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**Advantage India**

- Growing per capita income due to growth in employment levels has provided an impetus in domestic demand.
- Vehicle production grew to 11.17 million in 2008–09.

- NATRiP was set up at a cost of US$ 380 million to promote R&D in the sector.
- India has proven product development capabilities and proximity to emerging markets.
- Europe and North America are the major export destinations for India’s auto component industry.
- Shipments to Europe from India cost less than those from Brazil and Thailand.

- Manufacture of castings and forgings in India costs 25 to 30 per cent less than in western countries.
- India offers the advantage of low manufacturing costs due to economies of scale, low design, research and labour costs and local sourcing of tools and components.
- The cost of skilled labour in the country is the lowest in the world, with an average cost of about US$ 8,000 per annum for an entry-level engineer.
- India produces more than 0.4 million engineers every year.

Source: Ernst and Young research

NATRiP: National Automotive Testing and R&D Infrastructure Project, MEA: Middle East and Africa
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Market overview … (1/2)

• The size of the auto components industry has been estimated at US$ 19 billion in 2008–09, growing at a compound annual growth rate (CAGR) of about 23 per cent over the previous five years. The industry is expected to grow to US$ 40 billion by 2016.

• Among the 6,400 players present in the Indian market, only 600 constitute the organised sector and contribute more than 77 per cent of the country’s total production of auto components.

Source: Automotive Component Manufacturers Association of India (ACMA), Annual Report 2008–09
Market overview … (2/2)

• Large Indian players contribute about 43 per cent of the total production, while foreign companies such as Magna, Visteon, Valeo, Bosch, Federal-Mogul Corporation, Denso, etc., contribute 15 per cent.

Product breakdown (2008–09)

- Engine and engine parts: 31%
- Suspension and braking parts: 12%
- Equipment: 10%
- Electrical: 9%
- Transmission and steering parts: 19%
- Others: 19%

Source: ACMA, Annual Report 2008–09
KEY SEGMENTS

Auto components

- Engine and engine parts
  - Pistons and piston rings
  - Engine valves and parts
  - Fuel-injection systems and carburettors
  - Cooling system and parts
  - Powertrain components

- Transmission and steering parts
  - Gears
  - Wheels
  - Steering systems
  - Axles
  - Clutches

- Suspension and braking parts
  - Brake and brake assemblies
  - Brake linings
  - Shock absorbers
  - Leaf springs

- Equipment
  - Headlights
  - Halogen bulbs
  - Wiper motors
  - Dashboard instrument
  - Other panel instrument

- Electrical parts
  - Starter motors
  - Spark plugs
  - Electric ignition systems
  - Flywheel magnetos
  - Other equipment

- Others
  - Sheet metal parts
  - Body and chassis
  - Fan belts
  - Pressure die castings
  - Hydraulic pneumatic instrument
Key segments — engine and engine parts … (1/2)

• The sub-segments include pistons, piston rings, engine valves, carburettors, fuel-delivery and cooling systems and powertrain components.

• Engine parts comprise the largest product segment of the auto components industry with a 31 per cent production share.

Major players
• The four major players in the pistons sub-segment include Goetze, Shriram Pistons & Rings, India Pistons and Samkrg Pistons, while Rane Engine Valves, KAR Mobiles and Shriram Pistons & Rings lead the engine valves sub-segment.

• Ucal Fuel Systems and Spaco Carburettors & Escorts Auto Components are prominent players that manufacture carburetors. In diesel-based fuel injection systems, Mico, Delphi, TVS Diesel System and Tata Cummins are the major players.
Key segments — engine and engine parts … (2/2)

**Outlook**

- The segment is technology- and capital-intensive and is likely to be led by existing major players in the short-to-medium term.

- Some new technological changes in this segment include the introduction of turbochargers and common rail systems.

- The trend of outsourcing may gain importance in this segment in the short-to-medium term.
Key segments — transmission and steering parts … (1/2)

- Transmission and steering parts comprise the second-largest product segment in the Indian auto components industry, with a 19 per cent production share.

