STRATEGY OF JAPANESE AUTOMOBILE MANUFACTURERS: A COMPARISON BETWEEN HONDA MOTOR CO., LTD. AND MAZDA MOTOR CORPORATION

by

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ABSTRACT

The success of the Japanese auto industry has been remarkable. This success is considered, in general, to be attributed to the Japanese factors characteristic to all Japanese industries: low production costs, a high educated level of plant workers, systematic quality control and so on. However, among the Japanese auto manufacturers, the specific managing style and the level of success of each car manufacturer differ significantly.

This thesis focuses specifically on two of these Japanese auto manufacturers, Honda Motor Co. and Mazda Motor Corporation, #3 and #4 respectively among the Japanese manufacturers. For the past twenty years, since Honda started producing automobiles, Mazda and Honda have been competing for third place in the Japanese automobile industry, behind the leaders Toyota and Nissan. In general, Honda seems to be more successful than Mazda from the point of view of both financial standing and growth rate.

This thesis analyzes in detail the outstanding performance of Honda Motor Co., focusing on two areas: product development performance and international strategy. This analysis identifies the specific reasons for Honda's success, while at the same time comparing it to a similar sized Japanese auto manufacturer, Mazda Motor Corporation, which isn't as successful as Honda.

Honda's success has been primarily attributed to its strategic focus on the U.S. market, which had been by far the most profitable, at least before the appreciation of the yen began at the end of 1985. Honda's emphasis on the U.S. market is supported by an appropriate strategy in the important areas, such as a U.S.-oriented product line, aggressive dealer expansion primarily aimed at better service, and an early decision to build its U.S. plant. In contrast, Mazda's financial crisis in the mid-1970's continues to contribute to Mazda's inferior position.

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I. Introduction

The success of the Japanese auto industry has been remarkable. This success is considered, in general, to be attributed to the Japanese factors characteristic to all Japanese industries: low production costs, a high educated level of plant workers, systematic quality control and so on. However, among the Japanese auto manufacturers, the specific managing style and the level of success of each car manufacturer differ significantly. In this thesis, I will focus specifically on two of these Japanese car manufacturers, Honda Motor Co. and Mazda Motor Corporation, #3 and #4 respectively among the Japanese manufacturers. For the past twenty years, since Honda started producing automobiles, Mazda and Honda have been competing for third place in the Japanese automobile industry, behind the leaders Toyota and Nissan.

Honda is one of the most successful Japanese manufacturers founded after the Second World War. In particular, Honda Motor Company's growth rate in the auto industry has been outstanding, as well as in the motor cycle industry. Honda started its mass production of automobiles only about 20 years ago in 1967, and is one of the newest auto manufacturers in the world. Honda's growth, particularly in the 1980's, has been overwhelming, not only for Japanese manufacturing competitors but also for all auto manufacturing competitors in the world.

In contrast, Mazda is one of the oldest Japaneses auto manufacturers. Up to the beginning of the 1970's, Mazda had been enjoying the third place position in the Japanese auto industry, because of an extensive automobile product line and a high sales

volume. However, Mazda experienced extensive difficulties during the oil crisis in the middle of the 1970's. Mazda was about to go bankrupt at that time. After this crisis, Mazda was able to turn itself around quite impressively. Since 1985, however, Mazda has found itself in serious trouble again, primarily because of the sudden appreciation of the yen.

Honda and Mazda are similar in several aspects. The size of both companies, in terms of number of employees and total car production units, has been almost the same, until recently. The major products contributing the most to their profits are cars, even though Honda also produces motor cycles and power products (generators, lawn mowers, etc), and Mazda also manufactures commercial trucks and machine tools. In addition, as a corporate strategy, both manufacturers are even more export-oriented and R&D-oriented than the other Japanese manufacturers.

In general, Honda seems to be more successful than Mazda from the point of view of both financial standing and growth rate. It is believed that the major reasons for Honda being more successful than the other Japanese automobile manufacturers including Mazda are:

- Innovative and distinctive products and marketing strategies
- Aggressive international strategies, especially focusing more on the U.S. market than the other Japanese manufacturers.

In this thesis, the author's objective is to analyze the outstanding performance of Honda Motor Co., focusing on these two areas to analyze the specific reasons for Honda's

success, while at the same time comparing it to a similar sized Japanese auto manufacturer, Mazda Motor Corporation, which isn't as successful as Honda.

The author will first explain the historical overview of Honda and Mazda in Chapter II, focusing on the changes in their competitive situations. In Chapter III, statistics of Honda and Mazda, including company size, sales performance, and financial performance will be portrayed. Then, in Chapter IV and V, the author will explore two specific areas which are considered to be key factors for both Honda and Mazda. In Chapter IV, the author will discuss product strategy and R & D performance at both manufacturers to analyze how Honda's products have been more successful than Mazda's. In Chapter V, the author will evaluate the respective major international strategies and their implementation by Honda and Mazda, primarily discussing the most important export market, the U.S. Finally, in Chapter VI, the author will conclude with the future competitiveness of Honda and Mazda in the auto industry, confronted with the ongoing environmental changes, including the ever growing competition in the industry.

II. Historical Overview of the Competition between Honda and Mazda

1. Entrance into the Car Industry

Around 1955, the Japanese market started showing increasing demand for passenger cars for personal use. Before this period, demand in the Japanese auto industry had been primarily for commercial vehicles like trucks and taxis. In 1955, the Japanese MITI(Ministry of International Trade and Industry) revealed a plan called, the "National

Car Project" to vitalize the Japanese car industry. MITI's plan included that it would select through a competition one particular microcar[1] with an engine of 350 cc to 500 cc as a "National Car." The car selected would be promoted by MITI for mass production and for export.

Even though this plan was never implemented, it stimulated Japanese auto makers to develop a microcar. In 1958 Fuji Heavy Industry introduced the Subaru 360, and in 1960 Mitsubishi Heavy Industry marketed the Mitsubishi 500. Especially because of the great success of the Subaru 360, the Japanese microcar market immediately appeared to be taking off. This microcar segment was on appropriate starting point, particularly for a manufacturer which was newly entering the car industry. So, in 1960 Mazda introduced a microcar, the R-360, and added another microcar, the Carol, in 1962. Honda entered this microcar market with the N-360 in 1967. Around this period, the race in the microcar market can be identified as the beginning of the competition between Honda and Mazda. An elaboration of the historical overview of Honda and Mazda around this period will follow, after I will first discuss several important topics before that period.

a. Honda's History of its Entrance into the Car Product Market

Honda Motor Co. was founded in 1948, by Soichiro Honda. Many people attribute the company's uniqueness among Japanese manufacturers to the uniqueness of Soichiro Honda. So, to begin with, I will describe Soichiro Honda, focusing on his issues which are considered to have an influence on Honda's current culture and management.

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[1] In this thesis, a microcar is defined as a car with a 360-550 cc engine, only popular in Japan. A minicar is defined as a car with an engine of around 1,000 cc.

*Founder - Soichiro Honda[2]

Soichiro Honda was a great inventor and engineer. He had recorded 480 patents since founding Honda in 1948 until he retired as president of Honda Motor Co., in 1973. Soichiro's talent as a distinctive inventor and entrepreneur, together with his unique personality, continue to have a strong influence on Honda Motor Co.

Soichiro Honda was born in 1906 as a son of a metal smith. Since his childhood Soichiro had had a dream of going into the automobile business. Because Soichiro didn't think he would need a higher education to make automobiles, he didn't even attend junior high school. At the age of 12, he joined a small auto repair shop to learn automobile mechanics.

In 1934 Soichiro Honda founded a piston ring manufacturing company, Tokai Seiki Heavy Industry, and had been running the firm until 1945, when he sold it to Toyota Motors. Tokai Seiki started with only 50 employees, and. there were more than 2,000 employees when Soichiro sold it. Describing Soichiro Honda when he ran Tokai Seiki, Kiichi Kawakami, the president of Yamaha at that time, wrote in an article,"Soichiro Honda is the Edison of Japan. He invented all the machine tools used at his plant. He is even involved with the engineering issues at his company, from the mechanical to the electrical. Surprisingly, in his small plant, he designed and produced even a high frequency electric furnace and a high frequency power supply machine." David Halberstam writes about Soichiro in his book, "Soichiro Honda was an authentic genius, a man who loved to create

[2]The factual information pertaining to Soichiro Honda is taken from Hiroshi Matsuo, *Honda no Sugoi Kaihatsupawa wa Dokokara Deruka*, p. 79 - 94, unless otherwise noted.

and to experiment, the closest thing that modern Japan had produced to the first Henry Ford."[3]

In 1942 Toyota Jido Shokki, a company of the Toyota group at that time, bought 40% of the stock of Tokai Seiki. The management at Toyota Jido Shokki knew how high the level of technology was at Tokai Seiki for that period. Taizo Ishida, who was a director at both Toyota Jido Shokki and Tokai Seiki, and later became the president of Toyota Motors, recalled, "Soichiro was such an extremely powerful inventor that we normal people were not able to understand what he was doing, in terms of both his inventing activities and his behavior."

Soichiro's behavior was definitely unusual, especially when he was young. He liked to drink and play with geishas. With geishas in the passenger seats, drunk, he once drove into a river. Another time he threw a geisha, whom he didn't like, out of a window from the second floor at a geisha house. He also had a temper and was irritable. When Soichiro had a quarrel with a tax clerk, he sprayed water all over the tax office with a hose.

In 1946 Soichiro Honda founded the Honda Engineering Research Institute. First thing he did was buy small secondhand engines from American military bases in Japan and put the engines on bicycles. This bicycle with a motor, designed and produced by Honda, was popular and was selling more than 1,000 units per month by the end of 1947. In 1948 Soichiro reorganized the Honda Engineering Research Institute into Honda Motor Co. In 1949 Honda introduced its first "real" motor cycle, the "Dream-go." Kiyoshi Kawashima,

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[3]David Halberstam, *The Reckoning*, p. 306.

who much later in 1973 became the second president, joined Honda in 1947 and designed the "Dream-go" with Soichiro.

Yonosuke Miki, a founder of a prestigious business magazine, Zaikai"Business World", wrote about his impressions of Soichiro Honda when Miki visited Honda Motor Co. for the first time in 1952. Soichiro barely greeted Miki and immediately took Miki to the plant. At the plant, Soichiro suddenly started yelling a dirty joke over to a worker, took his jacket off and began to fix a motor cycle engine himself. Scichiro then testdrove the motorcycle out of the plant. At dinner that night, Soichiro wore a red jacket without a tie and only told jokes about women. Miki was supposed to decide whether he would buy Honda's stock at that time, when the stock was being issued to the public for the first time. Even though Miki was impressed by Soichiro's energy, he thought that Soichiro was a madman and didn't buy Honda's stock. Miki recalls that if he had bought Honda's stock at that time, he could have become a millionaire. These stories about Soichiro's unique personality continue, in a sense, to characterize Honda's corporate culture.

Soichiro also had an unusual managing style for a Japanese president. In less than two years of founding his company, Honda's president left every major responsibility to his partner, Takeo Fujisawa, whc joined Honda in 1949. Consequently, Soichiro was able to fully concentrate on research and development. His policy toward R & D continued to be, "Never copy others. Do exactly what the others don't do," even when many Japanese companies were trying to copy advanced western technologies. Soichiro also decided to not let his children join Honda. He hated the thought Honda some day being called a family-owned company. Soichiro even stated later that,"I believe to have made a mistake

in naming the Company "Honda". The Company does not belong to the Honda family but belongs to the employees'."[4] This approach to management was not typical of a Japanese president.

*Success with the N-360 and Failure with the Honda 1300

By 1960 Honda had established its position as the largest manufacturer of motorcycles in the world , in terms of annual units of production. At that time, Soichiro Honda wanted to expand the company production into the automobile industry. In a 1961 government policy statement , MITI announced a plan called the "three group system," which stipulated that car manufacturers should be structured into three groups, and that no new passenger vehicle companies would be allowed to be incorporated subsequently.[5] Around that time, in addition to the two giants Toyota and Nissan, Mazda, Daihatsu, Fuji, and Mitsubishi were also now entering the passenger vehicle market.

Honda then rushed to start its development of a car around that time. Honda introduced its first automobile to the public in 1962. At the 1962 Tokyo Motor Show, the Company exhibited a light-duty truck, the T-360, and a prototype sports car, the S-360. The T-360 was marketed in 1963, and the S-360 was developed into the S-500 and was also marketed that same year. At that time, however, Honda had neither a plant nor the appropriate technology to mass-produce its automobiles.[6]

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[4]Kodansha, *Honda Soichiro wa Kataru*, p. 116.
[5]Tetsuo Sakiya, *Honda Motor: The Men, the Management, the Machines*, P.137.
[6]Tetsuo Sakiya, *Honda Motor: The Men, the Management, the Machines*, P.137.

Fujisawa said at this point, "Because Honda entered the auto business much later than its competitors, Honda cannot compete with the other auto makers by producing cars similar to the competitors'." (October 1965)[7] Honda's primary product strategy at this point was to take advantage of its high power air cooled engine technology, which Honda had been incorporating into the motorcycle and racing fields. Even though the sports car segment of the Japanese market was not mature enough to allow sales of large quantities of sports cars, the Honda sports car gained a good reputation as a high-performance small sports car, especially among car enthusiasts.[8] In particular, the engine of the S-600 was a DOHC(Double Overhead Camshaft) type, still rare for a marketable car at that point.

The first successful mass-production model for Honda was a micro[9] passenger car, the N-360, which was introduced in 1967. This model was planned in response to the Japanese microcar market, whose demand was increasing rapidly at that time. The N-360 became a great success in the Japanese market because of such a high-performance engine for its class and because of its reasonable price. Around this period, the Subaru 360 and the Mazda Carol were the two major bestsellers in the Japanese microcar market. The N-360 immediately surpassed the two leaders, in terms of sales volume in the Japanese microcar market.[10]

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[7]Honda Motor Company, *Top Talks*, p. 239.

[8]Interview with Tsutomu Matano, managing stylist at Mazda North America, March 2, 1988.

[9]In this thesis, a microcar is defined as a car with a 360-550 cc engine, only popular in Japan. A minicar is defined as a car with an engine of around 1,000 cc.

[10]Hiroshi Kato and Kazuo Noda, *Series Nihon no Kigyo , Honda Giken Kogyo 1980nen ban*, p.44.

The N-360 had a 360cc air-cooled twin-cylinder engine with an output of 31 horsepower. Because the standard of microcar engines at that time was only 20-25 horsepower, the 31-horsepower engine was innovative.[11] Honda Motor's direct involvement in racing engines led the Company to develop Honda's high-power air-cooled engine technology. Honda had actively participated in both motorcycle and auto racing. It actually won one of the most competitive motorcycle races, the TT Race, in 1961. Honda also started participating in 1964 in the most competitive auto races, the F-1 Race Series. In 1965, Honda won one of the F-1 Race Series.

The N-360 used a system of an innovative front-wheel-drive, which was still rare in both Japan and the U.S. Accordingly, since then Honda has produced only front-wheel-drive cars. Because of the great success of the N-360, in 1970 Honda reached an annual car production rate of 277,000 units.

In 1969, Honda then introduced a subcompact model, the Honda 1300, to the Japanese market. The Honda 1300 had an air-cooled 1300-cc engine producing 100 horsepower, with a top speed of 110 mph, both of which were again innovative at that time.[12] Soichiro Honda had been managing all product development at Honda, including this Honda 1300 project. Honda's dominant product strategy, directed by Soichiro Honda, emphasized product differentiation by producing high horsepower with an air-cooled engine, as Honda had already done with its successful N-360. The Honda 1300 ended

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[11]Yoshio Ikari, *Moeru Honda Gijutsusha Shudan*, p. 53.
[12]Yoshio Ikari, *Moeru Honda Gijutsusha Shudan*, p. 57.

up failing in the Japanese market. Although the air-cooled engine was appropriate for producing high horsepower, as opposed to a water-cooled engine, the air-cooled engine made much more noise and produced excessive vibrations. Honda did not take full advantage of the advantage of its front-wheel drive technology either, which could have resulted in a more spacious interior.

Around this period, there were also incidents which significantly damaged Honda's sales and image. In 1969, the House of Representatives Judiciary Committee of the Japaneses National Diet reported that some of the Honda N-360's were suspected of defects in their steering system. At that time, a consumer movement had recently become active in Japan, which was already active in the U.S., typified by Ralph Nader. In April 1970, the Japan Automobile Users' Union was established. The institution demanded that Honda pay 80 million yen($222,222) to the family of a man who had died while driving the N-360. Honda agreed to pay the damages as compensatory retribution. The Automobile Users' Union also sued Honda for several other accidents involving the N-360. In all of these other cases, Honda was not actually indicted because of lack of evidence. In 1971 two counsel members in the Automobile Users' Union were arrested and indicted for their blackmailing of several Japanese auto manufacturers including Honda. Even though the incidents stopped, Honda suffered significant damage in both its sales and corporate image.[13]

[13]Tetsuo Sakiya, *Honda Motor: The Men, the Management, the Machines*, p.162 - 164.

*The Change in Product Strategy from an Air-cooled Engine to a Water-cooled Engine and Soichiro's Retirement

Even after the failure of the Honda 1300, Soichiro Honda believed the air-cooled engine to be the engine of the future. Many engineers at Honda, on the other hand, had come to realize that the water-cooled engine was more suitable for a mass-produced passenger car.[14] The water-cooled engine by nature offered less vibration and noise. It was also difficult for the air-cooled engine to provide an interior heating system. In addition, the water-cooled engine was also far more favorable than the air-cooled engine to meet the requirements of the U.S.'s Clean Air Act. The U.S. Congress had amended the regulations to set stringent automobile exhaust emission standards, to be effective in 1975.

After persistent disputes and persuasion efforts by Honda's managers and engineers, Soichiro Honda was convinced that Honda should produce water-cooled engines. Tadashi Kume, who was the leader of the engineers dealing with this issue, would later become the third president of Honda in October 1983. Soichiro said later, " I really like Kume, because he never gave in to a person of authority. Honda always needs that kind of people."[15] At the same time, Soichiro realized that his knowledge of technology was obsolete to manage Honda's R&D, which, he believed, would have to introduce an innovative technology to survive. Although Soichiro Honda would stay on as CEO until 1973, in 1971 he stopped managing Honda's R & D directly and left the responsibility to a director, Kawashima, who would also become Honda's CEO in 1973. Kawashima joined Honda Motor in 1947 when Honda only had 10 employees.[16] So, when

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[14]Yoshio Ikari, *Moeru Honda Gijutsusha Shudan*, p. 60.
[15]Kodansha, *Honda Soichiro wa Kataru*, p. 12.
[16]Yoshio Ikari, *Moeru Honda Gijutsusha Shudan*, p. 4.

Kawashima became president, he was completely familiar with Soichiro's philosophy and said that he would continue to uphold the corporate culture and philosophy, which Soichiro had established.[17]

Soichiro's partner, Takeo Fujisawa, also left Honda's management. Soichiro and Fujisawa believed that older managers have to leave the Company to younger managers.[18] Soichiro didn't even stay on as chairman after resigning from the presidency, as other Japanese presidents usually do. At this point, the age of Soichiro and Fujisawa's direct management ended. However, their philosophy toward the Company would always influence Honda.

b. Mazda's History of its Entrance into the Car Product Market[19]

Mazda Motor Corporation was founded in 1920, 28 years earlier than Honda, as the Toyo Cork Kogyo Company by Jujiro Matsuda. Expanding beyond the cork business, the name was soon changed to Toyo Kogyo Company. In 1931, Toyo Kogyo entered the motor vehicle business with the production of a small three-wheel truck. The annual production volume of Mazda's three-wheel trucks increased to the level of 1,000 units in 1935. Even though the production volume decreased significantly during World War II, after the war Mazda dramatically increased its production. In 1957 it controlled 28.3% of the overall Japanese three-wheel truck market. The Company had become one of the largest three-wheel truck manufacturers in Japan by that time, while the two leaders,

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[17]Honda Motor Company, *Top Talks*, p. 277.

[18]Hiroshi Matsuo, *Honda no Sugoi Kaihatsupawa wa Dokokara Deruka*, p. 94.

[19]The factual information pertaining to the Mazda's history is taken from Toyo Kogyo, *1920 - 1970 Toyo Kogyo 50 Nenshi*, unless otherwise noted.

Toyota and Nissan, expanded into larger passenger cars. Importantly, Mazda always led in the introduction of new technology for three-wheel trucks in the Japanese industry. In 1959 Mazda produced more than 60,000 units of three-wheel trucks.

However, starting in the late 1950's, the demand for three wheel trucks decreased drastically. In the early 1950's, the market share of three wheel trucks in the whole automobile industry was 65%, but in the early 1960's the share had decreased to less than 20%. In 1958 Mazda started selling its first four-wheel truck, the Romper. The model was successful in the Japanese truck market. Mazda tried to change from a three-wheel truck maker to a four-wheel automobile maker around this period and succeeded in doing so.

