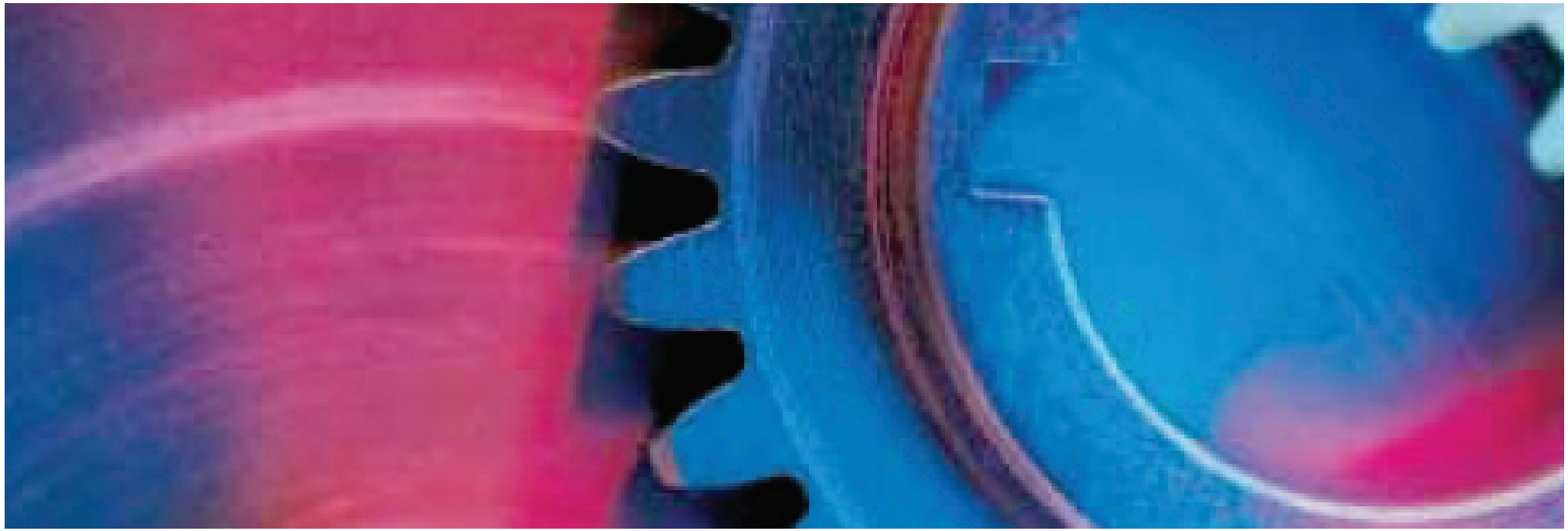

AUTO COMPONENTS

December 2008

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Contents

PROFILE OF INDIAN AUTO COMPONENTS INDUSTRY

Indian auto industry has entered the era of globalisation

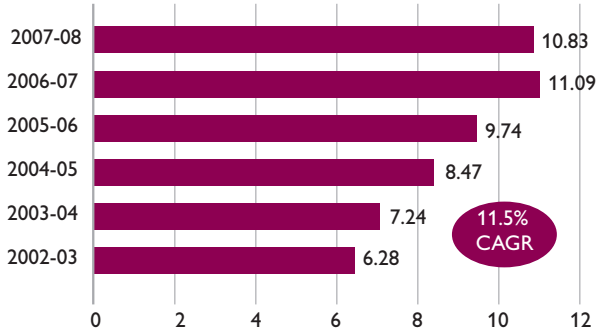
Pre 1983	1983-1993	1993-2007	
• Closed market • Growth of market limited by supply • Outdated models **Players** • Hindustan Motors • Premier • Telco • Ashok Leyland • Mahindra & Mahindra	• Japanisation - GOI-Suzuki joint venture to form Maruti Udyog • Joint ventures with companies in commercial vehicles and components **Players** • Maruti Udyog • Hindustan Motors • Premier • Telco • Ashok Leyland • Mahindra & Mahindra	• Delicensing of sector in 1993 • Global major OEMs start assembly in India (Toyota, GM, Ford, Honda, Hyundai) • Imports allowed from April 2001; alignment of duty on components and parts to ASEAN levels • Implementation of VAT	**Era of globalisation and evolution of India as a global manufacturing hub**

- Prerequisites for globalisation, high level of competence and productivity has become the forte of Indian automakers due to the favorable environment in the country

Indian automobile industry crossed a historic landmark: 10 million vehicles in 2006-07

- The Indian auto industry has the potential to emerge as one of the largest in the world. Presently, India is
  - Second largest two wheeler market in the world
  - Fourth largest commercial vehicle market in the world
  - 11th largest passenger car in the world and is expected to be the seventh largest market by 2016

Automotive Production
Million units



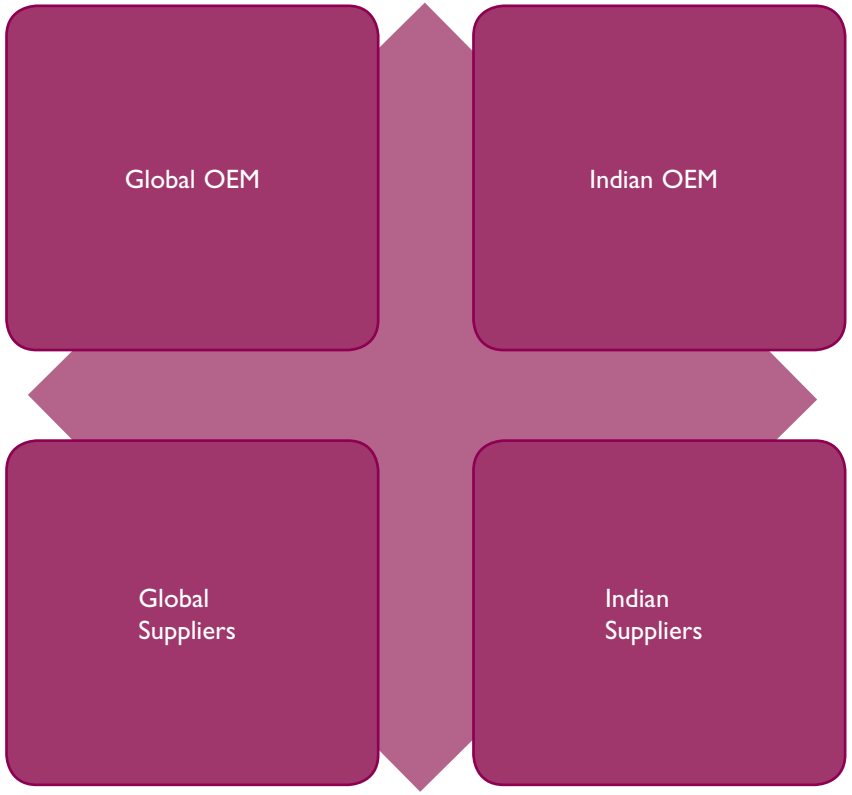
Segment	Share in total	CAGR
Two wheelers	74.1%	9.6%
Passenger vehicles	16.3%	19.5%
Three wheelers	4.6%	12.6%
Commercial vehicles	5.0%	21.8%

Source: SIAM, IMaCS analysis

The OEM as well as the component industry is highly competitive

- GM
- Toyota
- Ford
- Hyundai
- Maruti Suzuki
- Honda
- Skoda
- Volvo
- Mercedes

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



- Tata Motors
- Mahindra & Mahindra
- Bajaj Auto
- TVS Motors
- Hero Honda
- Bajaj Tempo
- Ashok Leyland

