『経済研究』（明治学院大学）第 153 号　2017 年

Infant industry argument for trade protection and Japanese automotive industrial policy

Toshihiro ATSUMI
Faculty of Economics
Meiji Gakuin University

1. Introduction

The infant industry argument for trade protection has a long history. In this research note, I review the Japanese experience on the development of the nation's postwar era automotive industry from 1945 to the 1970s. Although the focus is on policy, I offer data that may be relevant to examine whether the Japanese experience can be considered as a case for the infant industry argument for trade protection.

2. The infant industry argument for trade protection

The original ideas behind infant industry trade protection are found in the writings of John Stuart Mill, a nineteenth century English philosopher and economist, who argued that providing temporary protection to an infant (undeveloped) industry can be beneficial because it allows the industry space to gain competitiveness and become more efficient, and thus eventually stand on its own and compete against foreign products without the protection. The idea has been attractive to authorities in developing countries wishing to catch up with the more industrialized countries.

Suppose that there is no domestic supply of automobiles because production costs are too high compared to world price. Automobiles, therefore, are all imported. Now suppose that the government decides to take on a protection policy and imposes a tariff on imported automobiles. Then the domestic price that the consumers face will rise. If the tariff makes the corresponding rise in the domestic

price high enough, it will promote domestic supply. As is well known, however, this leads to losses in consumer welfare that outweighs the sum of producer surplus gain and tariff revenue. The net loss is the dead weight loss. If the protection takes the form of import quotas, there will be no tariff revenues, and importers earn rents instead. As in the tariff case, however, by harming consumers, imposing quotas on imports also leads to dead weight losses, which can be worse when resources are used to capture rents. This is the standard argument about the consequences of such trade protection.

The infant industry argument, however, goes on to say that, during protection, the domestic producers gain experience and efficiency over time through the production of automobiles such that its supply curve shifts outward. Then the quota/tariff protection can be lifted to eliminate the dead weight losses, and in addition, domestic supply implies some producer surplus. Theoretically, protection policy can be justified if the producer surplus generated later outweighs the dead weight losses during protection.

3. Postwar development of the Japanese automobile industry

3.1 Background and initial status

Before the Second World War, Japan gained some experience in automobiles through the production of military trucks and other commercial vehicles such as buses. Production of passenger vehicles was limited. After the war began, companies such as Toyota, which had started passenger car production, were ordered by the government to concentrate on military and commercial vehicle production instead.

Automobile imports to Japan immediately after the war were mostly for the Occupation Army and related personnel. This was because of a regulation with such a restriction that was in place until 1952. The route for Japanese to obtain cars was to purchase used cars from them, although demand was limited because of the poor economic situation of most Japanese.

The supply of passenger cars in 1951 is estimated as follows. The total supply to the Japanese was 5,248 vehicles, of which 3,598 were domestically produced. The remaining 1,650 were supplied as used cars that the Occupation Army had sold to the Japanese. The Occupation Army was basically exempt from foreign currency control and tariffs (described in the next subsection) and imported 3,981 passenger cars that year, in addition to the cars that they brought in themselves. Therefore, the amount of passenger cars imported to Japan exceeded domestic production.

3.2 Policies taken by MITI

Policies until the 1950s

Japanese imports in the aftermath of the Second World War were tightly controlled by the

