

## The Impact of the Rise of Chinese and Indian Automobile Industries

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### Abstract

The Chinese and Indian automobile industries have shown tremendous growth during the last decade. Globalization has led to a relocation of production activities and new regions have become significant sites for international competitiveness. The rise of the Chinese and Indian automobile industries cannot be understood independently of the global geographical shifts in the automobile industry and changing roles of governments, and this can be seen as one of the most significant aspects of China and India's modernization.

**Keywords:** automobile industry, economies of scale, production networks, local government

### The Globalizing Automobile Industry

The most dramatic shift in the global automobile industry is the sharp growth of newly industrializing countries in production and sales, notably China, India, and Brazil. The triadic structure of the automobile industry is now changing. The automobile industry has been under pressure since the financial crisis in 2008. The pressures requiring changes within the industry, such as stringent emission and safety regulation and increasing requirements for quality management standards, accompanied by severe cost competition has inevitably led to the massive restructuring of the automobile industry worldwide. The changes in manufacturing architecture, based on tier-layered and increasingly modularized production, have also affected the global geography of automobile production. In automobile manufacturing, China has emerged as the fastest-growing producer, surpassing Germany in 2006, the United States in 2008 and Japan in 2009. In 2010, China produced 18.26 million units (23.5% of the world total production). India has also emerged as a large producer, and production reached 3.53 million (4.6% of the total world production) in 2010. Together, these two account for roughly 28.1% of the total. Against that, the figure for the United States and Japan, which accounted for more than 40% of world production in 1997, fell to 22.4% in 2010. At the same time, China and India are also the fastest-growing markets for vehicles. China's domestic sales reached 18.06 million units in 2010, making it for two consecutive years the largest car market in the world. Sales of automobiles in India have also risen to 3 million in 2010, making it the sixth largest market in the world.

However, to understand the main trend in automobile production more accurately requires the company-level production figures. A relatively small number of leading automakers from advanced countries dominate automobile manufacturing. In 2010, the top five automobile companies produced about 45% of global production, and the top ten companies together accounted for two thirds of global production. Contrary to the state-level analysis, the triad producers still dominate world production. The company-level analysis results highlights that

economies of scale have always been an important factor. These can be through mergers and acquisitions, or by pursuing alliances. Although the majority of world production takes place in the home market of each producer (55.6% in 2009), China and India have received abundant foreign direct investment (FDI) from advanced countries. This trend made it possible for the leading firms involved to exploit a global market to sustain their growth.

The locations of leading assemblers have thus inevitably affected the consolidation of the parts and components suppliers as the international business strategies need to consider the firms' resource capabilities. Some automobile components suppliers have also emerged as large firms through shared management with the leading makers. The tier suppliers have themselves become assemblers with research and development (R&D) and design expertise. For the automakers, technological developments have been made possible by the use of shared platforms between different models, resulting in reduced production costs. Recent trends towards modular systems comprised of multiple parts are likely to decrease the overall number of parts at final assembly.

In the internationalization processes of firms, the firms' competitiveness is affected greatly by the local political support and local business environment including various institutions. The firms are inevitably engaged in politics, cultural practices, and social interactions. Political regimes at national and subnational levels directly or indirectly influence the firms' outcome through regulatory power. The industrial agglomeration supported by the governments has various potential advantages including rationalizing investment in infrastructure, financial support, supply of human resources, and arrangement of labor conditions, which further leads to an influx of tier II and tier firms.

### **The Chinese Automobile Industry**

After the establishment of the PRC (Peoples' Republic of China), the country adopted the Soviet economic system and received technological support from its ally. After the introduction of economic reforms in 1978, the shift to introducing inward foreign automobile investment was a critical turning point. In 1984, VW established a joint venture with the Shanghai Automotive Industry Corporation (SAIC), called Shanghai VW. The SAIC was part of the Shanghai local government bureaucracy. VW received full support from both central and municipal governments offering tax advantages, preferential treatment in foreign currency and the supply of materials for production.

