2. Market and Firms: The Changing Competitive Environment

2

Market and Firms

The Changing Competitive Environment

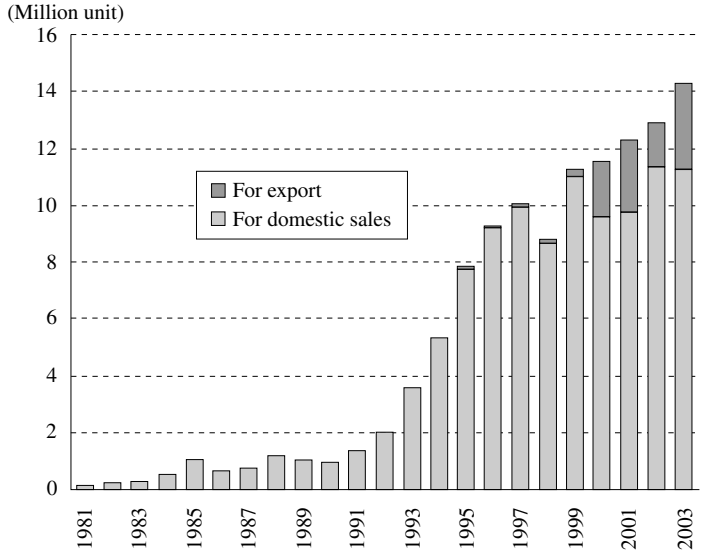
This chapter, using macro data and interview results, discusses the basic competitive environment of China's motorcycle industry during the reform period and its changes after 2000. Section I briefly clarifies the global position of the industry, and in Section II, the overall supply side profile of the industry is described analyzing mainly market concentration situation and the size, nature, and profitability of participating firms. In Section III, market- or demand-side factors such as the size and nature of demand, distribution system, and governmental supervision system and regulations are examined.

I. Competition among Indigenous Makers: The Domestic Market and Its Global Position

The central players in China's motorcycle industry are indigenous firms, and the major playing field is the domestic market. The industry expanded rapidly in the first half of the 1990s, and as early as in 1997 its production rose above 10 million units, accounting for half of global production in terms of the number of units. In 2003, the number of motorcycles produced domestically exceeded 14 million units (Figure 2-1).

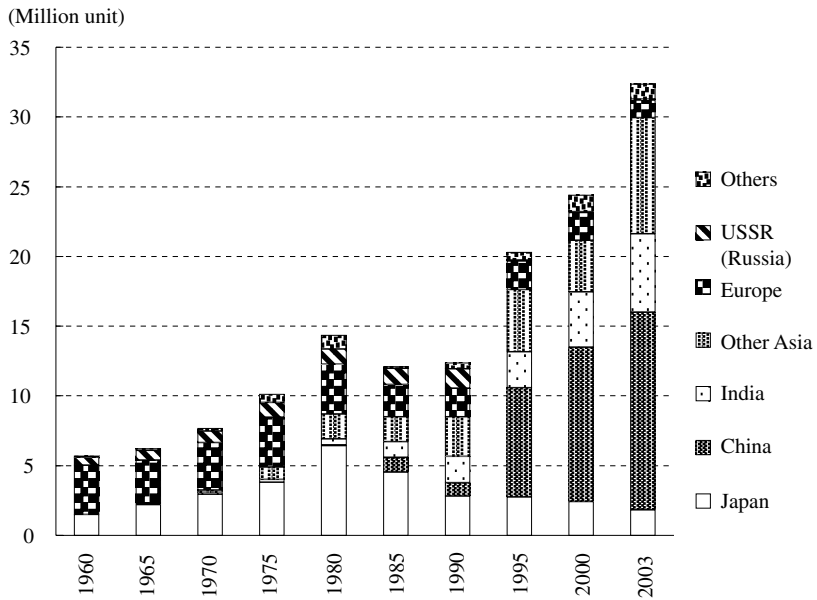
On the other hand, it was Japanese companies that led the world motorcycle industry. Some 90 percent of sales and production of motorcycles are concentrated in Asia in terms of the number of units (Figure 2-2), and the great majority, except in China, are produced under the brand names of Japan's four makers. Among them, Honda is the industry's dominant firm. For example, as of 2003, the Honda brand accounted for 38 percent of the 5.6 million motorcycles sold in South Asia and 52 percent of the 6.7 million in the ASEAN market. These motorcycles are supplied

Fig. 2-1. China's Motorcycle Production and Export



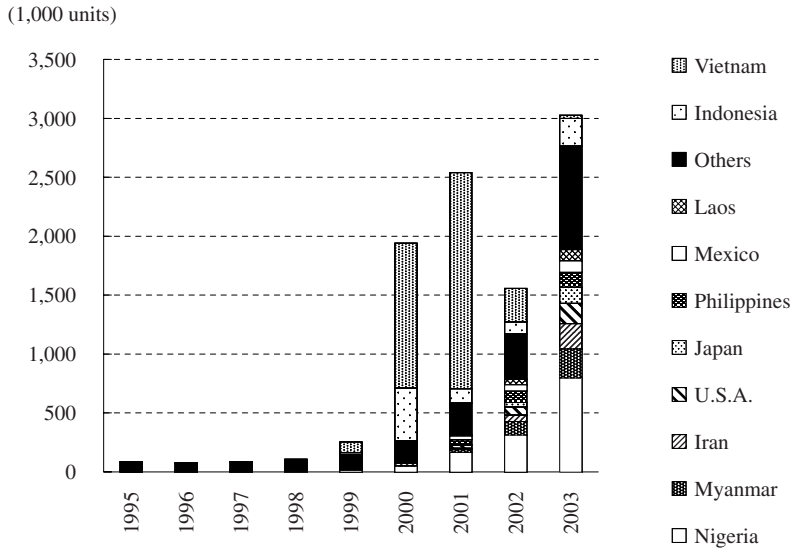
Sources: ZQGNB (various years.)

Fig. 2-2. Global Motorcycle Production



Sources: For 1960 to 1985, United Nations (1972, 1982, 1992) and CCYAH (1998); for 1990 to 2003, Honda Motor Co., *Sekai nirinsha gaikyō* (2001, 2004).

Fig. 2-3. Destinations of China's Motorcycle Exports



Source: China Customes Statistics (acquired via *World Trade Atles*).

locally by Honda-affiliated makers (wholly owned subsidiaries, joint ventures, and technically supported local makers).[1] In the Japanese market, too, an oligopoly among the four major makers has continued since the 1970s.

Japanese makers have also entered the Chinese market. From the beginning of the 1990s, about twenty foreign-JV firms were established in China, ten of them by the four major Japanese makers. Their total domestic market share at the end of the 1990s was approximately 5 percent. Honda's share dropped to 3.3 percent in 1999 from 11 percent in 1993. It is only in China that the Japanese makers long took second billing to local makers. This indicates the presence of unique elements in the competitive world of indigenous firms in China and its development process.

Further, Chinese indigenous makers began to sharply increase their exports from around 2000. Their destinations are low-income countries in Asia, Africa, and the Middle East, all markets with a qualitative resemblance to the Chinese market (Figure 2-3).

