Ohara, Moriki, and Koichiro Kimura, eds. 2009. *Comparative Study on Industrial Development Process in China and India*. Interim Report. Chiba: Institute of Developing Economies.

Chapter 5

A Comparison of Chinese and Indian Automobile Manufacturers

Tomoo Marukawa

Abstract

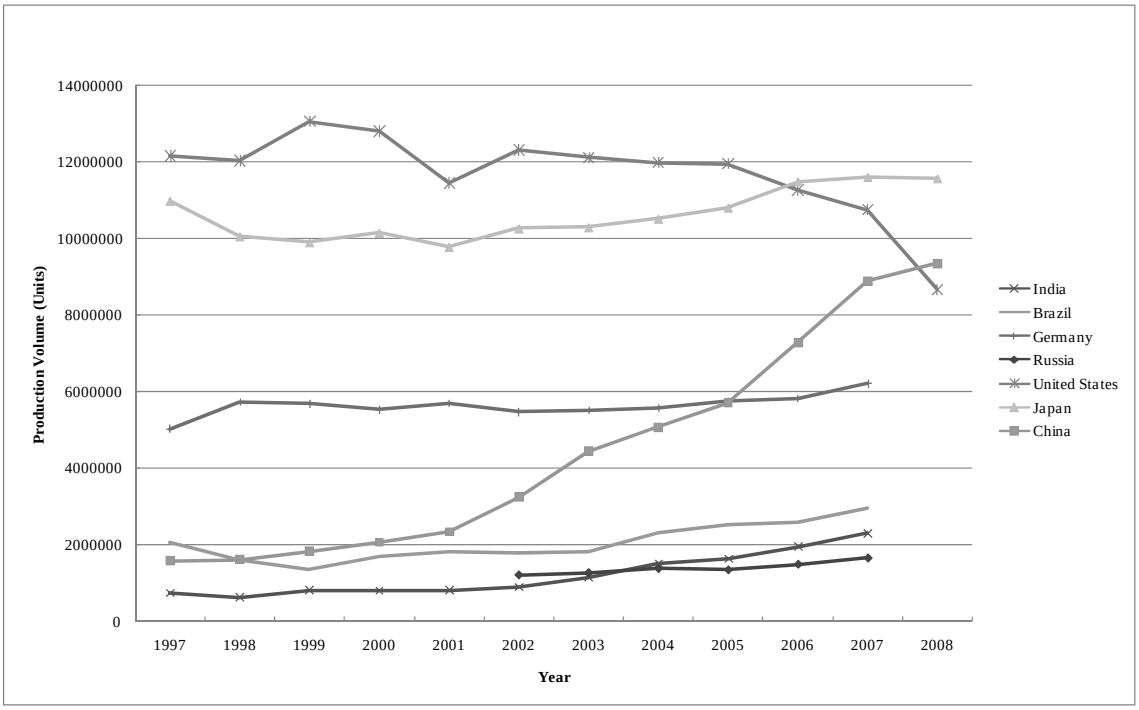
In 2008, China has become the second largest automobile producing country in the world. India's automobile industry is also growing rapidly. In these rapidly growing markets, some indigenous automobile manufacturers are emerging. This study reviews the growth process of rising automobile manufacturers in China and India, namely Chery, Geely, and Tata Motors. Through the comparison of the strategies of these companies, the study concludes that Chery and Geely face the challenge of redefining their purpose of developing original cars and internalizing product and process technology, while Tata's strategy of developing a very cheap family car has yet to be proved effective.

Keywords: automobile industry, China, India

1 China and India in the World' Automobile Market

In 2008, the American automobile industry was severely damaged by its financial crisis, leading its production volume to decline from 10.75 million units in 2007 to 8.68 million units in 2008. As a result, the production volume of Chinese automobile industry has, for the first time in history, surpassed that of America's, reaching 9.35 million units in 2008 (Figure 1). China has become the second largest automobile producing country in the world in 2008.

Figure 1: Production Volume of Major Automobile Producing Countries



Sources: Zhongguo qiche gongye xinxi wang, Ward's Automotive, and others.

India is also increasing its automobile production rapidly, doubling its production volume during the period of 2003 to 2007. As of 2007, India is the tenth largest automobile producer in the world.

Compared to the other major automobile producing nations, however, China and India lack powerful domestic automobile manufacturers. A large part of the growth of automobile production in China and India is attributable to the expansion of the production of foreign-invested enterprises. In the case of passenger cars, 73% of the production volume in China, and 83% of that in India are produced by foreign-invested

enterprises.

