



AUTOMOTIVE INDUSTRY

September 2009

Content

- ❖ Profile of Indian automotive industry
- ❖ Growth potential of Indian automotive industry
- ❖ India as a manufacturing hub

India — the global manufacturing hub

Before 1983	1983–1993	1993–2009	Evolution of India as a global manufacturing hub
<p>Closed market</p> <ul style="list-style-type: none"> • Growth of market limited by supply • Outdated models <p>Players</p> <ul style="list-style-type: none"> • Hindustan Motors • Premier • Telco • Ashok Leyland • Mahindra & Mahindra 	<ul style="list-style-type: none"> • Government of India (GoI)-Suzuki joint venture (JV) to form Maruti Udyog • JV with companies in commercial vehicles and components <p>Players</p> <ul style="list-style-type: none"> • Maruti Udyog • Hindustan Motors • Premier • Telco • Ashok Leyland 	<ul style="list-style-type: none"> • Delicensing of sector in 1993 • Global major original equipment manufacturers (OEM) start assembly in India (Toyota, GM, Ford, Honda, Hyundai) • Imports allowed from April 2001; alignment of duty on components and parts to Association of Southeast Asian Nations (ASEAN)* levels • Implementation of value-added tax (VAT) • Emerging small and medium enterprises (SMEs) in India • More global players, such as Volkswagen, BMW, Nissan, etc., set up manufacturing bases in India 	

High levels of competence in design and processes, high productivity and low cost are the forte of Indian auto-makers.

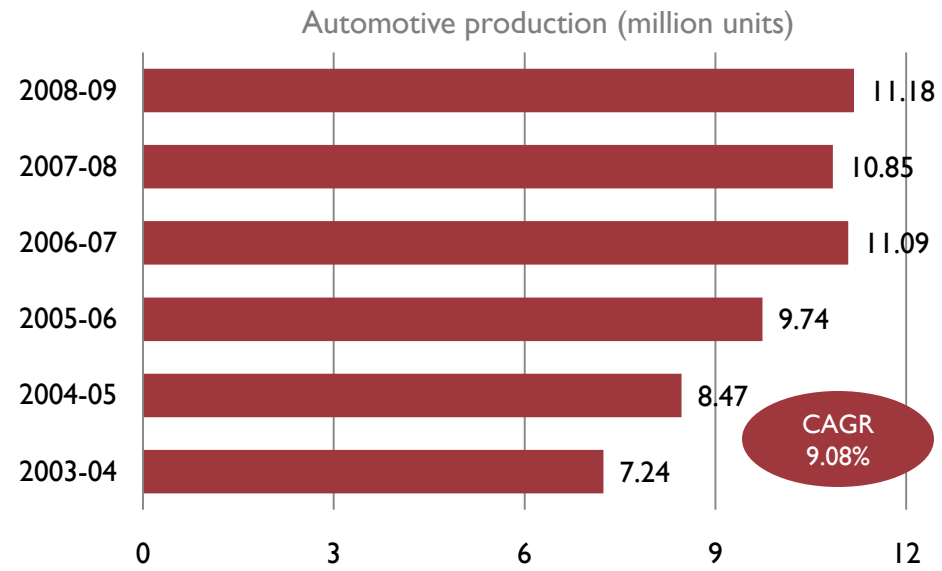
* ASEAN member countries include Malaysia, the Philippines, Singapore, Thailand, Brunei Darussalam, Vietnam, Lao PDR, Myanmar, Indonesia and Cambodia

Indian automobile industry stands at 11 million vehicles at present

The Indian auto industry has the potential to emerge as one of the largest in the world. Presently, India is:

- The largest two-wheeler manufacturer in the world.
- The largest three-wheeler market in the world.
- The second largest two-wheeler market in the world.
- The fourth-largest commercial vehicle market in the world.

*Compound Annual Growth Rate (CAGR)



Share of automotive segments (2008-09)

Segment	Share in total	5-year CAGR*
Two-wheelers	75.4%	8.8 %
Passenger vehicles	16.4%	16.7 %
Three-wheelers	4.5%	10.4 %
Commercial vehicles	3.7%	12.6 %

Source: Society of Indian Automobile Manufacturers (SIAM)/ IMACS Analysis

All large global players are present in India

- GM
- Toyota
- Ford
- Hyundai
- Maruti Suzuki
- Honda
- Skoda
- Volvo
- Mercedes Benz
- BMW
- Volkswagen
- Suzuki Motorcycle

- Delphi
- Visteon
- Bosch
- Denso
- Valeo
- Thyssen Krupp



- Tata Motors
- Mahindra & Mahindra
- Bajaj Auto
- TVS Motors
- Hero Honda
- Force Motors
- Ashok Leyland
- Eicher
- Swaraj Mazda

- Bharat Forge
- Sundram Fasteners
- Rane Group
- Shriram Pistons
- RICO Auto
- Sono Koyo Steering
- Exide

The OEM as well as the component industry is highly competitive

- The Indian auto industry is highly competitive with a number of global and Indian auto-companies present.
- The supplier industry is equally competitive with a mix of global and Indian players.
- Two-thirds of auto component production is consumed directly by OEMs.
- The major advantage of the Indian automotive industry is an educated and skilled, English-speaking workforce.

Most automotive players are present in more than one segment

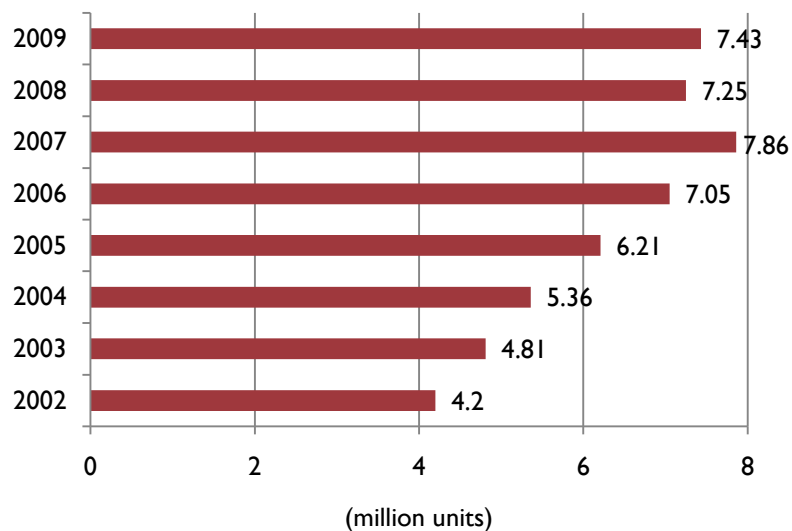
Manufacturer	Segments
Ashok Leyland	LCVs, M&HCVs, buses
Asian Motor Works	M&HCVs
Atul Auto	Three-wheelers
Bajaj Auto	Two- and three-wheelers
BMW India	Cars and MUVs, high-end bikes
Daimler Chrysler India	Cars, commercial vehicles
Eicher Motors	LCVs, M&HCVs, buses, bikes
Electrotherm India	Electric two-wheelers
Fiat India	Cars
Force Motors	Three-wheelers, MUVs and LCVs
Ford India	Cars and MUVs
General Motors India	Cars and MUVs
Hero Honda Motors	Two-wheelers
Hindustan Motors	Cars, MUVs and LCVs
Honda	Two-wheelers, cars and MUVS
Hyundai Motors	Cars and MUVs

Manufacturer	Segments
Mahindra & Mahindra	Three-wheelers, two-wheelers, cars, MUVs, LCVs
Majestic Auto	Three-wheelers
Maruti Suzuki	Cars, MUVs, MPVs
Piaggio	Three-wheelers, LCVs
Reva Electric Car Co.	Electric cars
Scooters India	Three-wheelers
Volkswagen, Skoda	Cars
Suzuki Motorcycles	Two-wheelers
Swaraj Mazda Ltd.	LCVs, M&HCVs, buses
Tata Motors	Cars, MUVs, LCVs, M&HCVs, buses
Tatra Vectra Motors	M&HCVs
Toyota Kirloskar	Cars, MUVs
TVS Motor Co.	Two-wheelers
Volvo India	M&HCVs, buses
Yamaha Motor India	Two-wheelers

MUVs: Multi-utility vehicles; MPVs: Multi-purpose vehicles; LCVs: Light commercial vehicles; M&HCVs: Medium and heavy commercial vehicles

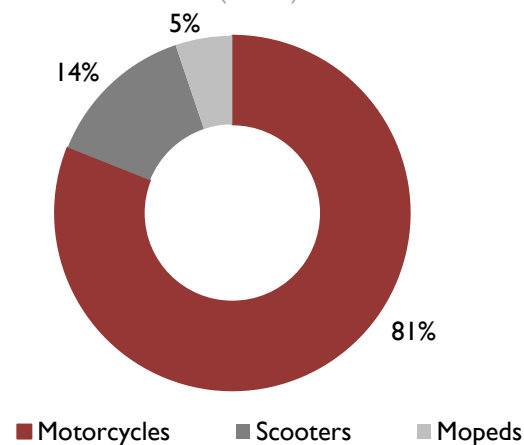
Two-wheeler segment is dominated by motorcycles

Domestic two-wheeler industry



Source: SIAM, IMAcS analysis

Break up of the industry by segment (2009)



- Scooter/scooterette: Wheel size less than or equal to 12 inches
- Motorcycle: Wheel size more than 12 inches
- Mopeds: Engine capacity less than 75 cc with fixed transmission, wheel size more than 12 inches
- Electric two-wheelers: Electrically driven

Two-wheeler segment is dominated by motorcycles

- The domestic two-wheeler industry has grown steadily at a CAGR of 8.5 per cent from 4.2 million in 2001 to 7.43 million in 2009.
- The motorcycle segment continues to dominate the market.
- Entry-level bikes (engine power below 125cc and price in the range of US\$ 850–1,000) account for around 80 per cent of sales.
- The cost of ownership and economics of operations are key purchase criteria.
- The premium-bike segment (engine power above 150cc and price in the range of US\$ 1,200–2,000) is growing at a faster pace than entry-level vehicles; this is an indication of the increasing affluence of customers.
- Recent trends indicate that 100cc bikes are being preferred over 125cc bikes by the market.

While the motorcycle segment is growing, the scooter segment is shrinking

- The scooter segment, except the A2 segment, is shrinking.
- Bikes in the 75cc to 125cc range corner the major share of the two-wheeler segment.
- The B3 segment is the fastest-growing segment in the Indian two-wheeler market.
- The C1 segment continues to fall owing to lower demand for mopeds.

Segment-wise analysis of two-wheeler market

Segment	Description	Share in 2001-02	Share in 2007-08	Share in 2008-09
A1	Scooter with engine capacity less than 75cc	5%	0.5%	0.2%
A2	Scooter with engine capacity between 75cc and 125cc	5%	13%	13%
A3	Scooter with engine capacity between 125cc and 250cc	12%	1%	0.5%
B2	Motorcycle with engine capacity between 75cc and 125cc	62%	58%	56%
B3	Motorcycle with engine capacity between 125cc and 250cc	5%	21%	25%
B4	Motorcycle with engine capacity above 250cc	1%	0.5%	0.5%
C1	Mopeds	10%	6%	5%

Source: SIAM, IMAcS analysis

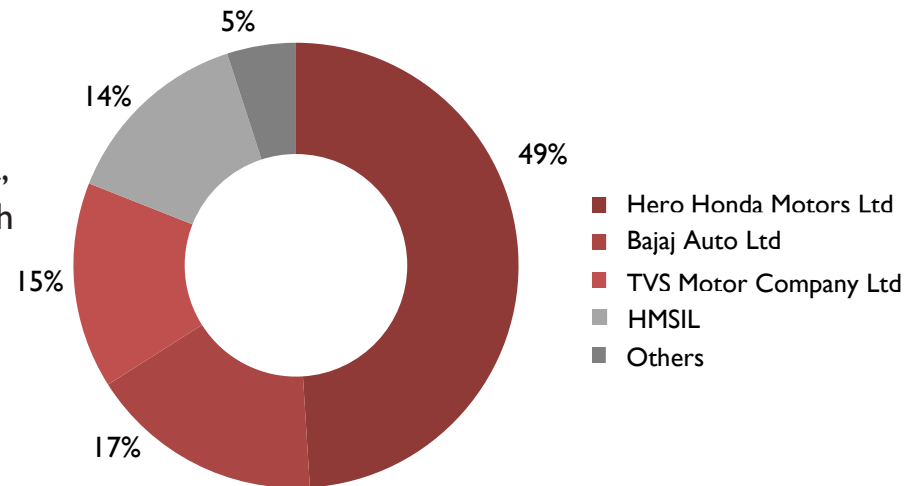
The domestic two-wheeler market is dominated by Indian players ... (1/3)

- Hero Honda: Largest two-wheeler manufacturer in the world
- Bajaj Auto: Second-largest two-wheeler manufacturer and largest three-wheeler manufacturer in India
- TVS Motor Co.: Third-largest two-wheeler manufacturer in India; has established a manufacturing facility in Indonesia
- Honda Motorcycle & Scooter India (Pvt) Ltd. (HMSIL): Has recently entered the Indian market through its own subsidiary (in addition to its joint venture Hero Honda)
- Suzuki Motorcycle India Pvt. Ltd.: The company started its India operations in February 2006 through this fully-owned subsidiary

The domestic two-wheeler market is dominated by Indian players ... (2/3)

- In the two-wheeler market in India, competition is intense with around 10 players competing for a share of the industry.
- The players include global giants such as Honda, Suzuki and Yamaha, as well as Indian players such as Bajaj and TVS.
- The market leader is Hero Honda Motors, closely followed by Bajaj Auto.
- The segment is characterised by frequent new product launches, with over 22 models launched in 2007–08, and close to 16 models and variants launched in 2008–09.