In China, the motorcycle industry is going through the phases of import → import substitution by indigenous makers → export, and on the surface, it appears to be achieving a "catching-up style development." And yet, if we delve into the development pattern and organization of indigenous makers and suppliers, as will be described later, they have not yet reached a "homogenization"[2] with their Japanese counterparts. Furthermore, their major export destinations are not developed countries. In this, they differ from the electronics industries in the NIEs, which, by attaining the high levels of product and technological requirements of the markets in developed countries, have implemented an "export-led building of technological ca-

pability" (Hobday 1995). The industry in China gives the impression that its unique development is being carried out through the global "low-end market."

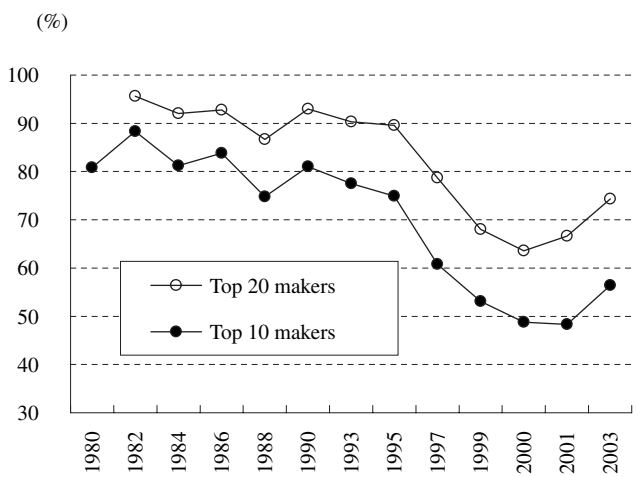
II. Relentless Competition among Numerous Firms

1. Dispersion of Market Shares by Rapidly Expanding but Unstable Makers

After production skyrocketed in the first half of the 1990s, the expansion of the domestic market fell into stagnation after 1997, and exports came to underpin the production growth. There were as many as 154 firms involved in the competition in 2003, only counting those officially registered. This number has consistently increased with the exception of 1990 and 1997, when the economy was in stagnation, and the industry is still enjoying active new entries. As for the market share held by the top makers, in 1995, the top ten accounted for about 75 percent, and this figure dropped to below 50 percent in 2000. However, from around 2000, the concentration began to increase again (Figure 2-4).

It is interesting to compare this with the Japanese experience. After World War II, the Japanese motorcycle industry developed in an environment of competition to meet domestic demand, which hit its first peak as early as around 1960. During the high-growth period that started around 1965, motorcycles began to be substituted by automobiles in the Japanese consumer market. The industry then cultivated export markets and as the 1980s began, nearly 70 percent of production was for exports. During this process, the number of makers, which reached as many as 140 in 1953, comprised mostly of small-size makers, rapidly decreased to seven ten years later in 1964, with most of the others having withdrawn and some of them having been

Fig. 2-4. Market Share of Top Makers



Source: ZQGNB (various years).
Note: Production unit base.

Fig. 2-5. China's Main Motorcycle Makers and Their Production Levels

Sources: ZMGB (1996); ZQGNB (various years); materials provided by the Qingqi Group and the Grand River Group.

Notes: 1. The numbers on the left of the names of makers are listed in the order of production size in 2003.

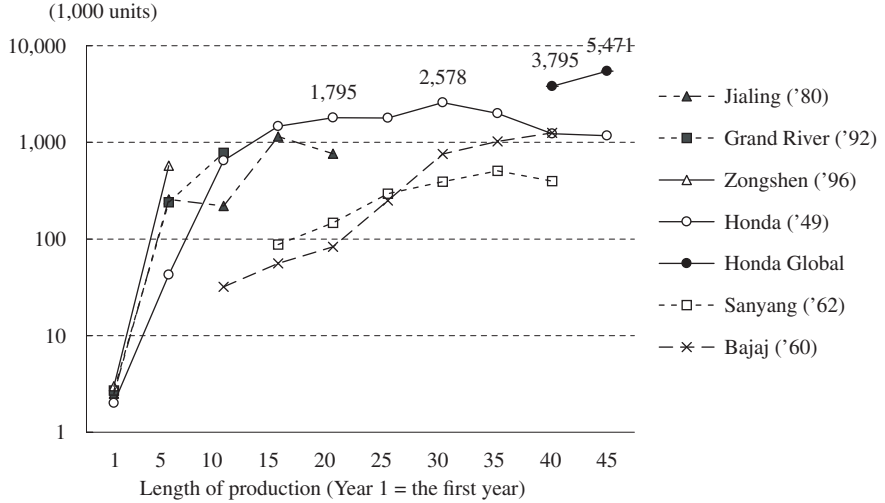
2. The names of makers are abbreviations. For their official names, see Table 2-1.

consolidated into large makers, and further down to four by the beginning of the 1970s, a situation that continues today.

Considering the rise of domestic demand, followed by stagnation, fierce competition and the cultivation of overseas markets, China from the mid-1990s to today is analogous to Japan from the 1950s to the mid-1960s. And yet, during this period, the number of makers, which was sixty in 1990, actually doubled, with the market concentration of top makers sharply declining.

This indicates that the leading firms followed different development paths in China and Japan. In 1965, the nineteenth year from its foundation, Honda produced 1.5 million units domestically, and its production exceeded 2 million units in 1974. However, in China, in the latter half of the 1990s, nearly twenty years after Jialing launched production, there was a clear pattern where the top makers, after closing on an annual production level of 1 million units, lost momentum one after the other (Figure 2-5). This instability seems to be linked to the rapid expansion impetus of Chinese firms. Looking at the speed of expansion after the beginning of motorcycle production, shown in Figure 2-6, leading Chinese makers have expanded more rapidly than Honda did. Comparing Jialing, the Grand River Group (China's largest maker in volume in 2003 and 2004, hereafter Grand River), and Zongshen, it seems

Fig. 2-6. Production Growth of Selected Asian Motorcycle Makers after Their Launch of Production



Sources: ZMGB (1995); ZQGNB (various years); CCYAH (1998); INTECOS and CIER (2001); Honda Motor Co., *Sekai nirinsha gaikyō* (2004).

Notes: 1. Figures are domestic production in each maker's home country with the exception of Honda Global.
2. The two-digit numbers in parentheses after each maker's name are years of their launching of motorcycle production.
3. The digits in the figure are those of Honda.
4. Honda Global is Honda's global production including Japan. Sanyang is Taiwan's Sanyang Industry Co., Ltd. and Bajaj is India's Bajaj Auto Ltd, both of which are leading local motorcycle makers in their respective countries. The production figures of Sanyang's 1st–10th and Bajaj's 1st–5th years are not known.

that, in China, the later the firms are established, the more rapidly they expand. Looking at the experience of other late-industrializing economies, however, we find that this is not only because they developed late. Leading indigenous makers in Taiwan and India, where the motorcycle industry has developed well and where indigenous makers who introduced basic technology from foreign makers play a significant role, have taken more time than Honda to expand their mass production capabilities[3] (Figure 2-6). It is only in China that, in the motorcycle industry, an impetus toward rapid expansion and instability are widely seen in leading indigenous firms.

