

MANAGEMENT DISCUSSION & ANALYSIS

ECONOMIC OVERVIEW

GLOBAL

The World Economic Outlook (WEO) for July 2024 projects global growth at 3.2% in 2024 and 3.3% in 2025. As cyclical effects diminish and economic activity aligns more closely with its potential, the early-year fluctuations have helped reduce the production gap between economies.

The energy commodity prices are anticipated to decline by approximately 4.6%. This decrease is primarily due to elevated oil prices driven by significant production cuts from OPEC+ and ongoing price pressures from the Middle East conflict. Meanwhile, monetary policy rates set by major central banks are expected to decrease in the latter half of 2024. However, the pace of this normalisation will vary and will be influenced by differing inflationary conditions across regions.

Global activity and world trade strengthened at the start of the year, driven by robust exports from Asia, particularly in the technology sector. Compared to the April 2024 WEO, first-quarter growth exceeded expectations in many countries, although there were notable downside surprises in Japan and the United States. World trade growth is anticipated to rebound to approximately 3.25% annually in 2024–25, following near stagnation in 2023, bringing it back in line with global GDP growth.

Despite this, the growth forecasts for 2024 and 2025 remain below the historical average of 3.8% (2000–2019) due to tight monetary policies, lower fiscal support, and sluggish productivity growth. Advanced economies are expected to see a modest increase, largely due to a rebound in the euro area, while emerging and developing economies are projected to experience stable growth, though with regional variations.

Moreover, following a decline during the summer, the IMF's base metals price index rose by 4.7% from August 2023 to February 2024. Simultaneously, G20 Emerging Markets (EMs) have become key producers of minerals essential for the green transition, such as nickel in Indonesia. As demand for these commodities rises, G20 EMs are expected to become

more integrated into global supply chains, potentially driving greater commodity price volatility. To mitigate the impact of potential shocks, countries exposed to commodity markets with relatively low elasticities, especially metals, should build fiscal buffers and create monetary policy space.

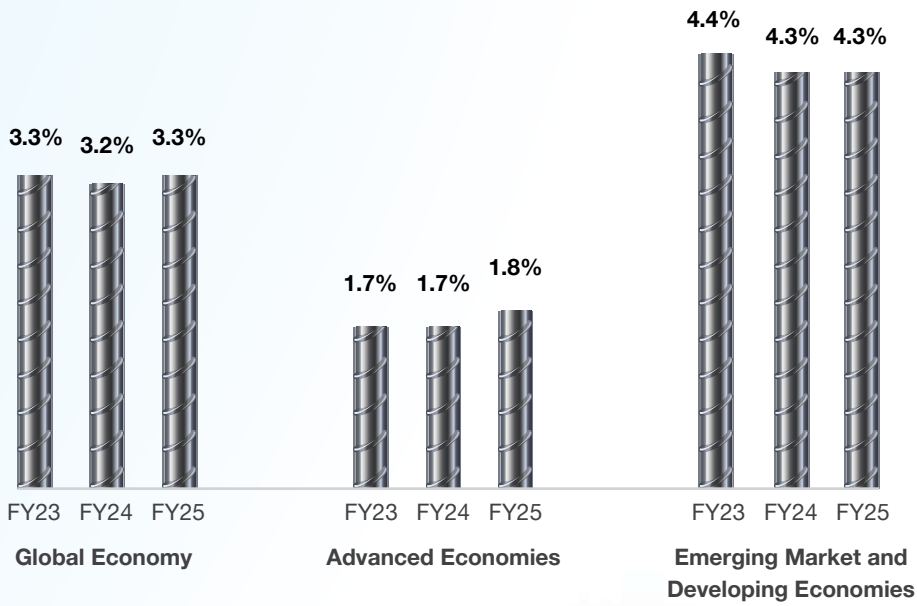
In the United States, the growth forecast for 2024 has been revised downward to 2.6%, slightly lower than earlier projections, due to a slower-than-anticipated start to the year. Moving into 2025, growth is anticipated to decelerate further to 1.9% as the labour market cools and consumer spending moderates, coinciding with the gradual tightening of fiscal policy. By the end of 2025, growth is expected to align with potential levels, effectively closing the positive output gap.

Meanwhile in the Euro area, economic activity appears to have reached its lowest point. However, a modest growth of 0.9% is expected for 2024. This improvement is driven by stronger momentum in the services sector and higher-than-expected net exports in the first half of the year. Growth is projected to increase to 1.5% in 2025, supported by rising real wages boosting consumption and higher investment due to easing financing conditions as monetary policies gradually loosen. At the same time, continued weaknesses in manufacturing, particularly in countries like Germany, suggest a slower recovery in this sector.

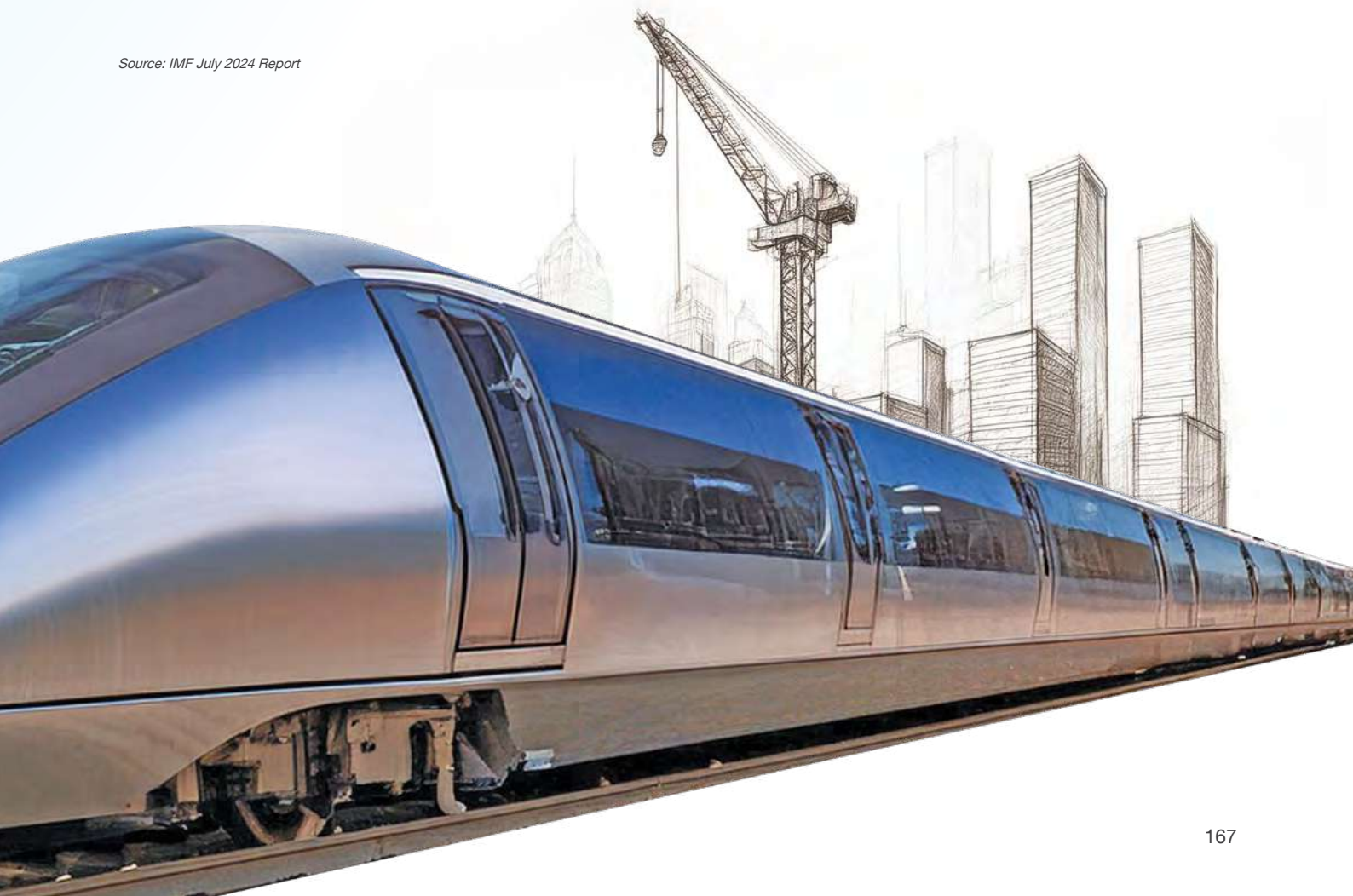




World, Advanced Economies, and Emerging Market and Developing Economies' Projections



Source: IMF July 2024 Report



The Indian economy grew by 8.2% in FY24, exceeding the 7.0% growth mark in FY23.

In contrast, the Emerging and Developing Asian Economies are expected to decline from 5.7% in 2023 to 5.4% in 2024 and 5.1% in 2025, with China's growth slowing from 5.2% in 2023 to 5.0% in 2024 and 4.5% in 2025. In the Middle East and Central Asia, economic growth is expected to increase from 2.0% in 2023 to 2.4% in 2024 and further to 4.0% in 2025.

The Emerging and Developing European economies grew by 3.2% in 2023 and are expected to grow by 3.2% in 2024 and 2.6% in 2025, with Russia's economic growth declining as investment effects diminish. In 2023, the financial conditions of emerging economies significantly improved as equity valuations surged and capital flows to most emerging market economies, excluding China, remained robust.

The global economic outlook remains clouded by the risk of elevated inflation, which has led to the expectation of higher interest rates persisting for an extended period. This scenario

increases external, fiscal, and financial vulnerabilities, with prolonged dollar appreciation due to rate disparities posing additional challenges. However, for the median emerging markets and developing economies, inflation is already approaching pre-pandemic levels, partly due to decreasing energy prices.

Sources:

IMF APRIL 2024

<https://www.imf.org/en/Publications/WEO/Issues/2024/04/16/world-economic-outlook-april-2024>

INDIA

As per the Ministry of Statistics and Programme Implementation (MoSPI), the Indian economy grew by 8.2% in FY24, exceeding the 7.0% growth mark in FY23. The direct tax collections reached INR 19.58 trillion in FY24, up from INR 16.64 trillion in FY23, marking a 17.70% increase. Meanwhile, the per capita income in India has seen a significant rise, with a 35.12% increase in per capita Net National Income (NNI) at constant (2011–12) prices. The NNI increased from INR 72,805 in FY15 to INR 98,374 in FY23, reflecting improved economic conditions and a growing middle class with higher disposable income.