The effort to upgrade local supply firms resulted in a steady rise in local content rates. By 1997 almost 90% by value of that local content was produced within the municipality of Shanghai<sup>93</sup>. Further, with the strong support of the Mayor Zhu Rongji (later became the premier), VW's share of the auto market in China exceeded 50% by 1996. Shanghai VW's remarkable success derives from various factors including favorable treatment (purchase, tax, currency, materials, communication, networks with local firms etc) mostly supported by the local governments.

The 1994 automobile industry policy by the central government aimed to achieve economies of scale by consolidating the fragmented automobile industry, regulation of domestic content, deregulation of inward investment, and regulation of imports. But it also aimed to protect the automobile market with high trade tariffs and tight entry controls. In 1996, the import tax rates on passenger cars were between 100 and 220% and on commercial vehicles were between 15 and 230%. However in the 10th Five-Year Plan (2001-2005), the central government announced the reduction of tariffs, the relaxation of import restrictions,

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<sup>93</sup> Eric Thun, *Changing Lanes in China: Foreign Direct Investment, Local Governments, and Auto Sector Development*, (New York: Cambridge University Press, 2006), 105

and deregulation of types and models of car products that could be produced in China. Import tax was then gradually reduced reaching 25% on passenger cars by 2006.

In 2004, China announced its New Automobile Industrial Development Policy, which emphasized the importance of independent development of cars by Chinese companies. It also opened up the distribution and retail sectors and made it possible for foreign automakers to build a vertically integrated distribution system. In 2006, the central government announced the 11th Five-Year Plan (2006-11), which aimed to create automobile groups such that more than 50% of production became indigenous. One of the features of the Chinese automobile industry is that there exist a large number of firms with small scale production capability. Fragmented production locations inevitably mean low efficiency, and the technological standard has also lagged. They have not yet fully acquired the core technologies, including electronics control.

Changing national policy targets often bring about different management decisions at the local government level. Local governments have an incentive to support local firms to increase local development and revenue, and local municipalities want to build an automobile industry within their regions. As of 2010, there are only three regions (Tibet, Qinghai, and Ningxia) where there is no automobile maker. The supportive measures by the local governments can be seen in their purchasing cars from the local automakers, resulting in local protectionism. The central government has taken steps to restructure the automobile industry to encourage the creation of larger automobile groups beyond the provincial borders and address sectionalism. In 2009, the central government announced guidelines for the rearrangement and integration of the Chinese automobile industry in order to promote a strong national automotive sector.

In China, the domestic production is almost all targeted to sell in China. Among 2010 passenger car sales figures for China only 3 of the top 10 companies are local Chinese makers, while the rest are joint ventures allied with European, American, Japanese and Korean automobile manufactures. Foreign automobile makers have been successful and account for almost 70% of new car sales in China. To capture the real statistics of car production, we should be careful about the production by joint venture automakers. For example, the number of vehicles produced by SAIC was reported as 3.62 million in 2010. However, 63.3% of this production was undertaken by the joint venture with the General Motors (GM) and also 28.1% of the total was produced by the ones with VW.<sup>94</sup> Thus, in the case of the largest Chinese automobile joint company, GM and VW are the actual auto producers. Chinese state enterprises are highly dependent on the capability of the foreign automakers from advanced countries. Thus, despite the continuous effort by the central government to consolidate the Chinese automobile industry, the current structure of the Chinese industry still reflects the early stage of development.

## **Indian Automobile Industry**

After independence in 1947, India adopted a centralized economic system on the model of the Soviet Union. In the 1980s, a partial liberalization was gradually implemented. In 1981, the central government formed a joint venture with Suzuki Motors (Maruti Udoyog). The car by Maruti was affordable, small in size and ideal for Indian roads as well as reasonable in price for a family. Suzuki's advance in India induced the establishment of joint ventures between local Indian manufacturers and Japanese parts manufacturers. This can be seen as the first step for the Indian auto components industry towards producing globally competitive

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<sup>94</sup> Tomoo Marukawa, "Kigyo no Sannyu to Ketsugo – Jidosha Sangyo no Rei wo Chushin ni (*Entry and Merger of Firms – the case of automobile industry*)," Chugoku wa Donoyouni Hatten Shitekitanoka (*How has China developed?*), Research Report, (Chiba: Ajia Keizai Kenkyusho, 2011).

