< Chapter 1 > Outline of The 2000 Japan-U.S. Input-Output Table

1. Background of the International Input-Output Table

(1) As is apparent from the sharp fluctuations in exchange rates since the 1973 oil shock and the 1985 Plaza Accord, the environment for the world economy has rapidly changed in recent decades. This change has caused the expansion of international transactions and investments, resulting in growing interdependence between nations. On the other hand, with the environment changing rapidly, economic problems such as trade friction and adjustment in industrial structure have been increasing. In addition, the growing interdependence may have an adverse influence on some industries, and bilateral negotiations may harm the interests of other industries and countries. Developed countries responsible for the stable development of the world economy need to think globally and consider how they are affecting other industries and countries when settling problems such as trade friction and adjustment in industrial structure or carrying out their economic policies.

Recognizing this need, METI decided to compile and publish international input-output tables. The tables are tools for quantitative analysis of how the economy of a country affects others. In compiling the tables, METI made clear the economic interdependence between countries, based on its experience of producing Japan's Input-Output Table. In 1986, when METI compiled the International Input-Output Table for 1985, it was the first time ever that a government agency had created such a table. Thereafter, METI compiled various bilateral and multilateral input-output tables for 1990, and published them one by one.

(2) METI's Research and Statistics Department has been proceeding with the project of the international input-output tables for 2000. Here we present the 2000 Japan-US Input-Output Table (Preliminary Report) recently completed.

(3) The international I-O tables previously published are as follows:

① 1985 Bilateral Tables

- 1985 Japan-US Input-Output Table (Preliminary Report) (published in September 1989)
- 1985 Japan-U.K. Input-Output Table (published in April 1992)
- Japan-France Input-Output Table (published in April l992)
- Japan-West Germany Input-Output Table (published in April 1992)
- Japan-US Input-Output Table (Revised Report) (published in March 1993)

② 1985 Multilateral Tables

- 1985 Japan-US-EC-Asia Input-Output Table (published in May 1993; abbreviated as "World Table")
- 1985 Japan-US-U.K.-France-West Germany Input-Output Table (published in May 1993 as a supplementary table of the World Table)

③ 1990 Bilateral Tables

- 1990 Japan-US Input-Output Table (Preliminary Report) (published in September 1995)
- 1990 Japan-U.K. Input-Output Table (published in March 1997)
- 1990 Japan-France Input-Output Table (published in March 1997)
- 1990 Japan-Germany Input-Output Table (published in March 1997)
- 1990 Japan-US Input-Output Table (Revised Report) (published in October 1997)

④ 1990 Multilateral Tables

- 1990 Japan-US-EU-Asia Input-Output Table (published in December 1998; abbreviated as "World Table")
- 1990 Japan.-US-TJK-France-Germany Input-Output Table (published in January. 1999 as a supplementary table of the World Table)

⑤ 1990 Multilateral Tables

- 1990 Japan-US-EU-Asia Input-Output Table (published in December 1998; abbreviated as "World Table")

⑥ 1995 Bilateral Tables

- 1995 Japan-US Input-Output Table (Preliminary Report) (published in October 1999)
- 1995 Japan-US Input-Output Table (Revised Report) (published in October 2000)

(4) The International Input-Output Tables contain the following information:

① Direct interdependence between countries through their production activities.
② Comparison of each country's economic and industrial structure under a common classification.
③ Quantitative analyses as to how changes in a country's domestic final demand, economic policies (public investment, tax reduction, etc.) trade protection policies, and foreign investment influence the economies and industries of that country and other countries.

2. Characteristics of the Japan-US I-O Table

(1) METI compiled the 2000 Japan-US Input-Output Table (hereinafter referred to as the "Japan-US Table") to understand how Japanese and US industries' production activities are connected with other industries and the final demand in the two countries. Thus, the table contains information on all transactions of goods and services made domestically and between Japan and the US in 2000 (see Figure 1).

Fig 1. Structure of the Japan-US I-O Table

		Intermediate demand		Final demand				Domestic production
				Japan		US		
		Production activity (Japan)	Production activity (US)	Domestic final demand (Japan)	Exports to ROW	Domestic final demand (US)	Exports to ROW	
Intermediate input	Products (Japan)		External Trade Sector (Japan→US)			External trade sector (Japan→US)		
	Products (US)	External trade sector (US→Japan)		External trade sector (US→Japan)				
	Tariffs & transp. costs							
	Imports from ROW							
	Tariffs of ROW							
Gross value added								
Domestic production								

Note: ROW (Rest of the World) means countries other than Japan and the United States.

(2) The table shows vertically what commodities Japanese and US industries used for production activities and how much of each commodity was used. The table also indicates what kinds of added values were produced and the extent of value-added (cost structure).(*1)

(3) The table shows horizontally how many goods produced by Japanese and US industries were sold, and to which markets (sales or market structure).

(4) The parts showing the transactions between Japan and the United States in the area of intermediate inputs and intermediate demand represent the interdependence between Japan and the United States in production activities. However, data for tariffs, freight charges, and insurance premiums are indicated separately.

Furthermore services transactions (excluding goods) between Japan and the United States that were formerly included in transactions with the "Rest of the World" (countries other than Japan or the United States, hereinafter abbreviated as "ROW") due to restrictions on data are newly included and calculated in this year's Japan-US Table.

(*1) This I-O table is a table of the non-competitive import type (or Isard type), which describes domestic and other countries' products separately.

(5) The value of each commodity is indicated at producer prices in each country[*2]. Therefore, transactions of Japanese goods in Japan and with the United States are indicated at producer prices in Japan, whereas transactions of US goods in the United States and with Japan are indicated at producer prices in the United States. Transactions between Japan and the United States related to commerce transportation are equivalent to the sum of trading margins and transportation costs related to the export to Japan or the United States. With regard to transactions with the ROW, exports are indicated at the producer prices in the exporting country (indicated on the left side of the table), while imports are indicated in the CIF values of importing countries (indicated at the top of the table)[*2].

(6) Values are indicated in US dollars. The exchange rate used in this table is 107.77 yen, IMF's average rate for 2000 (the rate was 144.79 yen in the 1990 table and 94.06 yen in the 1995 table).

When analyzing input and output between countries, it may be desirable to use common prices, such as purchasing power parity or international standard price by commodity. However, since the methodology is still under discussion, prices were calculated at the yearly average exchange rate, as in the 1995 Japan-US Table (Revised Report).

(7) Compared to the 1995 Japan-US Table (Revised Report), nine sectors were added, making the total 175 sectors for both rows and columns of the Basic Classification Table of this year's Japan-US Table. This change is due to the fact that from the 1997 US Input-Output (I-O) Table, the concept definition for the sector classification in the United States was changed from SIC to NAICS, and therefore there was a need to change a few parts of the basic classification of the Japan-US Table starting from the 1995 Japan-US Table (Revised Report).

Moreover, in addition to the Basic Classification Table, unified classification tables were compiled for the "54 sector table" and the "27 sector table" (for details, see IV Classification of the 2000 Japan-US I-O Table).

(8) In the most detailed 175 sector table, transactions within a sector are excluded, and the corresponding production value is subtracted in the 2000 Japan-US Table (see III Compilation of "The 2000 Japan-US I-O Table"). Therefore, production values are different from those in the I-O tables that were published officially by the Japanese and US governments.

(9) We created an export and import matrix (exports and imports of each of the 18 countries and regions) for Japan and the United States. Exports are indicated at producer prices and imports at CIF prices.

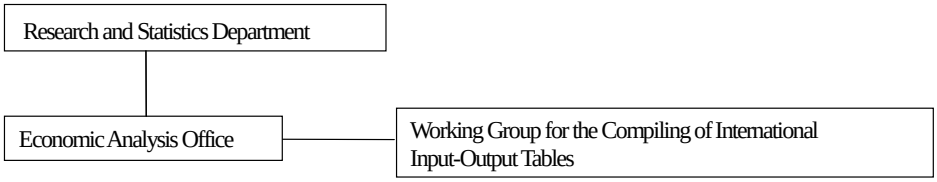
[*2] The producer price is the producer shipment price and does not include distribution costs such as domestic transportation and handling costs.

3. Compilation of the 2000 Japan-US I-O Table

(1) "The Japan-US I-O Table" was compiled by the Research and Statistics Department of the Economics and Industrial Policy Bureau at METI.

(2) This project was organized as follows:

Organization for the Japan-US I-O Table



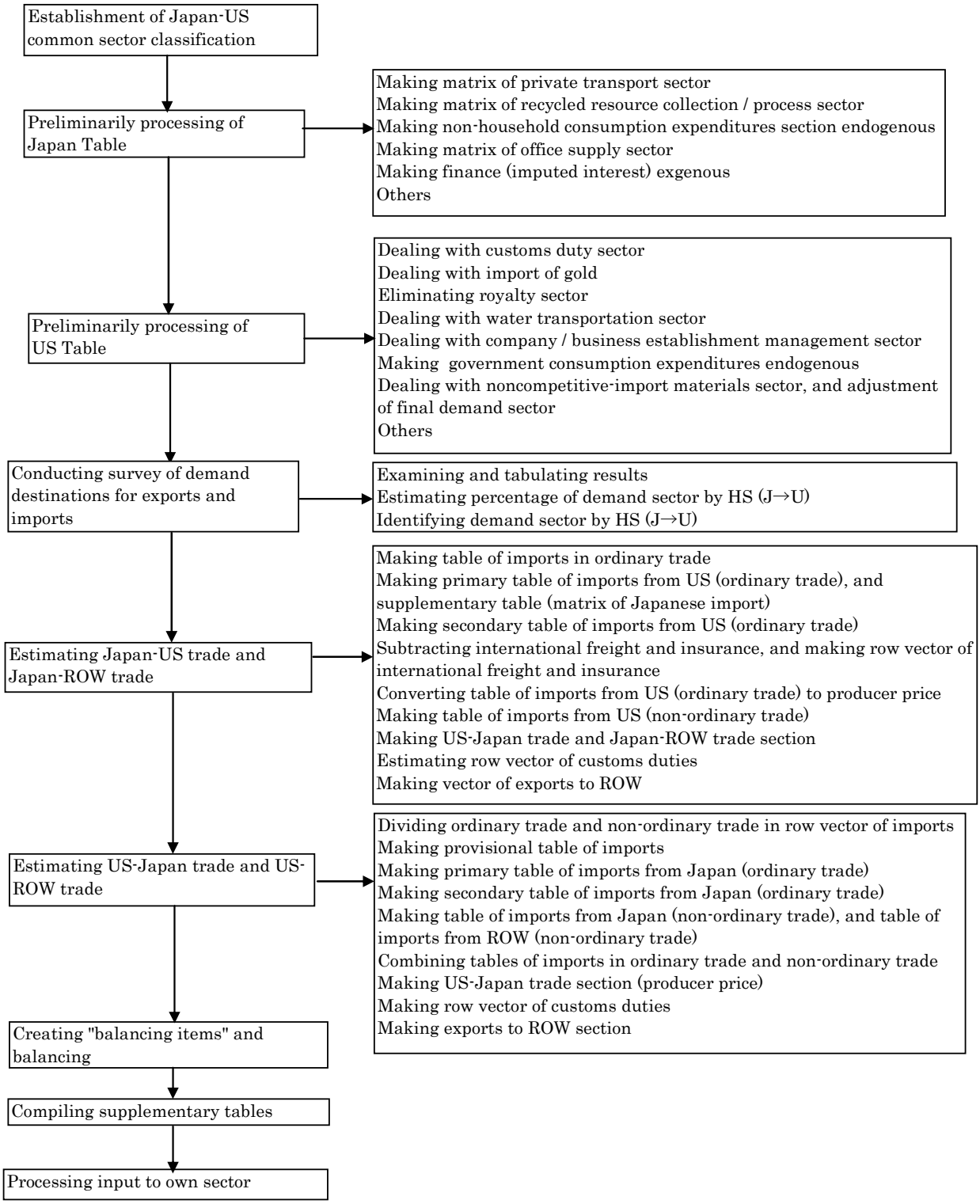
[Working Group for the Compiling of International I-O Tables]

The working group solves specific problems that arise during compilation of international I-O tables and performs the necessary tests and adjustments for compiling such tables.

