

# STRUCTURE OF FOREIGN TRADE

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THIS PAPER OUTLINES the major characteristics of the structure of Japanese exports and imports in Sections I and III, and analyzes recent changes in exports and imports in Sections II and IV. Problems relating to the geographical distribution of Japan's export markets and import sources are reviewed in Section V. Finally, in Section VI, projections of the future structure of Japanese exports and imports are presented, taking into consideration probable domestic and international developments, as well as present and potential trade problems.

## I. FEATURES OF THE EXPORT STRUCTURE

A comparison of the exports of Japan, the United States, EC, and EFTA reveals that the Japanese export structure places relatively great importance on the products of manufacturing industries. As Table I shows, the major part of Japan's exports, as large as 94 per cent, is composed of chemicals, machinery, and other manufactured products, as compared with 81 per cent of EC and EFTA exports and 70 per cent of United States exports in these categories. Japan's scarcity of land and natural resources, and relative abundance in labor force, capital, and technology, explains this larger proportion of manufactured products.

Changes in the export structure during the past fifteen years are traced in Table II. Products of the heavy and chemical industries have shown especially sharp increases. In 1955, 54 per cent of the total exports was accounted for by

TABLE I  
COMPOSITION OF EXPORTS BY COMMODITY GROUP  
(Japan, U.S., EC, EFTA: 1971)

	Japan	U.S.	EC	EFTA
Total trade	100.0	100.0	100.0	100.0
Food, beverages, and tobacco	2.8	11.7	10.1	8.4
Crude materials and local fuels; oils and fats	1.9	11.4	3.8	7.6
Mineral fuels and related materials	0.3	3.4	4.5	1.8
Chemicals	6.2	8.8	10.2	9.2
Machinery and transport equipment	44.1	44.7	36.0	35.7
Other manufactured goods	43.9	16.5	34.3	35.9
Miscellaneous transactions	0.8	3.5	1.1	1.4

Source: [9, April 1973].

TABLE II  
JAPANESE EXPORTS BY COMMODITY GROUP

	(\$ million)			
	1955	1960	1965	1970
Foodstuffs	133( 6.6)	256( 6.6)	344( 4.1)	648( 3.4)
Raw materials and fuels	39( 1.9)	66( 1.6)	127( 1.5)	199( 1.0)
Light industry products	1,078( 53.5)	1,959( 48.4)	2,741( 31.9)	4,335( 22.4)
Heavy and chemical industry products	761( 38.0)	1,756( 43.4)	5,240( 62.5)	13,982( 72.4)
<b>Total</b>	<b>2,011(100.0)</b>	<b>4,055(100.0)</b>	<b>8,452(100.0)</b>	<b>19,318(100.0)</b>

Source: [7, 1971].

Note: Figures in parentheses show percentages of the total.

products of light industries, and 38 per cent by products of heavy and chemical industries. In contrast, by 1970 the proportion of light industry exports has been reduced to a mere 22 per cent of the total, while exports of heavy and chemical industry products rose to 72 per cent. Among heavy and chemical products, machinery registered an outstanding increase. In 1955, the chief item of Japanese exports was cotton fabrics, but the most important item in 1970 was iron and steel, followed by automobiles, ships, and radio and television sets. The

TABLE  
COMPOSITION OF JAPANESE EXPORTS AND

	Export Ratio <sup>a</sup>				
	1955	1960	1965	1969	1980
All products <sup>d</sup>	10.0	8.9	9.9	9.4	9.2
Agriculture, forestry, and fishery; foodstuffs <sup>e</sup>	3.9	4.7	3.3	3.2	2.1
Textiles	24.1	24.8	21.4	20.7	13.4
Paper, pulp	2.1	1.4	2.3	2.7	1.6
Chemicals	4.4	4.0	6.8	7.2	8.5
Petroleum, coal products	8.9	5.6	4.7	3.6	1.4
Ceramics	12.7	12.4	9.8	8.0	5.0
Primary metals	12.3	6.2	12.9	10.5	7.4
Metal products	9.7	8.4	7.8	6.8	5.9
General machinery	10.7	6.3	9.7	9.7	13.8
Electrical machinery	4.2	7.3	13.3	14.0	14.7
Transport machinery	10.2	11.4	15.2	14.6	16.0
Precision machinery	20.1	19.1	21.9	23.8	23.1
Other machinery	6.9	8.7	6.0	4.9	2.8
Construction					

Source: [4].

<sup>a</sup> Value of exports/value of domestic production.

<sup>b</sup> Value of imports of fabricated goods/(value of domestic production+value of imports of fabricated goods).

<sup>c</sup> Value of imports of raw materials/value of domestic production.

rapid tempo of change in the composition of exports is the remarkable feature of Japan's export structure.

## II. REASONS FOR CHANGES IN THE EXPORT STRUCTURE

What, then, caused these changes? The causes may be summarized as follows:

(1) Economic growth and changes in domestic markets: Behind the changes in the export structure has been rapid economic growth. In the fifteen years between 1955 and 1970, Japan's annual economic growth averaged approximately 10 per cent in real terms and 15 per cent in nominal terms. As a result of this economic growth, the structure of domestic industry has undergone a change, with the machinery industry assuming increasing importance (see Appendix Table II). This is due to growth of demand for machinery and durable consumer goods associated with increased domestic investment in plant and equipment as well as increased consumer incomes during this period. Such an expansion in the domestic market has been a contributive factor in improving the competitive position of Japanese machinery in the international market through realization of economies of scale. As a result, the ratios of exports to domestic production in the electrical and transport machinery industries have increased sharply, as shown in Table III. Export ratios of primary metals and general machinery do not

### III IMPORTS BY INDUSTRY GROUP

Import Ratio—Fabricated Goods <sup>b</sup>					Import Ratio—Raw Materials <sup>c</sup>				
1955	1960	1965	1969	1980	1955	1960	1965	1969	1980
4.5	3.2	3.7	3.6	6.1	7.7	6.5	5.7	5.0	4.8
6.0	4.0	6.1	5.7	8.1					
0.4	0.4	0.8	1.8	12.5	18.9	15.5	11.5	8.5	4.3
0.1	0.2	0.3	0.8	2.9	2.4	1.8	2.7	2.6	2.8
5.0	5.9	4.8	5.3	7.5					
					1.4	1.6	1.9	1.8	2.1
0.9	0.5	1.7	2.2	4.5	15.4	6.7	4.9	4.1	2.9
1.3	2.8	3.4	4.9	8.7	7.0	10.1	9.3	8.8	7.4
0.2	0.5	0.6	0.6	3.0					
9.2	7.4	6.5	5.8	8.4					
2.3	0.9	1.7	1.8	2.9					
1.9	1.7	1.9	1.3	3.6					
5.6	6.0	3.8	5.0	8.7					
0.3	0.4	0.8	1.0	3.2					
					1.9	2.0	2.7	3.7	4.5

<sup>a</sup> Value of production represents output of all manufacturing and processing industries. Values of exports and imports exclude nominal changes due to exchange rate realignment.

<sup>c</sup> Value of domestic production excludes primary production in agriculture, forestry, and fishery.

show any appreciable increases because of substantial demands for them in domestic markets, but the absolute increases in exports of these items are large. Japan's exports, as shown in Table IV, increased from \$2 billion to \$19 billion between 1955 and 1970, representing growth at a rate nearly double the rate of expansion of world trade as a whole. However, as the expansion of domestic markets during this period was likewise large, the degree of export dependency (exports/gross national product) registered only a slight increase from 8.1 per cent to 9.9 per cent between 1955 and 1970. To be sure, the export ratio of Japan in 1970 was still very low in relation to those of European countries. One might possibly assume that the high rate of increase in Japan's exports, as compared with the growth rate of world trade, indicates leadership of exports in Japanese economic growth. This assumption is not justifiable. Rather, the basis for the expansion of Japanese trade has been the development of domestic markets.