Market share of key players in 2008–09



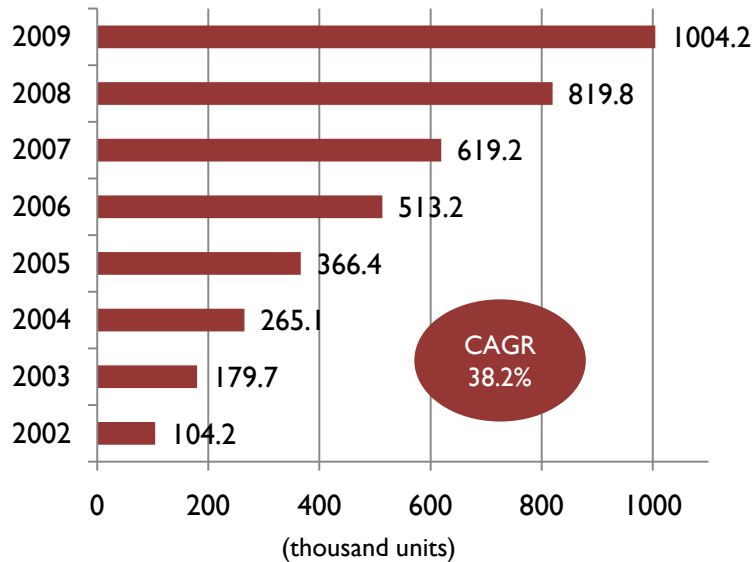
Source: SIAM, IMAcS analysis

The domestic two-wheeler market is dominated by Indian players ... (3/3)

- Mahindra & Mahindra has recently made an entry into the two-wheeler market with the acquisition of Kinetic Motors.
- Bikes fuelled by compressed natural gas (CNG) is a recent promising technological development in the two-wheeler market.
- Several foreign players, such as BMW and Harley Davidson, are entering the Indian market with a range of luxury bikes.

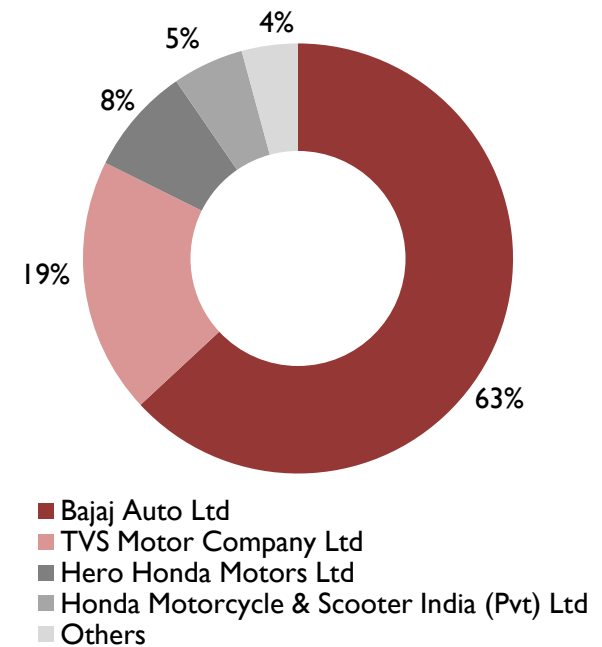
Two-wheeler exports have grown at an impressive CAGR of over 38 per cent ... (1/2)

Two-wheeler exports from India



Source: SIAM, ImaCS analysis

Market share of key players in exports in 2008-09



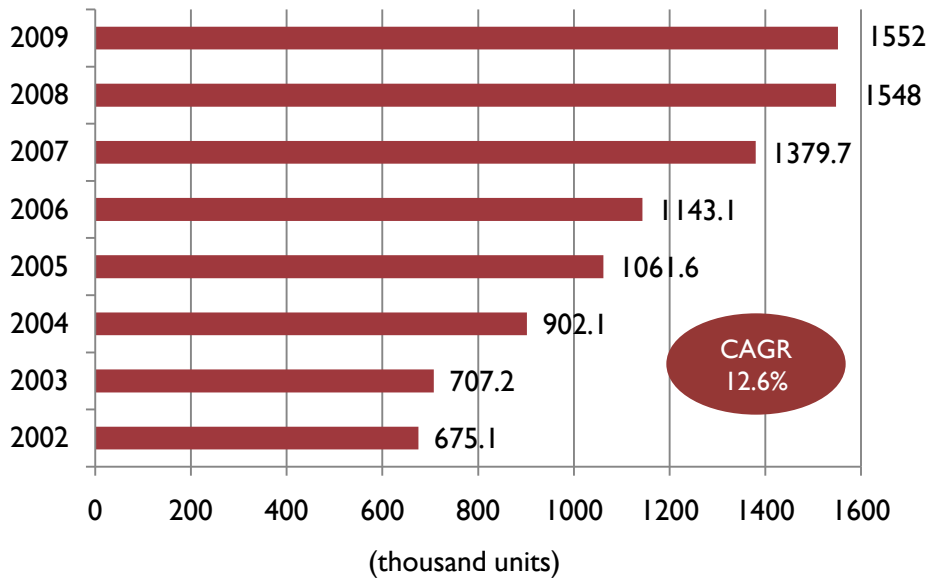
Source: SIAM, ImaCS analysis

Two-wheeler exports have grown at an impressive CAGR of over 38 per cent ... (2/2)

- Two-wheelers exports have grown at a CAGR of over 38 per cent in the last seven years.
- The majority of the exports were to Bangladesh, Sri Lanka, Bhutan and Nepal.
- 60 per cent of the bikes exported were those with an engine capacity below 125cc.
- Bajaj Auto is the market leader in exports with a share of 63 per cent.
- Bajaj Auto is further looking to explore bike markets in Africa and Europe.

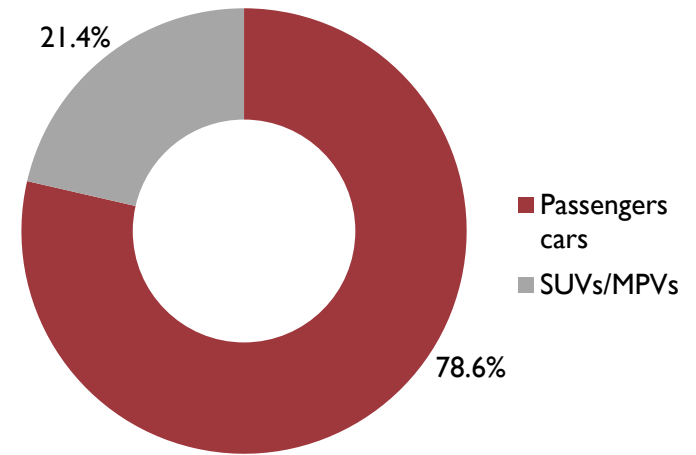
Passenger vehicles segment in India is dominated by cars...(1/2)

Domestic passenger vehicles industry



Source: SIAM, IMaCS analysis

Domestic passenger vehicles industry (2009)



Source: SIAM, IMaCS analysis

Passenger vehicles segment in India is dominated by cars...(2/2)

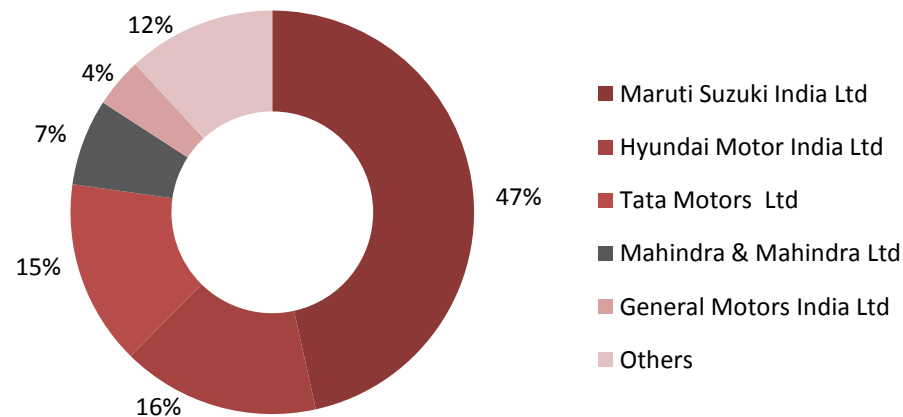
- The domestic Indian passenger vehicles market has grown at a CAGR of 12.6 per cent over the last seven years to reach 1.55 million units in 2008-09.
- Passenger cars, which accounted for 78.6 per cent of volumes, grew at a CAGR of 15 per cent.
- The remaining share was accounted for by multi-utility vehicles and sports-utility vehicles.
- Domestic sales in 2008-09 did not increase significantly over sales in 2007-08; however, sales did not drop either.
- The organised used car industry is gaining steady ground in the Indian market with sales fast reaching the levels of new car sales.

All major global players in passenger vehicles segment have a presence in India ... (1/3)

- Ford, GM, Toyota, Mercedes and Hyundai have been present in the Indian market for more than a decade each and have successfully established a strong foothold in India.
- Among the newer global players establishing bases in India are Volkswagen, Nissan and BMW.
- Maruti Suzuki India Ltd. is the largest passenger car manufacturer in the country; India is considered a strategic market by the company.
- Tata Motors, the largest automotive player in the Indian industry, launched the Rs. 1 lakh (US\$ 2,500) car 'Nano' in June 2009.
- Hyundai Motors is the third-largest passenger car manufacturer in India; it has one of its global manufacturing bases in India, near Chennai.

All major global players in passenger vehicles segment have a presence in India ... (2/3)

Market shares of key players in 2008–09



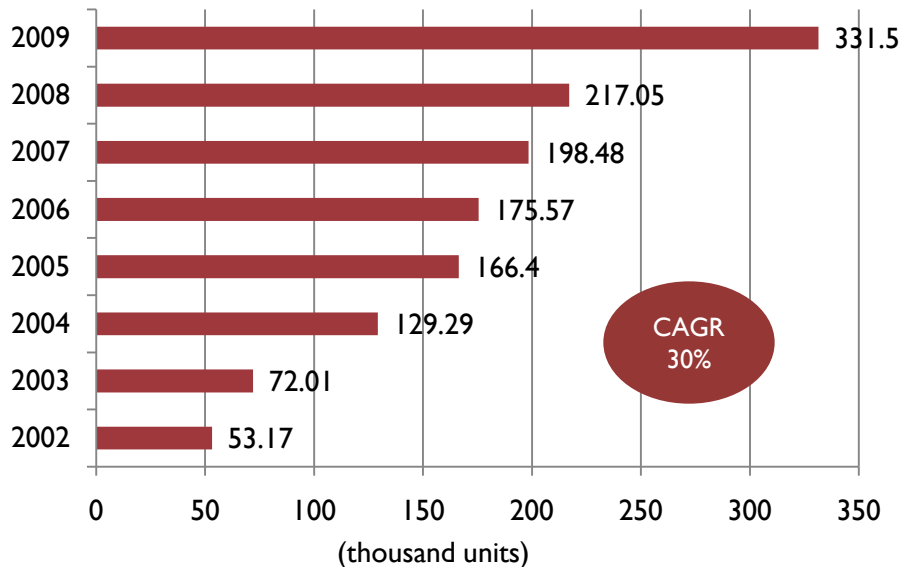
Source: SIAM, IMA CS analysis

All major global players in passenger vehicles segment have a presence in India ... (3/3)

- Mahindra & Mahindra: Amongst the largest players in the multi-utility vehicles segment, M&M has a tie up with Renault for the manufacturing and marketing of the Logan brand of cars in India.
- Toyota: The company envisions capturing 10 per cent share of the Indian passenger car market by 2010.
- Honda Motors: It is one of the leading players in the Indian premium car segment.
- Ford: The company is a leading player in the premium car segment.
- General Motors: A leading player in the premium car segment, General Motors has recently entered the compact car segment in India.
- Most of the leading global players have a presence in India in the form of joint ventures or subsidiaries.