In 1951 the president, Jujiro Matsuda, was replaced by his son, Tsuneji Matsuda. It is important to note this clear contrast to Honda's company policy, which did not even allow Soichiro's son to join the Company. At Mazda the position of president was carried over three generations of the Matsuda family. In 1970 Kohei Matsuda, Tsuneji's son, became the president when his father died. Finally, in 1977 Kohei reluctantly resigned as president due to Mazda's critical financial crisis at that time. His managing style was not considered to be acceptable for turning Mazda around. In this context, even though Soichiro's basic managing philosophy is still diffused at Honda in its strong corporate culture, at Mazda the Matsuda family's is not.

The first introduction of a passenger car to the market came in 1960 with a microcar, the R-360, featuring a 360-cc engine. The R-360 introduced the first 4-cycle engine in the

Japanese microcar market. Because of its 4-cycle engine, the reliability and fuel efficiency of this model was much better than the other microcars available in Japan. Furthermore, the price of this model was less expensive than the other microcars by about 20%.[20] In 1962, another 360-cc microcar, the Carol, was introduced. This model represented the first all aluminum, 4-cylinder engine in the microcar market. The engine made the model quieter than the other models available in this class. These two models became an immediate success in the Japanese market and significantly contributed to the rapid growth of the Japanese personal-car market.[21]

Following the success of these models, Mazda introduced in 1963 a subcompact model, the Familia, and in 1966 a middle size car, the RX-5. Around this period one of Mazda's unique features, the rotary engine, had been developed successfully. In the early 1960's Tsuneji Matsuda made the decision to become one of the first licensees of the Wankel-NSU rotary engine. Tsuneji Matsuda thought that because Mazda was a late entrant into the passenger car field, Mazda had to have a viable means to close the gap with Toyota and Nissan.[22] In 1963 the Rotary Engine Development Division was established, recruiting internally more than 40 engineers. Having made legendary efforts, in 1967 Mazda engineers could introduce the first rotary-powered sports car, the Cosmo Sports. This sports car was the first marketable rotary-powered car in the world. Even General Motors had failed in developing a marketable rotary-powered car.[23] The advantages of

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[20]Toyo Kogyo, *1920 - 1970 Toyo Kogyo 50 Nenshi*, p.334 - 335.
[21]Toyo Kogyo, *1920 - 1970 Toyo Kogyo 50 Nenshi*, p.376 - 377.
[22]Richard Pascale and Thomas P. Rohlen, "The Mazda Turnaround", *Journal of Japanese Studies*, p. 221.
[23]Richard Pascale and Thomas P. Rohlen, "The Mazda Turnaround", *Journal of Japanese Studies*, p. 222.

the rotary engine was that it could produce higher horsepower and was quieter than a conventional engine, and the size of the rotary engine was smaller. On the other hand, one of its weak points was its high fuel consumption.[24]

Because of the success of the Cosmo Sports, Tsuneji Matsuda believed that the rotary engine would be the engine of the future. Mazda introduced the rotary engine into the Familia in 1968. In 1970 Mazda added the RX-2, filling the gap between the Familia and the RX-5, and also introduced a 2-door sport coupe, the RX-3. At this point, all of these Mazda cars were powered by either a rotary or a conventional engine. Mazda firmly believed in the future of its rotary engines, and Mazda's history book, published by the Company in 1970, concluded with the statement,"the 1970's will be the age of the rotary engine, and Mazda has made a big stride toward the future of the rotary engine."[25]

These rotary-powered cars became an immediate success in the market because of their high power and quietness. Thanks to the popularity of the rotary engine, Mazda's sales increased both in the Japanese market and the U.S. market. Particularly in the U.S. market, the rotary engine was appropriate because of its unmatched power and quietness. Most of the cars sold in the U.S. market by Mazda had a rotary engine. In 1972 the RX-2 powered with a rotary engine won the "Car of the Year" award in *Road Test*. In 1973, *Dun's Review* stated, "If the rotary age is indeed at hand, Toyo Kogyo [Mazda] , the third-ranking Japanese auto manufacturer, is sitting comfonably in the catbird seat."[26]

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[24]Toyo Kogyo, *1920 - 1970 Toyo Kogyo 50 Nenshi*, p. 384 - 393.
[25]Toyo Kogyo, *1920 - 1970 Toyo Kogyo 50 Nenshi*, p. 551.
[26]Dun's Review, May 1973, quoted from Harvard Business School, 9-682-092 Toyo Kogyo Co. LTD. (A).

By 1973, Mazda's annual car production increased to 466,000 units because of its well balanced and extensive car product line. Compared to Honda's 257,000 units of total car production in the same year, Mazda's car production volume was almost twice as high. In Figure 1, the shares of total car production in 1973 at each Japanese auto manufacturer is shown. Mazda seemed to have established itself in third place in the Japanese car industry.

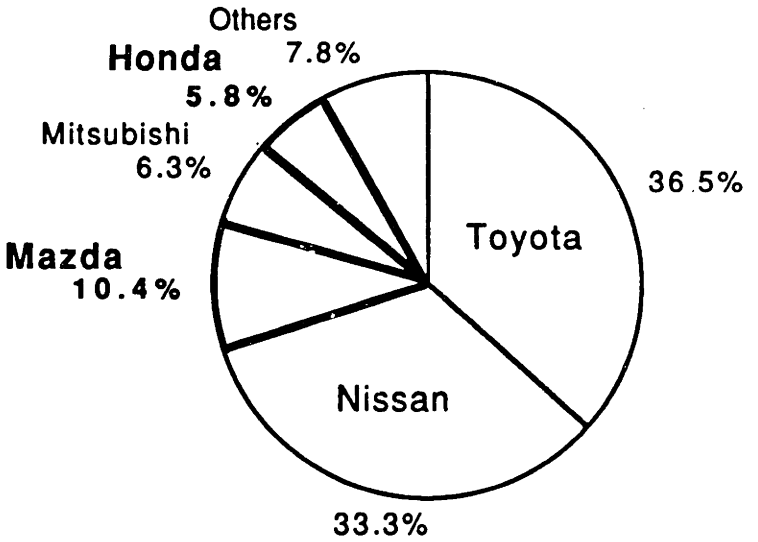

Figure 1. Total Production Share (Japanese Manufacturers, 1973)
Source: Japan Automobile Manufacturers Association, Jidosha Tokei Nenpo 1986

2. The Oil Shocks and its Repercussions

When the first oil shock occurred in late 1973, the Japanese car boom took off in the U.S. market. The primary reason for this boom was that small, economical cars were now preferred because of high gas prices. The Japanese automobiles also demonstrated less car maintenance problems. Another important reason was that, by then as a social

trend, many young customers no longer hesitated to buy Japanese cars.[27] During this period, however, a clear contrast could be seen in terms of the competition between Honda and Mazda. Honda developed appropriate new car lines for this situation and could dramatically increase its sales volume in the U.S market. Mazda, on the other hand, suffered from a terrible financial setback primarily due to its inappropriate product strategies.

a. Honda's Growth During the 1970's

*Great Success of the Civic

When Kawashima became President of Honda's R & D Center, appointed by the founder, Soichiro Honda, Kawashima said to all company managers, "We no longer have a genius, Soichiro Honda. Instead, we, mediocre people, should be able to (synergistically) achieve the same greatness as a group." Kawashima established a systematic R & D organization for the new project. Until the Honda 1300 project of the late 1960's, Soichiro Honda monitored and directed all research and development. Kawashima was the first one to clarify the difference between research and development. Research engineers should concentrate on basic research, which doesn't have to result in marketable products immediately and where there is room for a lot of trial and error. On the other hand, development engineers should develop competitive products for the market according to a predetermined schedule. Guided by his genius intuition, Soichiro Honda had controlled the research and development unsystematically. Kawashima also

[27]Interview with Nobuo Kondo, a manager in charge of corporate planning, of Mazda North America, March 2, 1988.

devised the SED (Sales, Engineering, and Development) system, where a development project team brings in people from sales, process engineering and development.[28]

After its failure with the Honda 1300 and the damage caused by the incidents of the the N-360's defects, Honda had to be successful in its next car model. Shinya Iwakura, a project leader of the new project, the Civic project, recalled, "All engineers thought that if the Civic project was a failure, Honda might not be able to survive."[29] Honda's product strategy was to develop a subcompact car which would become popular worldwide, including in the most promising market: the U.S. Honda managers also emphasized that as Honda's corporate culture and policy, which Soichiro Honda had emphasized and had nurtured since he founded Honda, the new model should be innovative and differentiated from the products of other auto makers. Honda engineers decided they must first invalidate all preexisting concepts and start over. In other words, Honda engineers first started thinking about what is an ideal subcompact car for customers.[30]

Honda had an advantage in its engine technology over the other car manufacturers. All the auto manufacturers had to meet stringent automobile exhaust emission standards, the Clean Air Act, effective as of 1975 in the U.S. market. Honda had started doing research on engine combustion much earlier than the other auto manufacturers through Honda's motor cycle racing activities.[31] In 1971 Honda announced the technology of the CVCC (Compound Vortex Controlled Combustion), developed through Honda's know-how of

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[28]Yoshio Ikari, *Moeru Honda Gijutsusha Shudan*, p. 85 - 87.
[29]Yoshio Ikari, *Moeru Honda Gijutsusha Shudan*, p. 101.
[30]Yoshio Ikari, *Moeru Honda Gijutsusha Shudan*, p. 102.
[31]Kodansha, *Honda Soichiro wa Kataru*, p.183.

the engine combustion analysis. In 1973 the National Academy of Sciences of the United States agreed that Honda's CVCC system was the first engine to meet the 1975 standards. In the 1973 hearing conducted by the Japanese Environment Agency, among Japanese manufacturers, only Honda and Mazda stated that they could meet the 1975 standards on time.[32] Mazda had a rotary engine technology which was favorable for clean exhaust.

In the end, even though major Japanese manufacturers did manage to pass the emission standards, Honda's CVCC was distinctive in method. The CVCC cleans exhaust air within the engine, while other methods at other manufacturers clean the air outside the engine with an additional device like a catalyst. Many engineers were impressed by this method to solve the problem, even though the end result, in terms of clean air, is the same.[33] This method was encouraged by Soichiro's philosophy about technology: "The philosophy behind the technology is important. A technology without a proper philosophy is not a real technology."[34]

Armed with this engine technology and the new product strategy, Honda developed the Civic and marketed it in 1972. The Civic had a 1200 cc CVCC water-cooled engine, and a 1500 cc CVCC engine was soon added. The Civic was innovative in its concept just as Honda's engineers had intended. The Civic was a 2-door model without a trunk and was not a sporty coupe. It was a hatchback model and was simple, practical and efficient.

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[32]Tetsuo Sakiya, *Honda Motor: The Men, the Management, the Machines*, p.182.
[33]Interview with Mr. Maebayashi, a manager in charge of engineering, of Mazda of North America, March 3, 1988.
[34]Hiroshi Matsuo, *Honda no Sugoi Pawa wa Dokokara Deruka*, p. 98.

Since Honda made the most of the advantages of the Civic's configuration, a front-wheel-drive, it had an exceptionally spacious interior for its small size and light weight.

With the exception of some smaller European cars, there had not been a hatchback model in this class before. When the Civic was first introduced in Japan, some customers said that it either looked small for a car in the subcompact segment or looked like a small truck. However, many educated young people appreciated its practical uses, and the Civic became a great success in Japan.[35] Soon after the introduction of the Civic, this type of car became one of the automobile standards in this segment.

The Civic earned the position of the most economical car according to the EPA(Environmental Protection Agency) fuel consumption test four years in row, starting in 1974. The Civic became gradually more and more popular also in the U.S. In 1973 and 1974, Honda sold 30,000 and 43,000 units of the Civic, respectively in the U.S. market. In 1975, the U.S. sales volume of this model exceeded 100,000 units. In 1973, the Civic won the "Car of the Year" award in the prestigious American magazine, *Road Test.*, and it also helped Honda to increase the Civic's sales.

*Establishment of a Car Line

Honda marketed a new product line, the Accord, in 1976. This model had a 1600 cc engine and was bigger than the Civic. The Accord was also a hatchback model. There had not been any hatchback model in this class before among Japanese cars. The Accord was particularly successful in the U.S. market. Honda had now established its practical

[34]Kodansha, *Honda Soichiro wa Kataru*, p.183 - 125.

and differentiated image with these two hatchback models. Around this period, Japanese automobiles, in general, were establishing a reputation in the U.S. of high quality and adequate well-designed equipment for their price, in addition to low fuel consumption and a reasonable price. Honda cars enhanced both the good image of all Japanese cars as well as the clearly differentiated image unique to Japanese cars.[36] In the Japanese market, the Accord was not as successful as in the U.S. market. Honda's brand image in Japan was still weak, and Honda didn't have as many dealers as the main competitors, Mazda and Mitsubishi. Because the Accord was, significantly, successful in the U.S. market and was not that successful in the Japanese market, in 1979 Honda sold almost half of its cars solely in the U.S. market. In the Japanese car market, Honda's car market share was only 5%, while Mazda's was 8%..[37]

In 1978, Honda added a 2-door personal coupe, the Prelude. In 1980, the Quint Integra was introduced to fill the gap between the Civic and the Accord. The Quint Integra was not introduced into the U.S. market. Even though these two models did not sell as well as the Civic and the Accord, they helped to increase Honda's total car sales in the world market and to build a higher quality image.

By 1980, Honda had succeeded in establishing its car line with four major car models: the Civic, the Accord, the Prelude, and the Quint Integra. During the period of establishing its car line, Honda recorded extremely high growth in its total car

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[36]Interview with Mr. Iida, a manager in charge of marketing research and product planning, of Mazda North America, March 3, 1988.
[37]Honda Motor Co., *Honda: A Statistical View 1987* and Mazda Motor Corp., *Kaisha Gaiyo 1987-3.*

production, primarily by increasing its sales in the U.S. market. Honda produced a total of 257,000 units of cars in 1973 for the world market.[38] In 1980, this number had increased to more than 800,000 units. Moreover, in the U.S. market, Honda's car sales increased from only 39,000 units in 1973 to 375,000 units in 1980.[39]

b. Mazda's Financial Crisis and its Turnaround

*Drop in Sales of Rotary-powered Cars

In 1973 the first oil crisis occurred. Although, as I have mentioned, the Japanese car boom was emerging in the U.S. market at the same time, Mazda could not take advantage of this opportunity. Due to the increase in the price of gasoline, the sales of Mazda's rotary cars, which had an EPA fuel economy rating of 11 miles per gallon, plummeted.[40] The rotary-powered cars consisted of about 80% of total Mazda car sales in the U.S. market.[41] The rotary engines also had many defects, due to Mazda's lack of quality control efforts and the immature technology of the rotary engine at that period. Mazda exchanged those rotary engines with defects for new rotary engines at no charge. However, the defect rate of rotary engines was so high that among rotary-engine customers the number of times they had to exchange an engine became a popular topic.[42] From 1973 to 1975, Mazda car sales in the U. S. dropped by 70%.[43]

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[38]Honda Motor Co., *Honda: A Statical View 1987*, p. 20.
[39]Honda Motor Co., *Honda no Kaigai Senryaku Hokubeihen*, p. 11.
[40]Harvard Business School, 9-682-092 Toyo Kogyo Co. LTD. (A), p. 5.
[41]Harvard Business School, 9-682-092 Toyo Kogyo Co. LTD. (A), p. 4.
[42]Interview with Akio Uchiyama, a vice president of Mazda North America, March 2, 1988.
[43]*Automotive News*, Market Date Book.

To make matters worse, Mazda had invested in the expansion of its rotary engine production facility in Japan to increase the annual production of the rotary engines to a 360,000 units level. The new plant for rotary engines cost more than ¥40 billion ($111 million), but was not used.[44] Mazda had been emphasizing its rotary engines so intensively in its marketing that Mazda couldn't sell its models with a conventional engine either.[45] At the end of 1974, Mazda's inventory in the U.S. was more than 50,000 units.[46] Due to the failure of this product strategy, Mazda was about to go bankrupt. In 1975, Mazda suffered an operating loss of $57.7 million, and outstanding bank loans amounted to $1.1 billion.[47] The Sumitomo Bank, Mazda's main creditor, dispatched several representatives to Mazda's Board of Directors in order to save Mazda from the crisis.

*Turnaround from the Crisis[48]

Sumitomo first made Mazda change its top management system from management by the owner, the Matsuda Family, to management by the executive group with democratic consensus operations. This concept led to persuading Kohei Matsuda to resign from the presidency in 1977. Sumitomo also made efforts to avoid possible turbulence among other creditors by assuring that Sumitomo would stand by Mazda no matter what happened.

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[44]Interview with Akio Uchiyama , a vice president, of Mazda North America, March 2, 1988, Dollar conversion is based on the exchange rate of ¥360 to $1.
[45]Interview with Mr. Minami, a vice president, of Mazda Motor of America(Central)., March 3, 1988.
[46]Kunio Yanagida, *Nihon no Gyakuten Shita Hi (II)*, p. 98.
[47]Harvard Business School, 9-682-092 Toyo Kogyo Co. LTD. (A).
[48]The basic information was collected primarily through interviews with Akio Uchiyama and Nobuo Kondo of Mazda North America, March 2-3, 1988.

Being given financial support by Sumitomo, Mazda began efforts to trim expenses and improve its quality control system. The Cost Control Division was established directly under the President. Initially, the function of this division involved setting cost targets for products, monitoring cost reduction efforts, and promoting cost reduction throughout the company. These functions were divided into three departments: Administrative Management, Cost Planning and Value Engineering. Among them, the Value Engineering was especially significant. With this concept, each part was designed only after engineers fully thought through the aspects of both value and cost.

The production system was also improved in terms of both quality and production cost. This area was supervised by Yoshiki Yamasaki, a 64-year-old engineer with over 30 years of experience, who would soon be the first non-Matsuda family President in 1977. One of the basic concepts in the new production system was the notion of the "Just-in-time" system. Many small improvements in processing and quality control, brought about by the interaction of plant management and workers, also contributed significantly to the increase in productivity. The number of workers decreased primarily through a hiring freeze on new workers. From 1974 to 1981 the total number of employees at Mazda was reduced from 35,000 to 28,000, and the total work force at Mazda's affiliated suppliers was reduced from 23,000 to 17,000. During this period total annual auto production increased by 500,000 units.[49]

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[49]Richard Pascale and Thomas P. Rohlen, "The Mazda Turnaround", *Journal of Japanese Studies*, p. 248 - 249.

The relationship between the union and management became much better than before. Both sides thought that unless everybody worked together, Mazda could not survive. Instead of a layoff, many plant workers, engineers, and even managers were transferred to dealers throughout Japan in order to sell Mazda cars.

Research and development were changed, too. The single most important concept in this area was that of customer-oriented products. As was seen in the case of the unrealistic expansion plan of the rotary engine, unjustified decisions had tended to be made internally. Product strategies at Mazda had depended almost entirely on Kohei Matsuda, rather than on customer needs based on market research.[50] As an organization, Mazda integrated line and staff functions into a matrix structure. Specifically, in addition to functional managers, program managers were established, who were individually responsible for a particular car program.

As a specific product strategy, Mazda tried to shift from its emphasis on its rotary engine to a conventional engine. The Familia was completely changed and introduced as only having a conventional engine in 1977, and the Capella was also changed and also discarded the rotary engine in 1978. Both models obtained popularity in the U.S. as well as in Japan, and Mazda began to indicate a recovery around this time.

At the same time, however, Mazda's dealers and customers still had strong expectations of the rotary engine, which was produced by only Mazda worldwide. In addition, Mazda

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[50]Richard Pascale and Thomas P. Rohlen, "The Mazda Turnaround", *Journal of Japanese Studies*, p. 222.

engineers believed that the rotary engine's merits should be taken advantage of in certain areas. In 1978 Mazda introduced a sports car, the RX-7, using the rotary engine. The RX-7 could not have been developed without the rotary engine, which was small and yet produced high power.[51] This sports car was an immediate great success both in Japan and the US and significantly helped the image of both Mazda's brand name and its rotary engines in the U.S. and Japanese markets to recover. Mazda increased its car sales from 35,000 units in 1976 to 162,000 units in 1980 in the U.S. market, where Mazda was hurt the most.

Mazda recovered rapidly from the crisis because of the success of the changes in organization and strategy as well as in its products. Mazda gained a lot of painful knowledge during this worst period. This major overhaul led to the later rapid recovery. Even though the price Mazda paid was significant, it seemed to have succeeded in evolving into one of the auto companies of excellence by surviving this nightmare period.[52]

However, at the same time, it should be pointed out here that Mazda seemed to have become a rather risk-averse company in terms of major strategy decision making in the 1980's. One example was in 1983 when the president Yamasaki was asked by an magazine interviewer," Why isn't Mazda building a U.S. plant immediately?" As when asked during all interviews, he always responded, "Mazda is still weak, though recovering its health after a serious illness, and now should give more consideration to it.

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[51]Interview with Akio Uchiyama, a vice president, of Mazda North America, March 2,1988.

[52]Harvard Business School, 9-682-092 Toyo Kogyo Co. LTD. (A).