(2) Shifts in international wage differentials: Another important cause for the change in the export structure is the high rate of wage increases which has accompanied the rapid economic growth in Japan. As shown in Table V, wages

TABLE IV  
PRINCIPAL INDICATORS OF JAPANESE EXPORTS

	Value of Exports (\$ Million)	Rate of Growth	World Trade Elasticity	GNP Elasticity	Dependence on Exports	Japan's Share of World Total (%)
1955	2,010	—	—	—	8.13	2.1
1960	4,050	15.0	2.34	1.18	9.02	3.2
1965	8,450	15.8	2.03	1.09	9.57	4.5
1970	19,320	18.0	1.67	1.04	9.85	6.2
1980 (I) <sup>a</sup>	92,184	16.9	1.53	0.98	9.63	10.9
1980 (II) <sup>b</sup>	71,699	14.0	1.40	0.98	9.63	9.1

Source: [4].

<sup>a</sup> In dollars at exchange rate of \$1=¥280.

<sup>b</sup> In dollars at exchange rate of \$1=¥360.

TABLE V  
WAGE DIFFERENTIALS AMONG MAJOR COUNTRIES

	(U.S.A.=100)			
	1960	1970	1980(I)	1980(II)
Japan	13	31	64	82
U.K.	34	36	38	40
France	19	24	29	32
Korea	—	5	6	
Philippines	15	8	8	
India	5	4	3	

Source: [2].

Note: 1980(I) at the exchange rates as of May 1971; 1980(II) at a prospective exchange rates in 1980.

in Japan in 1960 averaged 13 per cent, and in India 5 per cent, of wages in the United States. In 1970, the level of wages in Japan had increased to 31 per cent, while Indian wages were only 4 per cent, of the United States level. The wage gap between Japan and other advanced countries has decreased, while Japanese wages have increased relative to wages in less developed countries. Consequently, the international competitiveness of textiles, sundry goods, and other labor-intensive products of Japan has been weakened, and the importance of these products in total exports has been reduced.

(3) Improvement of the technological level: Advances in the nation's technological level and capital accumulation have contributed to the increased weight of heavy and chemical industry products in total exports. As Table VI shows, labor productivity in Japan about doubled between 1961 and 1969, the highest rate of increase in the world. As a result, although the rate of increase in wages was likewise high, the increase in labor cost per unit product in Japan remained comparatively low. This, in turn, contributed to strengthening of the international competitiveness of Japanese exports in general. The rate of increase in labor productivity was especially high in products of the heavy and chemical industries. As shown in Table VII, the labor productivity in the United States in 1963 was 2.2 times as high as that in Japan for the automobile industry, 1.8 times for the iron and steel industry, and 1.6 times as high for the television manufacturing industry. In 1970, by contrast, the corresponding figures were 1.0, 0.9, and 1.1 for these industries, respectively, indicating that differences in labor productivity between Japan and the United States had been almost eliminated by that year, at least for these products. Table VIII gives an international comparison of the proportion of technology-intensive products in total exports. In 1969, the proportion of such products in Japan's total exports reached 19 per cent, exceeding that of EC.

(4) Shortages of land, water, and natural resources: Because of Japan's very limited territory and increasing shortage of natural resources, the production of land-intensive agricultural products and semifinished products based on natural resources has become relatively unfavorable in international competition. At the same time, the rapid expansion in scale of production and improvement in tech-

TABLE VI  
LABOR PRODUCTIVITY, WAGE, AND LABOR COST OF PRINCIPAL COUNTRIES  
(1963=100)

	Labor Productivity		Wage		Labor Cost	
	1961	1969	1961	1969	1961	1969
Japan	92	199	82	204	89	103
U.S.A.	92	117	94	130	102	111
U.K.	94	126	92	151	98	120
West Germany	95	144	84	153	88	106
France	92	161	85	159	92	99
Italy	89	137	74	146	83	107

Source: [4].

TABLE VII  
JAPAN AND U.S. LABOR PRODUCTIVITY BY INDUSTRY

Industry	Representative Commodity	Comparative Productivity of U.S. Industries (Japan=100)		Annual Growth of Productivity (%) 1963-67	
		1963	1970	Japan	U.S.A.
All industries		290 <sup>a</sup>	147	10.1	3.2
Foodstuff	Wheat flour	252	238	2.6	1.8
Textile	Cotton yarn	156	110	7.8	4.5
Nonmetallic mineral	Cement	127 <sup>b</sup>	80	9.4	2.4
Chemical	Plastics	286	131	14.7	6.7
Iron and steel	Iron and steel	178 <sup>b</sup>	87	13.9	2.8
Nonferrous metal	Aluminium ingot	322	185	11.3	2.9
Metal products	Tin cans	377	205	12.7	3.3
Electrical machinery	TV sets	163	113	12.8	7.1
Transport machinery	Automobiles	219	104	14.8	3.5

Sources: Comparative productivity for 1963 is based on Japan Economic Research Center, *Quarterly Forecast*, No. 18 (January 1972). Productivity growth figures for the United States and Japan are respectively based on the figures in U.S. Bureau of Census, *Statistical Abstract of the United States*, and Japan Productivity Center, *Quarterly Journal of Productivity Statistics*.

<sup>a</sup> Average of all commodities.

<sup>b</sup> As of 1959.

TABLE VIII  
TECHNOLOGY-INTENSIVE EXPORTS OF JAPAN, U.S., AND EC

	Share of Technology-intensive Exports to Total Exports		Growth Rate 1964-69 (%)
	1964	1969	
Japan	15.5	19.1	24.5
Chemicals	5.8	6.3	21.4
Electrical machinery	9.6	12.5	25.7
Aircraft	0.1	0.3	55.0
U.S.A.	18.5	22.8	11.7
Chemicals	9.0	9.1	7.3
Electrical machinery	6.3	7.2	10.1
Aircraft	3.2	6.5	17.2
EC	16.2	18.5	13.2
Chemicals	9.0	10.7	14.3
Electrical machinery	6.3	7.0	12.4
Aircraft	0.9	0.8	7.5

Source: [8].

nology has improved the comparative advantage of technology and capital intensive products. These various changes are reflected in the remarkable changes in the percentage composition of Japanese exports, as seen in Table IX. If all export items are classified into labor-intensive products (textiles, foodstuffs, and other light industrial and metal products), resource-intensive products (industrial materials and fuels, nonmetallic mineral products, ferrous and nonferrous metals), and technology-intensive products (chemicals and machinery), labor-intensive products accounted for 59 per cent of total exports in 1955, resource-intensive products 22 per cent, and technology-intensive products 19 per cent. However, in 1970, labor-intensive products accounted for 28 per cent of total exports, resource-intensive products 19 per cent, and technology-intensive products 53 per cent. The proportion of exports in total production between 1955 and 1969 declined from 10.5 per cent to 7 per cent for labor-intensive products and from 12 per cent to 9 per cent for resource-intensive products, while it rose from 7 per cent to 12 per cent for technology-intensive products.

TABLE IX  
JAPANESE EXPORT INDICATORS BY FACTOR-INTENSITY

	Labor-intensive	Resource-intensive	Technology-intensive	Total (%)
Percentage of total exports				
1955	58.9	22.3	18.6	100.0
1960	55.1	14.9	29.6	100.0
1965	36.5	21.3	41.6	100.0
1970	27.7	18.9	52.7	100.0
1980	15.3	11.5	73.2	100.0
Growth rate				
1955-60	6.4	6.8	26.1	15.0
1960-65	7.1	23.7	24.1	15.8
1965-70	11.3	15.2	23.7	18.0
1970-80	10.2	11.2	20.8	16.9
GNP elasticity				
1955-60	0.50	0.54	2.06	1.18
1960-65	0.49	1.63	1.66	1.09
1965-70	0.65	0.88	1.37	1.04
1970-80	0.59	0.65	1.21	0.98
Export ratio*				
1955	10.5	12.0	7.3	10.0
1960	10.9	6.7	7.5	8.9
1965	8.1	10.8	11.6	9.9
1969	7.0	8.7	12.1	9.4
1980	4.4	6.4	14.0	9.2

Source: [4].

\* Value of total exports/value of domestic production.