- The sub-segment comprises gears, wheels, steering systems, axles and clutches.

Major players
- Sona Koyo Steering Systems, Rane Madras and Rane TRW Systems are the key players in steering systems.

- Bharat Gears, Gajra Bevel Gears and Eicher are some of the major players in the gears sub-segment. Two international companies, Graziano Trasmissioni and SIAP Gears India, have set up their base in India.

- Clutch Auto, CeeKay Daikin, Amalgamations Repco and Luk Clutches are the major players in the clutch sub-segment. Rane Brake Lining and Rico Auto are the key players manufacturing clutch-facings.

- GKN Driveshafts (India) and Delphi cater to the drive shaft requirements of passenger cars and Sona Koyo Steering Systems services to the commercial vehicle segment.
Outlook

• The unorganised sector is unlikely to foray into segments including steering systems because of its capital-intensive and technology-intensive nature.

• The share of the replacement market in sub-segments such as clutches is likely to grow due to the rise in traffic density and lack of good road infrastructure.

• Competition is expected to intensify in sub-segments including gears and clutches, with the entry of global players.

• Original Equipment Manufacturers (OEMs) prefer to source complete axle assemblies from one or two vendors rather than individual components from different vendors.
Key segments — suspension and braking parts … (1/2)

• This is the third-largest product segment with a 12 per cent production share.

• The primary sub-segments comprise brakes, brake assemblies, brake linings, shock absorbers and leaf springs.

• The demand share of the replacement market in this segment varies from 30 to 70 per cent, depending on the product.

Major players
• Brakes India, Kalyani Brakes and Automotive Axles are the three major brake system suppliers in the country.

• Rane Brake Lining, Sundaram Brake Lining, Hindustan Composites and Allied Nippon dominate the brake linings sub-segment.

• Jamna Auto and Jai Parabolic are the major manufacturers of leaf springs.

• Gabriel India, Delphi and Munjal Showa are the key manufacturers of shock absorbers.
Key segments — suspension and braking parts … (2/2)

Outlook

• The segment is estimated to witness high replacement demand, with players maintaining a diversified customer base in the replacement and OEM segments, apart from the export market.

• Replacement market companies are expected to focus on setting in place a wide distribution network, maintaining a wide range of products and building a brand image.

• Competition is expected to intensify in sub-segments including shock absorbers, following the entry of global players.
Key segments — equipment

- This is the fourth-largest product segment with a 10 per cent production share.

- The primary sub-segments include headlights, halogen bulbs, wiper motors, dashboard instruments, switches, electric horns and other panel instruments.

- The demand share of the replacement market in this segment varies from 30 to 70 per cent.

Major players
- Lumax, Autolite and Phoenix Lamps are the key players in the headlights sub-segment.

- Premiere Instruments and Controls is the leading player in the dashboard sub-segment.

- Jay Bharat Maruti, Omax Auto and JBM Tools are the major players in the sheet metal parts sub-segment.

Outlook
- Indian companies are becoming more globally competitive in key segments of the auto components industry.

- Replacement market companies are likely to focus on establishing a distribution network, brand image, product portfolio and pricing policy.
Key segments — electrical parts

• This is the fifth-largest product segment in the auto components industry, with a 9 per cent production share.

• The primary sub-segments comprise starter motors, generators, distributors, spark plugs, ignition coils, flywheel magnetos, voltage regulators and electric ignition systems (EIS).

• The demand share of the replacement and export markets is low at about 25 per cent, while that of the OEM segment is about 75 per cent.

Major players
• Lucas TVS, Denso, Delco Remy Electricals and Nippon Electricals are the key players in this segment.

Outlook
• This segment offers a growing opportunity for manufacturers of EIS due to increasing recognition of electric start mechanisms for the two-wheeler segment.

• Competition is expected to intensify in the electrical parts segment serving four-wheelers due to the increasing presence of multinational companies in the country.
Key segments — others

• This segment is one of the fastest growing within the automotive components industry, with a 19 per cent production share.

