

FOUNDRY FRONTIER

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TRUMP TARIFFS: ENABLERS OR CHALLENGES FOR INDIAN FOUNDRIES?

— Madhumita Mookerji

India is not a major supplier to the US, but MSMEs may find it tough to weather the storm unlike larger players. However, many view the tariffs as a catalyst for transformation. The IIF is also playing a proactive role in terms of industry handholding and policy advocacy

Only 0.8 mnt of foundry products exported to the US

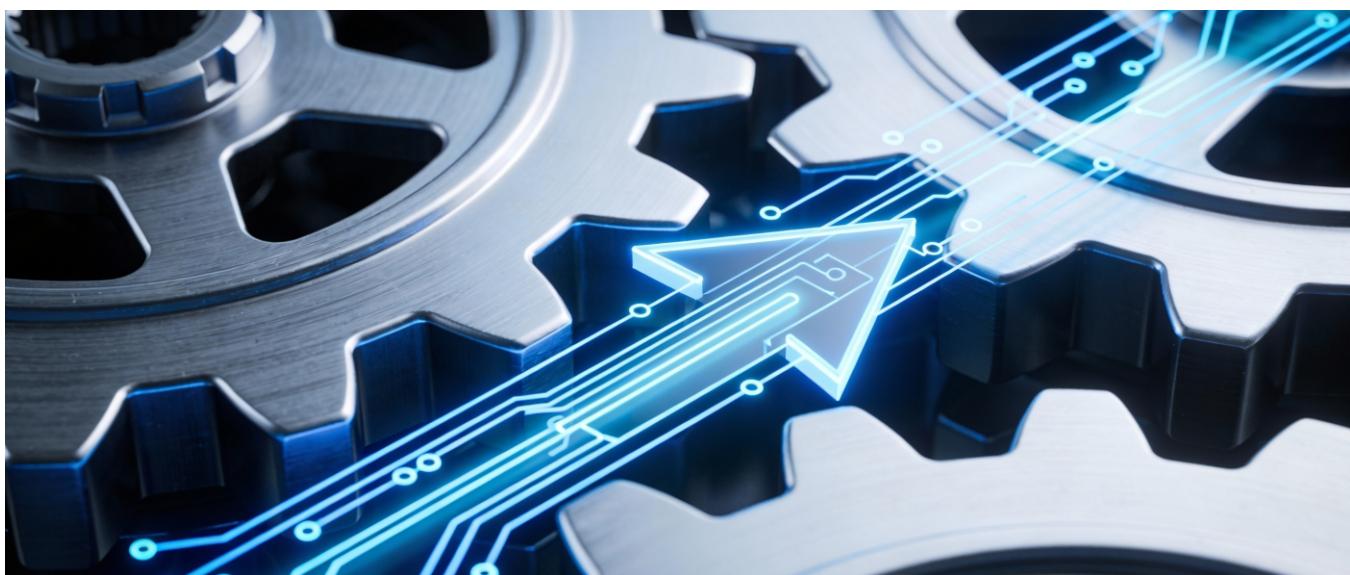
Automotive, tractor castings segment on the backfoot

India's foundry sector — the world's second largest after China — is assessing the aftershocks of the new US "national security" tariffs under Section 232, which

have redrawn global trade equations across metals and manufacturing supply chains.

It may be recalled, the United States had recently imposed a steep 50% duty on steel, aluminium, and derivative products, along with 25% on automobiles and auto components, citing the need for national security and domestic industry protection.

The measures were followed in quick succession by a 25% reciprocal tariff announced on 7 August and an additional 25% levy on 27 August in response to Washington's stance on India's oil imports from Russia. The cumulative effect has seen an immediate erosion in the



competitiveness of Indian exports to the US, particularly in steel, aluminium, and cast-component categories.

While the Section 232 tariffs apply broadly to several countries and are not specifically targeted at India, the reciprocal duties have created an uneven playing field. India's competitors such as Mexico, Japan, Thailand, Vietnam, and the Philippines, which share a comparable engineering export profile, are facing much lower effective tariffs, giving them an advantage in the North American market. So how will the tariff impact unfold?