At the same time, the progress of some indigenous automobile manufacturers in China and India is remarkable. In China, Chery Automobile Co. Ltd., which began producing automobiles in 2000, has rapidly raised its position to the forth largest passenger car manufacturer in 2007. India's Tata Motors has astonished the world by its announcement to launch a very cost-effective "one lakh (100,000 Rupee) car."

This paper will examine the strategies of the rapidly-growing Chinese and Indian indigenous automobile manufacturers. In the second section, I will deal with Chinese manufacturers, focusing on Chery Automobile and Geely Automobile. In the third section, India's Tata Motors will be examined. The forth section concludes the paper.

2 Rising Chinese Automobile Manufacturers: Chery and Geely

China has a long history of automobile industry, dating back to the 1950s. The first automobile plant in China, which was also named "First Automobile Works" (Diyi qiche zhizaochang), was established in 1953. Being offered technological assistance from the Soviet Union, the plant started as a large-scale truck producer with a production capacity of 30 thousand units a year, which was soon expanded to 60 thousand units a year. Because of this long tradition and the fierce competition among numerous domestic manufacturers, Chinese automobile makers have turned out to be competitive in commercial vehicles, occupying 95% of the domestic production in 2008. However, they remain weak in sedan-type passenger car market, where they occupy only 26.6% of domestic production, whereas in the markets of multi-purpose vehicles (MPV), sport utility vehicles (SUV), and microvans, they accounted for 53.5%, 50.5%, and 48.6% of domestic production, respectively (Table 1).

Table 1: Structure of China's Automobile Production (2008)

(Units)

	Total production volume	Of which: Foreign-invested enterprises	Domestic manufacturers
Sedan-type car	5,037,334	3,697,078	1,340,256
MPV	191,740	89,224	102,516
SUV	447,956	221,929	226,027
Microvan	1,060,715	545,509	515,206
Commercial vehicle	2,607,356	137,526	2,469,830
Total	9,345,101	4,691,266	4,653,835

Source: China Automotive Information Net.

Until mid-1980s, Chinese passenger car production had remained underdeveloped, producing only several thousand sedans annually. In 1985, the German automobile manufacturer Volkswagen established a joint venture with a state-owned automaker in Shanghai. The joint venture introduced for the first time in the history of China state-of-the-art production technology of passenger cars. Along with the expansion of car production by the Volkswagen's joint venture and the emergence of other foreign-invested car makers, China's automobile industry has drastically renovated its technology. Because the Chinese government enforced the manufacturers to maintain a high local content of the cars they produce, foreign-invested car makers sought for the supply of automobile components in China. This fact has triggered the surge of foreign direct investment by international automobile parts manufacturers, which also contributed to the technological progress of the automobile industry.

Especially after China's entry to the World Trade Organization (WTO) in 2001, the number of new entrants to the Chinese automobile industry and the production volume of automobiles have rapidly increased simultaneously, making China the most vibrant and competitive automobile market in the world. Nowadays, all of the major players in the world's automobile industry, including GM, Ford, Toyota, Nissan, Honda, Mazda, Mitsubishi, Hyundai-Kia, Suzuki, Volkswagen, BMW, Daimler, PSA, and Fiat, have more than one factory in China.

Because there was a big gap between the technological level of foreign automobile manufacturers and that of China's indigenous automobile manufacturers, the latter had remained to be only minor players in the Chinese passenger car market. Since 2001, however, the share of domestic-brand cars has been rising steadily (Table 2).

Table 2: Domestic-brand Cars in China's Automobile Industry

Year	2001	2002	2003	2004	2005	2006
Number of Car Brands				110	115	156
Of which: Domestic Brands	18	19	26	27	34	66
Share of Domestic Brands (%)				24.5	29.6	42.3
Passenger Car Production (thousand units)	772	1230	2189	2483	3118	4302
Of which: Domestic Brands (thousand units)	104	212	442	496	741	1153
Share of Domestic Brands (%)	13.5	17.2	20.2	20.0	23.8	26.8

Sources: 2004-2006: China Automobile Industry Yearbook 2007, p.4. 2001-2003: Calculated by the author, based on the same method with the Yearbook. Data is from China Automobile Information Net.

