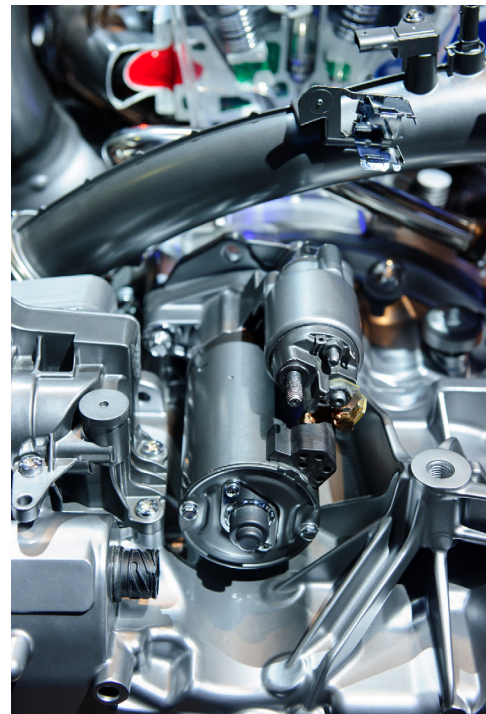




Automotive Components

# 'Make in India' – Making it happen



September 2015



Automotive Components

# 'Make in India' – Making it happen

Presented at the 55<sup>th</sup> ACMA Annual Session and National Conference

September 2015



# Foreword

On the back of strong exports and growing domestic automotive demand, the Indian automotive components industry has roughly tripled in size from INR 83,000 crore (USD 18 billion) in 2006 to INR 235,000 crore (USD 39 billion) in 2015. Its contribution to India's manufacturing GDP has increased to 5 per cent.

However, India's manufacturing sector contributes only about 13 per cent of India's GDP, while this share is about 25 to 35 per cent for many developing nations. This presents an opportunity for the Indian automotive components industry to lead the manufacturing sector to significantly increase its contribution to India's GDP over the next decade, helping the nation achieve its 'Make in India' aspirations.

For this, automotive components manufacturers in India should aspire to make not only for India but also

for the world. The industry would have to focus beyond manufacturing to design and development. This would make India a global automotive components manufacturing hub. Apart from proximity to a large, growing market and significant cost advantages for manufacturers, there are significant pay-offs for the country as well in terms of forex earnings, skill development and job creation.

Establishing India as a manufacturing and export hub, however, will require concerted action from automotive components manufacturers, Automotive Component Manufacturers Association of India (ACMA), automotive OEMs, automotive value-chain partners and policy-makers, in order to attract investments to the tune of USD 100 billion over the next decade to realise 2026 aspirations.

With this objective, ACMA, with the support of McKinsey & Company, decided to conduct an incisive study on the key

drivers that will influence the success of the industry's 'Make in India' campaign, and imperatives that the industry must focus on. As the knowledge partners for the 55<sup>th</sup> ACMA Annual Session and International Conference, McKinsey & Company conducted a detailed study to develop a perspective on 'Make in India' for the automotive components industry.

We are thankful to McKinsey & Company for their effort and for bringing an insightful perspective to this conference. We hope that you will find this document informative and useful for shaping the 'Make in India' efforts of the Indian automotive industry.

Ramesh Suri,  
President, ACMA

Ashok Taneja  
Chairman, ACMA Committee for  
Knowledge Partner Engagement

Vinnie Mehta  
Director General, ACMA



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# Executive summary

## Strong performance and significant aspirations

Over the last decade, the Indian automotive components industry has scaled significant heights. The overall size has grown to about three times while exports have grown faster to about five times and contribution to manufacturing GDP has increased from 3 per cent to 5 per cent. This has been driven by strong growth in the domestic market and increasing globalisation (including exports) of Indian suppliers. However, there is further room for growth — Indian exports still form only one per cent of the global automotive components exports with imports having grown at the same pace as exports.

In an ever changing world, the automotive components industry will have to adapt and reshape itself to align with evolving forces. 'No Ordinary Disruption', a book by the McKinsey Global Institute, highlights four disruptive forces that are global in nature and will impact almost every sector in every country. These forces, along with key regulatory and market trends, are likely to drive significant shifts in the global automotive sector, leading to ripple effects in the Indian automotive components sector.

The industry has significant aspirations for 2026 — to reach five times current levels in overall size, seven times current levels in exports and to reach 10 per cent of India's manufacturing GDP. In order to realise these aspirations, the automotive components industry will need to attract about USD 100 billion worth of investments and ensure skill development of the existing talent pool to realise the complete job creation potential of the industry. These

aspirations when translated into an exciting vision could imply the following — India being the frugal innovator for the world, significant scaling of existing clusters/ emergence of new automotive clusters in India, global MNCs manufacturing in India for the world, multiple Indian automotive component players entering the top 100 global suppliers lists and the sector being supported by world class logistics and port infrastructure.

There are two key drivers for attracting investments and realising the aspirations: increase the economic profit generated by automotive components players and strengthen India's competitiveness as an investment destination for manufacturing by improving the ease of doing business.

## Economic profit and the ease of doing business

India's manufacturing sector is still not operating at its potential. Across two key measures of share of manufacturing in GDP (India at 13 per cent, China at 33 per cent) and share of exports in manufacturing (India at 23 per cent, China at 40 per cent), there is significant room for growth.

Economic profit is a measure of the surplus a company has generated after repaying its cost of capital. Across 2007–2011, among the top 1000 manufacturing companies in India, less than one in two companies generated economic profit. Moreover, this number has significantly come down and for the period 2011–2014, less than one

in three companies generate economic profit. However, within the automotive components manufacturers across both the time periods, a little over one in three companies generated economic profit.

McKinsey's proprietary research on the performance of about 2,500 Indian companies across approximately 60 sectors shows that the top 20 per cent of the companies create over 90 per cent of the economic profit. A view on sectors indicates similar findings: 20 per cent sectors generate over 90 per cent of economic profit. While automotive OEMs, IT services and pharma are among the most value-creating sectors, the automotive components sector lies in the 'mid zone'.

Within the Indian automotive components sector, while 90 per cent of suppliers are profitable, less than a third make economic profit. Indian players need to generate substantially greater economic profit to match the likes of China, Germany, US and South Korea. It is observed that the countries with high economic profit have attracted over two thirds of global investments in the last five years. Analysis of countries across margins and asset turnover lead to two indifference curves, one for high economic profit and one for low economic profit; Indian players can focus on improving their asset turnover to shift to a high economic profit indifference curve.

In addition to economic profit, ease of doing business is critical to attract investments. Based on the World Bank's 10 themes for the ease of doing business, India has ranked among the top 40 nations in the world in terms of investor



protection and availability of credit. However, it has also ranked among the bottom 20 in the world on the ease of starting a business, dealing with construction permits and enforcing contracts. India's competitiveness as an investment destination needs to be improved in order to attract the requisite investments.

### Attracting investments

McKinsey's proprietary research suggests that companies could improve economic profit by focusing on a three-part recipe — endowments, trends and big moves.

- Endowments refers to company and industry characteristics like capital structure, geographical diversification, access to resources, and basis of differentiation among others.
- Trends refer to the global and local changes affecting the industry as a whole or a particular company in specific.
- Big moves are the choices and decisions made by the company/industry, in the light of endowments and trends that would help them create incremental value.

Further, research suggests that the odds of moving to the top quintile could be dramatically increased to 95 per cent

from levels of 10 per cent, if companies/sectors make the best use of the endowments and trends while concurrently executing big moves.

We propose a nine-point agenda for the automotive components industry across the three-part recipe to improve economic profit.

The industry could build on its endowments by:

- Graduating from 'make to print' through frugal innovation
- Growing scale and professionalising for the next wave of cost excellence
- Improving quality capability of Tier-2 and Tier-3 suppliers

It can win over trends by:

- Investing to stay on top of the evolution of emission and safety standards/adoption
- Growing plant capacity, people skills and technology to support domestic and global expansion of OEMs
- Building automotive electronics supply capabilities; leveraging large aftermarket

It can execute big moves such as:

- 'Make in India for the World' by leading in simplified and low-cost technology
- Building scale and managing cyclicality through M&A and diversification
- Embracing 'Digital Manufacturing' to transform productivity and quality

Apart from this, the industry ecosystem and the Indian government could collaborate to make India an attractive manufacturing investment destination.

- ACMA, automotive OEMs, and other value-chain partners could invest in improving the ecosystem by promoting Brand India, creating competitive products (e.g. liability insurance), facilitating quality improvements, embracing digital services and promoting competencies in the value chain.
- The government could provide continued R&D and infrastructural support while exploring strategic trade agreements and making it easier to do business in India.