2. Multilayer Structure with Firms of Diverse Backgrounds

Though the scale of the Chinese motorcycle industry is gigantic as a whole, there is a mixture of firms with diverse backgrounds, forming several layers differentiated by competence and the market segments they target. The ways of competing differ from one layer to another, making it difficult to discuss the whole of China in a single framework. At this point, let us look at the way that the numerous makers with diverse backgrounds were born, while confirming the characteristics of each of the layers.

(1) The Large State-Owned Makers That Laid the Foundation of the Industry

It was after the introduction of the reform and opening policy that China's motorcycle industry became established as a modern mass-production based, consumer-goods industry.[4] The central players at this stage were armaments factories that aspired to survive by converting themselves to civil-demand-oriented production, represented by Jialing in Chongqing (its name at the time was National Jialing Machinery Factory, and it produced shell casings and bullets.)

The government gave these firms preferential permission to introduce foreign technologies. With the imported technologies and new equipment, they rapidly established a new type of mass production system, thus coming to dominate in a single stroke the motorcycle market, which until that time had been a niche market. Most of the firms that came to hold top market shares by the first half of the 1990s were large state-owned makers that had properly introduced foreign technologies in one way of another.[5] Qingqi, too, though not an armaments-related factory, was a large state-owned firm that attained momentum for development by acquiring licensed technology from Suzuki.[6]

One of the important roles played by these large state-owned makers was to lay the foundations for a mass-production-type motorcycle industry in China. They introduced manufacturing technology for finished products, engines, and major parts, and at the same time nurtured parts suppliers. They also cultivated the market and established rudimentary nationwide sales networks. The major models of today, such as the CG125 and C100, which will be described in detail in the next chapter, were mostly introduced from the 1980s to the beginning of the 1990s. These makers also trained a large number of engineers, managers, and sales personnel, and their subsequent outflow facilitated the massive creation of new firms.

(2) New Entrants: Public and Private Makers

As the 1990s began, new entrants increased and the competition intensified. From the state-owned sector, medium-to-small state-owned firms that did not belong to the armaments industry entered the market one after another as fast growing makers. In addition, non-state-owned makers including collectively owned firms and privately owned makers, as well as foreign JV makers, entered the industry. The share of nonstate firms was even greater if parts suppliers are included.[7] Since motorcycle parts can be produced with a relatively small initial investment, even small-scale collectively owned firms in rural areas and private firms owned by individuals were able to enter the industry.

To be noted in the latter half of the 1990s is the rise of private firms. As shown by Table 2-1, in 1995, there was not a single private firm among the top ten makers, whereas in 2001 they accounted for five of the top ten.[8] Zongshen, one of the major subjects of this study, is a new maker that launched operations in the beginning of the 1990s as a specialized assembler of motorcycle engines, and which started motorcycle production in 1996. Zongshen, together with Chongqing Lifan Industry (Group) Co., Ltd. (hereafter Lifan), and Loncin Industry Group Co., Ltd. (hereafter Loncin), are called Chongqing's thee big private makers.

TABLE 2-1

CHANGE IN THE TOP-TEN MOTORCYCLE MAKERS: SHARE IN PRODUCTION BY UNIT, 1990–2003

(%)

1990		1995		2001		2003	
Jialing	22.8	Jialing	14.6	Jialing	6.7	**Grand River**	6.9
Jianshe	15.7	Jianshe	13.2	Qianjiang	6.3	Qianjiang	6.7
Shanghai	14.5	Qingqi	11.7	**Lifan**	5.8	Jialing	6.6
Qingqi	8.9	Jincheng	8.4	**Loncin**	4.9	**Lifan**	5.6
N. Ek Chor	6.3	Jieda*	6.5	**Sundiro Honda**	4.8	**Loncin**	5.6
Yuhe	3.1	Shanghai	5.1	**Zongshen**	4.7	**Sundiro Honda**	5.4
Nanfang	2.8	N. Ek Chor	4.5	Qingqi	4.6	**Zongshen**	5.3
Jincheng	2.4	Nanfang	3.5	**Grand River**	4.2	Jianshe	5.1
Nanchang	2.2	Chanlin	3.5	Jincheng	3.9	Jincheng	4.8
Weiyang	2.1	Qianjiang	3.5	Jianshe	3.3	Qingqi	4.6

Sources: Figures for 1990 are from ZMGB (various years) and figures for 1995, 2001, and 2003 are from ZQGNB (various years).

Notes: 1. Makers indicated in boldface are private firms.

2. Chanlin = Changchun Chanlin Group Co., Ltd.; Grand River = Grand River Group Co. Ltd; Jialing = China Jialing Industrial Co., Ltd.; Jianshe = Jianshe Industrial Group Co., Ltd.; Jieda = Jiangsu Jieda Motor Group Ltd; Jincheng = Jincheng Group Co., Ltd.; Lifan = Chongqing Lifan Industry (Group) Co., Ltd.; Loncin = Loncin Holdings Ltd.; N. Ek Chor = Luoyang Northern Ek Chor Motorcycle Co., Ltd.; Nanchang = Nanchang Aircraft Manufacturing Co.; Nanfang = Nangfang Motor Limited Co.; Qianjiang = China Qianjiang Group Co., Ltd; Qingqi = China Qingqi Group Co., Ltd.; Sundiro Honda = Sundiro Honda Motorcycle Co.; Shanghai = Shanghai Ek Chor Motorcycle Co., Ltd.; Weiyang = Shaanxi Weiyang Diesel Engine Factory; Yuhe = Nanjing Yuhe Machinery Factory; Zongshen = Chongqing Zongshen Motorcycle Group."

* Jieda used to be a collectively owned firm and was the first non-state-owned motorcycle maker to enter the top-ten ranking.

Unlike the big state-owned makers, many of the private firms were small in scale when they were founded, and only a few introduced foreign technology on a proper basis. Technologically, they began by collecting and assembling the parts manufactured by legitimate suppliers to large state-owned makers, and by adding minor changes, accumulated production and development capabilities. This is a "minor-change-type" development that makes heavy use of existing external resources, as will be described in the following chapter. Initially, they were criticized as "copy-makers," but some emerged as makers that overwhelmed large state-owned makers in terms of quality, product line-up, and brand credibility.

The new entrants included many smaller companies. They varied a great deal, ranging from potential quality makers to those called *zapai* (odds and sods brand) makers who were mostly "pick-up assemblers" of existing parts, makers only handling licensed production, makers of fake brand products, and "underground factories" that were not officially registered. In China, a diversity of firms can exist concurrently, because the country has market segments on varying levels, and the absolute scale of each segment is huge.

(3) Foreign JV Makers

Foreign makers, until the 1980s, sold their own brand products in the Chinese market through technological licensing provided chiefly to state-owned makers. In the 1990s, they entered the market through directly managed joint ventures. In the beginning, many of the foreign JV makers, capitalizing on their high quality and high performance, employed a high-grade motorcycle strategy targeting the high-end urban demand, differentiating their products from those of local makers. They lost the market, however, as a result of the policy restricting the new ownership of motorcycles in urban areas in the middle of the 1990s. From around 2000, the foreign JV makers began to accelerate the full-fledged development of low-price products for low-end markets, while increasing transactions with local suppliers.

(4) Three Layers

The diverse groups of makers described above can be roughly divided into the following three layers according to the grade and price of the products they manufacture, the nature of technologies they use and their business behaviors.