• The segment includes components such as sheet metal parts, pressure die castings, plastic moulded components, fan belts and hydraulic pneumatic equipment.

Major players
• Phoenix Lamps, Autolite, Hella India and Lumax are prominent players manufacturing sheet metal parts.

Outlook
• Currently, leading players in the sheet metal parts sub-segment are in the process of expanding their customer base. This sub-segment is expected to grow at a rate of 10 to 11 per cent in the next five years.

• Companies in this segment are likely to reduce their costs and improve their margins.
Exports … (1/2)

- Export of auto components from India was estimated at US$ 3.82 billion for 2008–09, witnessing a CAGR of 24 per cent over the last five years.

- A surge in exports is expected with the enactment of the ASEAN Free Trade Agreement (FTA) in 2009.
Exports … (2/2)

- Europe and North America, together, account for nearly 66 per cent of total exports from India, followed by Asia.

Source: ACMA, Annual Report 2008–09

Composition of exports

<table>
<thead>
<tr>
<th>Year</th>
<th>EU</th>
<th>NA</th>
<th>Asia</th>
<th>Africa</th>
<th>Middle East</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>35</td>
<td>65</td>
<td>35</td>
<td>15</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>2008</td>
<td>80</td>
<td>20</td>
<td>65</td>
<td>15</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: ACMA, Annual Report 2008–09

Auto components exports by destination

- Europe 44%
- North America 22%
- Asia 15%
- Africa 7%
- Middle East 7%
- Others 5%

Source: ACMA, Annual Report 2008–09

ASEAN: Association of South East Asian Nations
Domestic demand … (1/2)

- The industry is expected to witness a growth of 6 to 7 per cent in production in 2009–2010.
- OEM exports are likely to grow by 5 per cent in 2010–11, along with a 8 per cent growth in the replacement demand.

![Segment-wise offtake for auto components — 2008–09](chart)

### Segment-wise offtake for auto components — 2008–09

- **Cars and utility vehicles**: 53.0%
- **Two wheelers**: 22.0%
- **Commercial vehicles**: 17.6%
- **Tractors**: 6.0%
- **Three wheelers**: 1.5%

*Source: ACMA, Annual Report 2008–09*
Domestic automobile production is expected to grow in 2010–11, resulting in a 13 per cent rise in OEM demand in the auto components industry.
Growth drivers … (1/2)

- India generates about 0.4 million engineering graduates every year.
- The cost of entry-level engineers is as low as US$ 8,000 per year.
- India accounts for 26 per cent of the world’s Engineering Service Outsourcing (ESO) and Business Process Outsourcing (BPO) talent.

- Nine Indian component manufacturers have won the Deming prize for quality.
- There have been 89 to 92 per cent ‘first-time right’ designs by Indian companies, which is much above the world average.
- There has been a cost reduction of 25 to 30 per cent in production in the domestic market as compared to costs overseas.
- India offers low labour costs.

- There is rising per capita income and changing demographic distribution.
- There is greater consumer awareness of and linkage to global auto trends.
- Vehicle production grew to 11.17 million in 2008–09.
- Global OEMs are entering India to set up their manufacturing base.

- There has been a cost reduction of 25 to 30 per cent in production in the domestic market as compared to costs overseas.
- India offers low labour costs.

- Automotive Mission Plan 2016 is being envisaged to promote growth.
- De-regulation and policy initiatives such as lower excise duties, realisation of VAT, etc., have been implemented to boost demand.
- FDI up to 100 per cent is permitted through the automatic route for manufacturers of automobiles and components.
Growth drivers … (2/2)

Technological shifts in the Indian automobile industry have been the key driver of growth and innovation in the auto components industry in the country.

• Transition of emission norms from Euro I in 2000 to Euro IV and Bharat Stage IV in 2010, have made Indian automobiles more compliant with environmental norms.

