiency, and stringent regulatory compliance. Firms differentiate through advanced inverter technologies, automation, and AI-driven quality systems while optimizing supply chains and cost structures. Strong certification credentials and customer-focused services, including aftermarket support and digital engagement, are critical for sustaining client relationships across aerospace, defence, and automotive sectors. Strategic vertical integration and global partnerships accelerate innovation, market expansion, and operational flexibility. High capital intensity, specialized technical expertise, rigorous certification norms, and established supply networks create significant entry barriers, maintaining market discipline and limiting new entrants. Ongoing consolidation enables leading players to achieve scale economies, risk diversification, and specialization in high-value applications. The evolving landscape demands sustained investment in technology, compliance, and customer-centric models to capture growth opportunities and reinforce market leadership domestically and globally.

10.5 Key Industry Players

Global Players:

1. Lincoln Electric Holdings, Inc. (USA)

Founded in 1895, Lincoln Electric Holdings, Inc. is a globally recognized leader specializing in the manufacture and distribution of arc welding equipment, consumables, and automation systems. The company distinguishes itself through advanced inverter-based power technology, robotic welding solutions, and state-of-the-art digital process control systems. With operations spanning over 160 countries, Lincoln Electric demonstrates robust operational excellence, a consistent commitment to R&D, and adherence to sustainability standards. These factors collectively reinforce its status as a financially sound and technologically advanced market participant.

2. Miller Electric (USA)

Miller Electric, a wholly owned subsidiary of Illinois Tool Works (ITW), offers a diverse portfolio of welding equipment including TIG, MIG, and submerged arc welding technologies, complemented by integrated automation and robotic systems. With a strong focus on precision engineering and reliable performance, Miller serves critical sectors such as aerospace, shipbuilding, and heavy machinery. The company's strategic emphasis on continuous technological enhancement and rigorous quality assurance underpins its compliance with global manufacturing standards.

3. ESAB Corporation (Sweden/Global)

ESAB Corporation is a leading multinational provider of comprehensive welding and cutting solutions, encompassing consumables, equipment, gas control systems, and automation technologies. The company prioritizes operational productivity, compliance with safety and environmental regulations, and the promotion of sustainable fabrication practices. ESAB's proactive innovation agenda and global regulatory alignment enable it to effectively cater to diverse industrial sectors including construction, automotive, and energy.

4. Fronius International GmbH (Austria)

Fronius International GmbH specializes in the development of inverter-based welding systems alongside battery charging and photovoltaic electronic technologies. The entity is noted for its commitment to energy efficiency and sustainable manufacturing, meeting increasing demands from environmentally conscious sectors such as automotive and renewable energy. Fronius combines durable product design with comprehensive compliance, thereby establishing a distinctive competitive advantage in international welding markets.

5. EWM Hightec Welding GmbH (Germany)

EWM Hightec Welding GmbH is recognized for its high-performance arc welding power sources that incorporate sophisticated digital integration. The company's product portfolio emphasizes durability, energy efficiency, and strict conformance with international certifications. EWM supports Industry 4.0 manufacturing paradigms and caters to high-precision fabrication sectors including aerospace and heavy engineering, providing advanced welding solutions that meet rigorous technical and regulatory standards.

Domestic Players:

1. Ador Welding Limited

Ador Welding Limited, the flagship company of the Ador Group, is among India's largest publicly listed welding equipment and consumables manufacturers. Founded in 1951 (formerly Advani-Oerlikon), it serves infrastructure, shipbuilding, automotive, and oil & gas sectors. With six advanced manufacturing units in India and presence in over 15 countries, it emphasizes innovation, quality management, and integrated aftersales support to maintain a competitive domestic and international stance.

2. ESAB India Limited

A wholly owned subsidiary of ESAB Corporation, ESAB India Limited manufactures welding and cutting equipment, consumables, and automation solutions for construction, automotive, and heavy engineering sectors. Combining global technological expertise with local manufacturing, the company ensures compliance with domestic and international standards, underpinned by strong distribution and client servicing capabilities.

3. Jyoti CNC Automation Ltd.

Jyoti CNC Automation Ltd. is a leading Indian manufacturer specializing in CNC machine tools, automated welding systems, and precision cutting technologies. Catering primarily to automotive, aerospace, and heavy engineering industries, Jyoti is recognized for its advanced R&D capabilities, technological integration, and customization expertise, enabling it to address complex fabrication challenges effectively.

4. Cruxweld Industrial Equipment Limited

Cruxweld Industrial Equipment Limited designs and produces welding, cutting, and resistance welding machinery tailored to Indian operational challenges such as voltage variability and high dust conditions. Recognized for reliability and aftersales services, it caters to varied industrial clusters and supports India's localized manufacturing efforts.

Comparative Analysis of Key Indian Players:

The table below provides a comparative overview of leading The Machine Tools — Metal-Cutting and Welding Equipment Manufacturing Industry, including Technocrats Plasma Systems Ltd. It highlights their capabilities across welding equipment, plasma cutting, consumables, automation, aftersales services, export presence, R&D focus, and industry-specific solutions, reflecting their competitive positioning in the capital goods sector.