## III. FEATURES OF THE IMPORT STRUCTURE

The import structure of Japan is characterized by relatively large imports of raw materials and fuels, and relatively small imports of processed goods. As Table X shows, raw materials accounted for 33 per cent of the total imports in 1969, while mineral fuels accounted for 20 per cent, with these two types of imports combining to form 53 per cent of the total. Imports of finished goods accounted for 31 per cent. In contrast, U.S. imports of raw materials and mineral fuels constituted only 18 per cent of total imports. Even Italy, whose import structure is closest to Japan's among all the industrial countries imported only 34 per cent raw materials and mineral fuels and 49 per cent processed goods. These figures also indicate that the major components of both exports and imports of industrial countries are manufactured goods traded to each other. The Japanese trade structure is rather exceptional, embodying a vertical division of labor to import raw materials and to export manufactured goods. This uncommon trade structure is due primarily to Japan's meager endowment of natural resources. Other factors which favor this import structure include, *inter alia*: industrial products are profitably produced at home taking advantage of large scale production to supply the extensive domestic markets based on the large population; demands for high-grade consumer good imports from Western countries have not been very strong due to the generally low level of personal income; labor-intensive manufactured goods of developing countries have not been available for export to Japan in adequate or sufficient quality; and, there have been regulatory controls enforced for the purpose of protecting domestic Japanese industries, such as import controls and high tariff rates on industrial products.

However, a review of the development of the import composition in time series reveals noticeable changes which indicate that a tendency toward a horizontal division of labor is now taking place progressively in Japan's import structure too. This tendency is shown by gradually increasing imports of machinery and high-grade consumer goods from Western countries, and of textiles

TABLE X  
COMPOSITION OF IMPORTS OF MAJOR COUNTRIES

	1960				1969			
	Food and Beverage	Raw Materials	Mineral Fuels	Processed Goods	Food and Beverage	Raw Materials	Mineral Fuels	Processed Goods
Japan	13.6	49.5	14.1	22.7	14.2	33.0	20.3	31.4
U.S.A.	22.7	19.2	10.5	47.7	14.1	9.8	8.0	66.2
U.K.	34.0	23.8	10.6	31.6	23.3	15.1	10.9	50.7
France	20.3	24.6	17.0	33.2	13.3	12.0	11.4	63.3
West Germany	22.7	24.4	7.8	45.2	17.4	14.5	8.9	59.2
Italy	15.8	30.4	14.1	39.8	17.8	18.9	14.6	48.7

Sources: Figures for Japan and U.S.A. are from [9], and for other countries, from [8].



and sundry goods from developing countries. As Table XI of import values by commodity groups shows, raw materials accounted for \$6.7 billion or 35 per cent of total imports in 1970, and fuels \$3.9 billion or 21 per cent. The proportion of foodstuffs, which was 25 per cent in 1955, decreased by 1970 to only 14 per cent of total imports, while machinery imports increased from 6 per cent in 1955 to 12 per cent in 1970. (General machinery, electrical equipment, transport machinery, and precision machinery all increased.) Other fabricated products also recorded a sharp increase between 1955 and 1970, from 1.7 per cent to 12.8 per cent. This jump was attributed primarily to increases in imports of textile products and nonferrous metals. The ratios of imports against domestic production of the various classifications are given in Table III. As the table shows, general machinery accounted for the highest ratio of imports of finished goods in 1969 followed by agricultural-forestry-fishery products and foodstuffs, chemicals, precision machinery, and primary metals.

TABLE XI  
JAPANESE IMPORTS BY COMMODITY GROUP

	(\$ million)			
	1955	1960	1965	1970
Foodstuffs	625( 25.3)	548( 12.2)	1,470( 18.0)	2,574( 13.6)
Raw materials	1,263( 51.1)	2,209( 49.2)	3,220( 39.4)	6,677( 35.4)
Mineral fuels	289( 11.7)	742( 16.5)	1,626( 19.9)	3,905( 20.7)
Chemicals	112( 4.5)	265( 5.9)	408( 5.0)	1,000( 5.3)
Machinery	142( 5.7)	435( 9.7)	760( 9.3)	2,298( 12.2)
Other manufacture	41( 1.7)	294( 6.5)	684( 8.4)	2,427( 12.8)
Total	2,471(100.0)	4,491(100.0)	8,169(100.0)	18,881(100.0)

Sources: [5] [6].

Notes: 1. Value in C.I.F.

2. Figures in parentheses show percentages of the total.

#### IV. REASONS FOR CHANGES IN THE IMPORT STRUCTURE

##### A. *Economic Growth and Dependency on Imports*

The primary cause for the change in the import structure is found in economic growth. The extent of increase in demand attendant on economic growth varies according to the type of commodity. Table XII gives the indices of income

TABLE XII  
INCOME ELASTICITY OF IMPORTS BY COMMODITY GROUP: JAPAN

	All Imports	Food-stuffs	Raw Materials	Mineral Fuels	Chemicals	Machines, Apparatuses	Other Manufactured Goods
1960-65	0.88	1.50	0.54	1.17	0.62	0.81	1.27
1965-70	1.06	0.68	0.91	1.11	1.13	1.43	1.66
1960-70	0.97	1.05	0.74	1.14	0.89	1.14	1.48

Source: [5].

elasticity of different commodity imports, that is, rates of increase in imports when nominal gross national product increases by 1 per cent. The index is high in "other manufactured goods," machinery, and mineral fuels, and is low in raw materials. The rate of increase in chemicals and foodstuffs is about the same as that of the gross national product. These developments presumably are attributable to shifts in demand for different commodities accompanying economic growth.

It is noteworthy that the total value of imports increases at approximately the same rate as the growth of the gross national product, so that the degree of dependency on imports (imports/GNP) shows practically no change. As Table XIII indicates, Japan's dependency on imports declined slightly from 10.4 per cent to 9.2 per cent between 1955 and 1968. The degree of Japan's dependency on imports has generally been low relative to the rest of the world. With the exception of the United States, all the Western countries are more dependent on imports than Japan. As far as industrial raw materials are concerned, Japan's dependency on imports is nearly 100 per cent for most import items. However,

TABLE XIII  
IMPORT DEPENDENCY OF MAJOR COUNTRIES

	U.S.A.	Canada	U.K.	France	West Germany	Italy	Japan	Japan <sup>a</sup> (Real)
1955	3.1	20.0	20.0	13.6	12.8	11.6	10.4	5.9
1960	3.3	18.4	17.7	10.5	13.6	14.0	10.4	7.6
1965	3.4	18.0	16.1	11.0	15.5	12.9	9.3	8.1
1968	4.1	18.9	18.5	11.0	15.2	13.8	9.2	10.1 <sup>b</sup>

Source: [3].

Note: Imports in C.I.F.

<sup>a</sup> F.O.B.

<sup>b</sup> 1970.

TABLE  
JAPANESE IMPORTS OF SELECTED

	Total	Meat	Dairy Products	Fish, Shellfish	Cereals
Imports (\$ million)					
1955	625	1	6	1	440
1960	548	14	17	4	291
1965	1,470	45	23	71	767
1970	2,574	145	49	262	1,049
1980	8,431	1,309	541	942	1,937
Average annual growth rate (%)					
1955-60	-2.6	69.5	23.2	31.8	—
1960-65	21.8	26.3	6.2	77.6	21.4
1965-70	11.8	26.3	16.3	29.9	6.5
1970-80	12.6	24.5	27.0	13.7	6.3

Source: [6].

the dependency as measured for all commodities as a whole is relatively low because the domestic suppliers of manufactured goods are well developed. The fact that prices of imported raw materials have been relatively stable as compared with prices of industrial products also has contributed to the low dependency of Japan on imports in nominal terms. The real rates of dependency as measured by 1963 prices show that the import dependency is on an appreciable uptrend.

#### B. Shortages of Labor and Resources

The most important cause for the change in the import structure was the change in demand components attendant on economic growth. However, a detailed review of changes in imports of different items reveals that such factors as labor shortage, depletion of natural resources, changes in people's tastes, and diversification of demand have also been important influences.