Its members are the Economic Analysis Office of METI, JETRO's Institute of Developing Economies (IDE), the Industrial Research Institute of Keio University, and the Japan Applied Research Institute (ARI).

(3) The procedure for compiling the Japan-US I-O Table is as follows (See III Compilation of the 2000 Japan-US I-O Table for details):

Procedure for Making Japan-US I-O Table (flowchart)



< Chapter 2 >　Analysis of　The 2000 Japan-U.S. Input-Output Table

Chapter 1　Comparison of the economic structure between Japan and the United States as seen in the Japan-U.S. Table

The Japan-U.S. Input-Output Table has been prepared and publicized by the Ministry of Economy, Trade and Industry (Research and Statistics Department) together with the domestic I-O Table (collaboration of 10 governmental agencies) every five years since 1985. The Japan-U.S. I-O Table is created through the integration of the I-O Tables of Japan and the United States in order to enable us to understand the economic interdependence between the two countries. The 2000 Japan-U.S. I-O Table was compiled through the integration of the recently publicized 2000 Japanese I-O Table with the 2000 U.S. I-O Table, which was created from the standard U.S. table (the 1997 U.S. I-O Table). We are pleased to publicize this table and also the results of a simple analysis we conducted by comparing this table for 2000 with the previous table made in 1995. The analysis revealed how the economic interdependence between Japan and the United States has evolved since 1995 through international trading, while Japan has experienced the end of the appreciation of the yen, an increase in the consumption tax rate, instability of the financial sector, and a rise in crude oil prices.

1. Structure of the 2000 Japan-U.S. Input-Output Table

The 2000 Japan-U.S. Input-Output Table (hereinafter "Japan-U.S. I-O Table") shows all the transactions of goods and services within Japan and the United States respectively and also between those two countries in 2000. The purpose of creating such a table is to clarify the domestic and international interrelationships of the production activities of each industry of Japan and the United States in relation to other industries and also to final demand. Fig. 1 shows the structure of the Japan-U.S. Input-Output Table.

Fig. 1　Structure of the Japan-U.S. Input-Output Table

		Intermediate demand		Final demand				Domestic productions
				Japan		US		
		Production activity (Japan)	Production activity (US)	Domestic final demand (Japan)	Exports to ROW	Domestic final demand (US)	Exports to ROW	
Intermediate input	Products (Japan)		External Trade Sector (Japan→US)			External trade sector (Japan→US)		
	Products (US)	External trade sector (US→Japan)		External trade sector (US→Japan)				
	Tariffs & transp. costs							
	Imports from ROW							
	Tariffs of ROW							
Gross value added								
Domestic production								

Note: ROW (Rest of the World) means countries other than Japan and the United States.

2. Japanese and U.S. economic structures in 2000

(1) Output of Japan and the U.S.

"According to the 2000 Japan-U.S. Input-Output Table", the domestic outputs of Japan and the United States are $8.4116 trillion and $16.8753 trillion respectively. The United States produces about twice as much as Japan domestically (nominal U.S. dollar value; the outputs and transactions shown in the 2000 Table of Japan include the 5% consumption tax; hereinafter the same).

The values of domestic production of Japan and the United States increased by a factor of 0.92 and 1.34 respectively during the five years from 1995 to 2000. In short, the production scale of Japan has been on the decline, whereas that of the United States has been on the rise. This difference is attributable mostly to the depreciation of the yen against the dollar during the 5-year period. In fact, the exchange rate of ¥94.06 per dollar in 1995 became ¥107.77 per dollar in 2000. In terms of yen value, the domestic production of Japan increased by a factor of 1.05 during the 5-year period, indicating that the production scale of Japan has also been on the rise.

Table 1　Japan-U.S. I-O Table

(Unit: $100 million)

	Intermadiate demand			Final demand							Domestic production
				Japan			U.S.A				
	Japan	U.S.A	Total	Domestic	Exports to ROW	Total	Domestic	Exports to ROW	Total	Total	
Japan	34,361	706	35,067	44,420	3,721	48,212	836		836	49,049	84,116
U.S.A	484	63,540	64,024	375		375	95,639	8,683	104,354	104,729	168,753
Tariffs (intermediate goods in Japan and U.S.A)	31	10	41	47		47	14		14	61	102
International freight charges, insurance	21	19	40	8		8	19		19	27	67
ROW	2,453	6,684	9,137	1,328		1,328	5,520		5,520	6,848	15,985
Tariffs (on ROW)	184	56	240	94		94	130		130	224	465
Total amount of intermediate input	37,534	71,016	108,549	46,272	3,721	50,064	102,160	8,683	110,874	160,939	269,488
Gross value added	46,582	97,738	144,320								
Domestic production	84,116	168,753	252,869								

Note: The totals might not be accurate due to round-offs (hereinafter the same).

(2) Gross value-added of Japan and the United States

In 2000, the gross value-added (equivalent to GDP; hereinafter "value-added") of Japan was $4.6582 trillion, while that of the United States was $9.7738 trillion, which is about 2.1 times larger than that of Japan, as is the case for the production scale. The values-added of Japan and the United States increased by a factor of 0.92 and 1.35 respectively during the five years from 1995 to 2000.

Table 2 Comparative Increases from the 1995 Japan-U.S. I-O Table

(Unit: $100 million)

	Intermadiate demand			Final demand							Domestic production
				Japan			U.S.A				
	Japan	U.S.A	Total	Domestic	Export to ROW	Total	Domestic	Export to ROW	Total	Total	
Japan	34,361	706	35,067	44,420	3,721	48,212	836		836	49,049	84,116
U.S.A	484	63,540	64,024	375		375	95,639	8,683	104,354	104,729	168,753
Tariffs (intermediate goods in Japan and U.S.A)	31	10	41	47		47	14		14	61	102
International freight charges, insurance	21	19	40	8		8	19		19	27	67
ROW	2,453	6,684	9,137	1,328		1,328	5,520		5,520	6,848	15,985
Tariffs (on ROW)	184	56	240	94		94	130		130	224	465
Total amount of intermediate input	37,534	71,016	108,549	46,272	3,721	50,064	102,160	8,683	110,874	160,939	269,488
Gross value added	46,582	97,738	144,320								
Domestic production	84,116	168,753	252,869								

3. Comparison based on a breakdown of the output of Japan and the United States by industry

(1) Comparison between the respective outputs of the goods sectors and the service sectors

According to a breakdown of the output of Japan and the United States in 2000 by industry, the output of the goods sector and the service sector of Japan account for 42.77% (29.62 percentage points of which is attributable to the output of the manufacturing sectors) and 57.23% of the total output of Japan respectively, while the output of those sectors of the United States account for 34.39% (23.84 percentage points of which is attributable to the output of the manufacturing sectors) and 65.61% of the total output of the United States.

The chronological analysis of such a breakdown shows that the output of the goods sector of Japan accounted for 52.97% in 1985, 50.86% in 1990 (down 2.11 percentage points from the previous percentage), 44.52% in 1995 (down 6.34 percentage points), and 42.77% in 2000 (down 1.75 percentage points). The percentage of the output of the goods sector, which was higher than 50% until 1990, went down to below 50% in 1995. In contrast, the percentage of the output of the service sector always exceeded the percentage in the previous table, reaching 57.23% in 2000.

Table 3 Trends in Outputs

		Value of production (in $100 million)				Component ratio (%)				Change (point)		
		1985	1990	1995	2000	1985	1990	1995	2000	1990	1995	2000
Japan	Agriculture, forestry and mining	790	1,333	1,808	1,475	3.01	2.46	1.98	1.75	▲ 0.55	▲ 0.48	▲ 0.22
	Manufacturing	9,943	18,843	27,381	24,918	37.90	34.81	29.96	29.62	▲ 3.08	▲ 4.86	▲ 0.33
	Construction	2,348	5,980	9,097	7,171	8.95	11.05	9.95	8.53	2.10	▲ 1.10	▲ 1.43
	Electricity, gas and thermal energy supply	816	1,370	2,404	2,410	3.11	2.53	2.63	2.87	▲ 0.58	0.10	0.24
	Goods sector	13,896	27,526	40,690	35,974	52.97	50.86	44.52	42.77	▲ 2.11	▲ 6.34	▲ 1.75
	Service sector	12,340	26,598	50,715	48,141	47.03	49.14	55.48	57.23	2.11	6.34	1.75
	Total of production	26,236	54,124	91,405	84,116	100.00	100.00	100.00	100.00	0.00	0.00	0.00
U.S.A	Agriculture, forestry and mining	3,527	3,609	3,978	4,409	5.17	3.89	3.16	2.61	▲ 1.28	▲ 0.73	▲ 0.54
	Manufacturing	20,736	26,017	32,383	40,231	30.37	28.05	25.70	23.84	▲ 2.33	▲ 2.35	▲ 1.86
	Construction	4,836	6,557	8,035	9,110	7.08	7.07	6.38	5.40	▲ 0.01	▲ 0.69	▲ 0.98
	Electricity, gas and thermal energy supply	2,476	2,759	3,397	4,290	3.63	2.97	2.70	2.54	▲ 0.65	▲ 0.28	▲ 0.15
	Goods sector	31,575	38,942	47,792	58,041	46.25	41.98	37.93	34.39	▲ 4.27	▲ 4.05	▲ 3.54
	Service sector	36,698	53,821	78,212	110,713	53.75	58.02	62.07	65.61	4.27	4.05	3.54
	Total of production	68,273	92,763	126,004	168,753	100.00	100.00	100.00	100.00	0.00	0.00	0.00

A similar breakdown analysis shows that the output of the goods sector of the United States accounted for 46.25% in 1985, 41.98% in 1990 (down 4.27 percentage points from the previous percentage), 37.93% in 1995 (down 4.05 percentage points), and 34.39% in 2000 (down 3.54 percentage points). The percentage of the output of the goods sector has been on the decline. The percentage of the output of the service sector was always lower than the percentage in the previous table, while that of the output of the service sector was always higher than the percentage in the previous table, reaching almost 70% (65.61%) in 2000. This trend is also seen in Japan, although the speed of increase in the output of the service sectors is faster in the United States than in Japan.