[a major investment in a U.S. manufacturing site.]"53 In contrast, in 1976 Kawashima said in an interview," Honda should go ahead with any decision which appears too risky to outsiders."54

3. Export Quotas and Appreciation of the Yen

Due to the recession and the increase of import sales, in 1981 the unemployment rate in U. S. industries exceeded 10%. Thus, primarily in Detroit, the center of the U. S. auto industry, a strong anti-Japanese car movement occurred. Japan's MITI (Ministry of International Trade and Industry) then decided to impose an export quota of 1.68 million units per year on Japanese auto makers starting in the fiscal year 1981-1982. This quota has been maintained up to now with minor modifications in numbers:

- 1.68 million for both fiscal year 1982-1983 and 1983-1984
- 1.85 million for 1984-1985
- 2.30 million for each year from 1985-1989[55]

The quota imposed on each manufacturer was determined based on the previous year's exports record of the respective manufacturer. Honda's total car sales in the U.S. in 1980 reached 375,000 units. On the other hand, the total car sales of Mazda still only reached 162,000 units, although Mazda had recovered from its crisis of 1974 to 1978. Since its recovery, Mazda had been increasing its sales volume at a surprisingly rapid pace to catch up with Honda. Because Mazda and Honda both had to limit their exports

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[53]Interview with Nobuo Kondo, a manager in charge of corporate planning, of Mazda North America, March 2,1988.
[54]Honda Motor Corp., *Top Talk*, p. 302.
[55]Nihon Keizai Shinbun, January 30, 1988.

to the U.S. within these respective quota levels, Mazda missed out on the opportunity to catch up with Honda with regard to its car sales volume in the U.S.

Given this environment, it was Honda which was able to significantly increase its sales volume. Honda started manufacturing its Accord in 1982. The number of automobiles manufactured in the U.S. was not calculated into the quota number. Honda had actually planned to build its U.S. car plant before the export quota was even considered. In January 1980, Honda had announced that it would build an automobile plant in Ohio.

Mazda tried to cope with the situation of the export quota by stepping up export trucks, which are also not included in the restriction quota count. Truck sales were increased from 41,000 units in 1982 to 115,000 units in 1985. However, since Mazda had to pay 25% as an import tariff for each truck sold,[56] this sales increase could not significantly contribute to the increase in Mazda's overall profit.

In the fall of 1985, the yen suddenly appreciated. In terms of export cars, profits per unit deteriorated critically. Most Japanese car companies rely primarily on the U.S. market in terms of their profits.[57] In this situation, because U.S.-made Honda cars are affected less by any fluctuation of the yen, Honda's U.S. plant again contributed to minimizing the decrease in Honda's profitability. As shown below, Honda's ratio of consolidated operating income to net sales in two years decreased by 48%: from a operational income

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[56]Japan Automobile Manufacturers Association, *The 1987 Motor Industry of Japan*, p. 8.

[57]Interview with Akio Uchiyama, a vice president, of Mazda North America, March 2, 1988.

to sales ratio of 11.3% in 1984 to 5.9% in 1986, as shown below. Mazda's ratio decreased more drastically by 68%: from 4.4% in 1984 to 1.4% 1986.

		1984	1985	1986
Honda	Net Sales	2652	2910	2868
	Net Income	129	147	84
	Operating Income/Net Sales	11.3%	10.5%	5.9%
Mazda	Net Sales	1432	1570	1626
	Net Income	35	40	15
	Operating Income/Net Sales	4.4%	5.1%	1.4%

Table 1. Change in Financial Data (¥ Billion)
Sources: Honda Motor Co.'s Annual Report
Mazda Motor Corp.'s Annual Report

III. Statistical Overview of the Competition between Honda and Mazda

1. Size of the Companies

In terms of the number of employees on an unconsolidated basis, Honda and Mazda have been similar in size for the past several years. Mazda used to have a larger work force. Mazda's number of employees was significantly reduced when experiencing the financial crisis during the mid-1970's. Honda, on the other hand, increased its number of employees as new car lines were added.

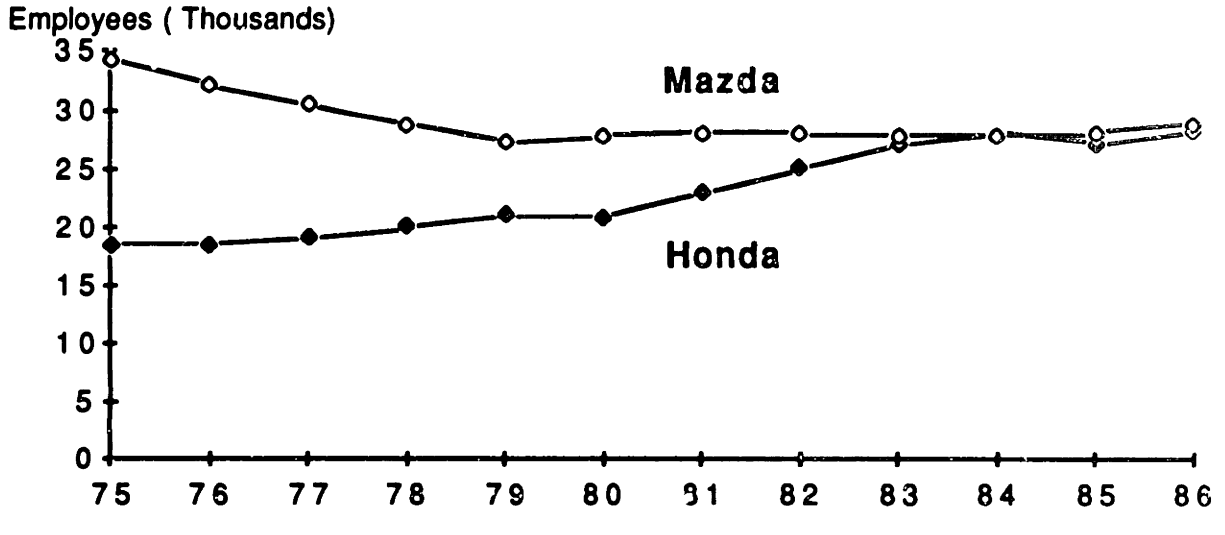

Figure 2. Number of Employees
Sources: Honda Motor Co., Honda: A Statistical View 1987, P. 9
Mazda Motor Corp., Kaisha Gaiyo 1987 - 3, P. 10

As shown in the next figure, total car production at both manufacturers, in general, is not only similar in absolute numbers but also has been growing in a similar pattern, except for the most recent years when only Honda has been able to increase its total production volume.

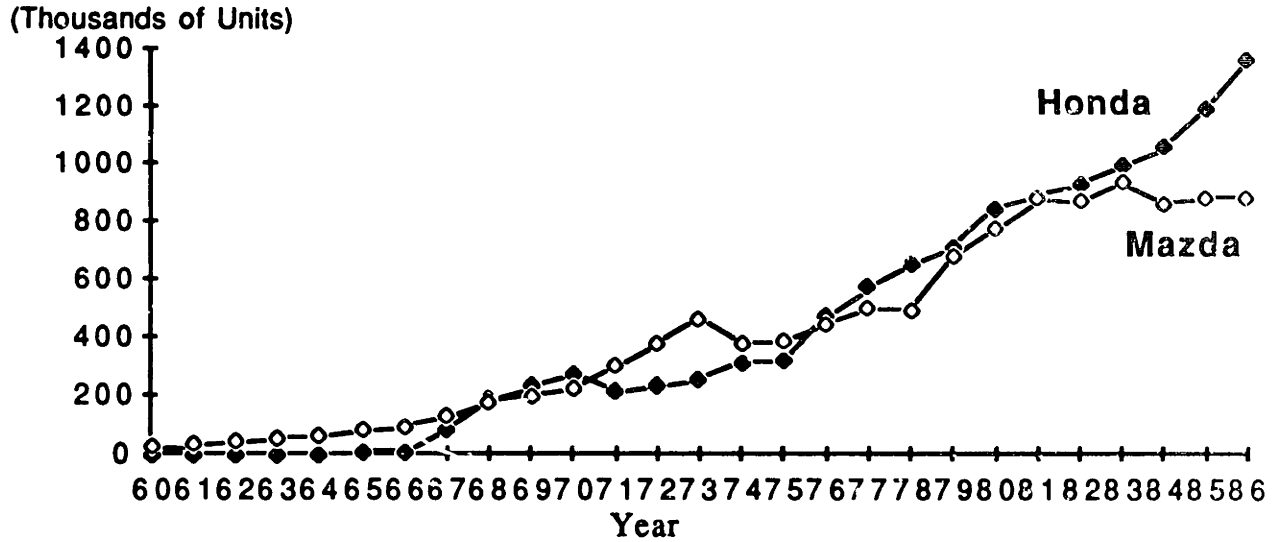

Figure 3. Total Car Production
Source: Japan Automobile Manufacturers Association, *The Motor Industry of Japan*

2. Market Share Comparison

I will show the market share of each manufacturer in the Japanese, the U.S. and the European markets based on the total Japanese manufacturers' sales volume in each market. The U.S. and European markets are the primary export markets for both Honda and Mazda, and in 1986 these two markets counted for 93% of total export sales at Honda[58] and 83% of those at Mazda.[59]

a. The Japanese Market

In the Japanese market, Mazda used to have a higher market share than Honda. Especially, between 1978 and 1980, the difference was significant. Because of the great success of the City in Japan, Honda increased its market share during both 1981 and 1982. Honda exceeded Mazda's sales in 1983, and the difference has been expanding. In the most recent years, Honda's increase in market share is primarily attributed to the success of the Prelude. In the Japanese market, Honda seems to have moved firmly into the third spot behind Toyota and Nissan.

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[58]Honda Motor Co., LTD, *1987, Honda : A Statistical View 1987*, calculated from a chart in p.24.

[59]Mazda Motor Corp., *1987, Kaisha Gaiyo*, calculated from a chart in p. 24.

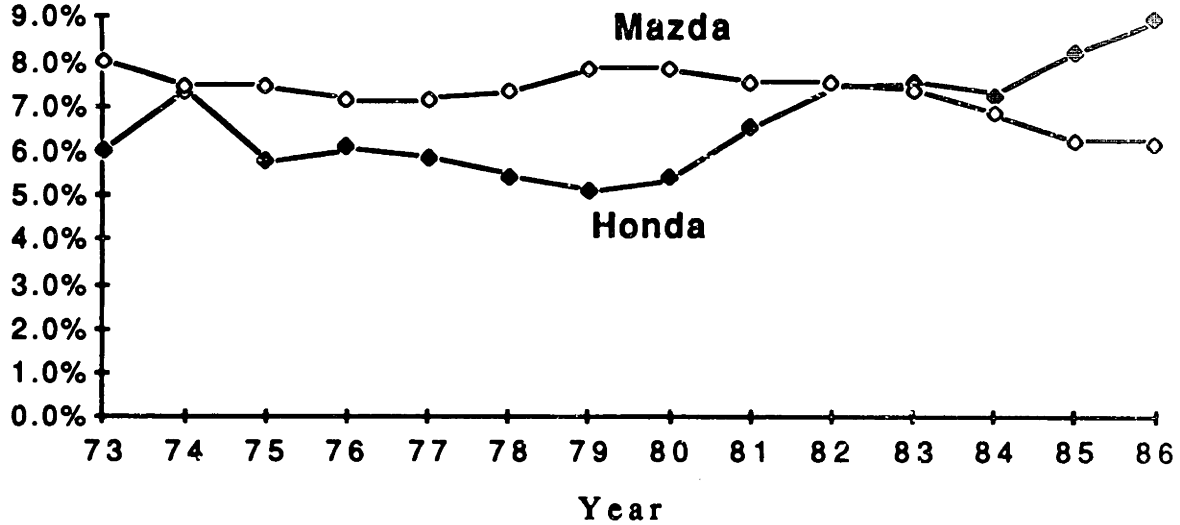

Figure 4. Market Share in Japan
Source: Honda Motor Co., *Honda: A Statistical View 1987*
Mazda Motor Corp., *Kaisha Gaiyo 1987-3*

b. The U. S. Market

In the U.S. market, Honda has more than twice as much of a market share as Mazda. While Mazda suffered from a sales drop in the U. S. market during the mid-1970's, Honda increased its market share even among Japanese manufacturers, most of which recorded significant sales increases because of the boom of the economy car size. After 1982 when the voluntary export restriction for Japanese auto manufacturers became effective, Honda could still increase its sales by using its U.S. plant.

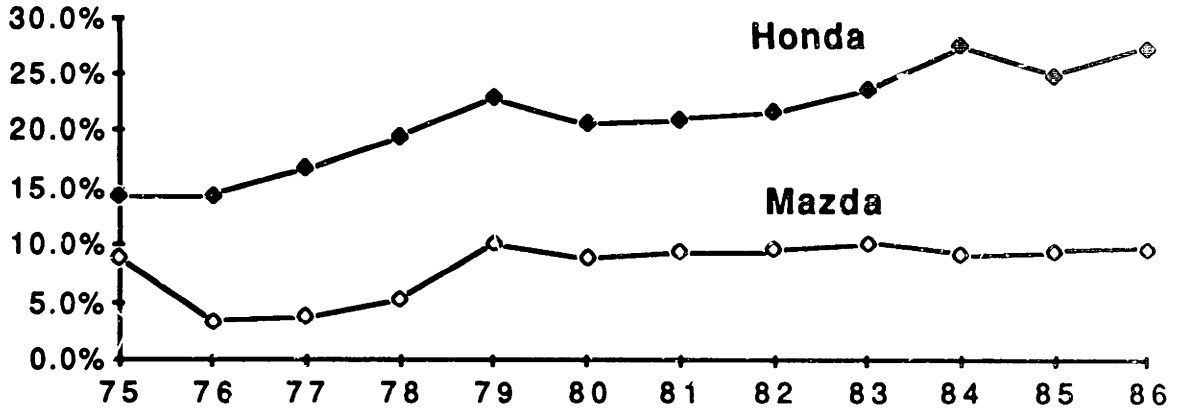

Figure 5. Market Share in the U.S. (Total Japanese Makers: 100%)
Source: Honda Motor Co., *Honda: A Statistical View 1987*
Mazda Motor Coop., *Kaisha Gaiyo 1987-3*

c. European Market

In the European market, Mazda has been recording a higher car sales volume than Honda. Even though the market share at both manufacturers has not been increasing among Japanese manufacturers, the absolute sales volume at each manufacturer has been increasing. Honda's sales in Europe increased from 169,752 in 1981 to 205,113 in 1986,[60] and Mazda's from 200,312 to 261,036[61] respectively. One of the reasons for Honda's slower sales in the European market is a direct result of its relationship with Austin Rover Group(ARG) of British Leyland. The president at Honda of Netherlands, Okubo, said, " Honda doesn't sell the Civic sedan because ARG produces the Civic as an OEM, and Honda decided to help ARG's sales instead of selling the Civic with Honda's brand name."[62] It is also true that in the European market, Mazda cars are more popular than Honda cars. In 1987 the Mazda 626 won "the best small car award" in a readers vote

[60]Honda Motor Co., LTD, *1987, Honda : A Statistical View 1987*, p.24.
[61]Mazda Motor Corp., *Kaisha Gaiyo 1987*, p. 24.
[62]Tetsuo Sakiya, *Hondashiki Daiseikoeno Kaigaisenryaku*, p. 184.

conducted by a prestigious German magazine, *Auto Motor und Sport*. This represented the fourth consecutive year that Mazda was awarded the title. In the 1987 competition, the Honda Accord was only in third place.[63]

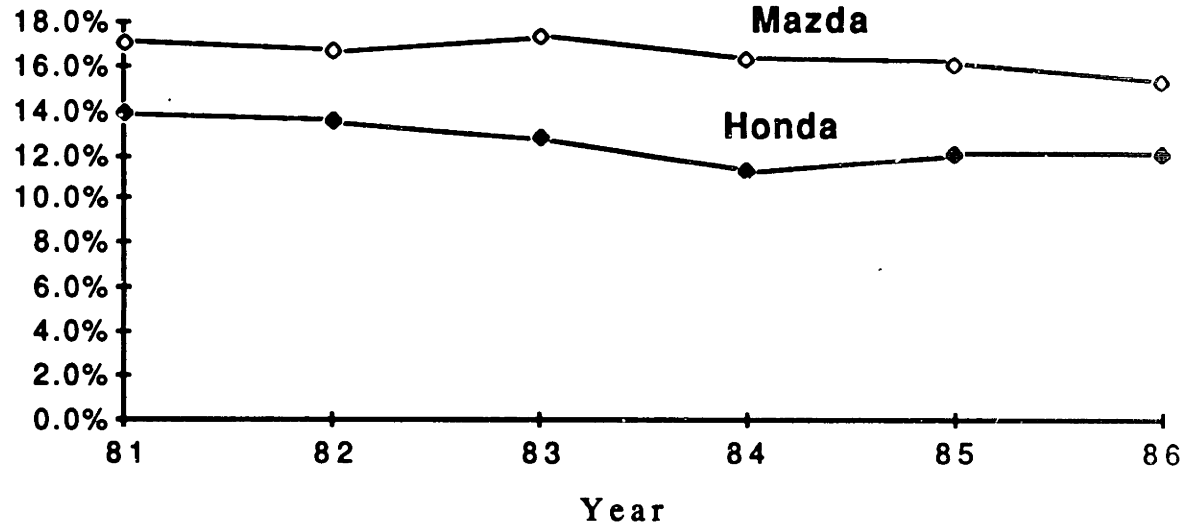

Figure 6. Market Share in Europe (Total Japanese Makers : 100 %)
Source: Honda Motor Co., *Honda: A Statistical View 1987*
Mazda Motor Coop., *Kaisha Gaiyo 1987-3*

3. Financial Performance

Even though the company size of both Honda and Mazda are similar, financial statistics shows that Honda significantly outperforms Mazda. Although total car production at both manufacturers is almost the same, the net sales at Honda is much higher than at Mazda. The difference has been growing. As I will discuss later, this difference is considered to primarily be a consequence of the level of success in the U.S. market. Before the yen was drastically appreciated in the fall of 1985, because the sales price of Japanese car products is higher in the U.S. market in the yen value than in other markets, Honda's higher

[63]Mazda Motor Corp., *My Mazda* ,1988 March, p. 20.

percentage of sales in the U.S. market had been contributing directly to a higher net sales. After the appreciation, Honda's increase in sales volume in the U.S., which resulted from its U.S. plant and resulted in Honda's higher total car production volume, is primarily considered to be the major factor for the difference in net sales between Honda and Mazda.

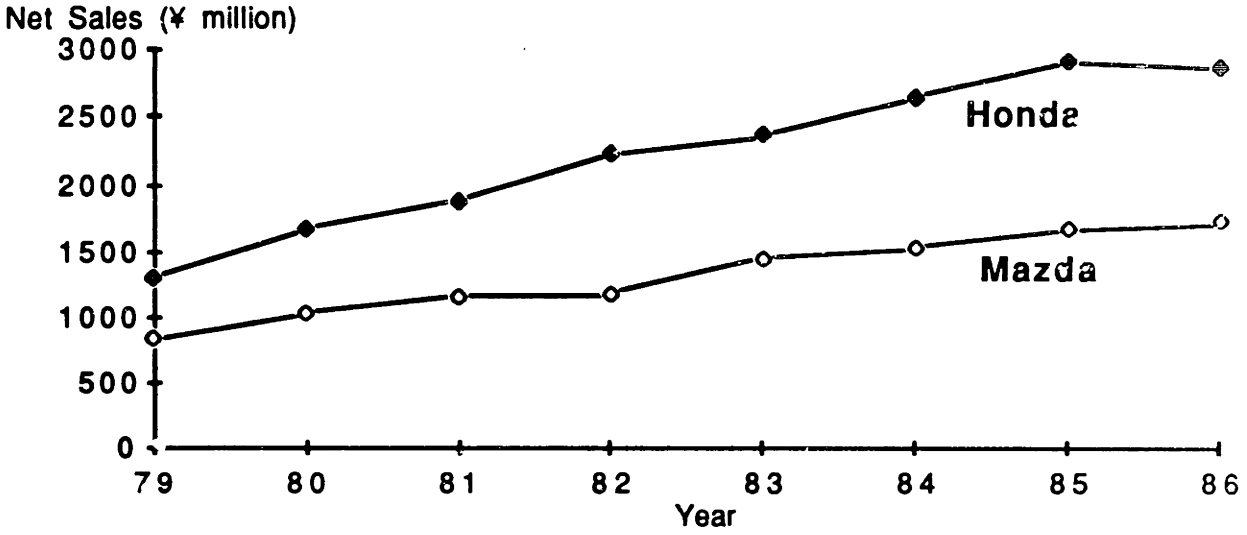

Figure 7. Net Sales
Sources: Honda Motor Co.'s Annual Reports
Mazda Motor Corp.s, Annual Reports

Both rates of net income to net sales and operating income to net sales at Honda are also much higher than at Mazda. This difference also partly comes from Honda's greater sales success in the U.S. market, which has been more profitable than the other markets. Value-added productivity at Honda is also much higher than at Mazda.

