

## INDUSTRIAL POLICY REGIMES IN INDIA & IMPACT ON AUTOMOBILE FIRM ERUDITION

**PRATIBHA JAGATAP**

Assistant Professor  
Tilak Maharashtra University  
Pune (MS) INDIA

**PRAVIN THORAT**

Assistant Professor  
Dr. D. Y. Patil University  
Pune (MS) INDIA

### ABSTRACT

*This study analyzes the impact of government policy regime on the erudition and capability acquisition of firms over time. Through a case study analysis of the Indian automotive industry, the study develops three hypotheses relating policy regimes with erudition strategies of firms. The study tests these hypotheses through a model of erudition using a panel data for the Indian automotive industry. It finds that speed of knowledge assimilation is more important in the liberalized policy regime vis-à-vis protection when knowledge assimilation per se was a more important economic goal.*

**Keywords:** Growth, erudition, Capabilities, Industrial Policy, Automobile industry, Asia, India.

### INTRODUCTION

It is well recognized in industrial organization theory and empirical literature that erudition as a capability is a major factor in explaining inter-firm performance differences. The success of newly industrialized countries. It is more than acquiring the technological blue prints and involves a erudition process. This is more so in the context of late comers to industrialization, where governments have actively pursued industrial regulation and protection to allow firms to grow and learn to compete. Therefore, it is an interesting research question to ask: how does regulation impact firm erudition and growth? This paper analyzes the role played by government policies in transforming the erudition abilities of the firms and the markets with reference to the Indian automobile industry.

### Protection: 1970-84 —Macro Economic Environment

During the protection phase, the industry's output was controlled by licensing production capacity and restricting output to single models so as to minimize the foreign exchange outflows due to the imports of components. Industrial policy did not allow capital imports or

foreign direct investment (FDI). Further, complicated rules on imports made access to technology difficult and slowed down the erudition process of firms.

## Market Structure and Technology

The market structure was concentrated with entry barriers and restrictions to creating capacities and adding new product lines. While General Motors and Ford shut down their operations in India, business groups like the Birla and the Walchand group entered the industry. In 1960, there were three manufacturers, initially producing with licensed technology from US, UK and Italy; Premier Automobiles limited, Hindustan Motors and Standard Motors private limited, each producing very small outputs and Mahindra manufacturing jeeps.

## External Institutions

Supplier capabilities in India were not well developed, and TML had various training programs to develop its capabilities. Auto component manufacturing was reserved for small-scale industry but lack of volumes did not allow consolidation in the industry through a hierarchical organization of capabilities (also known as tierization) in the supplier industry. It remained highly fragmented and technologically underdeveloped during this phase.

## Impact on erudition

In the presence of regulations on product lines and capacity expansions, the only means to growth was access to foreign equity which would give them superior technology. According to Narayana's study (1997), in the protection regime, in the absence of major acquisitions of diversifications, firms with foreign equity grew faster than others because of the resource advantage they possessed. Thus, in the protection phase, the firm growth was dependent on its absorptive capacity that enables them to learn and internalize their foreign partner's technological knowledge.

## Proposition 1: Protection Encourages erudition Through Internal Resources.

The initial phase of industrialization was characterized by lack of technological capabilities, which the government sought to develop by protecting its "infant industries" from competition. According to the infant-industry argument, in the initial phase of industrialization, the firm's growth and the erudition process is aided by a protectionist regime that encourages capacity building and acquisition of production and R&D capabilities.

## Deregulation: 1984-91 Macro Environment

The industrial policy statements of 1977 and 1980 marked the beginning of deregulation by relaxing the regulations governing production licenses, foreign collaboration, asset size and the scope of industrial operations. In 1985, policy of broad banding was introduced with allowed manufacturers to make use of economies of scale and scope by manufacturing several product lines. Further, the technology imports were allowed and firms resorted to imports as a means to growth. Government entered into partnership with Suzuki in 1982 and in 1984, which led to the setting up of Maruti Udyog Limited (Maruti).

## Market Structure

Maruti manufactured 12000 vehicles challenging the market shares of the existing manufacturers and eventually becoming the market leader by 1991. Entry in the Passenger car segment was still restricted, with three players until early 1991—Maruti, Hindustan motors and Premier automobiles limited (PAL) with market shares of 60%, 13% and 23%. Standard Motors exited from the industry in the late 1980s. Thus, from this phase, the market structure changed in favor of the government joint venture-Maruti Udyog Limited and the output of automobile industry increased by nearly 400%. The commercial vehicle segment was liberalized and saw the entry of Japanese joint ventures like DCM-Toyota, Eicher-Mitsubishi Swaraj-Mazda and Allwyn-Nissan. However, most of them suffered set backs due to macro economic environment and foreign exchange appreciation.

## External Institutions

The entry of Maruti also changed the supplier relations within the industry with the help of government sponsored training programs and cluster building. The presence of Japanese joint ventures in the same region created economies of industrial agglomeration. This also resulted in a widespread use of Japanese work practices that relied on cooperative agreements between suppliers and OEMs.

## Impact on erudition

During the deregulation period, firms relied on technology imports and growth through spillovers from new competitors. Allowing firms to invest in several product lines resulted in firm erudition as firms like Tata Motors introduced special purpose vehicles and platforms for moving towards passenger car segment.