Minuscule exposure to US market

China leads the global foundry industry with about 50 million tonnes (mnt) of castings annually — which is roughly one-and-a-half times the total output volumes of the next four countries combined. India, with 12 mnt, ranks second, ahead of the United States (10 mnt), Japan, and Germany.

Yet, India's foundry exports' share remains modest. Only about a quarter of the 12 mnt produced -- roughly 3 mnt tonnes -- leaves the country, and 20-25% of that total (around 0.8 mnt) heads to the US market.

That means just a sliver of India's considerable output is exposed directly to American tariffs. The US itself imports only 5-15% of its foundry requirements, a figure estimated at a little over 1 mnt, covering

iron, steel, aluminium, and brass castings. The relatively small import footprint in the US underscores a crucial point: even for major suppliers such as India, the American market, though important, is not a dominant one.

Both India and China cater largely to their respective vast domestic markets -- each serving populations that together make up nearly half of the world's consumers. This domestic orientation provides a cushion against external shocks but does not make the current tariff turbulence inconsequential.

MSMEs vs large foundries - uneven impact

The Indian foundry ecosystem is heavily skewed towards micro, small, and medium enterprises (MSMEs). Thousands of small units scattered across clusters such as Coimbatore, Rajkot, Kolhapur, Batala, Agra, and Howrah make up the backbone of production. Only a handful of large foundries operate at a global scale. These large players, industry leaders observe, are better equipped to weather the tariff storm. They possess financial muscle, technological depth, and diversified export networks that extend beyond the US, says a source in the Institute of Indian Foundrymen (IIF), Delhi.

He added that these larger players also have the flexibility to re-route trade through non-tariff regions, often by entering into joint ventures in the European Union or

Southeast Asia.

“Large Indian foundries have already begun adapting,” said the source, adding that many have switched to renewable power sources, particularly solar-based melting, turning themselves into net-positive energy producers that even sell excess electricity to the grid. Thus, these companies face no CBAM challenges, and are positioned to meet new environmental norms in the EU and beyond.

In contrast, MSMEs -- which account for over half of total foundry exports -- are more vulnerable. Though direct exports to the US remain small, they participate in complex global supply chains linked to automotive and engineering majors. With the new tariffs, orders are being delayed, shipments cancelled, and margins squeezed. The smaller exporters that depend on US demand, directly or indirectly, are seeing immediate pain.

Automotive, tractor segments may be hit

Roughly half of India's 0.8 mnt exports to the US come from the automotive and tractor segments, with general engineering contributing about 30% and non-ferrous castings making up the remaining 20%.

At a time when global automakers are rationalising sourcing to counter rising input costs, the 50% duty on steel and aluminium puts Indian automotive casting suppliers at

a clear disadvantage. A ballpark estimate places tractor-component exports alone at 0.2 mnt, now subject to steep tariffs that severely constrain price competitiveness.

The tariff escalation has also created ripple effects. Tier-2 and Tier-3 suppliers that feed into export-oriented OEMs are facing uncertain order flows. Domestic replacement demand may absorb some capacity, but the adjustment will take months.

IIF's role - policy advocacy, industry handholding

The Institute of Indian Foundrymen (IIF) - the apex industry body - has stepped up policy advocacy on multiple fronts. It is





working closely with the government to seek relief measures, pushing for technology-upgrade funding, and diversifying of export markets.

Through initiatives such as the Centre for Export Promotion in Kolkata, IIF has intensified buyer-seller meets and outreach under the Indian Foundry Congress and the Foundry Informatics Centre, which manages government-supported programmes for skilling and technology assistance.

For MSMEs, IIF's cluster approach is proving critical. By encouraging shared facilities -- for sand processing, pollution control, testing, and logistics -- clusters can lower production costs and improve environmental compliance. "Shared resources are a big enabler. They reduce capital burden on small units and make them globally competitive," explained a foundry source.

The IIF has also formed a dedicated policy

advocacy committee at both national and regional levels to channel industry feedback quickly to policymakers, a process that members say has yielded "reasonably quick responses" from government agencies.

Need to move up the value chain

Beyond immediate relief, the industry is, however, viewing the tariff disruption as a catalyst for transformation. The consensus within IIF is that Indian foundries must climb the value chain -- from being mere commodity casting suppliers to manufacturers of machined and finished components.

