PRICE SUPPORTS AND EXCHANGE RATE ADJUSTMENTS;
IMPLICATIONS FOR JAPANESE WHEAT AND BEEF MARKETS, 1960-83

By

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TABLE OF CONTENTS

LIST OF TABLES

iv

LIST OF FIGURES

CHAPTER I

INTRODUCTION

An agricultural protection policy is very common among industrial countries. However, there are actual pro and con arguments for it because someone must bear its cost. Even in Japan, consumers themselves do not necessarily object to increasing the importation of agricultural products. It may not be easy for today's advanced industrial countries to determine the criteria for opening their agricultural markets completely since to implement this kind of policy adjustment, many difficult political considerations must be taken into account.

The number of agricultural items restricted for import in Japan was reserved at 22, in 1983 (Hayami, p. 24). This number was the greatest among the advanced industrial countries. According to the investigation by Yujiro Hayami (ibid.), the price support rate of Japanese agricultural products,[1] which shows how much higher the Japanese prices are in comparison with the rest of the world, was inferred at 45% in 1980. This number is regarded as almost twice the EC's and is similar to the level in Switzerland where agriculture is strongly protected in order to preserve the "Alps Agriculture" (and it is said that the Swiss agricultural protection is the strongest in the world).

In the following calculation, governmental subsidies for protection are not taken into account; therefore, if the price support rate for Japan calculation

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[1] It was investigated for the purpose of the "Japan Policy Plot Forum, 1983."

would had included the subsidy factor, the amazing result would show that 70%
or more of Japanese agricultural income represents transfer from people (as
consumers or taxpayers) to farmers (ibid.).

FIGURE 1

International Comparison of Agricultural
Price Support Level: 1955-80

$$*S (\%) = \frac{A - B}{A} \times 100$$

A: Value of Domestic Agricultural Production Evaluated in Domestic Prices

B: Value of Domestic Agricultural Production Evaluated in World Prices
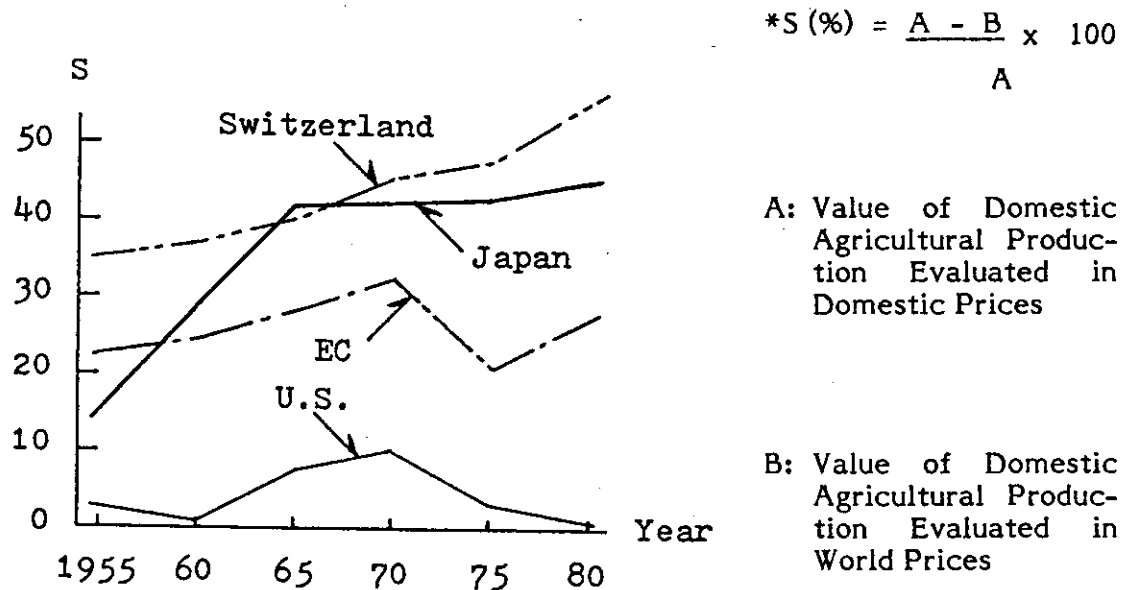
Source: Yujiro Hayami, "International Trade Friction and Agricultural Policy," Nippon Keizai Shinbun (Japan Economic Journal), 19 January 1984, p. 24.

As general impression, people may think that agricultural protection policy
in Japan must be adopted because the pressure of agricultural organizations on
the government is so strong. Before World War II, the small textile or

miscellaneous good industry which used labor intensive technology and cheaper labor was Japan's main industry for earning foreign exchange. For these small industries, the increase in food prices which would have forced a wage increase was a matter of life or death. Through the desperate resistance of these commercial and industrial concerns, even the political pressure of the agricultural organizations could not force the government to adopt agricultural protection policies (ibid.).

However, after World War II, especially during the High Economic Growth Period (from the 1950s), the Japanese industrial structure was transformed from a labor intensive form into a capital and knowledge intensive form. Further, owing to an increase in income of its wage-earning class, the rate of food costs against the household account was reduced and the degree of closer repercussion which had brought forth previous wage increases was also gradually reduced. In such a situation, Financial Circles and consumers began to lose their ability to resist the expansion of agricultural protectionism and the increase in prices of agricultural products as a matter of life or death (ibid.).

Through these political and economic processes, the level of Japanese agricultural protectionism was greatly raised during its high economic growth period. By inference, using the Agricultural Price Support Rate, at the beginning of the high economic growth period (1955) the rate was 15% and was lower than the EC's 23%. However, 10 years later, Japan's support rate exceeded that of the EC and reached that of Switzerland's (ibid.).

The ultimate purpose of this paper is to assess the welfare effects of price supports in Japan. However, there exists an external factor on agricultural trade, which is the effect of foreign exchange rates. Hence, another purpose is to infer Japan's benefits from the change of foreign exchange systems. The time period for these analyses is confined mainly to 1960 through 1983, and the

agricultural products to be examined are limited to two -- wheat and beef. Efforts will be made to answer the questions: How much has Japan benefited from the foreign exchange adjustments through the shifting of the system from a fixed to a floating exchange rate? How much have the producers benefited and how much of the cost of the internal programs (the agricultural price supports policies) have the consumers borne over this period?

The construction of the paper will follow these basic lines: In Chapter II, we will examine the changes of world prices and imports since the 1960s. In Chapter III, we will infer the changes of gains from the foreign exchange adjustments after the system shift (1971). In Chapter IV, the changes of domestic situations -- protectionist programs, prices, production and consumption in Japan -- will be trace. In Chapter V, the amount of monetary terms for social welfare will be calculated by the tools of producer benefit and consumer cost. Comparisons and assessments will also be made based on these calculations. In Chapter VI, the final chapter, the summary and policy implications are provided.

CHAPTER II

CHANGES OF EXCHANGE RATE WORLD PRICE AND IMPORT

Foreign Exchange Rates

Immediately after World War II (in 1944), the International Monetary Fund (IMF) was established as the central organization to settle accounts and oversee the ground rules of an international financial system (Kreinin, p. 48).[2] Japan joined the IMF in 1952. In 1953, the par rate for the Japanese yen was determined; 2.46853 mg of gold = Japanese ¥1, U.S. $1 = Japanese Y360; this rate was the same rate as had been adopted since April of 1949. However, until August of 1971, the fluctuating band of the exchange rate for the yen was prescribed to be within 0.75% up or down -- before April of 1963, it was to be within 0.5%. Therefore, under the Bretton Woods system, the exchange rate of the yen was fixed between ¥357.30 and ¥362.70 to the U.S. $1 (Komiya and Amano, p. 268), and the year average par rate per market rate was at 360.00 (Table 1).

On August 15, 1971, President Nixon inaugurated the "new economic policy." This policy officially stopped the conversion of the U.S. dollar into gold. With this new U.S. economic policy, the managed exchange rate system under the Bretton Woods Agreement had to be basically altered (ibid., p. 270). The new international monetary system, called the "U.S. Dollar Standard," was reestablished. In December of 1971, the eleven major financial countries

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[2] Until August 15 of 1971 (so called, Nixon Shock), the agreement at Bretton Woods, New Hampshire was maintained. So this period is usually named the "Bretton Woods System."

reached an agreement at the Smithsonian Institution in Washington. In this agreement, Japan lowered its currency price of gold by 8.5%, and the yen was revalued by 17.2%. The pivot rate was determined at $1 = ¥308 and the range of fluctuation was prescribed within 2.25%. This means the Japanese yen was expected to fluctuate between ¥301.07 and ¥314.93 to the U.S. $1 (ibid.).

TABLE 1

Exchange Rates of the Japanese Yen to the U.S. Dollar, 1960-83

	(Dollar)	(Yen)		(Dollar)		(Yen)
1960	$1	¥360.00	1972	$1	=	¥303.17
1961		¥360.00	1973			¥271.70
1962		¥360.00	1974			¥292.08
1963		¥360.00	1975			¥296.79
1964		¥360.00	1976			¥296.55
1965		¥360.00	1977			¥268.51
1966		¥360.00	1978			¥210.44
1967		¥360.00	1979			¥219.14
1968		¥360.00	1980			¥226.74
1969		¥360.00	1981			¥220.54
1970		¥360.00	1982			¥249.05
1971		¥349.33	1983			¥237.52

Source: International Financial Statistics, Yearbook 1984, IMF.

In March 1973, a new exchange rate system of generalized managed floats emerged. This implied the complete collapse of the Bretton Woods system. The Japanese yen and the major European currencies floated independently or jointly against the U.S. dollar (Kreinin, p. 180). Under these circumstances, in 1973, the year average par rate per market rate was ¥271.70 to the U.S. $1. This means the Japanese yen appreciated by 32.5% in comparison to the 1960s'. With the first oil

shock in late 1973 and early 1974, the value of the yen decreased until 1977. After 1978, the yen became strong again, especially in 1978, and appreciated by 71.1% against the 1960s' rates. However, this trend was weakened slightly after the second oil shock in 1979-80 (Table 2).

TABLE 2

Value Index of the Japanese Yen to the U.S. Dollar, 1960-83

1960-70 = 100			
1960	100.0	1972	118.7
1961	100.0	1973	132.5
1962	100.0	1974	123.3
1963	100.0	1975	121.3
1964	100.0	1976	121.4
1965	100.0	1977	134.1
1966	100.0	1978	171.1
1967	100.0	1979	164.3
1968	100.0	1980	158.8
1969	100.0	1981	163.2
1970	100.0	1982	144.5
1971	103.1	1983	151.6

Note:These numbers are calculated using the numbers from Table 1.

Figure 2

Change in the Value Index of the Japanese
Yen to the U.S. Dollar, 1960-83
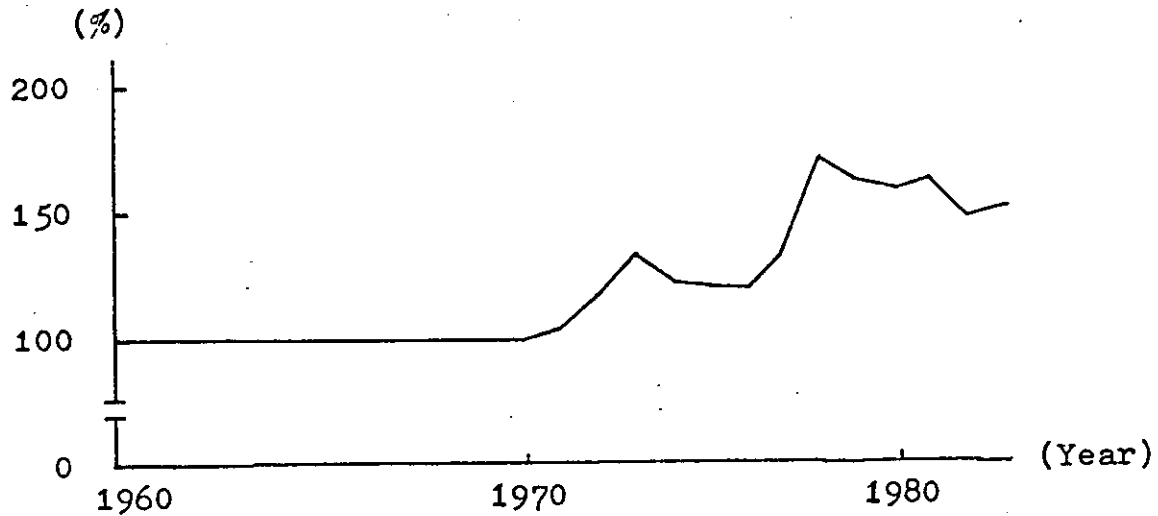
World Prices

Until the beginning of the 1960s, Canada was the biggest exporting country

of wheat to Japan. However, by 1966 the U.S. replaced Canada as the largest

exporter of wheat to Japan, and this situation has continued through 1983. In the

crop year of 1982/83, the U.S. exported 3,294 thousand metric tons of wheat to

Japan and it amounted to 58.9% of Japan's total wheat imports. In the same year,

the export shares of Canada and Australia were 24.2% and 16.7%, respectively;

the total share of these three countries was 99.8% of Japan's total wheat imports

(Table 3).