The leaders of the rising domestic-brand cars are not the old state-owned automobile manufacturers such as the First Automobile Works but some new entrants to the industry such as Chery Automobile and Geely Automobile Co. Ltd. It seems miraculous that such new entrants, which started producing cars in 2000 in the case of Chery Automobile, and in 1998 in the case of Geely Automobile, can reach the position of the forth and ninth largest automobile manufacturer in the Chinese car market in 2006 (Table 3), where more than thirty carmakers, both foreign and domestic, compete for larger sales.

Table 3: Top Car Manufacturers in China

2006		2007		2008	
Total	2,444,082	Total	4,797,687	Total	5,037,334
Shanghai GM	374,692	FAW VW	489,176	Shanghai VW	481,730
FAW VW	343,621	Shanghai VW	456,085	FAW VW	480,800
Shanghai VW	342,073	Shanghai GM	447,823	Shanghai GM	403,939
Chery	275,688	**Chery**	327,453	FAW Toyota	366,512
Beijing Hyundai	262,115	FAW Toyota	271,037	Dongfeng Nissan	319,455
Guangzhou Honda	226,183	Dongfeng Nissan	263,012	**Chery**	281,412
FAW Toyota	210,894	Guangzhou Honda	249,417	Guangzhou Honda	279,298
Geely	206,958	Changan Ford	221,117	Beijing Hyundai	258,356
Shenlong (Citroen)	201,858	**Geely**	216,774	**Geely**	220,955

Note: This table only includes sedan-type passenger cars.

Source: China Automobile Information Net

The new entrants have even started exporting their cars. Chery exported nearly 120 thousand cars and Geely exported nearly 30 thousand cars in 2007. Because the rapid expansion of exports by Chery and Geely, China's passenger car exports—which had been less than one thousand until 2002—have surpassed imports in 2007 in terms of volume (Figure 2).

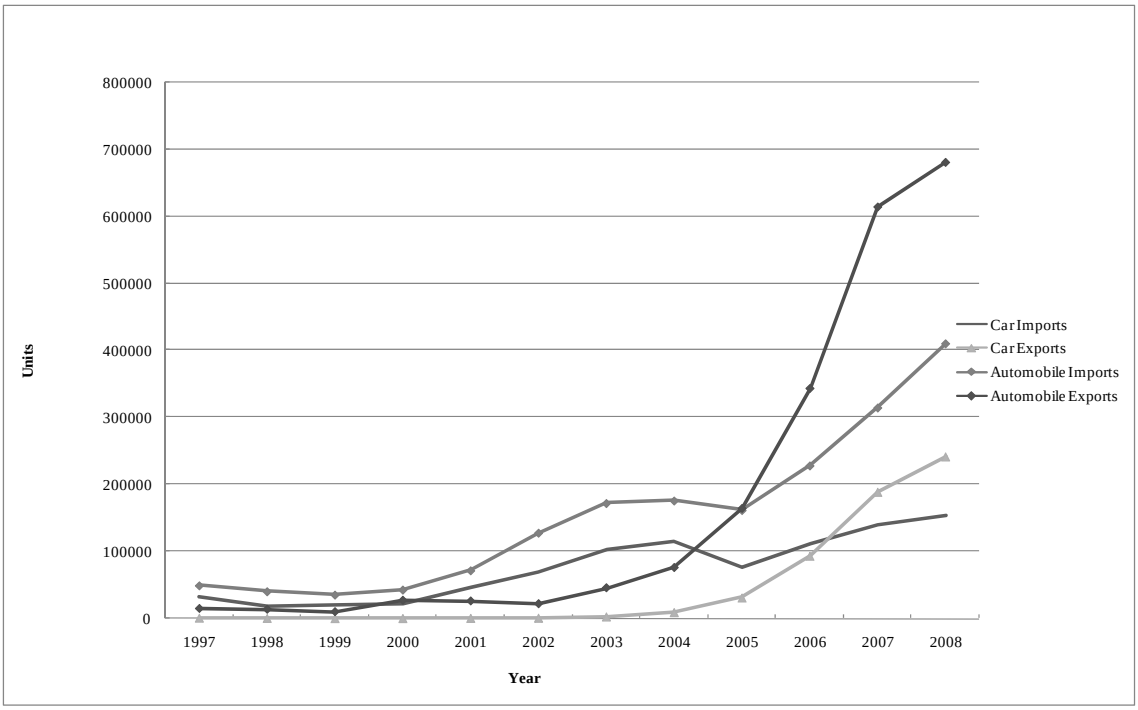
Why could Chery and Geely achieve such a miracle? Is their rapid growth really a ‘miracle’? Let us examine the case of Chery first.