(2) Comparison based on a breakdown of the output of Japan and the United States by industry in 2000

Table 4 shows the respective outputs of 54 sectors of Japan and the United States.

Table 4 Comparison of Japanese and U.S. 0utputs (54 sectors)

Sector		Production (in $100 million)		Component ratio (%)		Sector		Production (in $100 million)		Component ratio (%)	
		Japan	U.S.A	Japan	U.S.A			Japan	U.S.A	Japan	U.S.A
Total of production		84,116	168,753	100.00	100.00						
Goods sector						Service sector					
1	Agriculture products	718	1,225	0.85	0.73	37	City water, thermal energy supply, and other sanitary services	691	998	0.82	0.59
2	Livestock raising	239	896	0.28	0.53	38	Commerce	8,969	17,384	10.66	10.30
3	Agriculture and forestry services	44	176	0.05	0.10	39	Financial service and insurance	3,310	9,955	3.93	5.90
4	Forestry	95	159	0.11	0.09	40	Real estate	5,884	13,442	6.99	7.97
5	Fishing	247	37	0.29	0.02	41	Transport	3,455	6,938	4.11	4.11
6	Mining	121	269	0.14	0.16	42	Communication and broadcasting	1,845	4,622	2.19	2.74
7	Coal mining	3	196	0.00	0.12	43	Public service	3,361	10,935	4.00	6.48
8	Crude petroleum and natural gas	8	1,452	0.01	0.86	44	Education and research	2,462	7,011	2.93	4.15
9	Food	2,123	3,698	2.52	2.19	45	Medical and health service	4,021	9,530	4.78	5.65
10	Beverages	808	735	0.96	0.44	46	Other non-profit organizations	393	1,186	0.47	0.70
11	Animal and poultry feedstuffs	90	231	0.11	0.14	47	Advertising and information service	2,129	6,375	2.53	3.78
12	Tobacco	281	534	0.33	0.32	48	Goods renting and leasing	1,159	1,915	1.38	1.13
13	Textiles	633	1,319	0.75	0.78	49	Repairs	1,201	2,847	1.43	1.69
14	Lumber, wooden products and furniture	554	1,613	0.66	0.96	50	Other business services	2,442	9,870	2.90	5.85
15	Pulp, paper and paper products	761	1,678	0.90	0.99	51	Other amusement and recreation services	1,166	1,920	1.39	1.14
16	Publishing and printing	1,059	2,144	1.26	1.27	52	Drinking and eating places	2,131	4,042	2.53	2.40
17	Chemical products	2,234	4,039	2.66	2.39	53	Other personal services	2,036	2,247	2.42	1.33
18	Pertoleum products (including petrochemical basic products)	1,111	2,222	1.32	1.32	54	Unclassified, etc.	2,179	495	2.59	0.29
19	Plastic, rubber and leather products	1,087	1,742	1.29	1.03						
20	Ceramic, stone and clay	765	937	0.91	0.56						
21	Steel and steel products	826	830	0.98	0.49						
22	Non-steel metals and products	510	791	0.61	0.47						
23	Miscellaneous metal products	1,273	1,980	1.51	1.17						
24	General machinery	2,217	2,851	2.64	1.69						
25	Office machinery	79	27	0.09	0.02						
26	Household electrical and electric machinery	653	316	0.78	0.19						
27	Electric and communication machinery	1,140	2,338	1.36	1.39						
28	Parts and accessories of equipment	995	1,340	1.18	0.79						
29	Other electric machinery	1,653	1,425	1.96	0.84						
30	Cars	2,730	4,466	3.25	2.65						
31	Other transportation equipment and repairing	419	1,262	0.50	0.75						
32	Precision machinery	459	745	0.55	0.44						
33	Other manufactured products	457	971	0.54	0.58						
34	Construction and repairs	4,165	7,261	4.95	4.30						
35	Civil engineering and construction	3,007	1,849	3.57	1.10						
36	Electricity and gas	1,719	3,293	2.04	1.95						

Note: The thermal energy supply sector is included in the goods sector but isn't classified into the goods/service sector in 54

In the case of Japan, the sectors that produce large outputs are "commerce," "real estate," "construction and repairs," "medical and health care," and "transportation," including three manufacturing sectors in the top ten largest sectors. In the case of the United States, such sectors include "commerce," "real estate," "public service," "finance and insurance," and "other services for offices," with only one manufacturing sector in the top ten largest sectors. This shows that most of the top ten sectors are service sectors in both countries.

According to a breakdown of the total output of the goods sectors, the goods sector of Japan that produces the largest output is "construction and repairs," followed by "civil engineering works," "cars," "chemical products," and "general machinery." The top five goods sectors account for 17.07% of the total output of the Japanese goods sectors. Furthermore, 14 out of 36 goods sectors each account for more than 1% of the total. On the other hand, the goods sector of the United States that produces the largest output is "construction and repairs," followed by "cars," "chemical products," "foodstuffs," and "electricity and gas." The top five goods sectors account for 13.48% of the total output of the U.S. goods sectors. Furthermore, 12 out of 36 goods sectors each account for more than 1% of the total. This indicates that these top goods sectors of Japan have relatively larger shares than those of the United States.

According to a breakdown of the total output of the service sectors, the service sectors of Japan that account for more than 5% of the total output of the Japanese service sectors are "commerce" and "real estate," while those that account for more than 4% are "medical and health care," "transportation," and "public service." The service sectors of the United States that account for more than 5% of the total output of the U.S. service sectors are "commerce," "real estate," "public service," "finance and insurance," "other services for offices," and "medical and health care," while those that account for more than 4% are "education and research" and "transportation."

This shows that the number of sectors that have relatively large shares is higher in the United States than in Japan.

In both Japan and the United States, the percentage of the service sectors to the total output has been on the rise since 1985, when the Japan-U.S. Input-Output Table was compiled for the first time.

4. Comparison of the input structure between Japan and the United States

(1) Intermediate input ratio (ratio of intermediate input to gross output)

The percentage of the intermediate input to the gross output (intermediate input ratio) in 2000 is 44.62% in Japan and 42.08% in the United States. The ratio of Japan is higher than that of the United States by 2.54 percentage points (Table 5).

Table 5　Comparison of the Input Structure of Japan and the United States

		Japan				U.S.A			
		1985	1990	1995	2000	1985	1990	1995	2000
Input ratio	Total intermediate input	49.46	46.08	44.62	44.62	42.16	40.78	42.55	42.08
	Domestic goods	44.38	42.08	41.44	40.85	39.25	37.49	38.78	37.65
	Imported goods	5.08	4.00	3.18	3.77	2.91	3.29	3.77	4.43
	Gross value-added	50.54	53.92	55.38	55.38	57.84	59.22	57.45	57.92
	Compensation of employees	27.40	29.64	31.77	30.40	34.72	35.15	33.57	33.79
	Other values-added	23.14	24.28	23.60	24.98	23.12	24.07	23.88	24.13
	Domestic production	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Change from last report	Total intermediate inputs		▲ 3.38	▲ 1.46	0.00		▲ 1.38	1.77	▲ 0.47
	Domestic goods		▲ 2.30	▲ 0.64	▲ 0.59		▲ 1.76	1.29	▲ 1.13
	Imported goods		▲ 1.08	▲ 0.82	0.59		0.38	0.48	0.66
	Gross value-added		3.38	1.46	0.00		1.38	▲ 1.77	0.47
	Compensation of employees		2.24	2.13	▲ 1.37		0.43	▲ 1.58	0.22
	Other value-added		1.14	▲ 0.68	1.38		0.95	▲ 0.19	0.25
Difference in level of Japan and U.S.A	Total intermediate input					▲ 7.30	▲ 5.30	▲ 2.07	▲ 2.54
	Domestic goods					▲ 5.13	▲ 4.59	▲ 2.66	▲ 3.20
	Imported goods					▲ 2.17	▲ 0.71	0.59	0.66
	Gross value-added					7.30	5.30	2.07	2.54
	Compensation of employees					7.32	5.51	1.80	3.39
	Other value-added					▲ 0.02	▲ 0.21	0.28	▲ 0.85

Goods can be classified into two groups: domestic goods and imported goods (including freight charges and insurance premiums). The input ratio of domestic goods is 40.85% in Japan and 37.65% in the United States. The ratio of Japan is higher than that of the United States by 3.20 percentage points.

The input ratio of imported goods is 3.77% in Japan and 4.43 % in the United States. The ratio of the United States is higher than that of Japan by 0.66 percentage points.

Chronological analysis of this data shows that the intermediate input ratio of Japan decreased until 1995 because both the input ratio of domestic goods and that of imported goods had been on the decline. In 2000, however, the intermediate input ratio of Japan leveled off because the input ratio of imported goods increased, although that of domestic goods continued to decrease. In the case of the United States, the intermediate input ratio rose in 1995 because both the input ratio of domestic goods and that of imported goods increased. In 2000, however, the intermediate input ratio fell because the input ratio of domestic goods declined, although that of imported goods continued to rise.

(2) Gross value-added (ratio of value-added to output)

The ratio of value-added to gross output is called gross value-added ratio (hereinafter referred to as "value-added ratio"). The value-added ratio of all the industries was 55.38% in Japan and 57.92% in the United States in 2000. (Table 5)

Chronological analysis of this data shows that the value-added ratio has been on the rise in both Japan and the United States.

The value-added ratio was 50.54% in Japan and 57.84% in the United States in 1985. The difference between the two countries, which was 7.30 percentage points in 1985, shrank to 5.30 points in 1990 and to 2.07 points in 1995. In 2000, however, the difference increased to 2.54 points.

Value-added can be classified into two groups: "compensation of employees" and "other value-added." The ratio of compensation of employees (the ratio of compensation of employees to output) was 30.40% in Japan and 33.79% in the United States in 2000. The ratio of the United States is higher than that of Japan by 3.39 percentage points. The ratio of compensation of employees to value-added was 54.90% in Japan and 58.34% in

the United States in 2000. The ratio of the United States is higher than that of Japan by 3.44 percentage points. In both Japan and the United States the ratio of compensation of employees to value-added has decreased since 1995, when the ratio was 57.38% in Japan and 58.43% in the United States. (Table 6). In Japan, in particular, the ratio of compensation of employees increased until 1995 due in part to an increase in salaries. In 2000, however, the ratio of compensation of employees to output and also to the total value-added decreased from that in 1995.