The first layer consists of foreign JV makers, whose products are expensive and of high quality, but whose market share is small. The second layer consists of leading indigenous makers, including two sub-groups: large state-owned makers and major new makers. These firms play the pivotal role in the industry in China. Assuming that the second layer firms constitute the top dozen or so makers, their market share makes up 60–70 percent of the entire market. The third layer is made up of the others, many of which are medium-small makers of various sorts, but it also includes new makers that have the potential to develop as quality makers as well as those who were leading makers in the 1970s through the 1980s. The new and old makers are mixed, and act as a seedbed for competition.

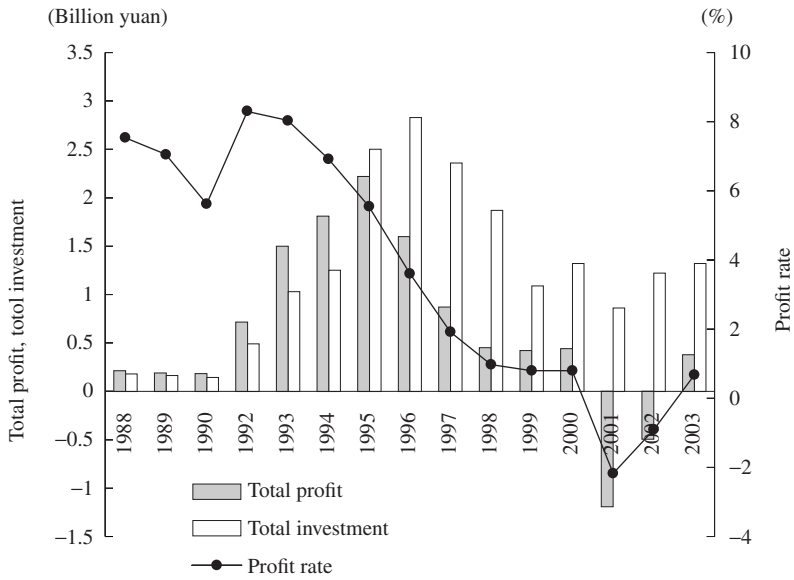
This study focuses its analysis on the competition platform of the second layer. However, since the end of the 1990s, foreign JV makers have been involved in head-to-head competition with the second-layer makers, while top makers in the third layer have been replacing lower-ranking firms in the second layer. The quality difference among the layers is diminishing year by year.

3. Decline of Profitability in the Late 1990s and Recovery after 2001

The fluctuations experienced by China's motorcycle industry in the second half of the 1990s were tremendous. This can be observed from the fact that the production of large state-owned makers decreased sharply starting in the mid-1990s, while new private makers gained increasing strength (Table 2-1, Figure 2-5). During the days of the supply shortage in the first half of the 1990s, the industry at large benefited from high profits, but this boom was short-lived, continuing for just a few years. Profits plunged, and after 2000, the entire industry sank deep into the red (Figure 2-7).

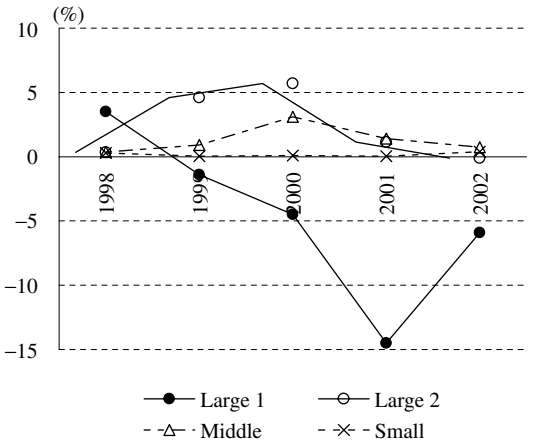
It was chiefly large makers that fell into stagnation starting toward the end of the 1990s. Looking at the profit rate of makers by firm size (Figure 2-8), deficits were posted solely by large-size makers for four consecutive years starting in 1999. This

Fig. 2-7. Profit and Investment of Chinese Motorcycle Industry



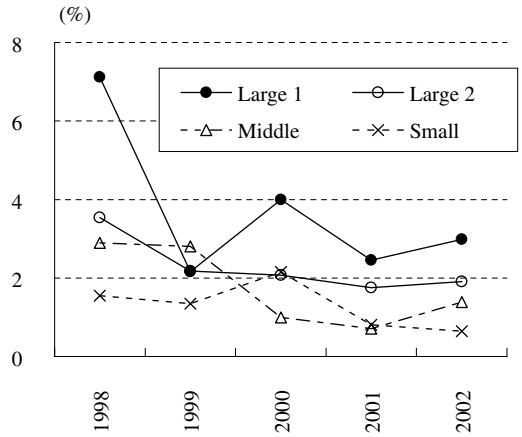
Sources: ZQGNB (various years).
Notes: 1. Figures are based on the total sum of all registered motorcycle makers (total of 91 makers in 1988, 154 makers in 2003).
2. Profit ratio = Rate of total profits over total sales of all motorcycle makers.
3. 1 yuan ≒ 0.12 U.S. dollar.

Fig. 2-8. Profit Rates of Makers by Firm Size



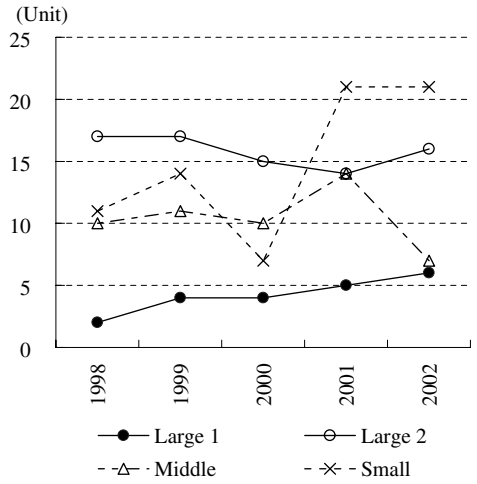
Source: ZQGNB (various years).
Notes: 1. Profit rate: ratio of total profits of categorized makers over their total sales.
2. The standard of categorization of firm-size level (Large 1, Large 2, Middle, and Small) is unknown.

Fig. 2-9. Investment Rate of Makers by Firm Size



Source: Same as Figure 2-8.
Note: Investment rate: ratio of total investment of categorized makers over their total sales.