TABLE 3

Quantity of Japanese Wheat Imports from the
Major Countries: Thousand Metric Tons

Year July/June	Total	U.S.A.	Canada	Australia
1960/61	2,105	790	1,045	216
1965/66	3,592	1,943	1,285	364
1970/71	4,728	2,878	1,029	821
1975/75	6,001	3,344	1,601	1,052
1980/81	5,941	3,525	1,474	914
1982/83	5,597	3,294	1,357	934

Source: World Wheat Statistics, International Wheat Council, 1963, 1968, 1973, 1978, and 1984, London

Taking this into account, we will use the U.S. f.o.b. price from the Pacific ports as the world price. Specifically, the price of the U.S. No. 2 Western White will be used because the Japanese government usually adopts this specified price of variety as the reference price when it determines its yearly purchasing price for domestic wheat (Yearbook of Agriculture of Japan 1973, p. 384).

From the beginning of Japanese beef imports, Australia has been a leading country among the exporters to Japan. In 1960, Australia exported 2,821 metric tons of beef to Japan, and it amounted to 48.7% of the total beef imports, Japan imports grass-fed beef (a lower grade of beef which is mainly processed into ground meat) from Australia (Yuize, p. 54). However, since 1978, Japan began in earnest to import a higher grade of beef (grain-fed beef) from the U.S. In 1983, Australia still maintained first place in exporting beef to Japan, and its quantity was 91,043 metric tons (66.2%). The exporting volume of the U.S. has climbed since 1965, but its weight in 1983 was 27.4% (37.728 m.t.), and New Zealand

followed far behind (5.6%, 7,734 m.t.). In 1983, the total share of Japanese beef imports from these three countries was 99.2% (Table 4). From the reasons provided, Australian beef prices are more suitable to be used as the world price through this period.

TABLE 4

Quantity of Japanese Beef Imports from the
Major Countries: Metric Ton

Year	Total	Australia	U.S.A.	New Zealand
1960	5,788	2,821	47	2,916
1965	10,813	7,774	7	2,569
1970	23,227	20,123	362	2,511
1975	44,923	37,109	3,545	3,512
1980	123,952	93,614	23,674	3,991
1983	137,542	91,043	37,728	7,734

Source: Meat Statistics in Japan, Livestock Bureau Ministry of Agriculture, Forestry and Fisheries, Government of Japan, 1981 and 1985, Tokyo.

The global situation of supply and demand of wheat was at a surplus until the first half of 1972. However, in the second half of that year, this situation was drastically changed by a poor harvest caused by bad weather conditions worldwide and by huge purchases of wheat by the Soviet Union in the world market (especially, from the U.S.). As a result, the supply and demand situation of wheat changed completely from one of surpluses to one of shortages. Then in 1973, the world wheat production was the greatest in its history, owing to agricultural policies to increase production in the major countries as well as good weather conditions. Nevertheless, the demand of importing countries was greater still, and

further, there was a prospect of decreasing stocks in the major exporting countries, so the world wheat market remained tight (Yearbook of Agriculture of Japan 1973, p. 375) and the world price (particularly, the U.S. f.o.b. price) continued to rise. The data show that until the crop year of 1971/72, the unit price of wheat (per metric ton) had been in the range between $55 and $64 since 1960;[3] however, in the crop year of 1972/73 it rose about 50% compared to 1960/61, and in 1973/74 this trend being strengthened even more by the oil problem, it tripled in comparison with the 1960s'. Since then, the U.S. f.o.b. prices have never fallen below the hundred dollar level although there was somewhat of lull between 1976 and 1978. In 1982/83, the unit price (per metric ton) was $165, 2.75 times as high as the average price ($59.9) during the previous decade (Table 5).

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[3] When these prices are measured by the current, i.e., Japanese yen (Table 1), the range falls between ¥19,800 and ¥23,040.

Table 5

World Price of Wheat for 1960–83:
U.S. Dollar Per Metric Ton

Crop Year July/June	Value	Crop Year July/June	Value
1960/61	58	1972/73	93
1961/62	60	1973/74	186
1962/63	61	1974/75	165
1963/64	64	1975/76	146
1964/65	59	1976/77	114
1965/66	59	1977/78	119
1966/67	64	1978/79	143
1967/68	59	1979/80	160
1968/69	60	1980/81	167
1969/70	55	1981/82	158
1970/71	59	1982/83	165
1971/72	59	1983(June)/84(Feb)	148

Note: These prices are based on the U.S. No. 2 Western White, f.o.b. Pacific ports; prior to June 1968, with Soft White and/or White Club.

Source: World Wheat Statistics, International Wheat Council, 1970, 1980, and 1984, London.

The world production has steadily increased from 1960 to 1978. However, since 1979, the total production of beef (and veal) has dampened and has stayed below the 1978 level (FAO Production Yearbook, 1980, p. 211). With respect to Australia, beef production increased during the first half of the 1960s, but in the second half, the growth rate of production was stagnant or decreasing. This situation changed in the beginning of the 1970s and continuous growth returned during the rest of the 1970s, except for 1974 and 1979 (It is inferred that there was a somewhat negative influence on beef production in Australia during these years.). After 1980, however, beef production stagnated again around the average of 1974-76.

In terms of Australian beef wholesale prices, from 1961 to 1964, the average yearly prices were lower than that in 1960 (U.S. $506/m.t.). However, after 1965 the prices steadily climbed until 1972 (to U.S. $825). In 1973, the price jumped to U.S. $1,201 per metric ton, a 45.6% rise compared to the previous year's. After this radical change in 1973, the market movement trended downward (this situation was presumably caused by the stagnation of the first oil shock) (FAO State of Food and Agriculture, 1974, p. 63), and the price dropped to U.S. $437 in 1975. During the following three years, the price moved similarly to the second half of the 1960s. But in 1979 and 1980, prices greatly increased again to U.S. $1,600, more than three times as high as the price in 1960. In 1981 and 1982, it dropped again down to U.S. $1,170 (in the first half of 1982) (Table 6).

TABLE 6

World Price of Beef for 1960-82:
U.S. Dollar Per Metric Ton

Year	Value	Year	Value
1960	506	1972	825
1961	438	1973	1,201
1962	386	1974	778
1963	432	1975	437
1964	482	1976	621
1965	540	1977	567
1966	603	1978	776
1967	631	1979	1,665
1968	651	1980	1,685
1969	659	1981	1,418
1970	709	1982(Jan-June)	1,170

Note: These prices are based on the Australian oxen, 301-350 kg, bone in, wholesale, brisbane.

Source: Commodity Trade and Price Trends, August 1982, Distributed for the World Bank, the Johns Hopkins University Press, Baltimore and London.

Import Quantities

Since the end of World War II, Japan has been one of the world's biggest wheat importing counties. However, the difference in prices between domestic and imported wheat has increased, primarily because small-scale farming as well as the Japanese climate are not necessarily suitable for wheat cultivation (Ogura, p. 454).

In 1960 and 1961, Japan imported 2,660 thousand metric tons of wheat mainly from the U.S. and Canada. In 1962, the import quantity was dampened slightly compared to the previous two years. However, in the next year, 1963, it jumped to 3,412 thousand metric tons (a 37.0% increase). During the following four years, imports gradually increased up to 4,238 thousand metric tons. In 1968, wheat imports dropped again below 4,000 metric tons. After 1968, they rose steadily until 1975; the import availability for 1975 was 5,715 thousand metric tons, and it was the peak period throughout the 1960s and 1980s. From 1976 to 1983, import quantities remained almost constant within the range of 5,500 thousand and 5,700 thousand metric tons (Table 7).

With respect to beef imports in Japan, the "Price Stabilization Law for Livestock Products" has been in effect since 1961, and especially since 1966 (Longworth, p. 172). In this scheme, first, the Ministry of Agriculture, Forestry and Fisheries (MAFF) fixes the target market price for domestic beef, then the quota for imports is determined in order to maintain the domestic market price around the target price. As a general rule, the government and MAFF determine the quotas for imports twice a year, the first and second half year (once a year during the initial stage of this scheme), and allot them to the "Corporation for the Promotion of Livestock Production." According to the governmental direction, this corporation is to release the imported beef into the market at a suitable price when it is needed (Matsuda, pp. 76-78).

TABLE 7

Japanese Wheat Production and Imports for
1960-83: Thousand Metric Tons

Year	Production	Imports	Year	Production	Imports
1960	1,531	2,660	1972	284	5,317
1961	1,781	2,660	1973	202	5,369
1962	1,630	2,490	1974	232	5,482
1963	716	3,412	1975	241	5,715
1964	1,244	3,471	1976	222	5,545
1965	1,287	3,532	1977	236	5,662
1966	1,024	4,103	1978	367	5,679
1967	997	4,238	1979	541	5,544
1968	1,012	3,996	1980	583	5,564
1969	758	4,537	1981	587	5,504
1970	474	4,621	1982	742	5,432
1971	440	4,726	1983	695	5,544

Source: 1. Food Consumption Statistics, OECD, 1968, 1981, and 1985, Paris.

2. Abstract of Statistics on Agriculture, Forestry and Fisheries of Japan, Ministry of Agriculture, Forestry and Fisheries, Government of Japan, 1983 and 1984, Tokyo.

During the first half of the 1960s, Japan's imported beef level was around 5 thousand metric tons. However, in 1965, the weight of beef imports for the first time exceeded 10 thousand metric tons, and the following three years reached the 13,000 and 14,000 level. In 1969, beef imports were at a level of 19 thousand metric tons, and then from 1970 to 1972, these imports increased by approximately 20% in 1970, 80% in 1971, and 40% in 1972, respectively, in comparison with the previous year. The quantity of beef imports drastically jumped up to 127 thousand metric tons in 1973, an increase of more than 100% compared to 1972. After the first oil shock, the numer decreased greatly, down to 54 thousand metric tons in 1975. But in 1976, the 90,000 levels of imports came

back (presumably, the decrease of domestic production also caused the increase in imports); in 1977, beef imports were at 85 thousand metric tons. After 1978, beef imports exceeded 100,000 metric tons again, and reached 138 thousand metric tons in 1983 (Table 8).

TABLE 8

Japanese Beef Production and Imports for 1960-83: Thousand Metric Tons

Year	Production	Imports	Year	Production	Imports
1960	141	6	1972	317	58
1961	141	6	1973	245	127
1962	153	4	1974	321	54
1963	199	5	1975	353	45
1964	228	6	1976	298	94
1965	217	11	1977	361	85
1966	155	13	1978	403	101
1967	158	14	1979	402	132
1968	176	14	1980	418	124
1969	237	19	1981	471	124
1970	278	23	1982	481	123
1971	296	42	1983	495	138

Source: 1. Food Consumption Statistics, OECD, 1968, 1981, and 1985, Paris.

2. Meat Statistics in Japan, Livestock Bureau, Ministry of Agriculture, Forestry and Fisheries, Government of Japan, 1985, Tokyo.

CHAPTER III

GAINS FROM EXCHANGE RATE ADJUSTMENT

Soon after the development of the new U.S. economic policy (1971), the Bretton Woods system collapsed completely. As a result, the Japanese yen became a floating currency. Generally, until 1978 the Japanese yen had a trend of appreciating from year to year. Before shifting to a floating exchange rate system, the yearly average rate of the yen was ¥360.00 to U.S. $1. However, through 1983, the yen has appreciated 52%, up to ¥237.52 = $1.