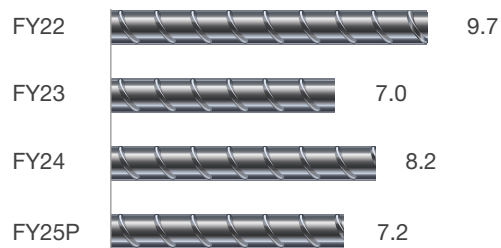
Despite the uncertainty caused by adverse geopolitical developments and the expansionary fiscal measures implemented during the COVID-19 pandemic, the Indian economy has shown resilience and maintained strong macroeconomic fundamentals. Robust domestic demand for consumption and investment, coupled with the government's sustained focus on capital expenditure, has been identified as a key driver of GDP growth in the first half of FY24. On the supply side, the industry and services sectors were the main contributors to growth during this period.



ECONOMIC OUTLOOK: INDIA

India has recorded the highest growth among major advanced and emerging market economies. According to the IMF, India is projected to become the third-largest economy in USD by 2027 at market exchange rates. Also, India's contribution to global growth is estimated to increase by 200 basis points over the next five years.

Indian Economic Outlook (%)



Source: MoSPI report dated May 31, 2024

RBI (Reserve Bank of India) MPC (Monetary Policy Committee) report dated June 7, 2024

Similarly, according to the RBI, India's GDP is projected to grow by 7.2% in FY25, accompanied by an estimated inflation rate of 4.5%, positioning India on a trajectory to become the world's third-largest economy by 2030.

In the Budget 2024-25, the government has prioritised key areas to bolster India's economic growth. A significant investment of INR 10 lakh crore under PM Awas Yojana 2.0 aims to address the needs of 1 crore urban poor and middle-class families. The Viksit Bharat initiative focuses on

enhancing the Credit Guarantee Scheme for MSMEs in the manufacturing sector. An allocation of INR 11.11 lakh crore, accounting for 3.4% of GDP, is designated for infrastructure development, with INR 8,155 crore specifically for the Dedicated Freight Corridor Corporation of India (DFCC).

Additionally, customs duties on 25 critical minerals, including nickel, copper, cobalt, silicon, and molybdenum, have been fully exempted from supporting the manufacturing sector. The government will also establish a Critical Mineral Mission to promote domestic production, recycling, and overseas acquisition of these essential minerals, alongside developing technology, a skilled workforce, an extended producer responsibility framework, and suitable financing mechanisms.

However, geopolitical tensions and financial market volatility present potential risks, which proactive government strategies aim to mitigate effectively going forward.

Sources: PIB

<https://pib.gov.in/PressReleasePage.aspx?PRID=2001124>

<https://pib.gov.in/PressReleaseframePage.aspx?PRID=2018373#:~:text=3.79%20lakh%20crore%20issued%20in%20FY%202023%2D24&text=The%20provisional%20figures%20of%20Direct,representing%20an%20increase%20of%2017.70%25.>

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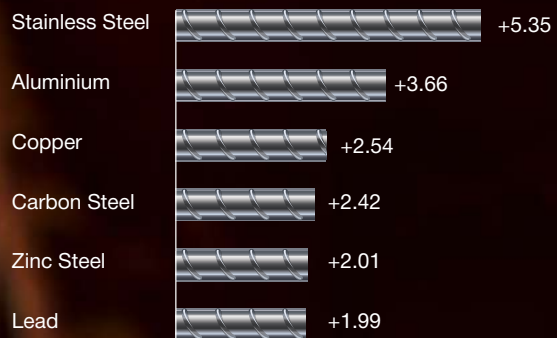
INDUSTRY OVERVIEW

GLOBAL STAINLESS STEEL INDUSTRY

Stainless steel (SS) is a value-added product with superior corrosion resistance compared to traditional steel due to higher chromium levels and other alloy elements like nickel and molybdenum. Stainless steel also offers a superior aesthetic finish and a longer lifespan, making it increasingly popular worldwide.

Over the past four decades, the growth of the stainless steel industry worldwide has been extraordinary. Stainless steel has surpassed other metals, including carbon steel, aluminium, and copper, driven by increasing demand. From 1980 to 2021, stainless steel demonstrated a compound annual growth rate (CAGR) of 5.35%, significantly higher than the average CAGR of 2.5% for major metals, as illustrated in the graph below:

Compound annual growth rate of major metals (%/year): 1980-2021



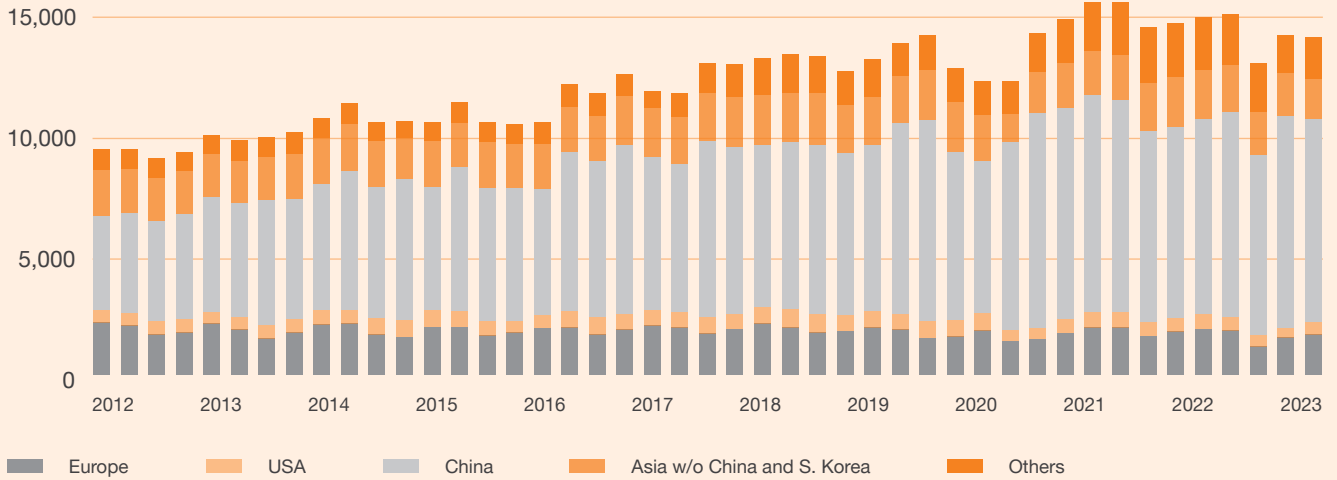
Source: *Wordstainlesssteel*

According to the International Stainless Steel Forum, the global SS melt shop production increased by 4.6% Y-o-Y to 58.4 million tonnes (MT) in 2023. Internationally, cold-rolled flat products represent the largest category of stainless steel production, followed by hot-rolled coils, steel wire rods, and bars.

In Europe, stainless steel production decreased by 6.2% Y-o-Y to 5.9 MT in 2023. Production decreased by 9.6% Y-o-Y in the United States to 1.82 MT. Asia (excluding China) saw a decrease of 7.2% Y-o-Y to 6.88 MT. Meanwhile, China increased its production by 12.6% Y-o-Y to 36.68 MT during the same period.

The decline in stainless steel production can be attributed to several key factors. A significant hindrance is the reduced demand from the downstream construction sector, primarily due to previously unfulfilled orders. Additionally, the residential construction industry faces elevated interest rates and increased construction costs, further dampening demand.

Stainless Steel Melt Shop Steel Production [1,000 Metric Tonnes]



Source: <https://www.worldstainless.org>

The global stainless steel production is projected to increase by 4.4% in 2024, reaching 60.53 MT, compared to 58.4 MT in 2023. In 2024, the demand for stainless steel in infrastructure, consumer goods, and chemical, petrochemical, and energy industries is anticipated to be exceptionally strong. However, consumption from heavy industries is anticipated to stabilise, and demand in the automotive industry is expected to decline accordingly.

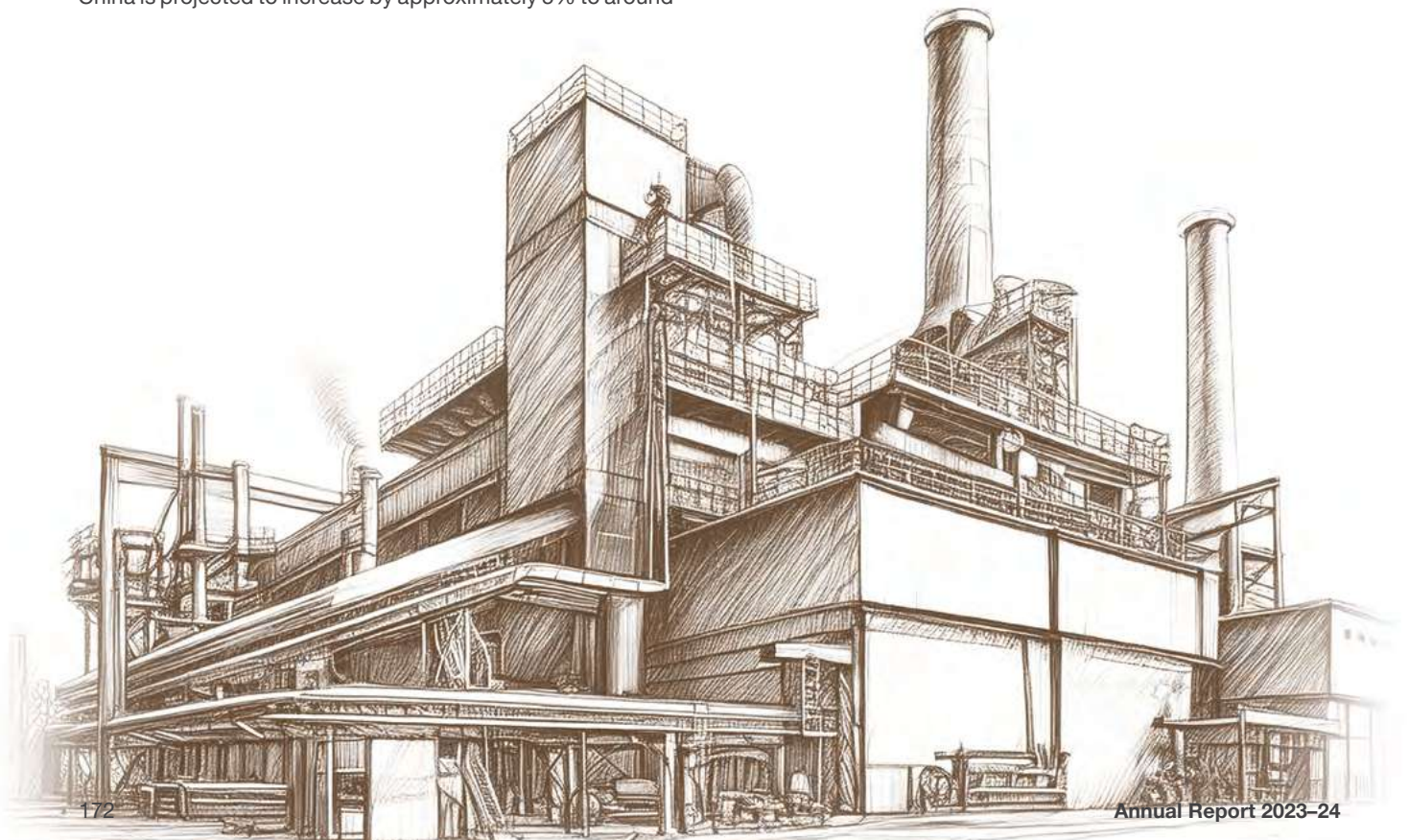
China and Indonesia are expected to be the primary drivers of overall stainless steel production growth. Production in China is projected to increase by approximately 5% to around