• Concurrent design, styling and frugal engineering, showcased in Reva, India’s first electric car in 2001 and the TATA Nano in 2009 demonstrated India’s ability to innovate and design.

• By 2012, India is expected to foresee an increased deployment of IT enabled automobile support systems such as global positioning system (GPS), anti braking system (ABS), automatic speech recognition (ASR) and safety systems promoting innovation in the auto component industry.
### Key trends

- **India set to become a global components sourcing hub**
  - Major global OEMs are planning to make India a component sourcing hub for their global operations.
  - Several global Tier 1 suppliers have also announced their plans to increase procurement from their Indian subsidiaries.
  - India is also emerging as a sourcing hub for engine components, with OEMs increasingly setting up engine manufacturing units in the country.

- **Domestic component manufacturers adopting inorganic route to expand their global footprint**
  - Domestic players are acquiring global companies in order to gain access to the latest technology, expand client base and diversify revenue streams.
  - Players, including Amtek Auto and Bharat Forge, have adopted a dual-shore manufacturing model, using overseas facilities to carry out product design and manufacture of high-value components, while outsourcing their labour-intensive operations to their low-cost facilities in India.

- **Improvement in product-development capabilities**
  - High quality designs are being produced at low costs.
  - Increased investments in R&D operations and laboratories, which are being set up to carry out activities such as analysis and simulation, engineering animations, etc.
  - The growth of global OEM sourcing from India and increased indigenisation of global OEMs is making the country a preferred manufacturing base.

- **Rise in auto financing activity in India**
  - There are more than 35 financers in the market today, with the State Bank of India being the leader.
  - Easy availability of finance has been one of the most important growth drivers of the auto industry from 2003 to 2009.
  - Reduction in interest rates by Reserve Bank of India is expected to further augment the growth of the industry.
## Key players — Indian ... (1/2)

<table>
<thead>
<tr>
<th>Company</th>
<th>Revenue (US$ million)</th>
<th>Component category</th>
<th>Manufacturing locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bharat Forge Ltd</td>
<td>1,008</td>
<td>Crankshafts, front axle beams and steering knuckles (forged and machined), connecting rods, camshafts and rocker arms (forged)</td>
<td>Maharashtra (4)</td>
</tr>
<tr>
<td>Sumi Motherson Group</td>
<td>850</td>
<td>Automotive wire manufacturers, automotive rear view mirrors, injection-moulding tools, sunroofs, vehicle air conditioning systems, lighting systems, cabins for off-highway vehicles, cutting tools and thin film coating metals</td>
<td>Kandla (1), Nashik (1), Pune (1), Bengaluru (1), Noida and NCR region (1), Chennai (1), Puducherry (1)</td>
</tr>
<tr>
<td>Lucas-TVS Ltd</td>
<td>NA</td>
<td>Auto-electrical equipment</td>
<td>Chennai (1), Puducherry (1), Haryana (1)</td>
</tr>
<tr>
<td>Rico Auto</td>
<td>285</td>
<td>High-precision fully machined aluminum and ferrous components and assemblies</td>
<td>Haryana (2), Ludhiana (1)</td>
</tr>
<tr>
<td>Rane Group</td>
<td>273</td>
<td>Manual steering and suspension systems, engine valves, tappet, brake linings, disc pads, clutch facings, brake blocks and pads, power steering systems, seat belt systems, etc.</td>
<td>Bengaluru (1), Mysore (1), Tamil Nadu (3), Hyderabad (1), Haryana (1), Uttarakhand (1)</td>
</tr>
</tbody>
</table>
## Key players — Indian … (2/2)

