

# **POWDER METALLURGY INDUSTRY IN INDIA**

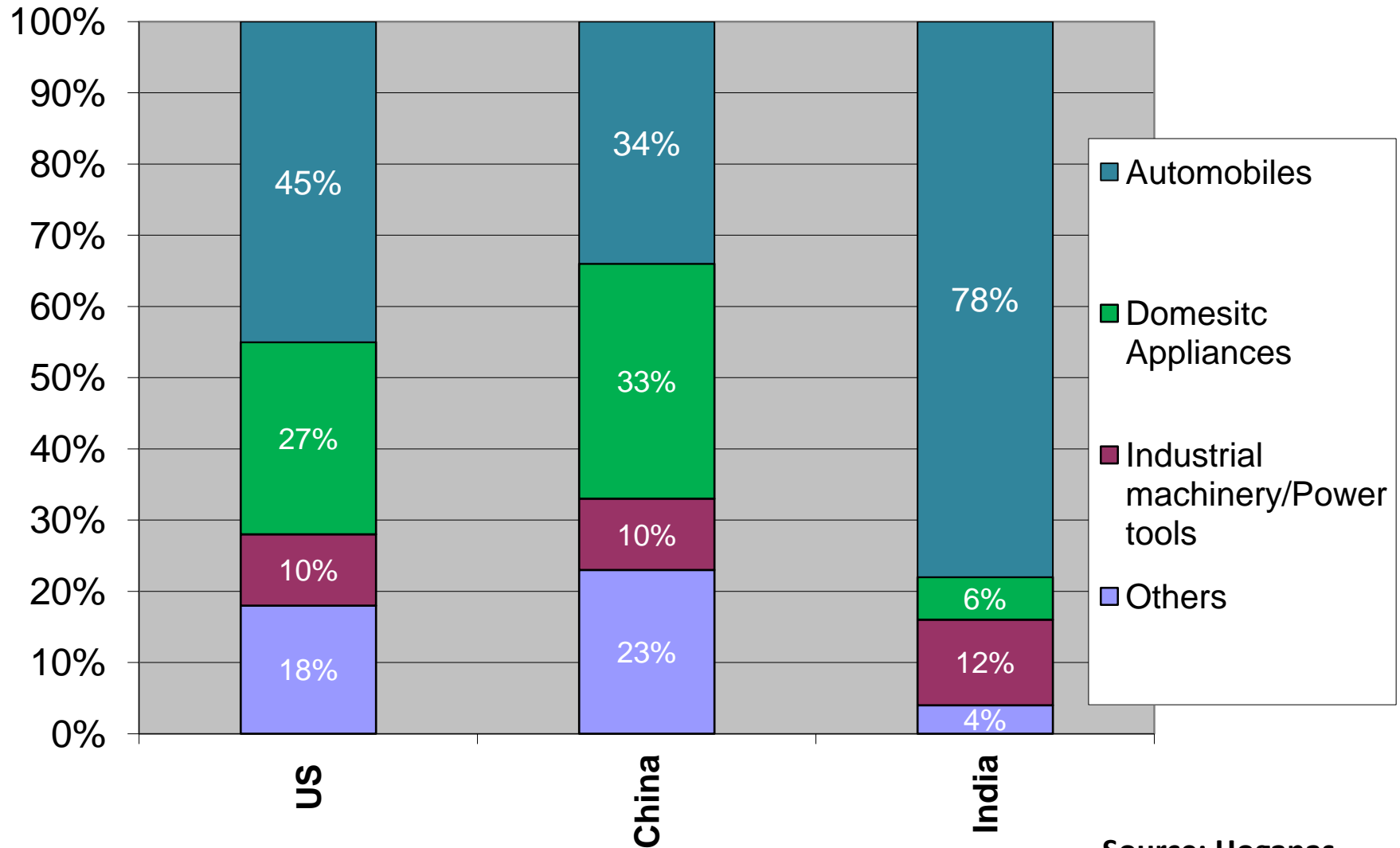
**N. Gopinath**

**Vice President**

**Powder Metallurgy Association of India**

# Application Ratio of P/M Parts in Automobile System

**PMA!**



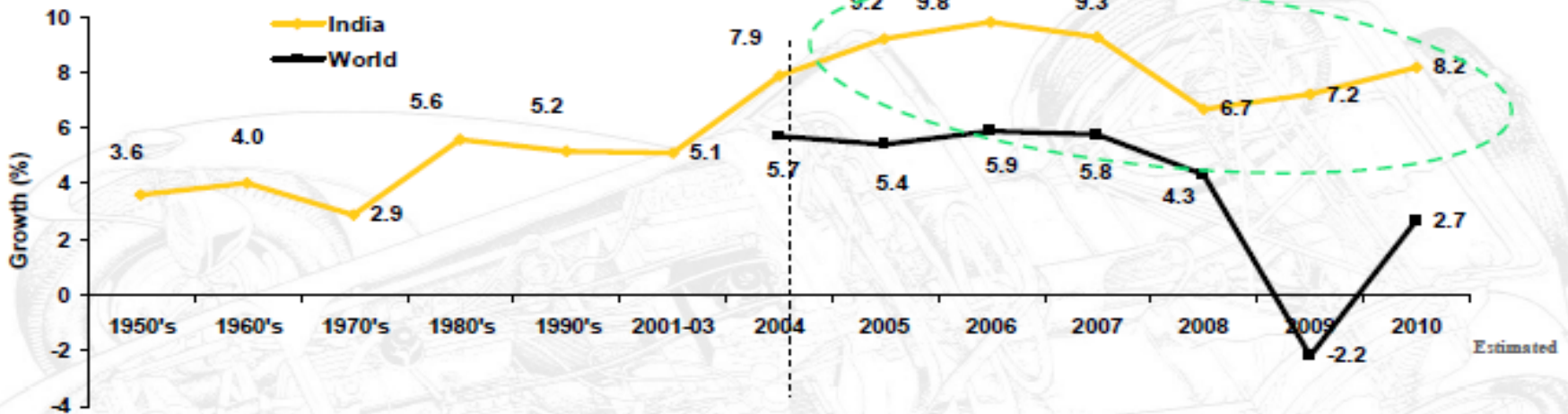
Source: Hoganas

# The Current Scenario

- India is a fast growing automotive market. 3 million new cars were sold in India in 2010.
- Double-digit growth forecast.
- India is the 7<sup>th</sup> largest automotive manufacturer in the world.

# The Indian economy poised for Growth...

**Real GDP growth rate: India vs. World**

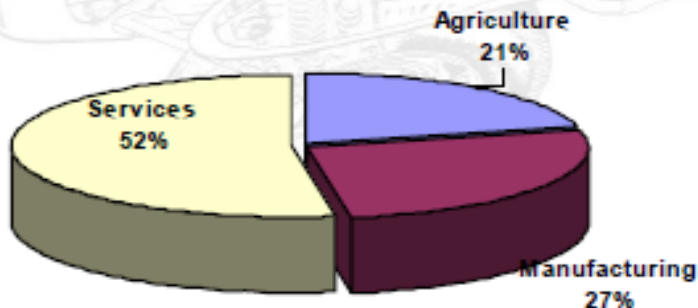


Slow growing closed economy

Fast growing open economy

## Transformation

### Composition of GDP



Average Real GDP growth in last 5 year was 8.5%.