Table 6 Structure of Gross Value Added

(Unit: 100 million yen, %)

			Japan				U.S.A			
			1985	1990	1995	2000	1985	1990	1995	2000
Value	Gross value-added		13,259	29,182	50,616	46,582	39,489	54,931	72,387	97,738
		Compensation of employees	7,187	16,043	29,041	25,572	23,703	32,604	42,296	57,018
		Other value-added	6,072	13,139	21,575	21,010	15,786	22,326	30,090	40,720
Compo-nent ratio	Total of value-added		100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
		Compensation of employees	54.21	54.97	57.38	54.90	60.02	59.36	58.43	58.34
		Other value-added	45.79	45.03	42.62	45.10	39.98	40.64	41.57	41.66

In contrast, the ratio of other value-added (the ratio of "other value-added" to output) is 24.98% in Japan and 24.13% in the United States, both of which have increased since 1995. (Table 5)

In the case of Japan, the value-added ratio of all the industries in 2000 remained almost the same as that in 1995. According to the breakdown, the ratio of compensation of employees decreased, whereas that of other value-added has increased since 1995. In the case of the United States, the value-added ratio in 2000 increased as a whole since 1995 because both the ratio of compensation of employees and that of other value-added slightly increased.

(3) Comparison of the input structure of the goods sector and the service sector

Table 7 below compares the input structure of the goods sector and the service sector and also between 1995 and 2000. Regarding the goods sector, the intermediate input ratio increased, whereas the value-added ratio decreased during the 5-year period in both Japan and the United States.

In both countries, the decrease of the value-added ratio is attributable mostly to a decrease in the ratio of other value-added. In particular, a decrease in the ratio of compensation of employees is noticeable in Japan, whereas a fall in the ratio of other value-added is significant in the United States.

Regarding the service sector, the trend in the input structure is opposite from that seen in the goods sector as far as Japan is concerned. In Japan, the intermediate input ratio has been on the decline, whereas the value-added ratio has been on the rise. In the United States, both the intermediate input ratio and the value-added ratio have remained almost the same since 1995. According to the breakdown of the value-added ratio of the United States, the ratio of compensation of employees has fallen, while the ratio of other value-added has risen since 1995.

Table 7　Input Structure of the Goods Sector and the Service Sector

(Unit: %)

	1995				2000				Change (2000-1995)			
	Japan		US		Japan		US		Japan		US	
	Goods sector	Service sector	Goods sector	Service sector	Goods sector	Service sector	Goods sector	Service sector	Goods sector	Service sector	Goods sector	Service sector
Total of intermediate input	56.45	35.13	57.00	33.72	58.45	32.94	59.97	33.67	2.00	▲ 2.19	2.97	▲ 0.05
Gross value-added	43.55	64.87	43.00	66.28	41.55	67.06	40.03	66.33	▲ 2.00	2.19	▲ 2.97	0.05
Compen sation of employee	24.25	37.80	24.64	39.02	23.73	36.34	24.49	38.11	▲ 0.52	▲ 1.46	▲ 0.15	▲ 0.91
Other value-added	19.29	27.06	18.36	27.25	17.81	30.72	15.54	28.22	▲ 1.48	3.66	▲ 2.82	0.97
Domestic production	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00	0.00	0.00

5. Composition of the final demand of Japan and the United States

(1) Comparison of the scale of domestic final demand

The domestic final demand in 2000 was $4.6272 trillion in Japan and $10.2160 trillion in the United States. The U.S. demand was 2.2 times larger than Japan's. (Tables 1 and 2)

Regarding the domestic final demand of Japan and the United States, Japan's domestic final demand in 2000 had increased by a factor of 0.92 since 1995. If the increase is measured in terms of yen value in order to eliminate the influence of fluctuations in the exchange rate, Japan's domestic final demand had increased by a factor of 1.06 since 1995. In the case of the United States, the domestic final demand in 2000 had increased by a factor of 1.37 since 1995.

In the five years from 1995 to 2000, the scale of output of Japan and the United States increased by a factor of 0.92 and 1.34 respectively. The increase in the output scale is almost the same as that in the final demand in Japan, whereas, in the United States, the increase in the output scale is slightly smaller than that in the final demand.

(2) Comparison based on a breakdown of domestic final demand by demand item

According to a breakdown of the domestic final demand by demand item, Japan's final demand increased only in "government consumption expenditure" (up 2.56 percentage points from 1995 to 2000) and decreased in other demand items such as "public fixed capital formation" (down 0.99 points), "private fixed capital formation" (down 0.91 points), and "private consumption expenditure" (down 0.28 points).

In the case of the United States, such consumption decreased as "private consumption expenditure (down 1.57 points)" and "government consumption expenditure (down 1.43 points)," whereas such capital formation increased as "private fixed capital formation" (up 2.42 points) and "public fixed capital formation" (up 0.23 points).

A comparison of Japan and the United States based on a breakdown of the domestic final demand by demand item shows that the total of the private sector (sum of "private consumption expenditure" and "private fixed capital formation") accounted for 76.77% in Japan and 81.50% in the United States in 1995, with a 4.73-point difference between the two countries. In 2000, the total of the private sector accounted for 75.57% in Japan and 82.35% in the United States, with a 6.78-point difference between the two countries. The difference had widened by 2.05 points during the 5-year period. In this way, the percentage of the private sectors in relation to the total final demand differs between Japan and the United States.

Table 8 Composition of Final Demand

(Unit: $100 million, %)

	1995						2000					
	Japan			US			Japan			US		
	Value	Compo-nent ratio	Ratio of domestic compo-nent	Value	Compo-nent ratio	Ratio of domestic compo-nent	Value	Compo-nent ratio	Ratio of domestic compo-nent	Value	Compo-nent ratio	Ratio of domestic compo-nent
Total domenstic final demand	50,246	92.98	100.00	74,375	92.38	100.00	46,272	92.43	100.00	102,160	92.14	100.00
Private consumption expenditures (A)	28,624	52.97	56.97	50,249	62.41	67.56	26,230	52.39	56.69	67,416	60.80	65.99
Government consumption expenditures (B)	7,353	13.61	14.63	11,478	14.26	15.43	7,953	15.88	17.19	14,298	12.90	14.00
Gross private fixed investment (C)	9,950	18.41	19.80	10,369	12.88	13.94	8,739	17.46	18.89	16,716	15.08	16.36
Gross public fixed investment (D)	4,103	7.59	8.17	2,134	2.65	2.87	3,325	6.64	7.18	3,166	2.86	3.10
Private (A+C)	38,574	71.38	76.77	60,618	75.29	81.50	34,969	69.85	75.57	84,132	75.88	82.35
Public (B+D)	11,456	21.20	22.80	13,612	16.91	18.30	11,277	22.53	24.37	17,464	15.75	17.09
Change in inventory	216	0.40	0.43	145	0.18	0.20	26	0.05	0.06	564	0.51	0.55
Exports to ROW	3,743	6.93		6,233	7.74		3,721	7.43		8,683	7.83	
Ordinary trade	3,148	5.83		4,995	6.20		3,322	6.64		6,458	5.82	
Non-ordinary	596	1.10		1,238	1.54		399	0.80		2,225	2.01	
Adjustment category	48	0.09		▲ 95	▲ 0.12		71	0.14		32	0.03	
Total final demand	54,037	100.00		80,514	100.00		50,064	100.00		110,874	100.00	

	Change in component ratio (2000-1995)			
	Japan		US	
	Compo-nent ratio	Ratio of domestic component	Compo-nent ratio	Ratio of domestic component
Total of domenstic final demand	▲ 0.55	0.00	▲ 0.24	0.00
Private consumption expenditures (A)	▲ 0.58	▲ 0.28	▲ 1.61	▲ 1.57
Government consumption expenditures (B)	2.27	2.56	▲ 1.36	▲ 1.43
Gross private fixed investment (C)	▲ 0.95	▲ 0.91	2.20	2.42
Gross public fixed investment (D)	▲ 0.95	▲ 0.99	0.21	0.23
Private (A+C)	▲ 1.53	▲ 1.20	0.59	0.85
Public (B+D)	1.33	1.57	▲ 1.16	▲ 1.21
Change in inventory	▲ 0.35	▲ 0.37	0.33	0.35
Exports to ROW	0.50		0.09	
Ordinary trade	0.81		▲ 0.38	
Non-ordinary	▲ 0.30		0.47	
Adjustment category	0.05		0.15	
Total final demand	0.00		0.00	

6. Comparison of the import structure of Japan and the United States

Imports increased during the five years from 1995 to 2000 by a factor of 1.08 (1.20 in yen value) in Japan and 1.60 in the United States. Considering the fact that the output had increased by a factor of 0.92 (1.05 in yen value) in Japan and 1.34 in the United States during the same period, the increase in imports is relatively large in both Japan and the United States.

In the case of Japan, the percentage of imports to the domestic demand (the sum of the intermediate demand and the domestic final demand) increased from 4.71% in 1995 to 5.56% in 2000. In the case of the United States, this percentage also increased from 6.71% in 1995 to 8.15% in 2000.

Imports can be classified into two groups: imports for intermediate demand and imports for domestic final demand. The percentage of imports to the intermediate demand increased by 1.05 percentage points, from 6.78% in 1995 to 7.83% in 2000. In the case of the United States, this percentage also increased by 1.69 percentage points, from 8.72% in 1995 to 10.41% in 2000. This shows that the percentage of imports to the intermediate demand had increased in both Japan and the United States.

In Japan, the percentage of imports to the final demand increased by 0.64 percentage points, from 3.04% in 1995 to 3.68% in 2000. In the United States, this percentage also increased by 0.96 percentage points, from 5.26% in 1995 to 6.22% in 2000. This shows that the percentage of imports to the final demand had also increased in

both Japan and the United States.

In summary, the percentages of imports to the intermediate demand and to the final demand had both increased, especially the former. As a result, the dependence on imports increased in both countries during the period from 1995 to 2000.

Table 9 Trends in Imports

(Unit: $100,000, %)

	1995			2000			Increase
	Total imports	Percentage total domestic demand (%)	Total domestic demand	Total imports	Percentage total domestic	Total domestic demand	Total imports
Imports of Japan	4,279,354	4.71	90,771,635	4,640,485	5.56	83,421,822	108.4
(from US)	671,736	0.74		859,092	1.03		127.9
Imports of US	8,573,110	6.71	127,767,198	13,746,237	8.15	172,925,766	160.3
(from Japan)	1,121,417	0.88		1,542,436	0.91		137.5

(Unit: $100,000, %)

	1995				2000			
	Total of imports for intermediate demand	Percentage of intermediate input (%)	Total of imports for final demand	Percentage of domestic final demand (%)	Total of imports for intermediate demand	Percentage of intermediate input (%)	Total of imports for final demand	Percentage of domestic final demand (%)
Imports of Japan	2,753,193	6.78	1,526,161	3.04	2,937,454	7.83	1,703,031	3.68
(from US)	427,261	1.05	244,475	0.49	483,991	1.29	375,101	0.81
Imports of US	4,666,362	8.72	3,906,748	5.26	7,389,545	10.41	6,356,692	6.22
(from Japan)	528,834	0.99	592,583	0.80	705,988	0.99	836,448	0.82

Chapter 2　Interdependence Observed in the 2000 Japan-U.S. Input-Output Table

From the viewpoint of input-output analysis, the size of final demand determines the size of output because the size of final demand and that of output have a certain correlation with each other, in that final demand induces production activities.