□ □ □



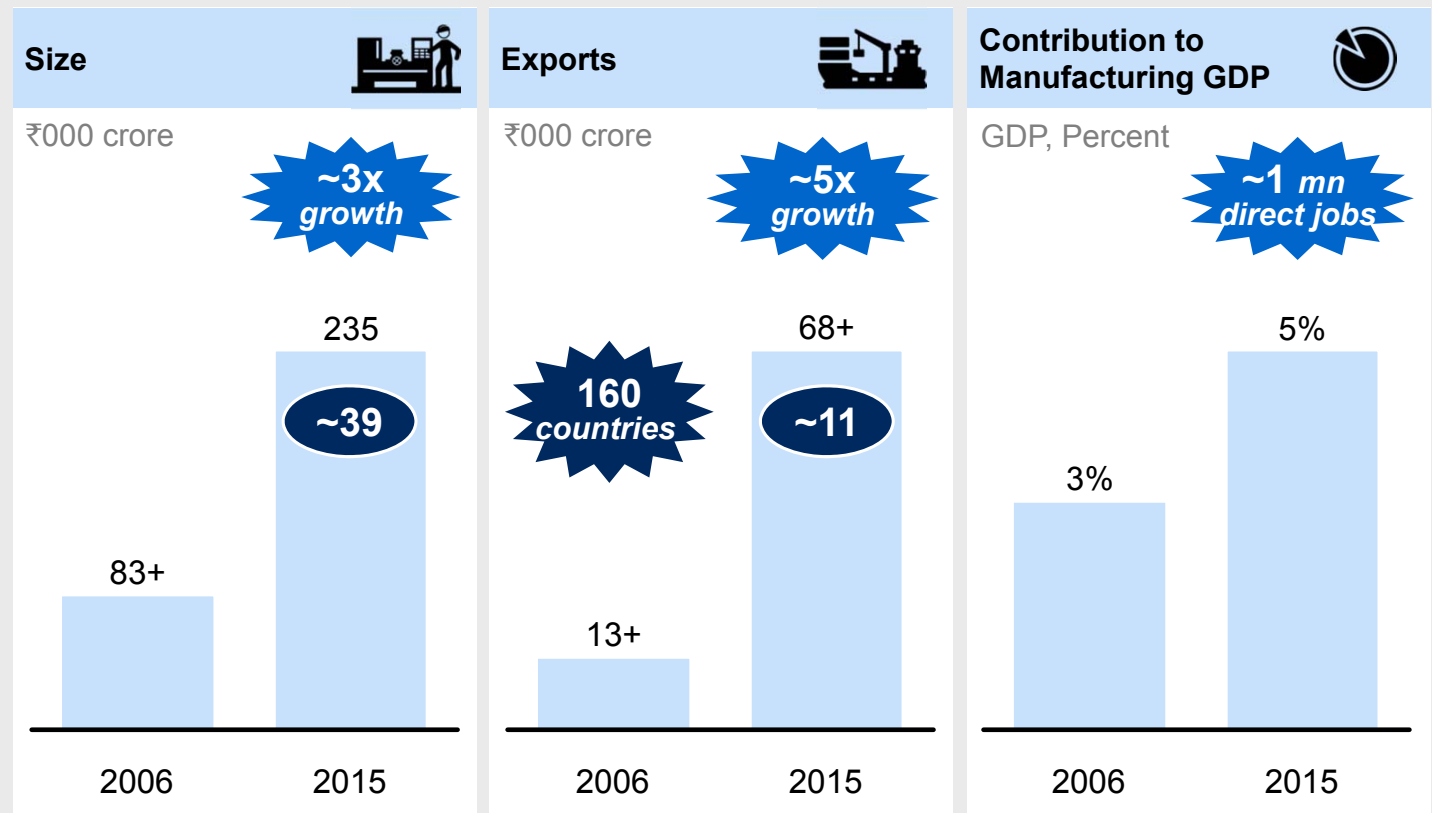
## Chapter 1

Strong all-round performance and significant aspirations

Over the last decade, the Indian automotive components sector grew at a CAGR of about 12 per cent to reach a size of INR 235,000 crore (USD 39 billion) in 2015. Exports, during the same period, grew faster at a CAGR of 16 per cent and scaling a size of INR 68,500 crores (USD 11 billion), reaching 160 countries. The automotive components sector has outgrown the overall manufacturing sector over the past decade, increasing its contribution to the manufacturing GDP to about 5 per cent while providing direct jobs to about a million people.

## Strong all-round performance by the Indian automotive components sector

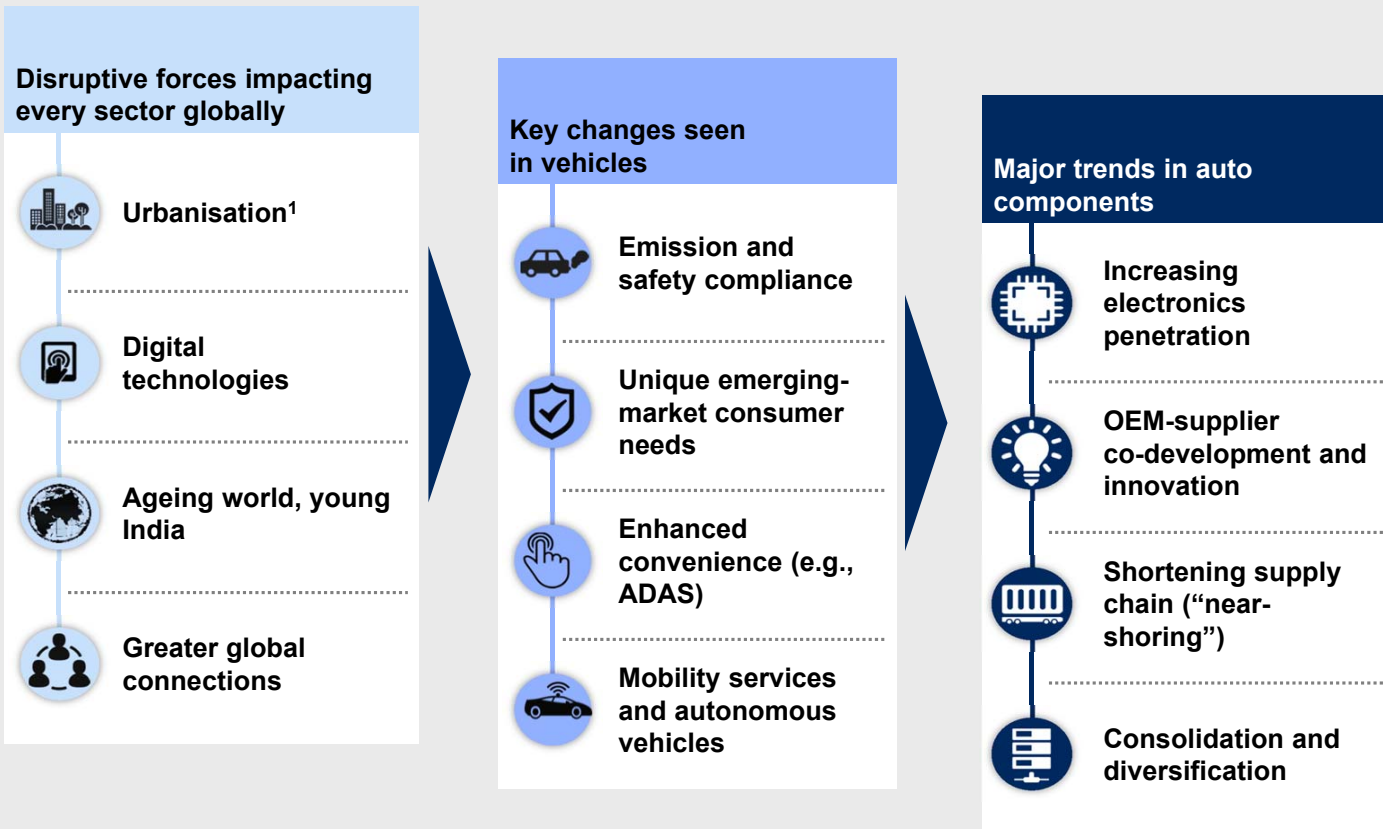
xx Value in USD bn 2006 2015



SOURCE: ACMA; Automotive Mission Plan 2026



## Diverse and disruptive trends will shape the global industry



<sup>1</sup> Emerging economies, including industrialisation

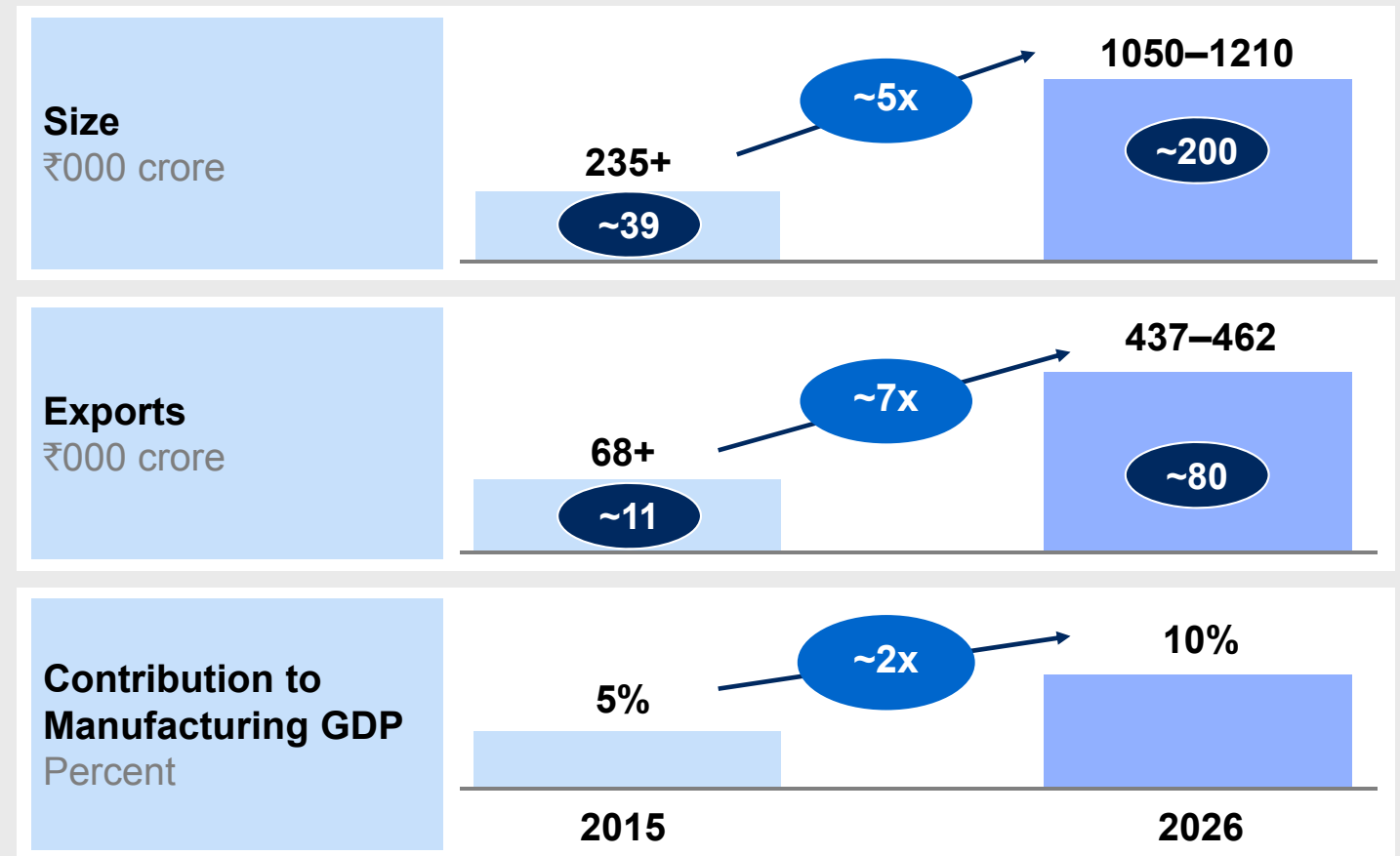
SOURCE: 'No Ordinary Disruption', a McKinsey and Company publication, July '15

In an ever changing world, the automotive components industry will have to adapt and reshape itself to align with evolving forces. 'No Ordinary Disruption', a book by the McKinsey Global Institute, highlights four disruptive forces that are global in nature and will impact almost every sector in every country. These forces, along with key regulatory and market trends are likely to drive significant shifts in the global automotive sector, leading to ripple effects in the Indian automotive components sector.