The question one may ask is by how much did Japan gain (lose) from the foreign exchange rate system shift from fixed to floating rates? Next, we will infer the amounts of the foreign exchange gain of these two items over the period from 1971 to 1982 (or 1983). Here, the assumed exchange rates through the above period are the same as that of 1970 (U.S. $1 = ¥360) against the actual rates under the floating system.

Variables are defined as follows:

Actual Imported Price = World Price x Actual Exchange Rate

Assumed Imported Price = World Price x Assumed Exchange Rate

Price Difference = Assumed Imported Price - Actual Imported Price

Total Gain = Price Difference x Imported Quantity

The total of foreign exchange gains are shown in Tables 9 and 10.

17

TABLE 9

Grains from Foreign Exchange in the Japanese Wheat Import

Year	World Price #1 (A)	Actual Exchange Rate #2 (B)	Assumed Exchange Rate #3 (C)	Actual Imported Price #4 (D=AxB)	Assumed Imported Price #5 (E=AxC)	Price Difference #6 (F=E-D)	Import #7 (G)	Total Gain #8 (H=FxG)
Unit								
1970	59	360.00	360.00	21,240	21,240	0	4,621	0
1971	59	349.33	360.00	20,610	21,240	630	4,726	2,977
1972	93	303.17	360.00	28,195	33,480	5,285	5,317	28,100
1973	186	271.70	360.00	50,536	66,960	16,424	5,369	88,180
1974	165	292.08	360.00	48,193	59,400	11,207	5,485	61,470
1975	146	296.79	360.00	43,331	52,560	9,229	5,715	52,744
1976	114	296.55	360.00	33,807	41,040	7,233	5,545	40,052
1977	119	268.51	360.00	31,953	42,840	10,887	5,662	61,642
1978	143	210.44	360.00	30,093	51,480	21,387	5,679	121,457
1979	160	219.14	360.00	35,062	57,600	22,538	5,544	124,951
1980	167	226.74	360.00	37,866	60,120	22,254	5,564	123,821
1981	158	220.54	360.00	34,845	56,880	22,035	5,504	121,281
1982	165	249.05	360.00	41,093	59,400	18,307	5,432	99,444
1983	148	237.52	360.00	35,153	53,280	18,127	5,544	100,496

Note: Years of the world price refer to the crop year, which extends from July to the succeding June.

Unit: #1 -- U.S. dollar/m. ton, #2, #3 -- U.S. $1 = Japanese ¥, #4, #5 -- Jap. ¥, #6 -- Jap. ¥/m. ton, #7 -- thousand m. tons, #8 -- million Japanese yens.

TABLE 10

Gains From Foreign Exchange in the Japanese Beef Import

Year	World Price #1 (A)	Actual Exchange Rate #2 (B)	Assumed Exchange Rate #3 (C)	Actual Imported Price #4 (D=AxB)	Assumed Imported Price #5 (E=AxC)	Price Difference #6 (F=E-D)	Import #7 (G)	Total Gain #8 (H=FxG)
Unit								
1970	709	360.00	360.00	255,240	255,240	0	23	0
1971	744	349.33	360.00	259,902	267,840	7,938	42	333
1972	825	303.17	360.00	250,115	297,000	46,885	58	2,719
1973	1,201	271.70	360.00	326,312	432,360	106,048	127	13,468
1974	778	292.08	360.00	227,238	280,080	52,842	54	2,853
1975	437	296.79	360.00	129,697	157,320	27,623	45	1,243
1976	621	296.55	360.00	184,158	223,560	39,402	94	3,704
1977	567	268.51	360.00	152,245	204,120	51,875	85	4,409
1978	776	210.44	360.00	163,301	279,360	116,059	101	11,722
1979	1,665	219.14	360.00	364,868	599,400	234,532	132	30,958
1980	1,685	226.74	360.00	382,057	606,600	224,543	124	27,843
1981	1,418	220.54	360.00	312,726	510,480	197,754	124	24,521
1982	1,170	249.05	360.00	291,389	421,200	129,811	123	15,967

Unit: #1 -- U.S. dollar/m. Ton, #2, #3 -- U.S. $1 = Japanese ¥, #4, #5 -- Jap. ¥/m. ton, #6 -- Jap. ¥/m. ton, #7 -- thousand m. tons, #8 -- million Japanese yens.

First, with respect to wheat, the imported quantities of this period ranged from 4,621 to 5,715 metric tons. However, in accordance with changes of both the world price and the exchange rate under the floating system, the price differences varied greatly. The biggest gain was ¥22,538 per metric ton in 1979; the smallest was ¥630 in 1971. A noteworthy, even in 1973, was the jump in the world price by 315% while the actual exchange rate appreciated 32% compared to 1970. Therefore, there was still ¥16,424 as the price difference. In 1975 and 1976, the price differences again dropped down below the ¥10,000 level because the yen depreciated as well as the decreasing world price. In 1978 and 1979, the world price increased steadily and the yen depreciated very slightly, hence the price differences were maintained above the level of ¥20,000 per metric ton. After 1980, the world price varied every year, and the exchange rate fluctuated in a different direction than the world price. The price differences have decreased gradually, down to the 18,000s yen per metric ton in 1983.

The total gains from the exchange rate variations in wheat imports, from 1971 to 1983, amount to 1,026,615 million yens. Until the first oil shock (in 1973), the total gains remarkably increased, from ¥2,977 million in 1971, and ¥28,100 million in 1972, to ¥88,180 million in 1973, respectively. However, between 1974 and 1977, the gains were somewhat dampened between 40,000 and 53,000 million yens. After 1978 until 1981, the total gains again jumped, approximately twice as high as in 1977, up to the 120,000 million level. However, in 1982 and 1983, they decreased again down to around 100,000 million yens.

Second, with respect to beef, the imported quantity in 1971 was 42 thousand metric tons which jumped to 127 thousand metric tons in 1973. However, in 1974 and 1975, imports were stagnant and down to around 50 thousand metric tons. Again, during the following two years, imports increased noticeably; reaching 94

and 85 thousand metric tons in 1976 and 1977, respectively. After 1978, imports were maintained above 100 thousand metric tons.

Same as wheat, according to the world price and the exchange rate, the price differences in beef imports were both up and down between 1971 and 1982. Until 1973, the price difference was rapidly increasing. The value in 1973 was 106,048 yen per metric ton, followed by 7,938 in 1971 and 46,885 in 1972. During these three years, the actual exchange rates appreciated 32% while the world prices increased by 69% in comparison with that of 1970. Between 1974 and 1977, the price differences decreased drastically, falling to around 50,000 yen per metric ton in 1974 and 1977, and around 30,000 in 1975 and 1976. During the first three years, the exchange rates were sustained at almost the same level as that of 1972 while world price fluctuated greatly. In 1977, the strength of the yen increased and the world price dropped down to $567 per metric ton. The price difference exceeded 116,000 yen in 1978 and reached 234,532 yen per metric ton in 1979. Since 1980, however, it has dropped yearly and was a ¥129,811 in 1982. The actual exchange rates rose by 71% in 1978, 64% in 1979, and 59% in 1980, respectively, compared to 1970. Meanwhile, the world price increased by more than 200% in 1979 and 1980, (also compared to 1970), but only increased by 110% in 1978. In 1981 and 1982, the world price increased by 200% and 165% compared to 1970, the yen appreciated by 3% and 45%, respectively, compared to 1970.

The total gains from foreign exchange between 1971 and 1982 from Japanese beef imports is estimated to be 139,740 million yens. Until 1973, the total gains rose from, ¥333 million in 1971, ¥2,719 million in 1972, to ¥13,468 million in 1973, respectively. After the peak in 1973, 1974's was almost the same as 1972's and the total gains reached a low (¥1,243 million) in 1975. In 1976 and 1977, the total gains were fixed at around 4,000 million yens. However, after 1978, the numbers again exceeded the ¥10,000 million level and rose to ¥30,958 million in

1979. Finally, the total gains fell to ¥20,000s million in 1980 and 1981, and then
to ¥10,000s million in 1982.

CHAPTER IV

CHANGES IN DOMESTIC SITUATIONS IN JAPAN

Protectionist Programs

Right after World Was II, the Japanese government felt the need to re-establish a new food delivery system; from the Ministry of Agriculture and Forestry to the prefectures, and from the prefectures to the cities, towns and villages. In 1947, the Bill of Temporary Measures for Securing Food was enacted. This law aimed to establish the system of allotting the delivery quota at the time of planting instead of at the time of harvesting. However, in the process of rehabilitating the economy, food control measures were also abolished one after another. The Law of Temporary Measures for Securing Food expired in 1950 but the pre-harvest allocation system was continued until 1954 under a governmental ordinance of 1961 in conformity with the new Food Control Law. In 1957, the control of wheat, barley, and naked barley was changed from a direct one to an indirect one. This meant the abolition of mandatory purchases by the government. After the decontrol of wheat, barley and naked barley, in accordance with the fact that the tight situation of demand and supply was relaxed in the world market, the agricultural parity index [4] was starting to increase. As a result, the indirect control of wheat began to function as a price support (Ogura, pp. 198-213).

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[4] The price parity formula is a method that determines the price of wheat in proportion to the prices of goods and services purchased by farmers. This idea was introduced by the Occupation Forces (Ogura, p. 208).

With the shift from direct control to indirect control, the principle of governmental intervention was rigidly prescribed by an amendment to the Food Control Law (in 1961) as follows (ibid., p. 213): First, the government should purchase unlimited quantities in accordance with the offer to sell by the producer. Second, the government purchasing price should not be lower than the amount calculated every year by the agricultural parity formula. Third, the government selling price should be determined to the effect that the household economy of the consumer would be stabilized by taking household expenditures, or the price of rice and other economic situations into account. Fourth, the foreign trade of wheat under the control of the national government and the national government's monopoly of imported wheat, meant no tariff (similarly for rice), was to be continued.

Therefore, from the beginning of the indirect control of wheat, barley, and naked barley, there has been implicitly a price support system. The spread between the government purchasing price and selling price of domestic wheat has exhibited an increasing trend since about 1957 (ibid.). Then, the indirect control of wheat has actually become similar to a direct and total control because almost all marketable wheat has been sold to the government.

With respect to beef, since the mid-1950s, the Japanese real GNP has grown at more than 10% per year, although the growth rate has slowed since the early 1970s. However, Japan still achieved the highest growth rate of all the OECD countries in the 1980s (Economist, 29 August 1983, pp. 128-129). Japan's increasing income has changed consumer behavior to a greater consumption of meat, e.g., pork, chicken, and beef. Nevertheless, beef consumption has not increased as fast as that of the others, primarily because of the much faster rise of its retail price than for the other two major products. Thus, Japanese beef consumption has been restrained by extremely high prices (Figure 3).

Figure 3

Average Annual Retail Prices
for the Major Meat in Tokyo
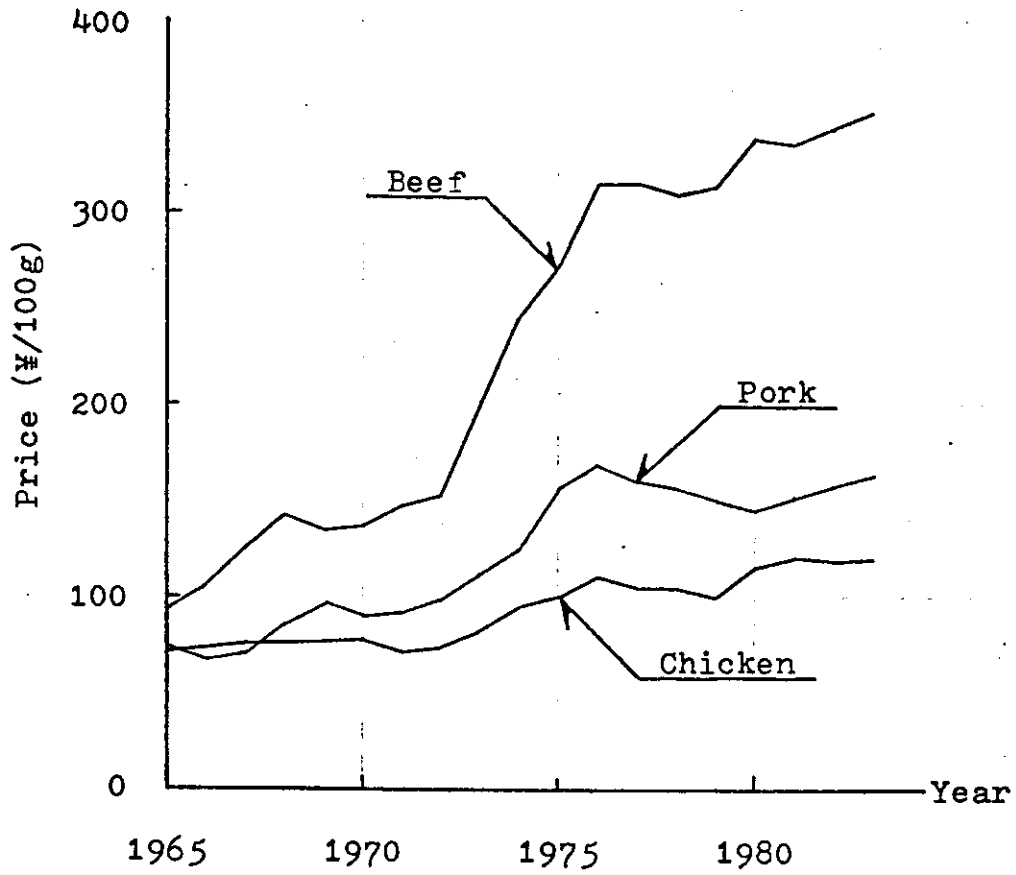
Note: Beef and Pork -- Medium Grade, Chicken -- Bonless Broilers as
           from Jan. 1980, Excellent Grade from 1965 and Broilers as from
           Jan. 1971.