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

The OEM as well as the component industry is highly competitive

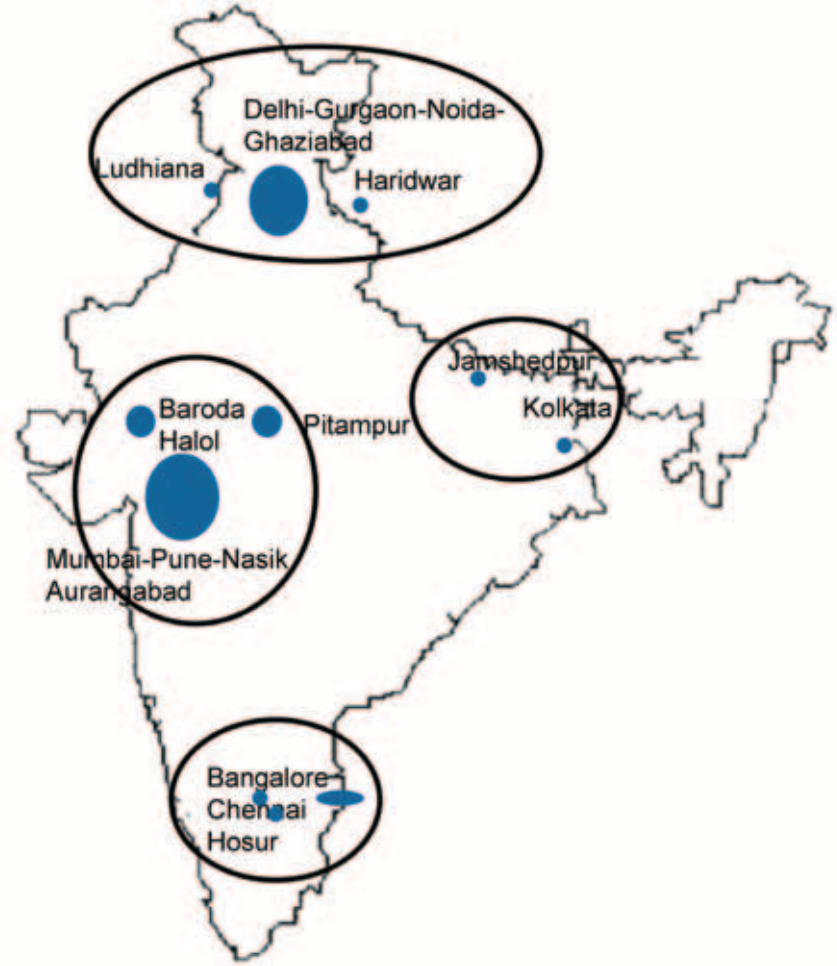
- The Indian auto industry is highly competitive with a number of global and Indian auto companies present
- The supplier industry is equally competitive with a mix of global and Indian players

Indian auto industry has evolved around three major clusters

North / Central

- **Ashok Leyland**
- **Hero Honda**
- **Honda SIEL**
- Delphi
- JBM
- Minda
- Sona Koyo
- Asahi India

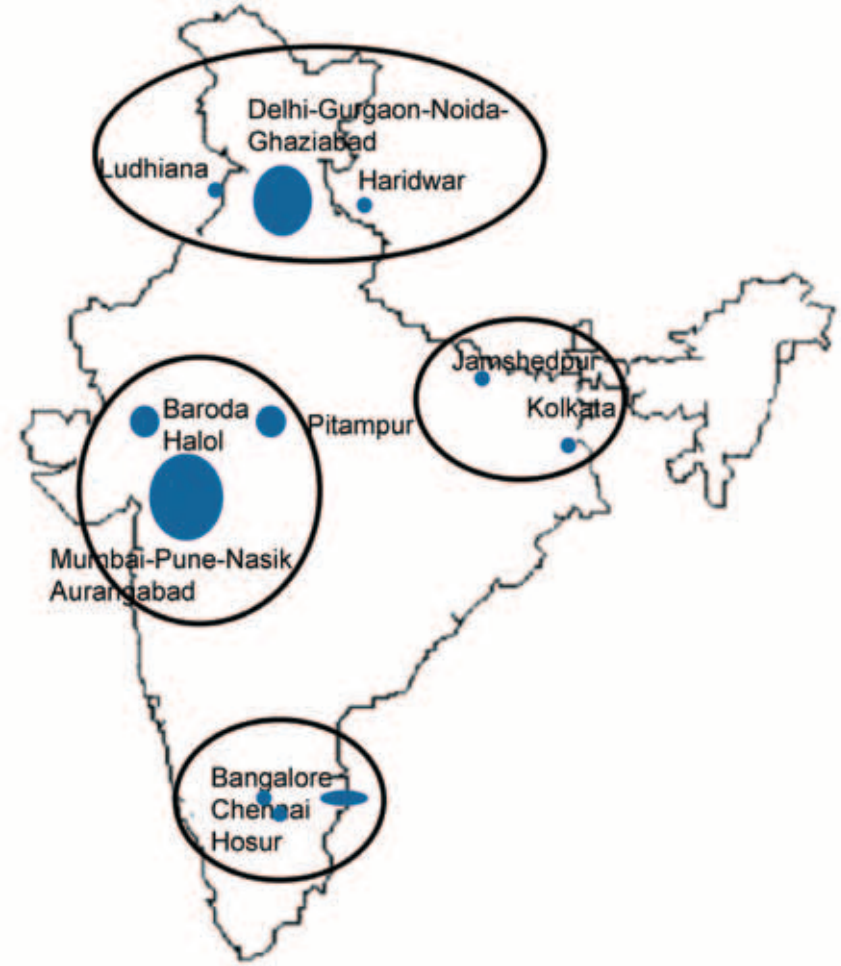
Eicher
Honda
Maruti Suzuki
Denso India
Lumax
Shriram Pistons
Phoenix
Johnson Matthey



Indian auto industry has evolved around three major clusters

West

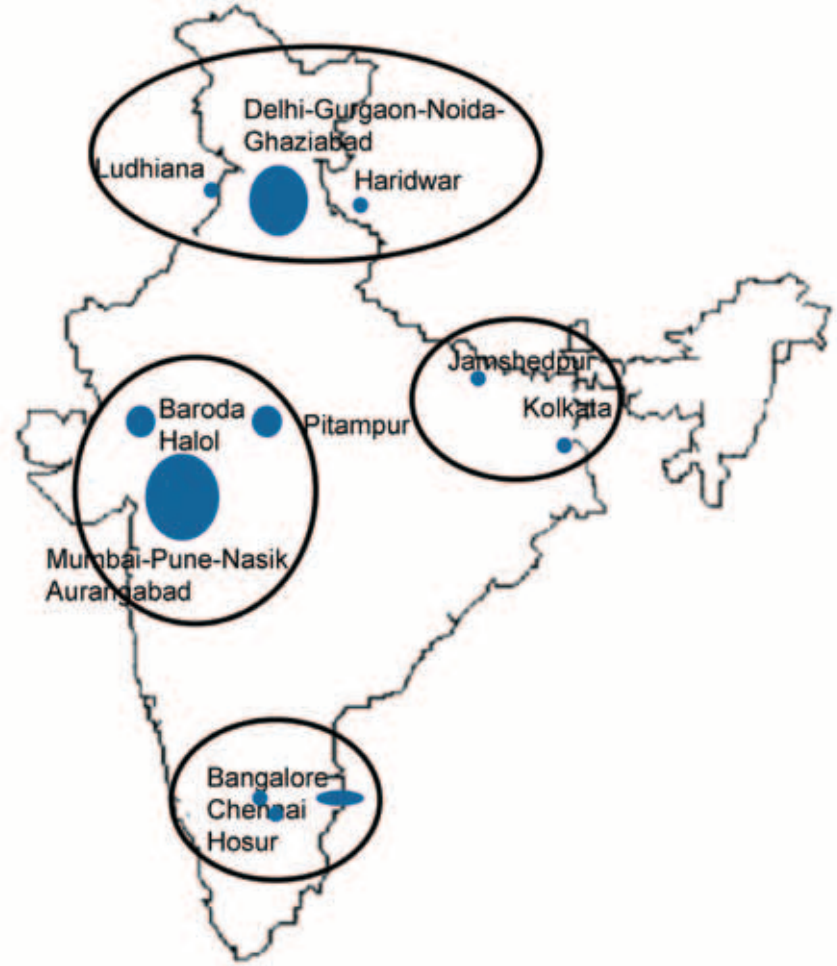
- **Ashok Leyland**
- **Daimler Chrysler**
- **GM**
- **Skoda**
- Bharat Forge
- DGP Hinoday
- Kirloskar Brothers
- SKF Bearings
- Supreme Ind
- **Bajaj Auto**
- **FIAT**
- **M & M**
- **Tata Motors**
- Bright Brothers
- Endurance Systems
- Kalyani Brakes
- Tata Johnson
- NRB