By 2026, the automotive components sector aspires to grow five to six times its current size, with exports growing to seven times to equal domestic demand. In order to achieve this, the sector would have to outgrow the overall manufacturing sector and this could imply that the Indian automotive components sector would have doubled its share in India's manufacturing GDP over the next decade.

## The sector has set exciting 'Make in India' aspirations

xx Value in USD bn  
 2015 2026



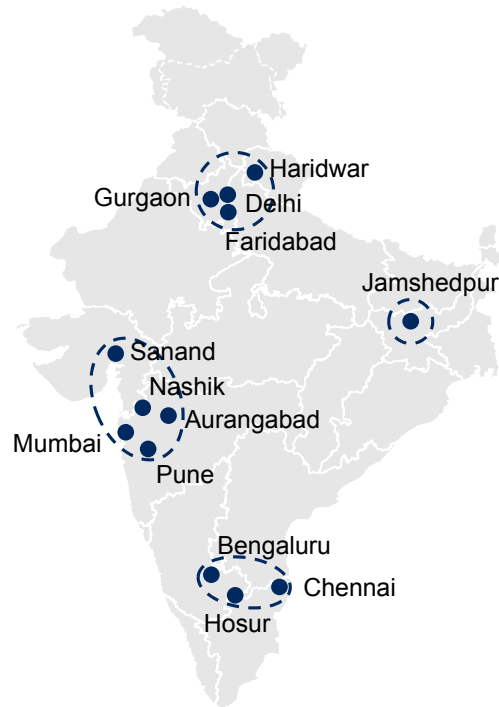
SOURCE: ACMA; Automotive Mission Plan 2026

## Aspirations translate into an exciting vision

### Vision for the automotive components sector in 2026



**USD 85–100 bn  
(INR 550,000–  
650,000 crores)  
additional  
investments  
required**



- 1** Global MNCs manufacturing at scale in India for the world
- 2** Multiple Indian automotive components suppliers in top 100 globally
- 3** Several new automotive clusters emerge
- 4** World-class logistics corridors and efficient port infrastructure
- 5** Indian auto components sector—a 'frugal innovator'

India's emergence, both as an automotive hub for the world and as one of the largest global automobile markets, is likely to necessitate investment to the tune of USD 100 billion in the automotive components sector. India should aim to be the destination for global MNCs manufacturing for the world, while enabling its automotive components suppliers to break into the top 100 global suppliers. This can be achieved on the back of newer manufacturing clusters, world-class logistics and infrastructural support and frugal innovations.

1 USD 1 = INR 63

SOURCE: Indian Brand Equity Foundation, AMP 2026, World Industry standards



## Chapter 2

Economic profit and country  
competitiveness as key drivers

There are two key drivers for attracting investments and realising aspirations: Increase the economic profit generated by automotive components players and strengthen India's competitiveness as an investment destination for manufacturing, by improving the ease of doing business.

## **'Make in India': Two most crucial pre-requisites**

**Companies in the sector generate sufficient economic profit (i.e., returns on capital greater than cost of capital)**

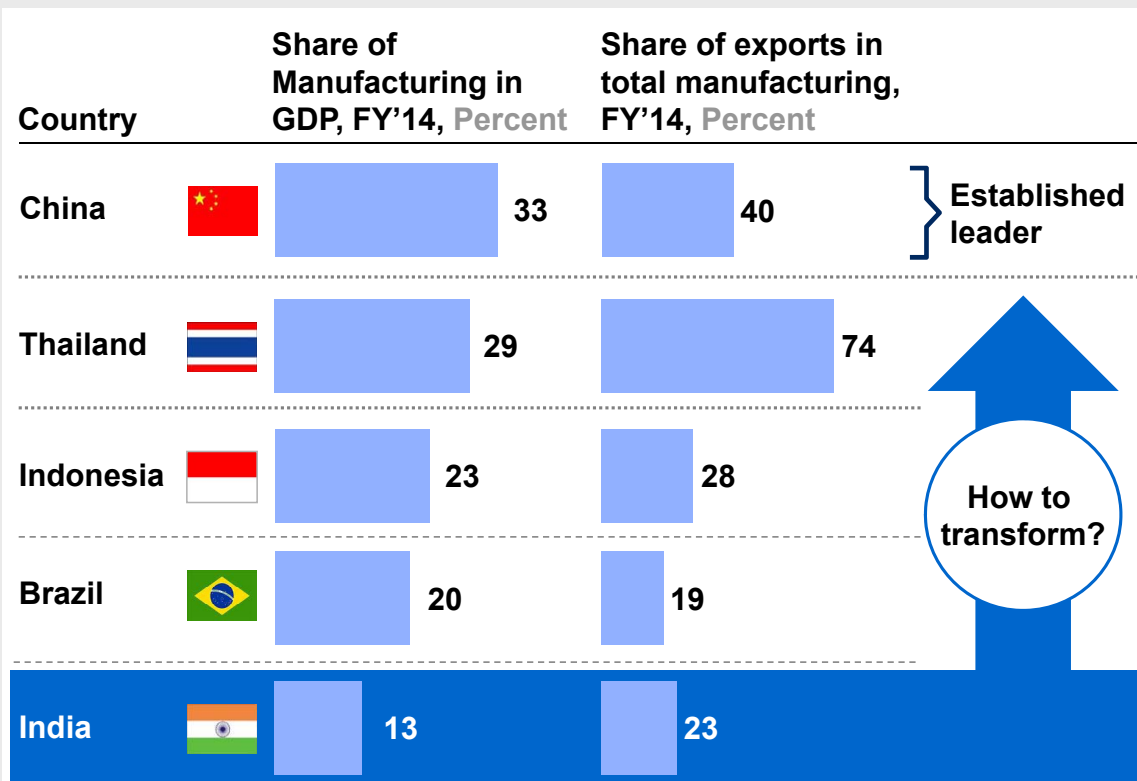


**Attract investments of USD 85–100 bn into the sector**

**The country becomes competitive on the ease of doing business**



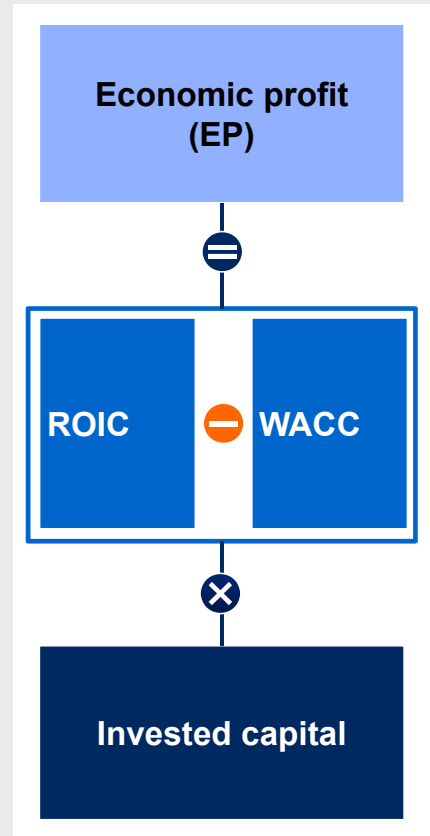
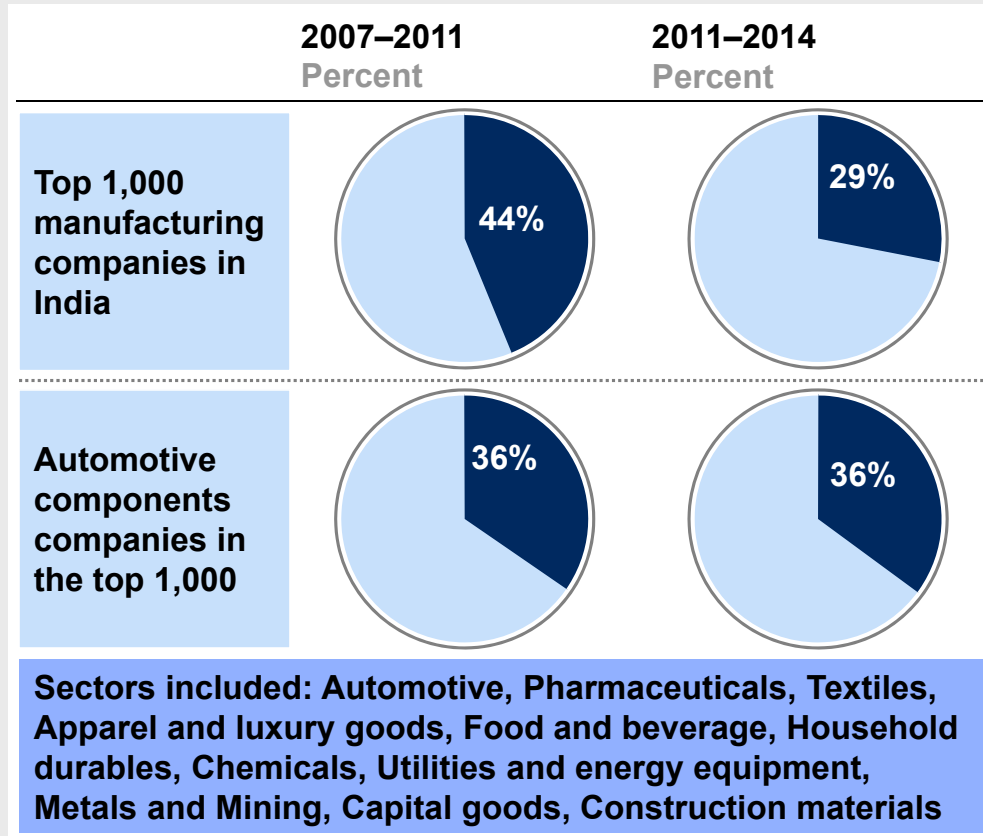
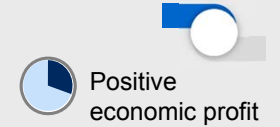
## India's manufacturing sector—not yet operating at potential



India's manufacturing sector is still not operating at its potential. Compared to other countries, India has significant room to improve across two key measures — share of manufacturing in GDP and share of exports in manufacturing. China has established itself as the global leader in manufacturing, whereas Thailand has emerged as a manufacturing export hub. With the 'Make in India' aspirations, the automotive components industry has the opportunity to lead the Indian manufacturing sector to increase its contribution to GDP and exports.