Source: The Meat Statistics in Japan, Livestock Industry Bureau, MAFF,
           Government of Japan, Jan. 1, 1985, pp. 56-57.

Then, in 1975, the Ministry of Agriculture and Forestry assigned the task of regulating the flow of beef to the wholesale market, so that the price of beef remained within a specified price band, to the Livestock Industry Promotion Corporation (LIPC). This governmental corporation was established in 1961 to promote and assist with the development of the livestock and related industries (especially, dairy and pork production until 1966), in accordance with the governmental program foundation of the Price Stabilization Law for Livestock Products in 1961 (Longworth, p. 172). At that time, the government wanted to improve the diet of the Japanese people by making more domestically produced animal protein available at low and stable prices. In 1966, the government partially amended the Price Stabilization Law to permit the LIPC to buy and sell imported beef. At that time, the aim of this assignment was only to restrain the upward movement in the domestic beef market by supplying imported beef. Since then, in this situation, the LIPC has not taken any action in the circumstances of the market price declines (ibid.). Again in 1975, the Price Stabilization Law was amended to permit the LIPC to expand its task so that it could buy and sell domestic beef as well as imported beef (ibid., p. 173).

The Japanese beef price stabilization scheme (in the wholesale market) is not complicated. The Ministry of Agriculture, Forestry and Fisheries (MAFF) establishes a band of prices [5] (a kind of target price) for each Japanese fiscal year

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[5] This price band is prescribed as follows: PC(ceiling price) = ((FGPxI)m+k)(l+v), PF(floor price) = ((FGPxI)m+k)(l-v), where FGP is the simple average of the average monthly farm-gate price received by farmers for "Wagyu" steer over the previous seven years, I is the current value of an index of the cost of fattening wagyu steers, m, k, and v are all determined by using regression techniques to estimate an equation of the form of ¥ = mX+k, (where ¥ is the monthly average wholesale carcass price for 2nd grade Wagyu steers for the last seven years, X is the monthly average farm-gate price for Wagyu steers for the last seven years), and v is the standard error of estimation for the estimated equation (Longworth, pp. 177-178).

for two specified types of wholesale beef carcass: The so called "Wagyu" steer 2nd grade and dairy steer 2nd grade. Formally, the Livestock Bureau of MAFF was supposed to be responsible for maintaining the wholesale market price within the price band prescribed. However, in practice, the LIPC administrates the program under the guidance of the Livestock Bureau. In short, the LIPC tries to maintain the market price within the prescribed ranges by a sort of buffer-stock operation (Longworth, p. 174). There are four different sources from which the Livestock Bureau can supply the wholesale beef market. First, there is beef in exporting countries which can be imported and sold to the LIPC on relatively short notice. Second, there is the beef stock which was imported previously and held in Japan under the control of the LIPC. Third, there may be beef stocks which are domestically produced and were previously purchased by the LIPC to prevent prices falling below the floor price. Last, there may be beef stocks held by the farmer cooperatives operation as a part of their voluntary efforts to withhold a supply from the market during a previous period of low beef prices (ibid., p. 176).

However, this buffer stock price stabilization scheme can be achieved both by varying the level of imports as required and by managing stocks of previously imported beef held by the LIPC. Until April 1, 1958, beef imports were not restricted by quantity terms and subject only to a 10% revenue tariff. Then, between 1958 and 1964, beef imports were restricted in value terms rather than physical quantity terms. Since April 1, 1964, beef has been subject to import quotas defined in physical terms and the 10% revenue tariff was raised to 25% ad valorem (ibid., p. 181). In terms of the beef quota system, during 1958 to 1964, all import quotas were assigned to private traders. From 1965, the LIPC was allocated an increasing share of what has been called the general quota. However, since 1973, the LIPC has been allocated more than 90% of the general quota, in spite of strong resistance from both the domestic trade interests and foreign suppliers (Table 11).

27

<p align="center">TABLE 11</p>

<p align="center">Japanese Beef Import Quotas, 1958 to 1982</p>

<p align="center">-Shipped Weight-
(Metric Ton)</p>

Quotas	General Quotas			Hotel	Okinaw	Special Quotas		Subtotal	Grand Total
	LIPC	Private	Subtotal			School Lunch	Cooked Beef		
Fiscal Year									
1958		3,000	3,000						3,000
1959		3,000	3,000						3,000
1960		4,200	4,200						4,200
1961		3,000	3,000						3,000
1962		3,000	3,000						3,000
1963		5,000	5,000						5,000
1964		3,000	3,000						3,000
1965	600	9,500	10,100						10,100
1966	5,000	5,000	10,000						10,000
1967	6,000	13,000	19,000						19,000
1968	2,738	18,000	20,738				700	700	22,138
1969	5,000	17,000	22,000	500			700	1,200	23,200
1970	12,000	12,200	24,200	500			700	1,200	25,400
1971	22,000	14,000	36,000	500			700	1,200	37,200
1972	57,500	14,000	71,500	1,000	4,330		1,000	6,330	77,830
1973	146,000*	14,000	160,000	1,000	6,455		2,000	9,455	169,455
1974					5,650			5,650	5,650
1975	69,900	5,100	75,000	1,000	5,500	1,000	2,500	10,000	85,000
1976	71,000	9,000	80,000	1,000	5,500	3,000	7,000	16,500	96,500
1977	73,000	7,000	80,000	2,000	5,200	2,200	3,100	12,500	92,500
1978	86,500	8,500	95,000	3,000	5,600	3,000	5,400	17,000	112,000
1979	105,600	10,900	116,500	3,000	5,800	2,500	6,700	18,000	134,500
1980	106,800	12,200	119,000	3,000	5,850	2,250	4,700	15,800	134,800
1981	99,900	11,100	111,000	3,000	5,850	2,250	4,700	15,800	126,800
1982	107,280	11,920	119,200	3,000	5,850	2,250	4,700	15,800	135,000

* About 40,000 m. tons of this quota was subsequently cancelled.

Notes:
1. For FY 1958 to FY 1963 inclusive the import quota was specified in value rather than quantity terms. Since FY 1964 quotas have been unambiguously expressed in quantity terms.
2. LIPC was first empowered to import beef in 1965.
3. The school lunch quota was included in the LIPC quota until 1975.

Prices

The domestic prices to producers and consumers of wheat in Japan are described by the purchasing price and selling price of the 2nd grade of the 2nd group by the government under the Food Control Law as discussed in the previous section (Table 12). During these twenty-four years, there has been a continuous and rising price spread between the purchasing price and selling price. Since 1972, the amount of this price spread was widened more than twice, and then after 1979, it expanded more than 2.6 times. Although, during this period, the purchasing price has been increasing (except for 1979, 1982 and 1983, expressed by U.S. dollars, it was derived from the strong exchange rate of the yen), the selling price has not necessarily been increasing so much as the purchasing price. Between 1960 and 1970, the selling price has been reduced, but since 1971 its general trend has been to increase. In 1983, the purchasing price and selling price were raised by approximately eight and three times (calculated in U.S. dollars), respectively, compared to 1960.

With respect to the domestic price of beef in Japan, we will quote the wholesale market price of dairy steers of standard grade as a domestic price because this particular Japanese dairy steer is closest to most of the imported beef in terms of quality. As described in Table 13, during these eighteen years, the beef wholesale price of the Central Livestock Market in Tokyo has increased by more than 5.5 times in U.S. dollar terms (almost four times in Japanese yen terms). From 1965 until 1973, this price has been steadily rising except for 1969. This steadily rising trend continued until 1979, although there were some stagnations in 1974 (also 1977 and 1978 using Japanese value terms). After 1980, the wholesale price showed a general decreasing trend.

TABLE 12

Wheat Price Supported by the Government

A: Purchasing Price
B: Selling Price

(Japanese yen per 60 kg)

Year	(A)	(B)	Year	(A)	(B)
1960	2,149	2,004	1972	3,810	1,870
1961	2,283	1,976	1973	4,345	2,595
1962	2,404	1,956	1974	5,564	2,564
1963	2,473	1,956	1975	6,129	2,561
1964	2,591	1,956	1976	6,574	3,272
1965	2,713	1,956	1977	9,495	3,272
1966	2,902	1,939	1978	9,692	3,248
1967	3,034	1,926	1979	9,923	3,248
1968	3,170	1,926	1980	10,704	3,622
1969	3,267	1,915	1981	11,047	3,812
1970	3,431	1,915	1982	11,047	4,124
1971	3,667	1,915	1983	11,092	4,135

Note: These prices are the official base prices of the 2nd grade of the 2nd group, excl. packing charge and inspection fee; prior to 1968, with the 3rd grade of the 2nd group.

(U.S. Dollar per 60 kg)

Year	(A)	(B)	Year	(A)	(B)
1960	5.97	5.57	1972	12.57	6.17
1961	6.34	5.49	1973	15.99	9.55
1962	6.68	5.43	1974	19.05	8.78
1963	6.87	5.43	1975	20.65	8.63
1964	7.20	5.43	1976	22.17	11.03
1965	7.54	5.43	1977	35.36	12.19
1966	8.06	5.39	1978	46.06	15.43
1967	8.43	5.35	1979	45.28	14.82
1968	8.81	5.35	1980	47.21	15.97
1969	9.07	5.32	1981	50.09	17.28
1970	9.53	5.32	1982	44.36	16.56
1971	10.50	5.49	1983	46.70	17.41

Note: These numbers are calculated by the yearly average exchange rates in Table 1.

Source: Data of Rice and Wheat, Food Agency (Ministry of Agriculture, Forestry and Fisheries, Government of Japan), December 1984, Tokyo.

TABLE 13

Beef Wholesale Price of the Central
Livestock Market in Tokyo

-- Carcass price of Japanese dairy steers
(Standard); yearly average price--

(Japanese yen per kg.)

1960		1972	642
1961		1973	928
1962		1974	746
1963		1975	1,106
1964		1976	1,200
1965	306	1977	1,158
1966	363	1978	1,183
1967	457	1979	1,353
1968	497	1980	1,212
1969	470	1981	1,133
1970	553	1982	1,183
1971	602		

(U.S. Dollar per kg.)

1960		1972	2.12
1961		1973	3.42
1962		1974	2.55
1963		1975	3.73
1964		1976	4.05
1965	0.85	1977	4.31
1966	1.01	1978	5.62
1967	1.27	1979	6.17
1968	1.38	1980	5.35
1969	1.31	1981	5.14
1970	1.54	1982	4.75
1971	1.72		

Note: These numbers are calculated by the yearly average exchange rates in Table 1.

Source: 1. Meat Handbook, Central Livestock Council, 1983, Tokyo.