Indian auto industry has evolved around three major clusters

East

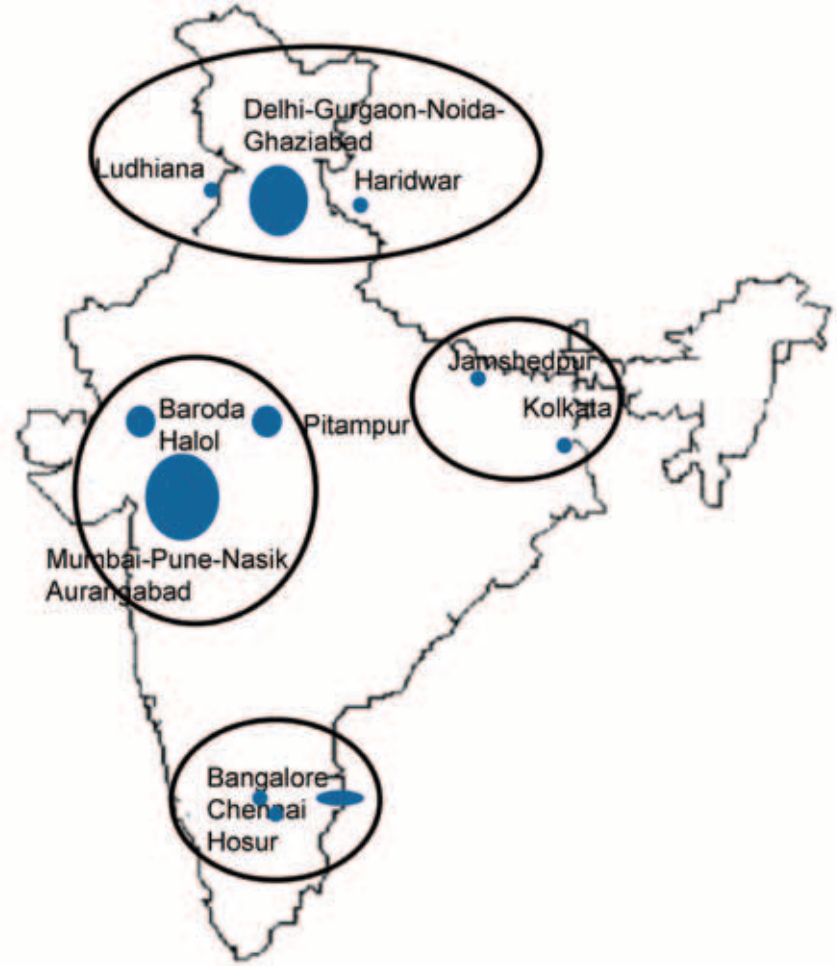
- **Hindustan Motors**
- Simpson & Co
- International Auto Forgings
- **Tata Motors**
- JMT
- Ramkrishna



Indian auto industry has evolved around three major clusters

South

- **Ashok Leyland**
- **Ford**
- **Toyota Kirloskar**
- Brakes India
- Fenner
- LUCAS-TVS
- Rane Brake
- Visteon
- Sundaram fastners
- **Enfield**
- **Hyundai**
- **TVS Motors**
- Delphi TVS
- India Nippon
- MICO
- Rane-TRW
- UCAL
- TI Group



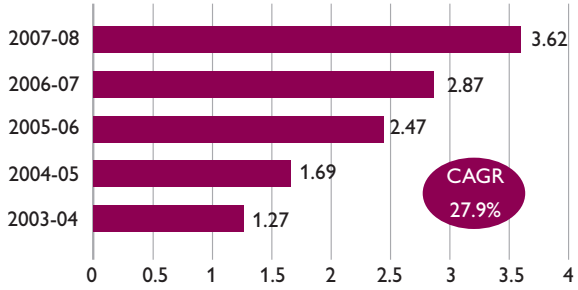
Indian auto industry has evolved around three major clusters

- Major automotive clusters - Mumbai-Pune-Nasik-Aurangabad (West), Chennai -Bangalore-Hosur (South) and Delhi-Gurgaon-Faridabad (North)
- The state of Uttaranchal is turning into an autohub because of the industry-friendly government policy

Growth in automobile production has driven growth in Indian auto component industry

- The Indian auto component industry has reached a size of US$ 18 billion in 2007–2008, growing at a CAGR of nearly 28 per cent in the last four years
- Industry has developed strong backward and forward linkages
- The industry is characterised by the presence of technically capable companies in areas such as manufacturing, design, testing and product development

Indian auto component industry turnover US$ billion

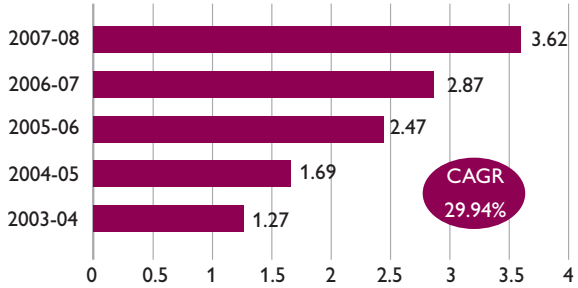


Source: ACMA, IMaCS analysis

Exports of auto components have also exhibited an impressive growth

- The exports of auto components industry has reached around US$ 3.62 billion in 2006-2007, having grown at a rate of nearly 30 per cent CAGR over the last four years
- The Indian auto component industry is well positioned to capitalise on the growth in outsourcing to low cost countries

Indian auto component industry turnover US$ billion

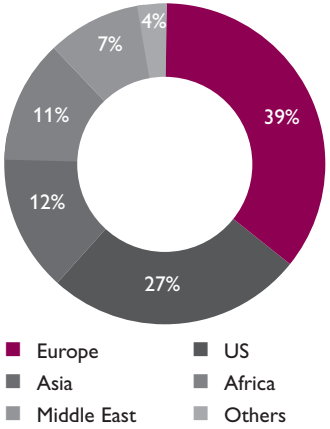


Source: ACMA, IMaCS analysis

More than 60 per cent of exports are made to the developed markets of Europe and USA