"This is about adaptation and restructuring," said a source. "Change comes when there is pressure. Those who once shipped raw castings will now invest in machining, surface finishing, and assembly capabilities. By offering complete sub-assemblies, Indian exporters can mitigate price risks and compete better with China," another foundry source stated.

Such technological repositioning requires capital and know-how. The industry has already begun to respond. Over the past five years, several Indian foundries have sourced technology from Germany and other advanced markets, investing in automation, quality control, and process sustainability. These upgrades also align with India's longer-term goals under the Make in India and Atmanirbhar Bharat missions, which seek to raise value addition and reduce trade vulnerability.

Outlook

Are the tariffs sustainable?

Even as exporters adjust, industry observers question the economic rationale and political sustainability of the US tariff regime.

Data show that US foundry imports form a small fraction of total consumption, suggesting that the tariffs are more symbolic than protective. Analysts warn that artificially inflated domestic prices will eventually hurt American consumers and local manufacturers alike.

“When imports dry up, domestic suppliers will exploit the vacuum and raise domestic prices in the US,” opined one industry voice. “With the EU already a high-cost supplier and US production expensive, end-user industries will feel the pinch. Sooner or later, consumer stress will force a political rethink. These tariffs won’t survive the test of time — perhaps not beyond two years,” observed a foundry source.

But in the short term, the Indian foundry industry is navigating a period of uncertainty. Short-term pain is inevitable, particularly for smaller exporters. But the sector’s diversified base, large domestic market, and rapid technology adoption will lend it resilience.

“The tariff era will pass,” said an IIF official. “What will remain is the strength Indian

foundries gain from modernizing, clustering, and moving up the value chain.”

As global trade rebalances under new political and environmental pressures, India’s foundries may emerge leaner, greener, and stronger — ready not just to survive the tariff tide but to also re-shape the post-tariff world.



Exim conundrum

India's foundry exports	3 million tonnes
Indian foundry exports to the US	0.8 million tonnes
US' total foundry imports	1 million tonnes



SKILL DEVELOPMENT, TECHNOLOGY, GLOBAL OUTREACH MY FOCUS AREAS, SAYS IIF PRESIDENT

— Madhumita Mookerji

Indian castings will not be majorly impacted by tariff and non-tariff barriers from the US and Europe respectively, because of their cost competitiveness, although short-term hiccups may be felt, says Sushil Sharma, who has recently taken over as the president of the Institute of Indian Foundrymen (IIF). While GST 2.0 is a boon, Indian foundries need further policy support for a sustained demand environment.

Excerpts from a free-wheeling interview:

| BIS certification, as policy support, needed to curb imports

| Geopolitical tensions impacting sourcing of input minerals

Q. You recently took over as the President of the IIF. How long has been your association with the foundry industry and how have you seen it evolve over these past many years?

A. I have been associated with the IIF for the last 20 years. During the last two decades, I



have seen it evolving from a domestic organisation to one which has an international presence. The IIF has grown manifold during the last two decades, as India has come a long way from being the fifth-largest casting producing country in the world to the second-largest, after China -- which is, of course, at No.1 position. The current production volume of the Indian foundry industry is at almost 15 million tonnes per annum (mtpa) but it still has a long way to go as China is at No.1 position with a humongous almost-55 mtpa.

Q. As the President of IIF, what is your vision for the Indian foundry industry?

A. As the president of IIF for the year 2025-26, my vision is anchored in three pillars:

Skill development: I aim to work on empowering the next generation through training, mentorship, and industry-academia partnerships.

Focus on tech: Technology and innovation are two survival watchwords today and I am keen to promote smart manufacturing techniques, green technologies, and R&D collaborations.

Global outreach: I want to promote policy advocacy and global outreach in strengthening our voice in shaping industry-friendly policies and expanding India's footprint on global foundry networks.

Q. Which are three key areas you feel the domestic foundry industry needs to bring about radical changes in order to compete globally and how?

A. As we all know, the India foundry industry needs a lot of manpower. India is known for offering cheap labour and this is one of the key areas where our domestic industry can compete with its global counterparts.