40 MT, while Indonesia's production could rise to 5.5 MT, marking a 20% Y-o-Y increase. Europe is the only region expected to experience a decline in 2024, with production decreasing by 1.8%. The combined global share of Chinese and Indonesian stainless steel production is anticipated to reach 72.63%, up from 71.6% in 2023 and significantly higher than the 53.24% recorded in 2015.

Source:

<https://www.fortunebusinessinsights.com/stainless-steel-market-106481>

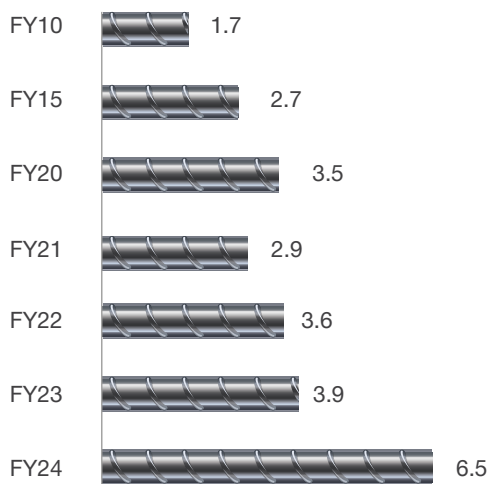
<https://gmk.center/en/news/global-stainless-steel-production-to-grow-by-4-4-y-y-in-2024-icda/>



INDIAN STAINLESS STEEL INDUSTRY

According to the Indian Stainless Steel Development Association (ISSDA) and other industry sources, India's stainless steel consumption has shown robust growth over recent years, reflecting the country's increasing demand and industrial expansion. In FY22, the consumption was at 3.6 million tonnes per annum (MTPA). By FY30, this consumption is projected to reach 6.5 MTPA. This growth trajectory represents a compound annual growth rate (CAGR) of approximately 7–7.5%, indicating a steady and significant increase in the demand for stainless steel in the coming years.

India stainless steel Consumption (MTPA)



Source: ISSDA, Industry

The Indian stainless steel industry consists of a diverse range of large, mid-sized, and small enterprises, including public sector entities and MSMEs, which contribute approximately 35% of the total capacity. Notably, MSMEs hold significant untapped potential due to under-utilised capacity. Enhancing this sector is essential for navigating the complexities of demand and supply. The domestic stainless steel industry is well-equipped to cater to local demand and discerning international consumers' requirements.

Further, stainless steel consumption in India surged by nearly 10% in FY23, reaching 4 million tonnes, according to data from the ISSDA. The industry body reports that India's per capita stainless steel consumption rose from 2.5 kg to 2.8 kg in 2023, fuelled by increased demand in sectors like railways, process industries, and architecture, building, and construction (ABC).

This growth is notable as it contrasts with the global trend, where stainless steel melt shop production declined by 5.2%, falling from 58.2 million tonnes in 2021 to 55.2 million tonnes in 2022. ISSDA also highlights emerging growth areas, such as alternative energy, ethanol, hydrogen production, and water storage and distribution, which are expected to further drive demand for stainless steel in the coming years.

However, the stainless steel industry faces unique challenges and requirements that often get overlooked due to an integrated policy framework approach for the steel sector. Unlike general steel products, stainless steel represents low-volume but high-value outputs, necessitating dedicated attention.

The Indian stainless steel industry has long waited for a special status from the Indian government. In this regard, a National Stainless Steel Policy, which has been in the making for a while, can address this concern reasonably. This one-size-fits-all approach fails to address the specific needs of the stainless steel industry, highlighting the necessity for a more focused policy framework.

Source: Stainless Steel Vision Document 2047

<https://www.livemint.com/industry/infrastructure/indias-stainless-steel-consumption-grew-by-10-in-fy23-11691071830947.html>



SECTOR-SPECIFIC DEMAND

Stainless steel is widely utilised across different applications and has a presence in diverse sectors. This versatility supports a robust, thriving industry backed by continuous innovation and adaptability to meet changing market demands.

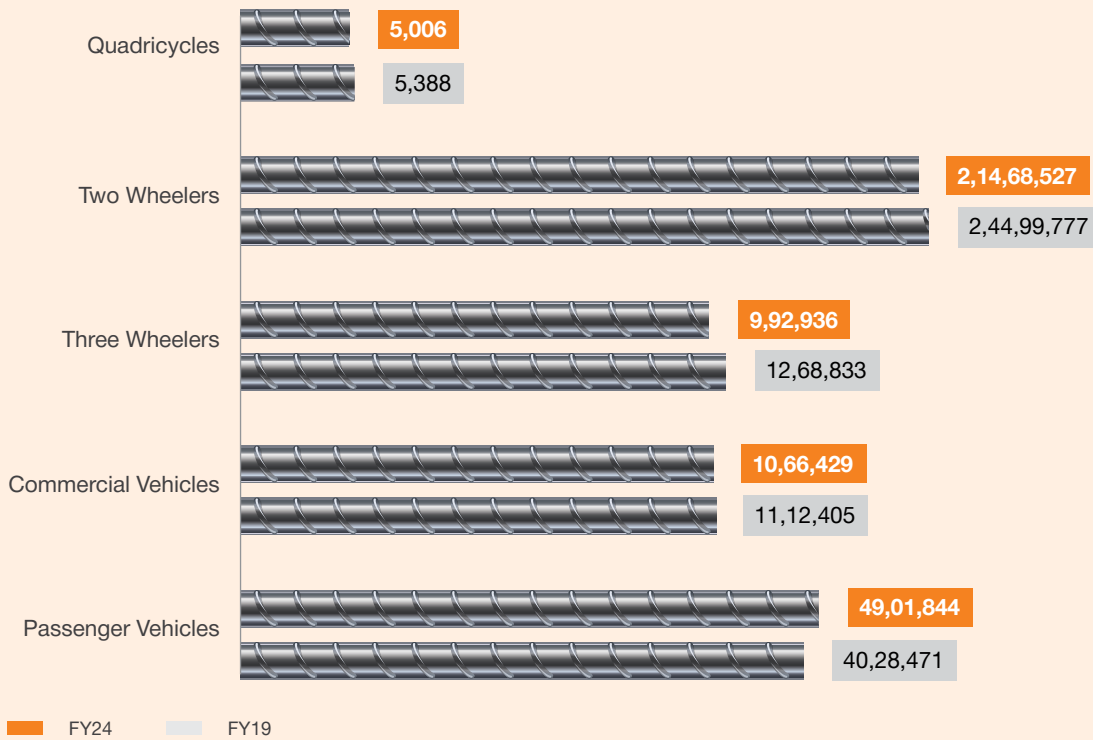
GROWING DEMAND FROM THE AUTOMOTIVE, RAILWAYS AND TRANSPORTATION (ART) SECTOR

The ART sector in India significantly drives the country’s rapid economic growth, contributing over 10% to the nation’s GDP. This sector consistently adds value across its various stages, and there is a noticeable surge in the momentum of stainless steel within this domain. For instance, the incorporation of stainless steel in Vande Bharat coaches has enhanced their structural integrity and added a sleek and modern touch to their design.

Automotive

The Indian automobile sector projects steady trends in terms of sales and production. According to the Society of Indian Automobile Manufacturers (SIAM), the total number of domestic automobile sales in FY24 was approximately 12.49% higher than in FY23. Meanwhile, the automobile production trends in FY24 registered approximately 9.62% growth over FY23. Utilising stainless steel in automotive construction can reduce weight and conserve resources without sacrificing safety standards. Lightness and safety are compatible, and stainless steel offers solutions to meet increasing environmental requirements.

Total Automobile Production (In Numbers)



Source: Society of Indian Automobile Manufacturers (SIAM)

Similarly, India is actively advancing electrification in its automotive sector, making significant investments and focusing on electric vehicles (EVs). Stainless steel is anticipated to play a crucial role in the production of EVs and their components, including battery enclosures and chassis. The manufacturing sector, especially the auto industry, drives up the demand for stainless steel in the country. While many automobile sub-sectors in the country heavily invest in EVs, some prioritise hybrid vehicles.

The strength-to-weight ratio of stainless steel allows for lighter vehicle components without compromising structural integrity. This weight reduction translates to increased

efficiency and longer driving ranges for electric and hybrid vehicles, enhancing overall performance. Also, as a fully recyclable material, stainless steel aligns with the eco-friendly goals of electric and hybrid vehicles. Its use supports sustainable manufacturing practices and reduces the environmental impact of vehicle production and disposal.