GDP Per Capita is US \$ 1018

Projected GDP growth in 2010-11 is 8.2%

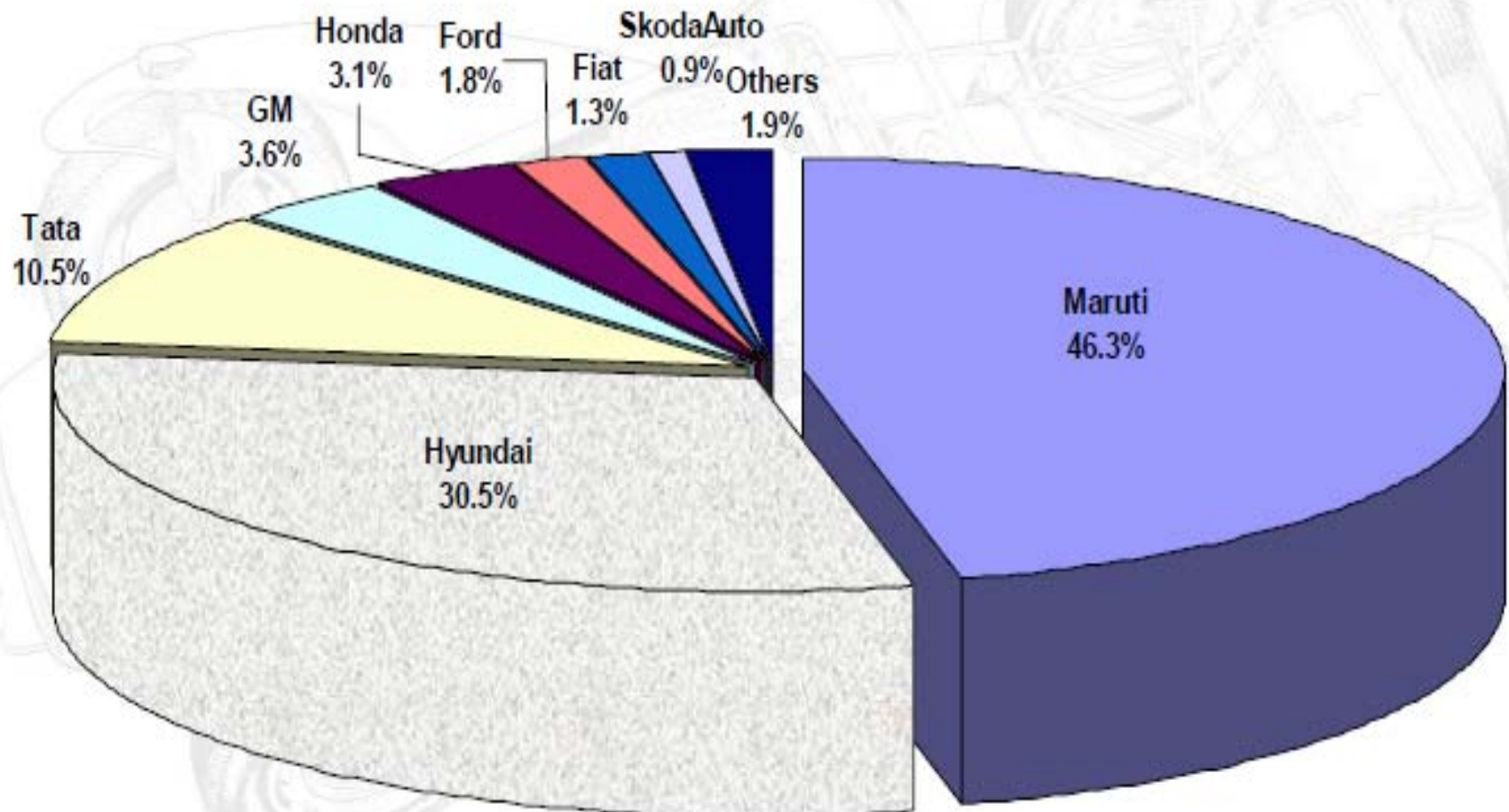
# Demand Drivers and their Impact...

Short Term	Long Term
Infrastructure development (US \$750 billion investment between 2007 – 2015*)	According to McKinsey, the middle class will grow from 50 million to 550 million by 2025
Low penetration rate of Cars (8/1000)	Continuously Improving Quality resulting in Export of Automobiles and Auto components
Easy access to capital although interest rate is high	Low cost of Skilled Manpower & Rapidly growing Design Capability