Economic profit is a measure of the surplus a company has generated after repaying its debt and meeting equity investors' expectations of returns. Across 2007-2011, among the top 1000 manufacturing companies in India, less than one in two companies generated economic profit. Moreover, this number has significantly come down and for the period 2011-2014, less than one in three companies generate economic profit. However, across both time periods, a little over one in three automotive components manufacturers generated economic profit.

## Most manufacturing companies in India are not creating economic profit<sup>1</sup>



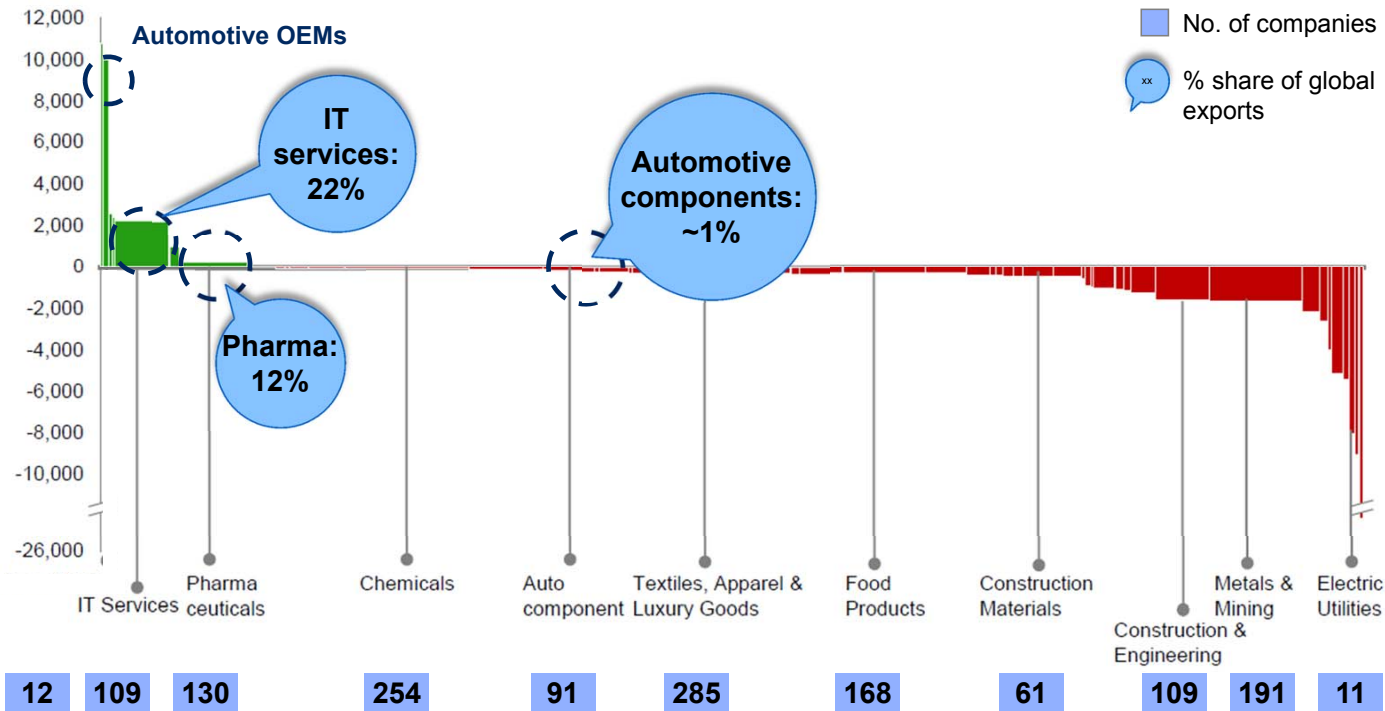
<sup>1</sup> Returns on capital employed over and above the cost of capital



## The Indian automotive components sector is in the 'mid zone' on economic profit creation

Average economic profit<sup>2</sup> generated by key sectors; 2010–14; N=2,576<sup>1</sup>

INR millions



<sup>1</sup> Includes all publically listed non-financial Indian companies covered by CPAT, less firms with insufficient data to calculate an accurate average economic profit for 2010–14; <sup>2</sup> Economic profit divided by number of companies

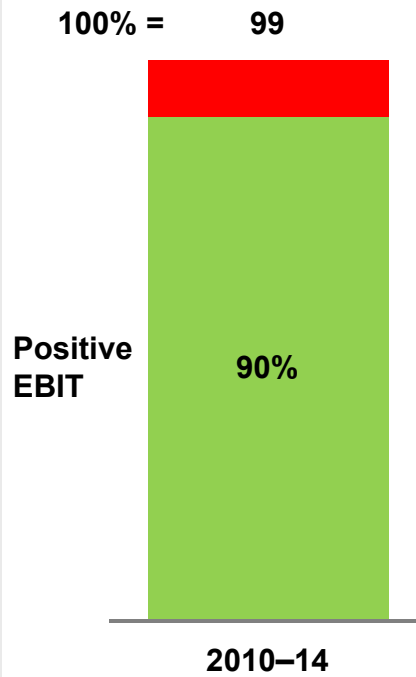
SOURCE: Corporate Performance Analysis Tool™ – a McKinsey Solution

McKinsey's proprietary research on the performance of approximately 2500 Indian companies across around 60 sectors shows that the top 20 per cent of the sectors create over 90 per cent of the economic profit. While automotive OEMs, IT services and pharmaceuticals are among the most value-creating sectors, the automotive components sector lies in the 'mid zone'.

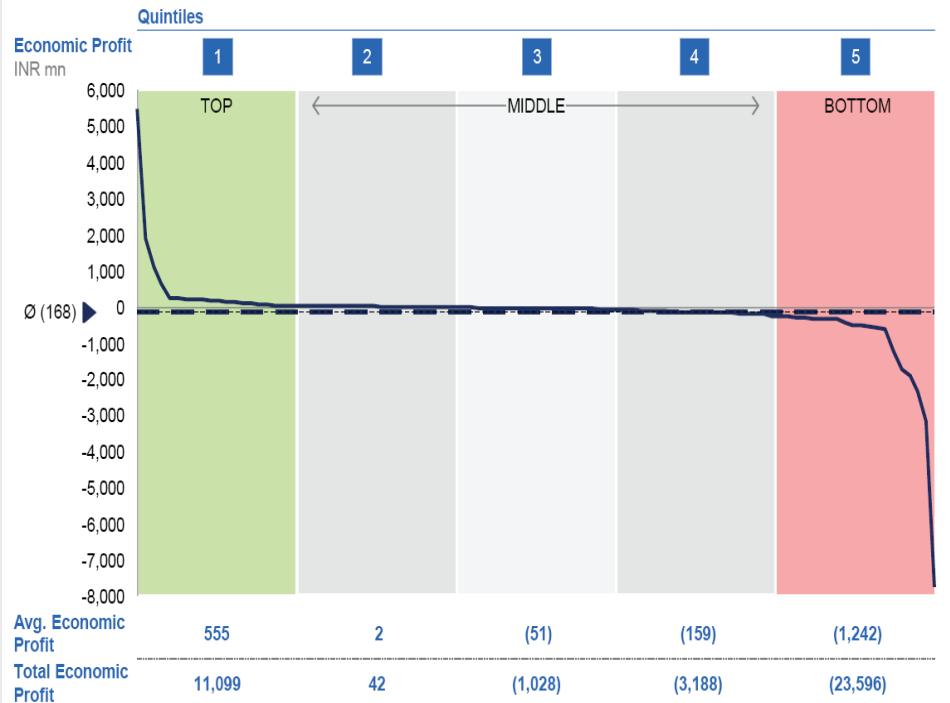
Analysing the financials of about 100 listed automotive components companies, one can find that while 90 per cent of automotive components manufacturers make positive EBIT, only about a third of them generate economic profits. In fact, global research shows that when arranged in decreasing order of economic profit, the companies form a 'Power curve' which can be divided into five equal parts or quintiles. This is consistent for the Indian automotive components sector and almost all the economic profit is generated by the top quintile companies.