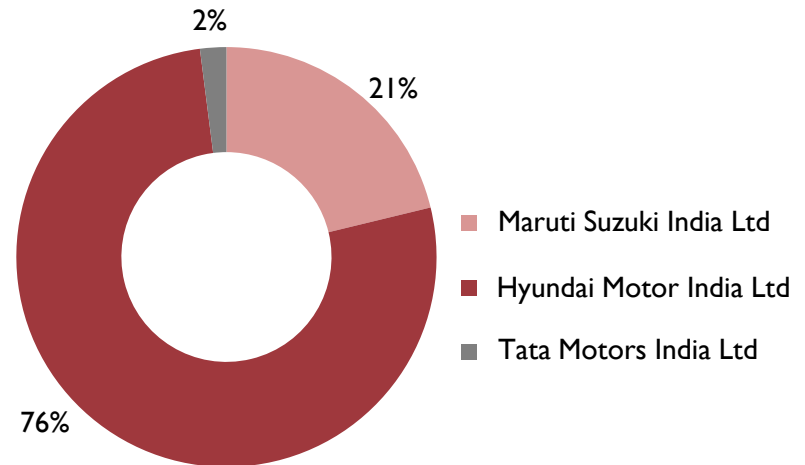
India is increasingly becoming a manufacturing hub for passenger cars ... (1/2)

Car exports from India



Source: SIAM, IMAcS analysis

Market shares of key players in 2008-09



Source: SIAM, IMAcS analysis

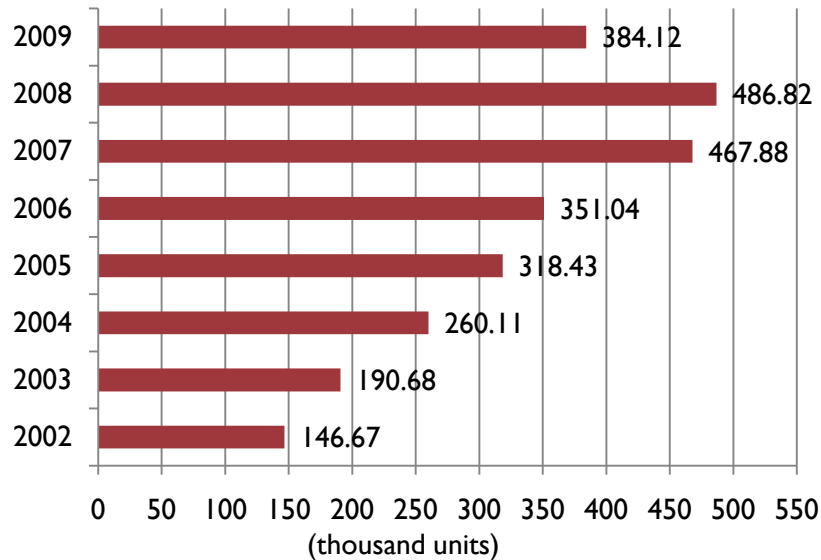
The substantial growth in car exports in 2008-09 is a strong indicator of India moving closer to becoming a manufacturing hub for global players.

India is increasingly becoming a manufacturing hub for passenger cars ... (2/2)

- Exports of cars from India have grown at a CAGR of 30 per cent in the last seven years to reach 331,000 units in 2008-09.
- Exports of cars in 2008-09 increased 52 per cent over 2007-08. This is the highest-ever, single-year jump in car export numbers in India.
- Hyundai Motors is the market leader in car exports with a 76 per cent share, up from the previous year's 66 per cent share; the company uses India as a manufacturing base for compact cars that are exported worldwide.
- Car exports are made largely to South America, Africa, Europe, Latin America and the Middle East.

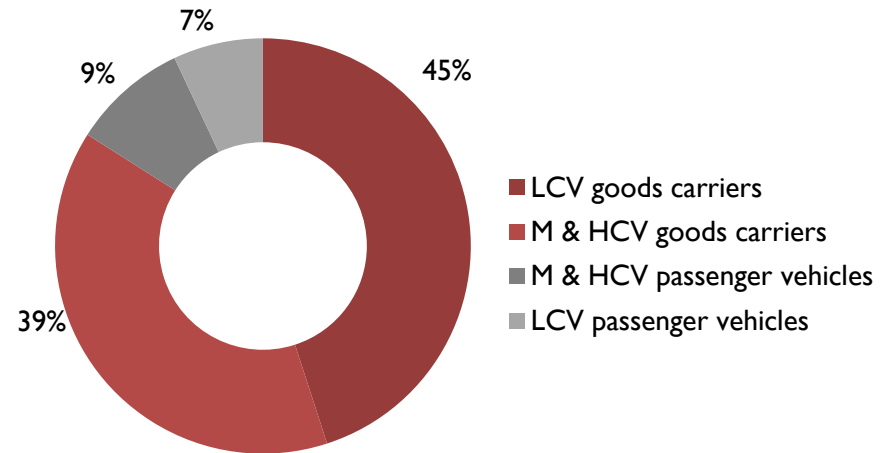
Commercial vehicles segment picks up after slight drag in 2008–09 ... (1/2)

Domestic CV industry in India



Source: SIAM, IMAcS analysis

Break up of the industry by segment (2008–09)



Source: SIAM, IMAcS analysis

Commercial vehicles segment picks up after slight drag in 2008–09 ... (2/2)

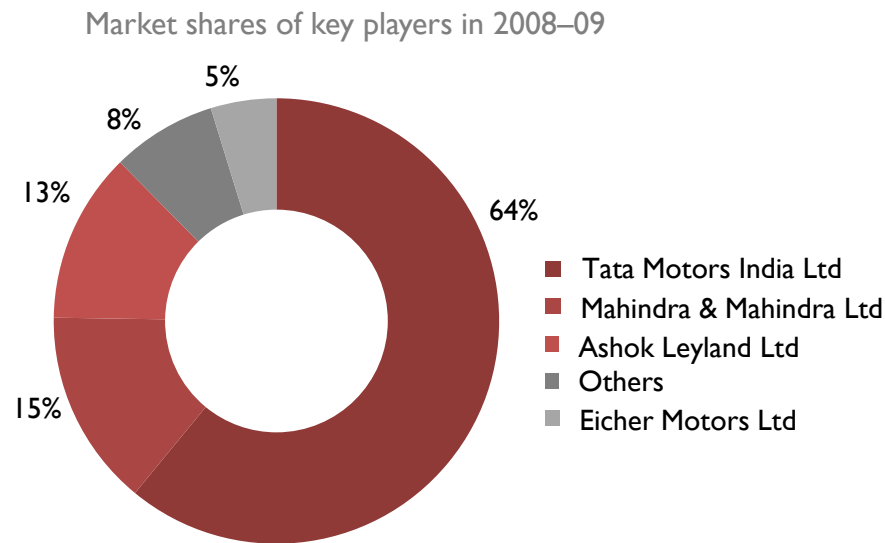
- The domestic commercial vehicles industry clocked sales of more than 384,000 vehicles in 2008-09. A series of recent incentive schemes, provided by the government, have had a positive impact on sales.
- The share of LCVs is gradually increasing, indicating the emergence of the hub-and-spoke model of transportation.
- In 2008-09, the LCV goods segment led growth with a share of 45 per cent.
- The goods industry is dominated by multi-axle vehicles, which account for nearly 50 per cent of the market.

Commercial vehicles segment is dominated by Indian players ... (1/3)

- **Tata Motors Ltd.:** The company is the largest commercial vehicle manufacturer in the country. Having established a strong position in India, it has been rapidly expanding globally with a series of recent acquisitions such as Daewoo Commercial Vehicle Co. Ltd. (2004) and Hispano Carrocera S.A., Spain, (2009) and joint ventures with Thonburi Automotive Assembly Plant Co., Thailand, (2006) apart from several other strategic alliances in the commercial vehicles space.
- **Mahindra & Mahindra Ltd.:** A relatively new player in the segment, the company formed a joint venture with International Trucks in November 2005 to manufacture M&HCV trucks in India and has displaced Ashok Leyland Ltd. from second position with respect to market share.
- **Ashok Leyland Ltd.:** The company is the third-largest player in the commercial vehicles segment in India.
- **Eicher Motors Ltd.:** A leading player in the LCV trucks segment, Eicher entered the M&HCV trucks segment recently; it has also entered into a joint venture with Volvo for the manufacture of commercial vehicles.

Commercial vehicles segment is dominated by Indian players ... (2/3)

- Volvo India: The company is one of the leading players in luxury passenger buses and heavy duty tippers.



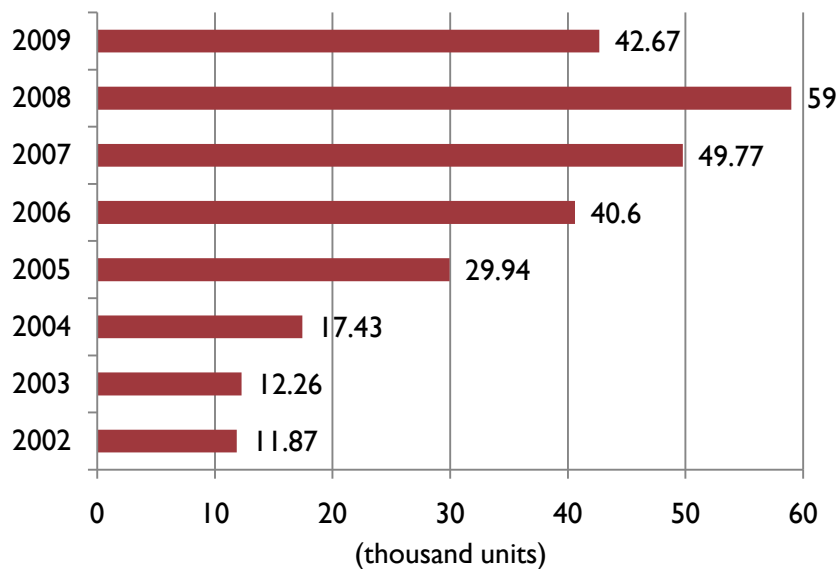
Source: SIAM, IMAcS analysis

Commercial vehicles segment is dominated by Indian players ... (3/3)

- Tata Motors is the market leader in both the goods and passenger vehicle segments.
- The LCV market is dominated by Tata Motors, followed by Mahindra & Mahindra.
- The introduction of Tata Ace in May 2005 contributed towards the significant growth of the sub-1 tonne segment. With other players entering this segment, it is expected to grow rapidly in the medium term.
- Many players are in the process of strengthening their hold in the market by entering into partnerships and joint ventures.