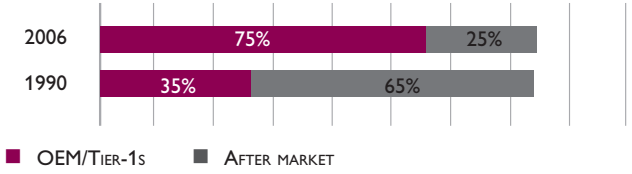
- Over 60 per cent of the exports are to developed markets such as US and Europe, indicating the capability of Indian manufacturers to meet stringent quality and technical standards
- A significant characteristic of exports is the shift in the market in which the components are sold – 75 per cent of the supplies are today made to OEM/ Tier-I players as compared to only 35 per cent in the 1990's

Indian auto component exports by destination (2006)



Source: ACMA, IMaCS Analysis

Exports by type of Client

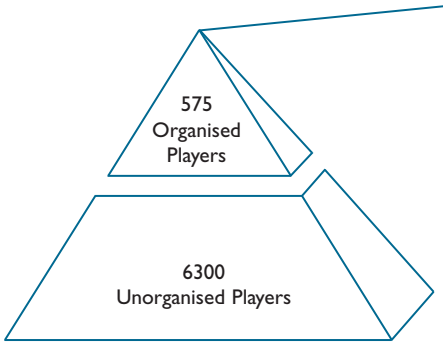


Source: ACMA, IMaCS Analysis

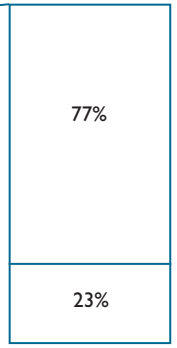
The Indian auto component Industry is highly fragmented

- Around 575 organised players account for the 77 per cent of the value added in the sector
- Unorganised players are mainly replacement market players or Tier 3/4 component manufacturers
- Automotive Component Manufacturers Association of India (ACMA) represents the auto component industry in India and has around 575 registered members

Industry Structure



Value added by the players

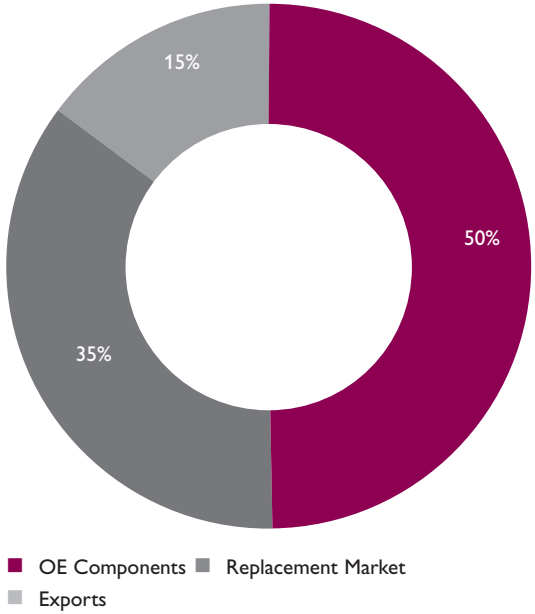


Source: ACMA, IMaCS Analysis

Demand from the OE segment dominates the Indian component industry

- OE demand accounts for half of the auto component market in India.

Breakup of components industry by end market profile

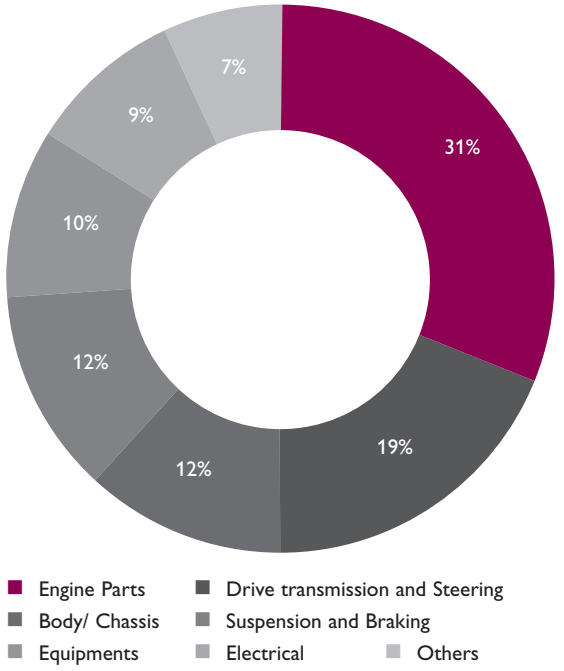


Source: ACMA, IMaCS Analysis

Demand from the OE segment dominates the Indian component industry

- Engine parts accounts for a third of the auto components made in India

Breakup of components industry by type of component

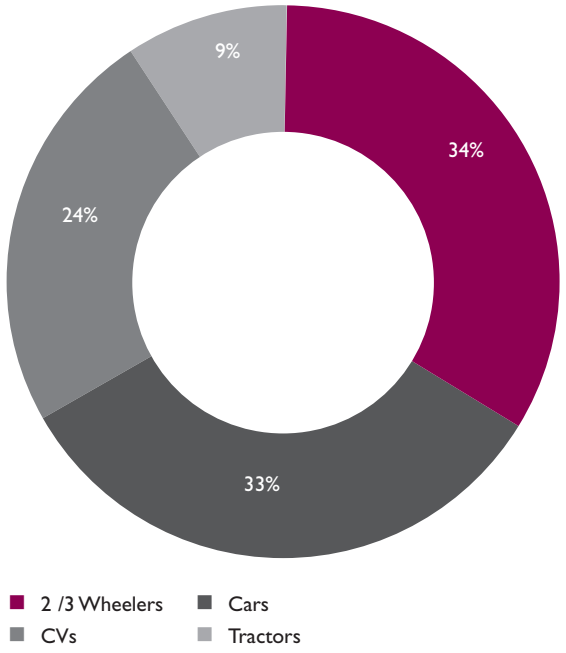


Source: ACMA, IMaCS Analysis

Two and three wheelers and car segments account for a major portion of the component market in India

- Two and three wheelers, along with passenger cars account for two-thirds of the components manufactured
- However, CV components have shown the fastest growth rate over the last five years. The growth rate of components of various vehicle categories are as follows:
  - 2/3Wheelers: 14.95 per cent
  - Cars : 15.4 per cent
  - CVs : 26.1 per cent

Vehicle Category Contribution



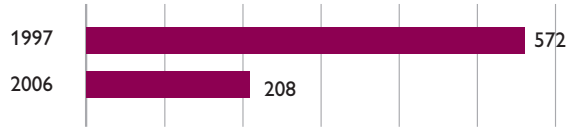
Source: ACMA, IMaCS Analysis

Indian auto components companies are making significant strides on the quality front

- Driven by needs of export markets and the increasing demands of Indian OEMs, quality awareness of Indian companies has increased over the last decade
- Quality awareness has increased across all levels of management and is being viewed as a "must have" instead of "nice to have", which is reflected in the drastic reduction in the number of problems of vehicles over the last decade
- 11 Indian auto component manufacturers have got the prestigious DEMING award

Certification	No. of companies as in FY 2008
Japan Quality Medal Winner	1
JIPM Awards	4
DEMING Prize	11 (9 since 2003)
OHSAS 18001	60
ISO 14001	182
QS 9000	81
TS 16949	393
ISO 9000	557