# Market Share- Passenger Cars

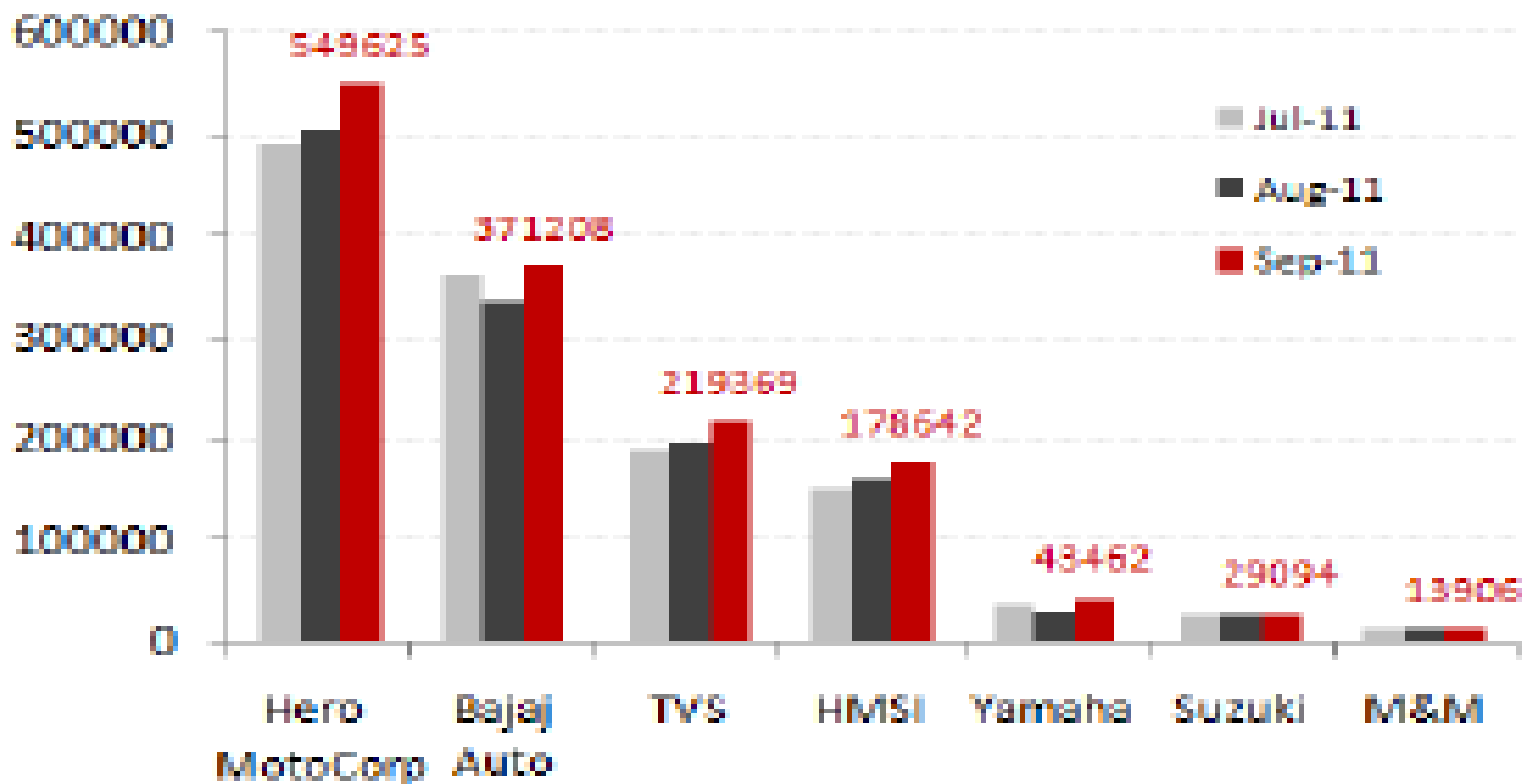
**PMAI**

2009-10(Apl-Mar)