## While the majority of automotive components suppliers in India are profitable, few generate economic profit

**90 percent of players make positive EBIT...**

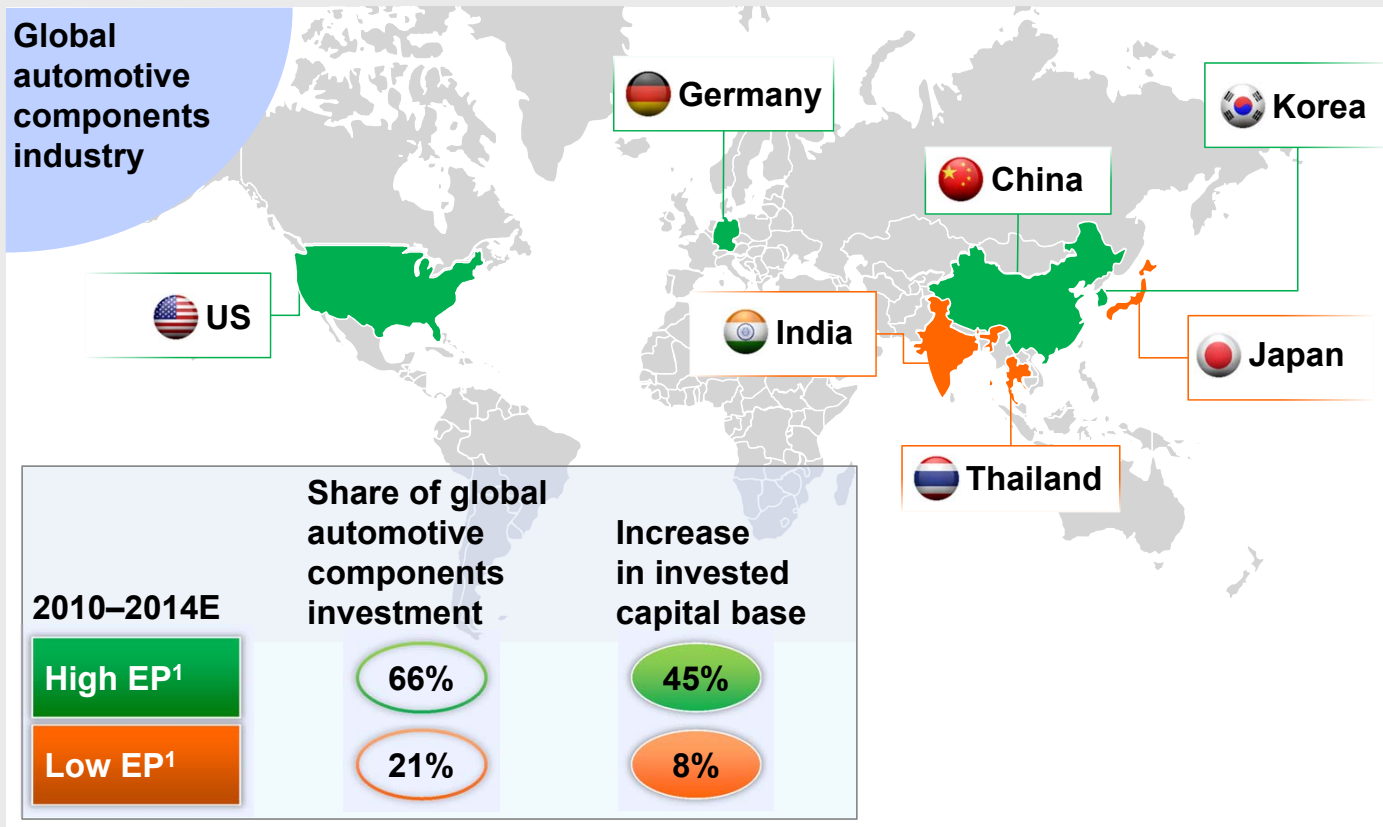


**... but only about one-third make positive economic profit**



SOURCE: McKinsey analysis

## Economic profit attracts investments



<sup>1</sup> High: EP/IC > 5%; Low: EP/IC < 5%

SOURCE: IHS Global Insights

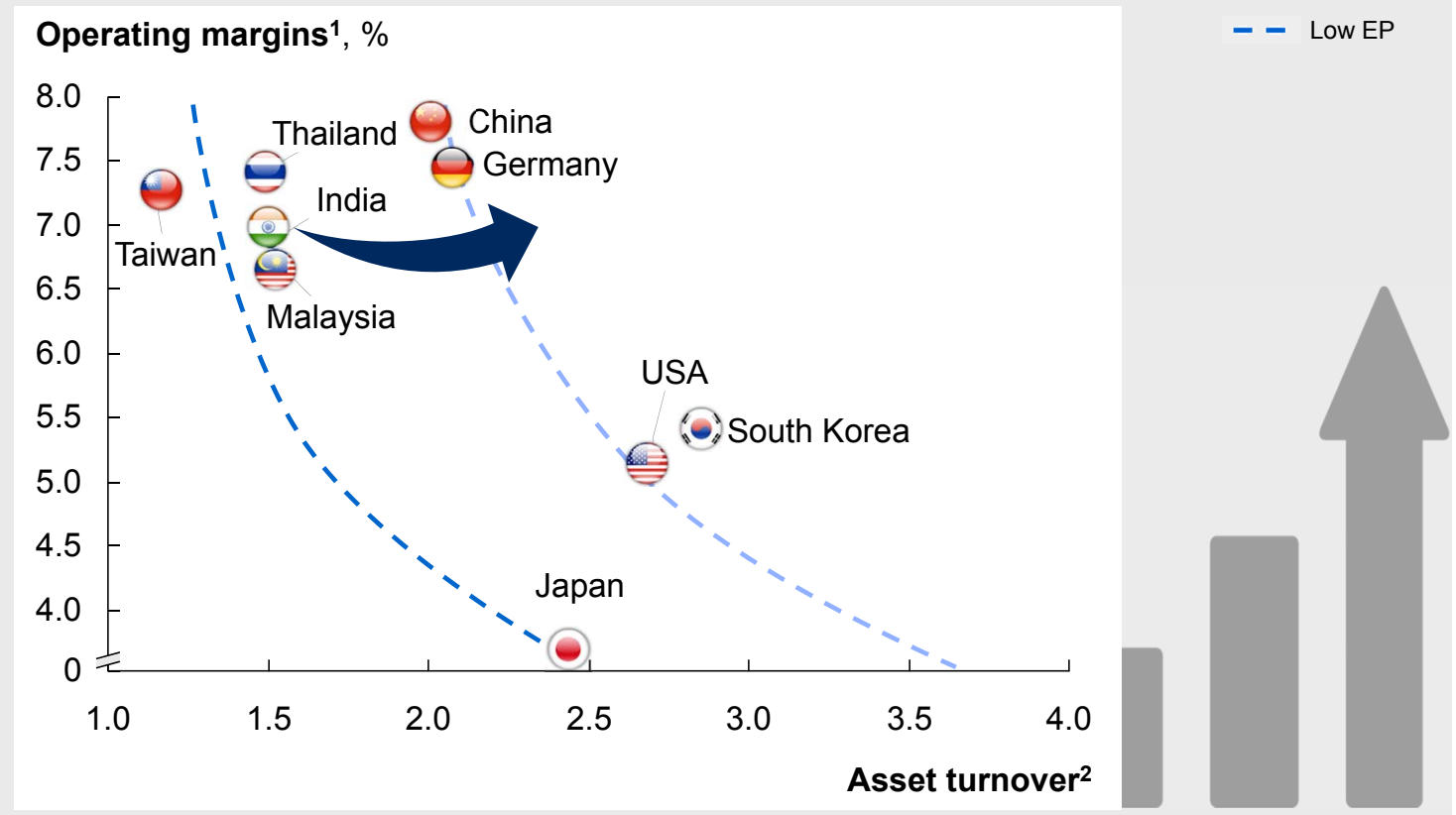
Global analysis of economic profit and investments helps segment countries into two groups—one comprising countries such as Germany, the US, South Korea and China, with high economic profit generated per unit investment (high EP/IC), and another set of countries such as India, Thailand and Japan, with low economic profit per unit investment.

McKinsey's analysis shows that the countries that generate high economic profit on investments get a larger chunk of the total investment. Over the past four years, we see that countries with high EP (e.g., the US, Germany, China, South Korea) have received two-thirds of the total global investments in the automotive components sector while countries with low EP (e.g., India, Japan and Thailand) have together received only about 20 per cent. This also reflects in the difference in the increase in the invested capital base.

Two key factors drive economic profit—operating margins (*net operating margins less taxes*) and asset turnover (*revenue per unit of invested capital*)

India, while enjoying higher operating margins, would need to improve its asset turnover ratio to increase its chances of improving EP, jumping to the higher EP indifference curve and attracting more investments.

## Indian automotive components sector has the opportunity to transform its economic profit position



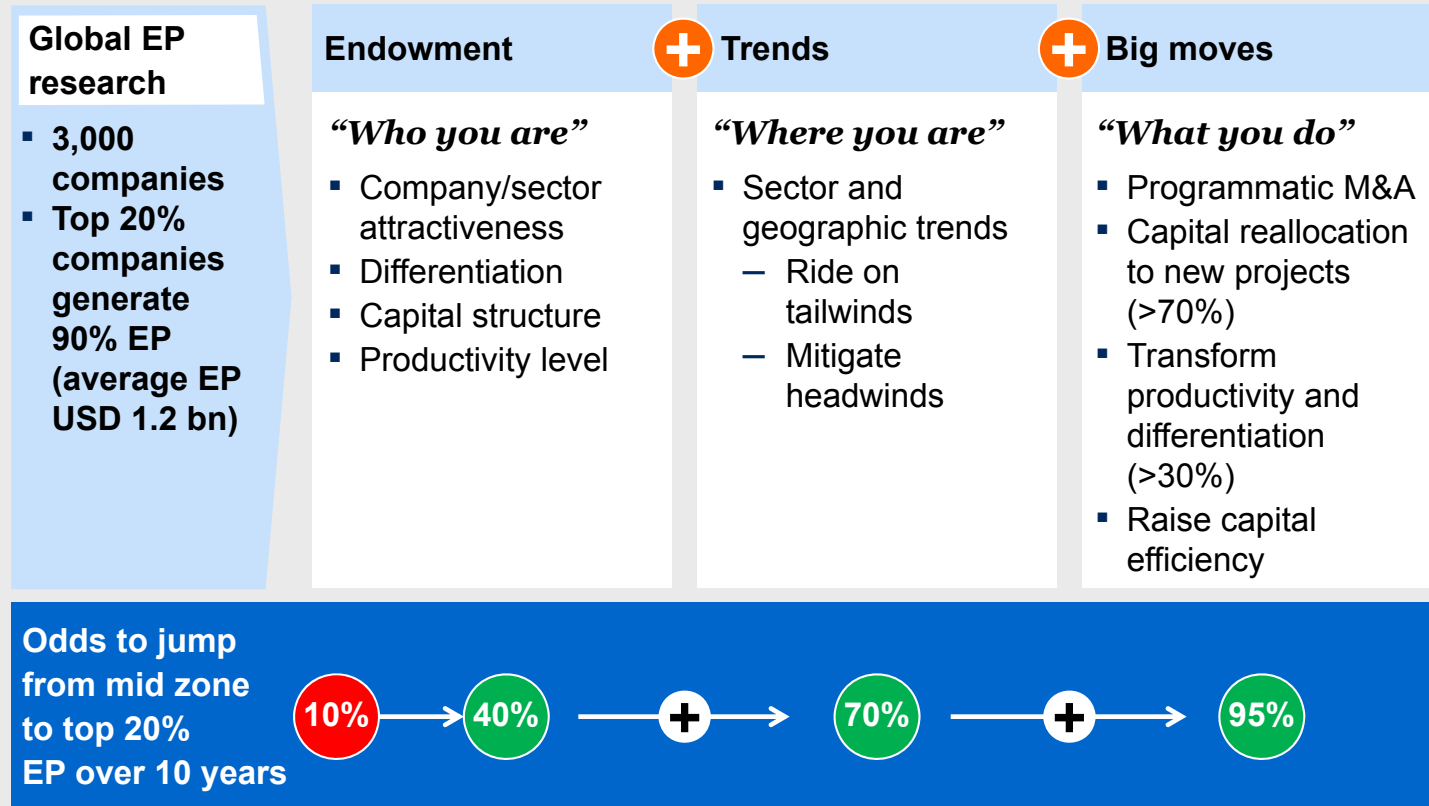
1 Net operating profit adjusted for taxes