As Table XIV shows, imports of foodstuffs increased from \$600 million to \$2.6 billion between 1955 and 1970. The rate of increase has recently been approximately the same as that of the nominal gross national product, but the percentage contribution of each component has been noticeably different. The rates of increase for imports of fish and shellfish, meat, coffee, and vegetables and fruits have been especially high. However, in absolute value, cereals remain most important, followed by sugar, vegetables and fruits, and fish and shellfish. The changes in relative composition of foodstuffs indicate concurrent changes in various aspects of demand, such as the recent Westernization of the Japanese pattern of consumption, increasing imports of feeds due to expanding poultry raising and dairy farming, and the declining rate of domestic production against imports of wheat.

Turning to textile imports, as illustrated in Table XV, imports of textile materials have shown relatively slow increase, while those of textile products have sharply increased. Although imports in money terms of textile products remain relatively small, amounting to only \$200 million in 1969, the shifting pattern

XIV  
COMMODITIES: FOODSTUFFS

Vegetables, Fruits	Sugar	Coffee, Tea	Foodstuffs	Beverages	Tobacco	Others
20	121	13	8	1	13	2
33	121	24	18	2	16	6
148	186	64	92	4	50	20
309	346	153	136	17	74	34
1,342	841	659	389	176	199	96
10.6	0	13.0	17.6	14.9	4.3	24.5
35.0	9.0	21.7	38.5	14.9	25.4	27.2
15.8	13.2	19.0	8.1	33.6	8.2	11.2
15.7	9.3	15.7	11.1	26.3	9.4	11.0

TABLE XV  
 JAPANESE IMPORTS OF SELECTED COMMODITIES: TEXTILE, LUMBER,  
 METAL, AND MACHINERY

	Textile Raw Materials	Textile Products	Lumber	Metallic Raw Materials				Metal Products	Machi- nery
				Total	Iron Ore	Iron Scrap	Copper		
Imports (\$ million)									
1955	586	12	64						142
1960	762	19	173	673	214	230	71	192	435
1965	847	57	502	1,019	524	153	108	388	760
1970	927 <sup>a</sup>	200 <sup>a</sup>	1,354 <sup>a</sup>	2,696	1,208	341	502	1,222	2,298
1980	1,167	3,854	7,738	7,029	2,902	826	1,604	9,083	16,938
Average annual growth rate (%)									
1955-60	5.6	9.6	22.0						25.0
1960-65	1.4	24.6	23.8						11.8
1965-70	2.3 <sup>b</sup>	36.9 <sup>b</sup>	28.1 <sup>b</sup>	21.4	18.2	19.3	36.0	25.8	24.8
1970-80	2.1 <sup>c</sup>	30.8 <sup>c</sup>	19.0 <sup>c</sup>	10.1	9.2	9.3	12.3	22.2	22.1

Sources: [7][1][6].

<sup>a</sup> 1969.

<sup>b</sup> 1965-69.

<sup>c</sup> 1969-80.

suggests that the textile industry in Japan is being transformed from an export to an import industry.

Imports of lumber have been rising at a high rate, as indicated also in the same table, with the amount in money terms ranking second only after petroleum imports. The sharp rise in lumber imports is attributed to the fact that most of the expanding demand for lumber due to high rate of housing investment have to depend on imports from abroad because the domestic lumber supply has reached its full capacity.

A similar shift is projected for imports of metal ores and metal products. Among imports of metallic raw materials, iron ore tops all others as the table shows, followed by copper, and iron and steel scrap. Recently, however, the rate of increase in imports has been rising faster in metal products than in metal raw materials. In absolute amount, import of metal ores far exceeds import of manufactured metal products, but it is expected that the latter will predominate by 1980.

Imports of machinery also have been increasing at a high rate, as seen in Table XV. A greater part of the increase in money terms is accounted for by aircraft, electronic computers, metal processing machinery, power generating equipment, and similar technically sophisticated products, which are expected to increase progressively in importance both as imports and exports in the future, with increasing sophistication of the nation's economy.

## V. PROBLEMS OF MARKETS

Let us now turn to the features of the market structure of Japanese exports. A

breakdown of Japanese exports by area of destination is given in Table XVI, and Appendix Tables V and VI. Among all the areas the United States leads, accounting for 31 per cent of total exports in 1970, followed by Southeast Asia, and Western Europe, which account for 25 per cent and 15 per cent, respectively. The concentration of Japanese exports to American and Asian markets means a large influx of Japanese products into these areas, which has given rise to the problem of Japan's high market share in these countries. As shown in Table XVI, the proportion of Japanese products to total imports in 1970 was 21 per cent in Asia, and 15.5 per cent in the United States, compared to 11 per cent and 7.5 per cent, respectively, in 1960. On the other hand, the share of Japanese products in total imports of Western Europe was only 0.9 per cent in 1960, and increased to only 2.6 per cent in 1970. Apprehension has been expressed over the near future, when Japanese exports could overflow the world market, exceeding the capacity of markets of absorb them as the growth rate of Japan's exports continues to exceed those of other countries. However, the share of Japanese exports in total world imports was 3.2 per cent in 1960 and 6.2 per cent in 1970, which does not seem to be excessively high. The real core of concern should be the excessively high concentration of Japanese exports in markets of limited areas.

The areal structure of Japanese imports is illustrated in Table XVII and Appendix Table VIII. In 1970 imports from the United States accounted for 29 per cent of total Japanese imports, indicating that the United States is an important trading partner, not only as an export market, but also as a source of imports. Imports from Southeast Asia, West Asia, Western Europe, and Australia, New Zealand, and South Africa were also large. The share of Japan's imports as a proportion of total exports of trading partners, as listed in the table is largest for the joint area of Australia, New Zealand, and South Africa, where

TABLE XVI  
JAPANESE EXPORTS BY AREA OF DESTINATION

	Exports (\$ Million)		Japan's Share in Imports of Trading Partners (%)	
	1960	1970	1960	1970
North America	1,230( 30.4)	6,580( 34.1)	6.1	12.8
Of which: U.S.A.	1,110( 27.4)	6,020( 31.2)	7.5	15.5
Western Europe	475( 11.7)	2,920( 15.1)	0.9	2.6
ANS <sup>a</sup>	227( 5.6)	1,070( 5.5)	5.0	12.1
Latin America	275( 6.8)	990( 5.1)	3.5	6.6
Asia	1,445( 35.7)	5,410( 28.0)	11.4	20.7
Africa	290( 7.2)	1,070( 5.5)	4.5	9.0
Planned economy bloc	73( 1.8)	1,045( 5.4)	0.5	3.4
Total	4,050(100.0)	19,320(100.0)	3.2 <sup>b</sup>	6.2 <sup>b</sup>

Source: [9].

Note: Figures in parentheses show percentages of the total.

<sup>a</sup> Australia, New Zealand, and South Africa.

<sup>b</sup> Japan's share in total world imports.

TABLE XVII  
JAPANESE IMPORTS BY AREA OF ORIGIN

	Imports (\$ Million)		Japan's Share in Exports of Trading Partners (%) 1969
	1960	1970	
North America	1,625( 41.9)	5,400( 34.4)	13.4
Of which: U.S.A.	1,440( 37.1)	4,610( 29.4)	9.2
Western Europe	360( 9.3)	1,710( 10.9)	1.1
ANS	372( 9.6)	1,625( 10.4)	18.9
Latin America	240( 6.2)	1,020( 6.5)	5.8
Asia	1,060( 27.3)	4,450( 28.4)	33.2
Africa	73( 1.9)	620( 4.0)	4.6
Planned economy bloc	110( 2.8)	765( 4.9)	2.3
Total	3,880(100.0)	15,670(100.0)	4.9 <sup>a</sup>

Source: [9].

Note: Figures in parentheses show percentages of the total.

<sup>a</sup> Japan's share in total world exports.

they account for nearly 20 per cent. This high percentage is attributed to the very substantial imports of iron ore, coal, wool, and wheat from Australia. Japan's importance as a market for West Asia is also high because of the former's almost exclusive dependence on this area for imports of petroleum. Japan is a major trading partner of Southeast Asia and the United States, but a minor importer from Western Europe, accounting for only 1 per cent of the total exports of that area.