products. Today about 350 suppliers serve Suzuki in India for various categories of items like body parts, suspension systems, engine components, electrical plastics parts etc.<sup>95</sup>

The economic liberalization policy was introduced in 1991, and the central government reduced the intervention of the government and promoted deregulation in the automobile industry. Following this, GM, Ford, and Daewoo were early entrants establishing local operations in India. In contrast to China, in 2002 the Indian government approved the 100% foreign ownership of manufacturing operations in India. Auto Policy in 2002 provided higher fiscal incentives for R&D and was targeted to develop small cars and to promote environmentally friendly cars. This policy promoted the technological upgrading of domestic automakers and the rush by the leading automobile companies, such as GM, Ford, Toyota, and Hyundai, followed. Foreign manufactures and local firms formed multiple industrial clusters attracting investment by component suppliers.

In 2006, the central government announced the Automotive Mission Plan (AMP) 2006-2016. This declared 10 years of strong support for the automobile industry, encouraged production and aimed to increase the export of vehicles. It was associated with measures to encourage investment and stimulate the domestic demand, as well as promote export. The government announced plans to upgrade the social infrastructure including areas such as highways, railways, ports and the provision of energy, which were seen to be the most serious bottlenecks of Indian economic development. The central government started to reform the tax system and reduced the commodity tax on the compact segment from 24% before 2005 to 8% in 2009. The domestic passenger car market is dominated by Maruti Suzuki, Hyundai Motors and Tata Motors. In particular, Maruti Suzuki has dominated with more than 50% of the passenger car market share. It had already achieved more than 90% of local content and held both price and brand competitiveness. In the commercial vehicle market, Tata and Mahindra & Mahindra dominate an almost 60 percent share of the market.

The export of passenger cars has risen strongly in the last decades. In Indian car exports the foreign auto manufacturers play a significant role. High import tariffs on passenger cars likely force global automobile companies to produce in India. In Indian car export, Hyundai and Maruti Suzuki dominate more than 90% of the total. Hyundai has concentrated its production sites in Chennai, and shipped to 95 countries in 2009. Hyundai uses India as a global automobile hub for production to sell both in India and to the global market.

The strong support from local governments is also critical. For example, in Maharashtra, with the largest GDP among Indian states and second largest population, automobile industrial agglomeration is emerging. In 1983, Swaraj Mazda was set up and this led to the growth of supporting industries in Maharashtra. Then an automobile concentration began in the 1990s and 2000s. Today, in terms of its share of output from India, the automobile cluster in Maharashtra accounts for almost 50% in net added value and about 35% in output.<sup>96</sup> The State has been politically stable and the government has supported investment. It has constructed road and train networks, and has two of the biggest ports in India. Maharashtra has successfully attracted the highest amount of FDI in India, 20.6% of total national FDI between August 1991 and March 2008.<sup>97</sup> Maharashtra aims to be Asia's most competitive manufacturing hub, the effort being led by a government established entity, the Maharashtra Industrial Development Corporation (MIDC). It promotes the establishment of special economic zones (SEZs) which provide economic incentives, power and water supply, together

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<sup>95</sup> Syed Nasir Aziz Rizvi and Debroto Mukherji, *A Comparative Study of Global Competitiveness of Indian and Chinese Auto Components Industry*, (Saarbrücken: Lambert Academic Publishing, 2011), 28.

<sup>96</sup> Michael Porter, Hiraoka Kuwajima, Lilian Rivera, Ravinder Saroop, Jun Takai, Daisuke Ueda, *Automotive Cluster in the State of Maharashtra in India*, (Final Report, 2010), accessed July 2011. [http://www.isc.hbs.edu/pdf/Student\\_Projects/India\\_%28Maharashtra%29\\_Automotive\\_2010.pdf](http://www.isc.hbs.edu/pdf/Student_Projects/India_%28Maharashtra%29_Automotive_2010.pdf)

<sup>97</sup> Ibid.

with efforts to provide land and administrative support. There are 72 SEZs in Maharashtra and 80% of them are located in the Golden Quadrilateral, which contributes 80% of Maharashtra's GDP.