Company	Technocrats Plasma Systems Limited	Ador Welding Limited	Cruxweld Industrial Equipment Limited	ESAB India Limited	Jyoti CNC Automation Limited
Welding Equipment Manufacturing	✓	✓	✓	✓	✓
Plasma Cutting Equipment	✓	-	✓	-	✓
Welding Consumables (Electrodes, Wires, Flux)	-	✓	-	✓	-
Automation & Digital Solutions	✓	✓	✓	✓	✓
Aftermarket Service & Support	✓	✓	✓	✓	✓
Export Markets Presence	✓	✓	-	✓	✓
R&D & Innovation Focus	✓	✓	✓	✓	✓
Industry-Specific Solutions (Automotive, Oil & Gas, Construction)	✓	✓	✓	✓	✓

10.6 Company Positioning – Technocrats Plasma Systems Limited

Technocrats Plasma Systems Limited (the “Company”), headquartered in Maharashtra, India, with its primary manufacturing facilities located at Vasai East, Mumbai, is engaged in the design, manufacture, supply, installation and commissioning of cutting and welding equipment. Incorporated in 1994, the Company has over three decades of operating experience in the metal cutting and welding solutions segment and serves government bodies, public sector undertakings and private sector enterprises across India, with a growing presence in select international markets.

The Company’s product portfolio comprises plasma cutting machines, CNC gas and plasma profile cutting machines, CNC pipe profile cutting systems, fibre laser cutting machines, laser welding systems, and conventional as well as inverter-based welding equipment, including MMA/TIG, MIG/MAG and submerged arc welding systems. These machines are used for precision plate cutting, profile cutting, pipe cutting, laser-based high-accuracy cutting, and welding applications across ferrous and non-ferrous metals such as carbon steel, stainless steel and alloy steels.

The Company offers a combined Fibre Laser + Plasma + Oxy-Fuel cutting system that integrates multiple cutting technologies on a single platform, positioning it among a limited number of manufacturers globally with such capabilities. This integrated solution enables customers to address a wide range of material thicknesses and fabrication requirements using a single machine configuration.

The Company undertakes customization, supply, installation, testing and commissioning of its machines and executes turnkey cutting and welding solution projects directly linked to the deployment of its manufactured equipment. The scope of activities includes system layout planning, cutting table and power source integration, on-site commissioning, lifecycle support services, operator training, spares supply, and retrofit and upgrade support for installed equipment as part of its post-sales service offerings.

The Company’s equipment is engineered to operate under Indian industrial conditions, including voltage fluctuations, dust exposure and high-duty operating cycles. Its in-house manufacturing capabilities, supported by standardized production processes and ERP-enabled systems, enable quality control, customization and timely execution across a range of machine specifications and capacities.

The Company’s machines are deployed across multiple end-use industries. In the automotive and auto component sector, demand for precision cutting and welding equipment is linked to vehicle production and the expansion of component manufacturing, supported by

localisation and electrification trends. In infrastructure and construction, fabricated structural steel is integral to bridges, highways, metro systems and industrial facilities, with public and private capital expenditure supporting sustained fabrication activity. The oil and gas sector utilises cutting and welding solutions for pipeline networks, refinery units and pressure vessels, where precision and quality requirements are critical. In the power segment, fabrication of boiler components and auxiliary structures drives demand for high accuracy cutting and welding. The railways sector relies on such equipment for wagon and coach fabrication as part of ongoing fleet augmentation and modernization programs. In heavy engineering, including machinery, defence and industrial equipment, bespoke fabrication requirements underpin continued use of integrated cutting and welding systems.

These end-use sectors are supported by broader economic and policy initiatives in India. Continued focus on infrastructure development through national highways, industrial corridors and urban transport projects underpins structural steel demand, while manufacturing growth driven by initiatives such as “Atmanirbhar Bharat” (Self-Reliant India) and Production Linked Incentive (PLI) schemes supports fabrication activity across automotive, rail and heavy engineering segments. Together, these macro-economic and sectoral trends support rising demand for precision cutting and welding equipment in domestic fabrication ecosystems.

The Company maintains a nationwide distribution and service network comprising distributors and dealers to support installation, preventive maintenance, spares, training, limited retrofit services and after-sales support. Internationally, the Company is expanding its presence through distributor partnerships, participation in industry exhibitions and localized service support in select markets including the Middle East, Africa and Europe.

The Company aligns its manufacturing operations with the Government of India’s “Atmanirbhar Bharat” (Self-Reliant India) initiative and complies with applicable quality and safety standards, including ISO 9001:2015 certification for the design and manufacture of plasma, laser and welding systems. Its integrated business model—covering manufacturing, supply, lifecycle services (including limited retrofit support), and execution of plasma, laser and oxy-fuel cutting and welding solutions—positions the Company as an established domestic manufacturer serving fabrication-driven industrial sectors.

