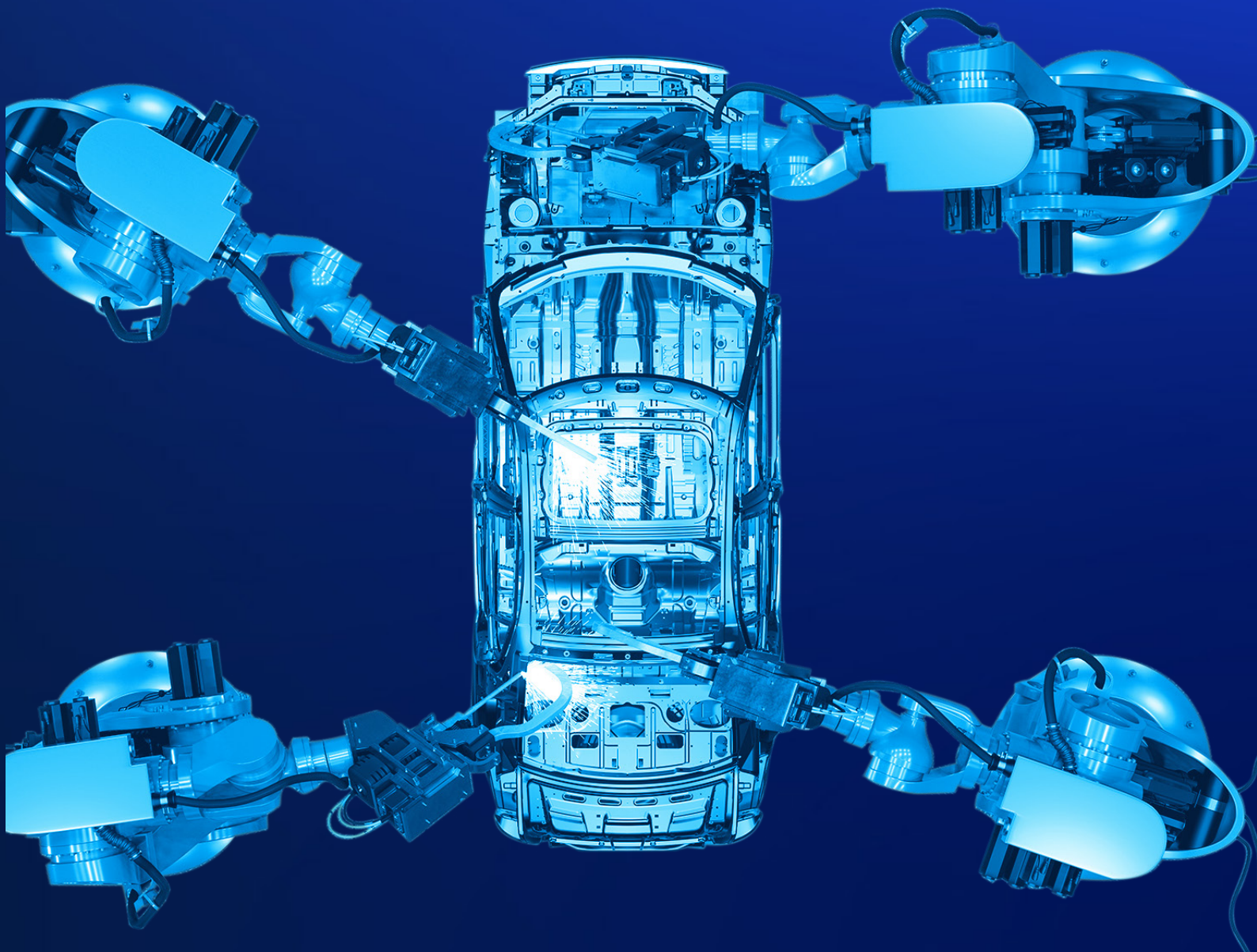


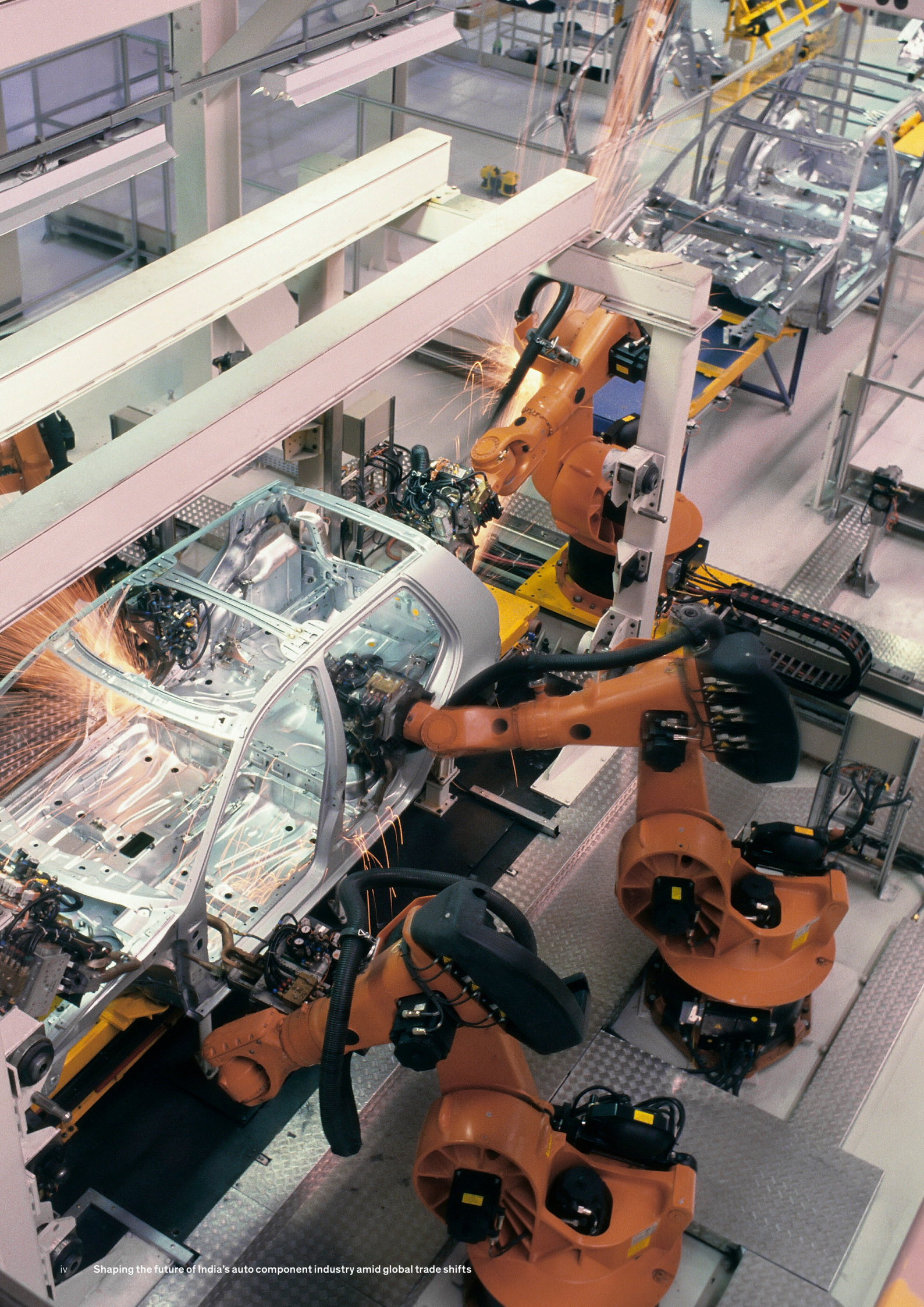
Shaping the future of India's auto component industry amid global trade shifts

September 2025



Shaping the future of India's auto component industry amid global trade shifts

September 2025



Acknowledgments

McKinsey & Company has developed this independent research report as the knowledge partner for the 65th Annual Conference organized by the Automotive Component Manufacturers Association of India (ACMA).

The authors thank ACMA's leadership for the opportunity to present this study at the Annual Session. In particular, we are grateful to Shradha Suri Marwah, Vikrampati Singhania, Vinnie Mehta, members of the ACMA steering committee, the ACMA secretariat, and the many industry leaders for their contribution.

Many McKinsey colleagues provided valuable advice and analysis for this report, including Nitesh Gupta, Bhavesh Mittal, K Ganesh, Soundharya Narayanan, Gandharv Vig, and Akshay Asija. We thank McKinsey's project team, consisting of Meghana G and Sumit Goenka. We are also grateful to Anamika Mukharji and Fatema Nulwala for their communications expertise and guidance, and to P Sarath Kumar for the design of this report.