In this chapter, an analysis is conducted by using various coefficients including a Leontief inverse matrix calculated based on the Japan-U.S. I-O Table. The analysis is carried out to answer such questions as "How much does the respective final demand of Japan and the United States induce domestic production and the other country's production?" (production inducement), "To what degree does the production of each industry of Japan and the United States depend on which demand item of which country?" (dependence on production inducement), and "How much output does a one-unit final demand of Japan and the United States induce in Japan and the United States respectively?" (production inducement coefficient).

Furthermore, a combined use of the production inducement value and such data as the value-added ratio and the input ratio of imported goods enables us to see which final demand of Japan and of the United States induces how much value-added or imports of those countries (value-added inducement and induced imports). The information obtained allows us to conduct a quantitative study as to how much value-added or imports a one-unit final demand induces (value-added inducement coefficient and import inducement coefficient).

1. Interdependence between the final demand of Japan and of the United States and production inducement, value-added inducement, and induced imports

(1) Final demand and production inducement

The following section discusses how much production the actual final demand of Japan and the United States has induced domestically or in the other country, and on what type of final demand the production depends (dependence on production inducement).

① Production induced domestically or in the other country

Japan's final demand stood at $5.0064 trillion (including the exports to foreign countries other than the United States) in 2000. It induced a production worth $8.1031 trillion in Japan (accounting for 98.22% of the total production induced in Japan and the United States), and also a production worth $146.7 billion (accounting for 1.78%) in the United States. In total, Japan's final demand induced $8.2497 trillion (Table 10).

Table 10 Production Induced by Each Fnal Demand Item of Japan and the United States in 2000

(Unit: 100 thousand dollars, %)

Item		Value of final demand	Value of production inducement		
			Total	Within Japan	Within US
Japan	Private consumption expenditure	26,230,202	39,951,301	39,245,616	705,685
	Government consumption expenditure	7,952,696	13,036,735	12,947,125	89,610
	Gross private fixed investment	8,739,264	15,840,511	15,378,119	462,392
	Gross public fixed investment	3,324,579	6,317,965	6,245,691	72,274
	Change in inventories	25,669	1,135	1,883	▲ 748
	Total of domestic final demand	46,272,410	75,147,646	73,818,433	1,329,213
	Exports to ROW (ordinally trade)	3,321,886	6,640,328	6,510,591	129,738
	Non-ordinally trade to ROW (export)	398,683	651,970	645,807	6,163
	Total of exports	3,720,569	7,292,299	7,156,398	135,901
	Adjustments	71,374	57,504	56,116	1,388
	Total of final demand	50,064,353	82,497,449	81,030,948	1,466,502
			100.00	98.22	1.78
US	Private consumption expenditures	67,415,882	99,276,372	1,380,286	97,896,086
	Government consumption expenditures	14,298,026	21,971,378	92,513	21,878,865
	Gross private fixed investment	16,715,773	27,374,542	1,193,255	26,181,287
	Gross public fixed investment	3,165,837	5,438,724	91,038	5,347,685
	Change in inventory	564,162	777,116	14,623	762,493
	Total domestic final demand	102,159,680	154,838,132	2,771,715	152,066,417
	Exports to ROW (ordinally trade)	6,457,801	11,982,602	296,316	11,686,286
	Non-ordinary trade to ROW (exports)	2,225,306	3,529,367	19,108	3,510,259
	Total exports	8,683,107	15,511,970	315,424	15,196,545
	Adjustments	31,700	21,593	▲ 2,371	23,964
	Total final demand	110,874,487	170,371,695	3,084,768	167,286,926
			100.00	1.81	98.19

The U.S. final demand stood at $11.0874 trillion (including exports to foreign countries other than the United States) in 2000. It induced a production worth $16.7287 trillion in the United States (accounting for 98.19%) and also a production worth $308.5 billion (accounting for 1.81%) in Japan. In total, the U.S. final demand induced $17.0372 trillion.

② Production induced in the other country

Regarding Japanese and U.S. production induced by the final demand of the other company in 2000, Japan's final demand induced a production worth $146.7 billion in the United States, whereas the U.S. final demand induced a production worth $308.5 billion in Japan. In the case of both countries, the proportion of the production induced in the other country to the total production inducement is about 1.8%, despite the difference between the two countries in terms of scale.

③ Dependence on production inducement and the degree of dependence on each final demand item

According to the breakdown of the final demand on which Japan's production depends (dependence on production inducement and the degree of dependence on each final demand item), the domestic final demand accounts for 87.76% of the total final demand on which Japan's production inducement depends, whereas the overseas demand accounts for the remaining 12.24% (Table 11).

According to a breakdown of the domestic demand, the degree of dependence on private consumption expenditure is the highest (46.66%) followed by private fixed capital formation, and government consumption expenditure.

Meanwhile, according to a breakdown of the final demand on which the U.S. production depends, the domestic final demand accounts for 90.11% of the total final demand on which the U.S. production inducement depends, whereas the overseas demand accounts for the remaining 9.89%. This shows that the United States depends more on its domestic demand than Japan does.

According to the breakdown of domestic demand, the degree of dependence on private consumption expenditure is the highest (58.01%) followed by private fixed capital formation, and government

consumption expenditure. In this respect, the United States is the same as Japan.

④ **Interdependence between Japan and the United States**

The Japan-U.S. Table shows that production activities of Japan and the United States are induced not only by each country's own domestic final demand but also by the other country's final demand. In order to further study this interdependence, the percentage of the domestic output of both Japan and the United States induced by the other country's final demand to the total domestic output is calculated and defined as Japan's or the United States' "dependence on the other country" (Table 11).

Japan's dependence on the United States is 3.67%, whereas U.S. dependence on Japan is 0.87%.

Table 11 Dependence on Production Inducement and the Degree of Dependence on Each Final Demand Item of Japan and the United States

Item		Composition ratio (%)		Dependence (%)	
		Japan	US	Japan	US
Japan	Private consumption expenditure	99.11	0.89	46.66	0.42
	Government consumption expenditure	99.66	0.34	15.39	0.05
	Gross private fixed investment	98.52	1.48	18.28	0.27
	Gross public fixed investment	99.43	0.57	7.43	0.04
	Change in inventory	122.22	▲ 22.22	0.00	▲ 0.00
	Total domestic final demand	99.11	0.89	87.76	0.79
	Exports to ROW (ordinary trade)	99.02	0.98	7.74	0.08
	Non-ordinary trade to ROW (exports)	99.52	0.48	0.77	0.00
	Total exports	99.06	0.94	8.51	0.08
	Adjustments	98.81	1.19	0.07	0.00
	Total	99.11	0.89	96.33	0.87
US	Private consumption expenditure	2.75	97.25	1.64	58.01
	Government consumption expenditure	0.84	99.16	0.11	12.97
	Gross private fixed investment	8.38	91.62	1.42	15.51
	Gross public fixed investment	3.30	96.70	0.11	3.17
	Change in inventory	3.71	96.29	0.02	0.45
	Total domestic final demand	3.53	96.47	3.30	90.11
	Exports to ROW (ordinary trade)	4.84	95.16	0.35	6.93
	Non-ordinary trade to ROW (exports)	1.08	98.92	0.02	2.08
	Total exports	4.00	96.00	0.38	9.01
	Adjustments	▲ 24.56	124.56	▲ 0.00	0.01
	Total	3.57	96.43	3.67	99.13
	Total Japan-US			100.00	100.00

(2) Final demand and value-added inducement

This section analyzes which final demand of Japan and the United States (the sum of domestic final demand and exports to ROW) induces domestic value-added or the other country's value-added.

① **Value-added inducement**

Japan's final demand (including exports to foreign countries other than the United States) stood at $5.0064 trillion in 2000. It induced a value-added worth $4.5216 trillion in Japan (98.43% of the total value-added inducement of Japan and the United States) and $72.1 billion in the United States (1.57%). The total value-added induced in the two countries reached $4.5937 trillion (Table 12).

In contrast, the U.S. final demand (including exports to foreign countries other than Japan) stood at $11.0874 trillion. It induced a value-added worth $9.7017 trillion in the United States (98.61%) and $136.6 billion in Japan (1.39%). The total value-added induced in the two countries reached $9.8383 trillion.

Table12 Value-added Induced by Each Final Demand Item of Japan and the United States in 2000

(Unit: 100 thousand dollars, %)

Item			Value of final demand	Value of added-value inducement		
				Total	Within Japan	Within US
Japan		Private consumption expenditure	26,230,202	23,892,311	23,538,326	353,985
		Government consumption expenditure	7,952,696	7,673,206	7,628,898	44,308
		Gross private fixed investment	8,739,264	7,828,695	7,606,500	222,194
		Gross public fixed investment	3,324,579	3,086,403	3,050,645	35,759
		Change in inventory	25,669	32,300	32,672	▲ 372
	Total domestic final demand		46,272,410	42,512,915	41,857,041	655,875
	Exports to ROW (ordinary trade)		3,321,886	2,989,323	2,927,624	61,699
	Non-ordinary trade to ROW (exports)		398,683	370,154	367,254	2,900
	Total of exports		3,720,569	3,359,477	3,294,877	64,599
	Adjustments		71,374	64,580	64,064	516
	Total		50,064,353	45,936,972	45,215,982	720,990
				100.00	98.43	1.57
US		Private consumption expenditure	67,415,882	60,185,829	611,724	59,574,105
		Government consumption expenditure	14,298,026	13,657,881	40,317	13,617,564
		Gross private fixed investment	16,715,773	13,745,200	529,527	13,215,673
		Gross public fixed investment	3,165,837	2,696,661	40,702	2,655,959
		Change in inventory	564,162	384,812	6,687	378,124
	Total domestic final demand		102,159,680	90,670,383	1,228,957	89,441,425
	Exporst to ROW (ordinary trade)		6,457,801	5,575,620	129,791	5,445,828
	Non-ordinary trade to ROW (exports)		2,225,306	2,098,996	8,195	2,090,801
	Total exports		8,683,107	7,674,615	137,986	7,536,629
	Adjustments		31,700	37,736	▲ 1,104	38,840
	Total		110,874,487	98,382,734	1,365,840	97,016,894
				100.00	1.39	98.61
Total Japan-US				144,319,706	46,581,822	97,737,884

② Dependence on value-added inducement and the degree of dependence on each final demand item

According to a breakdown of the total final demand on which the value-added inducement depends, the domestic final demand accounts for 89.86%, while the overseas demand accounts for the remaining 10.14% (Table 13).