2 Revenue per unit of capital employed

SOURCE: Corporate Performance Analysis Tool™ – a McKinsey Solution

## Three-part recipe to move to the top 20% position in economic profit (EP)

Company/sector-specific factors that affect the starting odds



SOURCE: McKinsey analysis

McKinsey’s proprietary research suggests that companies can improve economic profit by focusing on a three part recipe—endowments, trends and big moves.

- Endowments refer to company and industry characteristics like capital structure, geographical diversification, access to resources, and basis of differentiation among others.
- Trends refer to the global and local changes affecting the industry as a whole or a particular company in specific. Those that help create value, like what the increased penetration of smartphones is doing for e-commerce companies, are the tailwinds for the industry. On the other hand, those that make value creation harder, like what the rise of contact lenses did for the spectacle industry, are the headwinds.
- Big moves are the choices and decisions made by the company/ industry in the light of endowments and trends that would help them create incremental value.

Further, research suggests that the odds of moving to the top quintile can be dramatically increased to 95 per cent from levels of 10 per cent, if companies/sectors make the best use of the endowments and trends while concurrently executing big moves.

Over the period 2008–2013, the top five South Korean automotive parts players have doubled their share in the global automotive components market. Overall the South Korean automotive components industry witnessed a spurt in growth over the last decade as it successfully rode the wave of endowments, trends and big moves:

- Endowments: Leveraged the highly skilled labour and long term anchor relationships with OEMs to become a high-tech components hub
- Trends: Worked hand-in-hand with OEMs and quickly adopted modular design and manufacturing practices while focusing on technology
- Big moves: Relentlessly pushed for innovation at low cost (especially on electronics), strongly supported by the government through initiatives such as the automotive part parks

## The South Korean automotive components industry adopted a similar recipe

### Endowment



- Capability in co-designing with OEMs
- Highly skilled labour
- Long-term and exclusive anchor OEM relationships

### Trends



- Piggy-backing global OEMs (e.g., Hyundai)
- Growing demand for affordable technology
- Modular systems design and manufacturing

### Big moves



- Specialising in system-level design, rich in innovation
- Focus on being talent magnets
- Strong government push (KAPPs - Korea Auto Part Parks)

Global share of top 5 Korean auto parts suppliers

2008



~2x growth

2013



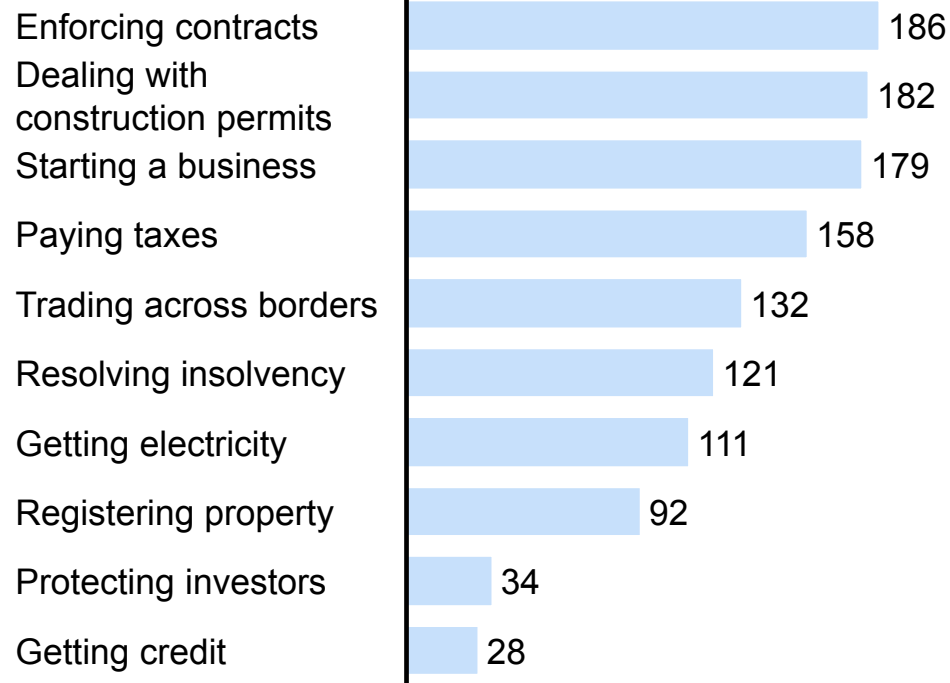
## In addition to EP, India's competitiveness on the ease of doing business needs to strengthen

### Key enablers

- Land
- Labour
- Infrastructure
- Product-market regulation (e.g., taxation, trade agreements)

### Rankings on 10 themes of doing business

Ranking (out of 189), 2014



While economic profit is one pillar to attract investments for industries to 'Make in India', the ease of doing business is another. The government is pushing forward on the arduous reform agenda along the four key enablers—land, labour, infrastructure and product market regulation.

The World Bank's Ease of Doing Business Report of 2014 breaks down the concept of the ease of doing business into specific tasks, and has indicated that India has great scope for improvement on multiple fronts, especially enforcing contracts, dealing with construction permits, starting new businesses and paying taxes. Out of 10 tasks ranked for ease of doing business, India is in the bottom quartile for four tasks and in the top quartile for only two tasks.





## Chapter 3

# Nine-point agenda for growing economic profit

Indian automotive components players could focus on a nine-point agenda across the three-part recipe to help significantly boost the odds of generating top-quintile economic profit.

#### Build on endowments

Automotive components manufacturers could focus on the three key endowments of the industry—innovation, cost and quality.

**On innovation**, manufacturers could leverage the experience in low-cost design and tooling in building out the next wave of growth through frugal innovation while moving away from ‘make to print’.

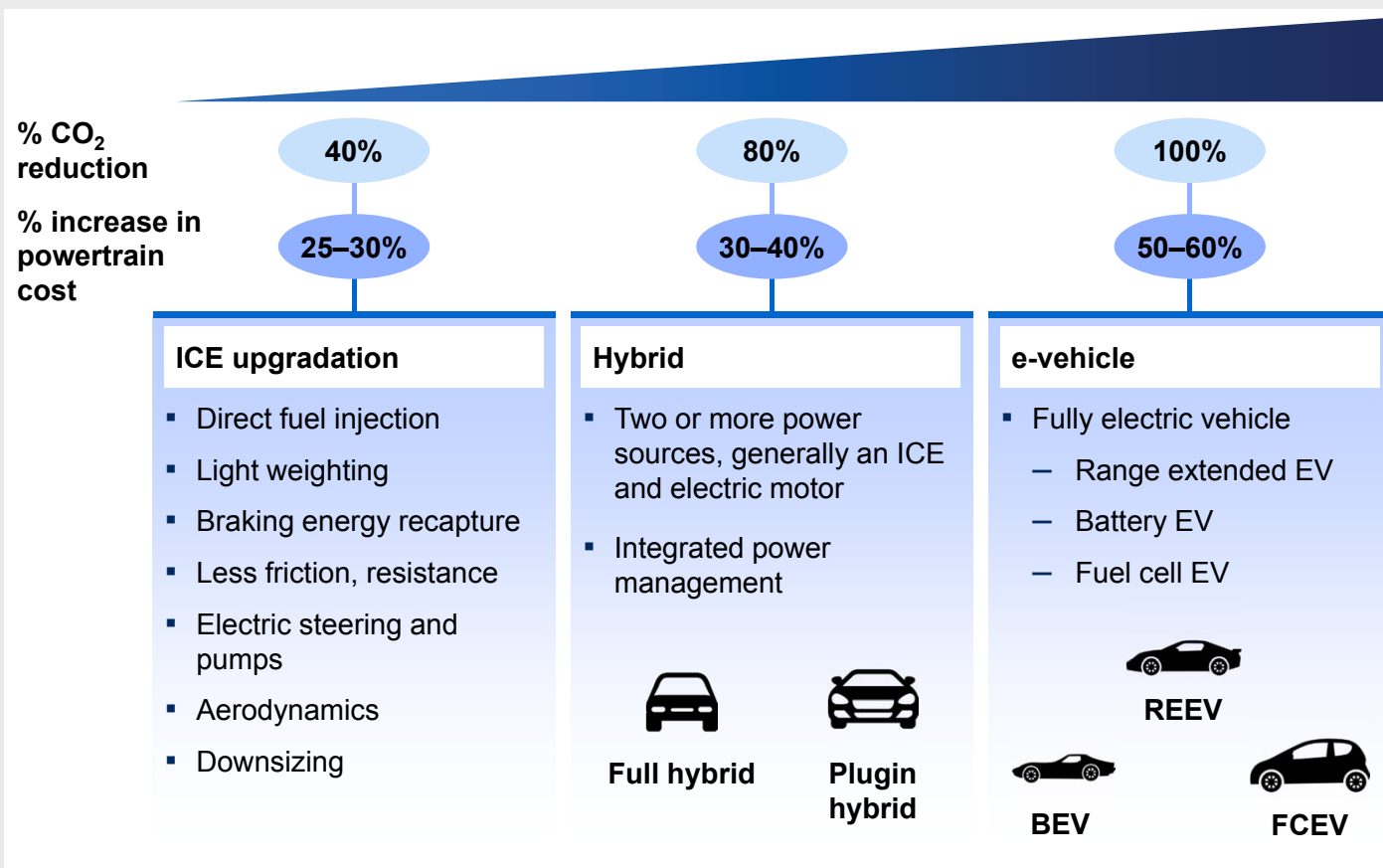
**On cost**, automotive components manufacturers could build on existing labour cost advantages and focus on achieving continued cost excellence. This could be realised by delivering on two key themes—building scale to leverage scale economies and focusing on professionalising the ecosystem to create a culture of cost excellence.