Authors

Brajesh Chhibber

Partner

Rajat Dhawan

Senior Partner

Shivanshu Gupta

Senior Partner

Shubham Singhal

Senior Partner

Akash Misra

Associate Partner

Jayati Shah

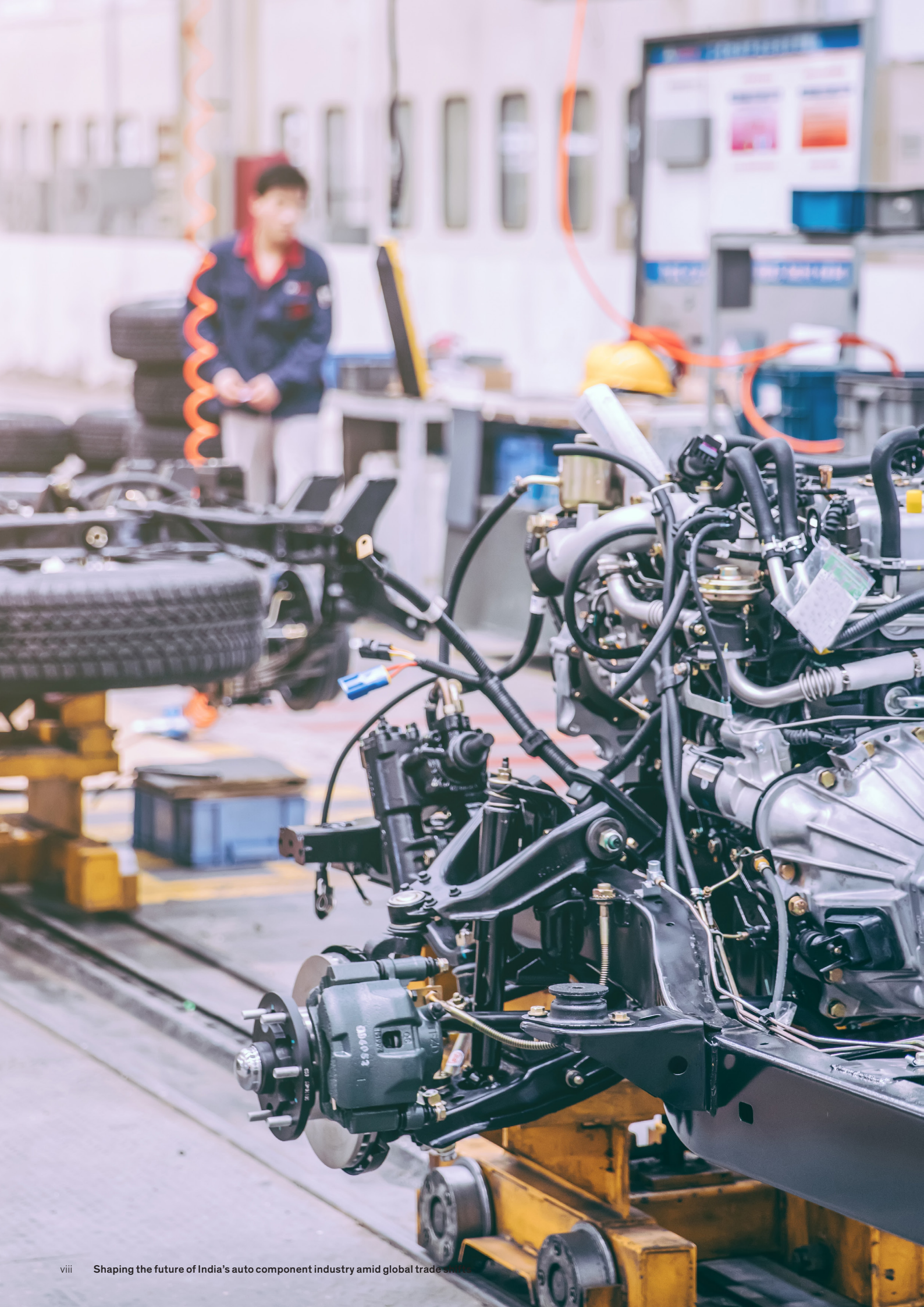
Associate Partner

This report is independent, reflects the views of the authors, and has not been commissioned by any business, government, or other institution.



Contents

Executive summary	1
1 India's auto component opportunity amid shifting trade dynamics	5
2 Implications of global trade disruptions for India's auto component value chain	13
3 Achieving value for India's auto component industry	23



Executive summary

Geopolitical and structural changes have been redrawing global trade patterns, with an estimated \$12 trillion to \$14 trillion in trade expected to shift across trade corridors by 2035.¹ Despite these challenges, global trade is projected to grow from \$33 trillion in 2024 to \$42 trillion to \$45 trillion by 2035.¹

The auto component industry has been heavily impacted by trade corridor shifts. India is now emerging as a key player in this realignment, helped by its cost competitiveness, skilled workforce, and growing domestic market.²

This is evidenced by a steady expansion of opportunities in the domestic and export markets and a compound annual growth rate (CAGR) of about 10 percent over the past five years in the Indian auto component industry. With domestic and exports demand rising further, this industry is projected to reach \$200 billion by 2030.³

The two pillars driving this growth are a \$20 billion to \$30 billion internal combustion engine (ICE) export opportunity by 2030 as global markets consolidate, and a 35 percent CAGR in domestic electric vehicle (EV) sales in line with rising worldwide electrification and connectivity.⁴

As these structural changes play out, they create short-to-medium term disruptions in the global trade flows, with implications for India's automotive component value chain.

- Reliance on critical components such as rare earth elements and semiconductors, the bulk of which are in China, creates supply risks and a need to diversify sourcing.
- Capability gaps in advanced technologies, high and growing import dependence, and limited investment in R&D for sustainable alternatives undermine global competitiveness.
- Policy shifts and carbon taxes in trade with developed markets are seeing suppliers set up local production in export markets, adopt greener practices, and diversify the export customer base.
- MSMEs, which contribute approximately 40 percent to industry revenue,⁵ face structural inequities such as a lack of economies of scale, rising costs, limited access to global markets, and the need for technology upgrades.

¹ "A new trade paradigm: How shifts in trade corridors could affect business," McKinsey, June 18, 2025.

² Based on current understanding of trade relations and tariffs.

³ Data provided by Auto Component Manufacturers Association, July 2025.

⁴ McKinsey analysis and McKinsey Center for Future Mobility electrification projections.

⁵ Data provided by Auto Component Manufacturers Association, July 2025.

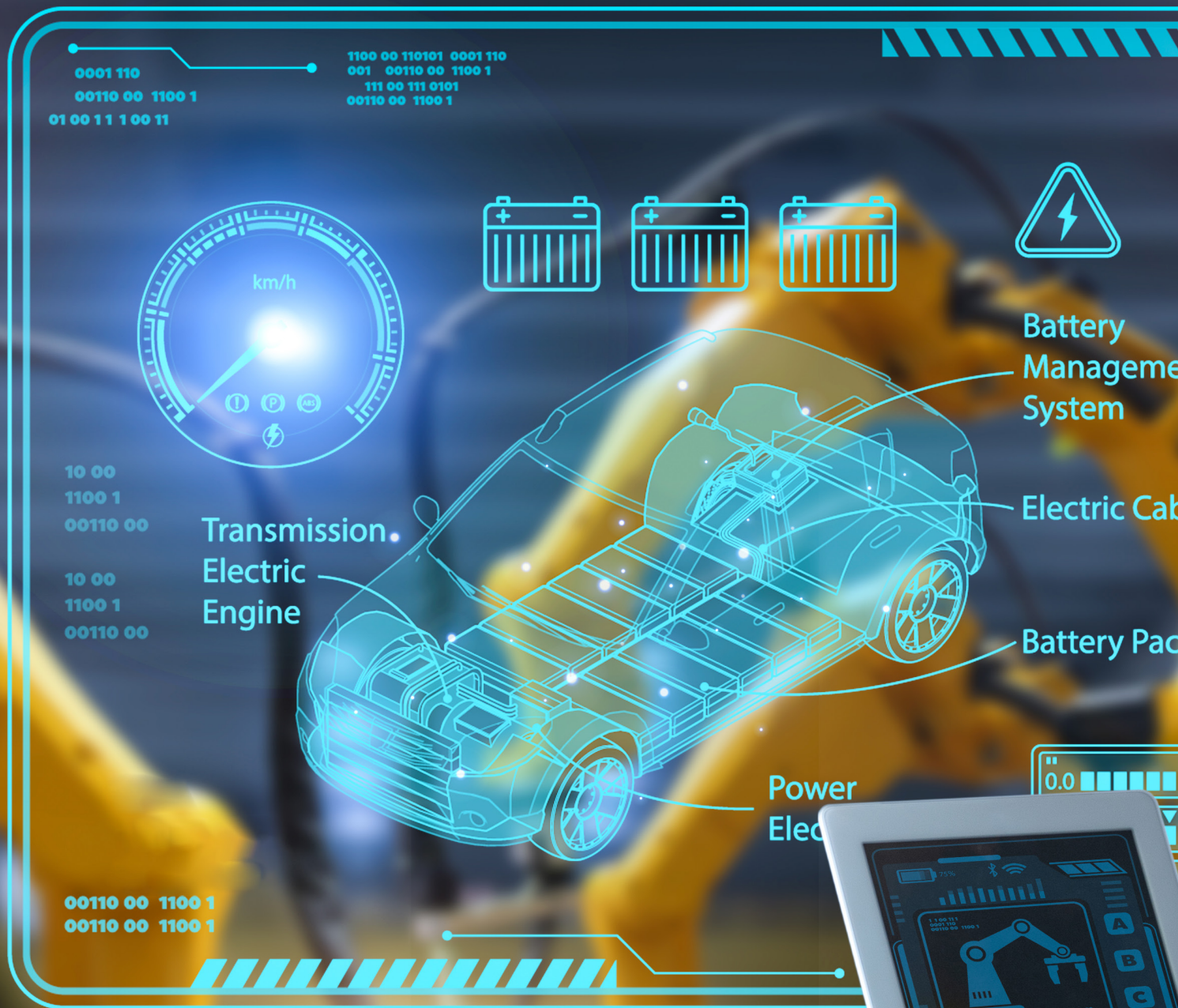
To navigate the evolving landscape and capitalize on emerging opportunities to lock in long-term value, the industry could consider the following two approaches:

— **The IGNITE** approach:

- **ICE Global** play can be enhanced by upgrading and refining supply chain strengths, paving the way for India to secure the “last person standing” advantage.
- **New** technology can be developed to future-proof the industry and ensure relevance in emerging powertrains.
- **Investment** in critical capabilities, such as global sales expertise and adherence to quality standards, can enhance competitiveness in the global marketplace.
- **Talent** rewiring can create an effective future-ready workforce and close gaps between academic and industry training and the skill sets required on the ground.
- **Engagement** with industry peers, academia, and startups can drive innovation, create intellectual property, and design relevant curricula in institutions.