In March 2024, Jindal Stainless collaborated with JBM Auto Ltd, India's leading electric bus manufacturer, to produce over 500 energy-efficient and lightweight stainless steel electric buses, promoting sustainable transportation solutions.



Railways

The Indian Railways has experienced significant growth, driving the nation's infrastructure and economic development. Its ambitious initiatives for developing dedicated freight corridors, high-speed rail networks, and modernising stations are expected to increase the demand for stainless steel significantly.

In the wake of recent elections, the government had introduced a 100-day action plan centred on passenger-centric initiatives. Key measures include the creation of a comprehensive super app for railway services, the development of three economic corridors, and the launch of sleeper Vande Bharat trains.

The Budget 2024-25 highlights a major commitment to upgrading the Indian Railways, with a record Capital Expenditure (CapEx) of INR 2,62,200 crore allocated for the fiscal year. This significant increase from previous years is aimed at modernising railway infrastructure and enhancing service capabilities, underscoring the government's focus on improving the nation's transportation network.

According to a recent report by the Ministry of Railways, 35 indigenously designed, semi-high-speed Vande Bharat Express trains (70 services) are currently in operation, with six more trains to be launched soon, bringing the total to 82 services. The ministry also plans to increase the number of Amrit Bharat trains, which offer improved passenger facilities, including better acceleration, attractively designed seats, enhanced luggage racks, mobile charging points, LED lights, CCTV, and public information systems.

In the FY23 Union Budget, the government announced that four hundred next-generation Vande Bharat trains will be developed and manufactured over the next three years, offering better energy efficiency and an improved passenger riding experience. Subsequently, during FY24 (up to June 2023), the overall utilisation rate of Vande Bharat trains has reached 99.60%.

Also, in FY24, railways achieved their highest-ever freight loading of 1,591 MT, marking a nearly 5% increase compared to the previous financial year. The ambitious redevelopment of 1,309 Amrit Bharat stations aims to improve passenger amenities and accessibility. In addition, significant projects like the Chenab Bridge, the Mumbai-Ahmedabad High-Speed Rail Corridor, and various green initiatives highlight the transformative journey of Indian Railways, aiming for net-zero carbon emissions by 2030.

Characteristics that make stainless steel a fit for railways:



Crash resistance: Stainless steel's high strength ensures robust passenger compartments, ensuring more safety during collisions.



Fire resistance: Its fire-resistant properties enhance passenger safety by minimising fire hazards in train cabins.



Corrosion resistance: Stainless steel prevents rust and corrosion, extending the lifespan of exterior train surfaces exposed to the elements.



Wear resistance: Durable stainless steel reduces maintenance costs by withstanding the constant friction of moving parts.



Impact resistance: Stainless steel can absorb and dissipate energy from impacts, protecting critical train components and passengers.



Abrasion resistance: High abrasion resistance maintains the integrity of frequently contacted surfaces like handrails and doorways.



Higher strength and lighter car body: Combining strength with lighter weight, stainless steel enables more efficient and faster trains with lower fuel consumption.



Weldability and repairability: Stainless steel's excellent weldability allows for easy construction and repair of train components, ensuring quick maintenance.



Green metal: Being recyclable, stainless steel supports sustainable practices, reducing the environmental footprint of railway operations.



Further, the Ministry of Railways is preparing to expand its Gati Shakti Cargo Terminals (GCTs) network, with plans to offer an additional 200 terminals to corporate entities and freight operators. Encouraged by the positive response, the ministry aims to strengthen rail-based supply chains through this initiative.

In the FY23 Union Budget, the government outlined its intention to establish 100 GCTs within three years. The initial response to these terminals has been robust, indicating significant interest from the private sector, including freight operators and manufacturers, in investing in railway infrastructure. Currently, 77 GCTs are operational, representing an investment of INR 5,400 crore from various operators, averaging INR 69 crore per terminal. Notable participants in this endeavour include state-owned companies and private entities such as Jindal Stainless.

Furthermore, Jindal Stainless has played a significant role in India's metro rail development. The expansion of the metro rail system from 248 km in 2014 to an impressive 945 km by 2024 reflects India's commitment to revolutionising urban commuting. This expansion benefits millions of daily commuters across 21 cities, with an additional 919 km underway in 26 cities. In March 2024, in line with the Atmanirbhar Bharat mission, Jindal Stainless provided stainless steel for India's first underwater metro line in Kolkata.

Additionally, JSL has supplied high-end steel for the Indian Railways' Vande Metro train project. Simultaneously, the Indian Railways have specified the use of stainless steel in high-speed bullet trains to be built in the Integrated Coach Factory (Chennai) in contrast to the conventional use of aluminium in bullet trains globally. Moreover, Jindal Stainless has undertaken lightweighting initiatives for Vande Bharat and LHB coaches. Railways are one of the main demand drivers for stainless steel.

Sources:

<https://www.fortuneindia.com/budget-2024/budget-2024-whats-in-store-for-railway-sector/115574#:~:text=The%20key%20focus%20of%20the,dedicated%20freight%20corridor%2C%20and%20others.>

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Transport

India's transport infrastructure is transforming significantly, with an increased focus on building sustainable and efficient systems. Major cities are investing in metro rail networks, bus rapid transit systems, and smart city initiatives. The need for robust and long-lasting transport infrastructure is expected to be a major demand driver for using and consuming stainless steel.

Accordingly, the transport sector has emerged as a key priority for the Indian government, with significant investments anticipated in the coming years. Projected to grow at a CAGR of approximately 4.5% from 2022 to 2050, this sector has been driven by initiatives such as the Gati Shakti programme. This initiative aims to integrate major transport schemes like Bharatmala, Sagarmala, and UDAN (air transport) onto a unified digital platform.

Further, ambitious targets have been set, including expanding the national highway network to 0.2 million km by 2025, increasing airports from 140 to 220, operationalising 23 waterways by 2030, and establishing 35 Multi-Modal Logistics Parks (MMLPs), among other initiatives.

In the FY24 Union Budget, INR 75,000 crores, including INR 15,000 crores from private sources, for 100 critical transport infrastructure projects were allotted for last and first-mile connectivity for ports, coal, steel, fertiliser, and food grains sectors.

The demand for stainless steel within the ART sector has surged by nearly 30% over the past decade. This robust growth is primarily driven by the substantial requirements for railway wagons, passenger coaches, and automotive exhaust systems. These factors ensure that the demand for stainless steel in the ART sector remains strong and poised for further growth.

Source: <https://pib.gov.in/PressReleaseDetailm.aspx?PRID=2014849#:~:text=During%20this%20FY%202023%2D24,in%20this%20FY%202023%2D24.>

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RAPIDLY EXPANDING BUILDING AND CONSTRUCTION SECTOR

Originating in 1977, life cycle costing has emerged as a crucial tool for evaluating the long-term financial implications of using different materials in construction. This methodology involves converting future expenses into present values, incorporating risk predictions, and considering environmental impact costs.

While life cycle costing encourages the industry to consider long-term impacts, it is essential to recognise that minimising maintenance needs does not automatically result in the most sustainable design. Nevertheless, stainless steel's durability and minimal maintenance requirements significantly reduce its environmental footprint over time despite its higher initial embodied energy compared to carbon steel and aluminium alloy.

One of India's emerging segments for stainless steel consumption is the architecture, building, and construction (ABC) sector. Stainless steel is being utilised alongside conventional materials like steel, glass, plastics, and aluminium composites.

The Indian ABC sector has increasingly recognised the benefits of stainless steel. The consumption of stainless steel in this sector, which encompasses products like sinks, elevators, foot-over bridges (FOBs), road-over bridges (ROBs), handrails, gates, roofing, cladding, street furniture, and builders' hardware, has seen significant growth in recent years. Architects are favouring stainless steel due to its aesthetic appeal, fire resistance, and corrosion resistance. Consequently, stainless steel is becoming integral to modern infrastructure, supported by various government initiatives.

Further, government support in infrastructure development is evident through initiatives such as transforming 508 railway stations across the country under the Amrit Bharat Station Scheme with an investment of INR 25,000 crore. Additionally, INR 10,000 crore is expected to be allocated for creating urban infrastructure in Tier 2 and Tier 3 cities, the completion of 25,000 km of national highways, the establishment of 50 additional airports with associated air connectivity, and the completion of 8 million houses under the Awas Yojna plan.

In buildings, stainless steel is widely used for facades, interior surfaces, stair structures, balconies, doors, lifts, and various supplementary structures such as canopies, hatches, and balustrades. Its use in load-bearing structures is also rapidly increasing. The construction industry primarily uses austenitic stainless steels for their corrosion resistance, strength, and formability, while ferritic grades are preferred for interior cladding, and specialist products are available for

roofing. In applications subject to severe atmospheric stress and in structures where lightweight architectural solutions are required, stainless steel is often the only viable option. Its ease of use and low maintenance needs are significant factors in its selection.

Stainless steel rebars are particularly well-suited for projects that require increased durability and heightened resistance to corrosion, such as bridges, coastal structures, high-rise buildings, and industrial facilities. Their exceptional strength and longevity make them a preferred choice for projects where structural integrity is crucial. Furthermore, the design flexibility offered by stainless steel rebars enables architects and engineers to explore innovative construction methods while ensuring the longevity and safety of the structures. India inaugurated its first two stainless steel foot-over bridges in Maharashtra and Andhra Pradesh in 2022. The bridges were opened to the public at Naupada station, Srikakulam district, Andhra Pradesh, and Bhayandar station, Maharashtra. Jindal Stainless supplied the stainless steel used in the construction of these bridges.

Jindal Stainless supplied stainless steel for India's first diagrid structure, the new head office building of United India Insurance Company Ltd in Chennai. The iconic building features stainless steel frames connected to a central core through lateral beams. This innovative design redefines conventional construction by eliminating columns, with the stainless-steel frames serving as the primary load-bearing elements of the structure.

Moreover, the government has allocated a substantial investment of INR 98,000 crore by 2025 towards new airport construction and the modernisation of existing ones. Private sector participation has been instrumental in doubling the capacity of Indian ports over the past decade, with further goals to increase the share of cargo handling capacity in PPP terminals to 85% from the current 50% in the long term.

Therefore, stainless steel, combining durability, low maintenance, and high residual value, presents a compelling solution in the Indian ABC sector that effectively balances initial costs with long-term sustainability and economic advantages.