But, at the same, I stress, we need to have skilled manpower. Hence, we are focusing

on skill development and youth engagement - which is a key area - through processes like training, mentorship, and industry-academia partnerships, which will eventually empower the next generation. Another key area where we need to focus on is adoption of new technologies and increased mechanisation of the foundry industry process to reduce human dependency and, yet, have quality production.

The foundry units need support from the Indian government in the form of industry-friendly policies for fostering a positive demand eco-system.

Q. How competitive are Indian foundries in terms of exports quality? What challenges do you foresee considering that Europe and other geographies are bringing in tariffs and carbon barriers like CBAM?

A) In today's scenario, the Indian foundry industry is very competitive in terms of quality castings which are also cheaper when compared to Turkish ones. Incidentally, Turkiye is called the China of Europe.

Whatever tariffs Europe and the US slap on us, Indian foundry units will be always competitive and thus remain one of the cheapest supplier countries in terms of

casting requirements.

Barriers like CBAM will definitely have an impact on the growth of Indian foundries but we will definitely overcome these in the near future.

Of course, as 80% of the Indian foundries are in the MSME sector, the challenge is always there. But, Indian innovations will always find ways to address these challenges.

Q. To what extent are Indian foundries exports-ready for certifications?

A. Indian foundry exporters are capable of all certifications requirements and are gearing up time and again to meet the standards set by the buyer industry.

Q. Also, what sort of an impact do you foresee from the US tariffs on Indian foundry exports?

A. US tariffs have definitely brought about a setback in the growth of the Indian foundry industry but this is a temporary phase and the dark clouds will lift in the near future. The impact on the industry will be temporary and the world will understand that there is no better solution than to procure from the Indian foundries because of our competitive pricing.

Q. How do you see the domestic market for castings panning out over the next

three years? Where are the challenges?

A. The domestic market in India is a very big one, characterised by good demand. I must add that the GST 2.0 reforms of the Indian government have opened up huge demand scope from the automobile sector, on which 40% of the domestic foundry units have a huge dependence.

Secondly, with the government's stress on "atmanirbhar" or self-reliance, the Defence sector too has opened up to the indigenous foundry industry unlike previously when it was primarily dependent on imports.

The key challenge lies in adhering to stringent norms when supplying especially to the Indian Defence segment where precision is the watchword.

Q. What is the import scenario like? The Indian government, by a 13 June 2025 order, had made it mandatory for importers to get a BIS stamp of approval and had also extended it to raw materials? What would be the implications for foundries once this gets going?

A. Indian casting manufacturers need to have BIS certificates as this is a policy support from the government and which aims to discourage castings imports. Indian foundries are dependent upon imports of ferro alloys from China, which is one of the biggest producers of this raw

material segment.

Currently, ferro alloy importers are facing a tough time in India but, in the long run, it will help Indian producers. But challenges still remain as China has geological advantage in the form of rich minerals and lower power tariffs unlike in India.

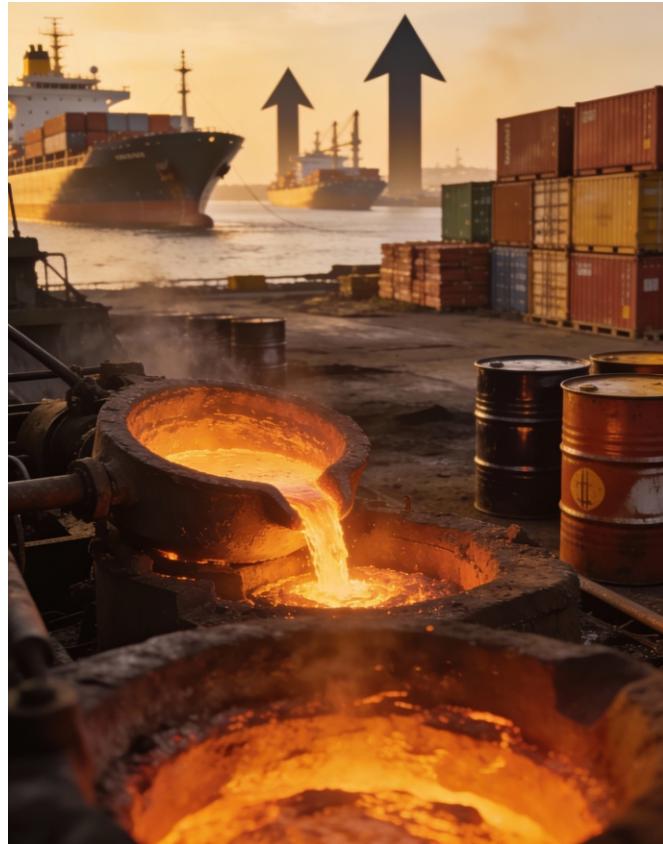
Q. How do you see the market for non-ferrous castings panning out over the next few years in India? Any challenges here?