— The **GAIN** approach (**G**overnment, **A**ssociation, **I**nstitutional finance support, and **N**etwork effort of MSMEs) to collaborations can serve as the primary lever to address systemic challenges, secure access to critical resources, and encourage innovation. Strategic trade agreements, infrastructure enhancements, and financial support will further strengthen the industry’s global position.

With these moves, the Indian auto component industry can weather short-to-medium term disruptions and establish itself as a key player in global automotive value chains.



1. India's auto component opportunity amid shifting trade dynamics

The auto component industry is experiencing a major reshaping of international commerce, influenced by evolving geopolitical factors and restructuring of supply chains. Amid these shifts, India has emerged as a strategic manufacturing partner. Due to its robust manufacturing growth, strong domestic demand, working age demographic, and strategically advantageous trade location, India offers resilience and competitiveness in an uncertain global trade environment. The region's auto component industry aspires to achieve a growth rate of 12 to 14 percent over the next five years, positioning itself as a critical contributor to global automotive value chains.⁶

Geopolitical shifts are redrawing the automotive trade map

Geopolitical and structural shifts are realigning global trade, creating opportunities alongside challenges for industries and policymakers. About \$12 trillion to \$14 trillion in overall trade is expected to shift over the next 10 years. Even with all the headwinds, it is projected to reach \$42 trillion to \$45 trillion by 2035 in real terms from \$33 trillion in 2024, highlighting the resilience of international trade systems.⁷









The auto component industry is facing both supply chain vulnerabilities and new market possibilities. There are mounting pressures from tariffs on raw materials and vehicles, trade restrictions altering global supply chains and market access, and policy changes accelerating localization and investment in advanced technologies, including electric vehicles (EVs) (Exhibit 1). However, these dynamics also provide new potential to redraw value chains and expand the industry's growth prospects.

⁶ Data provided by Auto Component Manufacturers Association, McKinsey analysis.

⁷ "A new trade paradigm: How shifts in trade corridors could affect business," McKinsey, June 18, 2025.

Exhibit 1

Auto components are among the sectors most affected by shifts in the trade corridor.

Sector	Trade growth, %	Potential trade swing, ² %
Electronics and electrical equipment	1.9  2.8	60
Textiles and apparel	2.3  2.4	45
Machinery and equipment	1.9  2.6	44
Auto components ¹	2.1  2.5	32
Metal and mineral products	2.5  2.7	30
Pharmaceuticals	2.0  2.2	29
Transport equipment (excl. auto components)	2.1  2.5	28
Chemicals	2.1  2.8	27

¹ Includes electrical components used in automobiles

² % of 2035 baseline trade-potential trade swing by sector is calculated as the difference between the highest and lowest projected 2035 trade values across growth scenarios for each corridor within the sector. These differences are then summed across all corridors and expressed as a share of the sector's 2035 baseline trade value. This reflects how much of a sector's trade is exposed to scenario-driven volatility

Source: McKinsey Global Trade Model; McKinsey Global Institute analysis, McKinsey, "A new trade paradigm," 2025

In an increasingly uncertain landscape, auto players are adopting a supply-chain diversification strategy, which has accelerated among other trade corridors. They are turning to new sourcing markets to strengthen supply chain resilience in three ways:

- **Greater local production:** Companies are expanding their domestic production capabilities to reduce reliance on imported components. For instance, tier-1 component suppliers in India and the leading US rare earth producer are growing in-country manufacturing.
- **More production facilities:** Businesses are shifting production capacity to low-risk or cost-effective regions. Top German component suppliers are establishing plants in Mexico, and various Chinese battery manufacturers are setting up production facilities in other Southeast Asian countries.
- **Multi-sourcing and supplier diversification:** Companies are transitioning from single-source vendors to a broader supplier network. For example, a major Japanese battery manufacturer is phasing out China-sourced materials in its products. Several US and Japanese automakers have significantly increased component sourcing from non-Chinese vendors.

Potential for India to emerge as a safe bet in the global trade paradigm in the medium-to-long term

As a result of the supply chain diversification strategy, there is an opportunity for India-led corridors to emerge as resilient global trade routes in the coming years (Exhibit 2).

Exhibit 2

Amid shifting trade dynamics, India is increasingly recognized as having strategic advantages that could make it a safe bet for anchoring businesses.



Source: McKinsey Global Trade Model; McKinsey, "A new trade paradigm," 2025

McKinsey & Company

Five key factors contribute to India's attractiveness:

- **Manufacturing leadership:** India's competitive cost structure, growing investments, and a robust industrial base support the projected GDP growth of 6 to 7 percent annually over the next five to seven years, positioning it as the world's third-largest economy by 2030.⁸ Ranked as the second most attractive hub in 2024, the country's manufacturing sector is expected to grow at 8 to 10 percent over 20 years, with value-added manufacturing likely to expand 30 percent by 2030.⁹
- **Talent pool:** Approximately 68 percent of India's population is in the working age bracket, creating a vast workforce of about 875 million.¹⁰ By 2027, the country is projected to contribute nearly 20 percent of the global workforce.¹¹ India also produces about 30 percent of the world's STEM graduates, fueling a talent pipeline for innovation and advanced industries.¹²
- **Consumption growth:** India's consumption is projected to grow 2.9 times over the next decade, led by a 90 percent increase in disposable incomes, a rapidly expanding middle class, and accelerated urbanization.¹³ By 2029, approximately 30 percent of Indian households are expected to earn over \$10,000 annually.¹⁴ The country is likely to add over 400 million high- and upper middle-income households by 2047, increasing its share of global consumption from the current 3 percent to 7 percent.¹⁵
- **Political stability and strategic position:** India offers a political stability score of 7.1 out of 10 for 2024.¹⁶ It also ranks as the third most improving major market for 2024–2028, based on business environment reforms and investor appeal.¹⁷ Its geographical advantage and central role as a regional and global trade hub further bolster its appeal as a trade partner.
- **Infrastructure support and government enablement:** The Indian government is investing heavily in transportation networks, logistics, and industrial infrastructure to support manufacturing and trade activities. Key initiatives include the \$5 billion Production Linked Incentive (PLI) Scheme to boost automotive battery and components manufacturing, and the \$1.3 billion PM Electric Drive Revolution in Innovative Vehicle Enhancement (E-DRIVE) scheme to subsidize the purchase of electric and hybrid vehicles.¹⁸

⁸ Ministry of Statistics and Programme Implementation (MoSPI), February 2025.

⁹ Ministry of Statistics and Programme Implementation (MoSPI), February 2025; Economic Survey of India, 2022–23.

¹⁰ Ministry of Statistics and Programme Implementation (MoSPI), February 2025.

¹¹ "India to contribute 20% of global workforce growth between 2023–2050, report says," Livemint, November 19, 2024.

¹² State of World Population Report 2025, UNFPA, June 2025.

¹³ Ministry of Statistics and Programme Implementation (MoSPI), February 2025.

¹⁴ Economist Intelligence Unit report, April 2024.

¹⁵ Ministry of Statistics and Programme Implementation (MoSPI), February 2025.

¹⁶ Economist Intelligence Unit report, April 2024.

¹⁷ "Greece, Argentina and India are the fastest improving business environments," Economist Intelligence Unit, March 20, 2024.

¹⁸ Tanvi Mehta, "India approves \$1.3 billion incentive scheme for electric vehicles," Reuters, September 11, 2024.

India's auto component industry shows promise

India is currently placed as one of the top seven global auto component suppliers.¹⁹ Over the past five years, the Indian auto component market has recorded a strong CAGR of about 10 percent.²⁰ India holds 4 percent of the global auto component market share, with a market size of about \$75 billion.²¹

The auto component industry is also a contributor to economic growth and employment. In 2024, the industry accounted for approximately 25 percent of India's manufacturing GDP and 2.7 percent of its total GDP.²² The industry supports nearly 5 million skilled and semi-skilled workers.²³

Based on these competitive advantages, the Indian auto component industry is likely to reach a market size of \$200 billion by 2030, further helped by strong domestic demand and increasing exports to mature markets.²⁴

Stable growth in domestic auto components

Domestic auto component sales are projected to grow 7 to 8 percent per annum until the fiscal year 2030, supported by vehicle growth, more parts used per vehicle, and new technologies (Exhibit 3).