The state government has set the foundation of the automobile industrial concentration as one of the target policy areas. In the 1990s and 2000s, Tata Motors and the influx of foreign automakers further assisted the development of industrial clusters in Maharashtra. Tata Motors has tried to be a largely self-sufficient automobile firm and operates five automobile manufacturing locations in India, one being the research center in Pune established in 1969. It has been engaging in knowledge-seeking and emphasizes in-house R&D, Tata having modern testing facilities for vehicle crash, pedestrian safety, and pendulum impact tests etc. Tata developed the first indigenously developed light CV in 1986, sports utility vehicle in 1998, and also launched India's first indigenous passenger car in 1998 (Indica). This is seen as the result of collaboration with Daimler, emphasis on R&D, the research and testing facilities, and other equipment developments. For example, the R&D expenditure has risen continuously and jumped 10 fold in the period 2002-03 to 2008-09<sup>98</sup>.

Since 2004, Tata has accelerated its promotion of its outward foreign direct investment. Tata took over Daewoo and established Tata-Daewoo as 100% stakeholder. In 2009, the company sold 4,857 units in South Korea and exported 4,280 units from South Korea. In 2005, Tata acquired 21 percent of the stake of a Spanish top end bus production company (Hispano Carrocera) and held a 100% stake in 2009. The company has production facilities in Morocco and provides bus components to the North African region. In 2006, Tata took over Nissan's factories in South Africa and made them a production base of passenger cars and small and large commercial vehicles targeted at South Africa and Europe. In 2007, Tata established a joint venture with a Thai automobile company (Tata's stake is 70%) and started to produce light trucks for South East Asian markets. In 2005, Tata established Tata Motors European Technical Research Centre (TMETC) in London. This centre has tried to develop design for small passenger cars and world trucks by collaborating with the research center in Pune. TMETC also invested in a Norwegian electric car company to acquire the most advanced electrical technologies. Tata established a joint venture with Fiat in Ranjangaon in 2006. Furthermore, in 2010, Tata took over an Italian automobile designing company in Turin to seek to improve designing and styling capability. In 2011, Tata started to export Nano to Sri Lanka and produced Jaguar in Pune. Tata's business has sharply expanded both domestically and in foreign countries through accelerating investment and creating production networks.

## Conclusion

It is worth asking what the rise of China and India can tell us regarding the spatial rescaling of economic dynamics. Firstly, the global automobile production has shifted from advanced countries to emerging countries. The introduction of economic reform was a critical turning point for Chinese and Indian automobile industries. The roles of government in deregulation and introduction of foreign investment in the automobile industry, as well as the construction of roads and ports and the provision of energy supplies have greatly facilitated opportunities to build automobile industrial clusters. The leading foreign firms were the most critical in the technological development of the automobile industry in China and India. Local firms have acquired the technologies through forming partnerships with foreign firms in production, sales, and the supply of parts. Thus the impressive growth is not only the result of foreign automobile companies but the growing contribution of local automobile firms in China and India.

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<sup>98</sup> Neelam Singh, 'Emerging Economy Multinationals: The Role of Business Groups', *Economics, Management, and Financial Markets*, (VO1.6(1), 2011),153.

Secondly, the national and subnational governments in China and India have also played significant roles to support the automobile industry. The industrially proactive policies implemented by local governments demonstrate the development of specific locations for industrial and institutional business environments. The strategic industrial policies have in turn created further opportunities for the leading automobile producers to establish the production sites in China and India. Thus, it is important to consider not just the state-to-state dynamics but also the dynamics of local-national-global relations. As the global competition becomes severe, more diverse and different levels of governments reacted in different ways to maximize their profits.

Thirdly, production networks within China and India have become increasingly interconnected and interdependent across the state borders. The leading international and local auto companies have begun to use China and India as hubs to supply the products to not only to the growing domestic markets but also to the international markets. The geography of production requires more study of the strategic rescaling of economic activities undertaken by economic actors which further connects specific regions in China and India with the rest of the world.

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