<table>
<thead>
<tr>
<th>Company</th>
<th>Revenue (US$ million)</th>
<th>Component category</th>
<th>Manufacturing locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shriram Piston and Rings Ltd</td>
<td>133</td>
<td>Automobile pistons, piston rings, engine valves and piston pins</td>
<td>Ghaziabad (1), New Delhi (1)</td>
</tr>
<tr>
<td>Pricol Ltd</td>
<td>128</td>
<td>Auto-electrical equipment</td>
<td>Coimbatore (3), Gurgaon (1), Uttarakhand (2), Pune (1)</td>
</tr>
<tr>
<td>Sundaram Fasteners Ltd</td>
<td>69</td>
<td>High-tensile fasteners, powder metal components, hot forged components, radiator caps, automotive pumps, gear shifters, gears and couplings, hubs and shafts, tappets and iron powder</td>
<td>Chennai (4), Hosur (3)</td>
</tr>
<tr>
<td>Sona Koyo Steering Systems Ltd</td>
<td>42</td>
<td>Steering systems</td>
<td>Gurgaon (1), Chennai, (1), Haryana (1)</td>
</tr>
<tr>
<td>Minda Industries Ltd</td>
<td>23</td>
<td>Auto-electrical components</td>
<td>Baddi (1), Haryana (2), New Delhi (1), Aurangabad (1), Pune (1), Uttar Pradesh (1), Hosur (1), Mysore (1)</td>
</tr>
</tbody>
</table>

Sources: www.acmainfo.com, members database, 2009; industry sources
Note: This is an indicative list
### Key players — international

<table>
<thead>
<tr>
<th>Company</th>
<th>Revenue (US$ billion)</th>
<th>Component category</th>
<th>Manufacturing locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bosch India</td>
<td>2.180</td>
<td>Auto electrical, belts, braking systems and pads, clutch plates gear pumps, etc.</td>
<td>Bengaluru (2), Nashik (1), Jaipur (1) and Goa (1)</td>
</tr>
<tr>
<td>Denso India</td>
<td>0.768</td>
<td>Auto-electrical components, alternators, starters, wiper motors, engine cooling fans, washer pumps, etc.</td>
<td>Bengaluru (1), Noida (1) and Haryana (1)</td>
</tr>
<tr>
<td>Continental AG</td>
<td>0.38</td>
<td>Chassis, powertrain and interior equipments</td>
<td>Bengaluru (1), Kolkata (1), Chennai, (1) Delhi (1), Gurgaon (2), Pune (1)</td>
</tr>
<tr>
<td>Magna</td>
<td>0.237</td>
<td>Automotive interior, seating, metal body and chassis, electronic equipments, powertrain components etc.</td>
<td>Pune (1)</td>
</tr>
<tr>
<td>Cummins</td>
<td>0.107</td>
<td>Engines and components</td>
<td>Pune (1) and Daman (1)</td>
</tr>
<tr>
<td>Visteon Automotive Systems</td>
<td>0.167</td>
<td>AC systems, alternators, panel instrument assembly and plastic components</td>
<td>Pune (2), Rajasthan (1) and Chennai (1)</td>
</tr>
<tr>
<td>Delphi</td>
<td>0.025</td>
<td>Electronic and safety systems, evaporative emissions canisters, air conditioning systems, oil filters, radiators, etc.</td>
<td>Bengaluru (1), Gurgaon (1), Manesar (1)</td>
</tr>
<tr>
<td>Same Deutz-Fahr</td>
<td>0.007</td>
<td>Tractors, engines and agricultural machinery and components</td>
<td>Tamil Nadu (1)</td>
</tr>
<tr>
<td>ArvinMeritor</td>
<td>0.31</td>
<td>Engines and components</td>
<td>Maharashtra (1), Bengaluru (1), Mysore (1)</td>
</tr>
<tr>
<td>Valeo</td>
<td>NA</td>
<td>Wiper systems, clutches, lighting and signaling, braking, ignition, etc.</td>
<td>Tamil Nadu (3), Pune (2)</td>
</tr>
</tbody>
</table>

Sources: www.acmainfo.com, members database, 2009; industry sources
Note: This is an indicative list
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Industry infrastructure — Special Economic Zones (SEZs) … (1/2)