2.1 Chery

Chery was established in 1997 by eight engineers who had worked for First Automobile Works. They sought financial support from Anhui provincial government and Wuhu municipal government, where Chery’s headquarters and plants were located, and therefore Chery became a local-state-owned enterprise. Chery bought an old engine plant of Ford’s and built their own engine plant, developed their own models, “Fengyun” and “QQ,” on the basis of the chassis of the cars which VW and GM were producing in China.

When Chery started producing cars in 2000, the Central government had been restricting the entry to passenger car production. Being a new entrant to the industry, the government would not permit Chery to produce cars. In order to get the permission, Chery gave 20% of its shares to Shanghai Automobile Industry Corporation (SAIC) in 2000 so that Chery, as of subsidiary of SAIC, can ‘share’ the production license awarded to the latter.

Figure 2: China’s Export and Import of Automobiles



Source: China Automobile Information Net

The entry barrier problem was hence cleared but for a few years Chery's production volume stagnated (Table 4), mainly because the company was having a hard time improving its product quality.

Table 4 Chery's Automobile Production

Year	Units
1999	
2000	2,767
2001	30,070
2002	50,398
2003	101,141
2004	79,565
2005	185,588
2006	307,232
2007	387,880
2008	350,006

Note: This table includes not only sedan-type cars but also SUVs, so the figures do not correspond with Table 3.

Sources: China Automobile Industry Yearbook, China Automobile Information Net.

Chery tried to improve its production technology by inviting Chinese engineers who had been working for western automobile manufacturers. Chery also invited a Japanese engineer who had retired from Mitsubishi Motors as the chief manager of its assembly plant. Chery tried to buy key components and technology wherever they were available. By gathering human resources, key components, and technology from all over the world, Chery managed to improve its product technology and rapidly expanded its production capacity since 2005.

The best selling model among Chery's lineup is a compact car named "QQ," which has three engine sizes, 0.8, 1.1, and 1.3 liters. Chery produced 129 thousand units of "QQ" in 2008. "QQ" resembles another compact car named "Spark" produced by SAIC-GM-Wuling Auto Co., Ltd. (SGMW), a joint venture by GM, SAIC, and a local-state-owned enterprise. Chery was sued by GM for infringing upon the latter's intellectual property rights, but the clone ("QQ") has been more successful than the original ("Spark") in the Chinese market, mainly because of its cheapness. Other major models produced by Chery includes: "Cowin," which installs 1.3 liter or 1.6 liter engines, "A520," which installs 1.6 liter or 2.0 liter engines, and a SUV named "Tiggo," which installs 1.6, 2.0, 2.4 engines. Engines smaller than 1.3 liter are produced by Chery's own engine plant, while the 1.6 liter engines are purchased from TRITEC, a

Brazilian engine manufacturer that was established by BMW and Chrysler. The 2.0 and 2.4 liter engines come from Shenyang Aerospace Mitsubishi Motors Engine Manufacturing Co., Ltd. (SAME), a joint venture by Mitsubishi Motors and a Chinese state-owned enterprise. The main reason of the success of these models in the Chinese car market is their cheapness: “QQ” costs only 40 thousand Yuan (which is around 6000 US dollars), and “Cowin” costs only 50 thousand Yuan (7300 US dollars). 1.3-liter cars produced by foreign-invested carmakers in China are much more expensive. For example, Guangzhou Honda’s “Fit” costs 90 thousand Yuan (13,000 US dollars).

The reasons for the rapid growth of Chery can be summarized into two points: its vigorous application of external resources and the support from the government. First, Chery has made use of a wide range of external resources. The exterior design of Chery’s cars has been outsourced to Italian design houses, such as Pininfarina and Fumia, and some Japanese design houses. The engines which Chery produce in its own engine plant are developed by an Austrian engineering company, AVL. Chery publicized that these engines had been ‘co-developed’ by Chery and AVL, but the relationship between them was more of a technology transfer than a joint development. The product platforms of Chery’s cars are based on existing models: Chery’s “QQ” is a clone of Daewoo’s “Matiz,” which, after the acquisition of Daewoo by GM, has been transferred to the aforementioned SGMW and renamed “Spark.” Chery’s “Eastar” is a clone of Daewoo’s “Magnus.”