According to a breakdown of the domestic demand, the degree of dependence on the private consumption expenditure is the highest (more than 50% of the total), followed by government consumption expenditure and private fixed capital formation at almost the same degree of dependence (16.38% and 16.33% respectively).

On the other hand, according to the breakdown of the final demand on which the U.S. value-added depends, the domestic final demand accounts for 91.51% of the total final demand, whereas the overseas demand accounts for the remaining 8.49%.

According to the breakdown of domestic demand, the degree of dependence on private consumption expenditure is the highest (60.95%), followed by government consumption expenditure and private fixed capital formation at almost the same degree of dependence (13.93% and 13.52%, respectively). In this respect, the United States is similar to Japan, although the U.S. value-added depends more on consumption than Japan's does.

Table 13 Dependence on Value-added Inducement and the Degree of Dependence on Each final Demand Item

Item		Composition ratio (%)		Dependence (%)	
		Japan	US	Japan	US
Japan	Private consumption expenditure	99.29	0.71	50.53	0.36
	Government consumption expenditure	99.72	0.28	16.38	0.05
	Gross private fixed investment	98.63	1.37	16.33	0.23
	Gross public fixed investment	99.44	0.56	6.55	0.04
	Change in inventory	100.57	▲ 0.57	0.07	▲ 0.00
	Total domestic final demand	99.26	0.74	89.86	0.67
	Exports to ROW (ordinary trade)	99.01	0.99	6.28	0.06
	Non-ordinary trade to ROW (exports)	99.62	0.38	0.79	0.00
	Total exports	99.07	0.93	7.07	0.07
	Adjustments	99.64	0.36	0.14	0.00
	Total	99.25	0.75	97.07	0.74
US	Private consumption expenditure	2.11	97.89	1.31	60.95
	Government consumption expenditure	0.62	99.38	0.09	13.93
	Gross private fixed investment	7.76	92.24	1.14	13.52
	Gross public fixed investment	3.12	96.88	0.09	2.72
	Change in inventory	3.59	96.41	0.01	0.39
	Total domestic final demand	2.80	97.20	2.64	91.51
	Exports to ROW (ordinary trade)	4.76	95.24	0.28	5.57
	Non-ordinary trade to ROW (exports)	0.82	99.18	0.02	2.14
	Total exports	3.70	96.30	0.30	7.71
	Adjustments	▲ 6.43	106.43	▲ 0.00	0.04
	Total	2.87	97.13	2.93	99.26
	Total Japan-US			100.00	100.00

(3) Final demand and induced imports

The following section discusses what type of final demand of Japan or the United States (the sum of domestic final demand and exports to ROW) induces imports by its own country or the other country (dependence on import inducement).

① Induced imports from the whole world

Japan induces imports worth $448.7 billion (97.73% of the total imports induced by Japan and the United States from the whole world by Japan's final demand (including exports to foreign countries other than the United States).

Table 14 Imports Induced by Each Final Demand Item of Japan and the United States in 2000 (from the whole world)

(Unit: 100 thousand dollars, %)

Item		Value of final demand	Value of import inducement		
			Total	Within Japan	Within US
Japan	Private consumption expenditure	26,230,202	2,502,201	2,461,429	40,773
	Government consumption expenditure	7,952,696	304,032	298,518	5,514
	Gross private fixed investment	8,739,264	1,110,506	1,070,785	39,721
	Gross public fixed investment	3,324,579	261,948	256,127	5,821
	Change in inventory	25,669	▲ 7,803	▲ 7,696	▲ 108
	Total domestic final demand	46,272,410	4,170,884	4,079,163	91,721
	Exports to ROW (ordinary trade)	3,321,886	383,843	372,152	11,692
	Non-ordinary trade to ROW (exports)	398,683	29,888	29,379	509
	Total exports	3,720,569	413,731	401,531	12,200
	Adjustments	71,374	6,895	6,719	176
	Total final demand	50,064,353	4,591,510	4,487,412	104,098
			100.00	97.73	2.27
US	Private consumption expenditure	67,415,882	7,747,733	64,929	7,682,804
	Government consumption expenditure	14,298,026	679,064	4,605	674,459
	Gross private fixed investment	16,715,773	3,528,457	60,219	3,468,238
	Gross public fixed investment	3,165,837	510,228	5,138	505,090
	Change in inventory	564,162	183,285	880	182,405
	Total domestic final demand	102,159,680	12,648,768	135,771	12,512,997
	Exports to ROW (ordinary trade)	6,457,801	1,019,192	16,545	1,002,648
	Non-ordinary trade to ROW (exports)	2,225,306	134,479	916	133,563
	Total exports	8,683,107	1,153,672	17,461	1,136,211
	Adjustments	31,700	▲ 7,227	▲ 159	▲ 7,069
	Total final demand	110,874,487	13,795,212	153,073	13,642,139
			100.00	1.11	98.89

Also, the United States induces imports worth $10.4 billion (2.27% of the total imports induced by Japan and the United States) from the whole world by Japan's final demand (Table 14).

At the same time, the United States induces imports worth $1.3642 trillion (98.89%) from the whole world by U.S. final demand (including the exports to foreign countries other than Japan). Similarly, Japan induces imports worth $15.3 billion (1.11%) from the whole world by U.S. final demand.

This shows that the domestic final demand of Japan and the United States induces imports from the other country and that the percentage of the imports induced in such other country of the total imports induced by the final demand is slightly higher in the case of Japan than that of the United States.

② Induced imports from the other country

The demand of Japan and of the United States induces imports from the other country. Regarding the inducement of imports to the country where the demand arises, Japan's domestic demand induced imports worth $448.7 billion from the whole world, of which $82.6 billion-worth of imports (18.41% of the total imports induced) was imported from the United States, with the rest imported from ROW (Table 15).

Table 15 Imports Induced by Each Final Demand Item of Japan and the United States in 2000

(Unit: 100 thousand dollars, %)

Item		Value of final demand	Value of import inducement (from the other)		
			Total	Within Japan	Within US
Japan	Private consumption expenditure	26,230,202	398,845	395,234	3,611
	Government consumption expenditure	7,952,696	50,374	49,882	492
	Gross private fixed investment	8,739,264	269,345	262,403	6,941
	Gross public fixed investment	3,324,579	42,479	41,638	840
	Change in inventory	25,669	▲ 496	▲ 482	▲ 15
	Total domestic final demand	46,272,410	760,546	748,676	11,869
	Exports to ROW (ordinary trade)	3,321,886	75,349	73,517	1,832
	Non-ordinary trade to ROW (exports)	398,683	3,452	3,413	39
	Total exports	3,720,569	78,801	76,930	1,871
	Adjustments	71,374	719	694	25
	Total final demand	50,064,353	840,066	826,301	13,765
			100.00	98.36	1.64
US	Private consumption expenditure	67,415,882	694,305	13,374	680,930
	Government consumption expenditure	14,298,026	46,090	870	45,220
	Gross private fixed investment	16,715,773	607,116	13,634	593,482
	Gross public fixed investment	3,165,837	47,244	1,087	46,157
	Change in inventory	564,162	7,783	160	7,623
	Total domestic final demand	102,159,680	1,402,536	29,124	1,373,412
	Exports to ROW (ordinary trade)	6,457,801	150,884	3,522	147,362
	Non-ordinary trade to ROW (exports)	2,225,306	9,347	178	9,169
	Total exports	8,683,107	160,231	3,700	156,531
	Adjustments	31,700	▲ 1,305	▲ 33	▲ 1,272
	Total final demand	110,874,487	1,561,462	32,791	1,528,671
			100.00	2.10	97.90

In 2000, the United States induced imports worth $1.3642 trillion from the whole world by the U.S. demand, of which $152.9 billion-worth of imports (11.21% of the total imports induced) were imported from Japan, with the rest imported from ROW.

This shows that the imports from Japan and the United States induced by the final demand of the other country are higher in the case of the United States than in that of Japan. In contrast, the percentage of induced imports from Japan and the United States of the total induced imports from the whole world is higher in Japan than in the United States.

③ Dependence on import inducement and the degree of dependence on each final demand item

This section analyzes the type of final demand on which the induced imports of Japan and the United States depend (only the import inducement of the importing country). In the case of both Japan and the United States, the induced imports from the whole world depend mostly on the domestic final demand (Table 16). According to the breakdown of the domestic demand, the degree of dependence on private consumption expenditure is highest in both countries.

Furthermore, in both countries, the induced imports from the other country depend largely on private consumption expenditure, with the degree of dependence being almost the same for the two countries. The United States is more dependent on private fixed capital formation than Japan is. This shows that the imports from Japan to the United States depend greatly on the U.S. private fixed capital formation (Table 17).

Table 16 Dependence on Import Inducement and the Degree of Dependence on Each Final Demand Item of Japan and the United States (from the whole world)

Item		Composition ratio (%)		Dependence (%)	
		Japan	US	Japan	US
Japan	Private consumption expenditure	99.44	0.56	53.04	0.30
	Government consumption expenditure	99.38	0.62	6.43	0.04
	Gross private fixed investment	98.76	1.24	23.07	0.29
	Gross public fixed investment	99.24	0.76	5.52	0.04
	Change in inventory	99.52	0.48	▲ 0.17	▲ 0.00
	Total domestic final demand	99.25	0.75	87.90	0.67
	Exports to ROW (ordinary trade)	98.95	1.05	8.02	0.09
	Non-ordinay trade to ROW (exports)	99.42	0.58	0.63	0.00
	Total exports	98.98	1.02	8.65	0.09
	Adjustments	99.11	0.89	0.14	0.00
	Total	99.22	0.78	96.70	0.76
US	Private consumption expenditure	2.44	97.56	1.40	55.89
	Government consumption expenditure	1.98	98.02	0.10	4.91
	Gross private fixed investment	4.89	95.11	1.30	25.23
	Gross public fixed investment	2.92	97.08	0.11	3.67
	Change in inventory	1.41	98.59	0.02	1.33
	Total domestic final demand	3.11	96.89	2.93	91.03
	Exports to ROW (ordinary trade)	4.66	95.34	0.36	7.29
	Non-ordinary trade to ROW (exports)	1.99	98.01	0.02	0.97
	Total exports	4.35	95.65	0.38	8.27
	Adjustments	6.20	93.80	▲ 0.00	▲ 0.05
	Total	3.22	96.78	3.30	99.24
	Total Japan-US			100.00	100.00

Table 17 Dependence on Import Inducement and the Degree of Dependence on Each Final Demand Item of Japan and the United States (from the other country)