<table>
<thead>
<tr>
<th>Name and location</th>
<th>No of companies</th>
<th>Exports (2007–08)</th>
<th>Contact details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mahindra City SEZ (auto ancillary), Chennai, Tamil Nadu</td>
<td>8</td>
<td>US$ 8.7 million (INR 415.5 million)</td>
<td>Mahindra World City, New Chennai Administrative Block, Central Avenue, Natham Sub Post, Chengalpattu Taluk, Kancheepuram, Tamil Nadu, India.</td>
</tr>
</tbody>
</table>

Source: www.sezindia.nic.in, “List of functional SEZs” as on 4th August, 2009
Industry infrastructure — Special Economic Zones (SEZs) … (2/2)

Distribution of auto component SEZs (2008–09)

Source: www.sezindia.nic.in, “Sectorwise distribution of SEZs approved under the SEZ Act, 2005” as on 19th June, 2009
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Investments … (1/2)

  - India’s share in the global auto components market is expected to grow from 0.9 per cent in 2008–09 to 2.5 per cent by 2015.
  - Auto component production worth US$ 20 billion to US$ 25 billion is expected to be outsourced to India by 2015.

- The auto component industry has recorded a total investment of US$ 7.7 billion in 2008–09.

- According to the Investment Commission, India’s share in the global auto components sourcing market is expected to grow from 1 per cent in 2008–09 to 3 to 4 per cent in 2015.

- Manufacturing costs of casting and forging in India are 25 to 30 per cent lower than in western countries.

Investments in Indian auto components industry

Source: ACMA, Annual Report 2008–09
Major foreign investments

• Swiss auto clamps maker, the Oeitker Group, has launched the first phase of its manufacturing initiative in India with an investment of US$ 12.58 million.
• French tyre maker, Michelin, plans to set up a US$ 851.5 million greenfield project near Chennai.
• German auto parts maker, Robert Bosch, plan to invest US$ 201.4 million in its Indian subsidiaries over the next two years.
• Delphi Corporation is planning to invest US$ 51 million near Chennai to set up an electronics manufacturing facility.
• Swedish automotive component maker, SKF, plans to invest US$ 30 million in a new ball bearing manufacturing plant at Haridwar.
• Toyota aims to set up a gearbox manufacturing plant in India to serve the Asian market.

Major domestic investments

• An auto park, with investments worth more than US$ 409.3 million, is proposed to be set up near Hyderabad.
• JBM Auto is planning to invest about US$ 88.74 million to set up three greenfield plants over the next two years.
• N K Minda Group plans to invest up to US$ 216.45 million to expand its current business and acquisitions in overseas markets.
• Hero Motors proposes to invest US$ 19.84 million, in association with Austrian firm, BRP Powertrain, to manufacture automotive transmission systems in India.
• Rico Auto plans to invest US$ 23 million to expand its capacity in the country.

Source: Industry sources
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Policy and regulatory framework … (1/2)

The National Strategy for Manufacturing, drawn up by the National Manufacturing Competitiveness Council (NMCC), has identified the automobile and auto components sector as one of the key areas for priority action. The government has undertaken a number of initiatives to promote growth in this sector.

Auto Policy 2002

• The policy emphasises on low emission fuel auto technologies and availability of appropriate auto fuels to take auto manufacturing to a self-sustaining level.

• Foreign equity investment up to 100 per cent for manufacturing of auto components is permitted through the automatic route. Manufacturing and imports in this sector are free from licencing and approvals.

Automotive Mission Plan (AMP) 2006–2016

• The AMP 2006–2016 aims to make India a preferred destination for designing and manufacturing automobile and automotive components.

• It proposes to increase the output to US$ 145 billion and account for more than 10 per cent of the country’s GDP.

• The plan envisages additional employment for 25 million people by 2016.
Policy and regulatory framework … (2/2)

**National Automotive Testing and R&D Infrastructure Project (NATRiP)**

- The government aims to set up NATRiP at a total cost of US$ 388.5 million, to enable the industry to adopt and implement global standards of vehicular safety, emission and performance standards.