The installment of machinery and equipments to a new car plant, and their testing and fine-tuning need to be conducted by a lot of experienced engineers, and as a newcomer of the automobile industry Chery lacks such experience. Therefore, Chery has outsourced this task to a Japanese engineering company. Chery also sought the technological support from component suppliers. There are already many foreign-invested component suppliers who are willing to sell their products to Chinese indigenous automobile manufacturers. As a part of their effort to open up the business with Chinese automakers, foreign suppliers provide them with some technological support. For example, a supplier of electronic fuel injection systems helped Chery to fine-tune the systems and engines, and a supplier of instrument panels design the panels on behalf of Chery. Having the support of experienced foreign suppliers, Chery managed to make up for the inexperience in automobile design.

Secondly, Chery has recently received strong support from the Chinese government. At the early stage of development, the government impeded Chery from entering passenger car manufacturing, but after Chery got on the track of rapid

expansion, the government has begun to appreciate Chery's efforts for developing "independent-brand" cars, and has started to extend financial support to the company. At the same time, the government had gradually become discontent with the traditional state-owned automakers such as FAW and Dongfeng Automobile Company, because, even with a lot of investments and preferential loans given to them from the state, these old state-owned enterprises seemed to be satisfied with being a rentier who received dividends from joint ventures with foreign automakers. Chery, on the other hand, has always been an independent automaker which has neither joint ventures nor formal licensing and technology transfer agreements with foreign automobile manufacturers. The government expected that the growth of Chery would stimulate the old state-owned enterprises to develop their own technological capability independent of foreign partners. Hence, an interest-free loan of 5.8 billion yuan was provided to Chery from the State Development Bank, and the Import-Export Bank of China gave 5 billion yuan of export credit.

Anhui provincial government and Wuhu municipal government allocated land to Chery free of charge, and provided various tax holidays. It was worth providing such privileges to Chery for the local governments, because as Chery expanded its production volume, a number of component suppliers, including some foreign ones, erected component plants around Chery's car assembly plant, bringing a lot of job opportunities and tax revenues to the region.

As Table 3 and 4 indicates, Chery experienced a decline of its production volume and its position in domestic car market in 2008. Chery's export, on the other hand, has so far grown rapidly. Its export volume was 18 thousand cars in 2005, 50 thousand cars in 2006, 120 thousand cars in 2007, 135 thousand cars in 2008. The largest export market for Chery was Russia, but in 2008 Chery experienced a sudden turmoil. Its Russian business partner, Avtotor, who assembled Chery cars from complete knocked-down components, suddenly declared to cut down the volume of assembly and required Chery to double the fee which Chery had been paying to Avtotor for assembling cars. Chery had to look for another partner in Russia, and eventually found a new partner, Taganlog Automobile Works, who agreed to assemble 90 thousand Chery cars at a cost of 100 million US dollars. These incidents reveal that Chery has yet to establish a strong foothold in the Russian market.

If Chery wants to be a bigger player in domestic and international car market, it needs to reconsider the strategy of technological outsourcing. For example, Chery relies on SAME for the supply of 2.0 and 2.4 liter engines, but because there are many

Chinese automakers who install SAME engines in their cars, it is difficult to differentiate Chery's cars from its domestic competitors. Chery has started to invest in the development of original engines and transmissions, but it might need some time for Chery to develop engines and transmissions similar in quality with those made by foreign-invested enterprises. Besides this, many of the engineers who came to Chery from western automobile manufacturers had already left the company because of the conflict between them and the management on the issues of corporate strategy and remuneration. Therefore, we can not be so optimistic about Chery's future development.

2.2 Geely

The history of Geely Automobile Co., Ltd., dates back to 1984, when Li Shufu of Taizhou, Zhejiang province and his two brothers established a private factory to produce refrigerator components. In Taizhou, there were many refrigerator component manufacturers then, and Li's factory was one among them. But in 1989, the government started to suppress investments to refrigerator production, and therefore Li gave up the component business and started producing interior decoration goods. In 1994, Li started producing motorcycles. Because of the rising demand for motorcycles in rural China, Li was fairly successful in his business, expanding production volume to 400 thousand units in 1999. In 1997, however, Li started preparing for the entry to automobile production. He established a school in his hometown to nurture the human resources that would be necessary for starting an automobile plant. He even established a private university in Beijing.

Geely's automobile production began in 1998, without the permission from the government. To acquire a production license, Geely created a joint venture with an automobile manufacturer in Sichuan province which had a license to produce "small buses." Hence, Geely's cars, which looked like sedan-type passenger cars, were allowed to enter the market as "small buses."