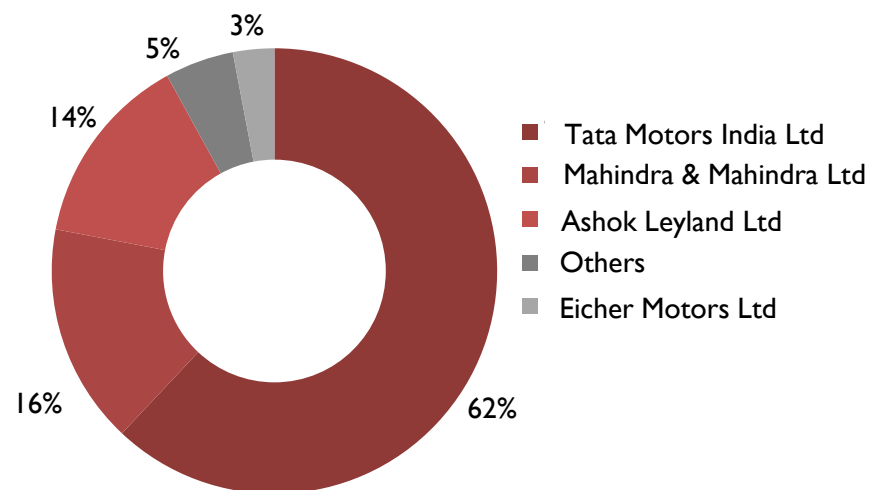
Exports of Indian commercial vehicles ... (1/2)

CV exports from India



Source: SIAM, IMAcS analysis

Key players' export share (2008-09)



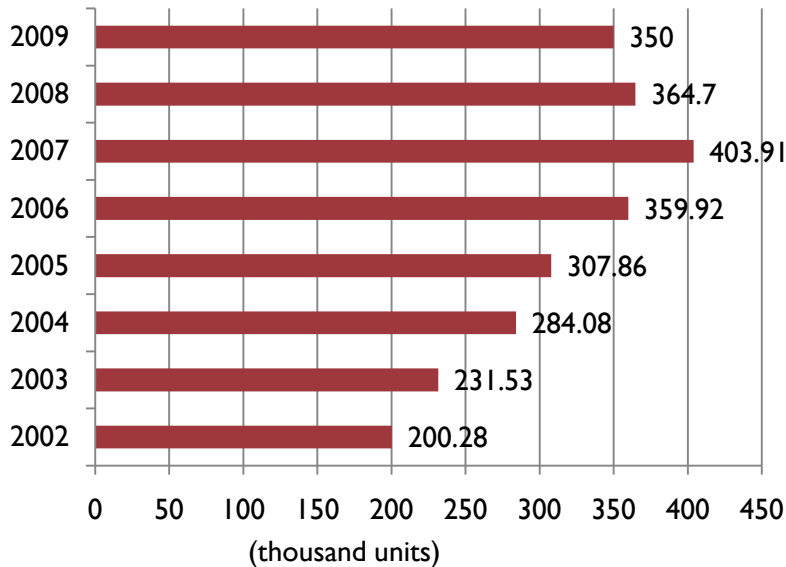
Source: SIAM, IMAcS analysis

Exports of Indian commercial vehicles ... (2/2)

- Tata Motors accounts for 62 per cent of commercial vehicle exports, and Ashok Leyland and Mahindra & Mahindra make up for a large portion of the balance.
- LCV goods carriers accounted for 60 per cent of overall exports.
- The major portion of the exports are to Sri Lanka, the Gulf countries and Africa.
- Although commercial vehicle exports witnessed lower sales in 2008-09, the future growth prospects remain bright owing to the expected recovery of world markets.

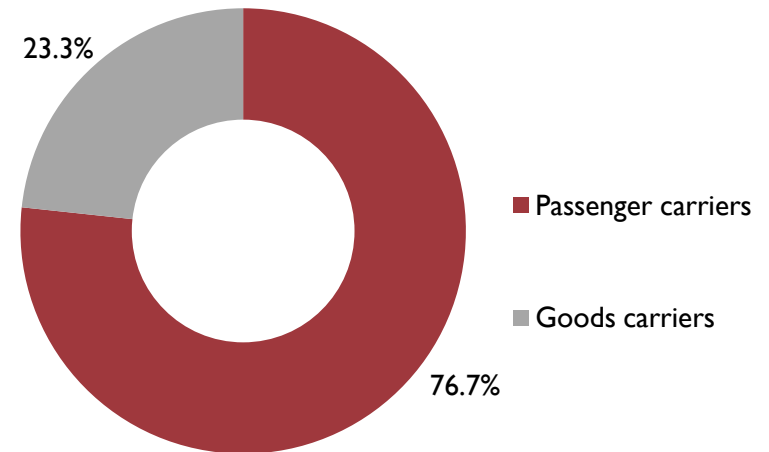
Growth in three-wheelers has been driven by the need for a low-cost, last mile transportation system ... (1/2)

Domestic three-wheeler industry



Source: SIAM, IMAcS analysis

Break up of industry by segment (2009)



Source: SIAM, IMAcS analysis

Growth in three-wheelers has been driven by the need for a low-cost, last mile transportation system ... (2/2)

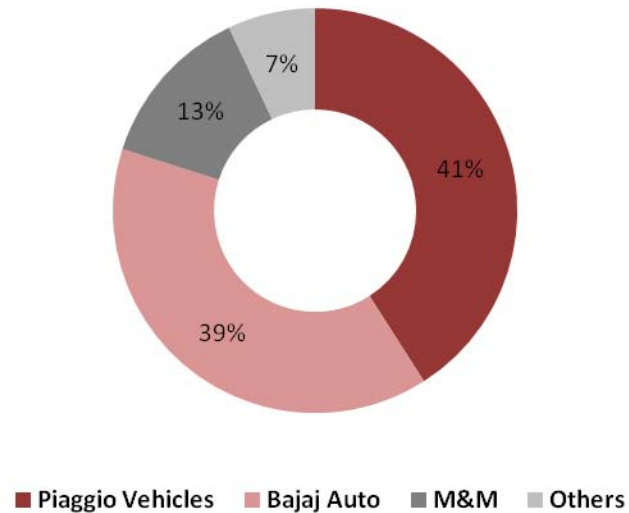
- Three-wheeler sales in India touched a new record of 0.4 million in 2006–07.
- The launch of four-wheel, sub-1-tonne vehicles has resulted in a segmental shift from three-wheelers.
- The proportion of three-wheeler goods carriers in overall sales has doubled, indicating the increased need for a low-cost, last mile transportation system.
- The less-than-3.5 tonne segment in goods accounted for 82 per cent of sales and the less-than-four seater segment in passenger versions accounted for 97 per cent of sales.

The three-wheeler market is dominated by Piaggio and Bajaj Auto

- **Piaggio Vehicles:** The market leader in the three-wheeler segment, it is in the process of making India its global manufacturing hub.
- **Bajaj Auto Ltd.:** Second by market share in the three-wheeler segment, Bajaj Auto in the process of revamping its product portfolio.
- **Mahindra & Mahindra:** One of the leading players in the segment with a growing market share.
- **Atul Auto Ltd.:** The company has introduced new products in the rear engine segment. It also manufactures 'Chakda' - a three-wheeler reengineered from a two-wheeler-popular in the western parts of the country.
- **Force Motors Ltd.:** A joint venture between Bajaj Tempo and MAN AG of Germany, Force is a leading player in the goods carrier segment.

The three-wheeler market is dominated by Piaggio and Bajaj Auto

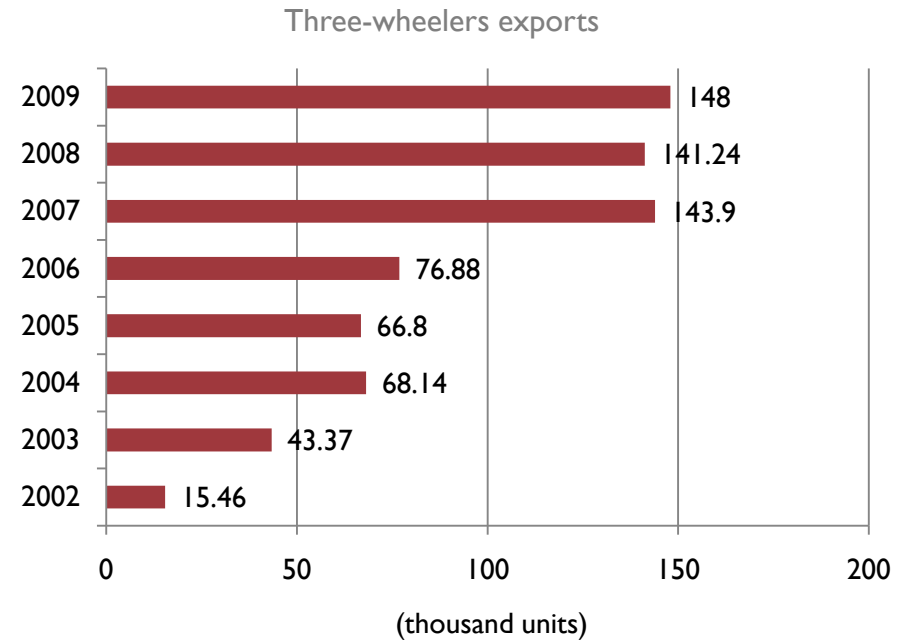
Market shares of key players in 2008–09



Source: SIAM, ImaCS analysis

Exports of three-wheelers have been growing rapidly, with Bajaj Auto as the clear market leader

- Exports of three-wheelers touched a new high of 148,000 units in 2008–09, registering a robust CAGR of 38 per cent over the last seven years.
- This has been contributed almost entirely by Bajaj Auto, which accounted for around 94 per cent of exports in 2008-09.
- Bajaj Auto exports to Sri Lanka, Egypt, Nepal and Bangladesh, among other countries.



Source: SIAM, IMAcS analysis

Indian firms are increasingly partnering with foreign firms across segments

Indian OEM	Foreign partner	Type of partnership
Maruti Suzuki	Suzuki Motor Corporation-Japan	Equity partner
Mahindra Logan	Renault	Joint venture
Tata Motors	Fiat	Tie up for manufacturing and marketing in India
Kinetic Group	Sanyang Industry Co Ltd (SYM-Taiwan)	Technology
	Italjet-Italy	Tie up for manufacturing and distribution
Hero	Honda-Japan	Technology
Hero Cycles	Ultra Motor Company, UK	Technology
Bajaj Auto	Kawasaki Heavy Industries Ltd., Japan	Engine technology
	Tokya R&D Co. Ltd., Japan	Technology
	Kubota Corp., Japan	Technology
Ashok Leyland	Nissan	LCVs
	Hino-Japan	Engine technology
	Irizar-Spain	Bus body technology
	ZF-Germany	Gearbox technology
Tata Motors	Marco Polo- Brazil	Bus/coach technology
	Cummins-USA	Engine technology

Indian auto industry has evolved around three major clusters ... (1/5)

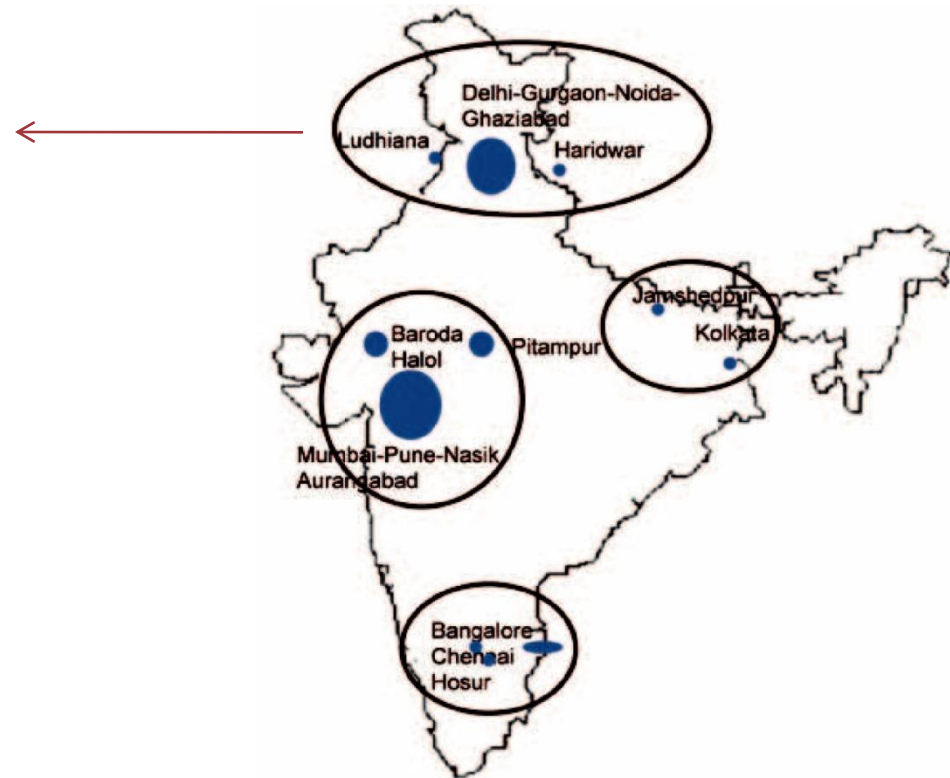
- Major automotive clusters: Mumbai-Pune-Nashik-Aurangabad (west); Chennai-Bangalore-Hosur (south); and Delhi-Gurgaon-Faridabad (north).
- Export-oriented companies have formed base in the west/south regions, due to proximity to ports.
- Uttarakhand is fast emerging as an auto hub with leading companies deciding to set up units in the state to make use of the benefits of the state's tax-holiday scheme.
- Tata Motors, along with Bajaj Auto and Mahindra & Mahindra, are together investing about US\$ 640 million in Uttarakhand.
- With the upcoming plant of Tata Nano, Sanand in Gujarat is also likely to develop as another node in the western cluster.