- NATRiP will focus on enhancing the industry’s competitiveness by providing low-cost manufacturing and product development.
Policy and regulatory framework … (1/2)

**Department of Heavy Industries and Public Enterprise**

- Initiatives such as lowering excise duty on small cars, extension of 150 per cent weighted deduction on R&D expenditure, increased budgetary allocation for R&D activities and lowering of the duty regime have been undertaken to further strengthen the capability of the sector.

- The department has also suggested the creation of a fund, worth US$ 0.2 billion (INR 10 billion), to modernise the auto components industry by providing an interest subsidy on loans and the purchase of new plants and equipment.

**De-reservation of items for small scale sector**

- This will include extension of deemed export benefits to intermediate suppliers of auto components against the duty free replenishment (DFR) scheme in the government’s EXIM Policy for 2004–05.

- It is aimed at benefiting all auto component manufacturers to enable them to avail of duty drawbacks, refund of terminal excise duties and an advance licence for duty free import of input.
Other incentives

• These include reduction of excise duty on smaller passenger vehicles and reduction in the duty levied on raw material to 5 to 7.5 per cent from the earlier 10 per cent.

• Emission norms and environmental standards, in line with those of developed world, and enforcement of Euro IV and Bharat Stage IV emission norms, have fostered the growth of the Indian auto components industry.
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Opportunities — India an emerging R&D destination … (1/2)

- The NATRiP, set up by the Indian Government with an investment of US$ 388.5 million, is expected to strengthen the country's automotive R&D infrastructure.

- Government policies, including a weighted tax deduction of up to 150 per cent for in-house R&D activities in the country, have given a boost to investment in R&D.

Establishment of growth centres in India by international players — growth drivers
- Increasing production costs, shorter product life cycles and the growing trend of geographic expansions to derisk dependence on a single market, are factors driving outsourcing.

- India offers the availability of a low-cost, skilled and educated workforce, proven product development capabilities and location advantage due to its proximity to emerging markets.
Opportunities — India an emerging R&D destination … (2/2)

<table>
<thead>
<tr>
<th>R&amp;D plans of foreign players</th>
<th>R&amp;D plans in India</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hyundai</strong></td>
<td>Hyundai plans to make its Indian R&amp;D centre a hub for the development of small cars such as the i10 and the i20 for global markets, with an investment of US$ 50 million.</td>
</tr>
<tr>
<td><strong>General Motors</strong></td>
<td>General Motor seeks to set up an R&amp;D centre in Bengaluru, the first outside the US, with an investment of more than US$21 million. The centre will cater to the needs of countries in the Asia-Pacific region.</td>
</tr>
<tr>
<td><strong>Volkswagen</strong></td>
<td>Volkswagen plans to set up its global R&amp;D centre in India and produce vehicles for the global market in five to six years.</td>
</tr>
<tr>
<td><strong>Bosch</strong></td>
<td>Bosch currently has an R&amp;D facility at Bengaluru, its largest technology centre outside Germany. It plans to set up another centre in the country and make India its technology hub.</td>
</tr>
</tbody>
</table>

Source: Ernst & Young analysis
Opportunities — India an emerging R&D destination … (1/2)

<table>
<thead>
<tr>
<th>NATRiP centre — north India</th>
<th>NATRiP centre — east India</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rae Bareilly centre</strong></td>
<td><strong>Silchar centre, Assam</strong></td>
</tr>
<tr>
<td>• Services to agri-tractors, off-road vehicles and a driver training centre</td>
<td>• Research, design, development and testing of vehicles</td>
</tr>
<tr>
<td>• Centre of excellence for accident data analysis</td>
<td>• Centre of excellence for photometry, electromagnetic compatibility (EMC) and test tracks</td>
</tr>
<tr>
<td>• Scheduled completion in August 2010</td>
<td>• Centre completed</td>
</tr>
<tr>
<td><strong>International Centre for Automotive Technology (iCAT), Manesar</strong></td>
<td></td>
</tr>
<tr>
<td>• Services to all vehicle categories</td>
<td></td>
</tr>
<tr>
<td>• Centre of excellence for component development, noise vibration and harshness (NVH) testing</td>
<td></td>
</tr>
</tbody>
</table>
Opportunities — India an emerging R&D destination … (2/2)