Potential enablers of domestic growth:

- **Rising vehicle sales:** Increasing incomes and a growing middle class are bolstering vehicle sales across segments. By 2030, households earning more than \$25,000 annually are expected to triple, which would further boost demand for vehicles.²⁵
- **Electrification of vehicles:** The government's target of 30 percent EV penetration by 2030 is driving demand for next-generation components such as batteries, power electronics, and electric drivetrains.²⁵

¹⁹ Data extracted from the Comparative Industry Service (CIS) - IHS Markit, 2024.

²⁰ Data provided by Auto Component Manufacturers Association, July 2025.

²¹ Data extracted from the Comparative Industry Service (CIS) - IHS Markit, 2024.

²² Data provided by Auto Component Manufacturers Association, July 2025.

²³ Data provided by Auto Component Manufacturers Association, July 2025.

²⁴ Data provided by Auto Component Manufacturers Association, July 2025.

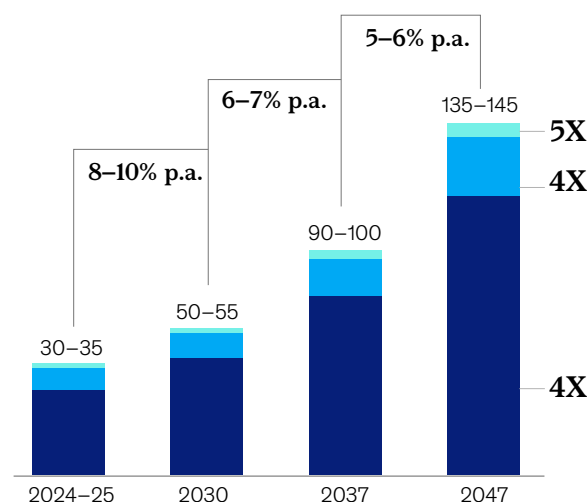
²⁵ SIAM, ICRA, Tractors and Manufacturers Association, McKinsey analysis.

Exhibit 3

Sustained domestic demand is expected, helped by 8–10 percent vehicle sales growth.

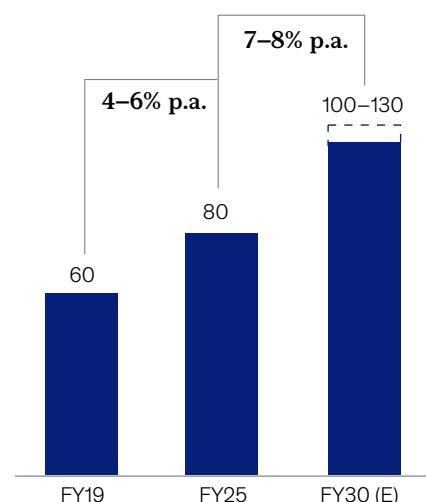
India annual vehicle production, million units

CV PV 3W + 2W



Auto components total domestic sales, \$ billion

Aspirational scenario Pragmatic scenario



Source: Vision India at 2047 by ACMA & SIAM, ACMA

McKinsey & Company

- **Smartification and automation:** The mobility value chain is transforming, and over 80 percent of car sales in major markets are expected to include connectivity solutions by 2030.²⁶
- **Premiumization:** The growing preference for premium vehicles is propelling a demand uptick for cutting-edge components, with application service providers for passenger vehicles recording an increase of over 50 percent from 2019 to 2024.²⁷
- **Regulatory changes:** Upcoming emissions-related regulations are expected to increase the bill of materials (BoM) for exhaust components, with three new rules anticipated in the next two to three years.²⁸
- **Organized sales channels and preventive maintenance awareness:** Better access to genuine parts through organized sales channels and growing awareness of preventive maintenance among vehicle owners are creating higher demand for genuine parts and services.

India's fast-growing domestic market is making the economy more appealing to global companies to localize their operations.

Strong growth in exports

As Exhibit 4 shows, India's export value is projected to reach \$70 billion to \$100 billion by fiscal year 2030. India's overall export growth has also led to a trade surplus of \$450 million in 2024, a big shift from a \$2.5 billion trade deficit in 2019. Key export markets, including the United States (around 27 percent share), Germany (about 8 percent share), Turkey, and the United Kingdom, account for approximately 40 percent of India's auto component exports, with a growing share from emerging markets such as Mexico, Brazil, and the United Arab Emirates.²⁹

²⁶ Automotive Mission Plan developed by ACMA and SIAM.

²⁷ SIAM, ICRA, Tractors and Manufacturers Association, McKinsey analysis.

²⁸ SIAM, ICRA, Tractors and Manufacturers Association, McKinsey analysis.

²⁹ UN ComTrade, 2024; Data provided by Auto Component Manufacturers Association, July 2025.

India's auto component export value is projected to reach \$70 billion to \$100 billion by fiscal year 2030.

Exhibit 4

Shifting global trade and a cost advantage position India's auto component industry for healthy export growth.

Auto components exports, \$ billion



Source: ACMA, McKinsey analysis

McKinsey & Company

While the immediate term outlook is constantly evolving given uncertainty in the global trade landscape, three broad trends are likely to play out in the long term to drive export growth:

- **Early starting point in the global market:** India currently accounts for less than 5 percent of global auto component exports, leaving ample room for market expansion.³⁰
- **Low-cost manufacturing advantage:** India's cost competitiveness—fueled by a cost-effective workforce, local production of steel, substantial domestic demand, lending scale advantages and strategic geographic location—positions it as a preferred supplier.
- **Dual export growth opportunity:** India's auto component industry is steered by both traditional parts and new-age technologies. As global automakers look to build more resilient supply chains, India could emerge as a choice for those adopting supply chain diversification strategies.

Two areas of expansion

Auto component players have two opportunities to boost exports and support local demand. First, the global ICE “last person standing” strategy, which captures opportunities in ICE markets as they consolidate globally. Second, the rising demand for electrification and connectivity solutions, both in India and globally, which increases innovation and creates new avenues for growth.

A. “Last person standing” position for ICE components export

Multiple ICE component segments are expected to shrink, and suppliers in developed economies are likely to lose economies of scale, facing the dual challenge of low production volumes and greater product variety (Exhibit 5).

This shift can give Indian SMEs an opportunity to potentially capture a \$20 billion to \$30 billion market opportunity by 2030, helped by their lower labor costs.

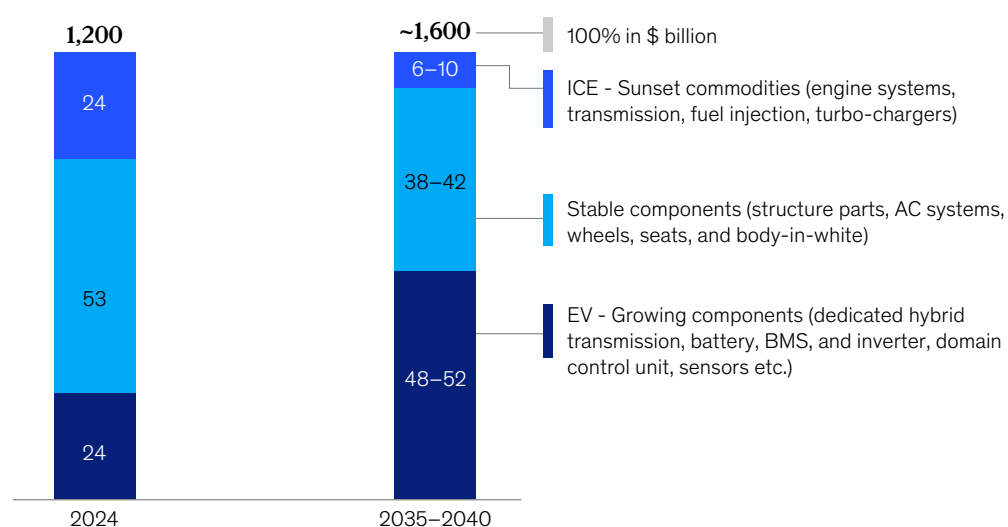
As China transitions its domestic market to EVs, it may divert its ICE production capacity toward exports, posing a competitive risk to India. However, the increasing adoption of the supply chain diversification strategy by global players can create an opportunity for India to be the preferred alternative supplier, as long as producers can meet global quality and cost expectations.

³⁰ Data extracted from the Comparative Industry Service (CIS) - IHS Markit, 2024.

Exhibit 5

ICE component share is expected to decrease by about 15 percent in the global market.

Global market share, %



Source: “European automotive industry: What it takes to regain competitiveness,” McKinsey, March 2025

McKinsey & Company

B. Electrification and connectivity

A growing focus on electrification and connectivity is influencing the domestic and global automotive markets (Exhibit 6).

Global electrification of four-wheelers is expected to rise by 2030, with EV penetration of 35 percent to 50 percent in the United States, and 60 percent to 85 percent in Europe.³¹ India's EV sales are expected to grow at a CAGR of approximately 35 percent.³²

As electric mobility advances, non-traditional components, including batteries and semiconductors, have grown to represent 40 percent to 50 percent of an EV.³³ At the same time, the rise of connected car technologies—from vehicle diagnostics to telematics—is reshaping the automotive landscape.