In the structure of Japan's trade markets, the first cause of concern lies in the increasing surplus of Japanese exports over imports vis-à-vis America, with the share of Japanese exports among U.S. imports trending upward and the share of Japanese imports among U.S. exports downward. This is partly caused by the fact that exports of the United States to Japan, excepting electronic computers, aircraft, and some others, are composed of commodities with low income elasticities, such as coal, lumber, soybeans, corn, wheat, and kaoliang. On the other hand, Japanese exports to the United States are composed of items with high income elasticities, such as automobiles, color TV sets, tape recorders, and electronic desk calculators. Another cause is the weakening competitiveness of U.S. goods resulting from rising U.S. export prices in contrast to the relative stability of Japanese export prices. Japanese export surpluses are causing concern also in Southeast Asia and Western Europe. Of course, bilateral balance should not be required between two particular countries. Rather, trade should be satisfactorily balanced for the world as a whole, at least theoretically. As a matter of practice, however, excessive disequilibrium in trade between any two specific countries causes complaints by the deficit countries, thereby impairing the smooth expansion of trade. At present, Japan's export surpluses with the United States, Asia, and Europe are creating resistance, which may deter the satisfactory development of future trade with these areas.

## VI. FUTURE EXPORT-IMPORT STRUCTURE

What, then, will be the probable future structure of Japanese exports and imports? In many respects, future shifts in Japan's trade structure will depend on the changes in both the world and domestic economies. At the same time, an important condition for satisfactory future development of international economic relations, as well as domestic growth, will be Japan's efforts to adjust her exports and imports in order to coordinate it with the patterns of the domestic economy and the world economy as a whole. The following analysis and projections are based on data provided by *Sekai no naka no Nihon keizai, 1980* [Japan's economy in 1980 in the global context] published by the Japan Economic Research Center [4].

The basic premises for this study are the following growth rate estimates for 1970 to 1980: world GNP, 9.6 per cent (nominal); world trade, 10.6 per cent; Japan's GNP, 17.2 per cent in nominal and 10.0 per cent in real terms. The growth rates for Japan's nominal GNP, exports, and imports, as shown in Table XVIII, have been based on an exchange rate for the yen of US\$1=¥280, and

TABLE XVIII  
WORLD ECONOMY AND JAPANESE EXPORTS AND IMPORTS

	1960	1970	1980
World GNP (\$ billion)	1,405	3,049 (8.2)	7,643 (9.6)
Japan GNP (\$ billion)	43	196 (16.5)	957 (17.2)
World trade (\$ billion)	128	311 (9.3)	850 (10.6)
Japan exports (\$ billion)	4.1	19.3 (16.9)	92.2 (16.9)
Japan imports (\$ billion)	3.9	15.7 (15.0)	75.5 (17.0)
Japan's dependence on exports	9.4	9.9	9.6
Japan's dependence on imports	9.0	8.0	7.9
World trade elasticity of Japan exports		1.82	1.59
Income elasticity of Japan imports		0.91	0.98
Japan's share of world exports (%)	3.2	6.2	10.8

Source: [4].

- Notes: 1. Figures in parentheses show the average annual rate of increase.  
2. For 1980, the value of U.S. dollar is calculated as equivalent to 280 yen.  
3. Value of trade is in F.O.B. price.

will need to be adjusted upward if the yen is further revalued after the present float. The estimation of growth rates in terms of yen is based on the assumption that they will be about the same as in the past, but it should be noted that a further decline in the value of the dollar will naturally increase the growth rates expressed in terms of dollars.

### A. *Exports*

Assuming that projected relations prevail, the share of Japanese exports in world trade will progressively increase. The problem is whether such a rapid expansion of Japanese exports may satisfactorily be coordinated with the growth of the world economy. One conceivable way for Japan to avoid friction with the rest of the world is to expand her domestic market to minimize her dependency on exports. This solution, however, seems to be difficult. As referred to in the foregoing, Japan's dependency on exports is relatively low already, compared with that of European countries. While the United States' export dependency is lower, unlike that country, Japan must pursue an international division of labor by means of which increasing exports can secure the expanding amounts of raw materials and fuels, which will be indispensable to maintain Japanese economic growth, and which can not be self-supplied. As Table III suggests, there are various items for which export markets will have to be expanded further, such as chemicals and machinery, thereby raising the ratio of exports to total production. For this reason, Japan's export dependency cannot be expected to become appreciably lower, although it may decline somewhat. On balance therefore, Japanese exports are estimated to grow at approximately the same rate as nominal GNP. The way to future development must be found in the direction of expansionary equilibrium, through growth of both exports and imports.

In order to prevent friction with the rest of the world due to export expansion, Japan will have to focus on export goods which are superior in comparative production cost, and for which world demand is expanding. In selecting items superior in comparative production cost, important factors to be considered include an expected rapid increase of wages, further sophistication of domestic markets, development of mass-production technics, environmental pollution and natural resource shortages. As already shown in Table V, the wage level in Japan in 1970 averaged only 31 per cent of that in the United States, but this differential is expected to narrow substantially, with the Japanese level nearing about 80 per cent of the U.S. level in 1980 as a result of high economic growth combined with possible further revaluation of the yen. By 1980 the wage levels in the United Kingdom and France may be possibly as low as 50 per cent of Japan's wage level. This comparatively high rate of increase in the Japanese wages is expected to bring the proportion of labor-intensive products, such as foodstuffs, textiles, light-industry products, and metals, in total exports of Japan down sharply to about 15 per cent in 1980 from 28 per cent in 1970 (Table IX).

At the same time, the proportion of technology- and capital-intensive exports, such as chemicals, general machinery, electrical equipment, transport machinery, precision machinery, and the like, is projected to increase substantially to 73 per cent in 1980 from 53 per cent in 1970. In addition, the rise in the national income level will generate additional demand for high-grade commodities in domestic markets, thereby consolidating the base for new exports of high-grade commodities. Future aggravation of pollution and resource shortages can be expected to reduce the international competitiveness of industries which are highly



dependent on resources, such as ferrous and nonferrous metal industries, and those which are more liable to cause pollution. The share of these industries in total exports will consequently contract.

Under these conditions, prospective key export items in the future will be machine tools, industrial machinery, chemical products, automobiles, electronic equipment, and high-grade consumer goods. In this respect, Table XIX suggests

TABLE XIX  
SHARE OF JAPANESE EXPORTS IN WORLD IMPORTS

	Growth Rate of				World Trade Elasticity of Japan Exports		Japan's Share (%)		
	World Trade(%)		Japanese Export(%)		1960-69	1969-80	1960	1969	1980
	1960-69	1969-80	1960-69	1969-80					
Food and beverages	5.8	5.7	8.7	7.6	1.50	1.33	1.2	1.5	1.9
Raw materials	3.8	6.0	7.4	2.1	1.95	0.35	0.7	1.0	0.7
Mineral fuels	7.8	9.2	12.7	3.4	1.63	0.37	0.1	0.2	0.1
Chemicals	11.1	12.8	22.0	18.3	1.98	1.43	2.3	5.3	9.4
Machinery and apparatus	12.1	14.1	23.3	22.4	1.93	1.59	3.4	8.0	17.3
Other manufacture	9.7	11.3	13.4	11.9	1.38	1.05	7.3	9.8	10.4
Total	8.8	10.9	16.5	17.3	1.88	1.59	3.2	5.9	10.8

Source: [9].

Note: Growth rate indicates annual average.

a hopeful future for Japanese exports in that those commodity groups for which world demand is expected to rise substantially are the ones in which Japan can be expected to strengthen its superiority in relative production costs. Any attempt to forcefully expand exports of articles with sluggish world demand will cause complaints from abroad. Fortunately, Japan is in the favorable position of being able to avoid this situation.

### B. Imports

The rapid growth of the Japanese economy means the creation of additional large markets for the rest of the world. The projected scale of the Japanese market in 1980 is \$960 billion in terms of gross national product, or about the same as that of the United States in 1970. If this market is opened to the world through further trade liberalization, the value of Japan's imports is estimated to be \$75.5 billion in 1980, compared with \$15.7 billion in 1970. This amount estimated for 1980 is large enough to absorb the total exports of the United States, the United Kingdom, and Italy for 1970, and thus, will surely contribute greatly toward the development of the world economy.