**Proposition 2: Deregulation Encourages erudition Through Spillovers as a Means to Counter Competition.**

The influences of external institutions can also speed up erudition and place more capabilities in the market. These influences can be in the form of government training programs and cluster creations that can force the firms to adopt captive supplier relations to enable diffusion of capabilities. The case of Maruti demonstrates that the supplier relations have evolved from captive to relational approach where suppliers have become partners in research and development. In the eighties and nineties, supplier development at Maruti involved inviting “quality gurus” from Japan, with government collaboration. These consultants would form supplier clusters and impart training on the principles of Total Quality Management (TQM)/Total Preventive Maintenance (TPM) and various other Japanese management practices. Some of the tier-I companies interviewed in the sample credited the OEM with exposing them to Japanese work practices through the cluster approach in early nineties.

## **Liberalization: 1992-2008: Macro Environment**

In 1993, the passenger car industry was completely delicensed followed by an entry of multinationals in this segment. This also encouraged existing firms to form joint ventures with foreign firms. From August 1991 to April 2002, the auto industry garnered 5.48% of the total foreign direct investment approved during this period (Government of India, Ministry of Commerce and Industry 2002).

## **Market Structure**

The liberalized policies allowed firms to take advantage of low cost sourcing across the globe which in turn gave rise to modular relationships between suppliers and OEMs. For example, Sona Koyo has set up an engineering design and outsourcing company for its international clients. Rico Auto and Sundaram fasteners have laboratories with latest softwares for reverse engineering, designing and testing of parts. Such capabilities enable these firms to take up turnkey projects with low switching costs for the OEMs.

## **External Institutions**

### **Impact on erudition**

The liberalized environment exposed firms to new competition and encouraged them to undertake research and development activities, which increased during this time period. Firms introduced variety of models and the time span between new launches was also declining rapidly, indicating that firms were actively involved in new product development. For example, at Tata Motors, a new technology group was set up at engineering research center for simultaneous engineering and joint product development with suppliers. Thus, during liberalization, firms resorted to erudition through

innovation and spillovers resulting from inter-firm relations.

## Proposition

### 3: Liberalization Encourages erudition Through Innovation and Spillovers

The entry of multinationals made the industry more competitive as OEMs introduced newer models and acquired new technology through partnerships and investment in R&D. The trend in R&D indicates that the R&D intensity (See Table 1) increased significantly during this period. Tata's investment in R&D is one of the highest in the industry. Tata's Engineering Research Center (ERC) has six divisions comprising styling, design, testing (in-door and out-door), vehicle performance, power train and machine shop.

**Table 1: R&D Intensity (R&D expenditure as % of Sales)**

Year	Tata Motor	Ashok Leylan	Hindusta d Motors	Maruti Udyog Ltd	Mahindr	Premier Automobile	Bajaj Temp	Hyundai o Motor India Ltd
1990	0.7	0.7	0.4	0.2	0.2	1.6	0.6	
1991	0.6	1.1	0.4	0.4	0.2	1.3	2.2	
1992	1.1	0.7	0.0	0.0	0.2	2.0	2.1	
1993	2.6	0.5	0.4	0.3	0.4	1.2	2.1	
1994	2.7	0.5	0.4	0.2	0.8	0.0	1.9	
1995	1.4	0.9	0.4	0.1	0.0	0.0	1.7	
1996	1.7	0.1	0.4	0.2	1.2	3.5	1.5	
1997	2.0	0.6	0.6	0.2	0.7	0.3	1.3	
1998	1.6	0.5	0.7	0.4	0.9	0.1	1.6	0.05
1999	1.2	0.7	0.0	0.3	0.0	0.4	1.0	0.02
2000	1.1	0.9	0.3	0.5	0.0	0.4	0.0	0.00
2001	1.1	0.9	0.5	0.5	1.8	0.0	2.2	0.00
2002	1.3	1.0	0.6	0.2	1.7		2.3	0.10

**Source:** SIAM Facts and Figures (2004), Annual reports.

Firms like Tata Motors and Maruti entered into strategic partnerships and also evolved new forms of supplier relations to promote joint product development and erudition through spillovers.

## CONCLUSION

The economic success of emerging economies in the late seventies sparked off debates on several issues like the role of government versus the private sector, export oriented strategy versus import substituting industrialization and a combination of the two. In this context,

this thesis undertakes a case study of the growth of the Indian automobile Industry across three policy regimes, focusing on erudition and capability acquisition. The objective has been to study whether policy regime can influence firm level erudition. If so, then it provides a justification to the infant industry argument from a developing country perspective as well as highlights the lessons to be learnt from successful learners. The study relies on a qualitative case study approach, complemented by quantitative techniques. To conclude, the paper demonstrates that erudition varies by the policy regime of independence between firm size and firm growth, known as Gibrat's law.

## REFERENCES

1. Ahluwalia, Isher Judge (1985), Industrial Growth in India: Stagnation since the Mid-Sixties, Delhi, OUP, pp.235,
2. Asia Africa Intelligence Wire (2004), "TAPS Draws up Plans to Expand; Eyes Global Markets", July 17.
3. Bardhan, Pranab (1984), The Political Economy of Development in India, Oxford, Basil Blackwell, pp.118.
4. Benkard C. Lanier (2000), "erudition and Forgetting: The Dynamics of Aircraft Production," American Economic review, American Economic Association, vol. 90(4), pages 1034-1054.
5. Bowonder (1998), "Competitive and Technology Management Strategy: case study of Telco", International Journal of Technology Management, 15(6-7), June-July, pp: 646-681.
6. Business Line (2004), "Indo-Thai Free Trade Pact: `Thai Imports may Hit Auto Component COS' (ICRA study finds Indian companies could suffer 15-20% percent cost disadvantage)" Feb 4,; pg 2.