Table 5: Geely's Automobile Production

Year	Units
1999	3,885
2000	14,530
2001	21,171
2002	47,370
2003	81,284
2004	93,285
2005	148,182
2006	206,958
2007	216,774
2008	220,955

Sources: China Automobile Industry Yearbook, China Automobile Information Net.

The production license problem was thus cleared, but Geely's production was stagnant for several years (Table 5). This was because of the bad quality of Geely's cars. Unlike Chery, which was established by engineers who had worked for FAW, nobody in the board members of Geely had previous experience in the automobile industry. Geely tried to make use of the expertise of foreign-invested component makers in China. One model of Geely installed engines produced by Tianjin Toyota Engine Co., Ltd., which were copied by Geely later, and transmission produced by Tianjin Aisin.

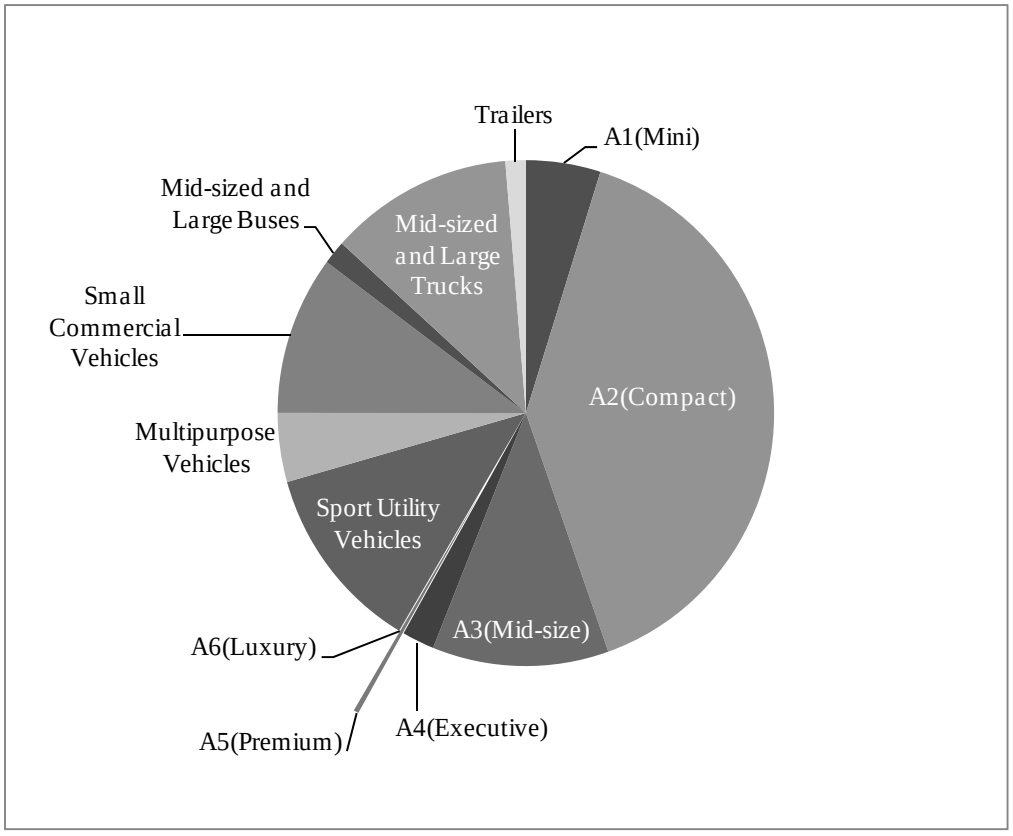
Geely, like Chery, absorbed many engineers from automobile manufacturers inside and outside of China. For example, the president of Geely's Research Laboratory is the former president of Daewoo Motor's research lab. Geely developed its own product platform on the basis of "Xiali," a small passenger car produced by Tianjin FAW.

Geely's growth in 2005 and 2006 was remarkable, but its share in domestic car market has been declining after 2006 (see Table 3). The challenges Geely face are similar to those of Chery's. The company needs to internalize the technologies which it has bought or borrowed from external sources. In fact Geely has already been moving to that direction. The company is trying to raise the proportion of in-house production of engines, which was 52% as of 2007. It has invested in the production of automatic and manual transmissions. It has developed an original braking technology, "BMBS (Blow-out Monitoring and Brake System)," which automatically decelerates the speed of the vehicle to 40 kilometers whenever the tires blow out.