Problems per 100 vehicles



Source: JD Power Survey, IMaCS Analysis

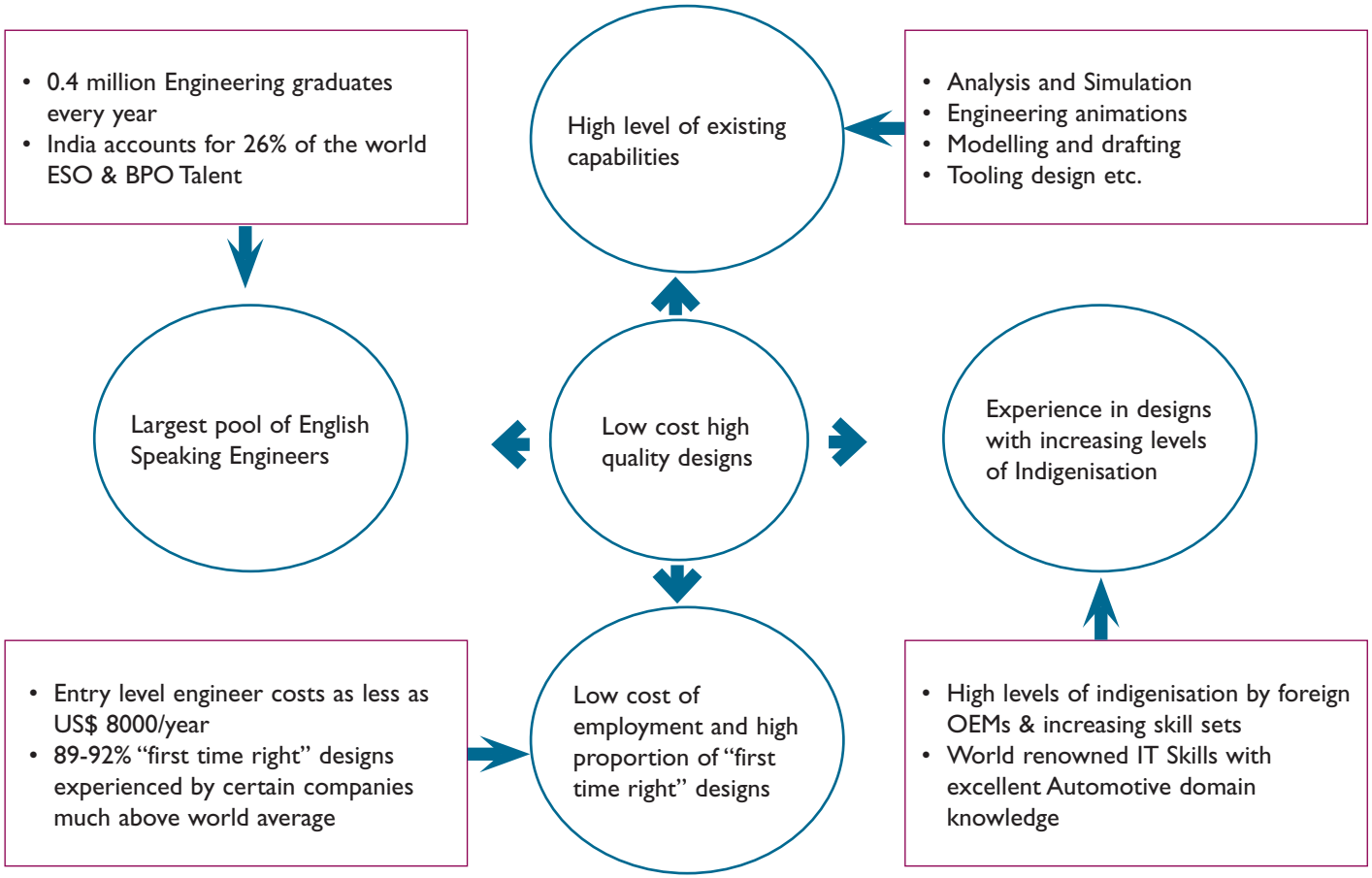
Indian auto component companies are spreading their operations globally, mainly through acquisitions

- Acquisitions made overseas are helping Indian auto component companies get access to new set of skills, technology and customers

Indian company	Acquired	Country	Acquisition value
Acquisitions in 2008			
Sona Koyo Steering	ThyssenKrupp Praezisionsschmiede GmbH	Germany	US$ 146 million
Shakti Auto Component	Arvika Gjuteri AB	Sweden	NA
Shakti Auto Component	Intermet Europe	Germany	US$ 130 million
Ruia Group	Metzeler Automotive Profile Systems	UK	NA
A K Minda Group	Schenk Plastic Solutions	Germany	NA
Acquisitions in 2007			
Tata Technologies	Incat International	UK	US$ 95 million
Bharat Forge	Imatra Kilsta AB	Sweden	US$ 56 million
Amtek Auto	GWK	UK	US$ 37 million
Amtek Auto	Zelter	Germany	US$ 36 million
Bharat Forge	Carl Dan Peddinghaus	Germany	US$ 35 million
EL Forge	Shakespeare Forgings	UK	US$ 28 million
Ucal Fuel Systems	Amtec Precision	USA	US$ 28 million

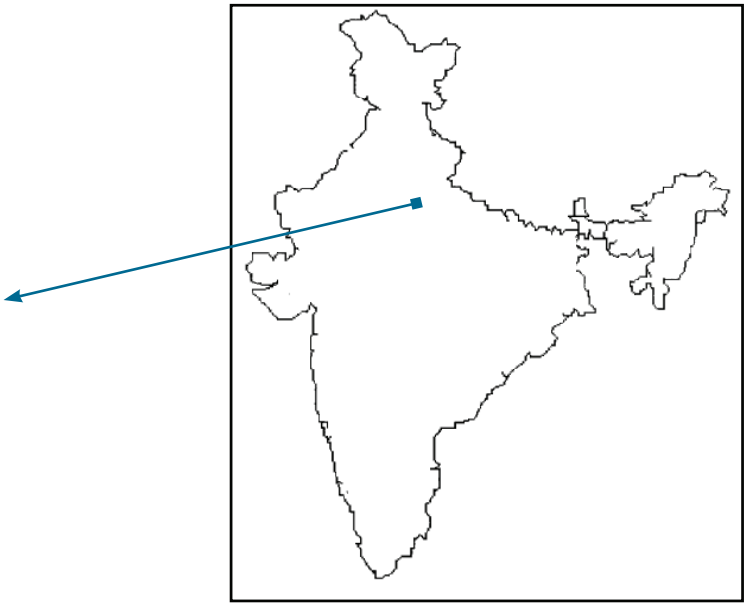
Source: Industry news

The companies are capable of carrying out product development activities at low cost



Government of India initiative to strengthen automotive R&D infrastructure- National Automotive Testing and R&D Infrastructure Project (NATRIP)

NATRIP envisages an investment of INR 17.18 billion (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 & Driver Training centre
- Center of Excellence For Accident Data Analysis
- Commissioning Schedule Phase-I: July 2010, Phase-II: Aug 2010

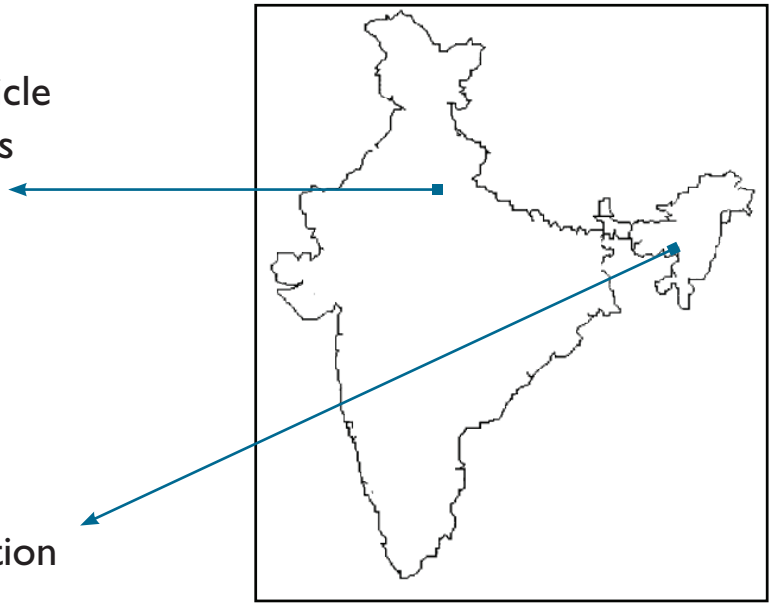
Government of India initiative to strengthen automotive R&D infrastructure- National Automotive Testing and R&D Infrastructure Project (NATRIP)