**On quality**, it is important to raise the bar to reach world-class standards. This could be accomplished if the entire ecosystem, including Tier 2 and Tier 3 players, deliver consistent quality at the highest standards. In order to make this a reality, there could be focused support through training and certification, dedicated hand-holding, measurement and monitoring, and driving quality improvements across the entire chain.

## Transformation agenda for the Indian automotive components industry

Build on Endowments	1	Graduating from ‘make to print’ through frugal innovation
	2	Grow scale and professionalise for the next wave of cost excellence
	3	Improve quality capability of Tier-2 and Tier-3 suppliers
Win over Trends	4	Invest to stay on top of the evolution of emission and safety standards/adoption
	5	Grow plant capacity, people skills and technology to support domestic and global expansion of OEMs
	6	Build auto-electronics supply capabilities; leverage large aftermarket
Execute Big moves	7	‘Make in India for the world’ by leading in simplified and low-cost technology
	8	Build scale and manage cyclicality through M&A and diversification
	9	Embrace ‘Digital manufacturing’ to transform productivity and quality

## 4 Emissions: Opportunities for suppliers along the powertrain evolution



As emission norms are tightened, the engine and powertrain will see significant changes. Given that engine and powertrain components contribute to 75 per cent of India's imports and exports, it is important for manufacturers to stay on top of powertrain evolution.

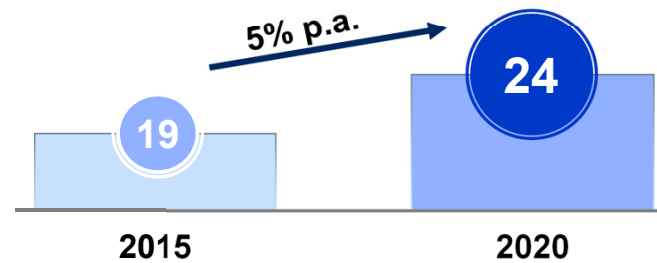
While there is potential to achieve up to 80 per cent reduction in vehicular CO<sub>2</sub> emissions by incremental improvements in the current IC engine or adding of a second power source (like an electric motor), components manufacturers need to work closely with OEMs and invest in newer technologies like hybrid powertrains, direct fuel injection, light weighting and downsizing.

The current solution to achieve zero emissions is the e-vehicle. Given its potential to significantly disrupt the conventional powertrain, it is extremely critical for automotive components manufacturers to work closely with Indian and global OEMs to develop the next wave of powertrain components in India, led by frugal innovation and supported by cost and quality excellence.

Automobile safety is in focus more than it has ever been. With increasing regulations and consumer adoption, the global automotive safety market is expected to grow to more than USD 60 billion by 2020. Given current low adoption of safety devices and increasing awareness about vehicular safety throughout the developing world, the market for these devices is likely to grow significantly in India. As scale increases, automotive components manufacturers could explore local manufacturing of these devices.

#### 4 Safety: Global active safety market expected to grow faster

##### Passive safety market USD billion



Airbags

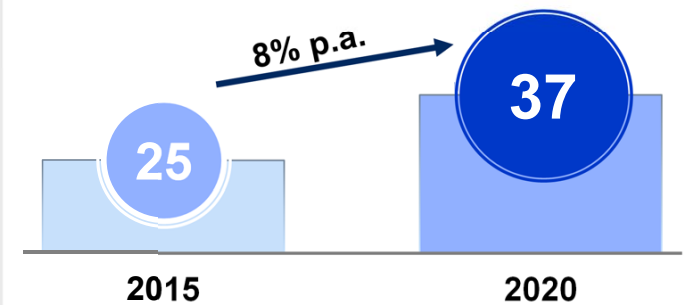


Seat belts



Head restraint

##### Active safety market USD billion



Parking warning  
(ultrasonic)



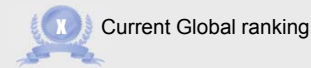
Parking camera



Tyre pressure warning

- Significant imports into India
- As Indian adoption increases, will lead to scale and local manufacturing

## 5 Leverage current scale; benefit as the Indian vehicle market grows



Current Global ranking

India has significant scale in certain segments for 'Make in India'...

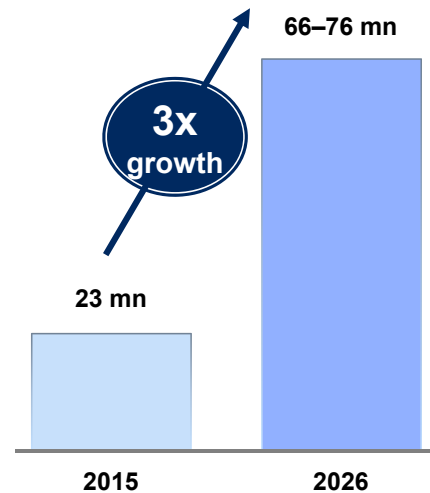
**Two wheelers**

**Segment A<sup>1</sup> cars**

**Tractors**

... with significant scope for growth to compete globally..

Grow with India vehicle market



... which can be realized by achieving scale in additional segments

**LCV<sup>2</sup>**

**Small UV<sup>3</sup>**

**MHCV<sup>4</sup>**

**Other PV<sup>5</sup>**

While the Indian automotive components market will grow along with the automobile market, there are select sub-segments (two wheelers, segment A cars and tractors) where India has a significant scale advantage. Indian automotive components manufacturers could leverage the scale to serve global markets.

In addition, as the Indian vehicle market achieves increased scale, the components suppliers could work towards fully serving and estimated three fold growth. This could potentially prove to be a key tailwind to ride on over the next decade to achieve global scale across additional segments, further improving the global competitiveness of the Indian automotive components manufacturers.

1 Sedans; 2 Light Commercial Vehicles; 3 Utility Vehicles; 4 Medium Heavy Commercial Vehicles; 5 All PV, except Seg A & Seg B

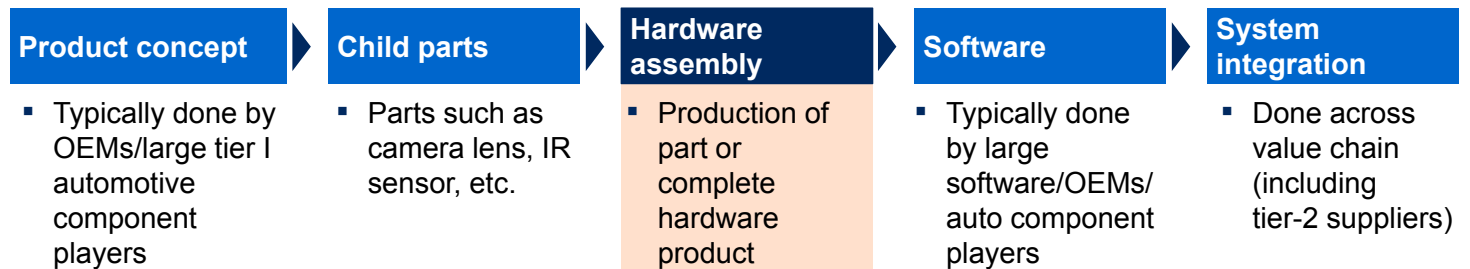
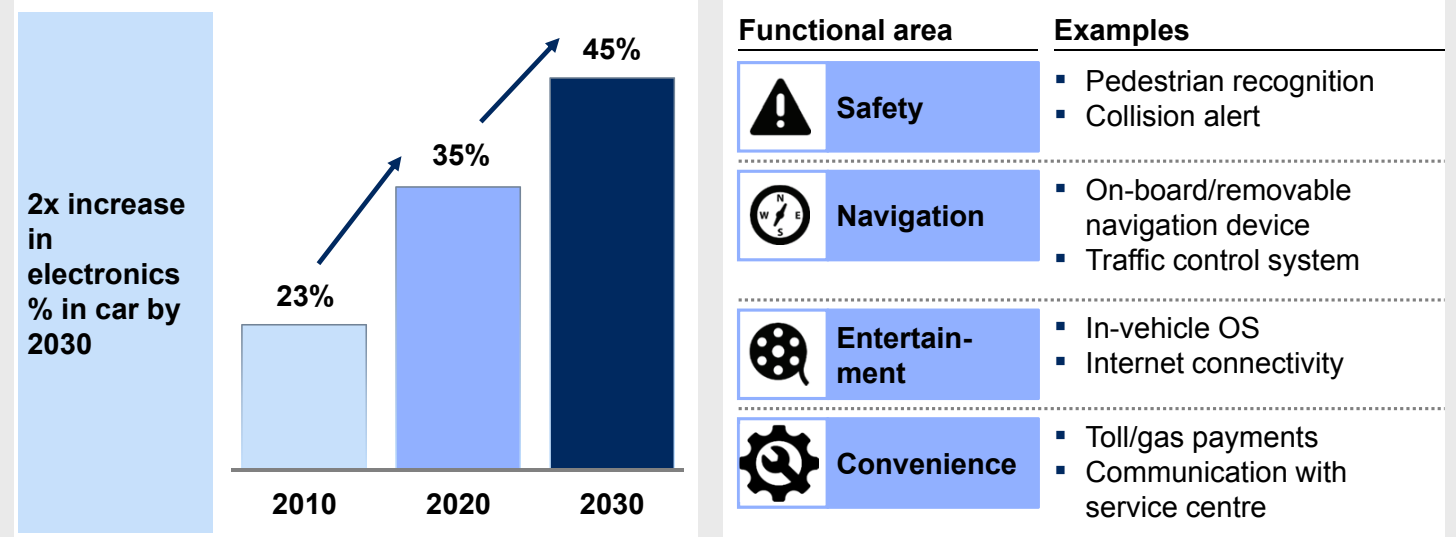
SOURCE: Automotive Mission Plan 2026; IHS Global Insights; Society of Indian Automobile Manufacturers

Electronics is a key focus theme for growth in the automotive components industry with the proliferation of electronics-based safety, navigation, entertainment and convenience systems in cars. Research suggests that the value of electronics content in a car will double between 2010 and 2030, reaching about 45 per cent of the value of a car. Given India's current dependence on electronics import, this would be a major headwind the Indian automotive components industry would have to counter.