3 The Rise of Indian Automobile Industry and "Nano"

As seen in Figure 1, Indian automobile production volume in 2007 has reached the size of China's in 2001, but the structure of the industry is not the same. In India, 59% of production was occupied by sedan-type passenger cars, whereas in China, the ratio was only 30% in 2001. Moreover, most of India's passenger car market is occupied by small cars. The 'A3 segment,' which is recognized in India as "mid-size," includes such cars as Maruti Suzuki's DZire (with 1.3 liter engine), Hyundai's Accent (with 1.5 liter engine), and Tata's Indigo (with 1.4 liter engine), which, according to western standards, would be recognized as "small cars." 76% of cars produced in India belong to the 'A2 segment' or smaller. This size corresponds to the "mini-sized" ("Weixing") cars in China which occupied only 27% of China's car production volume in 2005 and further declined to 12% in 2007.

Figure 3: The Structure of India's Automobile Production in 2006



Source: Fourin (2007)

Table 6: Production Volume of Major Automobile Makers in India

(Units)

Year	2004	2005	2006
Maruti Udyog (Suzuki)	537,734	555,319	628,355
Tata Motors	382,165	427,012	553,526
Hyundai Motor India	216,592	250,917	301,305
Mahindra & Mahindra	118,456	129,397	133,199
Ashok Leyland	52,250	63,981	77,985
Honda Siel Cars	34,535	38,580	55,379
Toyota Kirloskar Motor	47,628	45,695	44,310
Ford India	27,207	22,804	40,643
GM India	25,905	29,337	35,009
Total	1,514,781	1,642,412	1,957,755

Source: Fourin (2007)

Table 7: Production Volume of Major Passenger Car Makers in India

(Units)

Year	2004	2005	2006
Maruti Udyog (Suzuki)	468,251	480,653	548,078
Hyundai Motor India	216,592	250,702	301,305
Tata Motors	143,176	163,269	190,468
Honda Siel Cars	34,535	38,580	55,379
Ford India	24,921	20,779	38,751
GM India	17,493	11,324	13,679
Skoda Auto India	7,050	8,674	12,599
Hindustan Motors	12,632	12,635	11,638
Toyota Kirloskar Motor	10,770	8,935	6,813
Total	939,679	999,126	1,185,544

Source: Fourin (2007)

The peculiar structure of India's passenger car industry was created because Suzuki, a Japanese manufacturer which specialized in small cars, led the growth of Indian car industry since its establishment in 1982. Maruti Suzuki, a joint venture by Suzuki and Indian partners, still occupied nearly half of India's car production and one third of the country's automobile production in 2006 (Tables 6 and 7).

Following the success of Maruti Suzuki, international car makers, such as Hyundai, Honda, and Toyota, entered the Indian market. At the same time, a domestic automobile manufacturer, Tata Motors, has been rapidly growing in the passenger car industry.

Tata Motors has a long history of automobile production, which can be compared to that of China's First Automobile Works. The company started producing

commercial vehicles in 1954. The company is, however, a new entrant to the passenger car business, which started in 1998. Tata Motors has a wide range of products, including large trucks and buses, sport utility vehicles, and small passenger cars.

Tata Motors astonished the world's automobile industry when it announced to develop a new 'people's car' named "Nano" which would cost only 1 lakh Rupee (2,500 US dollars). Cheapness, of course, has been the competitive edge of Chinese indigenous car makers in the Chinese makers, but the latter has never produced a car that is as cheap as "Nano." Moreover, Tata's method of cutting costs seems to be more reasonable than those of Chinese makers such as Chery and Geely. Chery and Geely's resorted to copying other makers' cars—so that they can economize on development and testing costs—, and using cheap but low grade materials and components.

Tata Motors, on the other hand, tries to achieve low cost production by streamlining the product design. Tata's engineers have reduced the side view mirror of "Nano" to only one on the right side, and reduced the front wiper to only one. Neither air conditioner nor car radio is equipped in "Nano." Tata, however, does not sacrifice Nano's room space, which can seat four persons, nor safety performance, because Nano is intended to be a family car. Tata also tries to reduce production costs by producing "Nano" at a very large scale—one million units a year—in the future. Major suppliers of "Nano" components will erect their plants nearby Tata's assembly plant, so that they can economize on transportation costs. Tata will ship the knocked-down components of "Nano" from the main plant to several assembly plants in various parts of India to cut the delivery cost of cars to the market.