Manesar - iCAT

- Complete homologation services to all vehicle categories as per Indian or Global Standards
- Center of Excellence For Component Development, NVH
- Commissioning Schedule Phase-I: 2008, Phase-II: 2010

Silchar Centre

- Hill area Driver Training Centre and Inspection & maintainence Facilities
- Center of Excellence For Driver Training
- Commissioning Schedule Phase-I: 2008, Phase-II: 2010



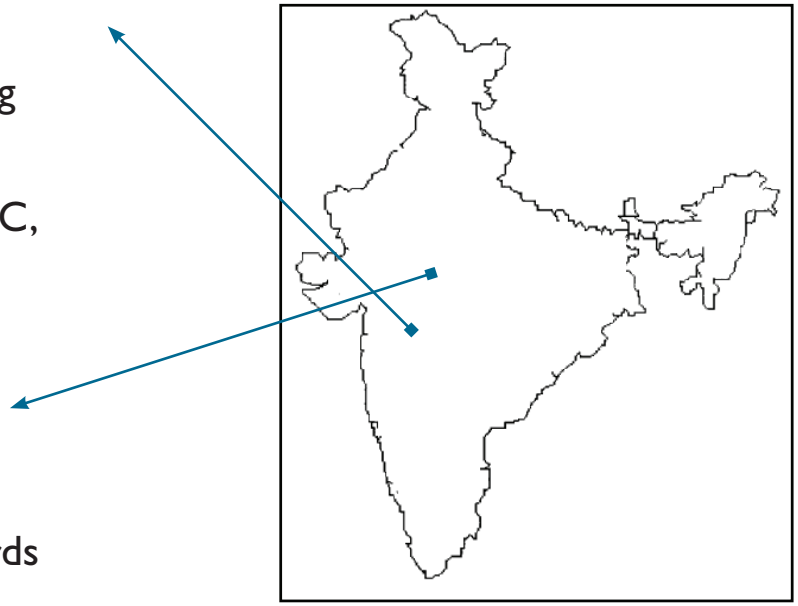
Government of India initiative to strengthen automotive R&D infrastructure- National Automotive Testing and R&D Infrastructure Project (NATRIP)

Ahmednagar - VRDE Up-Gradation

- Research, Design, Development and Testing of Vehicles
- Center of Excellence For Photometry, EMC, EMI, Test Tracks
- Commissioning Schedule April 2008

Indore - Proving Grounds

- Complete Testing Facilities to all vehicle categories as per Indian or Global Standards
- Center of Excellence For Vehicle Dynamics, Tyre Development
- Commissioning Schedule Phase-I: 2009, Phase-II: 2010



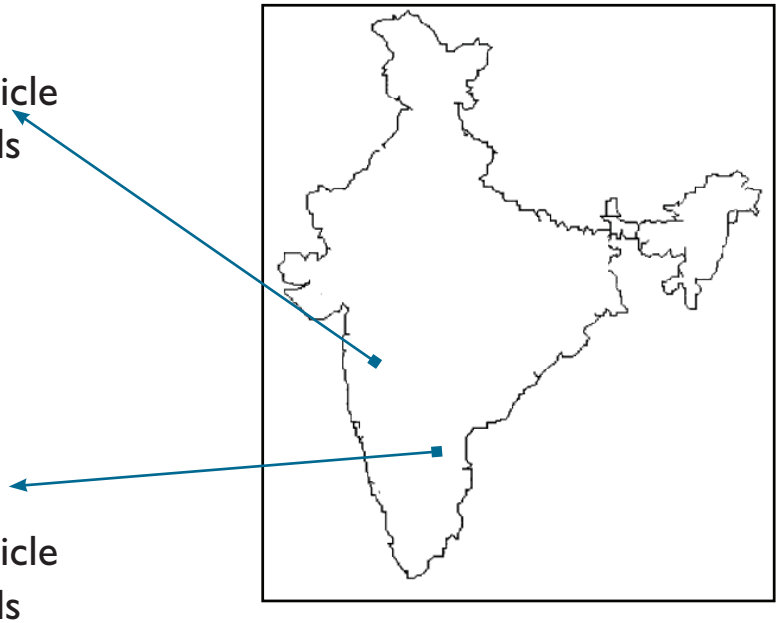
Government of India initiative to strengthen automotive R&D infrastructure- National Automotive Testing and R&D Infrastructure Project (NATRIP)

Pune - ARAI Up-Gradation

- Complete homologation services to all vehicle categories as per Indian or Global Standards
- Center of Excellence For Power Train Development, materials, fatigue
- Commissioning Schedule Phase-I: 2008, Phase-II: 2009

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 Phase-I: 2008, Phase-II: 2011



Indian productivity is on a rise - Analysis of Return On Capital Employed(ROCE)

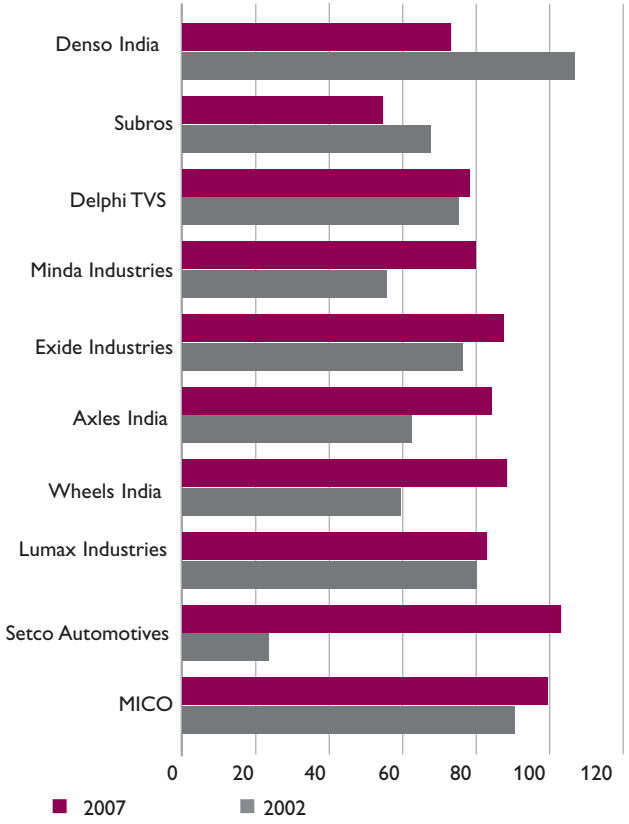
- ROCE per cent levels in India have shown an increase in the past few years, indicative of the productivity increase
- Average ROCE levels in India are estimated to be in the range of 20-24 per cent
- MNC/Collaborations have achieved significantly higher ROCE levels in India