Increased domestic costs from pollution, labor shortage, and wage hikes, as well as income growth and other improvements in economic and social conditions can be expected to bring about sharp rises in Japanese imports, not only

of raw materials and fuels, but also of foodstuffs and industrial products. With regard to foodstuffs, imports of meat, fish and shellfish, fruits, and dairy products should increase. As for manufactured goods, textiles, sundry goods, and light-industry products from developing areas, and chemicals, industrial machinery, machine tools, aircrafts, and large-size computers from advanced industrial countries should lead increases in imports. The ratio of manufactured imports to total Japanese imports should increase to 50 per cent in 1980 from 30 per cent in 1970 (Appendix Table IV).

In order to increase imports of these goods, a reform in the domestic industrial structure is required, together with liberalization of imports and reductions of tariff rates. Effective industrial reform is necessary because if the transformation of industrial structure is allowed to lag, free trade policy, even if put into force, will soon become unfeasible in the face of strong political pressures for import restrictions to protect such industries with inferior international competitiveness.

An important problem concerning imports is how well Japan can secure the expanding supplies of raw materials and fuels which the country will require. As long as the Japanese economy continues its growth, its import demand will continue expanding. Even if the structure of domestic industry is improved and dependency on raw materials is lessened, demand for petroleum, iron ore, alumi-

TABLE XX  
JAPAN'S SHARE IN WORLD IMPORTS OF SELECTED MINERAL RESOURCES

	Import Value		
	1960	1969	1980
<b>Aluminium (1,000 tons)</b>			
World import	4,919	9,417	19,823
Japan import	297	1,160	4,097
Japan's share (%)	6.0	12.3	20.7
<b>Copper (1,000 tons)</b>			
World import	2,532	3,186	4,652
Japan import	168	629	1,777
Japan's share (%)	6.6	19.7	38.2
<b>Petroleum (million tons)</b>			
World import	557	1,331	3,221
Japan import	32	163	631
Japan's share (%)	5.7	12.2	19.6
<b>Iron ore (million tons)</b>			
World import	129	238	405
Japan import	15	83	217
Japan's share (%)	11.6	35.1	53.6

Sources: Metal Gesellschaft, *Metal Statistics*; Organization for Economic Co-operation and Development, *Non-ferrous Metals*; United Nations, *World Energy Supplies*; and Committee on Iron and Steel Statistics, Japan, *Tekkō tōkei yōran* [Iron-steel statistics dictionary].

Notes: 1. Imports=raw materials+semifinished products+finished products.

2. For iron ores, "world" comprises nine developed countries.

nium, copper, and certain other raw materials is projected to expand to about three times the present volume by 1980. Japan's share in the total volume of world trade will, as estimated in Table XX, increase from 12 per cent in 1970 to 20 per cent in 1980 for petroleum, and from 35 per cent to 54 per cent for iron ore. As a result, overseas investments to secure resource supplies will probably be greatly increased, and prudent consideration will have to be given to maintenance of proper harmony with the world demand-supply situation, duly bearing in mind the interests of the supplier countries.

With regard to the dependence on imports, no appreciable increase is expected, despite import encouragement measures. In 1980 import dependence probably will be about 8 per cent of the nominal GNP. Any future revaluation in the exchange rate of the yen will reduce the value of imports in terms of yen.

### C. *Markets*

The United States is reasonably expected to remain the most important export market for Japan. In view of the scale and complementary economic structure of the United States, Japan finds no suitable market substitutable for that country. However, recently even in highly technological sectors of industry in which the superiority of the United States has been outstanding, the progress of Japanese technology has radically reduced the relative superiority of the United States' traditional exports. This change has caused a strain in the economic relationship between the two nations. For this reason, endeavors must be redoubled to further develop trade between the two countries in both primary and industrial products by such means as liberalization of imports and readjustment of exchange rates. A source of concern is the danger that since Japan's rate of export expansion is faster than the growth of United States imports, the Japanese share of American imports will continue to grow to alarming levels. Consequently, it will become unwise to continue to concentrate on the United States market, but diversification of Japanese exports into other markets will be called for.

The most hopeful of future markets for Japanese exports probably will be found in Western Europe. The size of this import market is four times as large as the United States, with imports in 1970 totaling \$144 billion, but in that year Japan's share measured only 2.6 per cent of Western Europe's imports. So far Japan's trade relations with Western Europe have been quite limited, but it is highly possible that a horizontal division of labor for the manufacture of highly processed industrial products will develop between the two areas. Australia, Latin America, and the Middle East at present are all areas of Japanese import surpluses. This uneven situation is expected to continue in the years ahead, since Japan will continue to expand imports from these areas. Therefore, it should be feasible to expand Japanese exports to these areas.

In the 1970s it is also possible that trade relations with the Communist bloc will progress further. Japan's trade with the USSR should show a marked increase as development projects for Siberian natural resources get underway. In China during the 1970s, the gross national product is expected to expand at a considerable rate. Because of the low level of its present production and its

traditional inclination to depend on self-supply, a substantial increase in the volume of trade with China cannot be hoped for. Nevertheless, China will be one of the most promising trade partners for Japan in the future, because of its geographical location and its economic complementarity to Japan.

All the structural changes in exports, imports, and trade markets projected in the foregoing are important requirements for the future development of the Japanese economy in orderly coordination with development of the economies of the rest of the world.

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APPENDIX TABLE I  
JAPANESE EXPORTS BY COMMODITY GROUP

	Value (\$ Million)					Annual Growth Rate(%)			
	1955	1960	1965	1970	1980	1955-60	60-65	65-70	70-80
Foodstuffs	133 ( 6.6)	256 ( 6.6)	344 ( 4.1)	648 ( 3.4)	1,287 ( 1.4)	14.5	5.1	13.5	7.1
Raw materials and fuels	39 ( 1.9)	66 ( 1.6)	127 ( 1.5)	199 ( 1.0)	346 ( 0.4)	11.1	14.0	9.4	5.7
Light industry products:									
Textiles	749 ( 37.2)	1,223 ( 30.2)	1,582 ( 18.7)	2,408 ( 12.5)	4,648 ( 5.0)	10.3	5.3	8.8	6.8
Nonmetal mineral products	85 ( 4.2)	145 ( 3.6)	265 ( 3.1)	372 ( 1.9)	1,200 ( 1.3)	11.2	12.8	7.0	12.4
Other light industrial products	244 ( 12.1)	591 ( 14.6)	894 ( 10.1)	1,556 ( 8.1)	5,163 ( 5.6)	19.2	8.7	11.7	12.7
Total	1,078 ( 53.5)	1,959 ( 48.4)	2,741 ( 31.9)	4,335 ( 22.4)	11,011 ( 11.9)	12.7	6.9	9.6	9.8
Heavy and chemical industry products:									
Chemicals	94 ( 4.7)	169 ( 4.2)	547 ( 6.5)	1,235 ( 6.4)	6,819 ( 7.4)	12.4	26.4	17.7	18.6
Metals	386 ( 19.2)	562 ( 13.4)	1,718 ( 20.3)	3,805 ( 19.7)	12,064 ( 13.1)	7.8	25.0	17.2	12.2
Of which: iron and steel	259 ( 12.9)	388 ( 9.1)	1,290 ( 15.2)	2,844 ( 14.7)	8,124 ( 8.8)	8.4	27.2	17.1	11.1
Machinery	281 ( 13.9)	1,025 ( 25.5)	2,975 ( 35.1)	8,941 ( 46.3)	60,657 ( 65.8)	30.8	24.2	24.5	21.0
Of which: general machinery	97 ( 4.8)	222 ( 5.6)	624 ( 7.4)	2,006 ( 10.4)	17,303 ( 18.8)	15.9	25.4	26.4	23.9
Electric machinery	31 ( 1.5)	274 ( 6.8)	865 ( 10.2)	2,865 ( 14.8)	18,900 ( 20.5)	54.4	24.3	27.0	20.8
Transport equipment	119 ( 5.9)	433 ( 10.7)	1,243 ( 14.7)	3,443 ( 17.8)	20,610 ( 22.4)	29.5	23.4	22.5	19.6
Precision instrument	34 ( 1.7)	96 ( 2.4)	243 ( 2.9)	628 ( 3.3)	3,844 ( 4.2)	29.0	20.3	21.0	19.9
Total	761 ( 38.0)	1,756 ( 43.4)	5,240 ( 62.5)	13,982 ( 72.4)	79,540 ( 86.3)	18.2	25.0	21.7	19.0
Total exports	2,011 (100.0)	4,055 (100.0)	8,452 (100.0)	19,318 (100.0)	92,184 (100.0)	15.1	15.8	18.0	16.9

Source: [7, 1971].