Fig. 2-10. Number of Motorcycle Makers by Firm Size

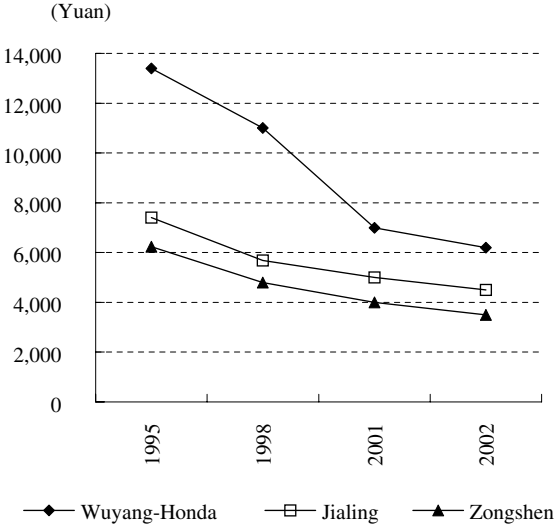


Source: Same as Figure 2-8.

presumably reflects the unfavorable performance of the large state-owned makers as described above.[9]

Investment by the industry as a whole, which declined in the second half of the 1990s as profits plunged, has recovered (Figure 2-7). Large firms invested the largest amount: scale-wise, with their investment accounting for 52 percent and 68 percent of the total investment of the industry in 1998 and 2002, respectively (ZQGNB, various years). Their investment propensity is also high and the investment to sales ratio of

Fig. 2-11. Retail Price of GL125-Type Motorcycles by Various Makers



Source: Author's interviews with various makers.
Notes: 1. Prices in this figure are the averages for the typical models. There are a range of prices depending on the grade.
2. Wuyang-Honda is Wuyang-Honda Motors (Guangzhou) Co., Ltd., one of Honda's JV firms, which has an official licence to produce the GL125 model.

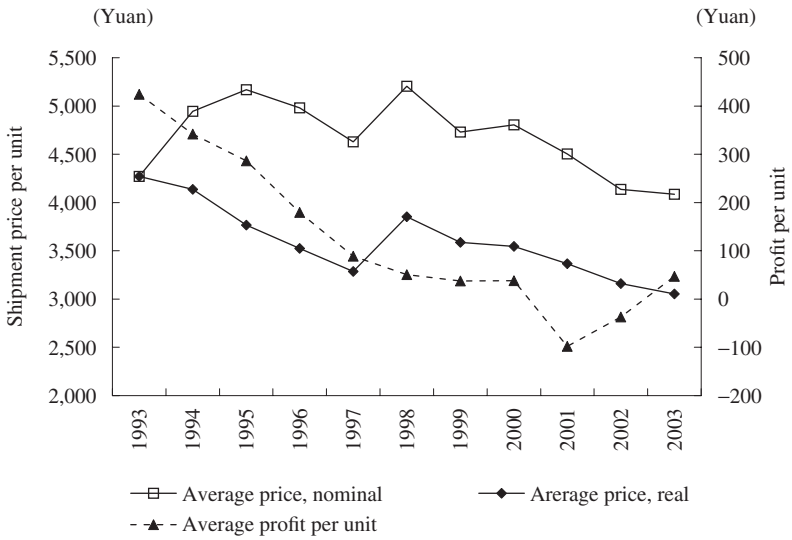
large firms is higher than other firms. Small makers have a low investment propensity (Figure 2-9). Since 2000, there has been an increase of small makers with low profits and low investment, and large firms with no profits and large investment (Figure 2-10).

Judging from the above, it may be that large makers facing stagnation continue production, while small firms presumably engaged in simple production without making investments continue to enter the market, which in turn facilitates the continuation of the state of excess supply capacity.

The plunge of profits in the latter half of the 1990s was a result of the buyer's market and the falling prices. This can be seen clearly in the sharp decline of the prices of conventional-type products. According to the firms interviewed by the author, product prices and profits peaked around l994 and 1995, and those of conventional-type products have continued to plunge since that time (Figure 2-11). The drop from the end of 1999 was particularly prominent.

As for the industry's average price per unit (Figure 2-12), real prices dropped sharply in the first half of the 1990s, and registered a further drop in 2000 and subsequent years.[10] In the early 1990s, when there was a massive increase in production, profit levels were high, and price cuts were financed primarily by profits. On the

Fig. 2-12. Average Price of Motorcycles and Profits per Unit



Source: Same as Figure 2-8.

Notes: 1. Average Price = Total sales of all motorcycles/total unit of sales. The average profit is deduced in the same manner. The real average price is deduced by deflating it by the factory shipment price index (1993 = 1).

2. The rise of prices in 1998 is considered to be the result of the sharp decline of the total sales of the industry after the overproduction in 1997.

other hand, after 2000, prices declined despite a recovery of the profit rate, suggesting that some kind of rationalization was underway. During this period, the market share of the top makers climbed, indicating that makers undertaking rationalization have survived and prevailed.

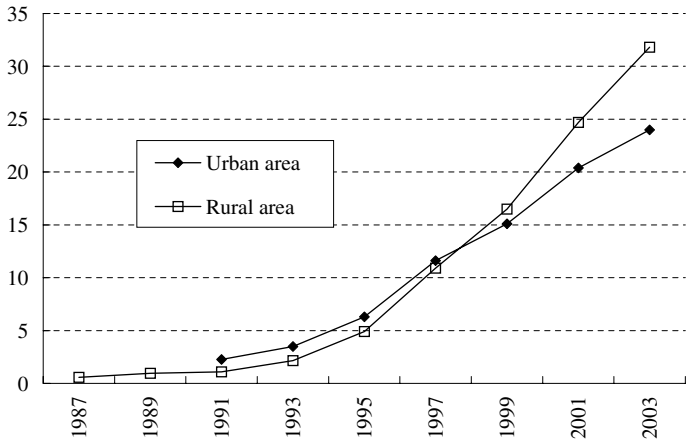
III. Market Factors: Demand and Governmental Regulation

The study assumes that the size and nature of China's domestic market determines the state of the competition in the motorcycle industry, and that changes in the market are the most important driving force behind firm upgrading. In this section, market factors will be examined.

1. The Domestic Market: Huge Low-End Demand with a Closed Upper Exit

China's motorcycle market marked a dramatic expansion over the five years from 1993 to 1997, when the number of motorcycles owned increased by an estimated 30–40 million units.[11] This implies that a huge market, more than twice the size of the current Japanese market, emerged in a period of just five years. It can be easily assumed that absolute enormity of the Chinese domestic market is the most important factor leading to the uniqueness of the development path of Chinese indigenous firms.

Fig. 2-13. Diffusion Rate of Motorcycles in Urban and Rural Areas (Number of Motorcycles Owned per 100 Households)



Sources: SSB (various years), data acquired via a sampling survey.

In the background of the rapid expansion impetus and instability of Chinese makers, as outlined above, we can see this huge market, which allows the simultaneous existence of as many as ten world-class large makers with production capacities of more than 1 million units each. Presumably, leading makers in Taiwan and India, which faced the ceiling of stagnant domestic market expansion in their early stage of development, primarily pursued the capability to handle quality stabilization and new product development. On the other hand, it can be assumed that immature makers, which had not yet fully accumulated mass-production capabilities, lost their control over order as they tried to reach the highest level of mass production possible. This point will be discussed again with regard to Jialing and Qingqi in Chapter 5.

The increased demand for motorcycles came from small and medium-sized cities and rural areas rather than big cities that were home to a large number of wealthy people. In the latter half of the 1990s, rural areas surpassed urban areas in terms of the diffusion rate (Figure 2-13). The demand for motorcycles in China came mainly from the low-income population.

Motorcycles in China have been mainly used for commuting and small business, namely as "transportation for the masses," and therefore, price is more important than performance as long as a certain level of quality is provided.

The immediate reason for the stagnant demand for motorcycles in urban areas was the strict regulations imposed upon their use.[12] In the postwar era, Japanese makers found a path to further development in highly value-added motorcycles tailored to enthusiasts, a path that Chinese indigenous makers could not follow given the present situation.