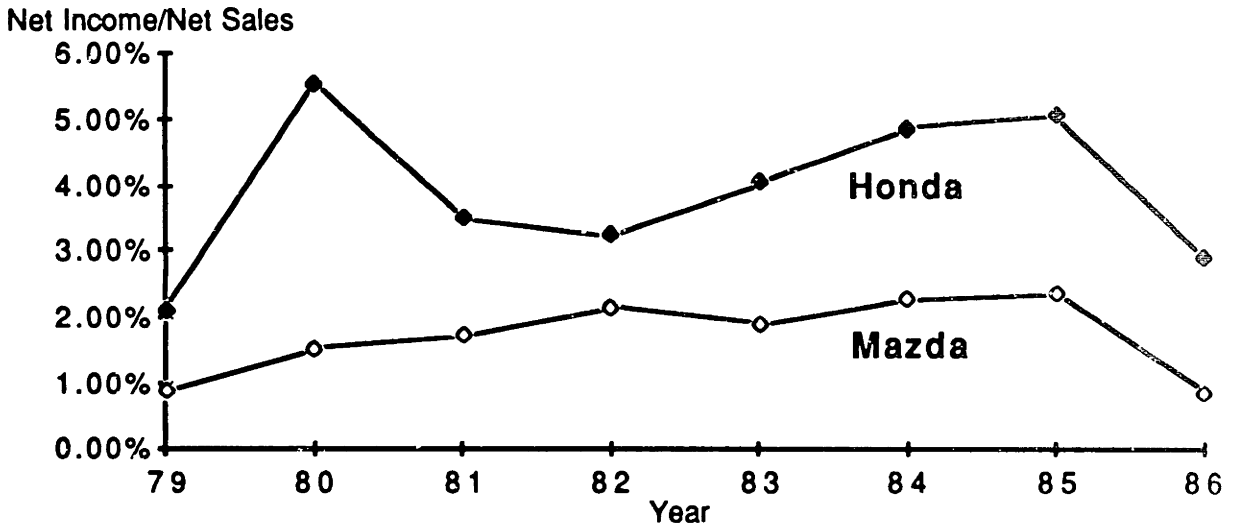

Figure 8. Net Income/Net Sales
Sources: Honda Motor Co.'s Annual Reports
Mazda Motor Corp.s, Annual Reports

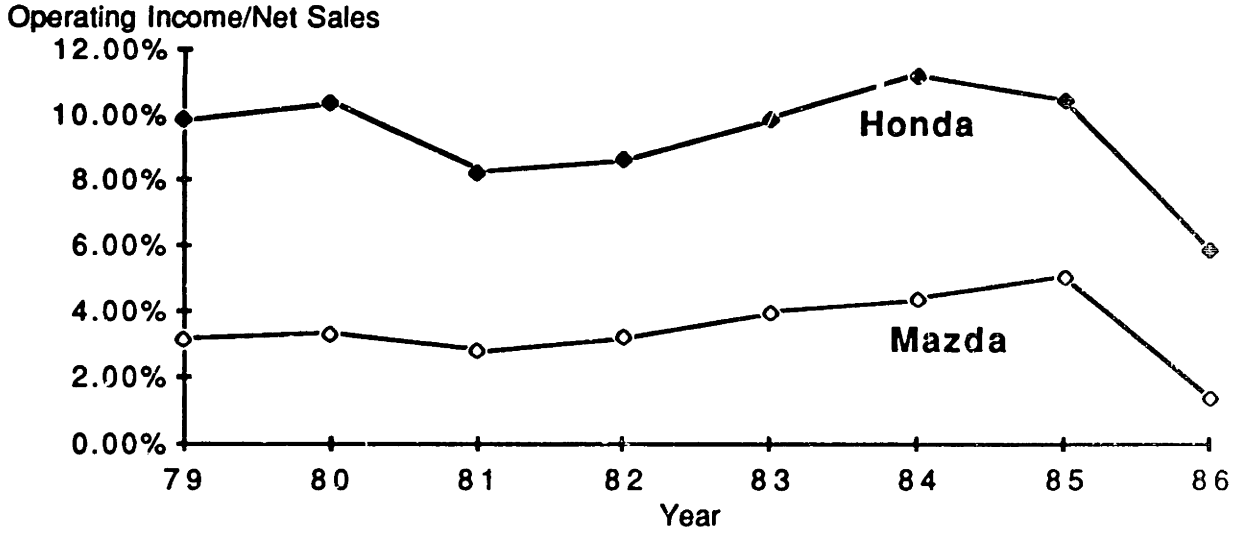

Figure 9. Operating Income/Net Sales
Sources: Honda Motor Co.'s Annual Reports
Mazda Motor Corp.s, Annual Reports

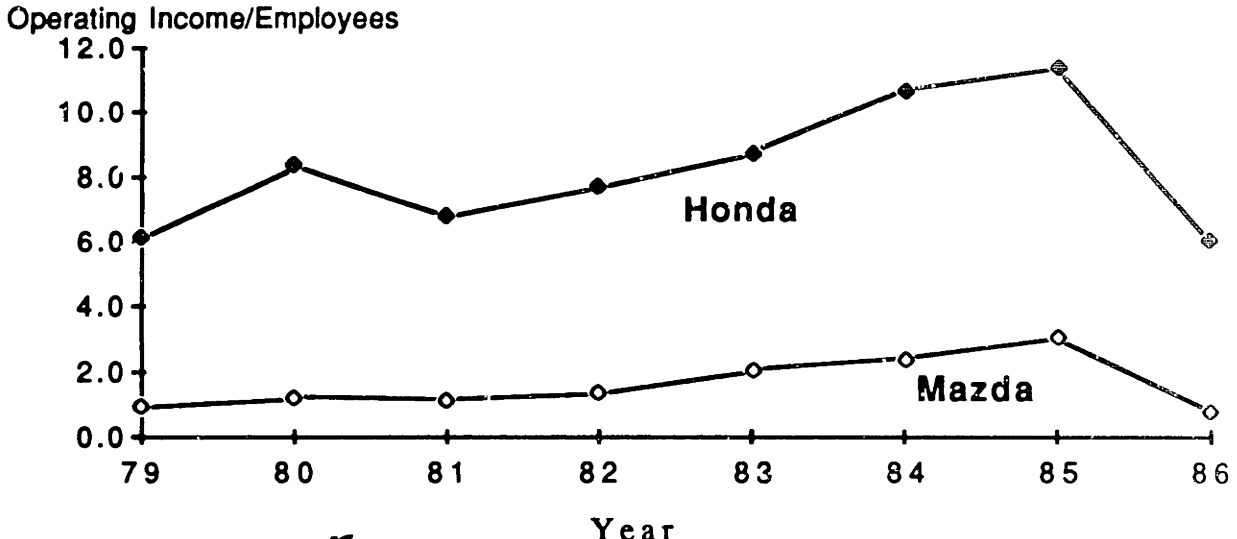

Figure. 10 Value-Added Productivity
Sources: Honda Motor Co.'s Annual Reports
Mazda Motor Corp.s, Annual Reports
Honda Motor Co., *Honda: A Statistical View 1987*
Mazda Motor Corp., *Kaisha Gaiyo 1987-3*

IV. Product Development Performance

In the car industry, product development performance is one of the most important functions. In particular, both Honda and Mazda have been clearly emphasizing the importance of research and development throughout their history and continue to place emphasis on R&D. Both manufacturers understand that differentiated products are the most appropriate means to compete with other bigger manufacturers like Toyota and Nissan.

Honda and Mazda even state the importance of research and development in their respective company brochures:

> "Technology - the cutting edge of the Honda philosophy. Honda's constant goal is the development of superior products. Since its birth in 1948, Honda has consistently aimed at newer and better technology. Through its own original conceptions, the company has produced the highest quality products of its age."[64]

> "Emphasis on research and development has always been a hallmark of Mazda. Mazda's commitment to deliver technologically advanced products with a distinct identity can be realized only through untiring efforts in technical research development."[65]

In this chapter, I will discuss product development at both manufacturers. First, I will compare the range of each company's market coverage, which is a fundamental part of product strategy. Then, I will analyze the capacity for new product development, which is measured by how many new development projects have been actually completed every year at each manufacturer. Using this new product development capacity, each manufacturer could enter a new segment of the market or could exchange an existing model for a new one. Both areas are key factors to implement on R&D-oriented strategy in the market, which both companies are pursuing. Given the fact that the size of the companies and the level of importance of R&D are similar between Honda and Mazda, additional development capacity can be a result of the need for "development efficiency" or "development speed" at each manufacturer.

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[64]Honda Motor Co.,Ltd., *Honda*, p. 6.
[65]Mazda Motor Corp., *Press Information*, p. 8.

The next area I will cover is how much "innovation" each manufacturer has been able to incorporate into their new product developments. Here I define "innovation" as the distinctiveness of a product, which can lead to the product's distinctive presence in the market. It doesn't necessarily mean real technological innovation. For example, the turbo charger had been mechanically an old technology by the time many automobile manufacturers started incorporating it into their products. However, a manufacturer which incorporated it much faster than the other manufacturers could be called "innovative" by my definition. The level of innovation will be measured by the level of diffusion of advanced technologies at Honda and Mazda.

This analysis of innovative factors represents the qualitative part of development performance, as opposed to a quantitative analysis, which is represented by the amount of development actually completed. The amount of development is measured by the number of new development projects which have actually been completed every year coupled with the level of complexity of each project at each manufacturer. Both these areas of innovation and amount of new product development are crucial to Honda and Mazda to be successful. As shown in the following exhibit, high development performance is determined by these two areas.

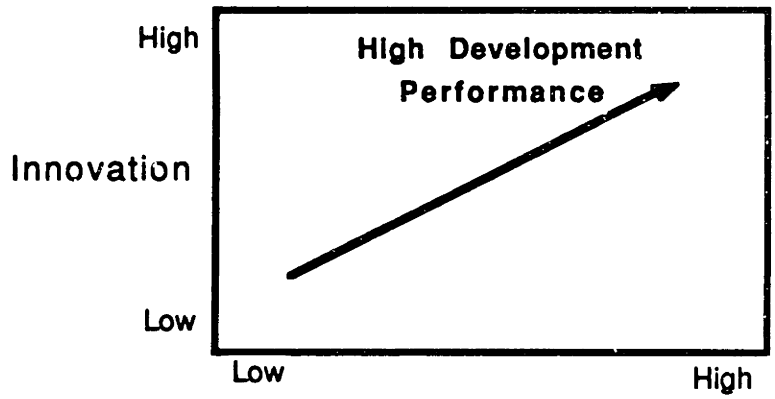

Figure 11. Development Performance

1. Product Range and Adequate Market Coverage

A product-mix strategy at a car manufacturer can basically be measured by its extensiveness of the range of products. Successful companies with a less extensive car product line include Mercedes, Porsche, and Suzuki, which can be considered specialized companies. Mercedes specializes in luxury sedans, Porsche specializes in sports cars, and Suzuki specializes in mini cars. Major examples of an extensive car product range are GM, Ford, and Toyota. Honda and Mazda fall between these two groups.

As discussed in Chapter II, Mazda established an extensive car line earlier than Honda. For example, in 1975 Honda had only two micro car lines and the Civic. On the other hand, Mazda had as many as eight car lines, ranging from a micro car, the Chante, to an upper class car, the 929. I will now show how product lines of Honda and Mazda ranged first in 1980 and then in 1987.

In 1980 the product range at Mazda was still more extensive than at Honda. One of the significant differences was that Mazda had models in the upper segment. However, in

1980 two of Mazda's upper class models, the 929 and the Cosmo, were not available in the U. S. market. The minivan, the Bongo, was not available in the U.S. either. Therefore, even though Mazda had a wider range of products, particularly in the all important U S. market, the product ranges at both manufacturers were not that different.

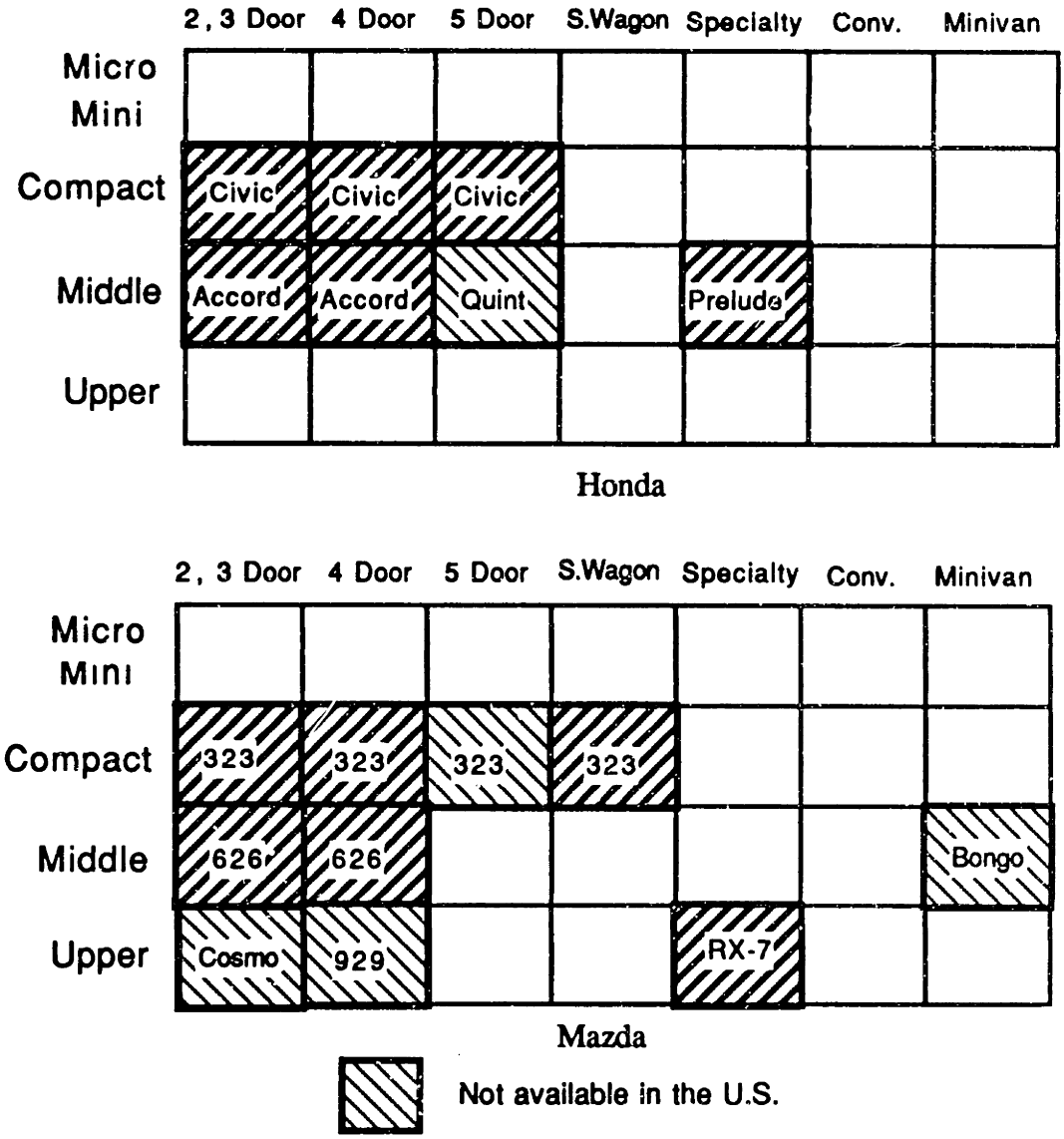

Figure 12. Market Coverage of Honda and Mazda (1980)
Source: Author's Compilation

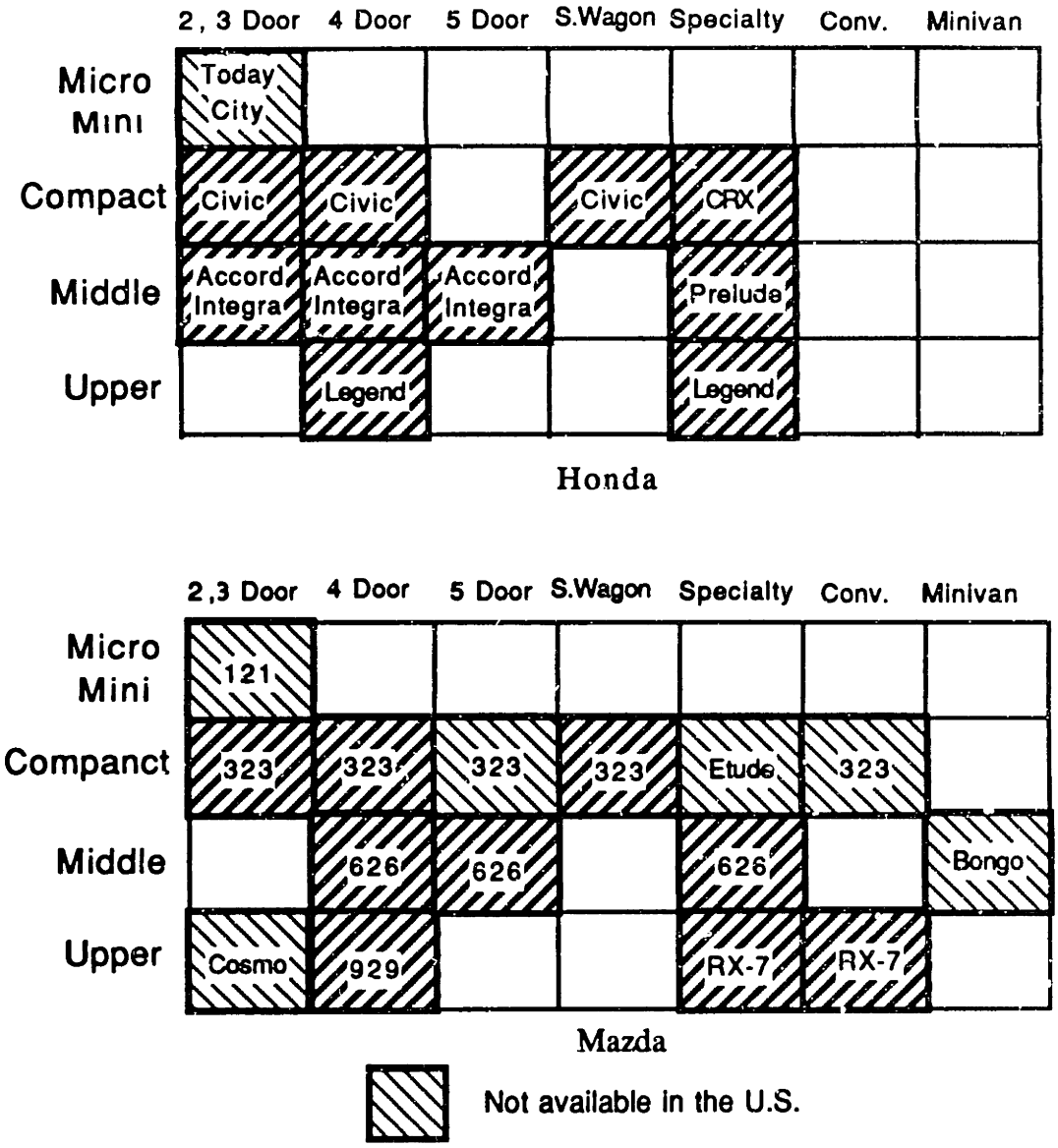

Figure 13. Market Coverage of Honda and Mazda (1987)
Source: Author's Compilation

In 1987 the extensiveness of product range at Honda and Mazda became a little closer, because Honda had expanded its product line into both the upper segment and the specialty

segment. However, Mazda's product lines were still more extensive. Other major differences now are that Mazda has convertible models and a minivan, whereas Honda doesn't. However, Honda has two models, in the middle segment, the Accord and the Integra, even though the Accord is positioned a little higher than the Integra.[66] Honda concentrates more on this middle class than Mazda. In addition, along with the Legend, the Integra plays a role as one of the two models featured in Honda's new distribution network, "Acura."

Another major difference again is that Honda had introduced all of its car models to the U.S. market, with the exception of micro and mini cars, whereas Mazda had not introduced its car lines for as many as six segments to the U.S. market. This strategy supports the idea that Honda places more importance on the U.S. market than Mazda.

2. New Product Development Performance - Amount of Development Completed

Introducing new products is extremely important in the car industry for primarily three reasons. First, even though the automobile technology seems to have matured in basic mechanical parts, each company is still competing every day against each other for an even better technology. Competition in the car industry is extremely fierce, partly because there are more than ten major manufacturers still competing in the same market. Therefore, a product usually becomes obsolete technologically rather easily after a certain number of years after its introduction and no longer sells well.

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[66]The Accord ranges from $10,925 to $14,130, and the Integra ranges from $10,915 to $13,485 in the U.S. market as of March 1988, *Automotive News*. In Japan, the Accord ranges from ¥129.5 million to ¥230.8 million, and the Integra ranges from ¥115.5 million to ¥180.9 million as of February 1988, *Car Graphic*.