Note: Figures in parentheses show percentages of the total.

APPENDIX  
TRENDS IN JAPANESE DOMESTIC

Industry Group	Value <sup>a</sup> (\$ Million)			
	1960	1965	1969	1980
Agriculture, forestry, and fishing	7,678	12,111	17,769	41,437
Mining	1,219	1,544	2,172	5,095
Manufacturing	45,583	85,803	169,675	781,745
Food and beverages	5,408	10,511	17,928	48,655
Textiles	4,931	7,378	10,972	26,914
Pulp, paper, and paper products	1,703	3,167	5,369	19,672
Chemicals	4,236	8,075	14,056	62,338
Petroleum and coal products, petroleum refining	1,172	2,711	4,872	18,864
Nonmetal mineral products	1,547	3,028	5,992	26,722
Primary metals	6,669	10,986	22,439	94,827
Fabricated metal products	1,756	3,914	8,639	39,428
Machinery	3,542	6,461	15,842	97,840
Electric machinery	3,781	6,525	17,322	100,208
Transport equipment	3,800	8,183	18,006	100,311
Medical, scientific, and optical instruments, watches and clocks	503	1,108	2,242	12,934
Others	6,542	13,756	25,997	133,027
Construction	8,442	18,444	36,164	213,151
Public utilities and facilities	7,475	14,953	25,647	108,384
Others	22,725	50,708	97,397	498,380
<b>Total</b>	<b>93,122</b>	<b>183,567</b>	<b>348,825</b>	<b>1,651,192</b>
<b>GNP</b>	<b>44,910</b>	<b>88,300</b>	<b>165,846</b>	<b>744,260</b>

Source: [1, 1971].

<sup>a</sup> The conversion rate is 360 yen per a dollar.

APPENDIX TABLE VI  
JAPAN'S SHARE IN IMPORTS OF TRADING PARTNERS

	Growth Rate of Total Imports (%)		Growth Rate of Imports from Japan (%)		Japan's Share (%)		
	1960-70	1970-80	1960-70	1970-80	1960	1970	1980
North America	9.8	12.0	18.3	16.3	6.1	12.8	18.7
Of which: U.S.A.	10.1	11.5	18.4	16.1	7.5	15.5	23.3
Western Europe	10.3	10.1	19.9	19.7	0.9	2.6	4.7
ANS	7.0	7.6	16.8	17.0	5.0	12.1	28.0
Latin America	6.6	5.6	13.7	12.5	3.5	6.6	12.4
Asia	7.6	10.6	14.1	16.0	11.4	20.7	33.1
Africa	6.3	8.2	14.0	14.2	4.5	9.0	15.5
Planned economy bloc	7.6	10.7	30.6	22.3	0.5	3.4	9.3
<b>World total</b>	<b>9.3</b>	<b>10.6</b>	<b>16.9</b>	<b>16.9</b>	<b>3.2</b>	<b>6.2</b>	<b>10.9</b>

Source: [9].

TABLE II  
PRODUCTION BY INDUSTRY

1960	Percentage <sup>b</sup>			Annual Average Growth (%)		
	1965	1969	1980	1960-65	1965-69	1969-80
8.2	6.6	5.1	2.5	9.5	8.0	8.0
1.3	0.8	0.6	0.3	4.8	8.9	8.0
49.0	46.7	48.6	47.3	13.5	18.6	14.9
11.9	12.2	10.6	6.2	14.2	14.3	9.5
10.8	8.6	6.5	3.4	8.4	10.4	8.5
3.7	3.7	3.2	2.5	13.2	14.1	12.5
9.3	9.4	8.3	8.0	13.8	14.9	14.5
2.6	3.2	2.9	2.4	18.3	15.8	12.9
3.4	3.5	3.5	3.4	14.4	18.6	14.6
14.6	12.8	13.2	12.1	10.5	19.3	14.0
3.9	4.6	5.1	5.0	17.4	21.9	14.8
7.8	7.5	9.3	12.5	12.8	25.1	18.0
8.3	7.6	10.2	12.9	11.5	27.6	17.3
8.3	9.5	10.6	12.8	16.6	21.8	16.9
1.1	1.3	1.3	1.7	17.1	19.3	17.3
14.3	16.0	15.3	17.0	16.0	17.3	16.0
9.1	10.0	10.4	12.9	16.9	18.3	17.5
8.0	8.1	7.4	6.6	14.9	14.4	14.0
24.4	27.6	27.9	30.2	17.4	17.7	16.0
100.0	100.0	100.0	100.0	14.5	17.4	15.2
				17.5	17.1	14.6

<sup>b</sup> Individual industry among manufacturing industry is shown as its percentage to total manufacturing.

APPENDIX TABLE VII  
JAPANESE IMPORTS BY AREA OF ORIGIN

	Imports (\$ Million)					Percentage				
	1955	1960	1965	1970	1980	1955	1960	1965	1970	1980
U.S.A.	680	1,440	2,070	4,610	20,956	31.3	37.1	30.2	29.4	27.8
Canada	92	185	295	790	2,702	4.2	4.8	4.3	5.0	3.6
Western Europe	160	360	620	1,710	11,675	7.4	9.3	9.1	10.9	15.5
EC	91	210	340	990	6,779	4.2	5.4	5.0	6.3	9.0
EFTA	59	135	250	650	4,670	2.7	3.5	3.7	4.7	6.2
Latin America	230	240	480	1,020	3,013	10.6	6.2	7.0	6.5	4.0
ANS	185	372	655	1,625	7,156	8.5	9.6	9.6	10.4	9.5
Southeast Asia	570	760	1,180	2,370	10,281	26.3	19.6	17.3	15.1	13.6
West Asia	125	300	890	2,080	9,153	5.8	7.7	13.0	13.3	12.1
Africa	35	73	165	620	3,013	1.6	1.9	2.4	4.0	4.0
Planned economy bloc	83	110	435	765	7,307	3.8	2.8	6.4	4.9	9.7
Others	15	5	50	120	151	0.7	0.1	0.7	0.8	0.2
Total	2,170	3,880	6,840	15,670	75,407	100.0	100.0	100.0	100.0	100.0

Source: [9].

APPENDIX  
JAPANESE IMPORTS BY

	Imports (\$ Million)				
	1955	1960	1965	1970	1980
Foodstuffs	625	548	1,470	2,574	8,431
Raw materials	1,263	2,209	3,220	6,677	19,503
Textile	586	762	847	963	1,167
Mineral	186	673	1,019	2,696	7,029
Other	491	774	1,354	3,018	11,307
Mineral fuels	289	742	1,626	3,905	16,676
Chemicals	112	265	408	1,000	5,074
Machinery	142	435	760	2,298	16,938
General	92	281	451	1,262	9,028
Electrical	17	34	111	478	2,959
Transport	23	87	154	406	3,716
Precision	10	32	44	151	1,235
Other manufacture	41	294	684	2,427	22,300
Iron and steel	10	88	141	276	1,022
Textiles	11	19	57	314	3,854
Nonferrous metals	21	104	247	945	7,961
Total	2,471	4,491	8,169	18,881	88,922

Sources: [5] [6].