2. The Preference for "Minor-Change" Versions and Quality Requirements

During the author's observations in the 1990s, hardly any diversity was seen in

motorcycles in China's rural areas and small cities, as the market was fully occupied by some standard vehicles such as the CG125 and minor-change versions of them. As described in the next chapter, the CG125 and C100 are extremely good technologically in terms of adaptability to the market of developing countries, and it is understandable that their diffusion was facilitated by the attractiveness of the products per se. However, why is it that there have been no major-change-version models developed on their basis, and that minor-change-versions prevail, which are indistinguishable on the surface? In this section, based on a rudimentary survey conducted by the author with regard to the distribution of motorcycles,[13] the reasons for the preference for minor-changes-versions over the original models or major changes is discussed.

(1) The Nature of Farmers and Lack of Information

The argument is sometimes made that "farmers are not comfortable with buying what is different from what others have. They buy what others are already using. Only then do they feel at ease."[14] In Shandong Province and Inner Mongolia, farmers usually buy motorcycles at retail shops in the center city/town of county or township, based, allegedly, on information gained by word of mouth. Some of the information on a certain type of vehicle regarding the safety and reliability, appropriate price, gasoline mileage, repair, and other maintenance, may be best confirmed by the fact that others are using it without any severe problems. In this sense, it is reasonable that brand-new models, which are not currently in use, cannot be easily accepted in a short period of time. However, it may well be that, in the long run, word of mouth leads to the spread of correct product information.

(2) Low Pricing of Minor-Change Version Vehicles

The biggest attraction of minor-change versions is their low price.[15] They tend to be substantially cheaper than the original models. The prices of minor-change versions of Jialing and Zongshen models are less than half of those of the originals manufactured by Wuyang-Honda Motors (Guangzhou) Co., Ltd. in the late 1990s (Figure 2-11).

The low pricing seen with minor-change versions also holds with spare parts: in addition to genuine parts, parts in various price ranges are distributed at the low end of the market. An interview at a repair shop in a county city of Kulun, Inner Mongolia, which is frequently visited by rural users, reveals that the price and quality of different parts varies a great deal, e.g., a cylinder for a CG125 engine costs 230 yuan for a genuine part, 85 for a good quality copy, and 55 yuan for a poor quality copy product.[16] Once a minor-change version vehicle is purchased, those cheap compatible parts can be used.

(3) Easy Repair and Maintenance

For minor-change vehicles, there may be a cycle where the availability of repair parts at hand increases the convenience to users, leading more people to buy the vehicle, further encouraging the maker to launch compatible types of vehicles ("network externality effect"). Especially in the first half of the 1990s, when locally produced motorcycles were not highly trusted, ease of maintenance was presumably

the major judgment criterion. This is seen as the main reason for farmers "wanting to ride what others are riding."

In urban areas, where makers have direct retail shops and official dealers, the access to genuine parts and other direct services is likely convenient, whereas there are few users who actually use them.[17] This is because there is a large-scale market in cities dedicated exclusively to after-parts, and for parts and subsidiary materials that are not important to the safety, performance, or quality of the motorcycle, people generally either have them repaired in a repair shop unaffiliated with the maker or do the repairs themselves, using cheap copy parts. However, users with a high level of awareness are said to purchase genuine parts if they are important (e.g., engine parts).[18]

(4) Increasing Minor Differentiation and Distribution Infrastructure

On the other hand, in recent years, some differences have become increasingly conspicuous among minor-change version vehicles. The author observed a repair shop in Kulun, where a Loncin-brand CG125-type engine was being repaired. The malfunction had been caused by damage to a certain part attached to the shaft of the gear unit. According to the owner of the shop performing the job, the gear unit as a whole could be loaded onto other makers' CG125-type engines. However, the particular part that was damaged could not be substituted by the corresponding part of another maker's gear unit, because it had a special shape. That particular part had to be ordered from Loncin's parts supply center, located within the motorcycle wholesale market in the suburb of Shenyang City, 250 km away from the county. Earlier, makers had produced identically shaped engines with all constituent parts being the same size, and repairers and users could combine different maker's engine parts as they pleased. However, starting a couple of years before the survey, minor differences allegedly began to appear among makers, making repairers find things increasingly "troublesome."[19]

At present, genuine parts from most makers are available in the wholesale market in Shengyang. In the beginning of the 1990s, when the parts market was not yet well formed, direct purchases from the maker using postal money orders was the only way to get repair parts. But it took as long as two weeks, and required follow-up phone calls, because orders were often forgotten. Starting in 1995 and 1996, genuine parts became available via agencies in the wholesale market. Copy parts began to appear in the market in around 1994, but they were notorious for their poor quality, and users were eager to purchase genuine parts. Apparently, it was from around 1998 that the quality of copy parts became stable and everyone began using them.

Seen from the perspective of final demand, the establishment of the distribution infrastructure proceeded in parallel with the stabilization of repair parts in the 1990s, forming toward the end of the 1990s the basis for the competition seen today. Further, in 2000 and thereafter, the differentiation of individual parts began gradually. However, major-change version vehicles have yet to be launched. The current phase seems to be one in which the degree of differentiation is steadily expanding within the scope of minor-change type development.

(5) Increasing Requirements for Quality

Most of the consumer demand in the first decade of the twenty-first century seems to have been for improved quality and performance of existing vehicle models, rather than major changes or great novelty. Makers, retailers, and repair shops share a common perception that the biggest concern of the majority of motorcycle purchasers is endurance and gasoline mileage.

There has been an increase in products returned from consumers to makers due to malfunctions since the latter half of the 1990s. Earlier, amid the supply shortage, consumers were satisfied as long as they were able to purchase a motorcycle; if the vehicle broke down, they simply resigned themselves to somehow repairing it themselves. Today, by contrast, they quickly demand a replacement. This is partly a result of the campaign under which makers are using *sanbao* (returns, repairs, and replacement free of charge) as part of their sales promotion, and thus is fundamentally driven by heightened level of user demand for quality and good services. Furthermore, there has apparently been an increase in new users who are sensitive to "drivability and comfort," as evidenced by good acceleration, and low vibration and noise.

It may be true that there still is persistent demand for vehicles that are merely good for "riding" and "moving with loads on," but quality has taken on primary importance of late against the backdrop of growing consumer awareness and improved living standards throughout China.

3. Incomplete Government Regulations and Recent Tightening

The motorcycle, as a product that has an inherent impact upon safety and the environment, is subject to various public regulations. Emission controls in particular are becoming increasingly strict worldwide, and have become one of the driving forces facilitating technological progress on the part of makers who are required to meet regulations. Also strongly required, in recent years, has been the safeguarding of intellectual property rights.

Until the 1990s, however, China had extremely loose government regulations covering those areas both in terms of content and enforcement. This was the primary factor that allowed the flooding of low-quality and low-price products. In this respect, too, changes are being steadily made, clearly bringing about favorable results in recent years.

(1) Immature Government Supervision of the Industry

The Chinese government recognizes that there were major problems and limitations with its industry supervision system until the 1990s.[20]

The primary purpose of the government's supervision over the industry in the 1980s was specifically to "prevent a reckless expansion, restrict the market entry of poor products, and improve quality" (ZMGB 1995, p. 231). Some of the central measures the government could take to this end included restricting new entrants into the market, establishing reference standards for technologies and quality, and providing guidance to new entrants.