Secondly, a product could become obsolete even only in its exterior and interior styling, as other fashion products like clothes do. Styling plays a significant role for a product's popularity in the car industry. Thirdly, aiming at and introducing a new product to a market niche is one of the major product strategies. Making a product stand clearly distinctive from a competitive model in the same market segment has become extremely difficult.

Therefore, speed and efficiency of car product development, which can lead to a high amount of development actually completed, is crucial to frequently introduce new products into the market. There are some successful European manufacturers, which don't seem to place importance on development speed. However, in the competition among competitive Japanese manufacturers, a short cycle of major changes on existing models is considered essential. I will show the average number of years for major changes in models at each manufacturer in Japan, compared to the European manufacturers which don't implement major changes in their products as often as Japanese manufacturers.

	Number of models being changed from Jan. 1981 to Mar. 1988	Number of Years since the Last Change or Introduction
Japanese		
Honda	8	4.3
Mazda	7	5.1
Toyota	12	4.3
Nissan	12	4.4
European		
Mercedes	2	10.1
BMW	3	7.8
VW-Audi Group	4	7.7

Table 2. Average Cycle of Major Changes on a Car Product
Source: Author's Compilation

Honda, Toyota, and Nissan have changed their models with a tight cycle. Mazda's average cycle is longer than the other three major Japanese manufacturers. One of the reasons for Mazda's longer average cycle than Honda's is because, in the 1970's, Mazda had more extensive car lines than Honda, some of the lines had been left unchanged and were changed only after a long cycle. In contrast, Honda could change most all of its product lines early, because it had a fewer product lines than Mazda. In other words, Mazda has tended to stay with older models. This difference between Honda and Mazda might have impressed on customers that Honda is the more R&D-oriented manufacturer of the two companies.

I will now measure how much development in total has been done at Honda and Mazda respectively. Completed development can be measured by new products introduced or old redesigned by each manufacturer. However, because each product has different degrees of complexity, the actual number of products introduced is not sufficient for measuring overall development performance. For example, the Accord which was redesigned in 1985, has a newly developed platform which includes an entirely new suspension system. On the other hand, the Integra, which was redesigned that same year, shared the same platform as the Civic, which had been redesigned in 1983. With only one body style, the Prelude is another example, while the Accord and the Integra have three body styles.

I will summarize the methodology of determining the degree of complexity for each development project.[67] To begin with, a car project is divided into three basic parts: the exterior, the interior, and the platform. Each of these parts is then broken down into several categories that describe the degree of change in that part. For example, the degree of change to the exterior starts with minor trim changes (moldings and ornamentation) and progresses through changes to the nose and tail, fenders and hood, partial changes to the greenhouse (the greenhouse refers to the glass area and includes the pillars and roof), total changes to the greenhouse, and total restyling. For the interior, the degree of change starts from a new trim to new seats, new instrument panel, and total restyling. For the platform, the degree of change ranges from a minor change in the existing platform to a new wheel base, new tracks, new suspension, to a totally new platform. Each of these factors has a weighting associated with the degree of difficulty of making that particular change. Then, a total weighting of the project is multiplied by a multiplier, which is determined by the number of bodystyles and wheel bases of the project.

The results of every car project for the past 12 years at Honda and Mazda are shown in the next exhibit. From this exhibit, it is evident that the number of new projects at Honda has been increasing significantly. In doing so, Honda is taking advantage of a less complex project. In the category of a degree of complexity of under 20, there are seven Honda projects and only three Mazda projects.

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[67]This methodology is from a term paper at the Sloan School, "A Comparison of Product Development Performance at Chrysler and Mazda," which Antony Sherif and the author worked on together.

One of the best examples of the projects with an under 20 complexity point is the Integra. Most customers barely recognized that the Integra shared the same platform as the Civic.[68] In this context, the product strategy of the Integra is appropriate. On the other hand, designing a model using the platform employed for another existing car line is technologically unfavorable. For example, because the average weight of both the Integra and the Civic differ by more than 300 pounds,[69] the ideal platform to support the change in weight should be different.

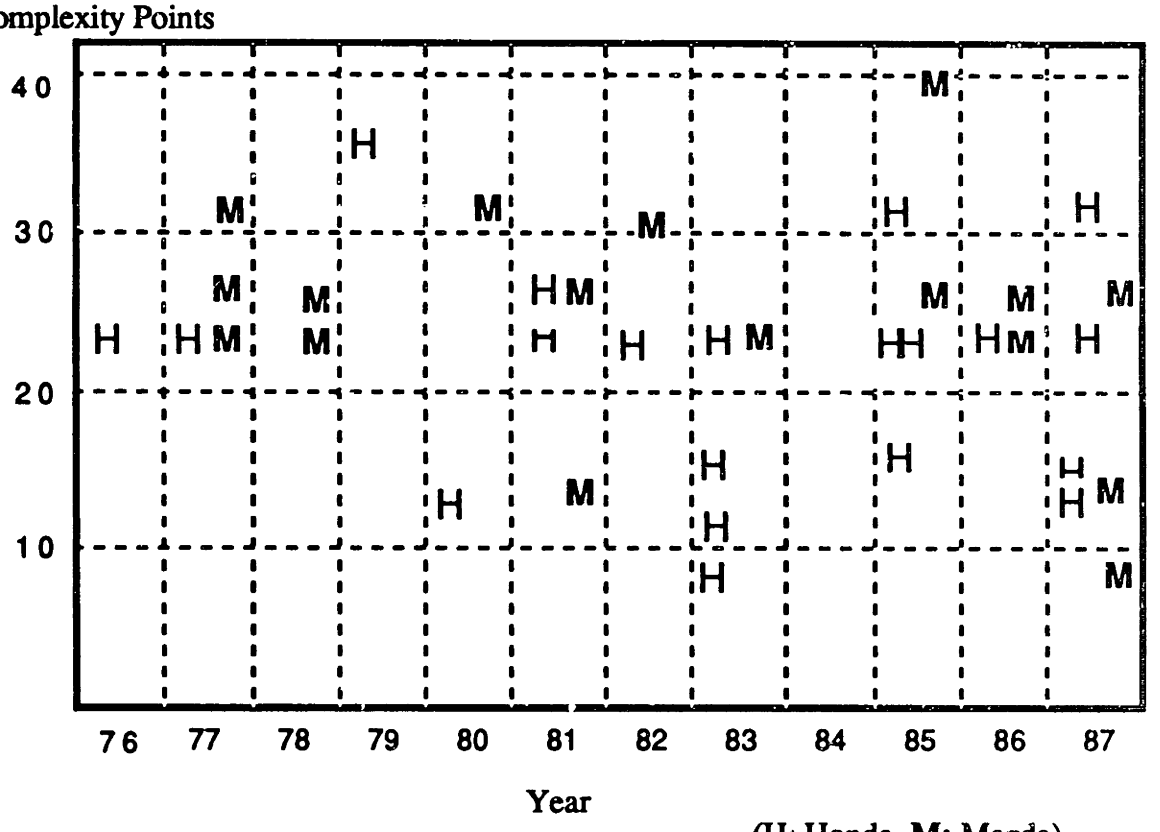

Figure 14. Project Complexity of Every Model at Honda and Mazda
Source: Author's Compilation

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[68]Because the Civic was completely redesigned in September 1987, currently the Civic and the Integra have different platforms.

[69]The average weight of the Civic is 2,023 lbs., and the Integra's is 2,352 lbs., calculated from a specifications chart in Automotive News.

Next I will show the total complexity of products actually completed every two years, which have been introduced for the past 12 years by Honda and Mazda. Although during the 1976-1977 period, Mazda's total development was almost twice as much as Honda's, Honda's total car development surpassed Mazda starting in the 1982-1983 period.

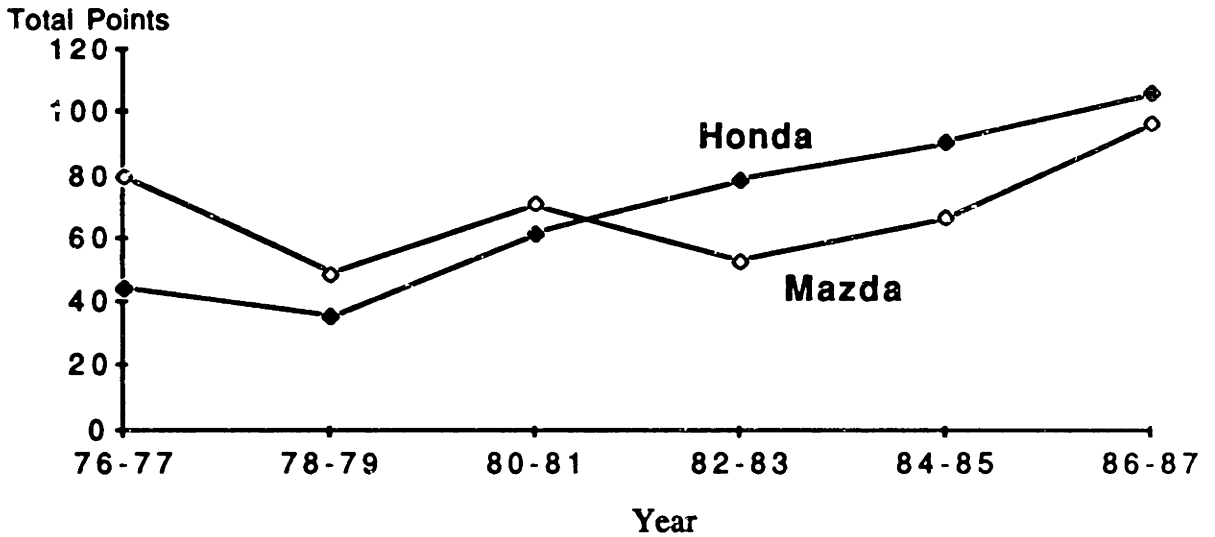

Figure 15. Total Development Complexity
Source: Author's Compilation

Next I will discuss the relationship between total development and sales at both Honda and Mazda. The following exhibit portrays the relationship between total development and sales for the past 12 years at each manufacturer. As Honda increased its total car development over the past 10 years, its sales also increased proportionally. On the other hand, Mazda's total development didn't increased continuously as much as Honda's did, and Mazda's sales didn't increase as much, either. Even though Mazda's total development complexity increased considerably during the 1986-87 period, its sales for the most part

stayed the same. The stagnancy of its sales, despite a high increase rate of Mazda's total development complexity in this period, is considered to be one of the reasons for Mazda's weaker financial performance. It is generally understood that achieving a higher total development complexity requires a larger R&D investment.

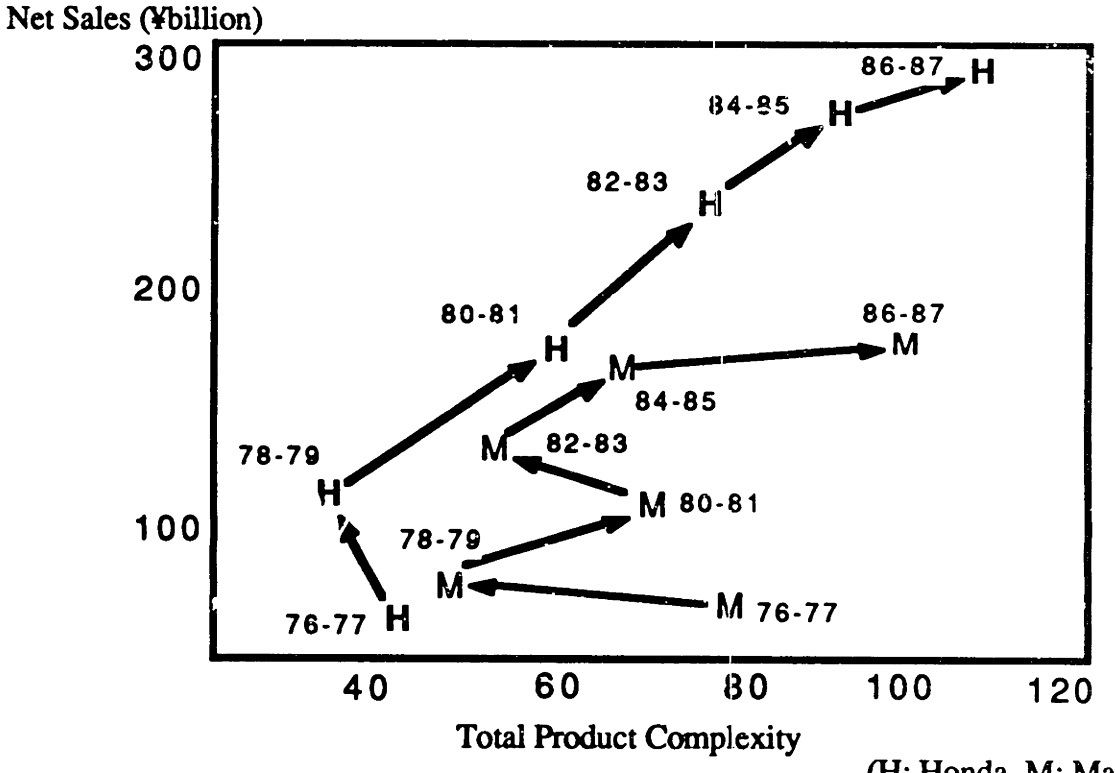

Figure 16. Relationship between Total Product Complexity and Net Sales
Source: Author's compilation

On the next page is a percentage of total development to net sales every two years. In the 1976-77 period, the ratios of both Honda and Mazda are high. After that period, Mazda's ratio is generally higher than Honda's, and the difference between the ratios is increasing in the most recent years. A high percentage, in general, has two implications as stated below:

-Extensive R&D either for future growth or for implementation of a strong R&D-oriented strategy,

-Too much development for its weak sales performance.

It is understood that Honda's high ratio during the 1976-1977 period corresponds to the first implication above, "for future growth." However, Mazda's high ratio that same period and during the 1986-1987 period was combination between "for future growth" and a "weak sales performance." Since the 1978-1979 period, Honda kept the ratio at a relatively low level. Even though Honda's total development has been increasing more extensively than Mazda's, Honda's high sales performance has been able to pay back any increases in development.

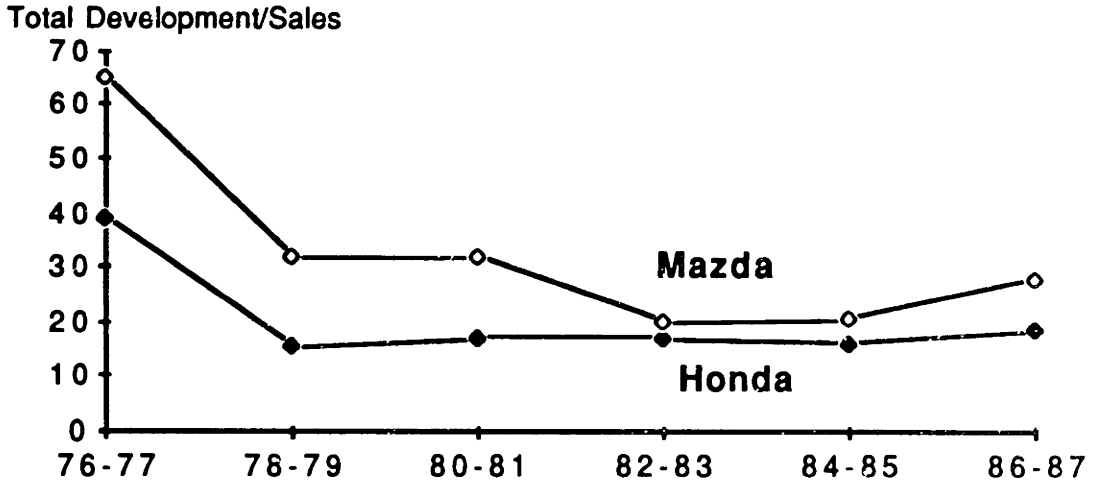

Figure 17. Total Development Complexity to Sales
Source: Author's compilation

3. Technology and Innovation

Even though both manufacturers clearly emphasize the importance of R & D and innovative technology, it seems that Honda presents a stronger image of an innovative manufacturer. According to survey results conducted by the Nihon Keizai Shinbun(the Japanese equivalent of the Wall Street Journal), asking Japanese business people what company produces the most innovative products, Honda was ranked fourth, trailing only Sony, NEC and Hitachi.[70] Toyota, Nissan, and Mazda were not even ranked among the top 15. A question to be asked here is if there actually is a difference in product development performance in terms of innovation between Honda and Mazda.

I will analyze diffusions of new technologies in a product at both manufacturers. I will portray how Honda and Mazda have incorporated new technologies into each segment of their products, as of the end of 1987. Four segments of products at each manufacturer are analyzed. The specific products and their respective segment are listed below.

		Honda	Mazda
A	Compact	Civic & CRX	323 & Etude
B	Middle	Accord & Integra	626
C	Upper	Legend	929
D	Specialty	Prelude	RX7

Table 3. Class Segmentation

Specific technologies are divided into two group: a car's engine and chassis. In each of these two categories, four specific technologies are chosen. These technologies are

[70]Nikkei Newspaper, January 1, 1988, number of samples : 1,000 business people.

considered to be both important and advanced for late 1987.[71] The technology diffusion of these specific technologies in each segment is shown in the following exhibits.

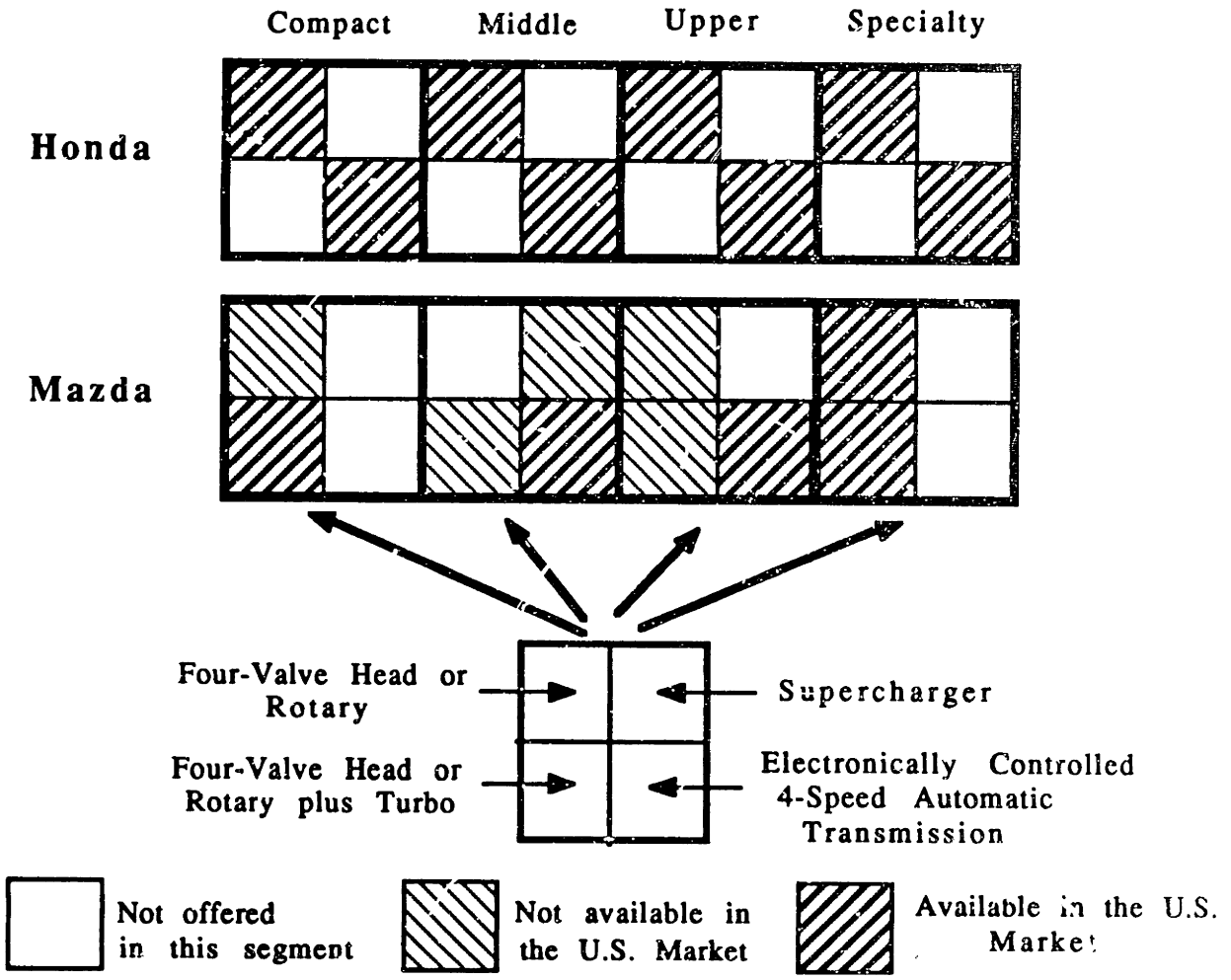

Figure 18. Engine Technology Diffusion
Source: Author's compilation

First, with regard to engine technology, as shown above Honda covers eight out of sixteen possible segments, while Mazda covers ten. It is understood that there is not a considerable difference between the diffusions of high technology in Honda engines and

[71]The selection of these specific eight technologies was first made by the author and then was checked with other industry experts and adjusted as needed.