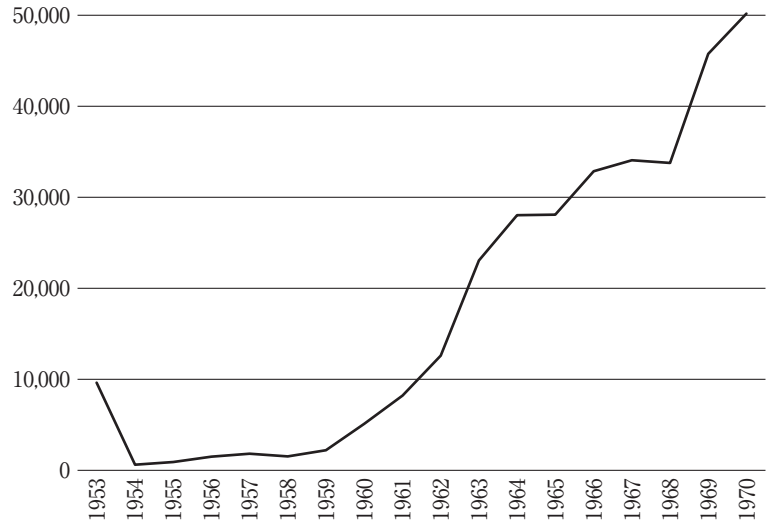
government due to the nation's low foreign currency reserves. It was considered that automobile imports were *wasting* Japan's monetary reserves at a time when the authorities were desperate to preserve them. Government approval of foreign currency allocation was required in order for the private sector to import goods from abroad. This effectively put a cap on imports. Specifically, foreign currency quotas for automobile imports were set every six months; these are shown in table 1 and figure 1. As indicated in figure 1, it was not until the 1960s that the cap was gradually lifted.

Table 1. Foreign currency allocation to automotive imports (unit: $1,000)

	Cars (CBU)	Repair parts	Knocked-down parts (CKD)	Motorcycles and repair parts	Total
1949	600	—	—	—	600
1950	9,380	—	—	—	9,380
1951	8,750	—	—	—	8,750
1952	12,665	—	1,170	—	13,835
1953	13,735	—	4,094	—	17,829
1954	612	1,971	4,729	105	7,417
1955	922	3,672	3,890	—	8,484
1956	1,500	3,372	2,618	282	7,772
1957	1,818	1,784	480	321	4,403
1958	1,553	2,392	—	401	4,346
1959	2,236	2,400	—	422	5,058
1960	5,125	2,785	—	528	8,438
1961	8,226	—	—	—	8,226
1962	12,560	—	—	—	12,560

Source: Keizaihyoronsha, various years

Figure 1. Foreign currency allocation to automobile imports (unit: $1,000)



Source: JAMA statistical yearbook, various years

In addition to the foreign currency quota, tariffs were imposed on automotive imports, including parts. For example, 40% and 30% tariffs were levied on passenger vehicles and engines, respectively.

Liberalization process of the automotive sector

In 1962, the Japanese Ministry of International Trade and Industry (MITI) set up a passenger vehicle policy committee, and formally began to consider trade liberalization in the automotive sector. In December 1962, the committee concluded that auto imports should be liberalized by the end of fiscal 1964 (March 1965), and preparations would be necessary to improve the international competitiveness of the Japanese passenger vehicle industry. Such preparations included establishing domestic passenger vehicle production and strengthening the sales and distribution system of the industry.

MITI, in response to the committee's recommendations, advised Japanese automakers to reduce passenger car prices. It also announced that the foreign currency allocation system for auto imports will be modified so that currency would be allocated upon request, rather than under a fixed quota system for the first and the second halves of every year. In addition, MITI announced that concessional government loans would be offered to Japanese automakers that planned to merge with other Japanese manufacturers to increase production scales.

Further, in September 1964, MITI requested the Japanese auto manufacturers to 1) cooperate with domestic companies, and refrain from forming alliances with foreign companies and from bringing in foreign capital, and 2) price car parts *properly*, and cooperate with each other to enable mass production of parts.

Also in 1964, as previously announced, the foreign currency quota on automotive imports was increased drastically, which meant that the Japanese passenger vehicle market was essentially liberalized, in the sense that the general public could import as many automobiles as they could afford. Sakurauchi, the Minister of MITI at the time, announced that the passenger vehicle market of Japan would be liberalized on September 1, 1965. After a one month delay, passenger vehicle import was liberalized on October 1, 1965 by the abolition of the quota system.