Item		Composition ratio (%)		Dependence (%)	
		Japan	US	Japan	US
Japan	Private consumption expenditure	99.49	0.51	46.01	0.23
	Government consumption expenditure	99.45	0.55	5.81	0.03
	Gross private fixed investment	98.55	1.45	30.54	0.45
	Gross public fixed investment	98.89	1.11	4.85	0.05
	Change in inventory	98.25	1.75	▲ 0.06	▲ 0.00
	Total domestic final demand	99.12	0.88	87.15	0.77
	Exports to ROW (ordinary trade)	98.63	1.37	8.56	0.12
	Non-ordinary trade to ROW (exports)	99.37	0.63	0.40	0.00
	Total exports	98.66	1.34	8.95	0.12
	Adjustments	98.06	1.94	0.08	0.00
	Total	99.08	0.92	96.18	0.89
US	Private consumption expenditure	3.41	96.59	1.56	44.15
	Government consumption expenditure	3.34	96.66	0.10	2.93
	Gross private fixed investment	3.96	96.04	1.59	38.48
	Gross public fixed investment	4.06	95.94	0.13	2.99
	Change in inventory	3.63	96.37	0.02	0.49
	Total domestic final demand	3.67	96.33	3.39	89.04
	Exports to ROW (ordinary trade)	4.11	95.89	0.41	9.55
	Non-ordinary trade to ROW (exports)	3.36	96.64	0.02	0.59
	Total exports	4.07	95.93	0.43	10.15
	Adjustments	4.40	95.60	▲ 0.00	▲ 0.08
	Total	3.71	96.29	3.82	99.11
	Total Japan-US			100.00	100.00

2. Various inducement coefficients of Japan and the United States

(1) Production inducement coefficient

A one-unit final demand of a certain industry has a series of repercussions on the production of various industries because the demand triggers transactions of goods and services necessary to produce the product or service to meet the demand. As a result, the demand ends up inducing a domestic output several times larger in value than the original demand. The value of production induced as a result of such repercussions in one country as a whole increases in proportion to the size of the country's industries that have a strong repercussion effect on production.

The production inducement value also increases if products are produced from raw materials into finished goods completely domestically, whereas the production inducement value decreases if half-finished goods are imported (the repercussions before the import are generated in the exporting country of the half-finished goods).

This section analyzes the production inducement coefficient for cases where Japan or the United States has a one-unit final demand (hereinafter "unit demand").

① Production inducement coefficient for domestic production and the other country's production

A unit demand of Japan or the United States induces domestic production and the other country's production. A unit demand of Japan induces the production of Japan and the United States at a coefficient of 1.6478 (Table 18).

In the case of the United States, a unit demand of the United States induces the production of the two countries at a coefficient of 1.5366.

This shows that the production inducement coefficient is higher in the case of Japan than in that of the

United States.

② **Production inducement coefficient for domestic production**

A unit demand of Japan or the United States induces domestic production. A unit demand of Japan induces domestic production at a coefficient of 1.6185 (Table 18). In the case of the United States, a unit demand of the United States induces domestic production at a coefficient of 1.5088.

③ **Production inducement coefficient for the other country's production**

A unit demand of Japan or the United States induces the other country's production. A unit demand of Japan induces the U.S. production at a coefficient of 0.0293 (Table 18).

In the case of the United States, a unit demand of the United States induces Japan's production at a coefficient of 0.0278.

This shows that the production inducement coefficient is slightly higher in the case of Japan than that of the United States.

Table 18 Production Inducement Coefficient for Each Final Demand Item of Japan and the United States

Item		Total	Within Japan	Within US
Japan	Private consumption expenditure	1.5231	1.4962	0.0269
	Government consumption expenditure	1.6393	1.6280	0.0113
	Gross private fixed investment	1.8126	1.7597	0.0529
	Gross public fixed investment	1.9004	1.8786	0.0217
	Change in inventory	0.0442	0.0733	▲ 0.0291
	Total domestic final demand	1.6240	1.5953	0.0287
	Exports to ROW (ordinary trade)	1.9990	1.9599	0.0391
	Non-ordinary trade to ROW (exports)	1.6353	1.6199	0.0155
	Total exports	1.9600	1.9235	0.0365
	Adjustments	0.8057	0.7862	0.0194
	Total final demand	1.6478	1.6185	0.0293
US	Private consumption expenditure	1.4726	0.0205	1.4521
	Government consumption expenditure	1.5367	0.0065	1.5302
	Gross private fixed investment	1.6376	0.0714	1.5663
	Gross public fixed investment	1.7179	0.0288	1.6892
	Change in inventory	1.3775	0.0259	1.3516
	Total domestic final demand	1.5156	0.0271	1.4885
	Exports to ROW (ordinary trade)	1.8555	0.0459	1.8096
	Non-ordinary trade to ROW (exports)	1.5860	0.0086	1.5774
	Total exports	1.7865	0.0363	1.7501
	Adjustments	0.6812	▲ 0.0748	0.7560
	Total final demand	1.5366	0.0278	1.5088

(2) Value-added inducement coefficient

As is the case with the above-mentioned production inducement coefficient, a one-unit final demand of a certain industry has a series of repercussions on the production of various industries because the demand triggers transactions of goods and services necessary to produce a product or service to meet the demand. As a result, the demand ends up inducing value-added. The scale of value-added inducement in one country as a whole increases in proportion to the size of the country's industries that have a high value-added ratio.

This section analyzes the value-added inducement coefficient for cases where Japan or the United States has a unit demand.

① **Value-added inducement coefficient for domestic value-added and the other country's value-added**

A unit demand of either Japan or the United States induces the domestic value-added and the other country's value-added. A unit demand of Japan induces the value-added of Japan and the United States at a coefficient of 0.9176 (Table 19).

In the case of the United States, a unit demand of the United States induces the value-added of the two countries at a coefficient of 0.8873.

This shows that the value-added inducement coefficient is higher in the case of Japan than that in the United States.

② **Value-added inducement coefficient for domestic value-added**

A unit demand of either Japan or the United States induces the domestic value-added. A unit demand of Japan induces the domestic value-added at a coefficient of 0.9032 (Table 19). In the case of the United States, a unit demand of the United States induces the domestic value-added at a coefficient of 0.8750.

③ **Value-added inducement coefficient for the other country's value-added**

A unit demand of either Japan or the United States induces the other country's value-added. A unit demand of Japan induces the U.S. value-added at a coefficient of 0.0144 (Table 19).

In the case of the United States, a unit demand of the United States induces Japan's value-added at a coefficient of 0.0123.

Table 19 Value-added Inducement Coefficient forEach Final Demand Item of Japan and the United States

Item		Total	Within Japan	Within US
Japan	Private consumption expenditure	0.9109	0.8974	0.0135
	Government consumption expenditure	0.9649	0.9593	0.0056
	Gross private fixed investment	0.8958	0.8704	0.0254
	Gross public fixed investment	0.9284	0.9176	0.0108
	Change in inventory	1.2583	1.2728	▲ 0.0145
	Total domestic final demand	0.9188	0.9046	0.0142
	Exports to ROW (ordinary trade)	0.8999	0.8813	0.0186
	Non-ordinary trade to ROW (exports)	0.9284	0.9212	0.0073
	Total exports	0.9029	0.8856	0.0174
	Adjustments	0.9048	0.8976	0.0072
	Total final demand	0.9176	0.9032	0.0144
US	Private consumption expenditure	0.8928	0.0091	0.8837
	Government consumption expenditure	0.9552	0.0028	0.9524
	Gross private fixed investment	0.8223	0.0317	0.7906
	Gross public fixed investment	0.8518	0.0129	0.8389
	Change in inventory	0.6821	0.0119	0.6702
	Total domestic final demand	0.8875	0.0120	0.8755
	Exports to ROW (ordinary trade)	0.8634	0.0201	0.8433
	Non-ordinary trade to ROW (exports)	0.9432	0.0037	0.9396
	Total exports	0.8839	0.0159	0.8680
	Adjustments	1.1904	▲ 0.0348	1.2252
	Total final demand	0.8873	0.0123	0.8750

(3) Import inducement coefficient

As is the case with the production inducement coefficient and value-added inducement coefficient, a one-unit final demand of a certain industry has a series of repercussions on the production of various industries because the demand triggers transactions of goods and services necessary to produce a product or service to meet the demand. As a result, the demand ends up inducing imports. The scale of import inducement in one country as a whole increases in proportion to the input ratio of producer goods made in the other country and also to the import ratio of final demand goods made in such other country.

This section analyzes the import inducement coefficient for cases where Japan or the United States has a unit demand.

① Import inducement coefficient for the imports from the whole world

A unit demand of Japan or the United States induces imports from the whole world. Japan induces its imports from the whole world at a coefficient of 0.0896 by Japan's unit demand. On the other hand, the United States induces its imports from the whole world at a coefficient of 0.0021 by Japan's unit demand (Table 20).

The United States also induces its imports from the whole world at a coefficient of 0.1230 by the U.S. unit demand. Japan induces its imports from the whole world at a coefficient of 0.0014 by the U.S. unit demand.

Table 20 Import Inducement Coefficient for Each Final Demand Item of Japan and the United States (from the whole world)

Item		Total	Within Japan	Within US
Japan	Private consumption expenditure	0.0954	0.0938	0.0016
	Government consumption expenditure	0.0382	0.0375	0.0007
	Gross private fixed investment	0.1271	0.1225	0.0045
	Gross public fixed investment	0.0788	0.0770	0.0018
	Change in inventory	▲ 0.3040	▲ 0.2998	▲ 0.0042
	Total domestic final demand	0.0901	0.0882	0.0020
	Exports to ROW (ordinary trade)	0.1155	0.1120	0.0035
	Non-ordinary trade to ROW (exports)	0.0750	0.0737	0.0013
	Total exports	0.1112	0.1079	0.0033
	Adjustments	0.0966	0.0941	0.0025
	Total final demand	0.0917	0.0896	0.0021
US	Private consumption expenditure	0.1149	0.0010	0.1140
	Government consumption expenditure	0.0475	0.0003	0.0472
	Gross private fixed investment	0.2111	0.0036	0.2075
	Gross public fixed investment	0.1612	0.0016	0.1595
	Change in inventory	0.3249	0.0016	0.3233
	Total domestic final demand	0.1238	0.0013	0.1225
	Exports to ROW (ordinary trade)	0.1578	0.0026	0.1553
	Non-ordinay trade to ROW (exports)	0.0604	0.0004	0.0600
	Total exports	0.1329	0.0020	0.1309
	Adjustments	▲ 0.2280	▲ 0.0050	▲ 0.2230
	Total final demand	0.1244	0.0014	0.1230

② **Import inducement coefficient for imports from the other country**

A unit demand of Japan or the United States induces imports from the other country (referring to imports induced in the country where the demand arises; although the final demand of Japan or the United States induces imports to the other country as well, such imports are excluded). Japan induces imports from the whole world at a coefficient of 0.0896 by Japan's unit demand, of which 0.0165 is attributable to imports from the United States with the rest attributable to the imports from ROW (Table 21).