Mazda's.[72] However, in the U.S. market, Mazda covers only five segments, while Honda covers ten segments. As was shown in the market coverage figure, it is again evident that Honda places more emphasis on the U.S. market than Mazda.

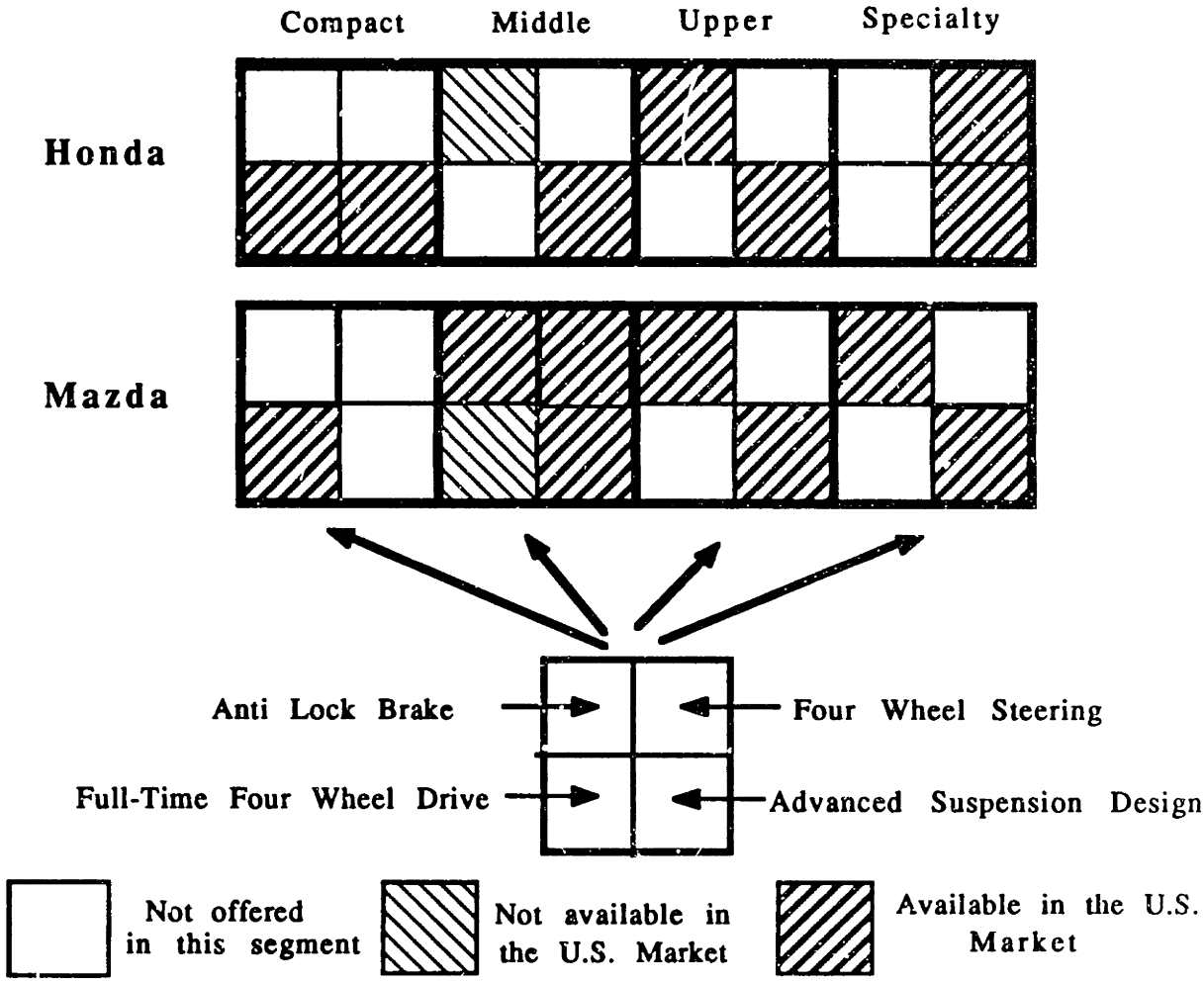

Figure 19. Chassis Technology Diffusion
Source: Author's compilation

Secondly, in the chassis-technology area, Mazda covers nine segments, and Honda eight. There is no noticeable difference in this area. Accordingly, their close level of advanced

[72]Because this is a rough analysis, I don't conclude which is definitely more innovative with a small difference.

chassis technology was also apparent in 1987, when they were the only two manufacturers to introduce four wheel steering, one of the most distinctive technologies of that year, almost at the same time.

4. Other Aspects of Product Strategy

Honda customers often refer to the strong reputation of a Honda automobile when they buy a Honda car. I will now discuss three issues, "quality," "product identity," and "enthusiastic engineers," which are considered to be major contributors to the strong reputation of Honda's products.

a. Quality and Reliability

According to J.D. Power's customer satisfaction index, Honda has a better rating over Mazda as shown below. The people factor indicates how well the customer was treated by dealership personnel. The technical factor indicates how problem-free the vehicles were and how well dealers are able to fix problems.

	1986			1987		
	People	Technical	Total	People	Technical	Total
Honda	110(#7)	154(#1)	132(#1)	132(#6)	127(#3)	130(#2)
Mazda	87(#14)	138(#3)	113(#4)	108(#15)	124(#4)	116(#5)

(#): A ranking among all manufacturers in the U.S. market

Table 4. Customer Satisfaction Rating
Sources: J.D. Power and Associates, The Power Report, August 1986 and August 1987

Honda achieved a higher level of customer satisfaction than Mazda in the U.S. market. Honda's better rating than Mazda's is primarily a result of Honda dealers' high rating in the

people factor. In terms of the technical factor. the difference is smaller, even though Honda products technologically are also rated better than Mazda's.

b. Honda's Product Identity Strategy

Honda's product lines, as its product strategy, share similar aspects both in concept and in styling. After Honda introduced the first Civic in 1972, Honda's products had been perceived as practical, economical, and well made, primarily differentiated by their hatchback styling. In 1982 when Honda introduced the second generation of the company's sports coupe, the Prelude, Honda's product strategy shifted from "practical" to "sportier" and from "economical' to "sophisticated."[73]

The mechanical engineering on the new Prelude used a complicated mechanism, usually only found on more expensive cars, partly for the purpose of making the exterior styling look "wide and low." The interior design was made more luxurious and the exterior design more sporty. The "wide and low" exterior styling used in the Prelude became the major new product strategy for the Company and was extended to include Honda's other product lines as well. Honda introduced new generations of the City, the Civic, the Integra, the Accord, and the Legend between 1983 and 1986. All of these models had the same concept and motif in their exterior styling, wide and low, as in the Prelude.

The result was that all Hondas became clearly differentiated from competitors' cars, while remaining similar to each other (within Honda). This was the first time that a Japanese

[73]The argument here is a result of separate interviews with Mr. Iida and Mr. Uchiyama of Mazda North America, March 2, 1988.

automobile manufacturer had successfully implemented such a strategy. To date the only other manufacturers who have been able to do this are Mercedes-Benz and BMW. Around 1985, GM also started using the same motif in styling of its product lines. However, the idea was not popular because all its product lines look alike, from less expensive compact models to luxury models. Therefore, Honda could have faced the risk of the same kind of a failure in this strategy. This strategy has contributed significantly to Honda's higher and more prestigious brand image, particularly in the U.S. market.

However, in the Japanese market, the Legend is not successful, primarily because of its styling. Because of its wide and low exterior motif, the Legend looks smaller for its class, compared to the Toyota Crown, the Nissan Cedric, and even the Mazda 929. It is common knowledge that in the Japanese market, a luxury model with a "low" styling is not preferred.[74] In 1987 Honda sold only 11,468 units of the Legend domestically, whereas Mazda sold 28,523 units of the 929 in its home market.[75] It is again evident that Honda places more emphasis on the U.S. market than the other Japanese manufacturers. In order to implement the strategy of total product identity and emphasize on the U.S. market, Honda seems to have ignored the Japanese market with its Legend.

c. Enthusiastic Engineers at Honda

When Kume, the current president, was asked why Honda's products are so popular, he responded that it is because Honda's employees, who design Honda's automobiles, are all

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[74]Interview with Mr. Iida, a manager in charge of market research and product planning, of Mazda of North America, March 2, 1988

[75]*Car Graphic*, June 1987 - April 1988.

car maniacs.[76] Honda is one of the most popular manufacturing companies for college students to join. When newly hired engineers at Honda are asked why they joined Honda, most of them say, "Because I like Honda cars," or "I want to design the kind of car I really want to own." One of the reasons for this popularity clearly goes back to the personality of Soichiro Honda. He was a genius inventor, and his values were a far cry from bureaucracy, which might prevent engineers from creative activities.

At Honda even the managing directors are car enthusiasts. Nobuhiko Kawamoto, the president of Honda R and D Co., says, "Kume, the president of Honda Motor Co., and Kawashima, the former president of Honda Motor Co., both have even more superior driving techniques [on the perilous testing courses] than the young engineers."[77]

On the other hand, at Mazda more than half of the engineers join just because they want to remain in the geographical area where Mazda is located. Mazda's headquarters including R & D facilities and most of its plants, is located in Hiroshima, which is in the western part of Japan, and Mazda is one of a few large manufacturers in this area. Actually, Mazda used to be popular among engineering-major university students, because of its innovative rotary engine. However, the rotary engine, no longer an exciting new technology, no longer attracts young engineers.[78]

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[76]Kiyoaki Hirotani, *21 Seiki wo Tsuranuku Honda Shinjinruikeiei No Sugosa*, p. 144.

[77]Kiyoaki Hirotani, *21 Seiki wo Tsuranuku Honda Shinjinruikeiei No Sugosa*, p. 152.

[78]Telephone interview with an engineer at Mazda Motor Corp., Toru Furusawa, March 10, 1988.

Another important point is because of the financial crisis during the mid-1970's, Mazda hired only small number of engineers between 1975 and 1979.[79] In Mazda's hierarchy organization, based on a seniority system, engineers who would have been hired during that period would be currently playing a major role, in terms of innovative engineering. In other words, most of the engineers hired before 1975 had been promoted to managing jobs before 1984, and most of the engineers hired after 1979 currently still have not acquired sufficient skills to come up with an innovative edge.[80]

V. International Strategy

Compared to Toyota and Nissan, both Honda and Mazda are heavily export-oriented, as is shown in the figure. In 1986 Honda exported 76% of its total car production, and Mazda 75%.

[79]Richard Pascale and Thomas P. Rohlen, "The Mazda Turnaround", *Journal of Japanese Studies*, p. 250.

[80]Interview with Mr. Maebayashi, a manager in charge of engineering, of Mazda of North America, March 3, 1988.

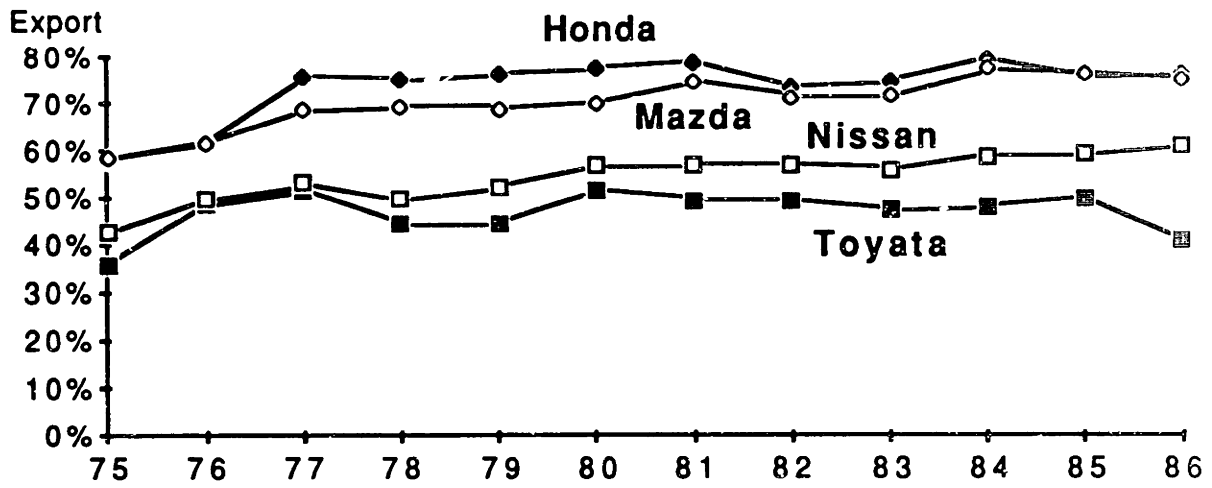

Figure 20. Percentage of Export cars
Source: JAMA, Automobile Industry in Japan

Among the overseas markets, in terms of sales volume and profit margins, the U.S. market is more important than all other markets. So, in this chapter, I will first discuss the U.S. market, focusing on why Honda is significantly outperforming Mazda.

1. Strategy in the U.S. Market

a. Importance of the U. S. Market

The U. S. market for Japanese auto manufacturers is too important to be overemphasized. As mentioned, it is understood that Honda's stronger financial performance is primarily attributable to its success in the U. S. market. The importance of the U. S. market was ironically shown by the drastic decrease in the ratio of operating income to net income due to the appreciation of the yen starting in late 1985. Mazda's ratio in all markets dropped from 5.1% in 1985 to 1.4% in 1986. At Honda, the overall ratio dropped from 10.1% in 1985 to 5.9% in 1986. Total worldwide car sales didn't drop at either manufacturer, and sales in the Japanese market and in the European market even increased during this period. The appreciation of the yen must have primarily had influence on profits coming from the

U.S. market. This drastic drop in overall profitability, solely as a result of the appreciation of the yen, may, in a sense, support a statement, made before the appreciation of the yen, by auto industry experts, "Most of the Japanese car companies make most of their profits in the U. S. market."

I will now make an approximate calculation of how the U.S. market was profitable before the appreciation of the yen, which started in the fall of 1985, and of how the profitability has changed since then. Profitability in the U.S. market will be measured by comparing it to profitability in the Japanese market. In 1985 the lowest trim level of the Mazda 626 was sold in Japan at ¥1.35 million ($5,650, the average exchange rate in 1985 was $1=¥239), and in the U. S. market at $8,495, or ¥2.03 million. The only difference in major features between models is the U.S. version has an engine equipped with an electronic fuel infection system. Because of this difference, the price of the Japanese version should be adjusted upward to ¥1.40 million($5,860). The difference in the sales costs for Mazda between the Japanese market and the U. S. market, which includes shipment costs and operating costs, is estimated at about ¥100,000($420).[81] Therefore, in 1985 the difference in sales margin for the Mazda 626 between the U.S. market and the Japanese market is calculated at as much as ¥530,000($2,220) per car. This calculation shows that the profit margin in the U.S. market is much higher than in the Japanese market.

I will now estimate how the difference of the profit margin changes because of the appreciation of the yen. If the same calculation is done at the exchange rate of $1 to ¥168 (the average in 1986), the 626 in the Japanese market, also adjusted by the difference in

[81]Teruhiko Hashimoto, *Kokusaikano nakano Jidoshasangyo*, p. 76.

features and sales costs, becomes even more expensive than in the U.S. market by ¥23,000($140). Therefore, the sales margin per car in the U.S. market relative to the Japanese market is reduced by ¥553,000, as a result of the appreciation of the yen from $1=¥239 to $1=¥168. Mazda sold about 210,000 units in both 1985 and 1986 in the U. S. market. The decrease in Mazda's sales margin for the U.S. could total ¥116 billion. Mazda had three car products: the 323, the 626, and the RX-7, and the 626 is considered to fall in the middle segment, in terms of both price and profit margin. Since it is assumed that Mazda is able to keep about a half of its total sales margin(not its sales price) as profit, Mazda would have recorded a decrease in operating income by about ¥58 billion, solely as a result of the appreciation of the yen. The actual number for the decrease in Mazda's operating income in the worldwide market was ¥61.3 billion. Mazda's operating income in 1985 was ¥85.0 billion and in 1986 ¥23.7 billion. The same kind of results also can be calculated at Honda for an export car to the U.S. At the same time, the degree of damage inflicted by the appreciation of the yen on a Japanese auto manufacturer is demonstrated by this calculation.

b. Honda's Higher Dependence on the U.S. Market than Mazda

Honda's dependence on the U. S. market is much higher than Mazda's as shown in a ratio of U.S. car sales units to total worldwide car sales units. The risk at Honda could have been higher than at Mazda when such incidents as the voluntary export restriction and the sudden appreciation of the yen became factors. However, Honda managed to avoid irreparable damage through appropriate strategies like building its U.S. plant.

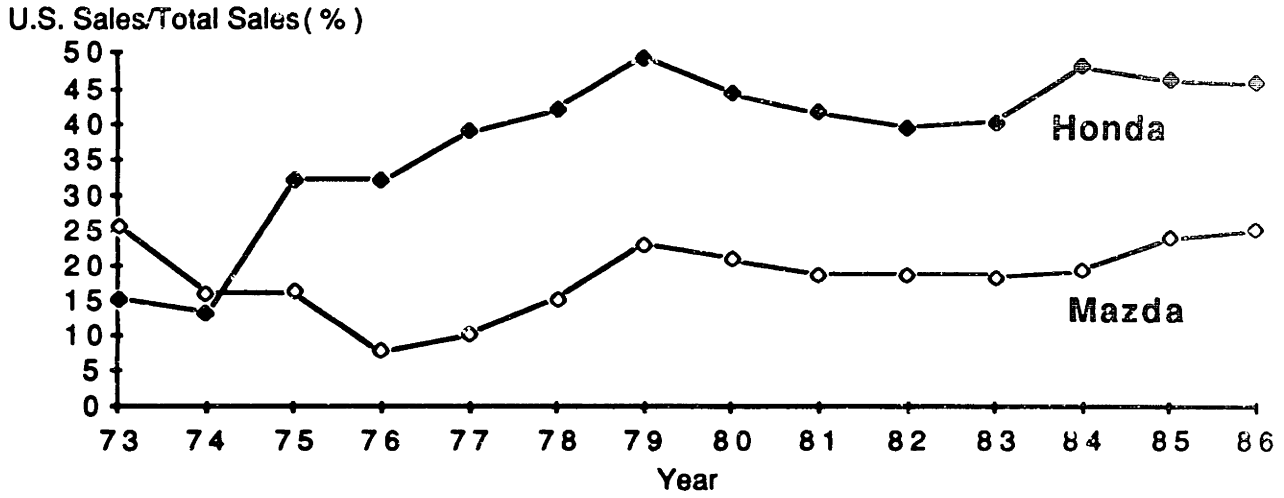

Figure 21. Percentage of U.S. Sales to Total Car Sales at Honda and Mazda
Sources: Honda Motor Co., LTD, 1987, Honda : A Statistical View 1987
Mazda Motor Corp., Kaisha Gaiyo, 1987-3

Honda's higher emphasis on the U.S. market is a result of a combination between its competitive advantage in the U.S. market and a weak position in the Japanese market. By 1981, Mazda's market share in the Japanese market had been generally higher than Honda's. In the Japanese market, Mazda had a much more extensive dealer network, car lines, and a customer base with loyalty to Mazda, at least in the 1970's. These advantages enjoyed by Mazda had been developed partly through its three-wheel trucks sold in the Japanese market from 1940's to the 1960's. On the other hand, Honda had an much more extensive experience in the U.S. market with its motor cycles. Moreover, Honda had already established a good brand image in the U.S. market to a certain extent before it introduced its cars into the U.S. market.[82] In addition, even though Honda didn't have an upper-segment model, Honda was strong in the small car segment, and a Japanese small car was one which was in great demand in the U.S. market in the 1970's. In the Japanese

[82]Interview with Bob Hall of Mazda North America, March 3, 1988.

market, even though the N-360 and the first generation of the Civic were a great success, the other models in the 1970's including the Accord and the second generation of the Civic were not successful, in terms of sales.[83]

Another particularly important point was that the U.S. market was much more profitable than the Japanese market. In the overall situation, Honda seemed to make a decision that it would place an emphasis on the U.S. market, rather than first to strengthen Honda's weak position in the Japanese market. On the other hand, even though Mazda's management knew that the U.S. market was more profitable, they decided to maintain Mazda's strength in the Japanese market, and at the same time to grow in the U.S. market.[84] I will summarize the situation in the next figure.