Indian auto industry has evolved around three major clusters ... (2/5)

Major cluster: North/Central

- Hero Honda
- Honda SIEL
- Honda Motorcycle & Scooter India
- Maruti Suzuki
- Tata Motors
- Bajaj Auto

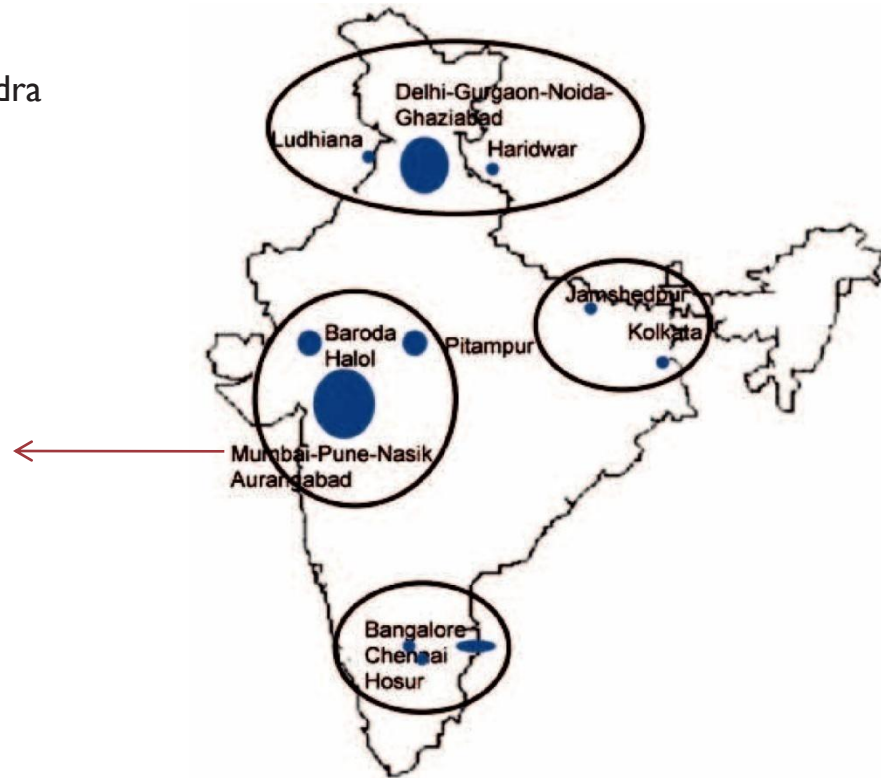
- Delphi Auto
- JBM
- Sona Koyo
- Asahi India
- Denso India
- Lumax
- Johnson Matthey



Indian auto industry has evolved around three major clusters ... (3/5)

Major cluster: West

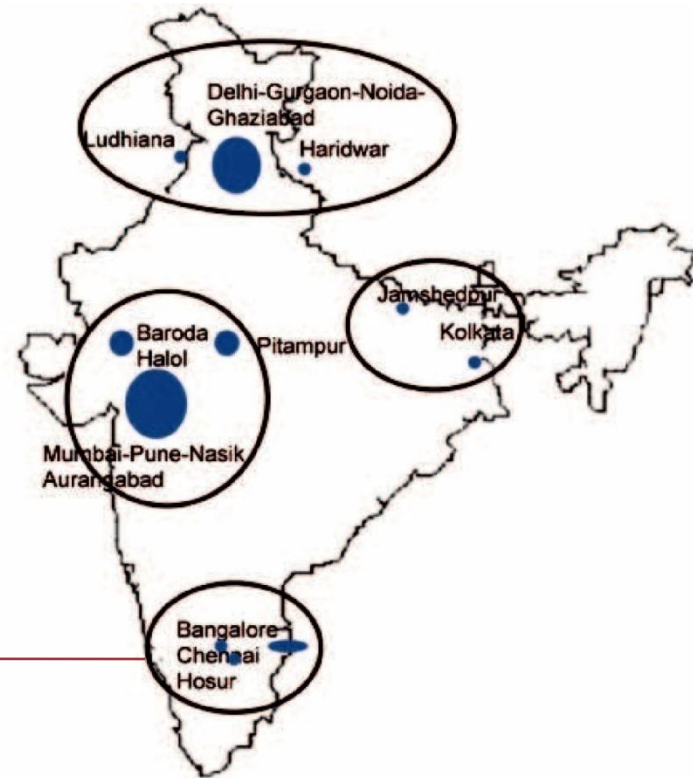
- Daimler
 - GM
 - Skoda
 - Bajaj Auto
 - Mahindra & Mahindra
 - Tata Motors
 - Volkswagen
-
- Bharat Forge
 - DGP Hinoday
 - Kirloskar Brothers
 - TACO Group
 - SKF Bearings
 - Supreme Industries
 - Bright Brothers
 - Bosch Chassis
 - Tata Johnson
 - NRB Bearings



Indian auto industry has evolved around three major clusters ... (4/5)

Major cluster: South

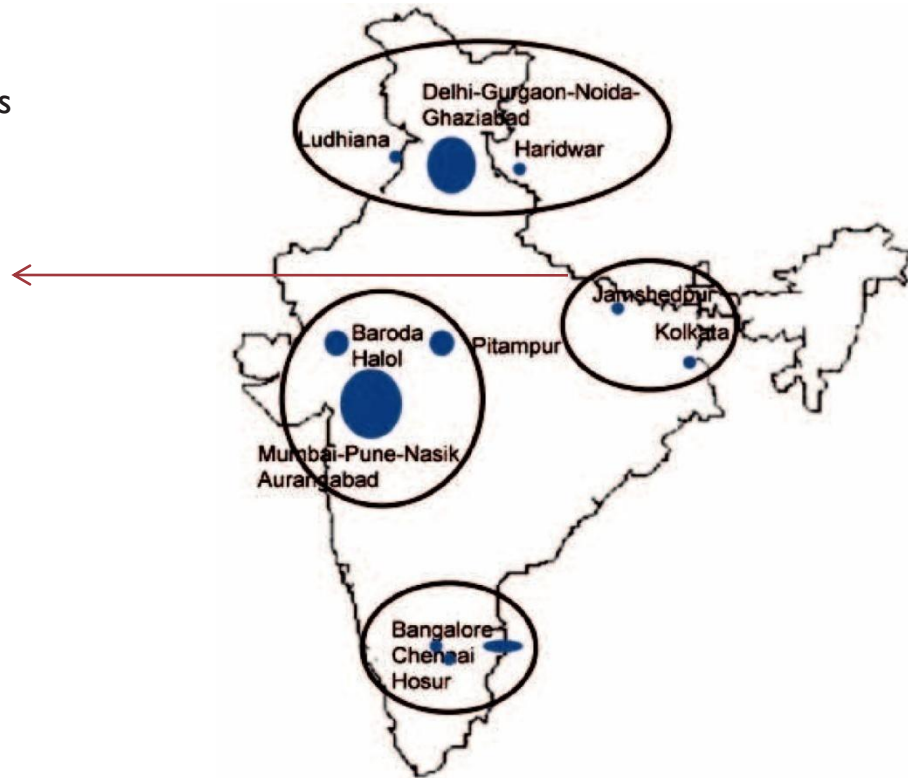
- Ashok Leyland
- Ford
- TVS Motors
- Hyundai
- Toyota Kirloskar Motor
- Brake India
- Fenner
- Rane Group
- Visteon
- Sundaram Fasteners
- Delphi TVS
- Royal Enfield
- Volvo
- India Nippon
- TI Group
- Lucas-TVS
- UCAL



Indian auto industry has evolved around three major clusters ... (5/5)

Minor cluster: East

- Tata Motors
- Hindustan Motors
- Simpson & Co
- JMT
- International Auto Forgings
- Exide
- Ramkrishna Forgings



Indian auto policy is designed for supporting the growth of the industry

In 2002, the Indian government formulated an auto policy aimed at promoting an integrated, phased and self-sustained growth of the industry.

- Automatic approval for foreign equity investment up to 100 per cent
- No minimum investment criteria



- Investment incentives by local state governments: Most states customise incentives for large investments



- Government's intention of harmonising regulatory standards with the rest of the world

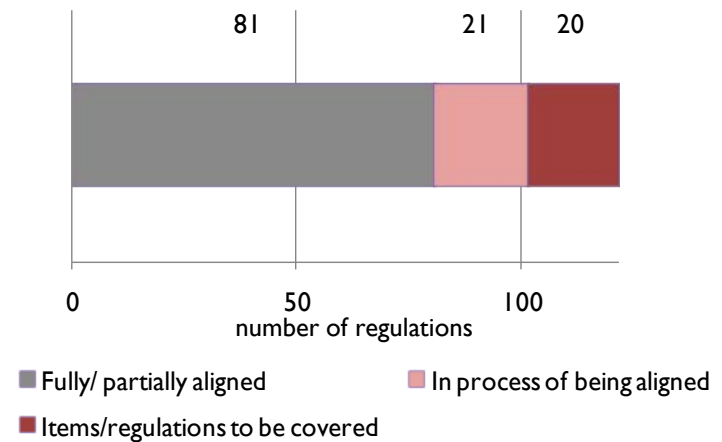


- Weighted tax deduction up to 150 per cent for in-house research and R&D activities

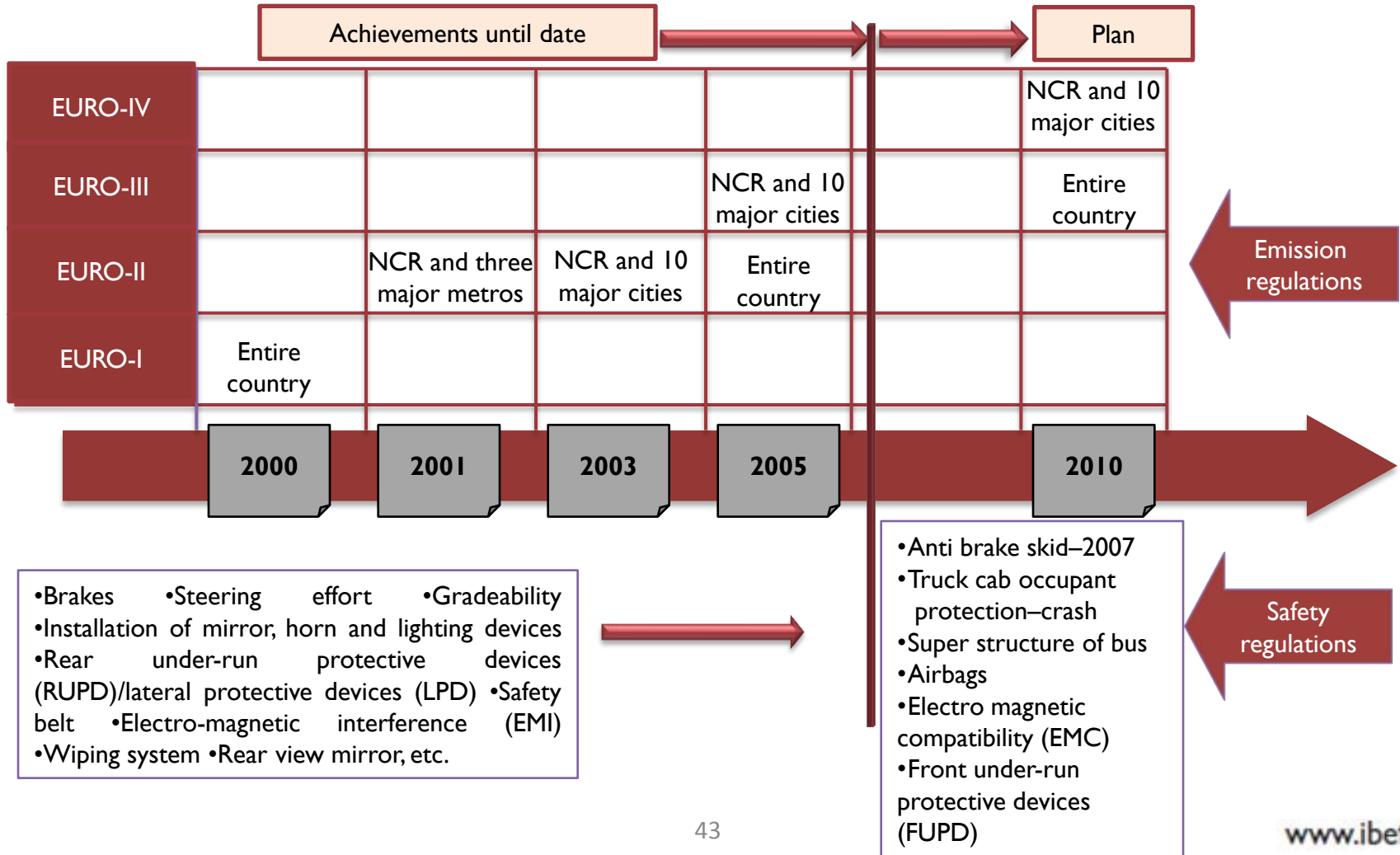
Indian automotive regulations are in the process of being aligned with European regulations