APPENDIX TABLE III  
WAGE DIFFERENTIALS AMONG MAJOR COUNTRIES

	U.S.A.=100				Japan=100			
	1960	1970	1980(I)	1980(II)	1960	1970	1980(I)	1980(II)
U.S.A.	100	100	100	100	753	322	156	121
Canada	73	82	92	98	553	264	143	119
West Germany	27	47	63	72	207	150	98	88
France	19	24	29	32	140	78	46	32
Italy	16	25	34	36	123	81	53	43
Netherlands	21	38	61	68	157	124	95	83
Belgium	23	33	43	48	177	108	67	58
U.K.	34	36	38	40	253	115	60	48
Sweden	50	65	74	80	373	210	115	97
Austria	19	34	47	54	147	110	74	65
Denmark	36	61	84	91	273	195	131	110
Switzerland	33	43	44	51	247	138	67	62
Japan	13	31	64	82	100	100	100	100
Korea	—	5	6			15	10	7
Taiwan	4	6	6		30	19	10	8
Philippines	15	8	8		113	25	12	9
Thailand	7	6	6		50	18	3	7
India	5	4	3		40	13	5	4
Ceylon	7	4	2		50	14	6	4
Pakistan	4	4	2		30	14	6	5
Singapore	12	9	5		93	30	14	11

Source: [2].

Note: 1980(I) at the exchange rates as of May 1971; 1980(II) at a prospective exchange rates in 1980.



TABLE IV  
COMMODITY GROUP

Growth Rate (Annual Average: %)				Percentage in Total Imports				
1955-60	1960-65	1965-70	1970-80	1955	1960	1965	1970	1980
-2.6	21.8	11.8	12.6	25.3	12.2	18.0	13.6	9.5
11.8	7.8	15.7	11.3	51.1	49.2	39.4	35.4	21.9
5.4	2.1	2.6	2.0	23.7	17.0	10.4	5.1	1.3
29.3	8.7	21.4	10.0	7.5	15.0	12.5	14.3	7.9
9.5	11.8	17.4	14.1	19.9	17.2	16.6	16.0	12.7
20.8	17.0	19.2	15.6	11.7	16.5	19.9	20.7	18.8
18.3	9.0	19.6	17.6	4.5	5.9	5.0	5.3	5.7
25.0	11.8	24.8	22.1	5.7	9.7	9.3	12.2	19.0
22.9	9.9	22.8	21.5	3.7	6.3	5.5	6.7	10.2
14.9	26.7	33.9	20.0	0.7	0.8	1.4	2.5	3.3
30.5	12.1	21.4	24.2	0.9	1.9	1.9	2.2	4.2
26.2	6.5	28.0	23.3	0.4	0.7	0.5	0.8	1.4
48.2	18.4	28.8	24.5	1.7	6.5	8.4	12.8	25.1
54.3	9.9	14.4	14.0	0.4	2.0	1.7	1.5	1.1
11.5	24.5	40.7	25.7	0.4	0.4	0.7	1.7	4.3
37.7	18.9	30.8	23.8	0.8	2.3	3.0	5.0	9.0
12.7	12.7	18.3	16.8	100.0	100.0	100.0	100.0	100.0

Note: Values in C.I.F.

APPENDIX TABLE V  
JAPANESE EXPORTS BY AREA OF DESTINATION

	Exports (\$ Million)					Percentage				
	1955	1960	1965	1970	1980	1955	1960	1965	1970	1980
North America	500	1,230	2,725	6,580	29,848	24.9	30.4	32.2	34.1	32.4
U.S.A.	455	1,110	2,510	6,020	26,751	22.6	27.4	29.7	31.2	29.0
Canada	45	120	215	560	3,097	2.2	3.0	2.5	2.9	3.4
Western Europe	195	475	1,100	2,920	17,679	9.7	11.7	13.0	15.1	19.2
EC	81	175	485	1,300	9,116	4.0	4.3	5.7	6.7	9.9
EFTA	90	230	460	1,060	5,709	4.5	5.7	5.4	5.5	6.2
ANS <sup>a</sup>	92	227	515	1,070	5,156	4.6	5.6	6.1	5.5	5.6
Latin America	180	275	410	990	3,223	9.0	6.8	4.9	5.1	3.5
Asia	803	1,445	2,480	5,410	23,756	40.0	35.7	29.3	28.0	25.8
Southeast	720	1,310	2,200	4,870	19,063	35.8	32.3	26.0	25.2	20.7
West	83	135	280	540	4,693	4.1	3.3	3.3	2.8	5.1
Africa	170	290	670	1,070	4,051	8.5	7.2	7.9	5.5	4.4
Planned economy bloc	38	73	475	1,045	7,919	1.9	1.8	5.6	5.4	8.6
USSR	3	60	168	341	4,181	0.1	1.5	2.0	1.8	4.5
China	29	3	245	572	2,336	1.4	0.1	2.9	3.0	2.5
Total exports	2,010	4,050	8,450	19,320	92,184	100.0	100.0	100.0	100.0	100.0

Source: [9].

<sup>a</sup> Australia, New Zealand, and South Africa.

APPENDIX TABLE VIII  
SHARE OF JAPANESE IMPORTS IN EXPORTS OF SELECTED AREAS, 1969 AND 1980

(%)

	Food- stuffs	Raw Materials	Mineral Fuels	Chemicals	Machinery and Apparatus	Others	Total
Developed areas total	5.2 ( 9.9)	13.0 (24.6)	8.4 (18.4)	3.9 ( 6.8)	2.1 ( 5.6)	1.9 ( 6.7)	3.8 ( 7.7)
U.S.A.	13.5 (24.9)	24.7 (45.5)	28.3 (44.9)	9.0 (15.2)	4.9 (13.1)	6.0 (18.7)	9.2 (18.0)
Canada	6.8 (14.7)	11.6 (16.2)	1.8 ( 2.7)	3.7 ( 8.2)	0.2 ( 3.1)	2.8 ( 3.8)	4.2 ( 6.0)
Western Europe	0.8 ( 3.0)	0.9 ( 2.8)	0.1 ( 0.1)	2.4 ( 4.4)	1.2 ( 2.8)	1.0 ( 3.4)	1.1 ( 3.2)
EC	0.8 ( 2.4)	0.8 ( 1.4)	0.0 ( 0.1)	2.2 ( 3.8)	1.0 ( 2.7)	0.7 ( 2.6)	1.0 ( 2.7)
EFTA	1.1 ( 6.3)	1.1 ( 5.4)	0.2 ( 0.1)	2.9 ( 6.3)	1.5 ( 3.2)	1.5 ( 5.6)	1.5 ( 4.7)
ANS	11.0 (23.4)	32.0 (49.9)	55.4 (87.3)	9.3 ( 8.2)	0.3 ( 0.3)	8.7 (43.0)	18.9 (40.2)
Developing areas total	5.3 (10.0)	16.8 (33.1)	12.1 (23.5)	4.8 ( 8.5)	2.5 ( 6.4)	7.8 (20.4)	10.2 (20.8)
Southeast Asia	14.5 (18.3)	26.8 (53.3)	22.0 (48.8)	11.6 (16.8)	3.2 (27.9)	6.3 (20.8)	14.8 (28.2)
West Asia	1.0 ( 2.2)	4.0 ( 6.2)	21.9 (36.2)	2.3 ( 4.7)	0 ( 0.9)	4.2 (10.0)	18.4 (30.2)
Latin America	3.9 (11.2)	16.3 (25.3)	0.8 ( 2.4)	2.6 ( 2.1)	0 ( 2.9)	6.5 (13.5)	5.8 (12.2)
Africa	1.5 ( 5.2)	6.3 (10.9)	0.1 ( 1.5)	0.7 ( 4.3)	7.7 (10.6)	13.2 (33.5)	4.6 (11.2)
Others	1.3 ( 2.2)	10.8 (11.6)	1.6 ( 2.1)	1.1 ( 0.0)	0 ( 0.0)	2.9 ( 3.9)	3.6 ( 4.3)
Planned economy bloc	1.8 (12.4)	10.1 (29.1)	3.1 (14.9)	1.4 ( 3.3)	0.1 ( 1.0)	1.3 ( 8.1)	2.3 ( 8.6)
Total	4.9 (10.3)	13.9 (27.4)	10.2 (21.7)	3.8 ( 6.7)	1.9 ( 5.1)	2.7 (10.0)	4.9 (10.0)

Source: [9].

Note: Projection for 1980 in parentheses.