2. The Meat Statistics in Japan, 1981, Tokyo.

What happened to the Japanese wheat and beef market price was that the wheat purchasing price, wheat selling price, and beef wholesale price rose by 7.8, 3.1, and 5.6 times, respectively, in U.S. dollar terms, compared to 1960 and 1965. Meanwhile, the wholesale price indexes in Japan rose by 2.4 times between 1960 and 1983, and by 2.3 times between 1965 and 1982 (Table A in Appendix).

Production and Consumption

First, with respect to wheat production in Japan, there has been a general trend of decreasing production from 1960 until 1976 (Table 14). However, during this period, a drastic agricultural policy change was made by the national government. In 1971, the MAFF started to promote the policy of decreasing rice production. This policy aimed to readjust supply and demand conditions for rice in the domestic market. At that time, the government suffered a huge budget deficit with the indirect control policy of rice under the Food Control Law. From the beginning of 1971 (Fiscal Year) to 1975 (FY), the government tried to promote a shift from rice paddy fields to other crops' fields (Yearbook of Agriculture, Forestry and Fisheries, 1973, p. 199). Nevertheless, the situation in wheat production has not changed greatly, although that of rice and other crop production has been gradually changed. Since 1977, wheat production has increased, from 236 thousands metric tons in 1977 to 742 thousands metric tons in 1982. However, it decreased slightly in 1983. It is primarily inferred that the reduction in the difference in purchasing prices by the government between rice and wheat encouraged the producers to increase the wheat supply. [6]

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[6] The purchasing price indexes of rice (per 60kg) were as follows: ¥15,570 in 1975, ¥16,572 in 1976, ¥17,232 in 1977, ¥17,251 in 1978, ¥17,279 in 1979, ¥17,674 in 1980, ¥17,756 in 1981, ¥17,951 in 1982, and ¥18,266 in 1983 (Data of Wheat and Barley Prices. p. 2).

Second, with respect to beef production in Japan, between 1960 and 1964, there was an increasing trend, but during the following two years, the production dropped and reached the 150 thousand metric tons level in 1966. Then, from 1967 to 1982, it has been rising except in the years of 1973, 1976, and 1979. In 1973, there was a negative impact from the first oil shock on beef production in Japan because the price of cattle feeders jumped drastically forcing a great number of beef producers to withdraw from production. Also in 1976, it is inferred that there was a cyclic effect in 1973 because of production retirement during that time. Furthermore, since 1971, there has been a positive move to promote beef production by a new governmental program which launched the readjustment of the utilization of rice paddy fields. After 1978, the level of Japanese beef production exceeded 400 thousand metric tons (Table 14).

TABLE 14

Wheat and Beef Production in Japan, 1960 to 1982-83

(Thousand Metric Tons)

Year	Wheat	Beef	Year	Wheat	Beef
1960	1,531	141	1972	284	317
1961	1,781	141	1973	202	245
1962	1,630	153	1974	232	321
1963	716	199	1975	241	353
1964	1,244	228	1976	222	298
1965	1,287	217	1977	236	361
1966	1,024	155	1978	367	403
1967	997	158	1979	541	402
1968	1,012	176	1980	583	418
1969	758	237	1981	587	471
1970	474	278	1982	742	481
1971	440	296	1983	695	481

Note: The above numbers for beef are the carcass weights of both beef and veal.

Source: 1.   Food Consumpton Statistics, OECD, 1968, 1981, and 1985, Paris.
          2.   The Meat Statistics in Japan, Livestock Bureau, MAFF, 1985, Tokyo

34

Third, wheat consumption in Japan has shown a steady increase since 1960, in accordance with a Westernization of diet patterns after World War II. However, in 1968, in 1970, and in 1971, wheat consumption stagnated slightly. Although during the 1970s, there were a couple of oil shocks; nevertheless, Japanese wheat consumption maintained a rising trend. Then, in 1980, it amounted to 6,054 thousand metric tons, approximately 1.5 times as much as in 1960. Since 1980, wheat consumption has stayed almost at a constant level (Table 15).

Fourth, beef consumption is usually said to be highly elastic to income levels. Between 1960 and 1982, the Japanese GNP increased by 468.6% in constant 1975 prices (World Table, 1984, pp. 237-238), and the beef consumption in Japan jumped by 410.9% (Table 15). This indicates that the GNP and consumption level in Japan are almost at the same rate of increase. During the 1960s, beef consumption has fluctuated in step with domestic production, but in the 1970s, as domestic production and imports rose, consumption also steadily increased, with a dampened period right after the first oil shock (in 1973). In the 1980s, both the production and consumption of beef have risen steadily.

TABLE 15

Wheat and Beef Consumption in Japan, 1960 to 1982-83

	(Thousand Metric Tons)				
Year	Wheat	Beef	Year	Wheat	Beef
1960	3,965	147	1972	5,372	375
1961	4,190	147	1973	5,498	372
1962	4,271	157	1974	5,517	375
1963	4,290	204	1975	5,578	387
1964	4,505	234	1976	5,660	399
1965	4,631	228	1977	5,761	440
1966	4,983	168	1978	5,861	507
1967	5,106	172	1979	6,020	521
1968	5,092	190	1980	6,054	536
1969	5,245	256	1981	6,034	579
1970	5,207	301	1982	6,035	604
1971	5,206	338	1983	6,059	

Note: The above numbers for beef are the carcass weights of both beef and veal.

Source: 1.   Food Consumption Statistics, OECD, 1968, 1981, and 1985, Paris.
2.   The Meat Statistics in Japan, Livestock Bureau, MAFF, 1985, Tokyo.

CHAPTER V

CHANGES OF SOCIAL WELFARE WITH PROTECTION

The final goal of this research paper is to analyze the social welfare effects of the agricultural protectionist programs in the Japanese economy, primarily by means of estimating producer benefits and consumer costs in monetary terms. We have already collected enough data for calculating them in the previous chapters. However, before executing the calculations, we must make two assumptions and provide two sets of definitions as follows:

Assumptions

1) In these analyses, we assume the sullpy schedules for both commodities are perfectly inelastic to price changes in a year, [7] such as S_1, S_2, S_3 and S_4 in Figure 4 and 5 (Tomek and Robinson, pp. 75-77).

2) The beef pricing mechanism in the Japanese domestic market was described in Chapter IV. Here, we make an assumption of an equilibrium in the market. As shown in Figure 6, in the short run (for each year), supply is equal to the total quantity which consists of both domestic production and imports. The total supply (S') will intersect with the demand curve (D) around the administrative target price. We assume that in the Japanese beef market demand and supply are

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[7] To simplify the calculations, here we assume perfectly inelastic supply schedules for each year. However, for more complete analysis, these schedules should be readjusted according to being more elastic supply conditions.

equilibrated at the "Central Livestock Market" price. Under this assumption, we will use the Central Livestock Market Wholesale Price (in Tokyo) as the domestic price, at which the producer price is equal to the consumer price.

Definitions [8]

1) Producer Benefit = (Price of Domestic Production) x (Quantity of Domestic Production) - (World Price) x (Quantity of Domestic Production), i.e., Area P_pABp_w (Figure 4) and Area p_tHIp_w (Figure 5).

2) Consumer Cost = (Price of Domestic Consumption) x (Quantity of Domestic Consumption) - World Price) x (Quantity of Domestic Consumption), i.e., Area p_cFGp_w (Figure 4) and Area p_tJKp_w (Figure 5).

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[8] The ideas of these definitions were referenced to "Tariffs, Variable Levies, and Import Restrictions" (Tomek and Robinson, pp. 284-286), "Government Purchases" (ibid., pp. 286-289), and "Limiting Production or Sales" (ibid., pp. 289-291).

Figure 4

Producer Benefit and Consumer Cost of Wheat
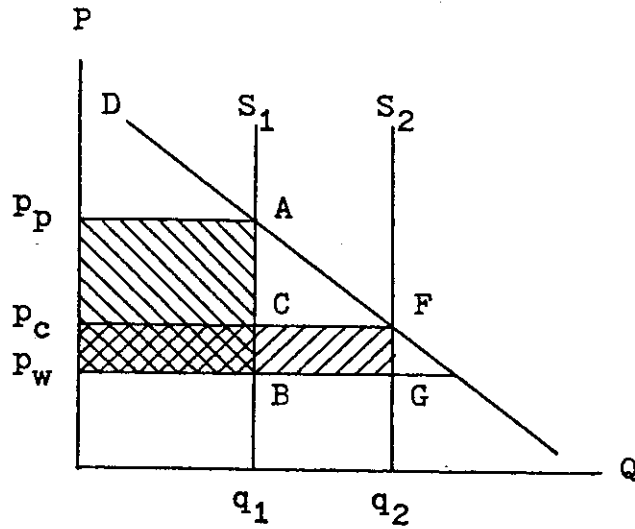
where p_p = Producer Price under Agricultural Protection
     ---Purchasing Price by Government

p_c = Consumer Price under Agricultural Protection
     ---Selling Price by Government

p_w = World Price --- U.S. f.o.b. Price

q_1 = Quantity of Domestic Production

q_2 = Quantity of Consumption

$q_2 - q_1$ = Quantity of Imports

S_1 = Domestic Supply

S_2 = Total (Domestic + Import) Supply

Area: $p_p A C p_c$ - CFGB = Taxpayer Burden

39

Figure 5
Producer Benefit and Consumer Cost of Beef
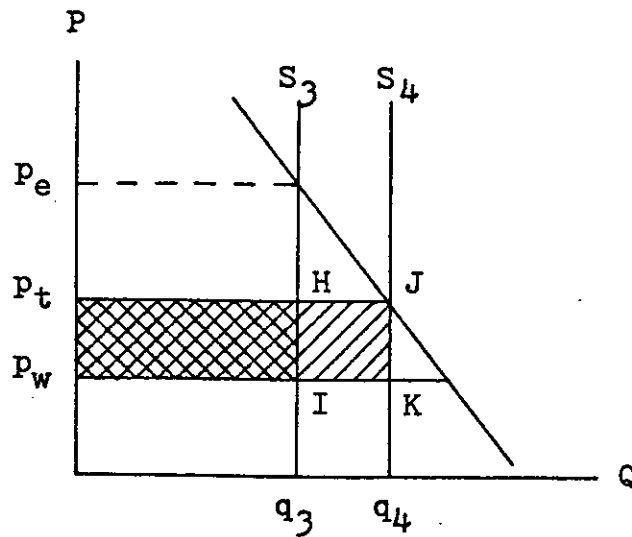
where P_t = Target Price (---Producer Price = Domestic Livestock Market Price)

P_w = World Price --- Australian Price

P_e = Equilibrium Price in the Non-import Market

q_3 = Quantity of Domestic Production

q_4 = Quantity of Consumption

$q_4 - q_3$ = Quantity of Imports

S_3 = Domestic Supply

S_4 = Total (Domestic + Import) Supply

Area HJKI = Government Revenue

Figure 6

Demand and Supply in the Japanese Beef Market
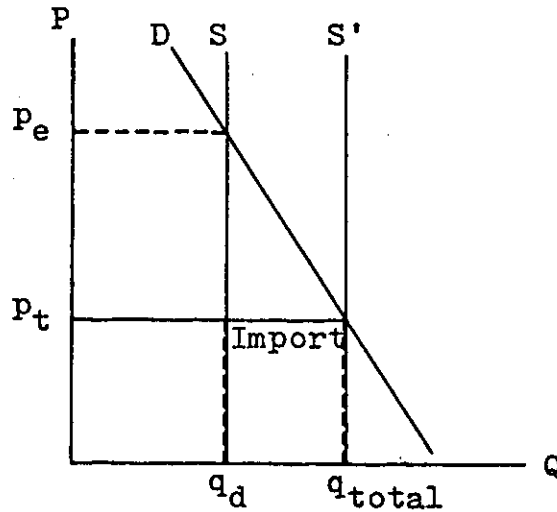
The numbers which were calculated according to the assumptions and definitions described above are shown in Tables 16-19. These monetary terms of producer benefit and consumer cost are all expressed in current dollars.