A. The non-ferrous castings market is growing multi-fold as demand is increasing and the future is very bright in particular for the aluminum sector.

Challenges in this sector include high import reliance for critical raw materials like ferro alloys, aluminium and copper scrap, especially from China. Fluctuating global prices of non-ferrous metals impact cost predictability and margins. BIS certification mandates for imports as per the June 2025 order add compliance burdens on smaller foundries.

Q. How are geo-political developments impacting Indian foundries? For instance, the Russia-Ukraine war, Iran-Israel tensions and their impact on freights?

A. The geo-political developments are definitely impacting the foundry industry.



Due to the Russia-Ukraine war, sourcing of a lot of key minerals like zircon sand (Ukraine being one of the biggest suppliers of quality zircon) is getting impacted. Also, the sanctions imposed on Iran have impacted imports of solvents (like methanol/ toluene/ xylene etc) which are by-products of crude oil distillation. We are experiencing scarcity of the same.

The geopolitical conflicts have driven up global crude oil prices, increasing transportation costs for the Indian foundry industry.

INDIA'S FOUNDRY INDUSTRY ENTERS HIGH-GROWTH DECADE AS TECHNOLOGY INFRA, AUTO DEMANDS CONVERGE

Our correspondent

India's foundry industry is entering a defining decade, powered by surging industrial demand, a sweeping infrastructure push, and rapid technological upgrades. With the market set to more than double to \$51.19 billion by 2033, Indian foundries are transforming into smarter, more competitive manufacturing hubs poised for global relevance

EV disruption pushing ferrous foundries towards aluminium, copper

Pricing volatility prompts demand for a unified pricing index

India's foundry and casting industry is stepping into one of its most transformative phases. From a market valued at \$19.80 billion in 2024, the sector is now on course to reaching \$51.19 billion by 2033, growing at a robust 11.13% CAGR, as per information released by the IMARC Group -- a global management consulting firm. Behind this exceptional trajectory lies a unique mix of heavy industrial demand,

government-led infrastructure push, and sweeping technological modernization that is redefining the future of manufacturing in India.

A market on the rise

With India producing nearly 12 million tonnes (mnt) of castings annually, the sector is already among the world's largest. What's changing now is the scale, sophistication, and strategic importance of the industry. By 2025, the market value is expected to touch \$25 billion, buoyed primarily by automotive and construction demand.

The IMARC study period spans 2019–2024 as the historical base and projects trends through 2025–2033, capturing the



momentum of rapid industrialisation -- much of which is being shaped by factors like infrastructure spending, EV penetration, and renewed emphasis on domestic manufacturing under "Make in India".

Technology takes centre-stage

A major storyline unfolding in Indian foundries is the acceleration toward automation and Industry 4.0.

Modern foundries are now equipped with:

Advanced robotics, automated molding lines, and simulation tools

CAD/CAM systems that enhance precision and reduce rework

3D printing applications, especially for patterns and molds, drastically cutting development cycles

Improved melting & molding technologies that reduce wastage and enhance quality

Data analytics and predictive maintenance, ensuring higher uptime and productivity

This technological leap has not only increased efficiency but also strengthened India's competitiveness in global casting markets.

One proof of this momentum is **SMG**



Group's July 2024 acquisition of Hunter Foundry Machinery Corporation, a global leader in matchplate molding machines. This move signals Indian players' rising interest in acquiring high-tech capabilities to upgrade domestic production systems.

Demand drivers: Infra, autos lead charge

Infrastructure boom: India's massive investments under the National Infrastructure Pipeline (NIP), ongoing highway modernization, rail corridor upgrades, airport expansions, and housing schemes like PMAY have collectively pushed up demand for a wide range of castings—structural, machinery, and engineering components.