Global automakers diversifying their supply chains could source from India, drawn by the country's quality, reliability, and cost advantages. With existing strengths in traditional car components and high potential for capability building in advanced EV technologies, India's auto component industry can become a critical engine in the global automotive value chains.

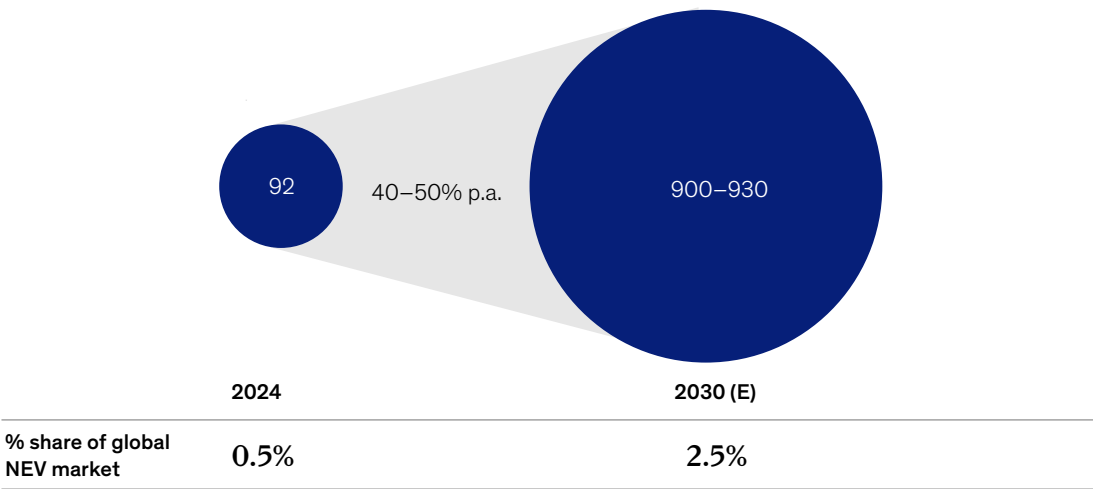
Indian SMEs can potentially capture a \$20 billion to \$30 billion ICE global market opportunity by 2030.

³¹ McKinsey Center of Future Mobility electrification projections.
³² McKinsey Center of Future Mobility electrification projections.
³³ "The future of the electric vehicle value chain," McKinsey, 2023.

Exhibit 6

New energy vehicle sales are expected to grow at approximately 45 percent CAGR in the Indian market.

India NEV sales volume,¹ (units in thousands)



Note: New energy vehicles include battery electric vehicles, plug-in hybrid electric vehicles, fuel cell electric vehicles, and range extended electric vehicles
Source: McKinsey Center of Future Mobility electrification projections



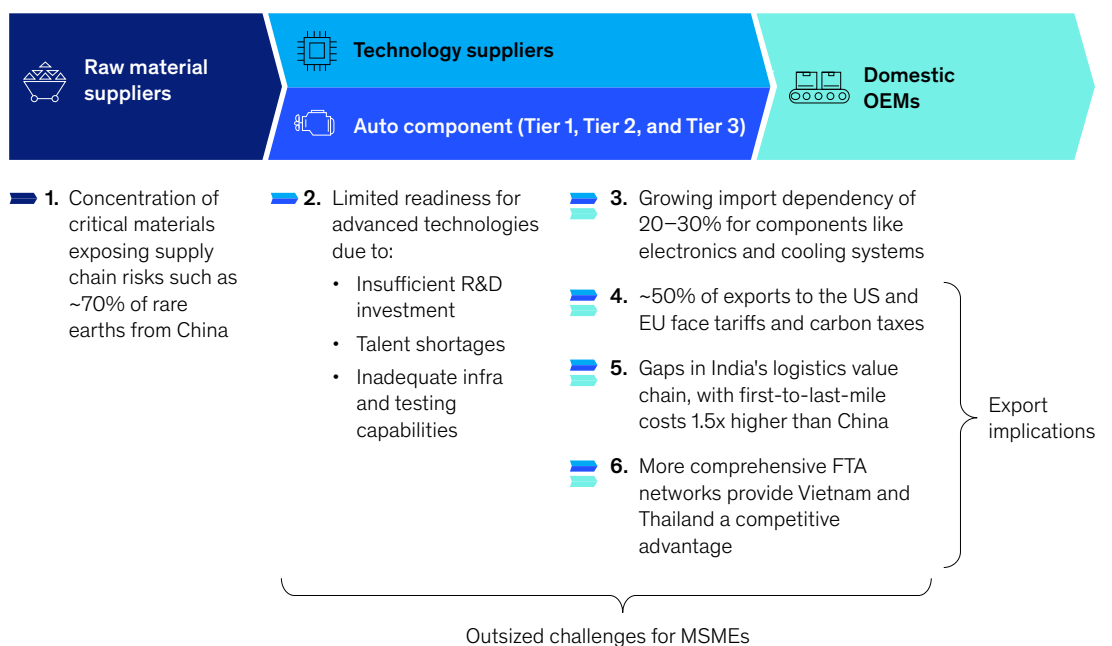
2. Implications of global trade disruptions for India's auto component value chain

Short-term disruptions are impacting Indian auto component players across the value chain, from raw material suppliers to OEMs. Geopolitical shifts and trade policy changes, such as US tariff adjustments and the EU's Carbon Border Adjustment Mechanism (CBAM), are eroding export competitiveness and increasing compliance costs. Supply chain vulnerabilities, including heavy reliance on geographically concentrated critical components and high import dependence, heighten the risk of shortages and delays. Further, India's logistics cost disadvantage and limited preparedness for advanced technologies also undermine the industry's global competitiveness.

The automotive value chain has six major pressures to overcome (Exhibit 7):

Exhibit 7

Geopolitical dynamics are impacting the entire automotive value chain.



Source: McKinsey analysis

McKinsey & Company

1. Geographical concentration of critical components

The concentration of critical components is prompting nations to develop more resilient and diverse supply chains through alternative production hubs (Exhibit 8). However, the traditional hubs continue to play a strategically vital role in the shift toward electrification and within the broader technological landscape.

Critical components are essential for the functioning of battery EVs (BEV), enabling energy management, motion control, and charging. Key materials include active metals in battery packs, rare earth elements such as gallium and palladium in vehicle control and e-drives, and semiconductors in charging systems.

Approximately 70 percent of global rare earth mining is concentrated in China, enabled by the presence of nearly 35 percent of known reserves and flexible environmental regulations, end-to-end supply chain integration, and technological expertise in the region.³⁴ Rare earth deposits elsewhere in the world are often subject to stricter regulation, a lack of advanced separation technology, and supply chain complexity, making it more challenging for other regions to compete in the short term.³⁵

By 2030, China's presence in rare earths is expected to decline as the European Union, United States, and Australia ramp up efforts in mining, processing, and recycling to reduce their dependence. However, other regions would require significant time, resources, and innovation to overcome existing challenges.

Potential impact for India-based auto component suppliers

Indian manufacturers can explore alternative suppliers outside concentrated regions or invest in domestic production capabilities to reduce reliance on imports, while building buffer inventories to absorb system shocks in the short term.

In the long term, Indian suppliers could explore innovative product designs that utilize non-rare earth alternatives. For instance, a leading German automaker has planned a transition from permanent magnet synchronous motors (PMSM) to electrically excited synchronous motors (EESM) in their latest models, which eliminates the need for rare earth elements while maintaining high performance.

³⁴ Data extracted from United States Geological Survey and MineSpans.

³⁵ Data extracted from United States Geological Survey and MineSpans.

Exhibit 8

Geographical concentration of critical components has exposed supply chain vulnerabilities.



Note: Map outline as per UN. The boundaries and names shown, and the designations used, on this map do not imply official endorsement or acceptance by McKinsey & Company
Source: USGS, SEMI WFF (H1 2025), Bloomberg NEF

McKinsey & Company

2. Limited readiness for advanced technologies, compared to other economies

As global trade disruptions accelerate the shift toward electrification, limited R&D and manufacturing capabilities could leave India's auto component industry lagging behind. This can hurt its prospects in the race to establish itself in the evolving global value chains and capture a larger share of the rising demand for modular, high-performance electric vehicles. Adoption of advanced technologies, such as lightweight materials, advanced e-motors, and powertrain innovations, is still in its early stages. However, matching and beating global benchmarks will require targeted investments in R&D, infrastructure readiness, and supply chain expertise (Exhibit 9).