First, with respect to the Japanese wheat producers' benefits (Table 16), in 1960 the domestic producer price (purchasing price by the government), world price, and domestic production were $99, $58 per metric ton, and 1,531 thousand metric tons, respectively. Between 1961 and 1969, domestic prices increased by 3-7% every year, meanwhile the world prices fluctuated around $60s. However, the trend in domestic production was generally declining throughout this period, especially in 1963 and 1969. Therefore, producer benefits were almost fixed between 70 and 90 million dollars (except for 36 million dollars in 1963) because of the above contrary relationship between producer prices and productions. In 1970 and 1971, producer prices increased slightly but world prices were fixed at $59 and production decreased to the 400 thousand metric ton level. As a result, producer benefits for these two years were approximately 50 million dollars. During the

41

TABLE 16

Japanese Wheat Producer Benefits From Agriculture Protection

Year	Domestic (A)	Producer (A)	Price	World Price	Price Difference	Domestic Production	Producer Benefits
	(a)	Exchange Rate	$A=a \times \frac{1000}{60} \times \frac{1}{b}$	(B)	(C=A-B)	(D)	(E=CxD)
Unit			#1	#2	#3	#4	#5
1960	2,149	360.00	99	58	41	1,531	63
1961	2,283	360.00	106	60	46	1,781	82
1962	2,404	360.00	111	61	50	1,630	82
1963	2,473	360.00	114	64	50	716	36
1964	2,591	360.00	120	59	61	1,244	76
1965	2,713	360.00	126	59	67	1,287	86
1966	2,902	360.00	134	64	70	1,024	72
1967	3,034	360.00	140	59	81	997	81
1968	3,170	360.00	147	60	87	1,012	88
1969	3,267	360.00	151	55	96	758	73
1970	3,431	360.00	159	59	100	474	47
1971	3,667	349.33	175	59	116	440	51
1972	3,810	303.17	209	93	116	284	33
1973	4,345	271.70	267	186	81	202	16
1974	5,564	292.08	317	165	152	232	35
1975	6,129	296.79	344	146	198	241	48
1976	6,574	296.55	369	114	255	222	57
1977	9,495	268.51	589	119	470	236	111
1978	9,692	210.44	768	143	625	367	229
1979	9,923	219.14	755	160	595	541	322
1980	10,704	226.74	787	167	620	583	361
1981	11,047	220.54	835	158	677	587	397
1982	11,047	249.05	739	165	574	742	426
1983	11,092	237.52	778	147	631	695	439

Unit: #1 -- US$/m. ton; (a) yen/60kg, (b) Jap.¥ = US$1, #2 -- US$/m. ton,#3 -- US$/m. ton, #4 -- thousand m. tons, #5 -- million US dollars.

following three years, approximately 50 million dollars. During the following three years, producer prices jumped by 19%, 28%, and 19% respectively, compared to each previous year. The world prices also fluctuated by 58%, 200%, and (-)11%, respectively, compared to each previous year, although domestic production stagnated at the 200 thousand metric ton level (until 1977). Producer benefits in 1972 and 1974 amounted to the $30 million level, and 16 million dollars in 1973 (because of the small price difference). In the next two years, producer prices increased steadily: contrarily, world prices fell greatly. Hence, producer benefits were $48 million in 1975 and $57 million in 1976. In 1977, the producer price increased by 60% in spite of the dampened world price, so that the producer benefit almost doubled in comparison with that of 1976. Noteworthily, in 1978, the producer price increased by 30% compared to the previous year and up to the $700 level per metric ton because of the substantial appreciation of the yen (28% compared to 1977). The price difference came to $625 per metric ton; furthermore, domestic production also increased by 56% compared to the previous year. Therefore, producer benefits again jumped more than twice that of the previous year (up to $229 million). In 1979, production increased by 47% despite the other numbers remaining at similar levels with 1978. Consequently, producer benefits were multiplied by 1.4 times that of 1978. In 1980, the producer price, world price, production, and producer benefits were $787, $167 per metric ton, 583 thousand metric tons, and $361 million, respectively. The producer price after 1981 was varied, primarily by the exchange rate, between $739 (1983) and $835 per metric ton (1981). Meanwhile, the world price moved up and down every year between $147 (1983) and $165 per metric ton (1982). Domestic production increased until 1982, up to 742 thousand metric tons, and then in 1983 it decreased to 695 thousand metric tons. However, since 1981, producer benefits have risen

steadily to 439 million dollars (in 1983). The total amount of producer benefits during these twenty-four years was 3.311 million dollars.

Second, with respect to the Japanese wheat consumer cost (Table 17), between 1960 and 1970, domestic consumer prices (the government selling prices) decreased slightly year by year. During this period, world prices fluctuated between $55 and $64 per metric ton. Domestic consumption increased slightly (except for 1968). Therefore, consumer costs for this period were primarily varied by the world price, and these numbers shifted in the opposite direction to the world price changes. In 1971, the consumer price increased by 3% compared to the previous year, but the world price and consumption remained at the same level with that of 1970. As a result, consumer costs jumped up by 10% in comparison with the previous year. The most notable period occurred during the following four years. In 1972, the consumer price increased by 12% and the world price jumped by 58% compared to 1971. Therefore, the price difference between the two prices became smaller than at any previous time. Consequently, consumer costs dropped greatly to $54 million, although consumption increased steadily. Between 1973 and 1975, a drastic change was occurring: Japanese domestic consumer prices became lower than world prices. This implies that, during these three years, the Japanese consumer received benefits rather than costs via the consumption of domestic wheat (apart from the taxpayer burden). These benefits amounted to $148 million in 1973, $105 million in 1974, and $11 million in 1975, respectively. However, in 1976, the former situation reoccurred, and the domestic price again exceeded the world price. Since then until 1980 (except for 1978), the price difference gradually has grown, from $70 into $99 per metric ton (but $114 in 1978). After 1981, the price difference grew to more than $100 per unit. The amount of consumer costs climbed to $396 million in 1976, $484 million in 1977, $668 million in 1978, $524 million in 1979, and $599 million in 1980,

44

TABLE 17

Japanese Wheat Consumer Costs From Agricultural Protection

Year	Domestic (f)	Consumer (F) Exchange Rate (h)	Price $F=f \times \frac{1000}{60} \times \frac{1}{h}$	World Price (H)	Price Difference (I=F-H)	Domestic Consumption (J)	Consumer Cost (K=IxJ)
Unit			#1	#2	#3	#4	#5
1960	2,004	360.00	93	58	35	3,965	139
1961	1,976	360.00	92	60	32	4,190	134
1962	1,956	360.00	91	61	30	4,271	128
1963	1,956	360.00	91	64	27	4,290	116
1964	1,956	360.00	91	59	32	4,505	144
1965	1,956	360.00	91	59	32	4,631	148
1966	1,939	360.00	90	64	26	4,983	130
1967	1,926	360.00	89	59	30	5,106	153
1968	1,926	360.00	89	60	29	5,092	148
1969	1,915	360.00	89	55	34	5,245	178
1970	1,915	360.00	89	59	30	5,207	156
1971	1,919	349.33	92	59	33	5,206	172
1972	1,870	303.17	103	93	10	5,372	54
1973	2,595	271.70	159	186	(-)27	5,498	(-)148
1974	2,564	292.08	146	165	(-)19	5,517	(-)105
1975	2,561	296.79	144	146	(-) 2	5,578	(-) 11
1976	3,272	296.55	184	114	70	5,660	396
1977	3,272	268.51	203	119	84	5,761	484
1978	3,248	210.44	257	143	114	5,861	668
1979	3,248	219.14	247	160	87	6,020	524
1980	3,622	226.74	266	167	99	6,054	599
1981	3,812	220.54	288	158	130	6,034	784
1982	4,124	249.05	276	165	111	6,035	670
1983	4,135	237.52	290	147	143	6,059	866

Unit: #1 -- US$/m. ton; (f) yen/60kg, (h) Jap.¥ = US$1, #2 -- US$/m.ton, #3 -- US$/m. ton; #4 -- thousand m. tons, #5 -- million US dollars.

respectively. Then, after 1981, it rose, and more or less fluctuated; $784 million in 1981, $670 million in 1982, and $866 million in 1983. The total amount of consumer costs during these twenty-four years was 6,527 million dollars.

Third, with respect to Japanese beef producer benefits (Table 18), in 1965, the domestic producer price (equilibrium price at the central livestock market), world price, and domestic production were $850, $540 per metric ton, and 217 thousand metric tons, respectively. During the following six years, the producer price increased gradually year by year (except for 1969) but remained below $2,000 per metric ton. World prices also climbed steadily to $659 per metric ton in 1969, and then to $744 in 1971. Therefore, between 1966 and 1971, the price difference became more than three times as great as in 1960. The price difference changed to (+)31% in 1966, (+)58% in 1967, (+)15% in 1968, (-)11% in 1969, (+)29% in 1970, and (+)18% in 1971, respectively, compared to each previous year. In 1966, domestic production fell by 29% compared to 1965, but after 1967, it also increased up to 296 thousand metric tons in 1971. As a result of the above changes, producer benefits ascended drastically from $63 million in 1966 to $290 million in 1971, i.e., a 460% increase during this period. Between 1972 and 1979, the producer price climbed rapidly to $6,174 in 1979, which was caused by both the substantial appreciation of the yen and the general increase in livestock market prices. Especially in 1973, the producer price jumped by 61% compared to 1972, although in the following year it dropped down to the previous trend's level. However, after 1972, the world price fluctuated drastically. Noteworthy changes occurred every other year: a 46% increase in 1973, a 44% decrease in 1975, a 9% decrease in 1977, and a 215% increase in 1979, compared to each previous year. The price difference steadily increased until 1978 and jumped greatly in 1973. In 1979 and 1980, the price difference dropped again down to

TABLE 18

Japanese Beef Producer Benefits From Agricultural Protection

Year	Domestic (a)	Producer (A) Exchange Rate (b)	Price $A = a \times 1000 \times \frac{1}{b}$ #1	World Price (B) #2	Price Difference (C=A-B) #3	Domestic Production (D) #4	Producer Benefits (E=CxD) #5
1960							
1961							
1962							
1963							
1964							
1965	306	360.00	850	540	310	217	67
1966	363	360.00	1,008	603	405	155	63
1967	457	360.00	1,269	631	638	158	101
1968	497	360.00	1,381	651	730	176	128
1969	470	360.00	1,306	659	647	237	153
1970	553	360.00	1,536	709	827	278	230
1971	602	349.33	1,723	744	979	296	290
1972	642	303.17	2,118	825	1,293	317	410
1973	928	271.70	3,416	1,201	2,215	245	543
1974	746	292.08	2,554	778	1,776	321	570
1975	1,106	296.79	3,727	437	3,290	353	1,161
1976	1,200	296.55	4,047	621	3,426	298	1,021
1977	1,158	268.51	4,313	567	3,746	361	1,352
1978	1,183	210.44	5,622	776	4,846	403	1,953
1979	1,353	219.14	6,174	1,665	4,509	402	1,813
1980	1,212	226.74	5,345	1,685	3,660	418	1,530
1981	1,133	220.54	5,137	1,418	3,719	471	1,752
1982	1,183	249.05	4,750	1,170	3,580	481	1,722

Unit: #1 -- US$/m.ton; (a) yen/kg, (b) Jap.¥ - US$1, #2 -- US$/m.ton, #3 -- US$/m.ton, #4 -- thousand m. tons, #5 -- million US dollars.

$3,660 per metric ton. In terms of domestic production, except for 1973 and 1976, there was a gradual rise from 317 thousand metric tons in 1972 up to over 400 thousand after 1978. Hence, producer benefits also climbed from $410 million in 1972 up to $1,161 million in 1975, $1,953 million in 1978, and $1,813 million in 1979; this meant a 283% increase in 1975, a 476% increase in 1978, and a 442% increase in 1979, compared to 1972. In 1980, domestic price, world price, and domestic production were $5,345, $1,685 per metric ton, and 418 thousand metric tons. Consequently, producer benefits amounted to 1,530 million dollars. In 1981 and 1982, the domestic price dropped below the 1980 level but it was sustained at the $5,000 level in 1981 (because of the strong yen). It then turned downward to the $4,000 level in 1982. The world price also fell by 16% in 1981 and by 31% in 1982, respectively, compared to 1980. Therefore, the price difference rose in 1981 and dropped in 1982 in comparison with 1980. Producer benefits increased by 15% in 1981 and by 13% in 1982 compared to 1980 since domestic production continued to increase. The total amount of producer benefits during these eighteen years was 14,859 million dollars.