However, as the motorcycle industry, unlike the automobile industry, was "outside

of planning from the beginning," the government was not armed with effective control measures.[21] In addition, the industry's production volume was small in the 1980s, and even if there were problems, the users were individuals whose voices were not socially influential. As such, the government had little motivation to actively control the industry.

In 1987, the first specialized governmental division in charge of the industry was established, followed by the introduction of a "list management (*mulu guanli*) system" the following year. Under this system, a new model of vehicle developed by a maker, after going through safety and environmental impact inspections, is registered on a "list" compiled by the government (Bureau of Machinery Industry and Ministry of Public Security), and only after this is the maker qualified to produce the model.

In reality, however, the system did not function effectively. The vehicles actually produced were often different from the samples submitted for registration to the list. The screening process differed from one area to another, and there was an absence of discipline. The interviews the author conducted with makers toward the end of the 1990s revealed that sample vehicles were not necessarily actually inspected, and in fact were quite easily placed on the list simply through the submission of forms with vehicle photos attached. In smaller cities and rural areas, vehicle models not registered on the list (i.e., which presumably failed to meet the official requirements) were openly used without license plates (number plates) issued by the local public security office.[22] Even in areas with frequent problems, lead administration officials of the central government were unable to conduct on-site inspections as they wished, because of the protectionism of provincial governments. The judiciary system was immature and legal regulations were far from effective.[23]

As a whole, the ability of public authorities, including the police and system of justice, to supervise the production of the "non-planned sector" such as motorcycles and the consumption of ordinary people is immature. It should be regarded as a problem specific to a developing country and transition economy, which is in the process of establishing a new system for the entire society to ensure fair competition and consumer protection, after the economic management method of the time of planned economy became obsolete, giving way to the preeminence of the market.

Industry supervision has been changing since 2000. The "list management system" was abolished and replaced in 2001 by an "entry permission (*zhunru*) system," a production licensing system based on the audits of makers themselves. The China Compulsory Certification (3C) system was introduced into the country's manufacturing sector, requiring quality audits prior to the launch of products on the market. Motorcycles were one of the first areas targeted by the system.

(2) Supervision Based on Technological Standards and the Law: Safety and the Environment

One of the important changes in supervision of the industry was the shift from "administrative control" in the 1990s to "legal control" and "technological control." In the 1980s, industrial supervision, not only for the motorcycle industry but elsewhere, relied exclusively upon administrative directives. On the other hand, serious

efforts were made toward upgrading quality and production efficiency, as Industrial Standards were established and promulgated, starting in the 1990s.[24] In the area of motorcycles, National Standards (Guojia Biaozhun: GB) began to be introduced in 1984, coupled by Professional Standards for the Automotive Industry (Qiche Hangye Biaozhun: QC) from 1993.[25] The enhancement and promulgation of Industrial Standards appears to have contributed to technological diffusion in the entire industry and the upgrading of production efficiency.

To be registered on the production list, new models are required to satisfy compulsory GB safety and environmental standards. However, as described above, the list management itself failed to function effectively, and products failing to comply with GB standards were placed on the market without any impediments. Standards, though compulsory, had in fact only limited enforcement power, as they were not legally enforceable. On the other hand, under pressure to reach international technology standards in preparation for joining the WTO, the country moved to legislate laws concerning safety and the environment from 1996, and in 2000 fifteen laws were promulgated (QGSBW 2001, pp. 982–83).

The level of China's regulatory standards is by no means low. In the area of emissions control, in August 2002 the country promulgated new standards that were compliant with EURO I,[26] and will reportedly introduce stricter emissions regulations comparable with the European counterpart in 2006.[27]

Environmental regulations do have an important impact upon product development by makers. In the 1990s, the dominant engines in China shifted from two- to four-stroke engines. This was partly due to the fact that Honda's four-stroke engines, such as the CG125 and GY6, attracted users because of their gasoline mileage. More fundamentally, however, the projection that stricter emissions controls would make the existing two-stroke technology unusable encouraged makers to adopt four-stroke engines.[28]

What is important for this study is the fact that stricter emissions controls created the necessity for efforts to develop and produce more sophisticated engines (and other related critical parts), and this seems to have led to the betterment of the product development process and a change of the supplier system in recent years (to be described in Chapter 6).

(3) Neglect of Intellectual Property Rights and Recent Changes

Another key factor that allowed "assembled by pick-up parts" vehicles, which are really nothing more than copies, to flood into the market was the failure to establish the protection of intellectual property rights.

From the 1980s, what we call "copy" motorcycles became a target of government regulations as "faulty and fake" (*jiamao-weilie*) products. However, the regulation was primarily intended to protect state-owned firms and consumers from the reckless behavior of smaller firms, and it was only in the latter half of the 1990s, when China's affiliation with the WTO came onto the political agenda and foreign firms made a flurry of complaints, that it became seen as a universal issue directly linked to the protection of the rights of the developed countries, namely, as a violation of intellec-

tual property rights. Under the list management system, the monitoring of intellectual property rights was looser than that under safety/environment-related standards,[29] and vast quantities of products that were in reality no more than dead copies were included in the government's list, and thus were considered legitimate. The awareness that they were violating intellectual property rights was indeed lacking in China's motorcycle industry in the latter half of the 1990s.

However in recent years, as in the case with the safety and environmental regulations, improvements have been observed on the issue of intellectual property right. For example, when Yamaha was preparing to accuse a firm of violating its trademark right in 2002, it sent staff to the violating factory to obtain hard evidence. However, the staff was detained by the local police and the case nearly swept under the carpet by powerful provincial protectionism. Yamaha, however, launched lobbying activities to the central government, while appealing to the media in China and abroad, and it successfully identified and charged the violating factory. This triggered a strengthening of the regulations by the government, and the number of fake bikes with falsified trademarks sharply decreased in 2002 and onwards. The Chinese government, which was preparing to join the WTO, seems to have taken the incident seriously and used extraordinarily means to defend its external image. The problems do still remain serious, but this should be seen as an indication of gradual improvement.

IV. Summary

In this chapter, I have discussed the demand and the market competition environment that lies in the background of the supplier system as well as the product development activities of makers and changes within this environment.

The motorcycle industry in China in the 1990s can be characterized as follows. Disorderly competition was in place, driven by a massive number of users with poor consumer consciousness willing to purchase low-quality products as long as they were inexpensive, and the enthusiastic spirit of firms producing in large volumes whatever was sellable, coupled by slack governmental regulations. In this process, existing large state-owned makers lost their momentum, while new private makers, which were capable of quickly supplying low-price products, came to play the central role, partially in the latter half of the 1990s.

However, as the living standard improved and a state of "excess supply" became general, consumers' demands for quality heightened and at the same time government regulations concerning safety and the environment as well as intellectual property rights have been strengthened. The top makers are increasing their share in a situation of continuing price declines and a bottoming out of the industry's profits, apparently indicating that firms capable of responding to the new changes in demand are increasingly exerting their strength.