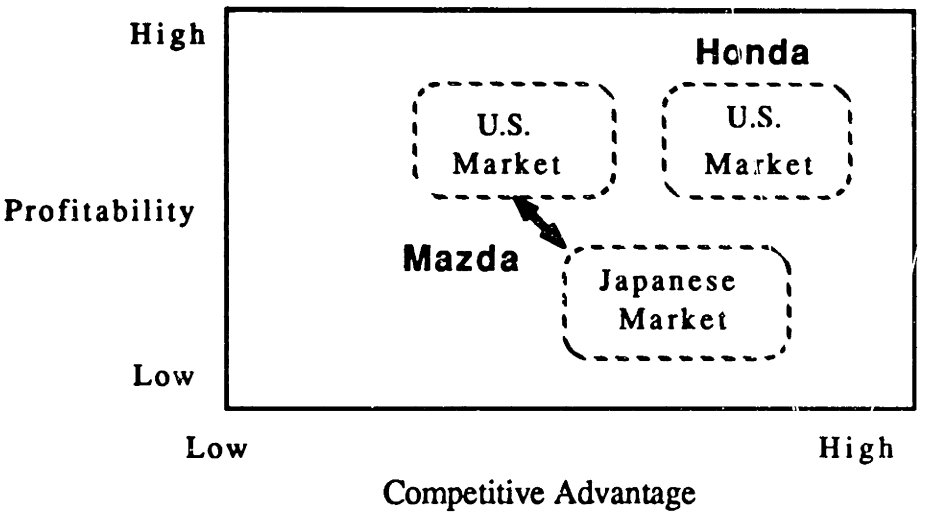

Figure 22. Strategic Emphasis on Geographical Markets
Source: Author's compilation

[83]Interview with Mr. Iida, a manager of market research and product planning, of Mazda North America, March 2, 1988
[84]Interview with Akio Uchiyama, a vice president, of Mazda North America

It is also important to point out that Honda's success in this strategy seems to have been positively influencing its recent competitiveness in Japan. Because Honda could place an emphasis on the profitable U.S. market, its total financial profit has been higher. Using this higher profit, Honda has been able to conduct more extensive new product development, which partly helped Honda to make its Japanese position stronger in recent years.

I will next elaborate on several specific issues about the strategies at Honda and Mazda in this crucial U.S. market, starting with their entrance into the U.S. market.

c. Entrance into the U.S. market

Export to the U.S. market by Japanese auto manufacturers began in 1957, when Toyota established Toyota Motor Sales, USA. However, the Company's model at that time, the Crown, was apparently inferior to other cars sold in the U.S. market. The Crown did not have enough engine power and durability in its major components for American driving conditions. Toyota encountered so many problems that it even decided to temporarily withdraw from the U.S. market a few years later. The Company didn't resume sales in the U.S. until 1965.[85] Nissan established Nissan Motor USA in 1960, and introduced the Bluebird. However, its performance was not at a high enough level to compete in the U.S. market either.[86]

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[85]Toyota Motor Co., *Sekaieno Ayumi Toyota Jihan 50 Nenshi*, 1980, p. 79 - 88.
[86]Teruhiko Hashimoto, *Kokusaikano nakano Jidoshasangyo*, p. 4 - 5.

However, although both Toyota and Nissan experienced many difficulties in the U.S. at first, these companies had been able to increase their sales volume in the U.S. by significantly improving their products. By 1969, the total combined sales units of Toyota and Nissan in the U.S. had increased to a total of 281,000 units.[87] While carefully following the experiences Toyota and Nissan had in the U.S. market, Honda and Mazda started exporting their cars to the U.S. in 1969 and 1970, respectively.

Even though Mazda was more prepared than Honda in terms of its car product line, Honda was more advanced in sales experience in the U.S. market with its motorcycles. In 1959, Honda established its own American Honda Motor Company and entered the American market with a very small light-weight motorcycle. By 1970, Honda had sold more than 2 million units of its motorcycles in the U.S.[88] Even though using a trading company to enter a foreign market is a convenient and popular path for Japanese manufacturers, Honda has never used a trading company in the U.S. market. Soichiro Honda decided not using a trading company to be company policy.[89] This strategy was supported by the notion that Honda should collect market information directly, and customer service cannot be overemphasized. Only a manufacturer which knows a lot about a car is able to fully accomplish these activities by being directly involved.

In 1969, with the introduction of Honda's very small micro car, the N-600, with a 600cc air-cooled engine, a scaled-up model of the already successful N-360, Honda entered the U.S. car market for the first time through Hawaii. At the beginning of the 1970's Honda

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[87]Teruhiko Hashimoto, *Kokusaikano nakano Jidoshasangyo*, p. 6
[88]Honda Motor Co., *Honda: A Statistic View 1987*, p. 11.
[89]Honda Motor Co., *Honda No Kaigai Senryaku Hokubeihen*, p. 2.

had only one model, the N-600, and it was too small for the U.S. market. Honda's first world-class model, the Honda 1300 was not even successful in the Japanese market. Due to the failure of this model in the Japanese market, Honda did not export this model to the U.S.

Mazda established Mazda Motors of America (N.W.) in 1970, covering the sales territory of the states of Washington and Oregon. In the same year, Mazda then added two more sales companies, Mazda Motors of Florida and Mazda Motors of Texas, to cover the rest of the U.S. market. Mazda had decided to form a joint venture with Japanese trading companies to establish these two companies. Sumitomo "Trading Company" invested to buy 40% of Mazda Motors of Florida, and C. Ito Trading Company invested to buy 40% of Mazda Motors of Texas. The advantages of using a trading company included an easy entrance for Mazda into the U.S. market, since trading companies have extensive knowledge about the U.S. market. In addition, there were few people at Mazda who could handle English with any sophistication.[90] Moreover, using a trading company is a kind of risk hedge. In fact, when Mazda was facing the crisis of the mid-1970's, these trading companies helped finance the shortfall. One of the disadvantages is that using a trading company often makes it difficult to respond to the market quickly, since communication and decision making between different companies tend to be delayed.

Another disadvantage is the sales margin taken by a trading company. Furthermore, the current problem for Mazda is that even though Mazda doesn't need the trading company's

[90]Interview with Mr. Minami of Mazda Motor of America (Central).. March 3, 1988.

help in the U.S. market now, it is difficult for Mazda to end the relationship with the trading companies.[91] In fact, currently half of the stock at the two current U.S. distributors (located in Jacksonville, FL and Irvine, CA) is owned by the two trading companies.

In 1970, Mazda started exporting a subcompact model, the Familia, known in the U.S. as the 808, and a middle size sedan, the Luce, known as the RX-4 to the U.S. market. Because Mazda had a complete line of automobiles, its car sales volume in the U.S. was higher than that of Honda, which only had the minicar N-600 during the first 3 years of the 1970's. In 1973 Mazda sold 119,000 units of cars, while Honda sold 39,000 units. However, as I explained in Chapter II, during the the oil shocks of the 1970's, the situation of both companies changed dramatically in the U.S. market.

d. Sales Network

Honda started sales of the Civic in the U.S. market in 1973. However, Honda only had a sales network for its motorcycles at that time. Even though Honda had already introduced the N-600 as its first automobile in 1969, Honda did not establish a car sales network at that time, but utilized its motorcycle dealer network. Now in 1973, Honda first used GM and Ford dealers to sell the Civic. Because these American makers did not have small cars to market, GM and Ford dealers were willing to sell the Civic.[92] At the same time, Honda started establishing its own car sales network, pursuing a policy where

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[91]Interview with Mr. Maebayashi, a manager in charge of engineering, of Mazda of North America, November 6, 1987.

[92]Tetsuo Sakiya, *Hondashiki Daiseikoeno Kaigaisenryaku*, p. 99 - 100.

the Company would seek to increase the number of dealers to exclusively handle Honda cars.

Yoshihide Munekuni, who was assigned as vice president to American Honda Motor in 1977, drove around the U.S. himself to establish Honda's dealer network. He still remembers the faces of all the owners of Honda's dealers, whom he persuaded to join Honda's dealership network.[93] As of July 1987 there were 1092 Honda dealers including 184 of the new Acura dealers, those handling Honda's newest product line. About 71% of all the dealers exclusively handle Honda cars.[94] Most of the dealers also handling other brand models are located in rural areas. Therefore, exclusive dealers comprise more than 90% of Honda's dealership network in cities.[95]

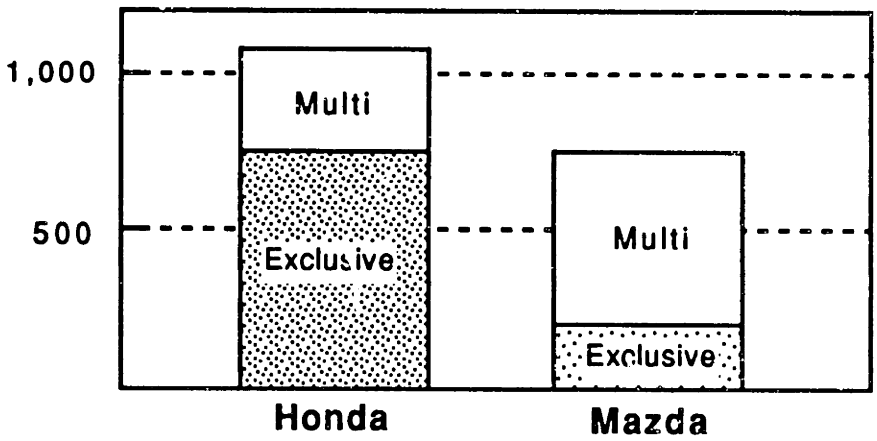

Figure 23. Number of Dealers in the U.S. Market
Source: Mazda Motors of America (Central)

[93]Tetsuo Sakiya, *Hondashiki Daiseikoeno Kaigaisenryaku*, p. 104.
[94]Interview with Mr. Minami of Mazda Motors of America (Central), March 3, 1988.
[95]Tetsuo Sakiya, *Hondashiki Daiseikoeno Kaigaisenryaku*, p. 105.

Sales managers at Mazda also understood the importance of dealer exclusivity. Before the oil shocks, most of Mazda dealers were "exclusive dealers." However, because of the low sales of Mazda cars during the oil shocks, most of the Mazda dealers started representing cars of other manufacturers as well. Mazda could not stop this flow.[96] Even though Mazda has been trying to increase the rate of exclusive dealers, 74% of the 777 Mazda dealers still handles multi-brands of products.[97] This higher rate of exclusivity results in Honda's superior sales efficiency and service quality. As one of the indicators of efficiency, Honda's sales per dealer outlet is twice as high as Mazda's, as shown below.

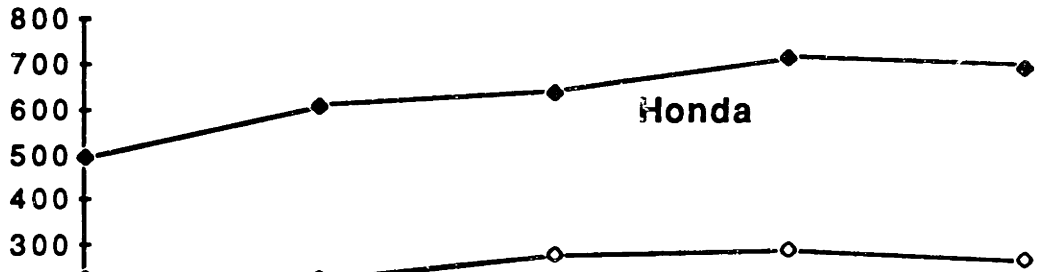

Figure 24. Sales per Outlet
Source: Automotive News, March 28, 1988

The difference in the rates of exclusive dealers is also considered to show positive results in the customer satisfaction survey, conducted by J.D Power, as I have already shown in

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[96]Interview with Mr. Minami of Mazda Motors of America (Central), March 3, 1988.

[97]Interview with Maebayashi, a manager in charge of engineering, of Mazda (North America), November 6, 1987.

Chapter IV. According to the people-service factor of this customer satisfaction index, Honda's points are 110 (ranked #7 among all brand names in the U.S. market) in 1986 and 132(#6) in 1987, and Mazda's 87(#14) and 108(#15) respectively.[98] The people-service factor indicates how well the customer was treated by dealership personnel. The J.D Power's reports,"Mazda's fine product reliability is offset by a less than impressive dealership/service performance. Only four manufacturers in the CSI (Consumer Satisfaction Index) were rated lower by their owners for dealer service-Isuzu, Mitsubishi, Ford and AMC/Renault."[99]

Another unique strategy at Honda is its second car distribution network, Acura, which was established in March 1986 to handle the Legend and the Integra. There are primarily two reasons for this decision. First, as Honda officials announced, Honda needed a new brand name for effectively marketing the Legend. The Legend is Honda's first upper-segment model which is much more expensive than both the Prelude and the Accord.[100] In addition, Honda's brand name has a strong economy-car image.[101] Secondly, Honda needed the second sales network and new brand name to realize its future goal of U.S. increased car sales units. American Honda chairman, Tetsuo Chino, says,"Honda's North American sales goal is one million cars a year by 1990."[102] Even though whether or not the goal can be achieved without the benefit of a second brand name is not that

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[98]J.D. Power and Associates, *The Power Report*, August 1986 and August 1987.
[99]J.D. Power and Associates, *The Power Report*, August 1986, p.9.
[100]As of March 1988, price of the Legend ranges from $21,535 to 29,085, the Accord from $13,640 to $14,130, and the Prelude from $13,640 to $18,125, Automotive News, March 14, 1988.
[101]According to the Weitzman Image Tracking Study, the strongest image for Honda cars is "low mileage", followed by "brand reputation" and "quality." This information was available at Mazda Motors of America (Central).
[102]*Automotive News*, July 27, 1987, p. 32.

clear, the sales goal is so high that it seems reasonable to establish the second division. One of the reasons for preventing a manufacturer from selling a large amount of automobiles is a regulation which doesn't allow more than one dealer of the same kind within a circle of 10 miles. The regulation is effective in many states in the U.S.[103] In 1986 in the U.S. market, only a few brand names, Ford, Chevrolet, and Oldsmobile, successfully achieved such an ambitious sales number.

Acura has been considerably successful so far, and in 1987 the sales of the Integra were 54,757, and the Legend 54,713. Moreover, in 1987 Acura was ranked first in the U.S. car owner survey measuring customer satisfaction, conducted by J.D. Power & Associates.[104]

In 1987 Mazda also introduced its upper-segment model, the 929, to the U.S. market for the first time. Mazda is using the same sales network as used for its other models. The 929 is just selling at a level of more than 2,000 units per month as of March 1988, as Mazda had planned. However, a salesperson at Mazda Motors of America (Central) says,"I don't think that it is appropriate to sell a luxury sedan, the 929, and a pickup truck at the same dealership."[105]

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[103]Nihon Kogyo Bank, *Kogin Research*, 1987 No.3, p. 55.
[104]*Business Week*, March 7, 1988, p.57.
[105]Interview with Mr. Hayashi of Mazda Motors of America (Central), March 3, 1988.

e. Transplants of Manufacturing Facilities to the U.S.

The importance of a transplant to the U.S. should be discussed first. Two major issues which influence transplants to the U.S. are the Voluntary Restriction Agreement(VRA) and the appreciation of the yen. The VRA started in 1981, and the appreciation of the yen first began in the fall of 1985. The VRA stopped the trends of the rapidly increasing import of Japanese cars.

The ITC(International Trade Commission) Report[106] estimates what Japanese sales would have been, if the VRA had not been approved. According to their estimates, there definitely would have been ever increasing demand for Japanese cars in the U.S. market. Cars which are produced in the U.S. are not counted into the restriction number.

	81	82	83	84	
Actual Sales	1,845	1,774	1,861	1,950	
Estimates without the VRA	1,948	1,969	2,435	2,948	(Thousands units)

Table 5. Estimate for the Loss of Sales Units to Japanese Car Manufacturer by the VRA
Source: ITC Report

The high valuation of the yen did extreme damage to Japanese auto manufacturers first in terms of their per unit profit. Because Japanese companies had to increase the price of their products, the high yen then later did damage to their sales. Cars produced in the U.S. became less expensive in terms of actual production cost. As the yen continued to appreciate, the point where production costs in the U.S. became lower than those produced in Japan was reached. A rough calculation is shown in Table 6, done by the NRI(Nomura Research Institute), which is based on the production cost of a subcompact car in 1984.

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[106]NRI, *Nichi Bei Kan Kigyo no Kokusaisenryaku*, February 1987, p. 116.

According to this estimate, when the yen is appreciated to more than ¥150/$1, the production cost in Japan would then be higher. In 1987 the yen was appreciated to more than ¥150/$1, and by March 1988 the yen was higher than ¥130/$1.

¥/$	Production Cost in the U.S.			Production Cost in Japan		
	Labor	Parts	Total	Labor	Parts	Total
238	3,300	2,600	5,900	1,200	2,600	3,800
180	3,300	2,600	5,900	1,580	3,420	5,000
150	3,300	2,600	5,900	1,900	4,130	6,030
120	3,300	2,600	5,900	2,380	5,160	7,540

Table 6. Production Cost Comparison between the U.S. and Japan
Source: NRI Report, February 1987, International Strategy among Japan, America and Korea, P. 121. The ¥/$=150 & ¥/$=120 calculation are added by the author

Honda built its U.S. car plant five years earlier than Mazda. In January 1980 Honda announced that it would build a car plant in the U. S., and started actual production of the Accord in November 1982.[107] In November 1984 Mazda announced that it would build its U.S. plant.[108] Mazda started producing the 626 in August 1987. Because of the success in Honda's car plant in the U.S., which is not calculated into the quota number, in 1986 Honda's total car sales increased to 694,000 units and has exceeded that of Toyota and Nissan. That same year, Toyota sold 641,000 units and Nissan sold 546,000 units.[109]

	1982	1983	1984	1985	1986	1987
Accord	968	55,337	138,573	145,337	213,811	230,085
Civic					24,348	86,533
Total	968	55,337	138,573	145,337	238,159	316,618

Table 7. Honda's Car Production in the U.S.
Source: Honda Motor Co., *Overseas Strategy at Honda*, p.13
Automotive News, January 1988

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[107]Tetsuo Sakiya, *Hondashiki Daiseikoeno Kaigaisenryaku*, p. 128 - 131.
[108]Mazda Motor Corp.'s Annual Report 1985, p. 4.
[109]Toyota Motor Co., *Automotive Industry in North America*, p. 9.

Honda was able to make a decision earlier than the other Japanese competitors, primarily because of its company policy. Honda's strategy towards its manufacturing is clearly stated in the Company's original credo, which is still printed on company brochures today: "From the global point of view, we will produce the best policy and the most economical product at locations where the products are consumed, in direct response to our customers' tastes," and "we will contribute to the social welfare of the countries where we build plants and encourage extensive localization."[110]

Honda had already realized this policy by establishing in 1978 its manufacturing company, Honda of America (HAM), to produce its motorcycles. In 1979, Honda started manufacturing its motorcycles in the U.S. The president Kume also clearly expressed his support in an interview, " I didn't forecast this sudden appreciation of the yen. I made the decision based solely on Honda's fundamental policy which I had implemented: Honda manufactures its products where they are sold." This international policy can be categorized as a long-term strategy, because Honda didn't base its decision on the present conditions. The international situation is volatile. Nobody could forecast that the VRA would be introduced or that the yen would be able to be appreciated so fast.

In contrast, while the restriction quotas were being passed, Mazda immediately started a feasibility study of building its plant in the U.S. Mazda's decision was delayed longer than necessary because of the complexity of its internal channels. Uchiyama, a vice

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[110]Honda Motor Co., *Honda no Kaigaitenkai Hokubeihen*, p. 2.

president at Mazda of North America, says, " A plan of building a U. S. plant was proposed even as early as 1980. The decision could have been made at least two years earlier."[111] One of managers at Mazda says that the Sumitomo Bank, who still had a great influence on Mazda's strategy, was reluctant to take risks with huge investments. So, as I quoted in Chapter II, the standard interview response of Yamasaki, Mazda's president, when asked why Mazda won't build a plant in the U.S. immediately, was always that Mazda should give serious consideration to the idea. The internal structure of including Sumitomo in major management decisions made a quick decision difficult. In the end, Mazda wasn't able to decide to start production at a U. S. plant until the fall of 1987.

By 1987 most Japanese companies have decided to start producing cars in the U.S. Crucial to the level of advantage provided by a plant, the following table shows the timing of establishing each plant and the style of business, the areas which differ the most depending on the individual manufacturer.

[111]Interview with Akio Uchiyama, a vice president, of Mazda North America, March 2, 1988.

	Mfg. Affiliate Established	Production Start	Style of Business
Honda			
HAM(Motor Cycle)	1978. 2	1979. 9	Independent
(Car)		1982. 11	
Mazda			50% of cars sold
MMUC	1985. 1	1987. 9	under Ford
Toyota			
NUMMI	1984. 2	1984. 12	Joint with GM
TMM	1986. 1	1988	Independent
Nissan			
NMMC(Truck)	1980. 7	1983. 6	Independent
(Car)		1985. 3	
Mitsubishi			
DSM	1985. 10	1988	Joint with Chrysler
Fuji & Isuzu			
SIA	1987. 3	1989	Joint

Table 8. Transplants of Japanese Manufacturers to the U.S.
Source: Toyota Motor Corp., Automobile Market in North America, P. 12-P. 13

Out of the Japanese manufacturers, Honda's decision to produce its products in the U.S. was the first. Close after the Honda decision, Nissan followed. However, Nissan decided to produce only trucks. Because the import tariff for trucks is 25% and a tariff is not imposed on trucks manufactured in the U.S., Nissan's plant easily achieved profitability. However, because trucks are not counted into the VRA number for any car manufacturer, this strategy doesn't actually provide any actual sales volume advantage.