NATRiP centre — west India

<table>
<thead>
<tr>
<th>Location</th>
<th>Services</th>
</tr>
</thead>
</table>
| Vehicles Research & Development Establishment (VRDE), Ahmednagar | • Research, design, development and testing of vehicles  
• Centre of excellence for photometry, electromagnetic compatibility (EMC) and test tracks |
| Indore — National Automotive Test Tracks (NATRAX) | • Complete testing facilities for all vehicle categories  
• Centre of excellence for vehicle dynamics and tyre development  
• Scheduled completion in December 2010 |
| Automotive Research Association of India (ARAI), Pune | • Services for all vehicle categories  
• Centre of excellence for power train development and materials |

NATRiP centre — south India

<table>
<thead>
<tr>
<th>Location</th>
<th>Services</th>
</tr>
</thead>
</table>
| Chennai centre, Tamil Nadu | • Complete homologation services for all vehicle categories  
• Centre of excellence for infotronics, EMC and passive safety |
Opportunities — India as a manufacturing hub … (1/2)

• There is an upsurge in the number of global players establishing their operations in India since 100 per cent foreign equity investments has been allowed by the government.

• Some companies are sourcing components from local suppliers, while others are setting up their own manufacturing units or opting for a mix of both.

• Components made in India and China cost 10–15 per cent lower than those made in Europe and the US. European manufacturers are likely to enjoy a cost advantage of 20–25 per cent and Latin American manufacturers nearly 10 per cent in India.

• More than 100 projects have been announced in the auto components industry, with investments worth more than US$ 1.9 billion, during the last two years.

• Currently, small cars are the fore-runners in the completely built units (CBUs) sourcing space in India and have low manufacturing costs.
## Opportunities — India as a manufacturing hub … (2/2)

<table>
<thead>
<tr>
<th>Company</th>
<th>Sourcing plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyundai</td>
<td>Plans to source gasoline and diesel engines from its Indian manufacturing operations for its domestic and global operations</td>
</tr>
</tbody>
</table>
| Ford       | • Seeks to expand the engine-production capacity at its Chennai plant to 250,000 per annum by 2010  
             | • Plans to make India its manufacturing hub for engines for Asia-Pacific and Africa |
| Volkswagen | • Plans to increase local sourcing to 70 per cent  
             | • Plans to source components worth US$ 1.3 billion by 2010 |
| Honda      | • Plans to set up a powertrain facility project in Rajasthan, with an investment of US$ 115 million  
             | • Has an export base for certain key engine components |

Source: Ernst & Young analysis
Opportunities — introduction of new electronic features

- Introduction of new electronic features by OEMs to provide impetus to the growth of auto component manufacturers

- Increased use of GPS services
- Increased use of safety components
- Increased use of simulation technology
- Increased use of informatics and telematics
- Introduction of digital drive assistance system
- Increased use of ABS feature by OEMs
- Increased use of car infotainment system
- Portable navigation
- Tire pressure monitoring system
- Increased use of CD/MP3 players
- Euro IV and Bharat Stage IV emission norms

OPPORTUNITIES
Auto Components | May 2010

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Industry associations

Automotive Component Manufacturers Association of India (ACMA)

6th Floor, The Capital Court,
Olof Palme Marg, Munirka,
New Delhi – 110 067, India
Phone: 91-11-2616 0315, 2617 5873, 2618 4479
Fax: 91-11-2616 0317
E-mail: acma@acma.in; acma@vsnl.com
Note

Wherever applicable, numbers in the report have been rounded off to the nearest whole number.
Conversion rate used: US$ 1 = INR 48
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