It should be noted that, at this point, liberalization only affected *assembled* passenger vehicles, and import restrictions on engines, major engine components, engine and chassis assemblies, and used passenger vehicles were still in place via the foreign currency allocation system. The government and most industry leaders were mistrustful about foreign direct investment in Japan or the assembly of knocked-down parts in Japan by foreign manufacturers. By restricting imports of essential parts, including those for engines, MITI and the industry protected its market from foreign investment in assembly factories. Not everyone in the industry was supporting the policy of blocking for-

eign investments, however. For example, Soichiro Honda, the founder of Honda Motor Co., was concerned that Japanese protection of its automotive sector would lead to their losing business opportunities abroad. Foreign investment in automobile production was not liberalized until April 1971.

It is also noteworthy that the liberalization in 1965 did not mean zero tariffs: the abovementioned 40% and 30% tariffs on imported assembled passenger cars and engines still remained. The first reduction of the 40% tariff, to 36%, occurred in 1968. After several subsequent reductions, in November 1972, the tariff on passenger car imports was reduced from 8% to 6.4%. Finally, in December 1977, the Japanese government announced that prior to the settlement of the GATT Tokyo round, it would abolish the tariff on passenger car imports, which it did, effective March 1978. It was from this point on that automobile imports in Japan became free of both quotas and tariffs. (Important policy changes described above are summarized in chronological order in table 2.)

MITI's blueprint of the Japanese automotive industry and challenges from abroad

The blueprint

The basic intension of MITI can be understood as a kind of a blueprint. The blueprint on the development of the Japanese automobile industry consisted of the following: 1) promoting domestic (passenger) car production by protecting its market, 2) encouraging mergers of Japanese manufacturers to gain economies of scale, and 3) liberalizing imports in a stepwise manner, while blocking foreign investments.

Background of the blueprint

In the background of the blueprint were 1) the idea that MITI took it for granted that they could control domestic companies, and 2) acquisitions of European manufacturers by the U.S. Big 3, namely, Ford, General Motors and Chrysler.

The first point can be observed in the attitude of MITI when it requested the Japanese manufactures to merge and increase production scales to reduce costs in the early 1960s. MITI was planning to reduce the number of automobile manufacturers. The fact that these requests were made suggests that MITI had the idea that they had the authority and power to influence the companies in the automotive sector.

The second point seems to have contributed to strengthening economic nationalism seen in the attitudes of most stakeholders on the Japanese side, and fostered a policy *rejecting* foreign investment in Japan, which is in stark contrast to the policies today that encourage inward investment. GM had acquired a German manufacturer, OPEL, Ford had subsidiaries in Europe, and a French car manufacturer, Simca, was acquired by Chrysler. Having seen the acquisitions of European automo-

bile manufacturers by the U.S. counterparts, MITI and the Japanese manufacturers became cautious about the same thing happening in Japan. This seems to have led MITI to postpone as long as possible foreign investment liberalization of the Japanese automotive sector.

Foreign pressures that affected MITI's Policy

Foreign pressures came from two levels. One was from international organizations, and the other was mainly from the United States. Japan joined the General Agreement on Tariffs and Trade (GATT) in 1955 . In 1964 it joined the Organisation for Economic Co-operation and Development (OECD) and accepted Article 8 obligations of the International Monetary Fund (IMF). These meant that Japan had to liberalize trade and investment, as part of the obligations of the industrialized economies. The international obligations gave MITI and the stakeholders of the automobile industry the understanding that their home market protection and rejection of foreign investment into Japan could not continue forever. Hence, both the industry and the government recognized the need to prepare for the coming inevitable liberalization of the auto market.

From around the 1960s, with the improved competitiveness and the resultant increase of exports of the Japanese passenger cars, particularly in the smaller segment of the market, foreign pressure on lifting protection got stronger. In addition to meeting international obligations, MITI's blueprint faced challenges from individual countries abroad, particularly from the United States. The Japan-U.S. automotive talks were held in December 1967 and January 1968; at these talks, the U.S. representatives requested Japan to 1) reduce tariffs on large passenger cars, 2) liberalize imports of engines and major components, 3) reduce domestic taxes on automobiles, and 4) liberalize capital transactions. MITI was pressurized in these meetings to widen the scope of liberalization of its automotive sector.