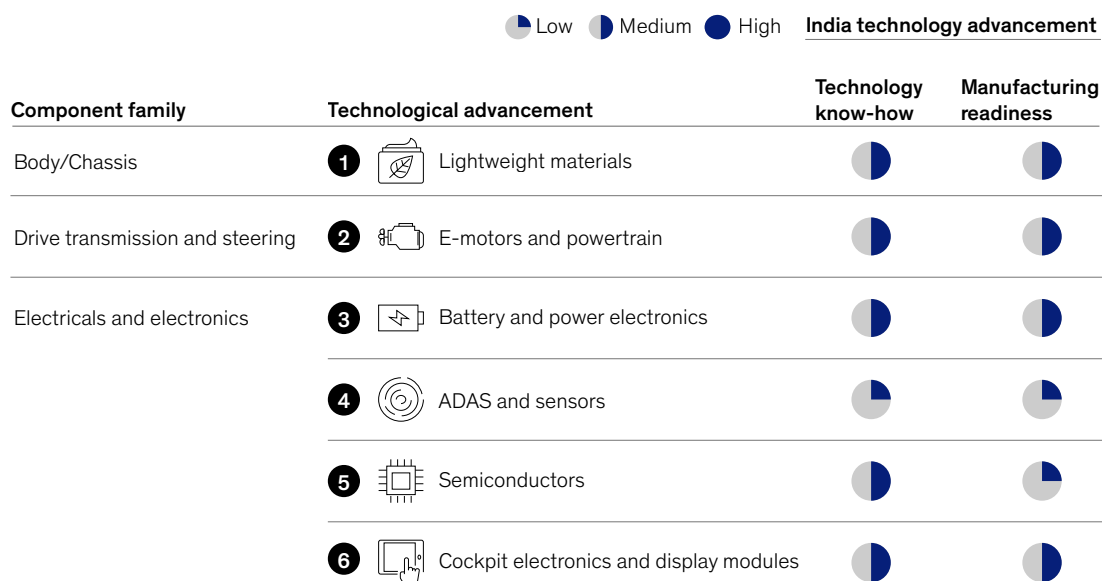
Potential areas where India can focus its efforts in capability building

- **Lightweight materials:** While India is increasing the use of aluminum, it can strengthen capabilities such as gigacasting, carbon fiber-reinforced polymers (CFRP), and sandwich composites, which enable modular vehicle architectures.
- **E-motors and powertrain:** India has achieved moderate maturity with production of PMSMs, with startups being established for scaled production. Globally, high-efficiency, integrated e-motors with oil cooling, silicon carbide (SiC)-based power control, and innovations like rare earth integration for magnet building and magnet-less motor R&D are setting benchmarks, highlighting opportunities for India to further enhance its capabilities.
- **Battery and power electronics:** Indian players are making strides in building gigascale factories, with cell manufacturers announcing over 140 GWh of capacity by fiscal year 2030, accounting for less than 5 percent of projected global production.³⁶ Despite this progress, international leaders are advancing in vertically integrated battery and power electronics production, as well as in-house lithium iron phosphate or nickel manganese cobalt (LFP/NMC) chemistries, and single-phase SiC-based inverters.

³⁶ Indian electric vehicle industry, ICRA, March 2025.

Exhibit 9

R&D and capability deficits hinder technological advancements in India's auto component industry.



Source: McKinsey analysis

McKinsey & Company

- **Sensors and advanced driver assistance systems (ADAS):** India's maturity in sensors and ADAS remains low, with most vehicles limited to Level 1 to 2 features such as lane departure warnings and adaptive cruise control, mainly in SUVs. The country has potential for growth in comparison to global advancements in areas such as light detection and ranging (LiDAR), radar, 4D imaging, AI/ML-powered perception stacks, custom AI system on chip (SoCs) for Level 3+ autonomy, and integrated domain controllers.
- **Semiconductors:** While fabrication facilities are being set up, India could consider advancing in areas including 7 nanometer automotive SoCs, in-house chip design, and IP to achieve global relevance in ultra-fast processing and energy efficiency.
- **Cockpit electronics and display modules:** India has piloted connectivity projects and can enhance its capabilities in OLED and AMOLED display technologies, robust vehicle-cloud integration, multimodal interfaces, and AI and voice integration to align with global advancements.

3. High import dependence for auto component requirements

India has a high import dependence, of 20 to 30 percent (Exhibit 10). This has tangible implications for companies, evidenced by an Indian automaker dropping its EV production targets amid China's export restrictions (Exhibit 10).

Exhibit 10

India relies on imports for 20–30 percent of its auto component requirements even today.

Import dependency of auto components,¹ FY25

Component family	Annual demand, ² \$ billion	Demand met by imports, %
Engine components (Fuel system, exhaust parts, and engine)	25–30	20–30
Suspension and braking (Brakes, clutches, suspension)	10–20	5–15
Body/Chassis/BiW (Cabin & load body, chassis, glass, wheel rims)	10–20	5–15
Drive transmission and steering (Axles, gear box, shafts, and steering parts)	10–15	30–40
Electricals and electronics³ (Cabin electricals, engine electricals)	10–20	30–50
Interiors (Non-electric)	10–15	5–15
Consumables and misc (Bearings)	5–10	10–20
Cooling system and others	<5	60–70
Rubber components	<5	20–30
Total	90–120	20–30

¹Includes ICE and non-ICE components

²Includes sales to OEMs, aftermarket and exports (including demand met by imports)

³Estimated value of semiconductors for auto component sector added

Source: ACMA, UN Comtrade

Auto component imports grew by 8 percent CAGR over the last fiscal year, outpacing the 6 percent CAGR of exports. Notably, imports from China and Japan, representing nearly 30 percent of India's total auto component imports, accelerated at approximately 20 percent CAGR.³⁷

Key areas of high import dependence include:

- **Electronics:** Semiconductors and sensors
- **Engine components:** Turbochargers and injectors
- **Drive transmission:** Advanced systems such as continuously variable transmissions (CVTs) and dual-clutch transmissions (DCTs)
- **Cooling systems:** Compressors and thermal units

Rebalancing will require a concerted effort to enhance domestic manufacturing capabilities, promote R&D, and establish a robust ecosystem for critical components. This is essential not only for enhancing self-reliance but also for mitigating risks associated with supply chain disruptions.

4. Impact of evolving policies on tariffs and carbon taxes

The competitiveness of Indian exports in global markets would be impacted by changes to trade policy, influenced by both trade dynamics and evolving priorities in decarbonization and green manufacturing. The United States has implemented tariffs on imported goods from various countries. Meanwhile, certain blocs are exploring implementation of carbon taxes to create a level playing field for regions with green manufacturing practices.

US trade policy

As of September 2025, Proclamation 10908, issued under Section 232 of the Trade Expansion Act of 1962 applies to imports of automobiles and automobile parts into the United States.³⁸

This proclamation sets a tariff of 25 percent on specified automobile parts, with certain exceptions, such as components meeting USMCA (United States-Mexico-Canada Agreement) content requirements.³⁸ Around 60 percent of India's auto component exports to the United States, by value, are covered within the purview of Proclamation 10908.³⁹

For exports not covered under Proclamation 10908, the tariff rates may vary based on reciprocal agreements or country of origin, and coverage of non-auto-exclusive HSN codes such as iron, steel, and rubber. Variability in tariff policies could lead to short-term volatility for India's auto component industry.

Potential implications for India-based auto component suppliers

- A possible decline in export volumes and market share for Indian manufacturers as US automakers shift sourcing to regions with preferential trade agreements, disrupting supply chains and eroding competitiveness.
- Indian auto component players could mitigate some of the impact by localizing production in the United States or the USMCA region through manufacturing facilities or strategic partnerships.
- Diversifying export markets by targeting regions with lower trade barriers could offset US market losses and reduce dependency on a single market.

³⁷ Data provided by Auto Component Manufacturers Association, July 2025.

³⁸ "Adjusting imports of automobiles and automobile parts into the United States," Federal Register 90 FR 14705, April 2025.

³⁹ UN ComTrade, 2024.

Taxes on carbon emissions

Carbon taxes being implemented by certain regional blocs will reshape global trade by favoring low-carbon producers and creating a level playing field for regions with green manufacturing practices. The taxes are levied on imported products based on their embedded carbon emissions. Covering products such as cement, iron, steel, aluminum, fertilizers, electricity, and hydrogen, carbon taxes aim to promote decarbonization by encouraging a transition to low-carbon production processes. India is yet to reach best-in-class capability in terms of carbon emissions in its steel and aluminum value chains.

Potential impact on India-based auto component suppliers

- The competitiveness of auto component exports to the European Union worth approximately \$4.6 billion⁴⁰ could face considerable pressure as carbon costs are institutionalized and increase over time.
- Key component categories such as chassis, body parts, and driving transmissions reliant on high-emission steel and aluminum, could see price increase by 10–25 percent by 2030.⁴¹ This burden is expected to be passed on to auto component players and could further erode profit margins.
- Carbon tax compliance may necessitate investments in carbon content reporting systems, adding financial and operational burdens.
- European OEMs are likely to shift to low-emission suppliers or pressure Indian suppliers to adopt greener production processes, such as hydrogen-based steelmaking, electric arc furnaces, and closed-loop recycling, requiring substantial capital investment and technological upgrades (Exhibit 11).









Tariffs and carbon taxes could impact around 50 percent of India's auto component exports.

⁴⁰ Data provided by Auto Component Manufacturers Association, July 2025.

⁴¹ "Cleaning up the act," ICRA, June 2023.



Tariffs and carbon taxes could impact around 50 percent of India's auto component exports.