Having said that, the increasing scale in India presents an exciting opportunity for automotive components manufacturers to work with innovative players in the technology and electronics space to develop solutions at-scale. Across the automotive electronics value chain, new players could start exploring hardware assembly while established players and new technology partners could lead in product innovation, software and system integration. Child parts, which are currently imported, could see increased local play with growing adoption and regulatory changes.

## 6 Automotive electronics: Opportunity or headwind?

■ Potential starting position for new players



SOURCE: McKinsey analysis

## 6 Potential to play in the electronic components aftermarket

Huge potential play in the electronics aftermarket ...

2014

2.6 million

PVs<sup>1</sup> sold per year in India

20 million

Total number of PVs in India

Electronic accessory	% of new cars sold along with accessory
Parking cameras	3%
Tyre pressure warning systems	6%
Parking sensors	12%

... with a set of emerging electronic accessories likely to be key drivers



Satellite navigation system



GPS-linked panic button for vehicles



Boot lights



Sensors for remote component diagnostics



Advanced, remote security systems

Indian automotive components manufacturers can explore a play in the electronic components aftermarket. Given low penetration of electronic products in new vehicles and a car parc of about 20 million passenger cars in India, electronic components could have huge potential aftermarket demand. New plug-and-play electronics products, like a GPS linked panic button that could benefit vehicle users, could be explored.

1 Passenger vehicles

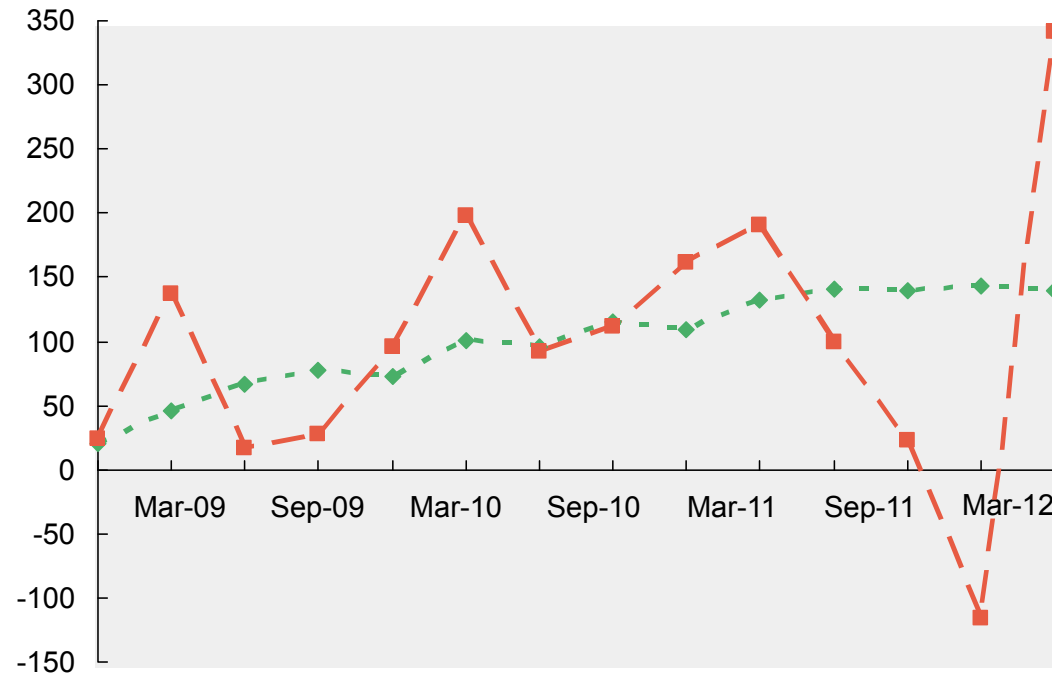
SOURCE: Society of Indian Automobile Manufacturers; IHS Global Insights; Team analysis

One of the potential big moves that could be explored by automotive components manufacturers is to diversify to manage volatility and cyclicality faced by the industry. Analysis of the profits of select Indian automotive components players shows that diversified players managed to maintain higher stability in profits. For automotive component players, opportunities to diversify exist in adjacent industries like defence, aerospace, renewable energy and mass-transit systems, among others.

## 8 Diversify to manage cyclicality

### Net profit for five diversified and five non-diversified Indian automotive component players

Profit scaled to 100



NOTE: Average of the shown period has been used for scaling

SOURCE: Prowess database of the Centre for Monitoring Indian Economy (CMIE)









—◆— Diversified  
—■— Non diversified

### Step-out opportunities

- Defence equipment
- Wind/solar energy equipment
- General purpose machines
- Mass transit
- Aerospace
- Industrial HVAC components
- Power equipment



## 9 'Digital Manufacturing': Disruptive technologies that will change the manufacturing sector

Technique	Example	
	Company	Details
<b>Data, computational power &amp; connectivity</b> 	Cloud technology	 <ul style="list-style-type: none"> <li>Use of cloud technology (SaaS ERP) to centrally track orders across plants in 18 countries</li> </ul>
	Internet of things/M2M	
	Big data/open data	
<b>Analytics and intelligence</b> 	Digitisation and automation	 <ul style="list-style-type: none"> <li>Real-time error correction at Alabama facility annually saving USD 550,000</li> </ul>
	Advanced analytics	
<b>Human machine interaction</b> 	Touch interfaces and next-level GUIs	 <ul style="list-style-type: none"> <li>Use of augmented reality glasses "KiSoft Vision" to assist warehouse workers</li> </ul>
	Virtual and augmented reality	
<b>Conversion to physical world</b> 	Additive manufacturing. (i.e., 3D printing)	 <ul style="list-style-type: none"> <li>3-D printing enabled rapid prototyping for testing, reducing time to market</li> </ul>
	Advanced robotics (e.g., human-robot collaboration)	

Technological advancements are impacting manufacturing in a big way. Global automotive companies have historically been first movers in adopting new technology to improve quality and efficiency, and address customer needs. General Motors has started rapid prototyping to test parts while Toyota has started using analytics at its facility in Alabama where it has reduced scrap and rework by introducing real-time error correction at its lines. Over the next decade, the Indian automotive components manufacturers could embrace digital manufacturing to improve efficiencies, quality and service.



## Chapter 4

# Key enablers to improve country competitiveness

ACMA, automotive OEMs, the government and other value-chain partners could work together to make 'Make in India' a success for the automotive component sector. Measures with a focus on improving profitability and attracting investments could help improve the value generation potential of the ecosystem.

## Key imperatives for the automotive components sector

A Government		B Ecosystem	
Investment	<ul style="list-style-type: none"> <li>Consider increasing the ease of doing business</li> <li><b>Strategic FTAs</b> with India-like markets could be tapped for greater exports</li> <li>Consider improvements in <b>Infrastructure and tax structure</b> (e.g., GST)</li> <li>Continued <b>R&amp;D support</b></li> <li>Consider supporting setting up of a CoE to drive quality</li> </ul>	ACMA	<ul style="list-style-type: none"> <li>Continue <b>promoting</b> road shows through Brand India summits</li> </ul>
	Labour	<ul style="list-style-type: none"> <li>Labour reforms to <b>incentivise hiring</b> and reduce non-wage labour</li> </ul>	OEMs
			Other value-chain partners

**Skill development is critical**

GOVERNMENT – INCREASED EASE OF DOING BUSINESS

**A** Many countries have implemented best practices to reduce administrative burden on businesses

Ease in India relative to other countries	Ease of doing business sub-components	Common best practices	Number of countries	Emerging market examples
Enforcing contracts		Specialised commercial court	90	Liberia
		Electronic filing of complaints	17	Brazil
Dealing with construction permits		One-stop shop	36	Chile
Starting a business		No minimum capital requirement	99	Mexico
		One-stop shop	96	Georgia
Paying taxes		Self-assessment allowed	160	Turkey
Trading across borders		Electronic submission and processing	151	Pakistan
		Risk-based inspections	134	Vietnam
		Single government window	73	Colombia
Getting electricity		Streamlined approval process	107	Cambodia
		Reduced security deposits	98	Nepal
		Safety regulations for electricians	41	Ghana
Registering property		Cadastre information available online	51	Malaysia
		Expedited procedures	18	Azerbaijan
Protecting investors		Regulation of related-party transactions	62	China
		Access to corporate documents during trial	47	Kenya
		Access to corporate documents before trial	31	Bangladesh
Getting credit		Clear definition of directors' duties	30	Botswana
		Distribution of credit information from retailers, utilities, banks, etc.	57	Argentina

The World Bank's Ease of Doing Business report 2014 ranks countries on parameters across 10 themes on the ease of doing business. Over the past few years, countries have implemented multiple 'best practice' measures to make doing business easier by reducing the administrative burden on businesses. This has included measures that have increased transparency, expedited processes and reduced costs.

SOURCE: World Bank Ease of Doing Business report 2014