Tentative summary of MITI's blueprint and policy implementation

The MITI policy actually observed, as summarized above, was the product of compromises made between the blueprint and the foreign pressures. The decisions to liberalize were also the results of the changes in the international status of Japan. It can be understood that, confronted with foreign pressure at various levels, the Japanese government was obliged to remove the remaining protections, rather than it making strategic decisions on its own to liberalize. (The core policies and their results are summarized in table3. The players that influenced MITI's automotive policies are summarized also in the Appendix.)

The reconstruction/development of the Japanese economy and the rise of Japanese automobile manufacturing themselves also affected policy through confidence-building within Japan. As will be shown in the next section, by the late 1960s, increased Japanese exports began contributing to Ja-

Table 2. Policy and events in the Japanese automotive sector, 1945–1981

year	Import policy	quota	tariff		Investment policy	International
1945		foreign currency allocation	passenger cars: 40%	engines: 30%	not permitted	
1946		↓	↓	↓	↓	
1947		↓	↓	↓	↓	
1948		↓	↓	↓	↓	
1949		↓	↓	↓	↓	
1950		↓	↓	↓	↓	
1951		↓	↓	↓	↓	
1952		↓	↓	↓	↓	
1953		↓	↓	↓	↓	
1954		↓	↓	↓	↓	
1955		↓	↓	↓	↓	joined GATT
1956		↓	↓	↓	↓	
1957		↓	↓	↓	↓	
1958		↓	↓	↓	↓	
1959		↓	↓	↓	↓	
1960		↓	↓	↓	↓	
1961	liberalization of truck and bus imports	↓	↓	↓	↓	
1962		↓	↓	↓	↓	
1963		↓	↓	↓	↓	
1964		↓	↓	↓	↓	joined OECD, accepted IMF Article8 obligations, GATT Kennedy Round (until 1967)
1965	liberalization of passenger car imports	abolished	↓	↓	↓	
1966		—	↓	↓	↓	
1967		—	↓	↓	foreign investment liberalization of motorcycles	
1968		—	36%	↓	↓	
1969		—	↓	↓	↓	
1970		—	34% to 20%	↓	↓	
1971		—	10%	15%	foreign investment liberalization of automobiles	
1972		—	8% to 6.4%	12%	↓	
1973		—	↓	6%	↓	GATT Tokyo round (Until 1979)
1974		—	↓	↓	↓	
1975		—	↓	↓	↓	
1976		—	↓	↓	↓	
1977		—	↓	↓	↓	
1978		—	0%	↓	↓	
1979		—	↓	↓	↓	
1980		—	↓	5.3%	↓	
1981		—	↓	0%	↓	

Table 3. Tentative summary of MITI's blueprint and policy implementation

	Blueprint	Policy Implementation
1)	Promote domestic production by blocking imports via quota/tariff	Quotas imposed until the first half of the 1960s; tariffs levied until 1978
2)	Strengthen the industry by promoting mergers and acquisitions among domestic automobile manufacturers, thereby reducing the number of manufacturers to gain scale economies	Totally failed; the industry did not respond as MITI intended (few mergers took place)
3)	Liberalize imports in a stepwise manner, while blocking investments from abroad	Realized almost exactly as planned; imports gradually liberalized and investment liberalization delayed until April 1971

pan's rise as the second largest automobile manufacturing country. The confidence gained may well have led to a change in the stakeholder mentality and an understanding that protection was no longer necessary. However, it must be stressed that many stakeholders in the Japanese auto industry remained wary of foreign investment in the domestic market, even in this era.

3.3 From imports to the rise of domestic production and exports

How did the automobile industry perform in the postwar era? The overall picture can be seen by comparing the changes in production, exports, and imports over time. According to table 4 and figure 2 , production started from around 1950, took off in the 1960 s, and grew rapidly in the late 1960s, exceeded 2 million passenger cars per year. This growth continued in the 1970s, except for during the Oil Shock year of 1974, and exceeded 7 million passenger cars in 1980.