Nano's mass production was planned to start in September 2008, but the plan has been suspended for more than half a year, because of the conflicts with the neighboring peasants of their main plant.

4 Conclusion

Both in China and India, we have seen that indigenous car manufacturers are growing rapidly. If we consider the growth of output, Chinese manufacturers, especially Chery and Geely, are growing more rapidly than Tata Motors of India. Not only the speed of growth of individual makers is faster in China than in India, but also the number of new entrants to car manufacturing is much larger. There are 17 indigenous passenger car manufacturers as of 2008 in China. However, as we have seen in the cases of Chery and

Geely, the ‘miracle’ of Chinese car manufacturers seems to have ended in 2007. Many indigenous car makers experienced a deceleration of their growth or even a decline in 2008. The share of domestic-brand cars in Chinese car production had steadily increased until 2007 (see Table 2), but experienced a drop in 2008 (Table 8).

Table 8: Passenger Car Production in China

Year	2006	2007	2008
Production Volume (thousand units)	3869.5	4797.7	5037.3
of which Domestic Brands (thousand units)	1036.1	1305.7	1340.3
Share of Various Brands (%)			
Domestic	26.8	27.2	26.6
Japanese	24.7	27.6	30.3
German	18.6	20.8	20.3
American	14.3	13.7	12.0
Korean	9.7	5.9	7.2
French and Italian	6.0	4.8	3.6

Source: China Automobile Information Net

The reasons for the slowdown of indigenous car manufacturers can be summarized as follows: First, the demand for “mini-sized” cars has stagnated since 2005. Indigenous car makers have been competitive in cheap “mini-sized” cars, but this market as a whole is shrinking. Secondly, safety problems of some domestic brands have been revealed since 2007. In June 2007, Brilliance BS6, a model made by Huachen—one of the rising indigenous car manufacturers—received a very bad assessment at a crush test conducted by ADAC (Allgemeiner Deutscher Automobil-Club e.V.), and Chery’s “Cowin” also received a bad assessment in Russia. Even in the “C-NCAP” (China New Car Assessment Program) conducted by a semi-governmental body in China, Chinese-brand have received mediocre assessments. Chinese customers are more conscious to the safety of cars than before.

The safety problems of Chinese manufacturers’ cars reveal the shortcomings of their strategy—to rely on external resources. For example, Huachen’s “Brilliance BS6” made use of exterior design made by Pininfarina of Italy, engines made by SAME, technological fine-tuning of chassis made by Porsche of Germany, and assembly line design made by Schenck of Germany. With all these supports from international companies, however, the company made a car that was assessed as dangerous. Huachen’s incident reveals that to outsource some parts of product design may help to shorten the lead time, but it is impossible to produce a good car without any in-house

development and testing. The challenge which Chinese car manufacturers face is to internalize the product design technology and the production of key components. But before making huge investments in R&D facilities and engine plants, Chinese car makers must redefine their purpose of developing their original cars. Tata Motors' purpose of developing "Nano" is clear: to create a car that is affordable for Indian families who can only buy motorcycles now. In order to achieve this goal, Tata Motors cannot simply copy some other makers' model, because that will make the car not much cheaper than the original model. Chinese car manufacturers lack such purpose of developing cars of their own.

However, whether "Nano" will be successful or not remains unclear at the moment of writing this paper. Whether Nano can achieve low cost or not relies a great deal on the scale of its production, but selling one model one million units a year is not an easy task for any car maker in India. Will the Indian citizens really buy Nano as many as one million a year? Will Nano be really safe on Indian roads? Can Tata Motors expand its production capacity to the planned level without being interfered by political conflicts? There are many uncertainties lying ahead of Nano.

References

China Automobile Information Net (http://english.autoinfo.gov.cn/), and Zhongguo qiche gongye xinxi wang (http://www.autoinfo.gov.cn/) (Chinese).

Fourin. 2007. *Indo Jidosha, Buhin Sangyo: Chou Teikosuto sha no Tounyuu Kyousou de Kasoku suru Buhin Yusyutsu Kyotenka [India's Automobile and Parts Industry]*. Nagoya: Fourin (Japanese).

Ward's Automotive (http://wardsauto.com/).

Zhongguo Qiche Jishu Yanjiu Zhongxin, and Zhongguo Qiche Gongye Xiehui. 2007. *Zhongguo Qiche Gongye Nianjian 2007 [China Automobile Industry Yearbook 2007]*. Tianjin: "Zhongguo Qiche Gongye Nianjian" Qiganshe (Chinese).