Component Manufacturer	ROCE (%) in 2002	ROCE (%) in 2008
Clutch Auto	14.17	20.64
Minda Industries	17.5	14.16
Setco Automotives	18.07	27.28
Wheels India	10.88	16.29
Sona Koyo	8.17	17.72
ZF Steering	25.94	32.35
Denso India	14.52	24.28
Exide Industries	13.69	36.21
Lumax Industries	6.56	12.09
Subros	10.9	18.49

Capacity utilisation is also on the rise

- The huge growth in demand has improved the capacity utilisation of Indian auto component manufacturers.
- Most of the Indian manufacturers have utilisation levels in excess of 80 per cent, even after taking into account the recent capacity additions

Overall capacity utilization



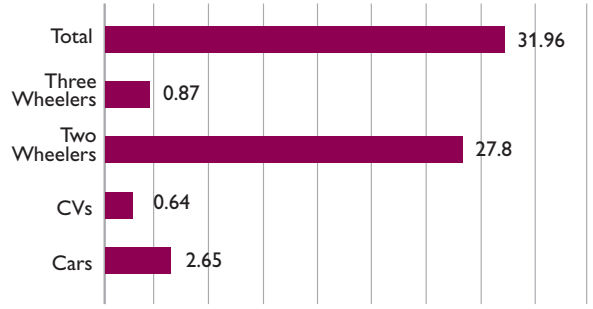
Source: IMaCS Analysis

GROWTH POTENTIAL OF INDIAN AUTO COMPONENT INDUSTRY

Indian auto component industry is expected to grow to US$ 33-40 billion by 2015

- 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$ 130-159 billion by 2016
- In volume terms the market is expected to grow to 31.96 million vehicles

Potential vehicle sales by 2015 (in millions)

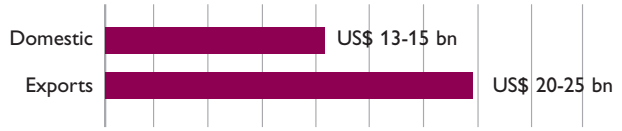


Source: AMP, SIAM, ACMA, IMaCS Analysis

Indian auto component industry is expected to grow to US$ 33-40 billion by 2015

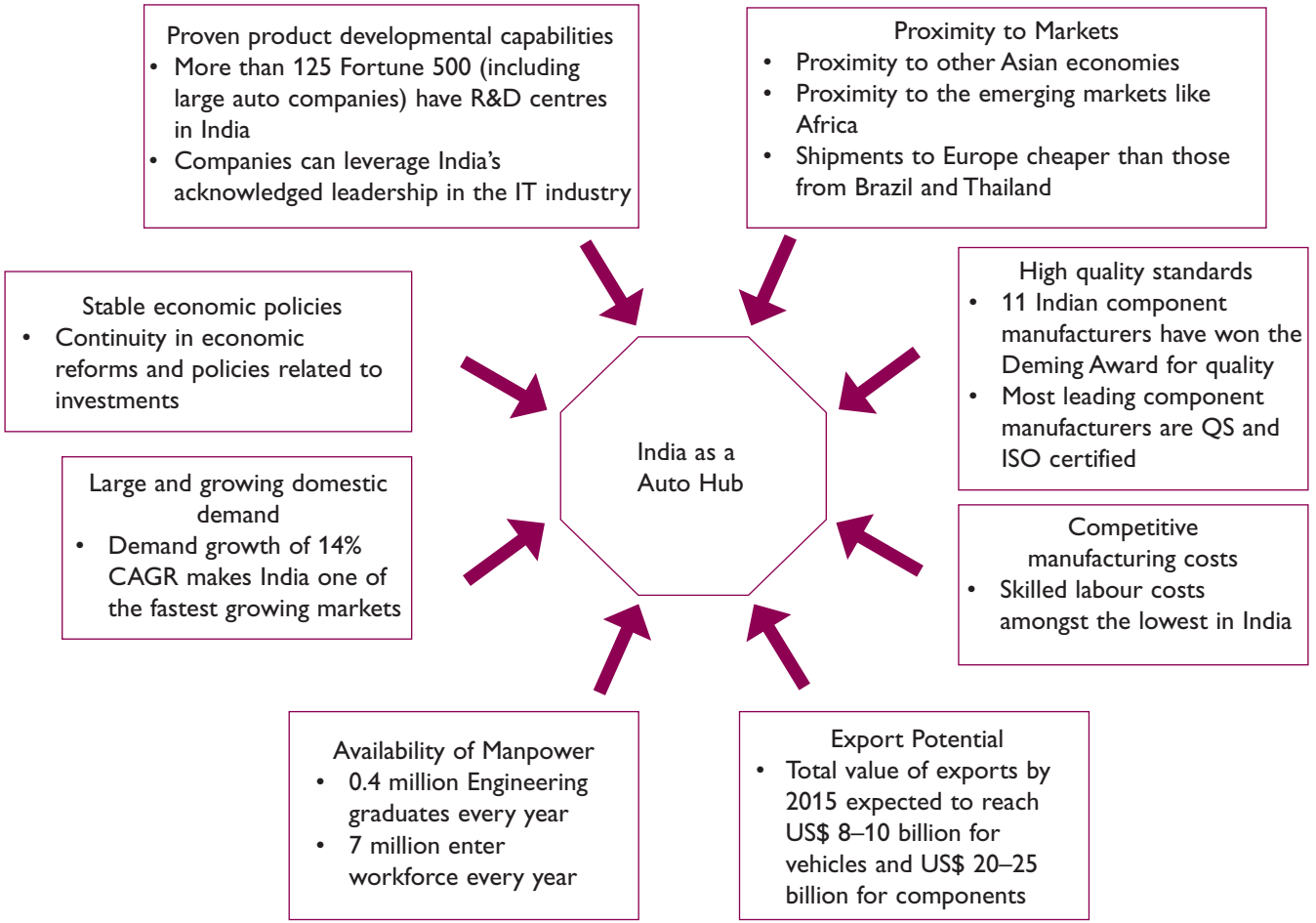
- The Indian auto component industry is well positioned to capitalise on the growth in outsourcing to low cost countries
- Exports would lead the growth in the component industry, which is expected to be around US$ 33- 40 billion by 2015, from the current size of roughly US$ 15 billion