Exports can be considered a sign that an industry is becoming competitive in the international market, and thus a sign of "graduation" from the infant stage. The first passenger car export to the United States by Toyota was seen in 1958 when the company exported its car named Crown. However, the initial attempt ended in failure. Kobayashi (2011) explains that, in this this era, the best cars from Japan still did not match the quality levels of foreign cars. Indeed, according to the data it is only from the late 1960s that automobile exports from Japan started to pick up. In 1969, 560 thousand passenger cars, that is, roughly a fifth of passenger cars produced in Japan, were exported abroad. Exports kept increasing along with production increases, and in 1980 almost 4 million passenger cars were exported, which means that more than half of passenger cars produced in Japan were sold overseas.

Import data are shown separately in figure 3, as its scale is so tiny compared to production and exports. Imports were kept low through the 1950s, and only started increasing in the 1970s. Despite the liberalization of imports, the highest figure recorded until 1980 was 64 thousand in 1979. Japan did liberalize trade and investment of its automotive sector, but the apparent imbalance between

Table 4. Production and exports of Japanese automobiles (unit: number of cars)

	production				export
	passenger cars	trucks	buses	total	passenger cars
1945	0	1,461	0	1,461	—
1946	0	14,914	7	14,921	—
1947	110	11,106	104	11,320	1
1948	381	19,211	775	20,367	1
1949	1,070	25,560	2,070	28,700	15
1950	1,594	26,501	3,502	31,597	308
1951	3,611	30,817	4,062	38,490	93
1952	4,837	29,960	4,169	38,966	2
1953	8,789	36,147	4,842	49,778	0
1954	14,472	49,852	5,749	70,073	1
1955	20,268	43,857	4,807	68,932	2
1956	32,056	72,958	6,052	111,066	46
1957	47,121	126,820	8,036	181,977	410
1958	50,643	130,066	7,594	188,303	2,357
1959	78,598	177,485	6,731	262,814	4,884
1960	165,094	308,020	8,437	481,551	7,013
1961	249,508	553,390	10,981	813,879	11,531
1962	268,784	710,716	11,206	990,706	16,011
1963	407,830	862,781	12,920	1,283,531	31,447
1964	579,660	1,109,142	13,673	1,702,475	66,965
1965	696,176	1,160,090	19,348	1,875,614	100,716
1966	877,656	1,387,858	20,885	2,286,399	153,090
1967	1,375,755	1,743,368	27,363	3,146,486	223,491
1968	2,055,821	1,991,407	38,598	4,085,826	406,250
1969	2,611,499	2,021,591	41,842	4,674,932	560,431
1970	3,178,708	2,063,883	46,566	5,289,157	725,586
1971	3,717,858	2,058,320	34,596	5,810,774	1,299,351
1972	4,022,289	2,238,340	33,809	6,294,438	1,407,340
1973	4,470,550	2,570,916	41,291	7,082,757	1,450,884
1974	3,931,842	2,574,179	45,819	6,551,840	1,727,396
1975	4,567,854	2,337,632	36,105	6,941,591	1,827,286
1976	5,027,792	2,771,516	42,139	7,841,447	2,538,919
1977	5,431,045	3,034,981	48,496	8,514,522	2,958,879
1978	5,975,968	3,237,066	56,119	9,269,153	3,042,237
1979	6,175,771	3,397,214	62,561	9,635,546	3,101,990
1980	7,038,108	3,913,188	91,588	11,042,884	3,947,160