Sources:

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PROCESS INDUSTRY

Stainless steel plays a pivotal role in various sectors of the process industry due to its exceptional properties. Its versatility and durability open numerous growth opportunities across diverse applications.

Aerospace and Defence

Stainless steel's high resistance to extreme temperatures makes it indispensable in the aerospace and defence industries. Stainless steel is extensively utilised in the manufacturing of various aircraft components, including landing gear, engine parts, and structural elements. Its high strength-to-weight ratio and exceptional resistance to corrosion make it an ideal material for these applications. In the defence sector, stainless steel is employed in the construction of military vehicles, naval ships, submarines, and armoured personnel carriers due to its durability and robustness.

Jindal Stainless is among the few companies worldwide to receive the prestigious AS 9100D Certification, a quality management system standard specifically for aviation, space, and defence organisations.

Furthermore, Jindal Stainless developed and supplied a special high-strength alloy steel grade for the motor casing of India's ambitious third lunar mission, Chandrayaan-3. This achievement underscores Jindal Stainless' commitment to meeting the unique material requirements of the aerospace sector. The company aims to continue supporting advanced aerospace projects with its specialised materials in the future.

Water and Waste Processing

In water treatment and waste management, corrosion resistance is paramount. Stainless steel's superior resistance to corrosive elements and ease of cleaning make it an ideal material for these processes, enhancing efficiency and longevity.

Green Hydrogen

Green hydrogen, produced through climate-neutral methods using 100% renewable energy, stands out as the more environmentally friendly alternative. The predominant method of producing green hydrogen is water electrolysis, which separates hydrogen from oxygen.

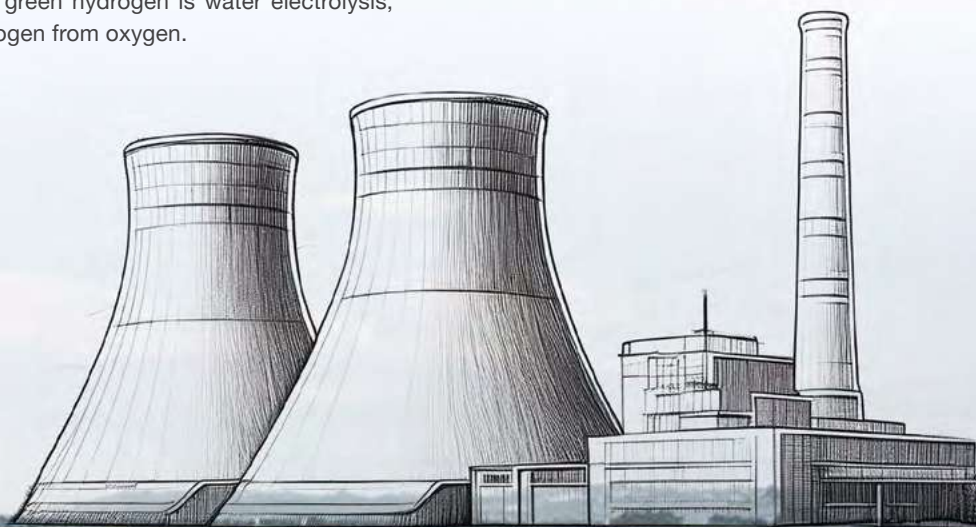


In March 2024, Jindal Stainless marked a significant milestone by initiating the use of green hydrogen in its stainless steel plant in Hisar, Haryana. This pioneering effort underscores the company's commitment to sustainability and aligns with India's goal of achieving Net Zero carbon emissions.

Nuclear Power Plants

Nuclear power plants depend on stainless steel for safe operation and durability. Its strength, corrosion resistance, and ability to endure extreme conditions make it the preferred choice for critical components in these highly sensitive environments.

The electricity generation from nuclear power plants has reached approximately 32,017 million units as of November 2023 in FY24, marking significant progress towards the aspirational MoU target of 52,340 million units for the year. Construction and commissioning activities are progressing for ten reactors with a total capacity of 8,000 MW across several states, including Gujarat, Rajasthan, Tamil Nadu, Haryana, Karnataka, and Madhya Pradesh. Additionally, pre-project activities have commenced for another ten reactors sanctioned by the government as of December 2023, indicating a concerted effort to expand India's nuclear power infrastructure in the near future.



Scientific Laboratories

Sterility is crucial in scientific laboratories, and stainless steel meets this need with its nonporous surface and ease of sterilisation. It is favoured over other materials, such as aluminium, for laboratory equipment due to its reliability in maintaining a sterile environment.

Commercial Kitchens

Stainless steel is a staple in commercial kitchens, used in everything from cutlery and saucepans to sinks. Its ability to withstand extreme temperatures, resist corrosion, and prevent bacteria buildup makes it essential for maintaining hygiene and food safety.

Medical Technology

In medical technology, stainless steel's rust resistance and germ-free properties make it ideal for surgical instruments, medical devices, and sterilisation equipment. Its use in surgical knives, clamps, forceps, and other apparatus ensures reliability and hygiene in medical procedures.

Food Industry

The food industry leverages stainless steel for manufacturing, catering appliances, cookware, and cutlery. Its durability and resistance to corrosion make it perfect for utensils, ensuring longevity and safety in food preparation.

Other Applications

The paper manufacturing industry uses stainless steel to avoid contamination and resist the corrosive effects of chemicals. Similarly, the pharmaceutical and chemical industries benefit from its endurance and resistance to contamination, ensuring product integrity.

Stainless steel's unique properties provide significant growth opportunities in the process industry, enhancing efficiency, safety, and reliability across various applications.

Sources:

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PIB <https://pib.gov.in/PressReleaselframePage.aspx?PRID=1988863>

INDIA STAINLESS INDUSTRY OUTLOOK

India currently holds the position of the second-largest global consumer of stainless steel, with its consumption projected to increase significantly. The per capita consumption of stainless steel, which stands at 2.8 kg, is expected to rise to between 8.5 kg and 11.5 kg by 2047.

The demand for stainless steel is anticipated to grow at a rate of 6.5–7.5% until 2025, after which it is expected to accelerate to approximately 7–8% from 2025 to 2030. By 2030, this demand is expected to reach approximately 6.6–6.8 million tonnes. Stainless steel's unique properties, such as corrosion resistance, lower life cycle costs, 100% recyclability, and sustainability, have driven its significant growth across various industries.

Substantial growth has been observed in domestic sectors such as automotive and railways. In the railways sector, ambitious initiatives like the Vande Bharat programme have propelled this growth, generating strong demand for wagons as well as metro and urban rail transit projects. The PM Gati Shakti project is also gaining momentum, expected to generate additional demand for ongoing and upcoming projects like airports, heliports, cargo terminals, station development, and freight corridors.

Additionally, there is a rising demand from emerging sectors like ethanol blending, renewable energy, and process industries such as thermal power plants and refineries, all of which rely heavily on stainless steel consumption. As India continues to grow economically, these segments are expected to maintain healthy compound annual growth rates (CAGRs).

However, the industry requires government intervention to impose Countervailing Duties (CVD) on China and Indonesia, where Chinese investments are substantial and aimed at exports. These countries have been dumping heavily subsidised materials into the Indian market at extremely low prices. It is widely recognised that China has been exporting significantly subsidised stainless steel to various countries, leading to the imposition of Anti-Dumping Duties (ADD) and CVD by all major stainless steel-producing nations on China and Indonesia.

Nevertheless, the Indian stainless steel industry is well-equipped to meet domestic demand and facilitate import substitution. It produces highly standardised products accepted in markets such as the USA and the European Union, and it will continue to export in the future. Also, the industry can produce nearly all grades of stainless steel used globally.

Source:

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BUSINESS OVERVIEW

ABOUT JINDAL STAINLESS LIMITED

Jindal Stainless Limited (JSL) is one of the leading stainless steel manufacturers in India. The company was established in 1970 and has continued to drive innovation and uphold its commitment to social responsibility. It has a benchmark in the sector through its dedicated workforce, value-driven business practices, customer-centric approach, and industry-leading safety standards.

Jindal Stainless is enhancing its operations to achieve an annual melt capacity of 4.2 million tonnes. The company is known for its fully integrated operations and maintains a competitive edge in cost efficiency and operational excellence, thereby positioning itself as a top global player in stainless steel.

JSL emphasises sustainability by manufacturing stainless steel using scrap in electric arc furnaces, a process that minimises greenhouse gas emissions and ensures 100% recyclability without compromising quality, thereby contributing to a circular economy. The company aims to reduce carbon emission intensity by 50% well before FY35 and achieve net zero emissions by 2050, reflecting its commitment to environmental responsibility and a greener future.

The company operates 16 stainless steel manufacturing and processing facilities in India, Spain, and Indonesia, with an extensive network spanning 15 countries globally. Jindal Stainless has established ten sales offices and six service centres in the country to better serve its customers. The company's primary manufacturing facilities in India are in Jajpur, Odisha and Hisar, Haryana.

PRODUCT OVERVIEW

Jindal Stainless Limited is India's prominent manufacturer of stainless steel in 200, 300, 400, and duplex stainless steel products. Modern technology, a vast range of products, cross-market experience, a clear focus on customer needs, and a five-decade experience define the company's product portfolio. It includes stainless steel slabs, blooms, coils, plates, sheets, precision strips, wire rods, rebars, blade steel, and coin blanks. Also, the company is the world's largest producer of chrome manganese steel.

Jindal Stainless Product Line:



Slabs



Blooms



Hot Rolled (HR) Coils



Cold Rolled (CR) Coils

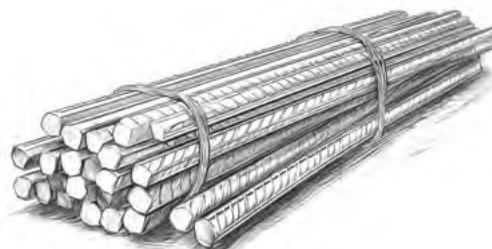


Plates



Speciality Products

- Precision Strips
- Coin Blanks
- Razor Blades



Long Products

- Wire Rods
- Rebars

APPLICATIONS AND INDUSTRIES SERVED

Architecture, building, and construction

Jindal Stainless provides tremendous design flexibility to construction projects and impeccable strength, resistance to corrosion, and fire resistance.