10.7 SWOT Analysis of Technocrats Plasma Systems Limited

Strengths	Weaknesses
• Established Operational Track Record: Over three decades of experience since 1994, serving institutional clients across government, PSUs, and private sectors, fostering deep industry insight and enduring client trust. • Indigenous Design and Technological Innovation: Indigenously developed core technologies with in-house R&D supporting CNC plasma cutters, automated welding, energy-efficient systems, and digital integration. • Comprehensive and Customizable Product Portfolio: Wide range of plasma cutting machines, welding equipment (including laser solutions), and automation-ready systems. Products are adaptable with CNC integration and special modifications across sectors like automotive, infrastructure, oil & gas, and heavy engineering. • Robust Service Network and Lifecycle Support: Nationwide technician deployment, preventive maintenance, spare parts availability, remote diagnostics, and predictive maintenance ensure operational reliability, customer satisfaction, and long-term client retention. • Cost-Efficient, Scalable Operations with Strategic Alliances and Certifications: Vertically integrated manufacturing and strong vendor/global partnerships enable scalable, cost-effective operations. Compliance with ISO, CE, and sustainability standards supports market credibility and adoption of Industry 4.0 capabilities, including automation and AI-driven solutions.	• High Capital & R&D Intensity: Significant investment requirements in technology and compliance infrastructure exert financial pressure especially during market downturns. • Supply Chain Dependency: Reliance on specialty steel and electronic components exposes the company to potential supply disruptions and price volatility. • Scalability Challenges: Managing operational scale-up while maintaining quality, service excellence, and efficiency remains complex. • Limited Global Brand Recognition: Despite exports, international brand visibility outside core markets is moderate compared to multinational competitors.

Opportunities	Threats
• Expanding Markets: Accelerating demand from infrastructure development, renewable energy projects, and precision manufacturing opens expansive growth avenues both domestically and internationally. • Industry 4.0 Adoption: Leveraging IoT, AI, and predictive analytics can enhance operational efficiencies, enable product differentiation, and introduce new service models. • Customization for High-Value Sectors: Specialized solutions addressing aerospace, defense, automotive, and oil & gas sectors offer higher margins and foster deeper client ties. • Government Initiatives: Make in India, PLI, and export promotion schemes provide cost advantages and facilitate capacity expansion. • Sustainability Trends: Developing energy-efficient, low-emission equipment aligns with increasing ESG mandates and customer preferences. • Geographic Expansion: Untapped regions such as Africa, Latin America, and Southeast Asia present sizable market opportunities.	• Competitive Intensity: Larger global and domestic players may adopt aggressive pricing or technological innovations that threaten margins and market share. • Regulatory & Trade Barriers: Evolving import-export policies, tariffs, and certification requirements risk market access delays and elevated compliance costs. • Technological Disruption: Emerging fabrication methods like laser cutting and additive manufacturing may reduce demand for traditional plasma and arc welding solutions. • Macroeconomic Volatility: Currency fluctuations, geopolitical tensions, and global economic slowdowns could disrupt supply chains and investment flows.

11. Future Outlook

The global and Indian machine tools industry, encompassing metal-cutting and welding equipment, is poised for sustained growth over the next decade. The global market is projected to expand at a CAGR of approximately 5.32%, from USD 110.83 billion in 2026 to USD 186.12 billion by 2036. The Indian market is expected to grow faster, at a CAGR of 7.49%, rising from USD 1.97 billion to USD 4.05 billion over the same period. Within India, the metal-cutting segment is forecast to increase from USD 0.57 billion to USD 1.08 billion at a CAGR of 6.61%, while welding equipment is expected to grow from USD 0.77 billion to USD 1.42 billion at a CAGR of 6.3%.

Accelerating industrialization and infrastructure expansion, widespread adoption of Industry 4.0 technologies (IoT, AI, machine learning), rising automation and robotics in welding and cutting operations, and increasing demand for high-precision, energy-efficient, and digitally integrated systems. Policy support under initiatives such as Make in India, Production Linked Incentives (PLI), and digital skill development programs further reinforce the sector's structural growth potential.

Technological advances—including AI-driven quality assurance, digital twins, welding simulation, and digital compliance tools—are enhancing operational efficiency, product quality, and global competitiveness. Sustainability considerations are also shaping equipment design, with energy-efficient, environmentally compliant solutions aligning with growing ESG mandates.

The industry faces challenges including high capital investment requirements, a fragmented domestic structure with many small-scale operators, skilled labour shortages, and evolving regulatory and environmental compliance pressures. Targeted government support through training, export promotion, anti-dumping measures, and regulatory harmonization is expected to mitigate these constraints over time.

Regionally, Indian demand remains concentrated in Western and Southern industrial hubs, while Northern and Tier-2/3 centres are emerging as growth areas. The domestic manufacturing ecosystem is gradually upgrading in sophistication, strengthening local supply chains, and reducing reliance on imports for mid-range equipment, even as high-specification imports remain essential.

Overall, the market is favourable, driven by robust domestic and global demand, technological innovation, and digital transformation. The metal-cutting and welding equipment industry is positioned as a critical enabler of India's industrial modernization, infrastructure development, and its evolution as a global manufacturing hub.

Yours Faithfully,



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