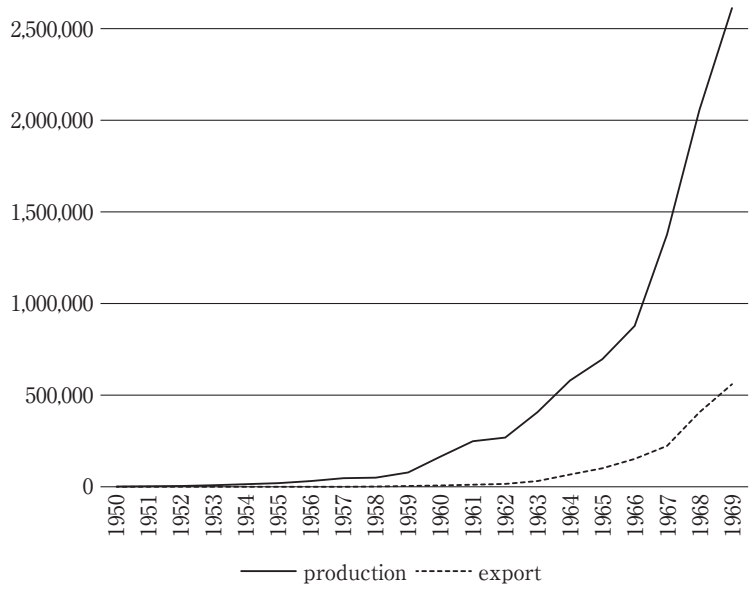
Source: JAMA statistical yearbook, various years

exports and imports gave rise to another issue, that is, trade frictions, particularly with the United States.

4. Price/cost data

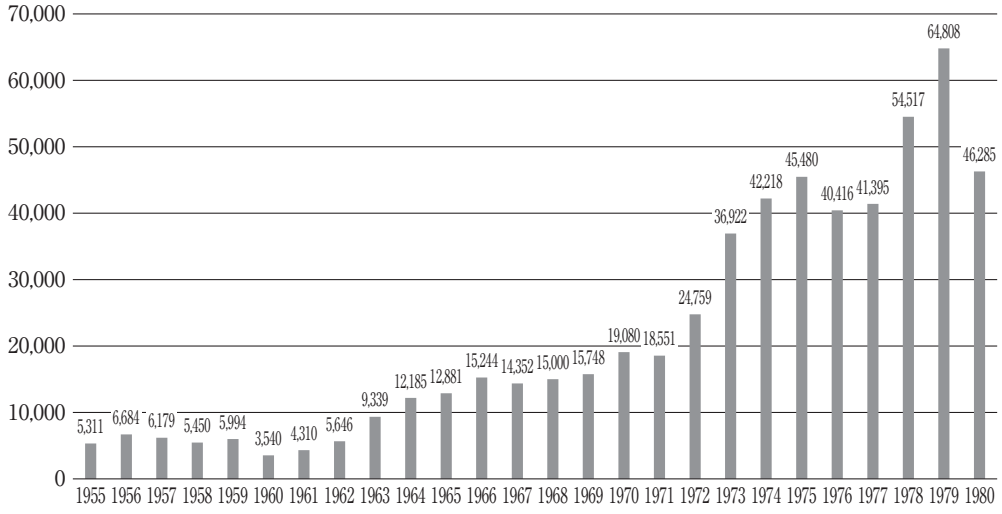
The following two questions should be asked in order to evaluate infant industry protection policies: 1) What kind of protection took place and for how long? 2) Did costs go down during protec-

Figure 2. Production and export of passenger cars, 1950–1969 (unit: number of cars)



Source: JAMA statistical yearbook, various years

Figure 3. Passenger car imports, 1955–1980 (unit: number of cars)



Source: JAMA statistical yearbook, various years

tion? The first question has been mostly answered in the previous section. Data relevant to the second question are presented in this section.

Data provided by Keizaihyoronsha (1965) show that in 1965 the retail price of Volkswagen 1200cc passenger car (VW1200) in Japan exceeded that of the Nissan Bluebird passenger car. The Volkswagens were priced at 900 thousand Yen (although their Yen converted retail prices were 344