- Indian automotive regulations are closely aligned to ECE regulations. The diagram depicts the level of alignment of Indian regulations with ECE regulations.
- The key regulations that are likely to impact the auto industry and create the need for world-class products in the future are crash-related regulations and the introduction of Bharat Stage IV norms.

Indian regulations aligned with ECE regulations



Safety and emission-related regulations in India — achievements and plans

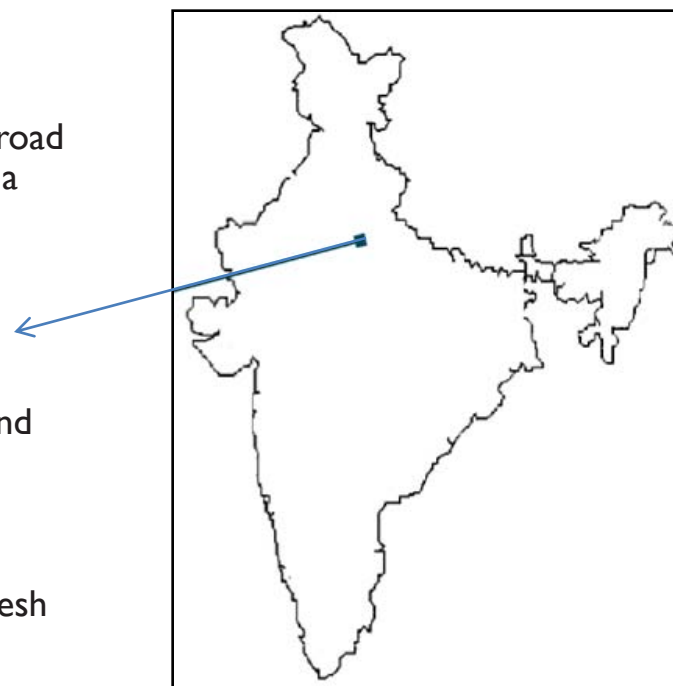


National Automotive Testing and R&D Infrastructure Project (NATRIP) — an initiative to strengthen R&D infrastructure — is approaching completion

NATRIP, a Government of India initiative, has envisaged an investment of Rs. 1,718 crore (about US\$ 380 million) in setting up the following facilities. NATRIP is expected to strengthen the automotive R&D infrastructure in India.

Rae Bareilly centre

- Complete homologation services to agri-tractors, off-road vehicles, gensets as per Indian or global standards and a driver training centre.
- Center of excellence for accident data analysis.
- The commissioning schedule for phase-I is July 2010 and August 2010 for phase-II.
- The acquisition of land for setting up the centre is in progress and is under consideration of the Uttar Pradesh government.



NATRIP—northern and eastern region

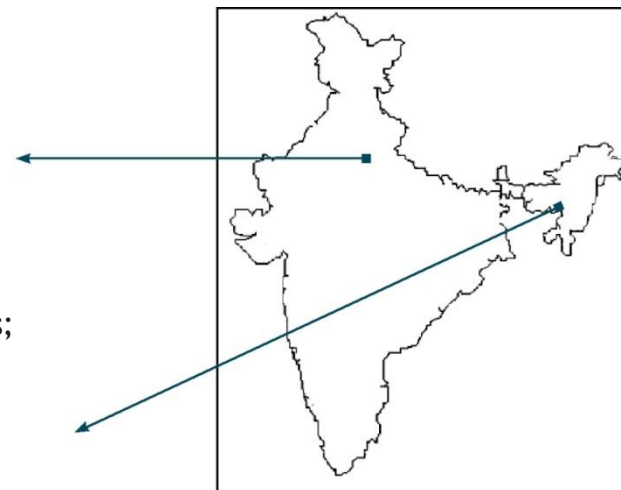
International Centre for Automotive Technology

(iCAT), Manesar

- Complete homologation services to all vehicle categories as per Indian or global standards.
- Center of excellence for component development, noise vibration and harshness (NVH) testing.
- It is scheduled to be commissioned in March 2010.
- Construction of buildings for powertrain lab and fatigue and certification lab; procurement of equipment for two more labs; and acquisition of an additional 42 acres of land is in progress.

Silchar centre

- Hill area driver training centre and inspection & maintenance facilities.
- Center of excellence for driver training.
- Commissioning schedule: 2010 (on schedule); civil works at one site completed; tenders for equipment on track.



NATRIP—western region

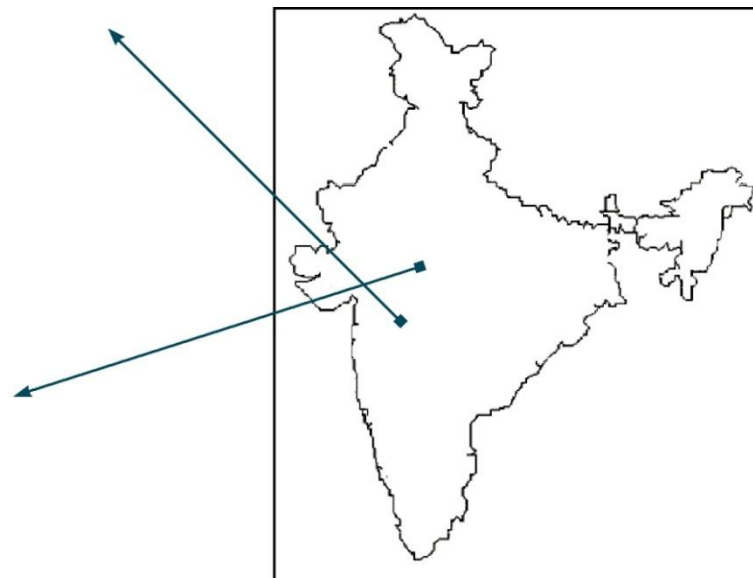
Ahmednagar—Vehicles research & development establishment (VRDE) upgradation

- Research, design, development and testing of vehicles.
- Center of excellence for photometry, electromagnetic compatibility (EMC), test tracks.
- Commissioning schedule: Completed.

Indore—National Automotive Test Tracks

(NATRAX)

- Complete testing facilities to all vehicle categories as per Indian or global standards.
- Center of excellence for vehicle dynamics, tyre development.
- Commissioning schedule: December 2010.
- In progress: 4,000 acres of land already acquired; construction of powertrain lab, test tracks and building in advanced stages; shifting of utilities in progress.



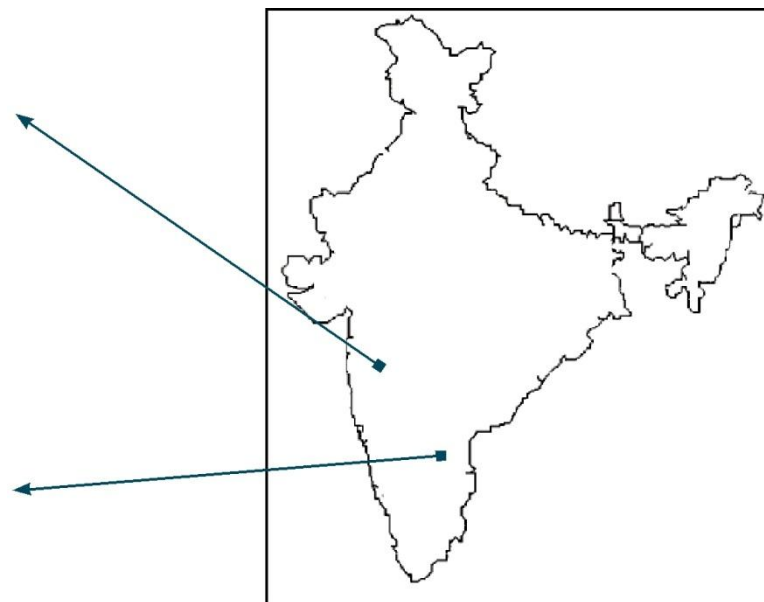
NATRIP—southern region

Pune — ARAI upgradation

- Complete homologation services to all vehicle categories as per Indian or global standards.
- Center of excellence for power train development, materials, fatigue.
- Commissioning schedule: Rescheduled to March 2010.
- In process: Land acquisition nearing completion; civil package tender in final stages; equipment tender finalised.

Chennai centre

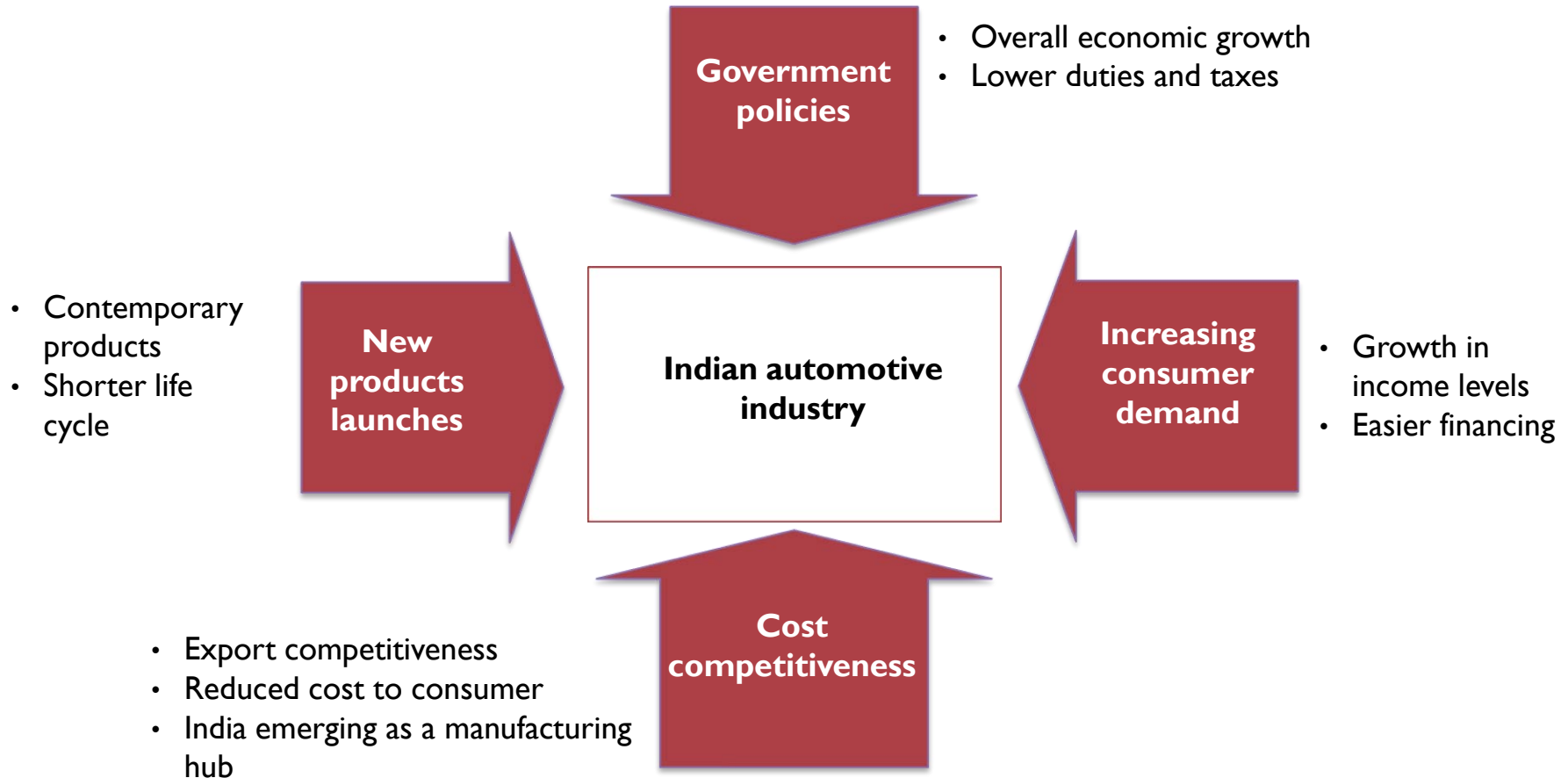
- Complete homologation services to all vehicle categories as per Indian or global standards.
- Center of excellence for infotronics, EMC, passive safety.
- Commissioning schedule: Rescheduled for December 2009.
- In progress: Award of most of the work completed by April 2009.