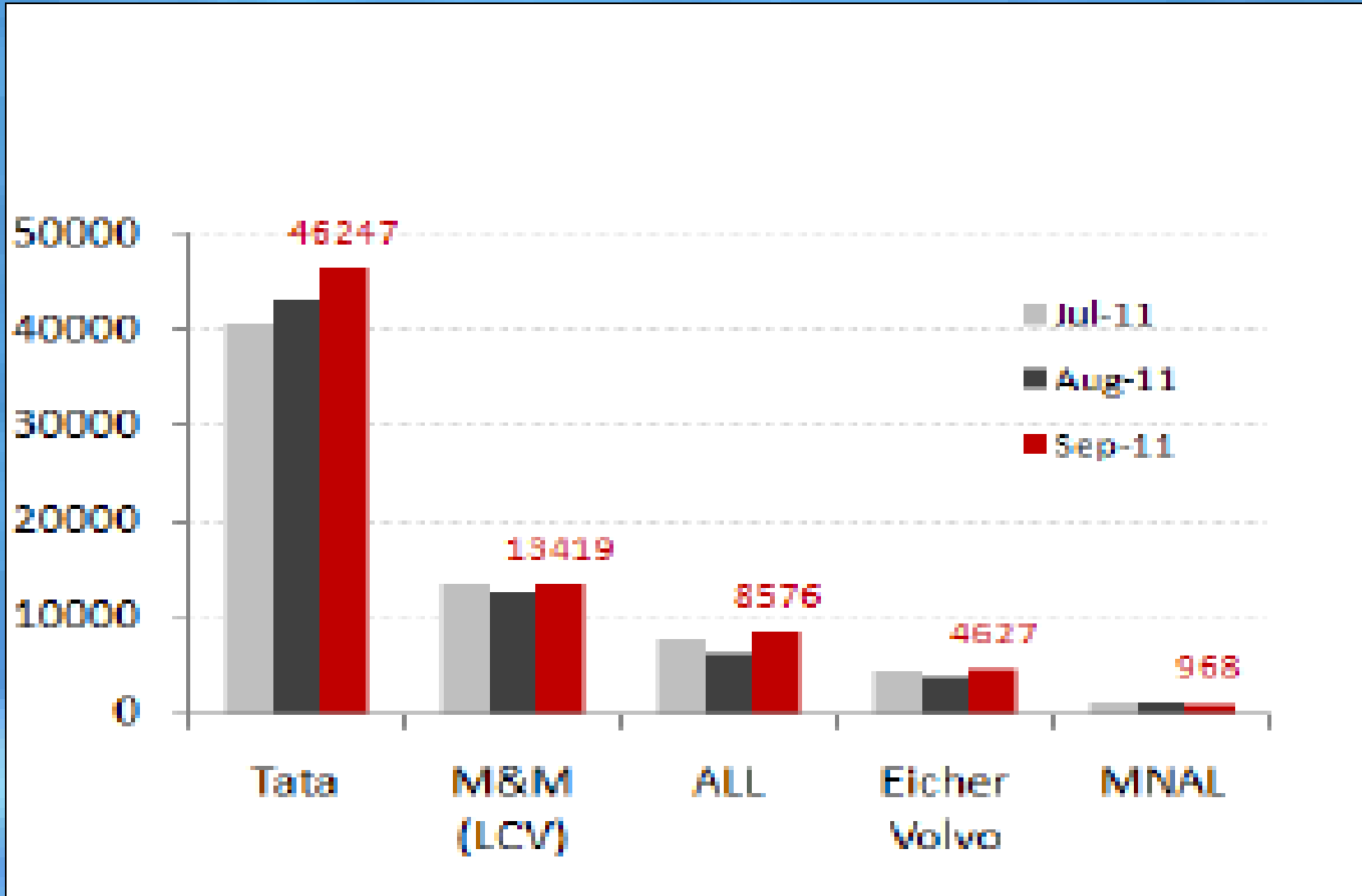
# MARKET SHARE SCOOTERS & MOBILKES

**PMA!**



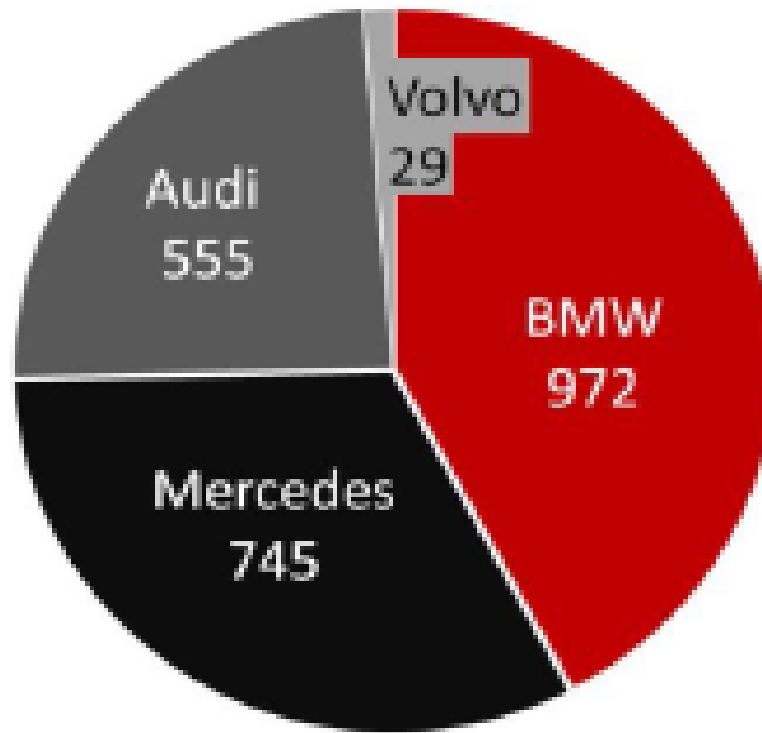
# MARKET SHARE COMMERCIAL VECHILES

*PMA!*

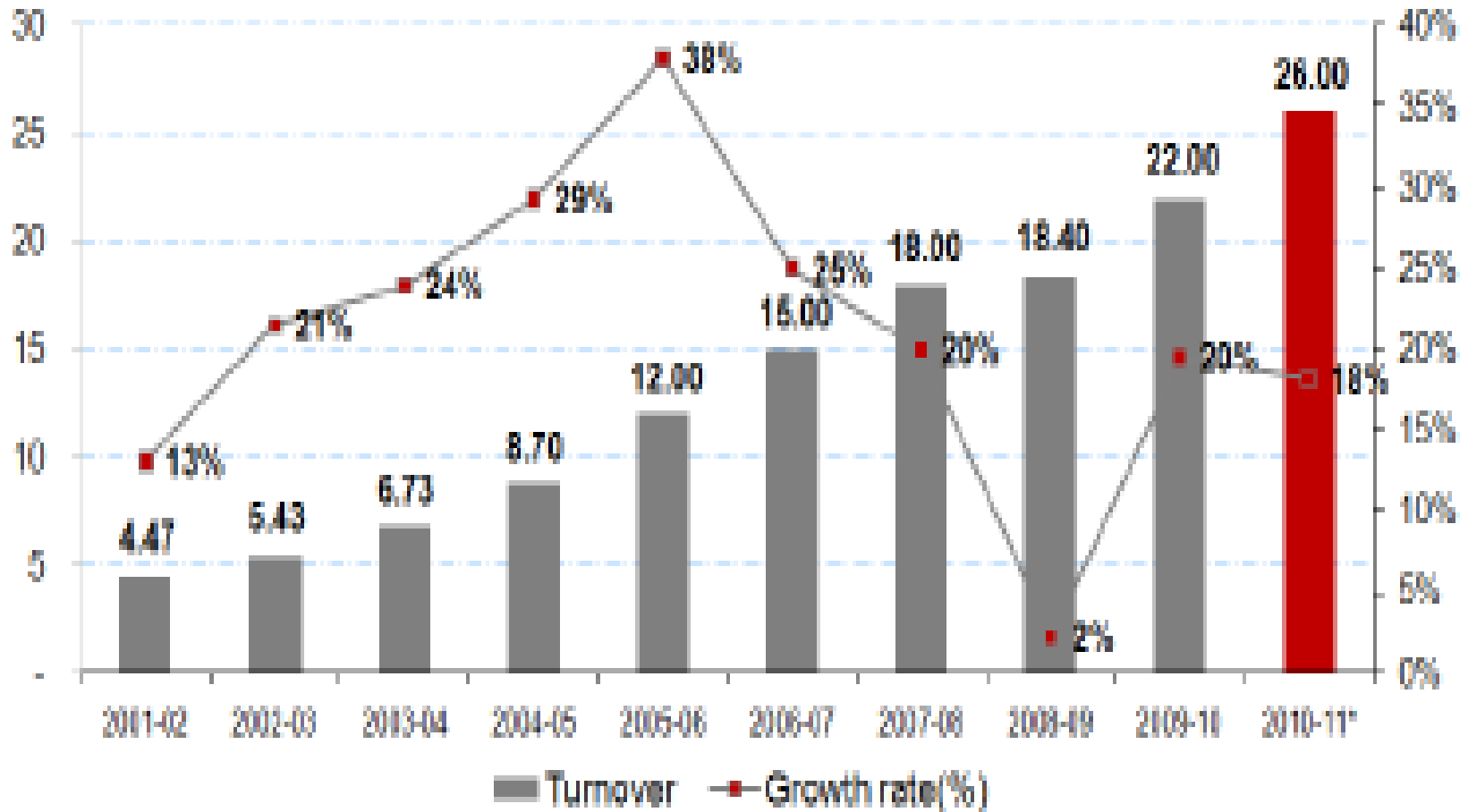




# MARKET SHARE LUXURY CARS



# Auto component Industry Production (in USD Billion)



# “INDIA” – A Global hub for Compact Cars

PMAI

## **Maruti Suzuki :**

Capacity 250,000

Investment US\$ 380 million.

## **Hyundai :**

Capacity Increased to 600,000

Investment US\$ 1 billion

## **Tata Motors :**

Capacity 500,000

Investment US\$ 240 million.

## **Toyota :**

Capacity 200,000

Investment US\$ 310 million.

## **Ford :**

Capacity 200,000

Investment US\$ 500 million.

## **General Motors :**

Capacity 140,000

Investment US\$ 650 million.

## **Nissan-Renault :**

Capacity 400,000