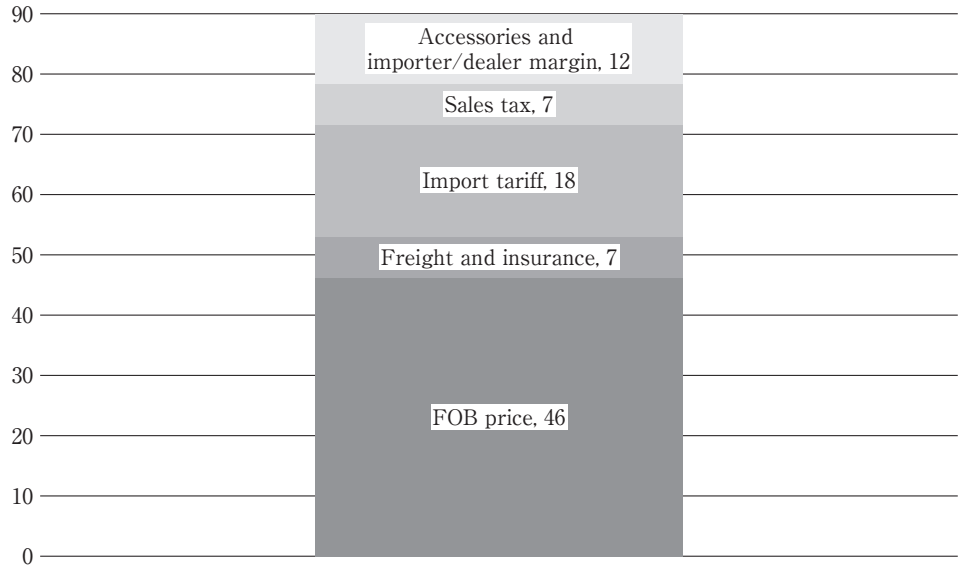
thousand Yen in Germany), while the Nissans were 583 thousand Yen. The retail price of VW1200 was much higher in Japan than it was in Germany not only because of transportation and other trade costs but also because of the 40% tariff imposed on imported cars. The cost composition estimate of VW1200 is shown in figure 4: Its free on board (FOB) price is estimated as 460 thousand Yen, and freight to Japan and insurance cost 7 thousand Yen. On top of this, a 40% import tariff (18 thousand Yen) and 15% sales tax (7 thousand Yen) were added, and finally 12 thousand Yen was needed for accessories and margins for importers/dealers.

The data suggest two things:

1) Protection was effective. If it were not for the 40% tariff, Volkswagen 1200cc passenger car could have been sold at 720 thousand Yen. Considering the likely quality difference between European and Japanese cars at the time, the Volkswagens would have been much more competitive in the Japanese market.
2) The FOB price of VW1200 is estimated to have been around 460 thousand Yen. This suggests that at around 1965, Japanese passenger cars (Nissan Bluebird in this case) still could not compete well in the international market.

Although the above international comparison suggests that the production costs of Japanese passenger cars were still relatively high in the mid-1960s, there is evidence that the costs did go down when a longer time period is examined. According to Yamazawa (1986), Nissan Bluebird was priced at 595 thousand Yen in 1959 and it was 619 thousand Yen in 1976, which is a 3.8% rise. During

Figure 4. Cost composition of VW1200 in Japan, 1965 (unit: ten thousand Yen)



Source: Author's calculation based on Keizaihyoronsha (1965)

the same period, overall consumer prices rose by 230%. This implies that the relative price of the car decreased by 31.5%. Indeed, therefore, passenger cars had become much more affordable to the Japanese public.

5. Concluding comments

Brazil started protecting its computer industry in 1977. Both imports and foreign firms' activity in the country were blocked in order to promote Brazilian computer production. This policy was kept in place until the 1990s. Luzio and Greenstein (1995) studied the case to find that the Brazilian computer industry never caught up to the industry leaders. Instead, made-in-Brazil computers remained more expensive than those available in the international market, and the adopted protectionist policy ended up generating net welfare losses in Brazil.