Content

- ❖ Profile of Indian automotive industry
- ❖ Growth potential of Indian automotive industry
- ❖ India as a manufacturing hub

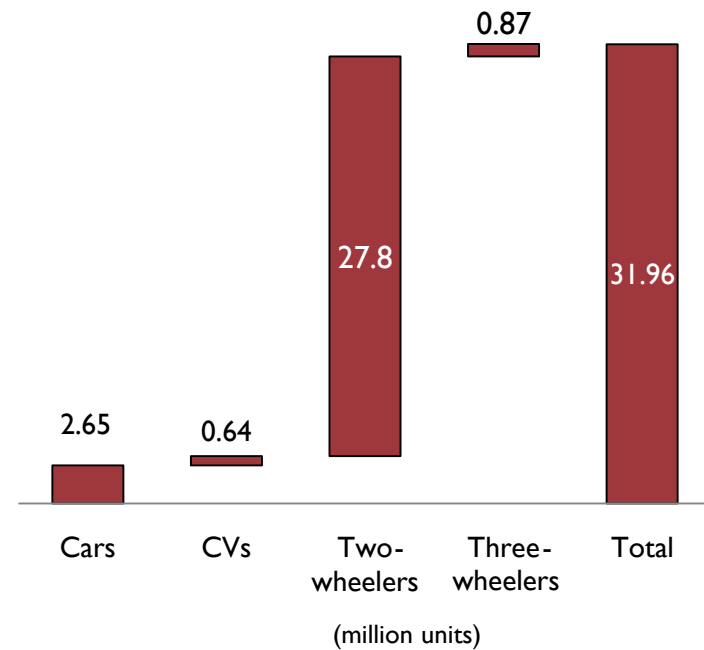
Growth drivers for the Indian automotive industry



Indian Automotive Mission Plan (AMP) — vehicles sales expected to grow to 32 million by 2015–16

- The size of the Indian automotive industry is expected to grow at 13 per cent per annum over the next decade to reach around US\$ 120 billion to US\$ 159 billion by 2016.
- The total investments required to support the growth are estimated at around US\$ 35 billion to US\$ 40 billion.
- The two-wheeler segment is expected to lead the growth, with an estimated sales of 27.8 million units by 2016.
- Total exports in the automotive sector would be around US\$ 30 billion to US\$ 35 billion, of which component exports would account for US\$ 20 billion to US\$ 25 billion, and vehicle exports for the rest.

Potential vehicle sales in India (2015–16)



Content

- ❖ Profile of Indian automotive industry
- ❖ Growth potential of Indian automotive industry
- ❖ **India as a manufacturing hub**

Global passenger car companies are taking advantage of India as a manufacturing base ... (1/2)

- **Nissan Motor Co.** has identified India as one of the five low-cost countries to manufacture its new generation compact cars, including the Micra.
- **Volkswagen** has invested in a 110,000-unit passenger car assembly plant, which was made operational in April 2009. Volkswagen's India plans include the manufacture of small cars based on the 'Polo' platform.
- **Toyota** has announced plans for a second plant to begin operations in 2010, having an initial annual production capacity of around 100,000 vehicles, apart from the transmission plant that the company has set up to meet regional demand.

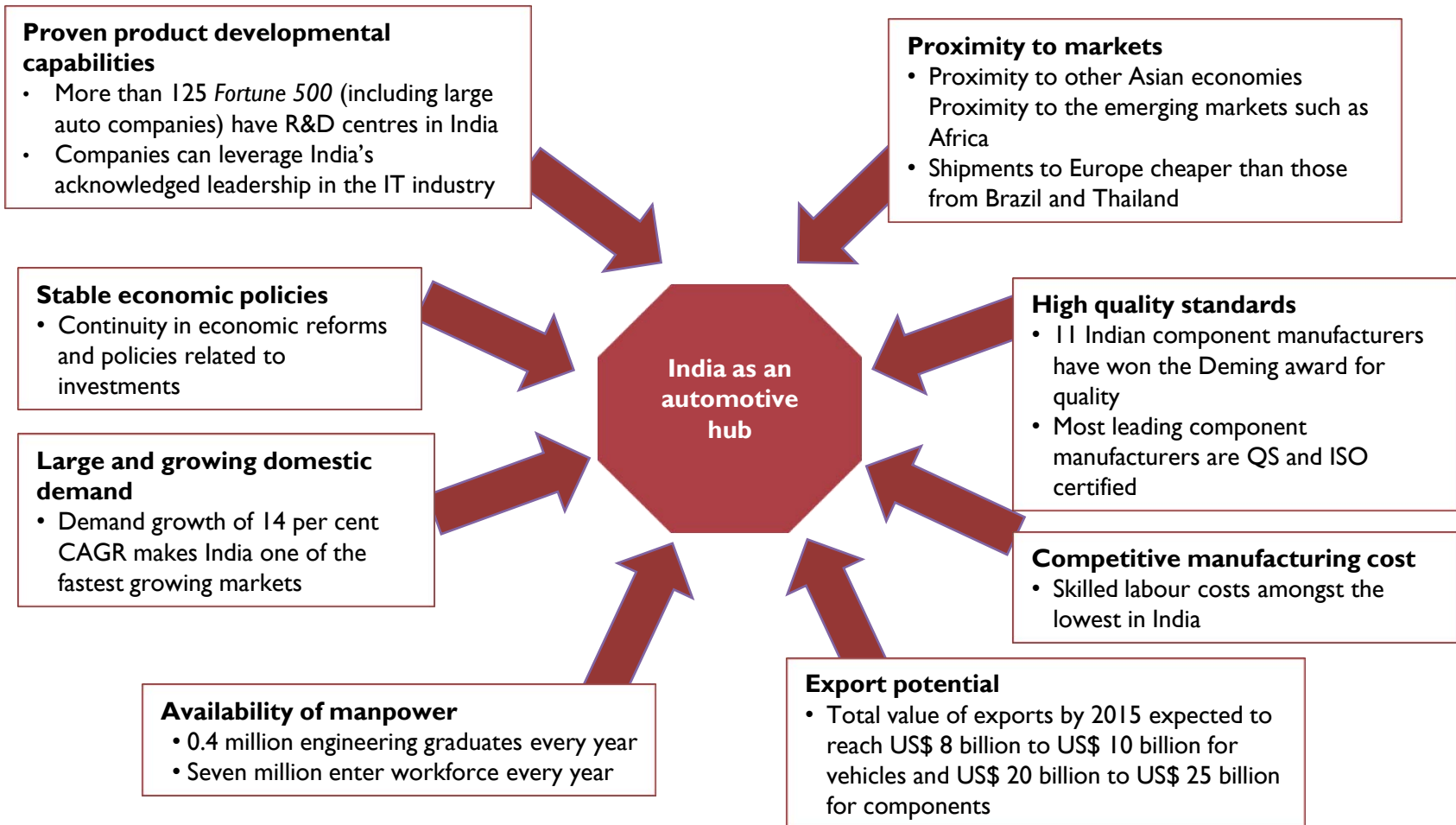
Global passenger car companies are taking advantage of India as a manufacturing base ... (2/2)

- **Hyundai Motors** has shifted the entire production of Atos Prime, its compact model, to its Chennai plant. It has also set up a US\$ 40 million computer-aided design centre in Hyderabad. Further, India is the sole manufacturing base for the newly-launched model i10. The company also plans to invest a further US\$ 250 million in India by 2013, raising its cumulative investment in the country to around US\$ 1 billion.
- **General Motors'** US\$ 60 million technical centre in Bangalore will be its powerhouse for developing future technologies and shaping new cars. Apart from the above, it is also in the process of setting up an additional facility at Talegaon, near Pune.
- **Ford Motor Co.** exports 58 per cent of the total number of cars produced in its India plant at Chennai.

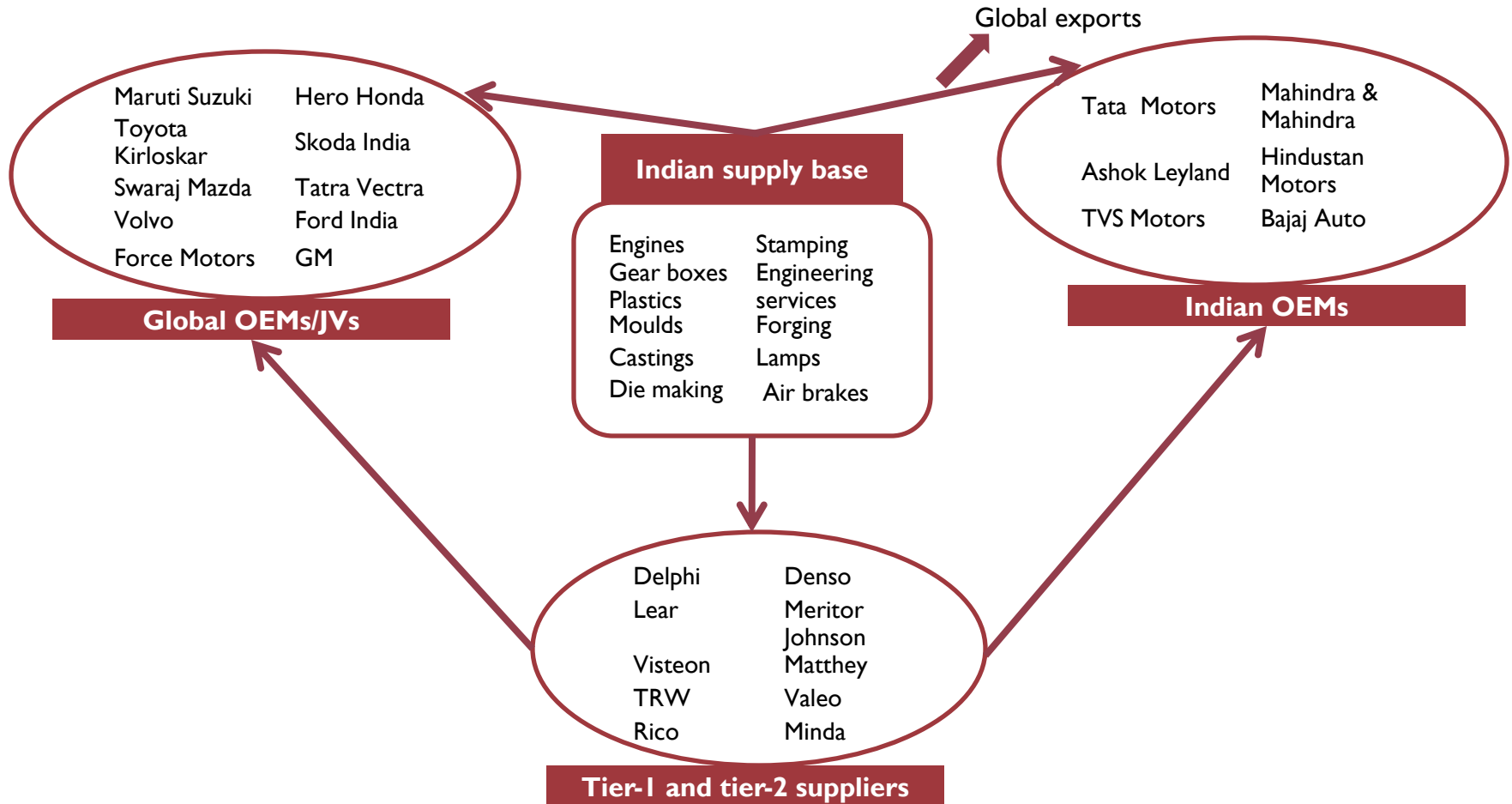
Indian auto industry is witnessing more joint ventures and acquisitions than before