Investment US\$ 1 Billion

## **VW :**

Capacity 110,000

Investment US\$ 750 million.

## **Honda :**

Capacity 60,000

Investment US\$ 250 million.

**Increasing Local Content – Creating Global Competence**

# HISTORY OF PM IN INDIA

- Powder Metallurgy activities started in India in 1950 with Siemetals Ltd. Mumbai & Flexicons Ltd., Udhana
- Production of porous components.
- Academic and research backing from BARC Indian Institute of Technology Bombay & Defence Metallurgical Research Laboratory.

# PM INDUSTRY DEVELOPMENT

- Hard metal production started by Sandvik Asia Ltd., Indian Tool Manufacturers Ltd., India Hard Metals Ltd.,
- Powder Metals & Alloys also started the production of electrical contacts in 1958 – 66.
- Mahindra Sintered Products started with porous components, which was later taken over by GKN Sinter Metals to manufacture automotive components.
- Others such as Widia India, Bengaluru, Goa Sintered Products, Sundaram Fasteners, Hosur, expanded the industrial PM activities in India late 70's.

# Iron powder manufacturing in India

Volume in MT	PM	Welding	Friction	Others	Total
<b>Total potential Fe Powder</b>	<b>29,590</b>	<b>7,300</b>	<b>1,700</b>	<b>4,450</b>	<b>43,040</b>
Hoganas	16,000	4,500	1,700	3,000	25,200
Sundaram Fasteners	5,400	550	-	450	6,400
Others	2,500	800	-	1,000	4,300
HC	350	1,200	-	-	1,550
QMP	300	-	-	-	300
JFE		250		-	250
<b>Comp. Import</b>	<b>5,040</b>			-	<b>5,040</b>

\*Growing 8% - 10% YoY

PMAI

# Powder Metallurgy Association of India

Founded in 1973

Its main objective is to provide a platform for exchange of ideas and knowledge and for professional networking