Fourth, with respect to Japanese beef consumer costs (Table 19), the domestic consumer price (equilibrium price at the central livestock market) and world price changed in the same direction as producer benefits. Therefore, we will primarily examine the changes in domestic consumption, and then consumer costs during the period examined. In 1965, domestic consumption and consumer costs were at 228 thousand metric tons and 71 million dollars, respectively. In 1966, domestic consuumption fell by 26% compared to the previous year down to 168 thousand metric tons. From 1966 until 1968, it increased again but remained below 200 thousand metric tons. In 1969, consumption jumped by 35% compared

TABLE 19

Japanese Beef Consumer Costs From Agricultural Protection

Year	Domestic (F)	Consumer	Price	World Price	Price Difference	Domestic Consumption	Consumer Costs
	(f)	Exchange Rate (h)	$F=f \times 1000 \times \frac{1}{h}$	(H)	(I=F-H)	(J)	(K=I×J)
Unit			#1	#2	#3	#4	#5
1960							
1961							
1962							
1963							
1964							
1965	306	360.00	850	540	310	228	71
1966	363	360.00	1,008	603	405	168	68
1967	457	360.00	1,269	631	638	172	110
1968	497	360.00	1,381	651	730	190	139
1969	470	360.00	1,306	659	647	256	166
1970	553	360.00	1,536	709	827	301	249
1971	602	349.33	1,723	744	979	338	331
1972	642	303.17	2,118	825	1,293	375	485
1973	928	271.70	3,416	1,201	2,215	372	824
1974	746	292.08	2,554	778	1,776	375	666
1975	1,106	296.79	3,727	437	3,290	387	1,273
1976	1,200	296.55	4,047	621	3,426	399	1,367
1977	1,158	268.51	4,313	567	3,746	440	1,648
1978	1,183	210.44	5,622	776	4,846	507	2,457
1979	1,353	219.14	6,174	1,665	4,509	521	2,349
1980	1,212	226.74	5,345	1,685	3,660	536	1,962
1981	1,133	220.54	5,137	1,418	3,719	579	2,153
1982	1,183	249.05	4,750	1,170	3,580	604	2,162

Unit: #1 -- US$/m.ton; (f) yen/kg, (h) Jap. ¥ = US$1, #2 -- US$/m.ton, #3 -- US$/m.ton, #4 -- thousand m. tons, #5 -- million US dollars.

49

to 1968, and it reached the 300 thousand metric ton level in 1970. An increase of more thatn 10% occurred in the following year of 1971. However, during the next three years, it stagnated around the level of 370 thousand tons. After 1975, consumption began to steadily increase again. Relatively large increases compared to each previous year occurred in 1977 (10%) and 1978 (15%).They exceeded the 500 thousand metric ton level in 1978 and finally reached the 600 thousand metric ton level in 1982. As a result of changes in other factors, consumer costs changed greatly during these eighteen years. In 1965 and 1966, they remained around 70 million dollars. In 1967, they jumped by 62% compared to 1966 and reached the 100 million dollar level. Consumer costs of the 100 million dollars continued until 1969, and then in 1970, they jumped to over 200 million dollars (a 50% rise compared to 1969). This trend continued in 1971 and 1972, where there was a 33% and 47% rise compared to each previous year. Then in 1973, the rising rate of consumer costs was amplified drastically, there was a 70% increase compared to 1972. But in 1974 they dropped by 19% compared to 1973. After the decrease of 1974, they jumped again (by 91% compared to 1974) and reached $1,273 million in 1975. During the following three years, this number increased steadily and drastically; there were rises of 7% in 1976, 21% in 1977, and 49% in 1978, respectively, compared to each previous year. They dropped again to $2,349 million in 1979 and to $1,962 million in 1980. In the final two years, costs increased slightly and stayed at 2,000 million dollars. The total amount of consumer costs during these eighteen years was 18,480 million dollars.

Net costs from agricultural price support programs in the economy, which are calculated by subtracting producer benefits from consumer costs, are described in Table 20 and Figure 7-8. The total amounts of the net cost of wheat and beef protection are 3,248 and 3,621 million dollars, respectively, during the

50

last eighteen to twenty-four years. Prior to 1968, the net cost of the wheat program fluctuated between the 40 and 80 million dollars. However, since 1969 to 1971, it has jumped above $100 million. Then, after 1973, it drastically dropped until 1975. But in 1976, it ascended drastically and rose to 339 million dollars. This situation remained until 1980, with the net cost of that year being 238 million dollars. During the last three years, net costs fluctuated between the 200 and 400 million dollars.

In terms of beef, net costs stayed below 10 million dollars between 1965 and 1967. During the following three years, they fluctuated at the ten million dollars level. They increased gradually up to 41 million in 1971, 75 million in 1972, and drastically up to 281 million dollars in 1973. However, they dropped intensively in 1974, down to 96 million dollars. Then in 1975, they climbed again to 112 million dollars, and since 1976, have fluctuated between the 200 and 500 million dollars. In 1980, the net cost was 432 million dollars and has remained almost constant until 1982.

TABLE 20

Net Costs from Agricultural Protectionist
Programs of Wheat and Beef in Japan

Year	Wheat	Beef	Year	Wheat	Beef
1960	76		1972	21	75
1961	52		1973	(-)164	281
1962	46		1974	(-)140	96
1963	80		1975	(-) 59	112
1964	68		1976	339	346
1965	62	4	1977	373	296
1966	58	5	1978	439	504
1967	72	9	1979	202	536
1968	60	11	1980	238	432
1969	105	13	1981	387	401
1970	109	19	1982	244	440
1971	121	41	1983	427	

Figure 7

Changes of the Japanese Heat Producer Benefit and Consumer Cost
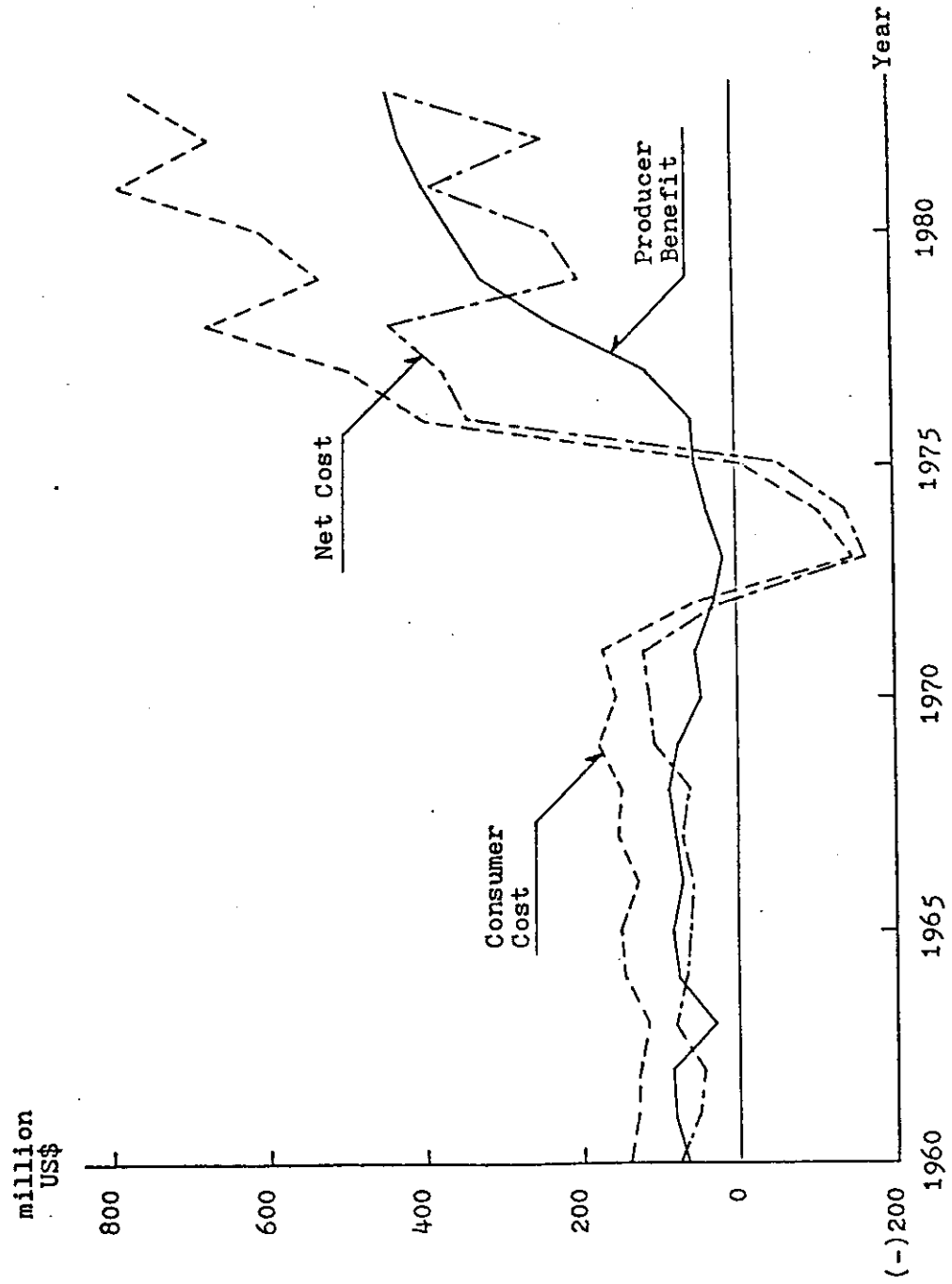
CHAPTER VI

SUMMARY AND POLICY IMPLICATIONS

So far, we have examined the two main factors related to the Japanese wheat and beef markets; one is the foreign exchange effects on these commodity imports by the change in the international monetary system, the other is the producer benefits and consumer costs from the wheat and beef protectionist programs after 1960 or 1965.

The data examined show that the simple self-sufficient ratios (SSR)[9] of Japan in 1960 were 38.6% for wheat and 95.9% for beef, and in 1982, were 12.3% for wheat and 79.6% for beef, respectively. Drastic changes in the SSR may be observed during these twenty-three years, especially, with regard to the wheat situation. The Japanese SSR of wheat between 1930 and 1945 were maintained above 100% (Ogura, p. 696), but in 1980, dropped to below 10%. However, the Japanese goverment has tried to raise the level of the SSR. The reasons are inferred as follows: First, especially, after the "Food Shock" in the 1970s, it occurred to the Japanese that food production in their own country could give the nation a kind of security against starvation and the collapse of their economy. Japan suffered a great deal of damage from the first oil shock and food shock, that is damage resulting from a high dependence upon imports from other countries. Second, as seen in other industrial countries, there has been a kind of political adjustment in Japan as well. Actually, the farmers, [10] who are faced

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[9] The simple SSR is calculated by the total domestic production in quantum ÷ the total domestic consumption in quantum.

[10] The agricultural population in 1983 was 10,717 thousand of persons, which amounted to 9.0% of the total Japanese population (Abstract of Statistics on Agriculture, Forestry and Fisheries, 1984, p. 91).

with misgivings about opening up their own agricultural market to other countries, can easily exert great pressure on government decision-making. As discussed in Chapter I, the rapid increase of GNP after the 1950s made it impossible for concerns to resist the governmental protectionist programs. Between 1955 and 1982, the real GNP increased by 712.8%, and the Engel's coefficient reduced from 48.7 in 1955 to 28.2 in 1982 [11] (Japan Statistical Yearbook, 1955/56 and 1983, p. 375 and p. 452). These numbers explicitly show that the food expenditure situation of Japanese consumers has been continually improving since the 1950s, even though strong agricultural protectionist programs have been adopted by the government since that time.

For Japan, another benefit has been brought about by the change in the international monetary system since the beginning of the 1970s. As examined in Chapter III, by the shift in the foreign exchange system from fixed to the floating exchange rates, Japan has had an estimated gain amounting to 1,166,355 million yens (1,026,615 million for wheat, 139,740 million for beef) from these two commodity imports until 1982-83. In the wheat market mechanism of Japan, when the world price decreased relatively, the government could have directly taken the above 1,026,615 million yens as its revenue in wheat imports between 1971 and 1983. However, in fact, the government could have purchased domestic wheat at higher prices and sold at lower prices with the assumed gain from the appreciated foreign exchange rates. In this case, indirectly, the producer and consumer could have also received the gains.