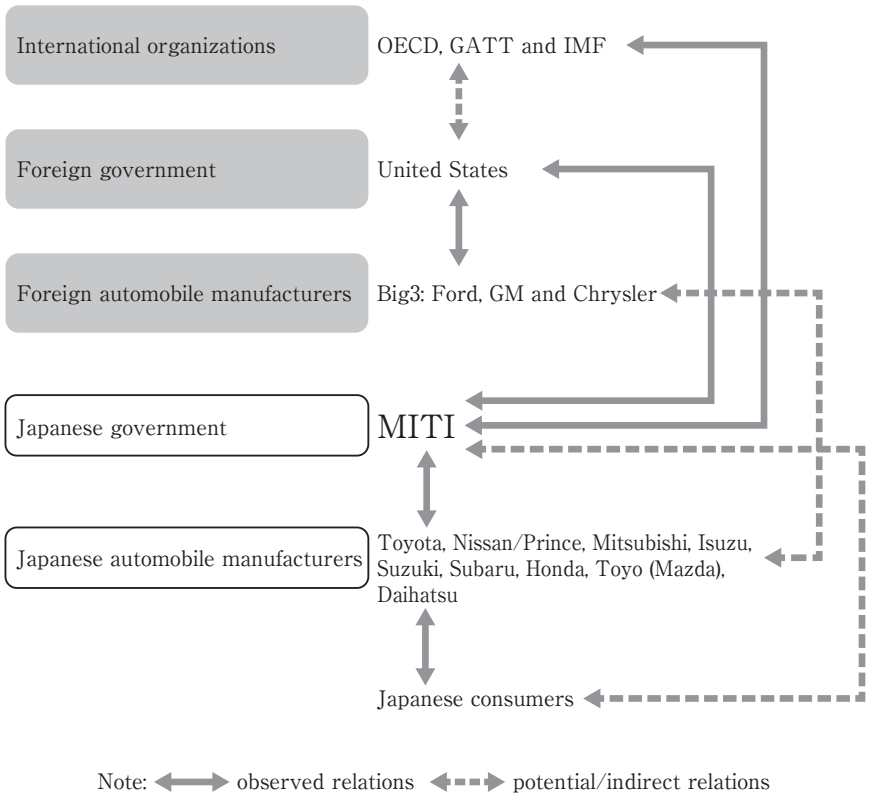
The outcome of the Japanese case of automobiles is clearly different from that of the Brazilian computer industry case. The Japanese automobile industry did develop and automobiles did become much more affordable to the consumers. Given the observed protection policy and the development of the Japanese automobile industry, the bottom line shows that it is *possible* that the Japanese policy of protection worked for the development of its auto industry. The causal relation remains unknown since there could be other reasons, for instance, the economic development and rise of Japanese income that increased the demand for automobiles.

The mid-1960s marked an important stage not only in the change in Japan's international position but also in the change of the automotive policy from protection to liberalization. The liberalization process was very well synchronized with the development of the Japanese automobile industry, and importantly it was not too delayed. Foreign currency quotas were abolished in 1965, when Japanese cars were still somewhat lagging behind European cars in terms of cost and quality. It may be said that the *slightly* early liberalization had a disciplining impact on Japanese manufacturers. At the same time, however, if it were not for the foreign pressures to liberalize, the whole process could have been much more delayed. The delay could have imposed larger dead weight losses on Japanese society.

Numerous Asian governments, including those of Thailand, Indonesia, Malaysia, the Philippines, and China, have adopted more or less similar automotive sector protection policies. It is of interest to study how the policies and their outcomes compare with those of the Japanese experience.

Appendix

Figure A1. Institutions and agents involved in the policymaking of Japan's postwar automobile industry



Acknowledgement

I appreciate the financial support from a Grants-in-Aid for Scientific Research (16H06548) from the Japan Society for the Promotion of Science.

References

Luzio, Eduardo and Shane Greenstein. 1995. "Measuring the Performance of a Protected Infant Industry: The Case of Brazilian Microcomputers" *Review of Economics and Statistics*, Vol. 77, No. 4, pp. 622–633.

Japan Automobile Manufacturers Association. *Jidoshatokeinenpo* (Automobile statistical yearbook), various years.

Keizaihyoronsha. *Nihon no jidoshakogyo* (The automobile industry of Japan), various years.

Kobayashi, Shotaro. 2011. *Nihonjidoshashakaishi* (Social history of Japanese Automobiles). Tokyo: Kodansha.

Yamazawa, Ippei. 1986. *Kokusaikeizaigaku* (International Economics). Tokyo: Toyokeizaishinposha.