# ACTIVITIES

## Publications

- Quarterly Newsletters,
  - Annual Transactions
- And organizes various activities such as:
    - Annual Technical Meetings,
    - Annual International Conferences
    - The Powder Metallurgy Short Course (PMSC) .
    - Powder Metallurgy Plant Practice (PMP2)



**PMA!**

# THE FIRST GATHERING - 1973



## FORMATION MEETING OF THE POWDER METALLURGY ASSOCIATION OF INDIA

30 October 1973

Sitting From L - R: Mr. P. K. Mirchandani, Dr. R. D. Bhargava, Dr. S. N. Anantanarayanan, Capt. P. S. Mahindra, Dr. R. V. Tamhankar, Mr. R. N. Dutta, Dr. N. K. Kondal Rao, Dr. M. K. Mukerjee  
Standing 1st Row: Mr. S. K. Agarwal, Mr. R. B. Subramanyam, Mr. P. K. Chatterjee, Dr. V. K. Murthy, Mr. H. c. Katiar, Mr. P. Pande, Dr. S. L. Jain, Dr. R. Srinivasan, Mr. B. M. Kataria, Mr. A. K. Savale,  
Dr. G. S. Upadhyaya, Mr. K. Dhoka Prakash, Mr. V. R. Subramanyam, Mr. S. L. N. Acharyalu, Mr. I. N. Bhatia, Mr. M. L. N. Rao, Dr. R. D. Naidu, Mr. N. T. George, Mr. A. K. Taneja  
Second Row: Mr. N. C. Sethi, Mr. F. Poonawala, Dr. S. R. Reddy, Mr. R. J. R. Mohan Rao, Mr. N. Maitra, Mr. R. P. Khanna, Mr. G. P. Sanghi, Mr. S. S. Thonar, Prof. Sanjay Basu,  
Prof. P. G. Mukunda, Mr. Dipak Chakrabarti, Mr. K. K. Sharma, Mr. R. L. Saha, Mr. G. M. Rajhans

*PMA!*

**POWDER METALLURGY  
SHORT COURSE  
ON  
PM FUNDAMENTALS  
AND  
TECHNOLOGY DEVELOPMENTS  
FOR MANAGERS**

# FIRST COURSE, 1976

INAUGURATION OF PMAI SHORT TERM COURSE  
ON POWDER METALLURGY AT I.I.T., Bombay'  
29<sup>th</sup>.Nov. to 10<sup>th</sup>.Dec. 1976.




L to R -Mr.B.S.Boneham, Managing Director, Sndvik Asia Ltd., Prof.G.S.Tendolk  
Prof.A.K.De, Director, I.I.T., Bombay & Prof.P.Ramakrishnan



*Participants of the P/M Short Term Course with the Course Director*

# PMSC-10



  
**POWDER METALLURGY  
SHORT TERM COURSE**  
**PMSC - 2010**

so VENUE 08  
Seminar Hall - I,  
Dept. of Metallurgical Engineering  
College of Engineering,  
Pune - 411005

Department Of  
**Metallurgy And Material Science**  
धातुशास्त्र आणि पदार्थ विज्ञान विभाग  
COLLEGE OF ENGINEERING, PUNE  
Pune - 411005  
PHONE : 020-25507261, FAX : 020-25507299 www.coep.org.in ESTD. 1948

  
**PMSC - 2010**  
We thankfully acknowledge  
the generous support of

  
**FLUIDTHERM  
Technology**

so VENUE 08  
Seminar Hall - I,  
Dept. of Metallurgical Engineering  
College of Engineering,  
Pune - 411005



*PMA!*

**TRAINING COURSE**  
**POWDER METALLURGY**  
**PLANT PRACTICE**  
**FOR FACTORY SUPERVISORS**

# PM Plant Practice 07



# THE MAJOR ANNUAL EVENT INTERNATIONAL CONFERENCES

PMAI



**PMA!**

# TRADE EXHIBITION





# AWARDS

**G. S .Tendolkar 'Best Paper Award'  
for work on Sintering Theory and Practice**

**'PMAI Best Student Paper award'  
for industrial research work**

**Best PM Product Award  
for the best products manufactured during the year**

PMA!

**THANK YOU**