Automotive and transport

The exceptional strength-to-weight ratio, corrosion resistance, and durability of stainless steel make it an integral element of the automotive industry.

Railways

Stainless steel, renowned for its durability, provides significant energy-saving benefits, a lightweight design, and 100% recyclability, making it an ideal material choice for the railway industry.

Process industry

Stainless steel applications are integral to the chemical, processing, and oil & gas industries due to their superior corrosion, high-temperature, and low-temperature resistance. They form a robust foundation to endure the demanding conditions in petrochemical, fertiliser, and various chemical manufacturing sectors, including both organic and inorganic chemicals and acids. These industries drive the demand for specialised stainless steel in process equipment like tanks, reactors, vessels, pipes, pumps, and valves. The exceptional corrosion resistance and superior mechanical properties of these grades under diverse conditions make them ideal for critical applications in chemical, petrochemical, and other industry-specific needs.

Consumer durables

Driven by stringent quality standards, aesthetics, hygienic, and high durability requirements, the consumer durables segment extensively utilises stainless steel for its excellent corrosion resistance and visually appealing surface finishes. Jindal Stainless stands out by offering a comprehensive range of stainless steel grades tailored to this segment. Through its subsidiary, Jindal Lifestyle Limited, the company has established itself as a global player, developing various high-quality lifestyle products in stainless steel.



GROWTH EXPANSION PLANS

Strategic partnerships and acquisitions for sustainable development

Over the last few years, Jindal Stainless has made significant expansions through strategic collaborations for further sustainable development. This includes a strategic collaboration with a Singapore entity to set up a 1.2 million tonnes per annum stainless steel melt shop in Indonesia for a 49% stake. This venture aims to enhance speed and secure raw material supplies.

Furthermore, on July 20, 2023, Jindal Stainless Limited completed the acquisition of Jindal United Steel Limited (JUSL). Previously, JSL held a 26% stake in JUSL. With this, JSL has acquired the remaining 74% equity stake of JUSL, making the latter a wholly-owned subsidiary of JSL.

As part of its ongoing commitment to strategic ESG (Environmental, Social, and Governance) expansions, Jindal Stainless signed a significant contract with ReNew Power, the country's largest renewable energy company, on December 5, 2022. This partnership will establish a ~300 MW utility-scale captive renewable energy project, reinforcing JSL's dedication to sustainable growth.

Downstream expansion for overall balancing

Jindal Stainless acquired Chromeni Steels Private Limited (CSPL), making it a subsidiary at a total capacity of 0.6 million tonnes per annum (MTPA) in Mundra, Gujarat. This aims to enhance alignment and operational efficiency within the company. Additionally, Jindal Stainless will upgrade its downstream facilities, aligning with the new SMS facility in Indonesia, and both are set to become operational simultaneously.

Backwards integration/raw material security

Jindal Stainless has acquired a 49% stake in Indonesia-based nickel pig iron (NPI) company New Yaking Pte. This acquisition is crucial for ensuring long-term access to nickel, a vital raw material in the stainless steel industry.

Product diversification

JSL invested in Rathi Super Steel, which has a production capacity of 0.16 MT, strengthening its foray into long products in response to India's growing infrastructure focus. The investment will be directed toward expanding capacity and enhancing plant quality, ensuring greater adaptability to the specific products needed in the infrastructure sector.

JSL acquired Rabirun Vinimay Pvt Ltd, a firm in liquidation. This aligns with the company's strategic goal of expanding its cold-rolling capabilities and catering to a broader range of industries.

OPERATIONAL OVERVIEW

Jindal Stainless stands out as one of the few manufacturing companies that have embraced significant digital disruption in crucial areas such as raw material procurement, transportation of finished goods, and supply chain management. The company operates two major plants: the Hisar plant, with a capacity of 0.8 MTPA, and the Jajpur plant, boasting a capacity of 2.2 MTPA. These facilities highlight Jindal Stainless' commitment to scale, efficiency, and meeting the growing demand for high-quality stainless steel products.

The unique selling proposition (USP) of Jindal Stainless manufacturing lies in its resilience and flexibility. The company's systems are designed to cater to diverse customer needs and demands, optimising and customising requirements efficiently.

Both the Hisar and Jajpur plants are undergoing constant upgrades, with full digitalisation expected by FY25. The Jajpur plant, serving as the mother manufacturing facility, is equipped with state-of-the-art technology to

cater to large, diverse, and high-scale demands. It has a voluminous capacity and is capable of producing any grade, size, and product of stainless steel. Meanwhile, the Hisar plant focuses on niche requirements, with ongoing efforts to match global standards through skill and technological development, as well as risk mitigation.

Quality assurance stands as a cornerstone of Jindal Stainless' operational strength. The company's unwavering commitment to maintaining the highest quality standards permeates every aspect of its production process. From the procurement of raw materials to the final product, rigorous quality checks and protocols ensure that every batch of stainless steel meets the stringent specifications required by various industries.

In essence, Jindal Stainless' operational and manufacturing framework reflects a commitment to innovation, efficiency, and customer satisfaction, positioning it as a leader in the stainless steel industry.

Both the Hisar and Jajpur plants are undergoing constant upgrades, with full digitalisation expected by FY25.



HISAR



JAJPUR

OPPORTUNITIES

STAINLESS STEEL – A GREEN AND SUSTAINABLE WONDER METAL

As one of the most commonly used green raw materials, stainless steel is a model of sustainability. It is 100% recyclable, with over half of the stainless steel materials in use today sourced from scrap, contributing to a circular economy. Moreover, its production does not produce toxic run-off, making it a preferable alternative to non-recyclable raw materials. By choosing stainless steel, individuals and businesses can contribute significantly to environmental conservation.

Stainless steel is renowned for its durability and long service life, making it an ideal choice for industries looking to reduce their environmental impact. Its unique properties allow it to withstand the test of time across various applications. The corrosion resistance of stainless steel significantly reduces the need for specialised cleaning supplies, paints, or coatings, which often contain harmful chemicals. Standard cleaners and degreasers, or even just clean, warm water and a soft cloth, are sufficient to maintain stainless steel equipment, services, and tools in pristine condition for years.

Jindal Stainless is at the forefront of the movement towards sustainability in the stainless steel industry. The company is making concerted efforts to reduce carbon emissions, focusing on renewable energy sources and aiming to cut emissions across its supply chain (Scope 3) and direct emissions (Scope 1). The company is also ensuring compliance with regulations like the Carbon Border Adjustment Mechanism (CBAM) and addressing challenges to remain fully compliant moving forward.

Moreover, Jindal Stainless has explored the use of green hydrogen as a process gas in stainless steel production, though this is still in the nascent stages and represents a learning case for the company. Additionally, in FY24, the company announced its official commitment to the near-term science-based emissions reduction and Net Zero targets outlined by the global climate action body, the Science-Based Targets Initiative (SBTi). This significant step underscores Jindal Stainless' dedication to achieving carbon neutrality and leading the industry in producing sustainable products.

GOVERNMENT INITIATIVES

The government initiatives present significant potential for growth and sustainability. The Union Steel Ministry has embarked on industry consultations to develop India's first stainless steel policy. This ambitious policy aims to increase the domestic production capacity from the current 6.6 million tonnes to 30 million tonnes by 2047. A crucial aspect of this policy is to reduce India's dependency on China for essential raw materials such as nickel, silicon, and chromium, which are critical for stainless steel manufacturing. Strategies are being explored to diversify sourcing options, including securing supplies from other countries or within India itself.

In alignment with these government efforts, Jindal Stainless Ltd has taken proactive steps by acquiring a 49% stake in an Indonesian nickel smelter for approximately INR 1,300 crore. This acquisition aims to ensure a stable supply of nickel, an essential raw material, highlighting Indonesia's role as a leading global producer. These initiatives reflect a concerted effort to bolster India's stainless steel industry, reduce import dependence, and foster sustainable growth.

Furthermore, the introduction of the Production Linked Incentive (PLI) 2.0 scheme marks a significant advancement in meeting the rising demands for stainless steel and alloy steel in critical applications. This scheme aims to establish product differentiation and niche solutions, thereby reducing reliance on imports and expanding the global presence of the Indian stainless steel industry. Unlike the previous PLI, which primarily focused on large-volume steel products, the current round targets specialty steel characterised by high value but low production volumes.

The domestic industry has the capability to produce most grades of stainless steel, but speciality products require technology upgrades to enhance quality and competitiveness. The demand for these speciality grades is expected to rise due to their applications in strategic sectors such as defence, aerospace, renewable energy, healthcare, blue and green economy, infrastructure, and process industries. These speciality steel products also have substantial export potential, and the PLI 2.0 scheme is poised to harness this opportunity, fostering long-term export growth.

By supporting value-added products, PLI 2.0 will make these products more competitive and improve their quality for critical applications. The scheme aligns with the government's vision of an Atmanirbhar Bharat, promoting self-reliance and sustainable growth among domestic manufacturers.



TECHNOLOGICAL ADVANCEMENTS AND AUTOMATION

Stainless steel is continuously evolving due to cutting-edge research and development, making it a dynamic and versatile material. One significant area of advancement is nanotechnology, which manipulates matter at the atomic and molecular scale to create new materials with unique properties. For instance, advanced high-strength stainless steels with nano/ultrafine grains exhibit high strength and ductility, enhanced deformation, and fracture behaviour due to twinning-induced plasticity (TWIP) and transformation-induced plasticity (TRIP) effects. These steels also offer improved corrosion resistance, wear resistance, and fatigue life compared to conventional stainless steel. An example of such innovation is the nanostructured austenitic stainless steel (NAS) developed at the University of Texas at El Paso, featuring a grain size of about 100 nm and yield strength of approximately 1 GPa, which is four times higher than conventional austenitic stainless steel.

Additionally, 3D printing, or additive manufacturing, is revolutionising the production of stainless-steel components. Techniques such as selective laser melting (SLM), direct metal laser sintering (DMLS), and binder jetting allow for the creation of stainless-steel parts with high density, strength, and accuracy. These methods can produce intricate geometries and features not feasible with traditional machining or casting. For example, researchers at Imperial College London have utilised SLM to create stainless steel lattice structures with variable porosity and stiffness, which are ideal for lightweight structural

applications. These structures boast high specific strength and stiffness, along with enhanced energy absorption and damping properties.