At the other manufacturers, the decision was delayed. Nobuo Kondo, a manager in charge of corporate planning at Mazda at that time, cites the following reasons for the delay:

1. Total production of 200,000 units was determined to be the minimum annual production level to be profitable.

2. Total investment runs as high as $500 million.

3. Labor and suppliers in the U.S. were considered inferior to Japanese.[112]

To compare Honda and Mazda to the other Japanese manufacturers, I will now summarize how the decision to build at least one U.S. plant was made at each Japanese manufacturer. The decision to produce only their own products by themselves was made at Honda as well as at Nissan and Toyota, which have a higher sales volume in the U.S. than the other manufacturers. Most of the other manufacturers including Mazda made the decision before the yen started being appreciated.

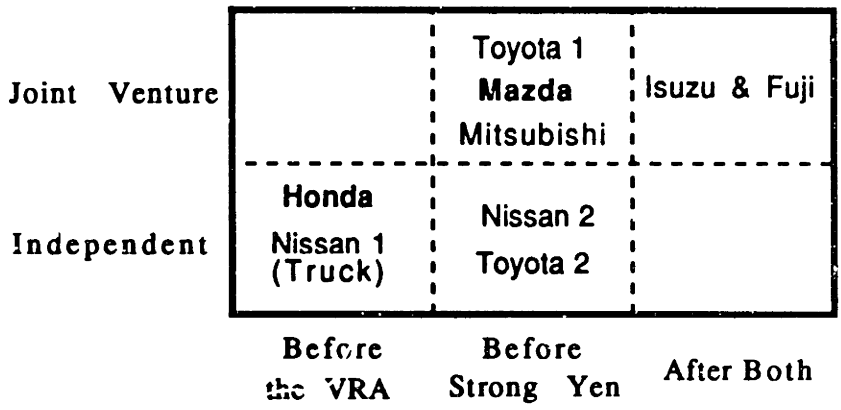

Figure 25. Decision Timing and Business Style of U.S. Transplants
Source: Author's compilation

Honda announced that it would build its second car plant in the U.S. to start production in August 1989 and would increase its production capacity in the U.S. to 500,000 units. Honda would also increase its use of U.S. made parts used in the U.S. plants from 60%

[112]Interview with Nobuo Kondo, a manager in charge of corporate planning, of Mazda North America, April 12, 1988.

in 1987 to 75% in 1991.[113] On the other hand, as of March 1988 Mazda has not announced any expansion plans of its U.S. production from its current production level of 240,000 units.

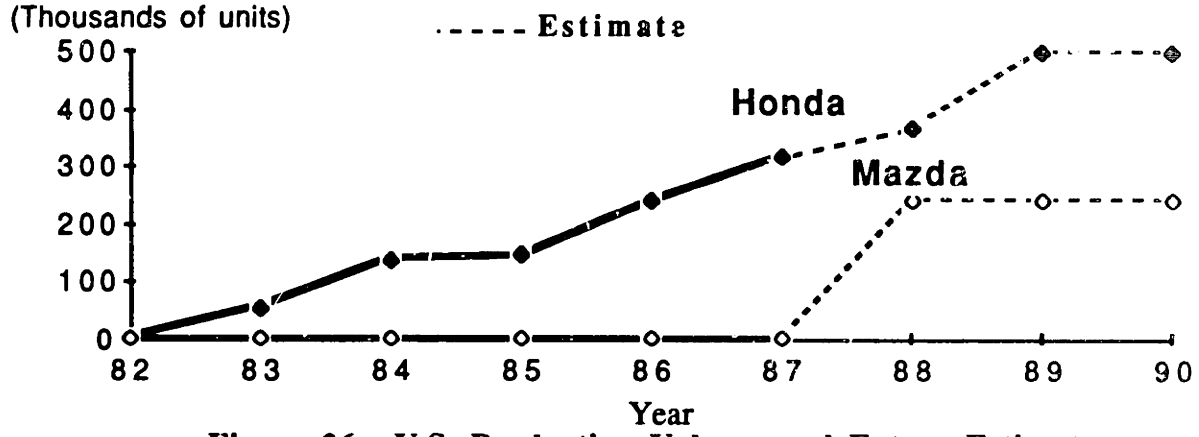

Figure 26. U.S. Production Volume and Future Estimate
Sources: Honda Motor Co., Overseas Strategy at Honda, p. 13
Automotive News, January 1988
Estimate number is taken from an interview with Kume, president at Honda, Nikkei, December 12, 1987

f. R & D Activities in the U.S.

Honda established its R & D center as one of the divisions of American Honda in 1975. In 1984, this division became an independent subsidiary, Honda Research of America (HRA). As of October 1987, there were 180 engineers, designers, and product planners at HRA. Honda announced that it would increase the number of staff members at HRA to 500 by the end of 1989.[114]

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[113]*Car Graphic*, December 1987, p. 54.
[114]*Car Graphic*, December 1987, p. 54.

HRA has already contributed significantly to Honda's car line. HRA had proposed a new concept and original styling for the CRX, which was introduced in 1983. Munekuni, vice president of HRA then thought an economical and sporty two-seater model would be successful in the U.S. market. He also wanted to regain the top position on EPA's mileage list, which had been taken from the Civic by the VW Rabbit.[115] The CRX was successful when in 1985 it was listed first on EPA list. HRA also designed the initial styling of the Civic, which was completely restyled and reintroduced in 1984. This model was a great success and that year won "Import Car of the Year" in *Motor Trend.* The Accord, which was introduced in 1985, had a special styling, a 2-door hatchback coupe, designed exclusively for the U.S. market. The special styling of this model was also designed at HRA. HRA has been successful in reflecting the U.S. customer tastes in styling, making the most of its advantage of being located in the U.S.

Even though the major jobs of HRA currently are drawing a styling, designing a basic layout, and developing an experimental car, the areas of its responsibility are expanding rapidly. Kume, president at Honda, says, "Honda's goal in this area in the future is to design an entirely new model, targeted at the U.S. market." However, he also commented,"At any plant it takes newly hired American employees five to ten years to understand and implement Honda's way of production. However, it takes ten to twenty years to entirely understand Honda's way of new product development. Therefore, I think it won't be possible for HRA to develop a new model from the beginning concept level to the end until the end of the 20th century."[116]

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[115]Tetsuo Sakiya, *Hondashiki Daiseikoeno Kaigaisenryaku*, p. 110 - 113.
[116]Nihon Keizai Shinbun, December 22, 1987

Mazda established a R & D division in its U.S. office, Mazda North America, in 1981. However, as of March, 1988, there were only 15 designers, engineers, and product planners. Their major task is to draw a styling, based on a layout dispatched from Japan. To date Mazda's R&D team has not made a significant contribution to Mazda's car line. Its responsibilities are also expanding. However, Honda's current R & D capacity is much larger than that of Mazda.

2. International Joint Venture Strategies at Honda and Mazda

One of the unique aspects of Mazda from a corporate strategic point of view is that Ford Motor Co. owns 24.4% of Mazda, as of April 1988. I will first cover the historical overview describing how the relationship between Ford and Mazda started. Then, I will explain specific business activities between Ford and Mazda, and will discuss the advantages and disadvantages for Mazda. In contrast, Honda doesn't have any joint project with an American auto manufacturer. However, Honda has an extensive development collaboration with British Leyland. So, I will then explain specific projects between Honda and BL, and will discuss the importance of the collaboration.

a. Mazda's Joint Venture with Ford

In general, around the middle of the 1960's, the internationalization of Japanese business was accelerating. Japan joined GATT in 1963 and OECD in 1964. At the same time the

U.S. auto manufacturers were interested in making a capital investment in and participating in the management of a Japanese manufacturer. Being supported by Japanese auto manufacturers, the Japanese government didn't deregulate capital investment made by U.S manufacturers until 1971. On the other hand, there were three Japanese auto manufacturers, Mitsubishi, Isuzu, and Mazda, who are interested in joint agreements with the U.S. auto manufacturers to compete against the two giants Toyota and Nissan. Mitsubishi was the first to take action, and in 1969, even before deregulation, the Company announced Chrysler would invest in Mitsubishi. This announcement was one of the major events which accelerated deregulation. Mitsubishi selected Chrysler because Chrysler was the only American car manufacturer which didn't require total control of management at a Japanese manufacturer. In other words, GM and Ford wanted to make a Japanese manufacturer their affiliate company, owning 100% of the stock. Chrysler invested 15% in Mitsubishi in 1971 and increased the percentage to 25% in 1972 and 35% in 1973.

GM and Ford wanted to enter Japanese business so much that they changed their policy of acquiring an affiliate company. In 1971 GM invested 34.2% in Isuzu. As of April 1988, the relationship between Chrysler and Mitsubishi as well as between GM and Isuzu continues to be close.[117]

In 1969 Mazda was trying to catch up with Toyota and Nissan by expanding its car product lines. At the same time, due to the stagnant demand of trucks in the Japanese market,

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[117]The factual information pertaining to the international joint ventures of Japanese auto manufacturers is taken from Teruhiko Hashimoto, *Kokusaikanonakano Jidoshasangyo*, p.27-42, unless otherwise noted.

Mazda's financial performance was not that strong. Given these conditions, in 1969 Mazda made its first joint venture with Ford by establishing a component manufacturer, JATCO(Japan Automatic Transmission Co.), together with Nissan. In addition, in 1970 Ford and Mazda agreed that Ford would make a capital investment in Mazda of 20%. In the end, in 1971 because Ford insisted on acquiring a larger percentage of Mazda and demanded to participate in Mazda's management, Mazda decided to not accept the terms of Ford's capital investment in Mazda. However, in 1971 Mazda did begin supplying Ford with 35,000 units of pickup trucks per year.

During Mazda's financial crisis in the mid-1970's, Ford and Mazda again started negotiating that Ford would invest in Mazda under the strong recommendation of Mazda's main creditor, Sumitomo Bank.[118] In November 1979, Ford made a capital investment in 25% of Mazda's stock. One of the major reasons for this joint venture for Mazda was to stabilize its financial performance in case the Company would face another financial crisis. Major joint projects, up to 1987 between the two companies follow next:

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[118]Isao Sato, Saburo Kawakami, and Hiroshi Toriyama, *Nichibei Jidosha Senso*, p. 22.

1980. 3	Started supplying manual transmissions for the Escort
1980. 9	Started supplying the 323(the Laser) as an OEM(Primarily for the Asian and the Australian markets)
1982. 1	Started supplying automatic transmissions
1982. 2	Started supplying diesel engines
1982. 10	Established a sales network, Autorama Inc., in Japan to sell primarily OEM products
1982. 12	Started supplying the 626(Telstar) as an OEM (Primarily for the Asian and the Australian markets)
1985. 4	Started supplying a minivan, the Bongo(Econovan), as an OEM (Primarily for the Asian, the Australian and the European markets)
1986. 2	Started supplying the 121(the Festiva), as an OEM(Primarily for the Japanese, and the U.S. markets)
1987.10	Started supplying the MX6(the Probe), as an OEM (Primarily for the Japanese and the U.S. markets)

Table 9. Joint Ventures between Mazda and Ford
Source: The author compiled this table, referring to Mazda Motor Co., Kaisha Gaiyo, 1987 - 3, p. 37

The Mazda models supplied to Ford are becoming more extensive. In April 1988, four car lines out of a total of eight Mazda car lines are supplied to Ford. In addition, two major changes have been seen. One is that Mazda has started supplying Ford even in the most competitive markets, the Japanese and the U.S. Secondly, as is seen in the case of the MX6(the Probe), Mazda started designing models which are totally differentiated in both exterior and interior styling from the original Mazda models, even though only the initial styling itself is drawn by members of the Ford staff.[119]

[119]Telephone interview with Mr. Masuyama of Mazda Motor Manufacturing (USA), March 12, 1988.

It is clear that for Mazda,there are advantages and disadvantages in their joint venture, in terms of actual competition against other Japanese auto manufacturers, including Honda.

Advantages:

- The joint venture increases Mazda's sales, and sales to Ford comprises 10% of total worldwide sales at Mazda.[120]
- It enables Mazda to participate in a big project. The single most important example is Mazda's U.S. plant. 50% of the production in this plant is sold to Ford.

Disadvantages:

- A part of the development power of Mazda is used for Ford. Especially, Mazda started developing more differentiated product exclusively for Ford, as is the case of the Probe.
- It is more difficult to establish Mazda's product identity, because customers can buy mechanically the same products in a Ford brand.
- Even though Mazda's management is primarily controlled by Mazda itself, Mazda should consult with Ford for major corporate decisions. Because of this decision making channel, a decision tends to be delayed even more.

The corporate partner program is expected to be extended, which already includes a Korean manufacturer, Kia Motors Corp. Ford owns ten percent of Kia, and Mazda has eight. The 121, which is supplied to Ford as the Festiva in the U.S. market, is produced by Kia. The clear advantage for Mazda and Ford using Kia in the manufacturing area is a low labor cost in Korea.

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[120]Mazda Motor Corp., *Kaisha Gaiyo 1987 - 3*, p. 37.

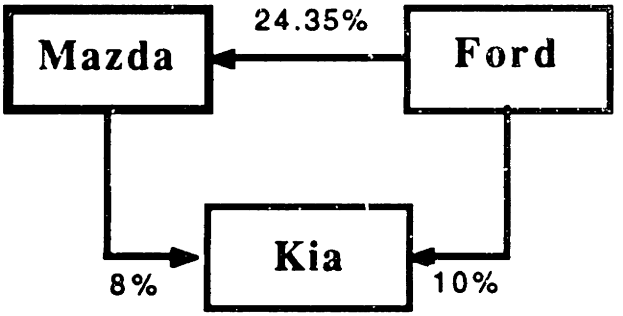

Figure 27. Relationship among Mazda, Ford, and Kia
Source: *NRI Report*, February 1987, International Strategy in Japan the U.S. and Korea, p. 94-95

b. Honda's Joint Venture with British Leyland

Honda has not been actively pursuing any international corporate partner, except for joint ventures with Austin-Rover Group of British Leyland(BL). In December 1979 Honda signed a technical collaboration agreement with BL, under which BL will produce a new car designed by Honda.[121] This agreement was proposed by BL. A managing director of BL, J.M. Snowdon recalls,"In 1978 BL needed a good small car, but didn't have time to do that. Another reason was BL looked for a partner, from which can technologically support BL. BL selected Honda, because it had a unique development philosophy and strong international strategies among Japanese auto manufacturers.[122]

In November 1981, BL started manufacturing the Honda Ballade as the Rover Triumph Acclaim, at an annual production level of 85,000 units. In 1983, the name of this model was changed to the Rover 2-series. In April 1986, Honda and BL agreed that Honda would sell the model as the Ballade in Europe, which would be manufactured in BL plant.

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[121]Honda Motor Co., *Honda its History, 1986*, p. 38.
[122]Tetsuo Sakiya, *Honda Motor*, p.185 - 186.

In April 1983, Honda and BL agreed that they would next collaborate on developing a luxury sedan. The joint project ended up introducing the Honda Legend and the Rover Sterling to the worldwide market. Honda is manufacturing both models in Japan for the Japanese market. BL is also manufacturing both for the European market. In terms of the U.S. market, Honda produces the Legend in Japan, and BL produces the Sterling in Britain.

One of the most advantageous aspects for Honda in these joint ventures is that Honda can sell Honda models to European countries, most of which have a strict restriction for importing Japanese cars. Another important point is that Honda is still pursuing its corporate philosophy,"Honda manufactures its products where they are sold." When Honda builds its own European car plant, this joint venture would certainly benefit the Honda plant in terms of manufacturing know-how and supplier relationships in Europe.

VI. Conclusion

In the Japanese car industry, Honda and Mazda have been striving for third place behind Toyota and Nissan, and at the same time to catch up with these two leaders. Honda is now more successful than Mazda, even though Mazda was in third place before the oil shock of 1973. As I have presented in this paper, even while limiting the issues to three areas, history, product development performance, and international strategy, the competition between Honda and Mazda has raised many important strategic issues.

First, the rotary engine as an "innovative product" at Mazda led to the company's critical mismanagement. Both Honda and Mazda always tried to be armed with innovative and differentiated products, setting the "destiny" of companies in the second tier of Japanese auto manufacturers. Mazda encountered extensive difficulties because of its innovative technology, the rotary engine. In the beginning of the 1970's, Honda had an air-cooled engine with extremely high power, and Mazda had an innovative rotary engine. Honda successfully changed its product strategy from an air-cooled engine, which the founder of Honda preferred, to a water-cooled engine, which customers demanded. However, Mazda stuck to its rotary engine, which was preferred by the son of Mazda's founder, Tsuneji Mazda, until confronted by its financial crisis.

Secondly, the influence of this mid-1970's financial crisis at Mazda, caused by its "innovative product," has continued to affect Mazda's strategy more significantly than is apparent on the surface. Even though Mazda's financial crisis made it a more efficient manufacturer, Mazda was no longer able to proceed with an aggressive strategy. After

the crisis, Sumitomo Bank and Ford Motor Co. have both been participating in Mazda's management. The participation of Sumitomo led to slow and conservative decision making. Ford is taking advantage of Mazda's development resources, which are precious in the competitive car industry. Along with the other small factors caused by the crisis, the critical one for Mazda was the low export restriction number to the U.S. market imposed on the company. The number was determined based on the 1980 sales record, when Mazda was still recovering from the crisis and in the process of increasing its sales volume in the U.S.

Thirdly, Honda's success has been primarily attributed to its strategic focus on the U.S. market, which had been by far the most profitable, at least before the appreciation of the yen beginning at the end of 1985. Honda's emphasis on the U.S. market is supported by its appropriate strategy in the important areas, such as the U.S.-oriented product line, aggressive dealer expansion primarily aimed at better service, and an early decision to build its U.S. plant. These aggressive strategies, in a sense, also reflected Honda's unique corporate culture. Differentiation from the other Japanese competitors, which Soichiro had developed, is always pursued. Honda's greater emphasis on the U.S. market than Mazda is also partially explained by the difference between histories of Honda and Mazda. Honda started with motor cycles and by 1970 had gained more than 60% of market share in the U.S. Honda had extensive experience in the U.S. market, even before it started exporting its car products. Mazda started with commercial trucks, whose primary market had been Japan. I have also pointed out that Honda's U.S.-oriented strategy was partly a result of its somewhat weaker position in Japan than Mazda as well as considerably weaker than Toyota and Nissan.

Finally, in terms of product development performance, I have not been able to find a significant difference between the level of new technology diffusions in each product sold by Honda and Mazda. However, Honda has been much more successful in the U.S. market. As mentioned, this success is primarily attributed to Honda's more appropriate product and marketing strategy in the U.S. For example, Honda's higher quality image than Mazda's has been achieved primarily through the service quality of Honda dealers in the U.S.[123] Mazda's total product development performance, measured by the amount of new product development actually completed, used to be higher than Honda's is until the 1980-1981 period. However, Honda surpassed Mazda in this area after that period. Honda's recent higher performance has been supported by its much stronger financial performance, which has been a result of its success in the most profitable market, the U.S. I was not able to completely analyze in more detail the popularity of Honda cars. In fact, some soft areas like styling and a brand name, which should strongly affect the popularity of a car, are extremely difficult to analyze. However, one thing I have pointed out is Honda's engineers are much more enthusiastic about cars in general than Mazda's, and this difference could make a major difference in a final product.

In the near future, Honda will attempt to approach third place in the overall U.S. market, competing against Chrysler. By now it seems to be difficult for Mazda to catch up with Honda in sales volume in the U.S. market. For the foreseeable future, a Japanese car manufacturer will no longer be able to expect an extraordinary profit per car in the U.S.

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[123] These arguments would be different if Honda were compared to other manufacturers, especially non-Japanese manufacturers.

market, because of both the high yen and fiercer competition.[124] Honda's ongoing expansion strategy in the U.S. market could encounter difficulties. However, Honda is also becoming more competitive in the other important markets, the Japanese market and the European market, in terms of its sales units and brand image. So, Mazda will have to identify a distinctive strategy to continue to compete against Honda in the Japanese and European markets, as well as in the U.S. market. Mazda's strong point is that it is still competitive in its technology against other car manufacturers including Honda. However, by now, there has been no indications that Mazda will catch up with Honda. Mazda's turnaround from the mid-1970's crisis was called a "miracle." Only with another miracle Mazda would be able to again become superior to Honda.

[124]Many industry experts are expecting there will be too much supply in the U.S. market, primarily because of the production capacity at Japanese transplants as described in Chapter V.

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