Automotive acceleration: The automotive sector remains the industry's largest and most influential consumer. Rising vehicle production, coupled with the shift to lighter, fuel-efficient, and EV-ready components, has sharply increased demand for steel, and non-ferrous castings. Technologies like "lost foam casting" are now gaining ground, particularly for complex, lightweight automotive parts.

Industrialisation & export growth: Growing urbanisation, expansion of engineering industries, power equipment demand, and a strong push in export markets have provided additional layers of momentum. Indian castings are increasingly penetrating global supply chains owing to quality upgrades, cost competitiveness, and improved manufacturing capabilities.

Market segments: A diverse industrial backbone

By casting type

Gray iron: Traditional yet crucial for machinery and construction

Ductile iron (SG iron): Strong growth from automotive & infrastructure

Steel castings: Heavy machinery, tools, and industrial use

Non-ferrous castings: Key for electrical, aerospace, and lightweight automotive

parts

By manufacturing process

Sand casting: Still widely dominant

Investment casting: High-precision parts, often for Defence & aerospace

Die casting: Essential for automotive and electrical components

Centrifugal casting: Used in pipes, cylinders, and specialised equipment

By end-use industry

Automotive leads the pack, followed by railways, agriculture machinery, engineering tools, construction, aerospace & Defence, power equipment, and sanitary fittings.

Regional landscape

While the report segments the market into northern, southern, eastern, and western India, specific dominance or CAGR patterns are not disclosed. However, historically:



Southern India (Tamil Nadu, Karnataka) is strong in automotive and precision castings

Western India (Gujarat, Maharashtra) leads in engineering and industrial castings

Northern India has a mix of iron foundries and heavy machinery units

Eastern India contributes significantly through steel and iron castings

Recent moves: Expansion & consolidation

Industry consolidation and capacity expansion are accelerating:

July 2024: Meson Valves India acquired a majority stake in Milindpra Castings, strengthening its manufacturing portfolio.

December 2024: JS Auto Cast Foundry, a Bharat Forge arm, announced an INR 67.5-crore expansion of its Perundurai unit. The project will boost capacity from 72,000 tonnes (t) to 116,000 t, a more than 60% leap, reflecting growing demand for grey and SG iron castings.

Such developments illustrate not just growth, but confidence - companies are betting big on long-term demand.

Key players shaping the market

Meson Valves India Limited, a valves specialist with a worldwide presence. It is well-known in the space of design,

manufacture, and supply of various type of valves in ferrous and non-ferrous materials.

JS Auto Cast Foundry, which is a wholly-owned subsidiary of Bharat Forge. Founded in 2004, it is a producer of rough and machined DI castings for numerous internationally renowned brands.

Bharat Forge, an Indian multinational with a strong presence in forging, automotives, energy, construction & mining, railways, marine, aerospace and Defence sectors.

SMG Group, a global leader in automotive components.

Hunter Foundry Machinery Corporation, a pioneer in automated matchplate moulding technology, delivering precision, efficiency, and durability to foundries worldwide.

These firms remain central to technology adoption, export expansion, and capacity enhancement.

Poised for multi-billion-dollar future

With rising industrial activity, deeper technological integration, and sustained policy support, India's foundry and casting industry is transitioning from a traditional manufacturing segment into a high-tech, globally competitive powerhouse. The coming decade will be defined not only by scale but by sophistication - as Indian

foundries evolve into smart, automated, export-ready manufacturing ecosystems.

The story of India's casting industry is now one of innovation, investment, and global ambition -- setting the stage for unprecedented growth through 2033.

Indian foundry market value-wise

2024	\$19.80 billion
2025	\$25 billion
2033	\$51.19 billion
CAGR	11.13%
Current total castings production at	12 million tonnes

Demand drivers

Infrastructure push

Automotive demand

Industrialisation

Casting types

Gray iron: Traditional yet crucial for machinery and construction

Ductile iron (SG iron): Strong growth from automotive & infrastructure

Steel castings: Heavy machinery, tools, and industrial use

Non-ferrous castings: Key for electrical, aerospace, and lightweight automotive parts