In the beef market mechanism in Japan, the governmental corporation (LIPC) could be assumed to have directly saved 139,740 million yens in the case of

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[11] The retail food price increased by 503.2% between 1955 and 1982 (Japan Statistical Yearbook, 1983, p. 404).

beef procurement in the world market. However, in this case, it is not necessarily assured that this assumed amount of savings could have indirectly given consumers much of a gain because imported beef in Japan has been functioning as a sort of buffer stock. In short, the share of this gain would depend upon the criteria for the determination of target prices. But in terms of producers, it could be implicit that they have received some benefits from the LIPC as a sort of indirect subsidiary for their production promotion. Accordingly, what is calculated in Chapter III is the total monetary benefits from the adjusted foreign exchange rates through Japanese wheat and beef imports.

In Chapter V, we examined the social welfare effects of the Japanese wheat and beef protectionist programs during the last eighteen to twenty-four years. The total net costs for the economy calculated by subtracting producer benefits from consumer costs are 3,216 and 3,621 million dollars from the wheat and beef protectionist programs, respectively. The "net costs" above mean that, as a whole, the amount of consumer costs of wheat and beef in Japan have been greater than those of producer benefits for these two commodities from the protectionist programs. The average prices per thousand metric ton of domestic consumption during the last eighteen to twenty-four years calculated from the numbers of column (F) in Table 17 and 19 were 150.08 and 3126.44 dollars (in the current terms) for wheat and beef, respectively, and those of the world were 103.33 and 871.11 dollars. The Japanese GNP in 1960 was $119,022 million dollars in the constant 1975 prices (World Table, 1984, p. 239), therefore, the amount of producer benefits from wheat ($3,311 million) and the consumer costs of wheat ($6,527 million) were 2.8% and 5.5% of GNP, respectively, and the amounts of these from the beef program were 12.5% and 15.5% of GNP, respectively, although the amounts for producer benefits and consumer costs are calculated in current terms. Even though, in the constant 1975 prices, the Japanese GNP after

Figure 8

Changes of the Japanese Beef Producer Benefit and Consumer Cost
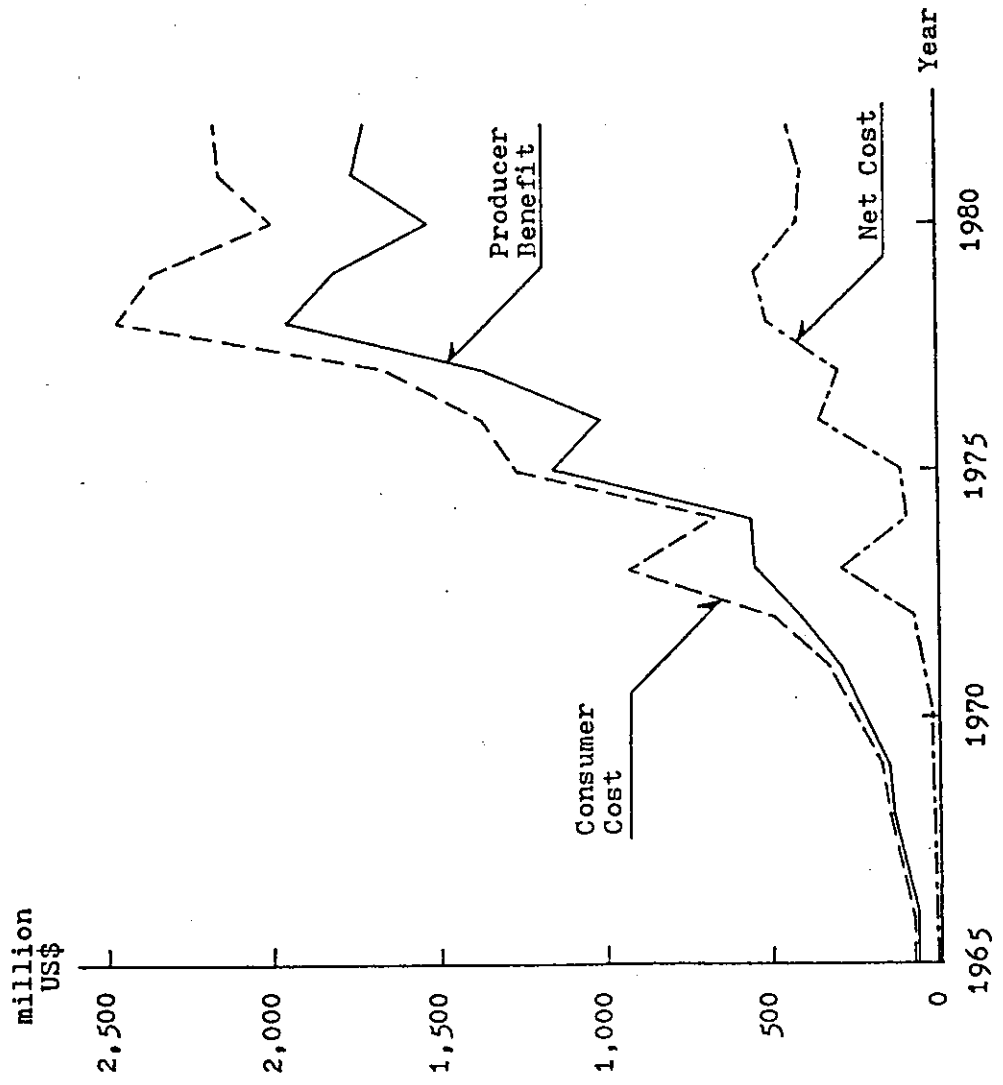
1980 quadrupled compared to 1960 (<u>Japan Statistical Yearbook</u>, 1983, p. 532), these monetary numbers are not small considering we are examining only two agricultural commodities.

Furthermore, as shown in Table 16-19, Japanese wheat producers and beef producers could get prices per metric ton of 4.5 and 4.1 times higher, respectively, than the world prices in 1982. At the same time, wheat and beef consumers had to pay unit prices of 1.7 and 4.1 times higher, respectively, than the world price in that year. Even if the logic of the "higher SSR for national security" were justified by the Japanese people, there had to be budget limitations in their households for expenditures on highly priced foods and payment for taxes.

Today, as mentioned repeatedly, agricultural protectionist policies are very common among industrial countries. Yet, on the other hand, we have come to realize the classical free trade theory as described by Paul A. Samuelson (pp. 15-16):

> "Protectionism, like war, is a game in actuality that is not worth the candle. Just as the theoretical gains that a nation might sometimes gain from war are so tenuous and small relative to the losses that war imposes on all or most, so too the theoretical gains from perfectly gauged protection are so uncertain and limited as to persuade many a rational person that in practice free trade is the best policy not just for all but also for each."

Actually, Japan has reaped a great deal of benefits from "free trade" in the field of industrial exporting. However, the same cannot be said for Japanese imports.

The only sensible policy proposal for today's Japanese agriculture might be to proceed with transforming its production structure rather than through a price support policy. More than twenty years have passed since this agricultural structural policy began to be emphasized in Japan. Nevertheless, the shortsighted Japanese agricultural authorities could never have done so boldly. In a sense, today's Japan, not only consumers but also producers, may be getting billed for

previously misled agricultural programs. However, as explained by Yujiro Hayami (p. 24), further possibilities still exist for the Japanese agriculture to survive. If the Japanese agricultural policy could successfully accomplish what the Dutch or Danish farm style combination of stockraising and gardening has done, Japan might find a new agricultural system, that is strong and competitive in the world market. [12] To incorporate the above reform into Japanese agriculture, for the long, revised policies must be adopted immediately.

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[12] Hayami emphasizes that two conditions must be carried out in the process of structural policies; one is the institutional adjustment concerning the transference of farm land, the other is the alteration of Agricultural Protectionism and creation of new market conditions in which the part-time farmers can not exist (p. 24).

APPENDIX

TABLE A

Purchasing Power Parity of the Japanese
Yen to the U.S. Dollar

Year b	P$ (A) *1	P¥ (B)	(A) *2	PPP Index (B)	Nominal Exchange Rate (A)	(B)	Value	Index(A)	Index (B)
1960	100		100		100		360.00	100	
1961	100		101		99		360.00	100	
1962	100		99		101		360.00	100	
1963	100		101		99		360.00	100	
1964	100		101		99		360.00	100	
1965	102		102		100		360.00	100	
1966	106		104		102		360.00	100	
1967	107		106		101		360.00	100	
1968	110		106		104		360.00	100	
1969	113		109		104		360.00	100	
1970	118		113		104		360.00	100	
1971	121		112		107		349.33	103	
1972	127		113		111		303.17	119	
1973	145	100	131	100	110	100	271.70	132	100
1974	172	119	172	131	100	91	191.08	123	93
1975	186	128	177	135	105	95	296.79	121	92
1976	196	135	187	143	105	94	296.55	121	92
1977	207	143	191	146	108	98	268.51	134	101
1978	222	153	185	141	117	109	210.44	171	129
1979	252	174	199	152	121	114	219.14	164	124
1980	287	198	235	179	118	111	226.74	159	120
1981	287	198	235	179	118	111	226.74	159	120
1982	319	220	242	185	132	120	249.05	145	109
1983	322	222	237	181	136	124	235.52	152	114

P ¥ Japan = Wholesale Price Index of Japan: 1960 = 100

P $ US = Wholesale Price Index of U.S.A.: 1960 = 100

P.P.P. = P$/P¥ (Kindleberger and Lindert, pp. 324-326).

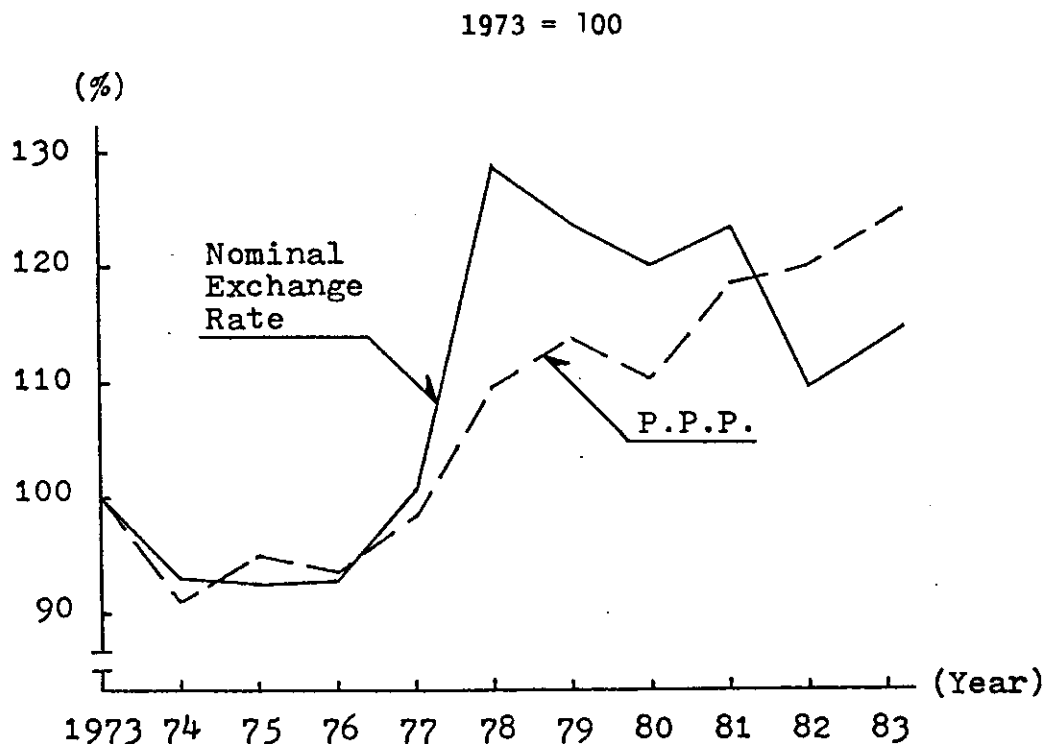Base Years: (A) 1960 and (B) 1973.

Note: #1. 1960-76 -- General, 1977-83 -- Domestic Supply.
     #2. 1960-76 -- General, 1977-83 -- Domestic Supply.

Source: Statistical Yearbook, United Nations, 1967, 1977, 1982, and 1984.

FIGURE A

Relationship Between P.P.P. and Nominal Exchange
Rate of the Yen to the U.S. Dollar

1973 = 100

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