Notes

1 Interview with Honda Motor Co., Ltd. on July 6, 2004.
2 The essence of the flying-geese model of economic development (catching-up style development model) is that the industrial structure, firms, and demand of latecomers reaches a "homogenization" with those of the developed countries. See Akamatsu (1962), Suehiro (2000), and Yun (2003).
3 In addition to China, indigenous firms in Taiwan and India are highly competitive. In Taiwan, the three top makers have a 90 percent or greater share of production. Of the three, two are indigenous makers. However, in their development process, the technological support provided by Honda played a vital role. In India, too, indigenous makers enjoy a high market share, whereas Japanese makers increased their share when open competition was phased in during the 1990s; in 2003, a joint venture maker with Honda captured a 40 percent share. For the motorcycle industry in Taiwan, see CCYAH (1998), Sato (1999), Shih and Chen (2004), and Ohara (2005), and for India, see INTECOS and CIER (2001) and Shimane (2005).
4 The production of motorcycles for the military, police, and postal services began in the 1950s, but the number of makers as well as the size of production was very limited (ZMGB 1995, p. 295).
5 Thirteen state-owned makers officially entered into agreements with foreign makers for the introduction of technology, technical cooperation, and the procurement of core parts in the 1980s; six were in the armaments industry (QGSBW 2001, pp. 9–12).
6 Qingqi, which began making imitations of small East European mopeds in the 1950s in Jinan City, Shandong Province, is one of China's most traditional motorcycle makers. Its name at the time was Jianan General Light Motorcycle Manufactory.
7 According to the 1995 National Industrial Census, of all motorcycle parts (value of industrial output by "all township and higher level self-supported enterprises"), 12% were manufactured by state-owned firms, 34% by collectively owned firms, 17% by foreign JV firms, and the remaining 37% by others (presumably mostly privately owned firms). (Calculated based on the relevant pages of DQGPB [1997]).
8 Sundiro Honda Motorcycle Co., Ltd., one of the five private firms, was a joint venture established in 2001 mainly by Honda and Hainan Sundiro Motorcycle Co., Ltd., a core subsidiary firm of the Sundiro Group (hereafter Sundiro), a privately owned firm established in 1988. Prior to the joint venture, Sundiro was producing 550,000 units, and the majority of the JV's share as of 2001 was taken over from this.
9 Presumably, the stagnation hit some of the former large state-owned firms most seriously. The profits of the major makers were not disclosed for a long period of time, but in its 2004 edition, *Zhongguo qiche gongye nianjian* [China automotive industry yearbook], for the first time in several years, the profits of the major motorcycle makers (fifteen firms) were disclosed. According to this, Jialing, Qingqi, Jianshe Industrial Group Co., Ltd., and Nanfang Motor Limited Company were in the red. Among them, Jialing moved into the black in 2003 (ZQGNB 2004 edition, p. 353).
10 The numbers reflect a drop in the unit price of individual models, mixed with the effect of an average price increase resulting from an upgrading of the composition of models. In the 1990s, the market composition of types of motorcycles dramatically changed, from small to large types and from two-stroke to four-stroke engine types. In addition, each maker released new models. This inherently had the effect of raising unit prices, and yet unit prices have declined since 2000.

11 Shen, Itō, and Li (2002) estimate that the number of the motorcycles owned in China increased to as many as 52 million in 2000. In Japan, about 13 million motorcycles were in use in 2003.
12 Restrictions were implemented in 128 large and medium-sized cities in 2002 (ZQGNB 2003 edition, p. 358).
13 The author conducted interviews in October 2002 in Jinan City, Shandong Province and in Kulun County, Tongliao City, Inner Mongolia Autonomous Region with fifteen business units including wholesalers, retailers (maker's direct retail shops, official dealer's shops, and independent small retailers), after-parts shops, and repair shops.
14 According to an interview with a wholesaler in the wholesale market dealing exclusively in motorcycles in the suburbs of Jinan City (October 28, 2002). In Shandong Province, there are seven or eight large wholesale markets, where wholesalers and retailers from nearby county towns come to make purchases. Through them, motorcycles are sold to small cities and farming villages. This wholesale market was established around 1994.
15 All the interviewees are in agreement on this point.
16 Interview conducted on October 30, 2002. If ten other types of parts are divided into (1) genuine parts, (2) good quality copies, and (3) poor quality copies, the price of (1) ranges 1.8–4 and that of (3) from 0.4–0.6 vis-à-vis (2) = 1.
17 Interviews with a direct retail shop of Qingqi and an official retail dealer of Sundiro in Jinan City (October 27). Sales of after parts, repair and other services accounted for only 5 percent and 1 percent of their total sales, respectively.
18 Same interview as Note 17. The same response was received from a repair shop in Kulun County.
19 Same interview with a repair shop in Kulun County.
20 The statements that follow are based on the author's interview with the Automobile Business Management Division, Industrial Business Management Department, Bureau of Machinery Industry, which was the administrative division in charge of supervising the motorcycle industry at the time (January 14, 1999).
21 Supervision over the industry (more properly, control at the time) by the government in the 1980s was implemented basically by administrative plans and directives. One of the main sources of authority for the directives was the right to distribute important resources to firms. The automobile industry, which relied heavily upon the government for production resources and sales, could be controlled with ease. In contrast, there was much less need for the motorcycle industry to rely upon the central government either for industrial materials, as they could be acquired, or for sales channels because its users were individuals. A similar case is examined by Marukawa (1999) with regard to the expansion of the management autonomy of TV firms in the beginning of the 1990s.
22 When a newly purchased motorcycle is registered with the local public security office, the security official checks and confirms that the model of the vehicle is included on the list and issues a license plate. However, in rural areas and small cities, it was a common practice for users to avoid paying tax and registration fees, using their motorcycles without registration.
23 An officer in charge described this as "a problem of the society as a whole that cannot be solved simply by the department in charge."
24 In 1988, the Standardization Law of the People's Republic of China was promulgated and the regulations for the implementation of the law were issued in 1990.
25 The Industrial Standards include compulsory standards for safety, environment, and energy saving (GB only) and voluntary standards for quality upgrading, rationalization and efficiency (GB and QC). As of 2000, 26 standards on environment and safety, 131 standards on

technology, and 30 standards on quality were established (QGSBW 2001, pp. 971–73).

26 Wang and Liu (2001, p. 109). EURO I is an emission regulation standard determined by the Economic Commission for Europe (ECE) which was implemented in Europe from 1999.

27 It is reported that Europe introduced EURO II in 2003 and will introduce EURO III in 2006 (ZQGNB 2003 edition, p. 358).

28 In the first half of the 1990s, the shift to four-stroke engine was taken for granted in the industry due to the strengthening of environmental regulations. In fact, no two-stroke technology was introduced from abroad in the 1990s (ZMGB 1995, pp. 295–96). Two-stroke engines have the following advantages: (1) simple intake and exhaust mechanism, fewer parts, and easy production and repair, and (2) strong torque and good drivability. On the other hand, four-stroke engines, with their excellent combustion efficiency, have the following advantages: (1) good gasoline mileage, leading to lower gasoline costs; and (2) cleaner emissions.

29 The Bureau of Machinery Industry determined, according to the above interview with the Bureau, that a vehicle is not a fake "if there was a 5 percent difference as a whole when comparing various parameters with the existing product." Not much importance was attached to intellectual property rights in the list management.