Industry 4.0 has been a cornerstone of Jindal Stainless' digital transformation strategy, driving innovation at the shop floor level. The journey began with the Digital Shopfloor and Digital Control Tower initiatives at the Jajpur and Hisar units.

The Digital Shopfloor focuses on IoT integration, enabling real-time data collection on operational, maintenance, and quality parameters through edge and cloud platforms. This transition to paperless operations consolidates various paper logs and fragmented system entries into a unified digital platform.

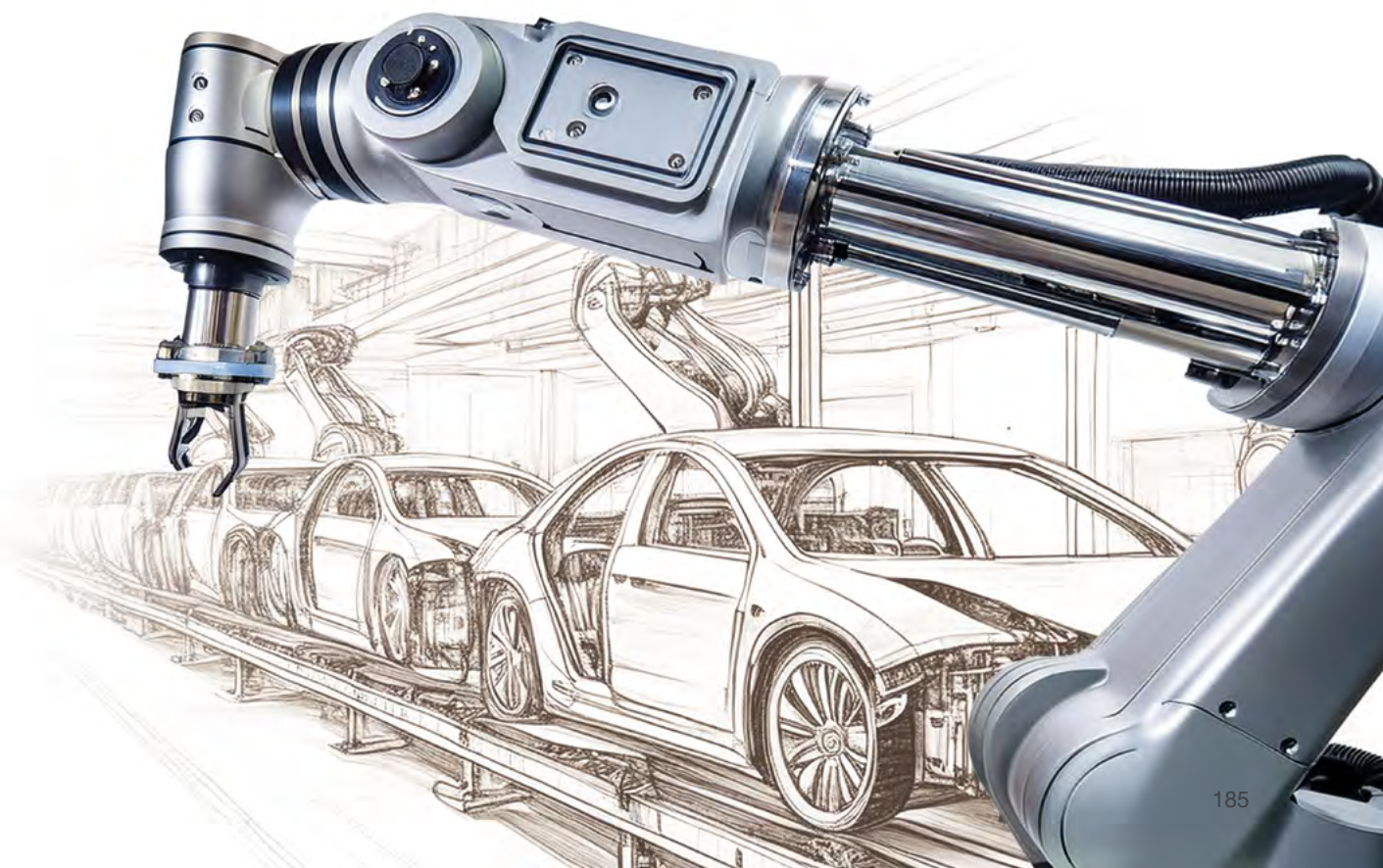
The Digital Control Tower, a cloud-based data consolidation layer, provides immediate benefits such as machine health monitoring and real-time dashboards for operational and quality KPIs. This platform will scale to enable system-driven decision-making by leveraging predictive and prescriptive analytics across operations, quality, and maintenance.

This Industry 4.0 initiative is set to revolutionise plant efficiency and productivity. By optimising processes and improving equipment reliability, the company aims to achieve significant improvements in key performance indicators such as Overall Equipment Effectiveness (OEE), Mean Time to Repair (MTTR), Mean Time Between Failures (MTBF), quality, turnaround time (TAT), and cost.

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KEY RISKS AND MITIGATION STRATEGIES

Key Risks	Particulars	Mitigation Strategy
Raw Materials Price Risks	<p>Nickel and ferrochrome are crucial raw materials in the stainless steel industry, significantly influencing the company's product costs. Being a typical commodity-based product, these materials are subject to price fluctuations and availability. Such volatility can affect the cost of user industries.</p>	<p>The company proactively manages these challenges by adjusting its strategies to secure a stable and cost-effective supply of raw materials. The company has established partnerships with reliable domestic and international suppliers to ensure continuous access to raw materials. For instance, Jindal Stainless entered into a joint venture with New Yaking Pte Ltd, ensuring the long-term availability of nickel pig iron for its stainless steel production.</p>
Import Risks	<p>The Indian stainless steel industry faces tough competition from cheap imports from China, exacerbated by Free Trade Agreements (FTAs) like the ASEAN FTA, which favour partner nations and threaten domestic profitability. This influx of Chinese imports, often characterised by substandard quality, continues to disrupt the Indian stainless steel market. This trend poses significant challenges to the MSME sector, disrupting the level playing field necessary for fair competition and hindering further innovation in the industry. Establishing robust monitoring of import pricing and regulations, including stricter port surveillance and empowering customs officials, has become crucial. While initial guidelines are in place, swift and careful implementation is essential. Moreover, India does not have any level playing field measures against the dumping. Whereas globally countries are imposing tariff barriers like CVD/AAD safeguard & non-tariff barriers like CBAM by EU.</p>	<p>Addressing the challenge of increased Chinese imports presents Jindal Stainless with an opportunity to strengthen its production capacity and fulfil the growing domestic demand that is currently being met by imports. Jindal Stainless advocates for safeguarding domestic manufacturers and increasing domestic production, which is currently met by imports. The government initiative to make India a developed economy and develop indigenous sustainable solutions will lead to enhanced consumption of metals, including stainless steel. This provides an impetus to stainless steel consumption in sectors like infrastructure and manufacturing.</p> <p>The Bureau of Indian Standards (BIS) has introduced three new grades—N5, N6, and N7—under the standard IS 15997, specifically for stainless steel used in utensils and kitchenware.</p> <p>Goods that do not meet these standards may pose safety and durability risks for equipment and infrastructure due to the use of non-standard stainless steel grades.</p> <p>Jindal Stainless focuses on developing new grades, markets, and applications to meet domestic market requirements and prioritise import substitution. A key example is the collaboration with BHEL, where Jindal Stainless successfully produced C276 clad plates and alloy steel plates SA387 GR 91 (9 Cr 1 Mo) locally—materials previously imported from the EU, China, and Japan. This achievement highlights the company's capability to reduce reliance on imports. Additionally, Jindal Stainless is diversifying its segment mix to mitigate risks and avoid over-dependence on any single segment.</p>

Key Risks	Particulars	Mitigation Strategy
Supply Chain Risks	Supply chain volatility, influenced by natural disasters, political instability, economic downturns, and technological disruptions, poses a significant risk to the stainless steel industry. Events like floods, earthquakes, and political conflicts can damage infrastructure and disrupt transportation, causing raw material shortages. Geopolitical tensions and global fragmentation can further complicate supply chains, erect trade barriers, and increase uncertainty, affecting the company's operations and profitability.	Jindal Stainless has implemented resilient systems to procure raw materials from diversified sources to mitigate the supply chain risk, ensuring consistent production. The company's agility in adapting to shifting geopolitical landscapes strengthens its resilience in navigating the complex global economic environment.
Compliance, Regulatory and Policy Risks	Regulatory risks, such as changes in laws and regulations by government or regulatory bodies, can significantly affect a business, sector, or market. These changes may raise operational costs, diminish investment appeal, or alter the competitive dynamics within an industry. In severe instances, such regulatory shifts have the potential to stifle a company's growth opportunities. Additionally, exporting to countries with varying political and commercial stability poses further challenges to the company's performance. The stainless steel industry has been impacted by an integrated policy framework approach within the broader steel sector. Stainless steel, characterised by low-volume and high-value products, requires dedicated attention that is distinct from general steel. Due to this integrated approach, the unique challenges and requirements of the stainless steel industry often go unaddressed within the overall steel framework.	Jindal Stainless closely monitors these regulatory developments in the stainless-steel sector and adjusts its strategies to mitigate risks and support industry growth. For instance, the company is among the first to apply for and secure certification for different grades, demonstrating its commitment to quality and safety. Simultaneously, the government is taking initiatives toward the preparation of policies like the National Stainless Steel Policy.
Financial Risks	The company faces financial market volatility, particularly in fluctuating interest rates, and is exposed to currency risks due to significant import and export activities.	Jindal Stainless has been focused on prudent financial risk management by maintaining healthy leverage ratios and improving creditworthiness. It actively manages its capital structure through debt reduction, refinancing to enhance average loan tenure and return on investment, and optimising costs associated with variable and fixed interest rates. The company also adopts suitable hedging strategies to mitigate its foreign currency exposure.
Cyber Risks	The increased reliance on digital systems presents enhanced efficiency opportunities and exposes the company to cybersecurity threats. These risks can potentially impact operational continuity and compromise data security. Such attacks may disrupt production, cause equipment malfunction, or lead to physical damage, resulting in operational downtime, financial losses, and compromised product quality.	To mitigate this risk, the company has been implementing robust network security measures, regular updates, employee training, and effective incident response plans. Jindal Stainless ensures uninterrupted operations and upholds the integrity of its products and services by prioritising data security and safeguarding manufacturing processes from cyber threats.