Auto component exports by India, 2024				Import dependence, 2024		
Component family ^{1,2}	Total exports, \$ billion	Exports to US, %	Exports to EU, %		US, %	EU, ³ %
Drive transmission and steering	 7	~30	~25	China	~12	~25
Engine components	 5	~25	~25	India	~3	~5
Electricals and electronics	 3	~35	~40	Vietnam	~2	~1
Suspension and braking	 2	~25	~20	Others	~83	~69
Body, chassis, BiW	 2	~20	~20			
Consumables and others	 2	~20	~20			
Interiors (Non-electronic)	 1	~15	~20			
Total	 22	~25	~25			

¹Including ICE and non-ICE components

²Does not include semiconductors used in automobiles

³Imports from countries within EU not considered

Source: UN Comtrade, ACMA

McKinsey & Company

ICE components account for the majority of India's total auto component exports. The United States, which receives approximately 25 percent of these exports, levies tariffs that could render Indian products less competitive in this key market, particularly when compared to suppliers from countries with preferential trade agreements. Similarly, exports to Europe, accounting for 25 percent of the total share, are increasingly vulnerable to carbon taxes.⁴²

5. Heightened strain on logistics

India has a logistics cost disadvantage that is further compounded by geopolitical challenges. Recent Middle East disruptions and reduced Suez Canal traffic have further strained supply chains. Rerouting via the Cape of Good Hope adds 10 to 15 days to delivery times and increases costs. Container shortages and port congestion, coupled with outdated port systems, have led to a nearly 25 percent increase in average anchor times (Exhibit 12).⁴³

⁴² Data provided by Auto Component Manufacturers Association, July 2025.

⁴³ Richard Milne, "Red Sea trade disruption could last until next year, warns Maersk," Financial Times, May 2, 2024.

India faces a disadvantage in first-mile, port handling, and last-mile efficiency.

✓ Best-in-class practices

Aspect	Top-tier global practices	Singapore	Thailand	Malaysia	China	Vietnam	India	Remarks-India
First mile logistics	Dense multimodal network enables strong connectivity	✓			✓			Uneven infra quality, complex terrain causes transport delays
Port handling and dwell	Highly automated ports for process efficiency	✓		✓	✓			Port congestion leads to demurrage and scheduling uncertainty
Ocean freight	Strategic location across sea routes		✓			✓	✓	Strategic location across port routes
Customs and clearance	Digitized export procedures with simplified single-window system		✓	✓	✓	✓		Adoption of ICEGATE, faceless assessments lags due to lengthy procedures, inconsistent rules, etc.
Last mile logistics	E-commerce growth with better connectivity, speed, and traceability	✓			✓			Rural areas face poor infra, challenging terrain, and labor shortages

Source: McKinsey analysis

McKinsey & Company

India has a significant disadvantage compared to other Southeast Asian countries, with logistics costs approximately 1.5 times higher than China.⁴⁴ The disadvantage is amplified by a greater distance to key markets such as the European Union and North America compared to Vietnam and Thailand.

India-based auto component suppliers can mitigate supply chain risks by implementing strategies such as diversifying logistics routes and partners, maintaining buffer inventories for greater flexibility, and evaluating near-shoring opportunities to establish production facilities closer to major markets.

Preferential treatment owing to FTA network

Thailand and Vietnam benefit from broader market access enabled by frameworks such as the Regional Comprehensive Economic Partnership (RCEP) and the ASEAN+ agreements (Exhibit 13). In contrast, India lags behind its Southeast Asian counterparts due to the slow-paced bilateral trade deals and limited participation in multilateral trade agreements.

⁴⁴ McKinsey analysis of logistics costs from Chennai vs. Shanghai to Rotterdam, per ton-kilometer for a 20-foot container (excluding terminal handling charges), as of August 2025.

More comprehensive FTA networks give Vietnam and Thailand a competitive advantage.

✓ Low tariff barriers with FTA

⊙ Medium tariffs with most-favored nation status

x Export value in 2024 in \$ billion

Exporting countries	US		EU		Japan	
	China	~26	✓ –	~26	✓ Benefits from RCEP ²	~14
	India	~7	✓ Benefits from EU GSP ¹ with FTA under negotiation	~4	✓ Comprehensive Economic Partnership Agreement	~0.5
	Vietnam	Active discussions ~3	✓ EU-Vietnam FTA	~1	✓ Vietnam-Japan Economic Partnership Agreement	~3
	Thailand	~4	✓ Benefits from EU GSP ¹ with FTA under negotiation	~2	✓ Japan–Thailand Economic Partnership Agreement	~3
	South Korea	~13	✓ EU-South Korea FTA	~4	✓ Benefits from RCEP ²	~2

¹EU Generalized Scheme of Preferences (GSP)

²Regional Comprehensive Economic Partnership (RCEP)

Source: UN Comtrade, McKinsey analysis

McKinsey & Company

Outsized challenges for MSMEs

MSMEs, which account for 70 percent of India's auto component industry and contribute approximately 40 percent of its revenue, are likely to face significant challenges with broader implications for the industry.⁴⁵

- With production volumes about one-tenth that of larger players, MSMEs have less pricing power and are more vulnerable to rising logistics and production costs.⁴⁶
- Limited access to global markets, compounded by fragmented trade routes and resource constraints, restricts MSMEs' ability to navigate complex export requirements, such as carbon reporting, greener practices, buffer inventory, and so on.
- Capital constraints may prevent MSMEs from prioritizing investments in new technologies and nearshoring initiatives, both of which are essential to maintaining competitiveness in a rapidly evolving global market.

Navigating trade disruptions and geopolitical challenges requires India's auto component industry to adopt a multi-faceted approach to enhance its resilience and competitiveness. The industry could proactively address its vulnerabilities by diversifying supply chains, investing in advanced technologies, reducing import dependence, and aligning with global sustainability benchmarks.

⁴⁵ Data provided by Auto Component Manufacturers Association, July 2025.

⁴⁶ Data provided by Auto Component Manufacturers Association, July 2025.



3. Achieving value for India's auto component industry

To capture emerging value pools and effectively manage transition risks, the Indian auto components industry could adopt a strategic and collaborative approach involving all stakeholders. By focusing on two key intervention themes, industry players and relevant bodies can address uncertainties, enable innovation, and position the industry to unlock its full potential in the evolving landscape.

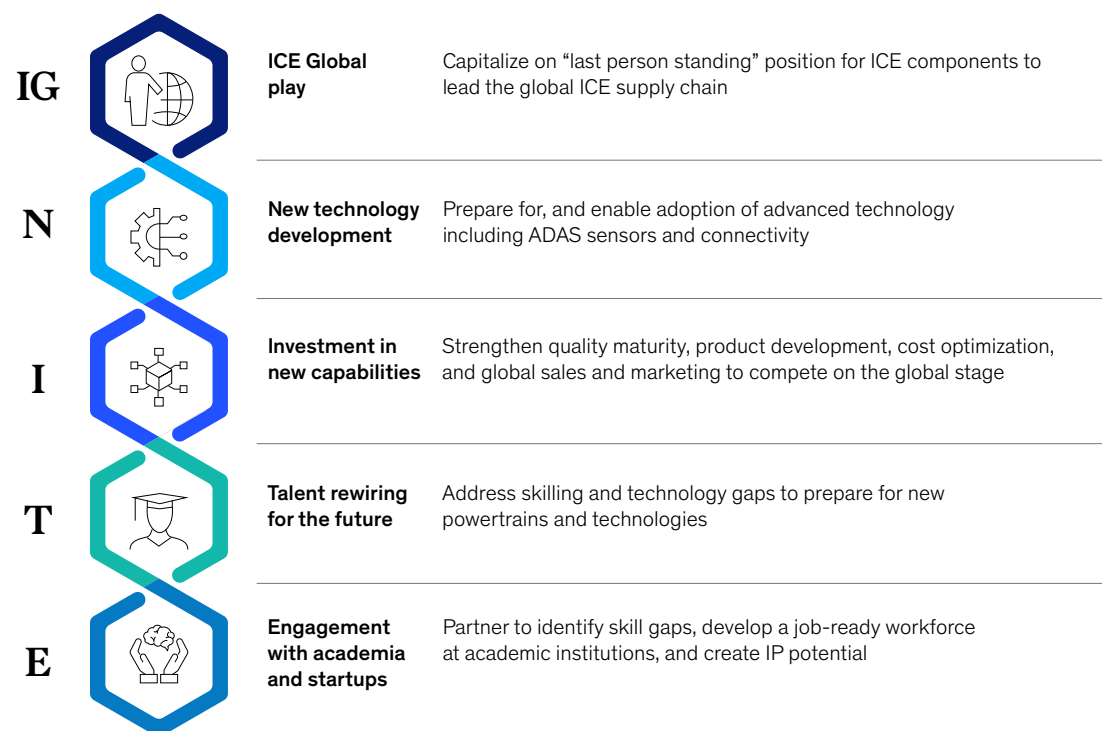
- **The IGNITE approach:** Industry players can take proactive steps to IGNITE long-term growth in the industry. This includes adopting innovative strategies, enhancing operational efficiencies, and building resilience to address evolving market dynamics.
- **Collaborate to GAIN:** Collaboration will be important to GAIN (government policy initiative, association leadership, institutional financial support and network effect of MSMEs). This requires active engagement across key industry bodies.

The IGNITE approach

Stakeholders can IGNITE growth within the industry to overcome challenges and lay the groundwork for enduring value (Exhibit 14).

Exhibit 14

Stakeholders can IGNITE growth within the industry to navigate uncertainties and create long-term value.