- Mergers, acquisitions and joint ventures have continued to be the driving force in the Indian automobile industry in sync with the dynamics of an open market. Leading automobile companies have either set up their own manufacturing base in India or have tied up with Indian automotive firms to roll out new products. The list includes International, MAN, Daimler, Toyota, Nissan, Renault, Fiat, Honda, Kawasaki and Cummins, among others. Daimler AG bought a 26 per cent stake in Sulej Motors in the first half of 2008.
- Indian companies have also been bullish in acquiring foreign automobile companies to reinforce their presence in the global market. The landmark deal in the first half of 2008 was Tata Motors' acquisition of Jaguar-Land Rover from Ford for US\$ 2.30 billion. During this period, Mahindra & Mahindra acquired three Italian companies - GR Grafica Ricerca, Metalcastello and Engines Engineering.

Several factors make India a favourite investment destination



Many global auto companies have made India a manufacturing base as a robust supply base exists in India



India — a sourcing hub and a manufacturing base for OEMs

Manufacturer	Components	Worth	Comments
Hyundai, Ford, Skoda, Suzuki, Mahindra	Specific models of cars	N/A	Have already picked India as a manufacturing base for particular car model
Toyota, GM, Fiat, Volkswagen, Renault and Daimler	Hub for auto components	N/A	Are in the process of making India a manufacturing hub for auto components
Fiat Group Purchasing	Auto parts	US\$ 1 billion	By 2010 for its European and other operations. About 70 per cent of the outsourced parts will be solely for the Fiat Group's multiple operations in India
Hyundai	Auto parts for global operations		Looking to source a greater percentage of components from Indian suppliers for its global operations
Volvo	Components in the commercial vehicles segment for products manufactured at its Bangalore facility	N/A	Sourcing of auto components through the recently-inked joint venture with Eicher Motors; to be manufactured from the Pithampur plant
Volkswagen AG	Auto components	€ 1 billion	The company is targeting about 70 per cent localisation of its cars produced in India within two years of starting operations
Renault-Nissan	Has firmed up plans to source components and aggregates	€ 300 million over the next two years	First phase to source low-end tech for low-end models, high-end in second phase
Daimler Chrysler	Auto components and IT services	US\$ 125 million	Growing at 20 per cent CAGR

Competitiveness of Indian automotive industry

- In order to emerge as a manufacturing hub, India faces competition from other low-cost countries such as:
 - China
 - Thailand
 - Brazil
- IMaCS has compared the cost competitiveness of manufacturing six automotive component groups (engine, transmission and steering, suspension and braking, electricals, equipment and others) in India with respect to these countries in terms of factors such as:
 - Taxes and duties
 - Cost of manufacturing (for example, power and fuel costs, labour costs)
 - Economies of scale
- Competitiveness of manufacturing in India is improving with the reduction of tax levels, tax reforms and with improving business infrastructure.

Tax structure in India vis-à-vis other countries

- The burden of direct and indirect taxes is higher in India than in other countries.

	India	Brazil	China	Thailand
Excise	8-16%	-	-	-
VAT	12.5%	17%	17%	7%
Other taxes		15%*		
Corporate tax	34%	34%	25%	30%
Exemptions	Specific packages provided by states for large investments	Tax incentives for companies in export processing zones	Preferential corporate tax policies for foreign investment enterprises	Tax incentives for investments outside central zone
Import duty	13%	16%	8%	Free
on rubber				
Import duty on steel	5%	12%^	2%	10%

Source: Gol, Apectariff

- Government of India announced an across-the-board excise duty reduction of 4 per cent across automobiles on December 7, 2008
- In case of bus chassis, excise duty is at 8.18 per cent. *Refers to local taxes such as Withholding Tax (WHT)

^Import duty on heavy plates has been reduced to 2 per cent, but with a cap of 20,000 tonnes

Labour and labour productivity in India vis-à-vis other countries

- India compares favourably with other low-cost countries in productivity-adjusted labour cost.
- Indian labour productivity in the manufacturing sector is on the increase with the application of production management techniques; many companies have doubled their productivity in the last five years.
- Government of India has earmarked nearly Rs. 1,000 crore for human resource skill development initiatives across industry sectors.

	India	Brazil	China	Thailand
Labour cost (US\$/hour)	0.75	4.3	0.75	0.8
Labour cost (US\$/day)*	6	33.6	6	6.4
Productivity index**	1.0	2.0	1.0	1.2
Productivity adjusted labour cost (US\$/day)	6	16.8	6	5.33

*Assuming eight-hour shift per day

** Gross value added per person employed when compared to India

Swift progress on National Skill Development Program (NSDP)

- The aim of the mission is “to provide within a 5-8 year timeframe, a pool of skilled workforce, sufficient to meet domestic requirements, with surpluses to cater to the skill deficits in other ageing economies”.
- The National Skill Development Corporation (NSDC) has been established with a commitment of Rs. 1,000 crore from the Centre. Another Rs. 15,000 crore is envisaged to be generated from state governments, public sector entities, the private sector, and bilateral and multilateral sources.
- The automobile and auto components sector is one of the top-10, high-growth manufacturing sectors that is in focus for sector-specific skill development; the sector enjoys extensive participation from the industry.
- The mission is expected to enhance skill availability and productivity across the industry.

Power costs and interest rates in India vis-à-vis other countries

- Power costs in India are the highest amongst competing countries.
- However, power cost accounts for only around 3 per cent of the overall cost structure and is, hence, not a significant disadvantage.
- Power costs in India vary by state and are as low as US\$ 0.1 in states such as Maharashtra.
- With privatisation and competition in the Indian power sector, the cost of power is expected to be rationalised further.
- Interest rates in India are high as compared to competing countries, but are expected to soften in the future.
- The recent downturn across the global economy has forced central banks of major countries to slash lending rates.

Power costs	
Country	Cost per kWh(US\$)
India	0.14
Brazil	0.05
China	0.03
Thailand	0.11
Interest rates	
Country	Annual lending
India	10-11%
Brazil	13-14%
China	5-6%
Thailand	7-8%

Manufacturing in China vis-à-vis India

- Indian manufacturers suffer from a cost disadvantage vis-à-vis Chinese manufacturers mainly because of higher power and fuel costs and, to some extent, due to the cascading impact of taxes.

China		Engine parts	Transmission and steering	Suspension and braking	Electricals	Equipment	Others
Cost of component for an Indian company		100%	100%	100%	100%	100%	100%
Less							
Taxes and duties	Higher net state-level levies and cascading impact of taxes	0.55%	0.85%	1.58%	1.51%	1.72%	0.89%
	Higher import duty	0.01%	0.01%	0.03%	0.07%	0.08%	0.03%
	Higher corporate taxes	0.27%	0.27%	0.27%	0.27%	0.27%	0.27%
Industry costs	Higher cost of power and fuel	3.43%	3.16%	4.01%	3.02%	2.13%	2.68%
	Higher cost of funds	0.62%	0.30%	0.18%	0.00%	0.44%	0.13%
	Higher rate of insurance	0.10%	0.08%	0.10%	0.08%	0.11%	0.08%
Others	Others	3.63%	2.98%	3.08%	3.11%	3.50%	2.72%
Total cost disadvantage for India		8.61%	7.65%	9.25%	8.06%	8.25%	6.80%

Manufacturing in Thailand vis-à-vis India

- Indian manufacturers suffer from a cost disadvantage vis-à-vis Thai manufacturers mainly because of higher level of taxes and their cascading impact.

Thailand		Engine parts	Transmission and steering	Suspension and braking	Electricals	Equipment	Others
Cost of component for an Indian company		100%	100%	100%	100%	100%	100%
Less							
Taxes and duties	Higher net state-level levies and cascading impact of taxes	3.92%	5.26%	5.98%	5.48%	5.69%	5.42%
	Higher import duty	0.51%	0.29%	0.38%	0.88%	0.91%	0.79%
	Higher corporate taxes	0.12%	0.12%	0.12%	0.12%	0.12%	0.12%
Industry costs	Higher cost of power and fuel	0.93%	0.86%	1.09%	0.82%	0.58%	0.73%
		1.72%	1.10%	1.19%	1.22%	1.59%	0.85%
	Higher cost of funds	0.50%	0.24%	0.14%	0.00%	0.35%	0.10%
	Higher rate of insurance	0.10%	0.08%	0.10%	0.08%	0.11%	0.08%
Others		2.15%	1.51%	1.60%	1.63%	2.02%	1.25%
Total cost disadvantage for India		9.95%	9.46%	10.60%	10.23%	11.37%	9.34%

Manufacturing in Brazil vis-à-vis India

- India is competitively positioned vis-à-vis Brazil across components mainly due to the higher cost of labour in Brazil.

Brazil		Engine parts	Transmission and steering	Suspension and braking	Electricals	Equipment	Others
Cost of component for an Indian company		100%	100%	100%	100%	100%	100%
Less							
Taxes and duties	Higher net state-level levies and cascading impact of taxes	-4.28%	-5.81%	-3.94%	-3.26%	-3.22%	-5.21%
	Higher import duty	-0.34%	-0.23%	-0.19%	-0.31%	-0.27%	-0.39%
	Higher corporate taxes	0	0	0	0	0	0
Industry costs	Higher cost of power and fuel	2.79%	2.58%	3.28%	2.47%	1.74%	2.19%
	High Labour cost	-23.16%	-14.85%	-16.07%	-16.45%	-21.47%	-11.51%
	Higher cost of funds	-0.27%	-0.13%	-0.08%	0.00%	-0.19%	-0.06%
	Higher rate of insurance	-0.06%	-0.05%	-0.06%	-0.04%	-0.06%	-0.05%
Others		5.55%	4.90%	5.00%	5.02%	5.42%	4.64%
Total cost disadvantage for India		-19.77%	-13.59%	-12.06%	-12.57%	-17.78%	-10.39%

Conclusions ... (1/2)

- India has a cost advantage when compared to Brazil. India, however, suffers from a cost disadvantage vis-à-vis China and Thailand, primarily due to high level of taxes and their cascading impact.
- India, in the near future, is expected to go ahead with the abolition of inter-state central sales tax (CST), which will reduce the cascading impact of taxes to some extent.
- Implementation of goods and services tax (GST), along the lines of value-added tax (VAT), and abolition of all other taxes is in progress and is targeted for April 2010. It will reduce the taxation loading on the automotive sector considerably. This step is expected to strengthen India's position as a leading automobile manufacturing hub in the future.
- Various steps being taken by the Indian government to improve infrastructure in order to reduce the disadvantage that India suffers because of poor infrastructure that causes project delays, delays in deliveries and so on. This would increase the demand for road transportation in the country.

Conclusions ... (2/2)

- Apart from road infrastructure, R&D infrastructure under the US\$ 380 million Central government project, NATRIP, which is expected to be completed by the end of year 2010, is expected to provide India a distinct advantage over other low-cost countries in the automotive industry.
- With the widespread implementation of the NSDP and the effecting of the ASEAN free trade agreement, skill development and productivity enhancement will add to the industry's competitiveness in the global market.
- Further, with the rising manpower costs in China, the competitiveness differential between India and China is fast reducing, strengthening India's potential for becoming the manufacturing hub for the global automotive industry.

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