OUTLOOK

Jindal Stainless Limited's growth trajectory for FY24 is underscored by a strategic focus on operational efficiency, digitalisation, people empowerment, market development, and customer satisfaction. The company is driving innovation through business development activities to create an ecosystem that facilitates the use of stainless steel. Emphasis is placed on transparent policies, system-based processes, and improved services to foster long-term, mutually beneficial relationships with customers.

Jindal Stainless prides itself on producing over 120 grades of stainless steel, the widest known offering by any manufacturer. The company focuses on strategic sourcing,

continuous product enhancement through R&D, predictive analysis, and ongoing product mix upgrades. Its flexibility in manufacturing a wide variety of grades across the 200, 300, and 400 series, including duplex, super duplex, and super austenitic grades, allows it to adapt production based on market conditions.

Through consistent internal improvements and a commitment to transparency and just-in-time delivery, Jindal Stainless has successfully navigated challenges such as inflationary trends and raw material price volatility. The company's goal remains to be the most energy and cost-efficient carbon-responsible manufacturer.

FINANCIAL OVERVIEW

Standalone INR (in crore)	FY24	FY23
Sales Volume (Tonnes)	21,74,610	17,64,405
Revenue	38,356	35,030
EBITDA	4,036	3,567
Other Income	369	106
Finance Cost	393	295
Depreciation	715	675
PBT	3,328	2,704
Tax	797	690
PAT	2,531	2,014

In FY24, sales volume reached 2,174,610 tonnes, up by 23% from 17,64,405 tonnes in FY23. Standalone net revenue from operations grew by 9% to INR 38,356 crore compared to INR 35,030 crore in FY23. Standalone EBITDA for FY24 was INR 4,036 crore, up from INR 3,567 crore in the previous year, marking a growth of 13%. The net profit for FY24 stood at INR 2,531 crore compared to INR 2,014 crore in FY23, which witnessed a growth of 26%. The capital employed increased to INR 17,826 crore in FY24 from INR 15,690 crore in FY23.

Key Financial Ratios*	FY24	FY23
Debtors Turnover	11.3	9.1
Inventory Turnover	3.5	3.5
Interest Coverage Ratio	11.2	12.5
Current Ratio	1.4	1.4
Net Debt to Equity Ratio	0.2	0.2
Net Debt to EBITDA Ratio	0.6	0.7
EBITDA margin (%)	10.5%	10.2%
Net Profit Margin (%)	6.6%	5.7%
ROE %	20.1%	19.3%
ROCE %	20.9%	21.4%

* Standalone financial statements

Similarly, the ROE increased to 20.1% in FY24 from 19.3% in FY23. Despite significant organic and inorganic capital expenditures, it continued to maintain a healthy net debt-to-EBITDA ratio of 0.6x and a net debt-to-equity ratio of 0.2x. Return on Equity and return on capital employed stood at 20.1% and 20.9%, respectively.

DIGITALISATION

Stainless steel manufacturing is a complex, made-to-order sector that demands agile and transparent processes to deliver reliable performance and meet customer targets. Effective planning, resource utilisation, real-time shop floor information, capacity balancing, and accurate predictions are essential to maintain high-quality standards.

Digitalisation at Jindal Stainless encompasses core processes, supporting functions, and employee experience. It enables simultaneous access to sensor data from the shop floor to the top floor without any imprint. The path followed is shop floor – plant – cloud.

Concerning stainless steel manufacturing, digitalisation supplements planning and scheduling orders and helps tackle manufacturing constraints. In this regard, Jindal Stainless uses Dassault Systèmes' 'Operations Planning and Scheduling Excellence' industry solution, based on the 3DEXPERIENCE platform and leveraging DELMIA applications, to optimise these processes virtually. This deployment enables JSL to strengthen its presence in core sectors, such as automotive and infrastructure, while sustainably expanding its lifestyle, aerospace, and defence activities. Virtual twin experiences help Jindal Stainless minimise its carbon footprint by reducing product diversions and quality rejections.

With the expansion and doubling of its production capacity at two facilities, the company seamlessly manages end-to-end production and operations through an integrated and fully-automated approach. Similarly, effective logistics and transportation management are crucial for both inbound and outbound operations in the intricate supply chain of stainless steel.

Jindal Stainless has been leveraging SAP Transportation Management to consolidate and optimise dispatch loads, manage spot tendering, streamline vendor invoice submissions, and facilitate freight settlement. Initially used for road outbound logistics, this system has now been extended to cover inbound logistics and private rail freight providers.

In essence, digitalisation at Jindal Stainless is in tandem with its business expansion goals, both organic and inorganic.

RESEARCH AND DEVELOPMENT

Jindal Stainless' R&D department, driven by the goals of replacing general-purpose stainless steel, expanding product demand, advancing stainless steel research, and adapting to market changes, embodies the vision of a progressive India by creating feature-rich, solution-oriented technology for its valued customers. Over the past decade, the company has been developing environmentally friendly and resource-efficient products.

To meet both social and economic needs, the company continuously upgrades its quality, processes, services, and product innovation, producing new stainless steel

products at competitive costs. Knowledge sharing between production, quality control, and commercial units is essential for maintaining global standards and guiding market research efforts.

Jindal Stainless' R&D Department focuses on:

- Developing high-value products for niche markets
- Investing in quality upgrades for existing products to enhance global expansion and acceptance
- Optimising manufacturing technology to reduce costs through process development and refinement
- Enhancing technology to increase quality production and provide a competitive edge
- Fostering growth and developing new market segments by sharing knowledge with customers and supporting their operations and applications of the company's products

To lead the stainless steel industry in India, the company's R&D division collaborates with national and international laboratories, scientific institutions, and universities, leveraging their expertise for critical investigations and steel research. The development of new products and import substitution remain key focuses for Jindal Stainless, intending to achieve 10% of production through R&D initiatives.

HUMAN RESOURCES

Jindal Stainless Limited prioritises its people, acknowledging them as the cornerstone of the company's success. The company leverages technology to improve the employee experience by implementing DarwinBox, a next-generation HR system that simplifies core HR functions. This allows it to concentrate on strategic initiatives that benefit its employees. Additionally, the company's integrated travel solutions and a digital employee rewards platform provides a more streamlined and user-friendly experience for everyone.

OVERVIEW OF WORKFORCE SIZE AND COMPOSITION

Jindal Stainless employs a diverse and extensive workforce, demonstrating its commitment to fostering talent across various regions. The total number of employees is more than 24,000, with a geographical distribution that includes a significant presence in India and international offices. The workforce composition reflects a broad demographic spectrum, encompassing a balance of gender, age groups, and educational backgrounds.

Jindal Stainless continuously recruits young talent from leading B Tech and MBA institutions, infusing the company culture with fresh perspectives and dynamism. This year, the company successfully onboarded a substantial number of graduates, enriching its workforce with diversity and vitality. By fostering a culture of well-being and regularly conducting safety training and assessments, the company is committed to ensuring the welfare of its employees.

TRAINING AND SKILL DEVELOPMENT PROGRAMMES

- **Continuous learning:** The company is committed to cultivating a culture of continuous learning. This year, a variety of workshops and programmes were designed to enhance constructive feedback skills, enabling employees to take charge of their own development.
- **Upskilling workforce:** The ongoing partnership with IIT Bombay has allowed the company to offer a specialised M Tech programme in steel technology, further enhancing the technical expertise of its employees.
- **Future-ready skills:** In addition to its technical training and workshops on topics such as 'Powerful Presentation Skills' and 'Change Management Leadership', the company introduced sessions on waste-to-wealth and other sustainability-focused themes.
- **Internal growth:** Jindal Stainless promotes internal growth through a multi-faceted approach. Job rotations expand employees' skill sets and provide exposure to various areas of the company. Individual development plans are tailored to each employee's aspirations, and leadership programmes equip high-potential individuals with the skills needed to become future leaders.
- **OPJEMS scholarship:** This scholarship aims to foster academic and leadership excellence. It is awarded to meritorious students who embody the vision and values of Shri O P Jindal and demonstrate potential for leadership in entrepreneurial excellence and innovation. Jindal Stainless organised the OPJEMS scholarship to honour and celebrate 100 students from India's premier engineering and management institutions this year.

LABOUR RELATIONS AND EMPLOYEE WELFARE INITIATIVES

Jindal Stainless cultivates a positive and engaging work environment through various engagement initiatives. Events like Fantastic Fridays, which celebrate employee birthdays and achievements, foster fun and team bonding, while celebrations like 'Utsav' promote a sense of community and belonging. The company also honours special occasions such as Women's Day and other cultural festivals, showcasing its commitment to inclusivity and appreciation for diverse backgrounds.

Moreover, the company is dedicated to enhancing employee well-being. Through its ongoing 'Utthan' programme, the company offers spiritual sessions led by Brahma Kumaris to support mental health. Additionally, the company organises sports activities like the Stepathon and Badminton and Cricket tournaments to encourage physical fitness, foster camaraderie, and promote a healthy work-life balance.

INTERNAL FINANCIAL CONTROLS AND THEIR ADEQUACY

The company has established robust internal financial controls pertaining to its financial statements. These controls were thoroughly tested during the year, and no significant weaknesses in their design or operation were identified. This assurance underscores the company's commitment to maintaining effective financial governance and ensuring the accuracy and reliability of its financial reporting processes.

CAUTIONARY STATEMENT

This Management Discussion and Analysis includes forward-looking statements regarding guidance, industry prospects, or future results of operations or financial position. We use words such as anticipates, believes, expects, future, intends, and similar expressions to identify forward-looking statements. Forward-looking statements reflect the management's current expectations and are inherently uncertain. Actual results could differ materially for a variety of reasons, including fluctuations in foreign exchange rates, changes in global economic conditions and customer spending, world events and the rate of growth, among others. The company assumes no responsibility to amend, modify or revise any such statements. The company disclaims any obligation to update these forward-looking statements except as may be required by law.