Projected size of Auto component Industry 2015



Source: AMP, SIAM, ACMA, IMaCS Analysis

Several factors make India a favourite investment destination



Indian auto component offers a balance between quality and cost

Quality Services

- Indian IT recognised worldwide

Quality Manpower

- 0.4 Million engineering graduates

Quality Suppliers

- 456 Nos ISO 9000 certified Suppliers

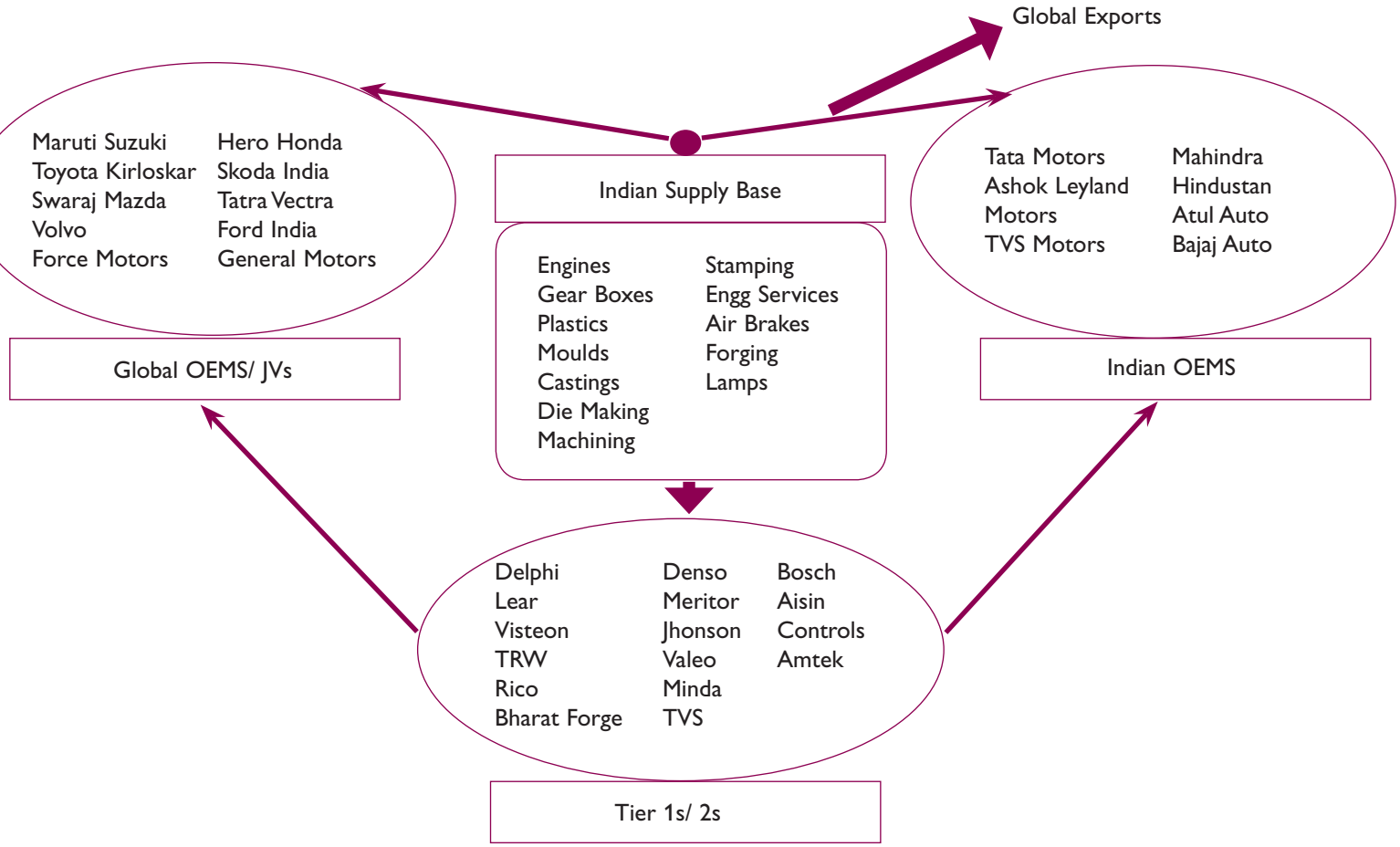
Lower

- Labour cost

Lower

- Design cost

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



OEMs have made India a sourcing hub for their auto component requirements

Manufacturer	Component	Worth	Comments
Volkswagen AG	Auto components	One billion Euros	The company is also aiming at 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 Euros over the next two years	First phase to source low-end tech for low end models. High-end in second phase
Fiat	Engines, Gearboxes, Others	US$ Four million	To source components for the Grande Punto as well as Linea Models. To invest US$ 1,000 million
Ford Motors	Castings and forgings, crankshafts, exhaust manifold, leaf springs, horns, dashboard, door trims	US$ 150 million	Expects the volume to grow to US$ 400 – US$ 700 million
Daimler Chrysler	Auto components and IT services	US$ 125 million	Growing at 20 per cent CAGR
BMW AG	Handle bars and die casts, exploring opportunities to source components for engine and chassis parts	NA	Planning to source parts from India for engines and chassis for its high-end motorcycles

Source: Industry News,IMaCS Analysis

Leading global auto components companies are also sourcing from India

Manufacturer	Component	Worth	Comments
Delphi	Catalytic Convertors, Steering Systems, Piston Rods, Drive Shafts etc	US$ 250 Million (2007 Plan)	Planning further investments in the software wing
Visteon	AC Systems, Alternators, Panel Instrument assembly	US$ 56 Million in 2002	
Bosch	FIPs, Common Rail Systems	US$100 Million	Planning for further investments of US$430 Million
Cummins	Engines and Components	US$ 150 Million	Plans to increase it to US$ 500 Million by 2010
Tenneco Automotive	Forgings	US$ 60 Million	
Deutz	Engine Components	US$ 70 Million	Plans to procure US$ 1,000 million worth of components from Low Cost Countries including India

Source: Industry News, IMaCS Analysis

Competitiveness of Indian auto component manufacturing

- In order to emerge as a manufacturing hub, India would face competition from other low cost countries such as
  * China
  * Thailand
  * Brazil
- IMaCS has compared the cost competitiveness of manufacturing 6 automative component groups (Engine, Transmission and Steering, Suspension and braking, Electricals, Equipment and others) manufacturing in India with respect to these countries in terms of factors like
  - Taxes and duties
  - Cost of manufacturing (for example, power and fuel costs, labour costs, including productivity interest rates)
  - Economies of scale

Competitiveness of Indian auto component manufacturing

- Competitiveness of manufacturing in India can be improved by reducing the level of taxes impact of taxes and by improving the 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	16.36%	-	-	-
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 on rubber	13%	16%	8%	Free
Import duty on steel	5%	12% ^	2%	10%

Source: GOI, Apectariff,

• Government of India announced an across the board excise duty reduction of four per cent across automobiles on December 7, 2008.
• In case of Bus chassis, Excise duty is further less at 8.18 per cent.
**Refers to local taxes (WHT)*
^Import duty on heavy plates have been reduced to two per cent, but with a cap of 20,000 tonnes.

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

- India compares favorably with other low cost countries in productivity adjusted labour cost
- Indian labour productivity in the manufacturing sector is on an increase with the application of production management techniques and many companies have doubled their productivity in last five years
- Government of India has earmarked nearly Rs 10 billion 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*

Power cost in India vis-à-vis other countries

- Recent downturn across the global economy has forced the central banks of major countries to slash lending rates
- Power cost in India the highest amongst the competing countries
- However, power cost accounts for around three per cent of the overall cost structure, hence not a significant disadvantage
- Power costs in India varies by state and is as low as US$ 0.1 in states like Maharashtra
- With privatisation and competition in the emerging Indian power sector, cost of power is expected to come under control
- Interest rates in India are high as compared to competing countries, but expected to soften in the future

Power costs

Country	Cost per kwh (US$)
India	0.14
Brazil	0.05
China	0.03
Thailand	0.11

Interest costs

Country	Annual lending interest rate
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 & Steering	Suspension & 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 & Steering	Suspension & 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%
	Higher labour cost	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	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 & Steering	Suspension & 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%
	Higher 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	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

- India has a cost advantage when compared to Brazil, however suffers from a cost disadvantage vis-à-vis China and Thailand (to a lesser extent), 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 interstate Central Sales Tax (CST), which will reduce the cascading impact of taxes to some extent
- Implementation of Goods and Services tax (along the lines of VAT) and abolition of all other taxes by 2010 is under consideration, which will reduce the taxation loading on the automotive sector considerably. This step is expected to strengthen India's future position as a leading automobile manufacturing hub
- Various steps being taken by the Indian government in improving infrastructure would reduce the disadvantage that India suffers from 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 and consequently demand for auto components
- India's exports of auto components have the advantage of proximity to automotive manufacturing nations like Thailand; trade agreements being signed with ASEAN nations are expected to give a further boost to exports

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