1. ICE Global play

India can secure a strong position in the global value chain of ICE components by refining existing supply chain strengths and aligning with international standards that global leaders can offer at scale:

- **Operational excellence:** The Indian auto component industry can improve its global operational competitiveness across key parameters such as yield, energy efficiency, throughput, quality, and manpower, thereby addressing its current cost disadvantage of around 10 percent compared to Southeast Asia.⁴⁷
- **Scale advantage:** The industry can leverage its core strengths in forgings, castings, gearboxes, and suspensions. This would require advancing towards capabilities that meet global quality standards of precision and reliability, with the potential to capitalize on India's diversification play. As a result, India could capture 10 to 15 percent of China's share of exports to the United States and the European Union under supply chain diversification strategies.⁴⁸
- **Strategic partnerships through mergers and acquisitions:** Large players can consider proactive joint ventures and technology transfer agreements, which can accelerate access to advanced technologies and R&D while opening corridors to global markets. This approach has already been adopted by leading Indian auto component and electronics systems manufacturers.
- **Minimum required local value addition:** Enterprises could make shifts to meet the qualifying export criteria and duty exemptions in target export markets. For instance, enterprises are exploring Morocco as a manufacturing hub to qualify for duty-free access to the US market.⁴⁹

2. New technology development

To be an alternative to China-led supply chains, the industry could focus on developing capacity in new technologies and leverage its strategic advantage in shifting global value chains. Some of the considerations are:

- **Boost R&D investments:** Transition from a "build-to-print" approach to a "design and develop" paradigm to enable end-to-end product ownership, process improvement, and material innovation. This could encourage advancement in technologies such as carbon-fiber materials, magnet-less motors, and level 2 or level 3 ADAS. Currently, Indian players allocate only 1–2 percent of revenue to R&D, compared to 4–6 percent by global peers.⁵⁰
- **Foster radical collaboration:** Encourage research-led partnerships, facilitated by industry associations and other large companies with like-minded firms in software and telecommunications. Such collaboration is critical to developing ADAS and EV capabilities to meet government mandates set for 2026.
- **Improve testing and certification infrastructure:** Establish National Accreditation Board for Testing and Calibration Laboratories (NABL)-accredited laboratories, ADAS validation tracks, and component-level quality pipelines, led by established companies, industry associations, and OEMs. Notably, the National Automotive Testing and R&D Infrastructure Project (NATRiP) has already been set up and upgraded over five testing facilities in India, laying a foundation for further advancements.⁵¹

3. Investment in new capabilities

Augmentation of capabilities would be key to achieving and retaining competitiveness in the global marketplace.

- **Elevate quality standards:** Invest in Industry 4.0 quality control systems, automated inspection, and traceability to meet OEM and export market requirements. Certifications that demonstrate capabilities and quality assurance in accordance with global standards can help secure international contracts.

⁴⁷ Logistics performance index (LPI), World Bank, 2023.

⁴⁸ Data provided by Auto Component Manufacturers Association, July 2025.

⁴⁹ Sam Metz, "Morocco's automotive industry shifts gears to prep for electric vehicle era," Associated Press, May 15, 2024; US-Morocco Free Trade Agreement, ITA.

⁵⁰ Sindhu Bhattacharya, "India's electronic component makers beaten by China on costs," ET Manufacturing, September 8, 2024.

⁵¹ "National automotive testing research & development infrastructure project," Ministry of Heavy Industries, 2025.

- **Strengthen product development:** Establish innovation hubs, centers of excellence (CoEs), and design-to-value labs led by tier-1 players and industry associations. India ranks 18th in the global patent-to-GDP ratio.⁵²
- **Modernize supply chain:** Build global logistics networks, adopt Industry 4.0 automation, and establish control towers for seamless operations. Address road infrastructure, port congestion, and turnaround time challenges.
- **Expand global sales:** Penetrate high-demand markets such as the United States and the European Union by curating global sales teams, participating in trade shows, and enhancing branding efforts.

4. Talent rewiring

Talent rewiring is critical to building a future-ready auto industry workforce.

- **Recruit top talent:** Establish CoEs to attract global talent and industry experts to encourage innovation. Over 90 percent of Indian employers face skill shortages, highlighting the need for targeted recruitment.⁵³
- **Invest in in-house training:** Tier-1 firms can build internal skill centers and technical training facilities, offering continuous learning programs for all firms, including MSMEs. For example, a leading Indian automaker has partnered with the government to upgrade Industrial Training Institutes (ITIs) nationwide.
- **Leverage policy support:** Utilize existing reskilling policies. Programs such as the ZED (zero defect, zero effect) certification by the Quality Council of India (QCI) and the Ministry of MSME have facilitated over 100,000 certifications, demonstrating the impact of policy-backed initiatives.⁵⁴
- **Scale digital training:** Use digital platforms and virtual labs to address reskilling needs. With India's digital training market growing at about 25 percent CAGR,⁵⁵ e-learning can provide accessible, cost-effective training for the five million workers in the auto component industry, preparing them for roles in ADAS and connected vehicles.

5. Engagement with academia and startups

To create a culture of innovation and address critical skill gaps, the industry could prioritize partnerships with academia, startups, and MSMEs.

- **Engage with academia for IP development and innovation:** Tier-1 companies and industry associations can partner with engineering institutes, ITIs, and skill councils to align training programs and internships with industry needs. Such partnerships can also include the co-development of innovation hubs within universities, creating a robust ecosystem for R&D. Encouraging faculty exchange programs with experts can further bridge the gap between academic research and practical application. For instance, IIT-BHU was awarded \$6.2 million in funding for EV battery research under the MAHA-EV initiative.⁵⁶
- **Collaborate with startups:** Hosting industry-specific startup challenges in incubation centers or university incubators could be supported by seed grants and IP mentorship. Additionally, enabling internships and apprenticeships with startups and MSMEs can provide hands-on experience to the workforce. This is particularly significant as MSMEs and tiered suppliers employ over 70 percent of the auto component workforce.⁵⁷

⁵² "World intellectual property indicators 2023," WIPO, 2023.

⁵³ ManpowerGroup talent shortage survey, ManpowerGroup, September 2024.

⁵⁴ "Technological transformation of MSMEs," Ministry of Micro, Small & Medium Enterprises press release, July 22, 2024.

⁵⁵ "India's digital education market poised to triple by 2028, aligns with enterprise tech priorities," ET CIO, June 23, 2025.

⁵⁶ "Seven high-impact projects (e-nodes) selected for support under MAHA-EV mission," Ministry of Science & Technology press release, May 5, 2025.

⁵⁷ Data provided by Auto Component Manufacturers Association, July 2025.

Collaborate to GAIN

- **Government initiatives to support the industry:** The industry can widen its global footprint by building strategic trade agreements to diversify import sources, expanding the FTA network, and negotiating favorable export conditions. Leveraging government-to-government agreements, overseas investments, and domestic initiatives can help secure access to critical raw materials. Infrastructure enhancements, including improved roads and ports, are also essential to reducing logistics costs. Trade corridors with minimal friction are crucial for India to capitalize on the global preference over current suppliers.
- **Association leadership for global integration:** Building stronger connections with global industry bodies can provide access to best practices and new market opportunities. Establishing a unified industry position on critical issues is essential to ensure government policies align with the industry needs and promote effective decision-making.
- **Institutional finance support:** Providing access to trade credit insurance, emergency working capital lines, and green financing can help mitigate trade disruptions. Currently, MSMEs have limited access to affordable export credit, with interest rates as high as 12 percent.⁵⁸
- **Network effect of MSMEs:** Strengthening networks between MSMEs and also with large players can create significant resource efficiencies, including procurement scale, complementary portfolio offerings, and enhanced innovation. Digital knowledge-sharing forums and shared services initiatives can enable MSMEs to access best practices, reduce costs, and improve operational efficiency.

Industry participants would play a leading role in ensuring the success of IGNITE and GAIN. Collaboration, not only among large enterprises and MSMEs, but also with policymakers, academia, innovators, and adjacent industries, will be critical, where each participant can bring unique strengths to the table and could consider how best to contribute to these efforts.

⁵⁸ Banikinkar Pattanayak and Anuradha Shukla, "Interest subsidy may return to help MSMEs compete in global market," The Economic Times, May 15, 2025.

Conclusion

India's auto component industry stands at a pivotal moment, with shifting global trade dynamics and the country's favorable manufacturing ecosystem presenting an opportunity to make progress towards the aspiration of about \$200 billion market by 2030. By building on existing strengths to execute a global strategy for ICE, while simultaneously investing in capability development and innovation in advanced electrification and connectivity, the industry can progress toward achieving this vision. A two-pronged strategy can guide the roadmap: IGNITE and GAIN. The IGNITE approach helps ensure long-term industry growth by driving investments in innovation and capability building to meet the global standards of operational excellence and efficiency. Collaboration through GAIN helps stakeholders leverage the strength of network effects in resources, capabilities, and innovation, and build enablers to unlock new opportunities and scale. Successful execution of these strategies can help shape the future for the country's auto component industry amid global trade shifts.

*Shaping the future of India's auto
component industry amid global trade shifts*

By McKinsey

September 2025

Copyright © McKinsey & Company

Designed by INO-VG Design Center

www.mckinsey.com

 @McKinsey

 @McKinsey