The United States induces imports from the whole world at a coefficient of 0.1230 by the U.S. unit demand, of which 0.0138 is attributable to imports from Japan with the rest attributable to the imports from ROW.

Tab le 21 Import Inducement Coefficient for Each Final Demand Item of Japan and the United States (from the other country)

Item		Total	Within Japan	Within US
Japan	Private consumption expenditure	0.0152	0.0151	0.0001
	Government consumption expenditure	0.0063	0.0063	0.0001
	Gross private fixed investment	0.0308	0.0300	0.0008
	Gross public fixed investment	0.0128	0.0125	0.0003
	Change in inventory	▲ 0.0193	▲ 0.0188	▲ 0.0006
	Total domestic final demand	0.0164	0.0162	0.0003
	Exports to ROW (ordinary trade)	0.0227	0.0221	0.0006
	Non-ordinary trade to ROW (exports)	0.0087	0.0086	0.0001
	Total exports	0.0212	0.0207	0.0005
	Adjustments	0.0101	0.0097	0.0003
	Total final demand	0.0168	0.0165	0.0003
US	Private consumption expenditure	0.0103	0.0002	0.0101
	Government consumption expenditure	0.0032	0.0001	0.0032
	Gross private fixed investment	0.0363	0.0008	0.0355
	Gross public fixed investment	0.0149	0.0003	0.0146
	Change in inventory	0.0138	0.0003	0.0135
	Total domestic final demand	0.0137	0.0003	0.0134
	Exports to ROW (ordinary trade)	0.0234	0.0005	0.0228
	Non-ordinary trade to ROW (exports)	0.0042	0.0001	0.0041
	Total exports	0.0185	0.0004	0.0180
	Adjustments	▲ 0.0412	▲ 0.0010	▲ 0.0401
	Total final demand	0.0141	0.0003	0.0138

③ **Import inducement coefficient for each final demand item**

Each final demand item induces imports from the whole world (referring to imports induced in the country where the demand arises; although the final demand of Japan or the United States induces imports to the other country as well, such imports are excluded). The import inducement coefficient related to private fixed capital formation is especially high in both Japan and the United States (Table 21). Regarding Japanese and U.S. imports from the other country, the import inducement coefficient related to private fixed capital formation is also the highest in both countries (Table 21).

Chapter 3 Comparison of Production Repercussions Between Japan and the United States Based on the 2000 Japan-U.S. Input-Output Table

This chapter analyzes the repercussions of production activities in each industry of Japan and the United States on domestic production or the other country's production. In short, it analyzes the interdependence among various industries through production activities.

For example, if for some reason demand arises for Japanese telecommunications equipment, the production of that equipment will be conducted in Japan to meet the demand. The telecommunications equipment maker will induce the production activities of other domestic or U.S. industries by procuring the raw materials and parts necessary for the production. In this way, the production of telecommunications equipment in Japan has repercussions on the United States through the import of the raw materials and parts necessary for the production from the United States. This induces U.S. production of raw materials and parts for export to Japan. In order to produce such raw materials and parts, the United States might import some products or materials from Japan, inducing Japan's production in return. In short, the production activities of a certain industry in a certain country have repercussions not only on domestic production activities but also on other countries' production activities through the import and export of raw materials and parts.

1. Production repercussion coefficient

A unit demand (for example $100 million) of a certain industry in a certain country has repercussions on domestic production and the other country's production. This section compares such repercussions on domestic production and those on the other country's production. This analysis can be conducted based on the column total of a Leontief inverse matrix, which shows the strength of production repercussions. The strength of production repercussions is expressed as a coefficient which shows by what factor the repercussions on the production of all the industries of Japan and the United States is larger than the original unit demand of a certain industry. This coefficient is defined as "own country production repercussion coefficient" and "other country production repercussion coefficient." The other country production repercussion coefficient increases in proportion to the import of raw materials and parts from such other country or the degree of processing of the imported goods.

The average production repercussion coefficient for all industries is 1.8044 in Japan, which is higher than 1.7713 in the United States. (Table 22).

Table22 Production Repercussion Coefficient of Each Sector of Japan and the United States

	Japan		US		Difference in repercussion coefficient between US and Japan (US−Japan)	
	Japan	US	US	Japan	Own country	The other country
Average of all sectors	1.8044	0.0188	1.7713	0.0233	▲ 0.0331	0.0046
Average of manufacturers	1.8922	0.0270	1.8409	0.0316	▲ 0.0514	0.0046

Regarding manufacturing sectors (referring to 16 sectors ranging from "foodstuffs" to "other manufactured products" out of a total of 27 sectors), the coefficient is 1.8922 in Japan and 1.8409 in the United States. The coefficient is higher in Japan as is the case with the average for all industries. On the other hand, regarding the coefficient of other country production repercussions the coefficient of Japan's production repercussions on the United States is 0.0188 on average for all industries and 0.0270 on average for manufacturing sectors. The

coefficient of U.S. production repercussions on Japan is 0.0233 on average for all industries and 0.0316 on average for manufacturing sectors.

The coefficient of production repercussions of the United States on Japan is relatively high.

Table 23 Production Repercussion Coefficient of Each Industry

Title	Japan		US		Difference in repercussion coefficient between US and Japan (US−Japan)	
	Japan	US	US	Japan	Own country	Other country
1 Agriculture	1.7467	0.0096	2.0597	0.0196	0.3130	0.0100
2 Forestry	1.1993	0.0039	1.6791	0.0023	0.4798	▲ 0.0016
3 Fishing	1.6151	0.0046	1.7190	0.0128	0.1039	0.0082
4 Mining	1.9102	0.0080	1.4989	0.0089	▲ 0.4113	0.0009
5 Foodstuffs	1.9388	0.0071	2.0764	0.0470	0.1376	0.0399
6 Textiles	2.0040	0.0162	1.9607	0.0271	▲ 0.0433	0.0109
7 Lumber, paper and pulp	1.9845	0.0109	1.9617	0.0514	▲ 0.0228	0.0405
8 Publishing and printing	1.9030	0.0074	1.6851	0.0200	▲ 0.2179	0.0126
9 Chemical products	2.0054	0.0231	1.8465	0.0315	▲ 0.1589	0.0084
10 Petroleum products (including petrochemical basic products)	1.1542	0.0059	1.9092	0.0056	0.7550	▲ 0.0003
11 Plastic, rubber and leather products	1.9708	0.0253	1.8811	0.0323	▲ 0.0897	0.0070
12 Miscellaneous ceramic, stone and clay products	1.9223	0.0113	1.7710	0.0171	▲ 0.1513	0.0058
13 Steel and steel products	1.6888	0.0185	1.8364	0.0103	0.1476	▲ 0.0082
14 Non-ferrous metals and non-ferrous metal products	1.6713	0.0161	1.8893	0.0369	0.2180	0.0208
15 Other metal products	1.9111	0.0141	1.7038	0.0120	▲ 0.2073	▲ 0.0021
16 General machinery	1.9100	0.0486	1.8073	0.0356	▲ 0.1027	▲ 0.0130
17 Electric machinery	1.9784	0.0852	1.7076	0.0545	▲ 0.2708	▲ 0.0307
18 Transportation equipment	2.3016	0.0830	2.0213	0.0448	▲ 0.2803	▲ 0.0382
19 Precision machinery	1.9037	0.0417	1.6783	0.0539	▲ 0.2254	0.0122
20 Other manufactured products	2.0277	0.0174	1.7180	0.0259	▲ 0.3097	0.0085
21 Construction	1.9237	0.0115	1.8926	0.0126	▲ 0.0311	0.0011
22 Electricity and gas	1.5657	0.0052	1.7130	0.0076	0.1473	0.0024
23 Commerce	1.4879	0.0044	1.4796	0.0049	▲ 0.0083	0.0005
24 Financial services, insurance and real estate	1.3047	0.0031	1.3339	0.0037	0.0292	0.0006
25 Transport	1.5890	0.0121	1.7682	0.0153	0.1792	0.0032
26 Services	1.6285	0.0065	1.5306	0.0113	▲ 0.0979	0.0048
27 Unclassified, etc.	2.4736	0.0064	1.6976	0.0253	▲ 0.7760	0.0189
Total	48.7200	0.5071	47.8259	0.6302	▲ 0.8941	0.1231

A similar analysis of all 27 sectors shows that Japan has a high production repercussion coefficient mostly in the manufacturing sectors including “transportation equipment,” “other manufactured products,” “chemical products,” and “textiles.” On the other hand, the United States has a high production repercussion coefficient in such sectors as “foodstuffs,” “agriculture,” “transportation equipment,” and “lumber, pulp and paper.”

A comparison of the production repercussion coefficient of each sector between Japan and the United States shows that Japan has a higher production repercussion coefficient than the United States in 17 out of 27 sectors mostly in the field of manufacturing, such as “mining,” “other manufactured products,” “transportation equipment,” “electric machinery,“ and “precision machinery.” The United States has a higher production repercussion coefficient than Japan mostly in such basic materials sectors including “petroleum products (including petrochemical basic products),” “forestry,” and “agriculture.”

When it comes to the coefficient for other country production repercussions, both countries have a high production repercussion coefficient in such manufacturing sectors as “electric machinery,” “transportation equipment,” and “precision machinery.”

The following section analyzes the manufacturing sectors where production repercussion coefficients are relatively high.

(1) Production repercussion coefficient of Japanese manufacturing sectors

An analysis of the production repercussion coefficient of Japanese manufacturing sectors (coefficient of the production repercussions on Japan) shows that 13 manufacturing sectors out of a total of 16 have a production repercussion coefficient of more than 1.9, among which "transportation equipment," "other manufactured products," "chemical product," and "textiles" have a production repercussion coefficient of more than 2 (Table 23).

On the other hand, an analysis of the production repercussion coefficient of Japanese manufacturing sectors on U.S. industries (coefficient of the production repercussions on the United States) shows that machinery sectors including "electric machinery," "transportation equipment," "general machinery," and "precision machinery" have a relatively high production repercussion coefficient (Table 24).

(2) Production repercussion coefficient of U.S. manufacturing sectors

An analysis of the production repercussion coefficient of U.S. manufacturing sectors (coefficient of the production repercussions on the United States) shows that five sectors have a production repercussion coefficient of more than 1.9, with "foodstuffs" and "transportation equipment" having a production repercussion coefficient of more than 2. The number of sectors with a high production repercussion coefficient is smaller in the United States than in Japan.

The coefficient of production repercussions of U.S. manufacturing sectors on Japanese industries (coefficient of production repercussions on Japan) is highest in "electric machinery," followed by "precision machinery," "lumber, pulp and paper," and "foodstuffs" (Table 23).

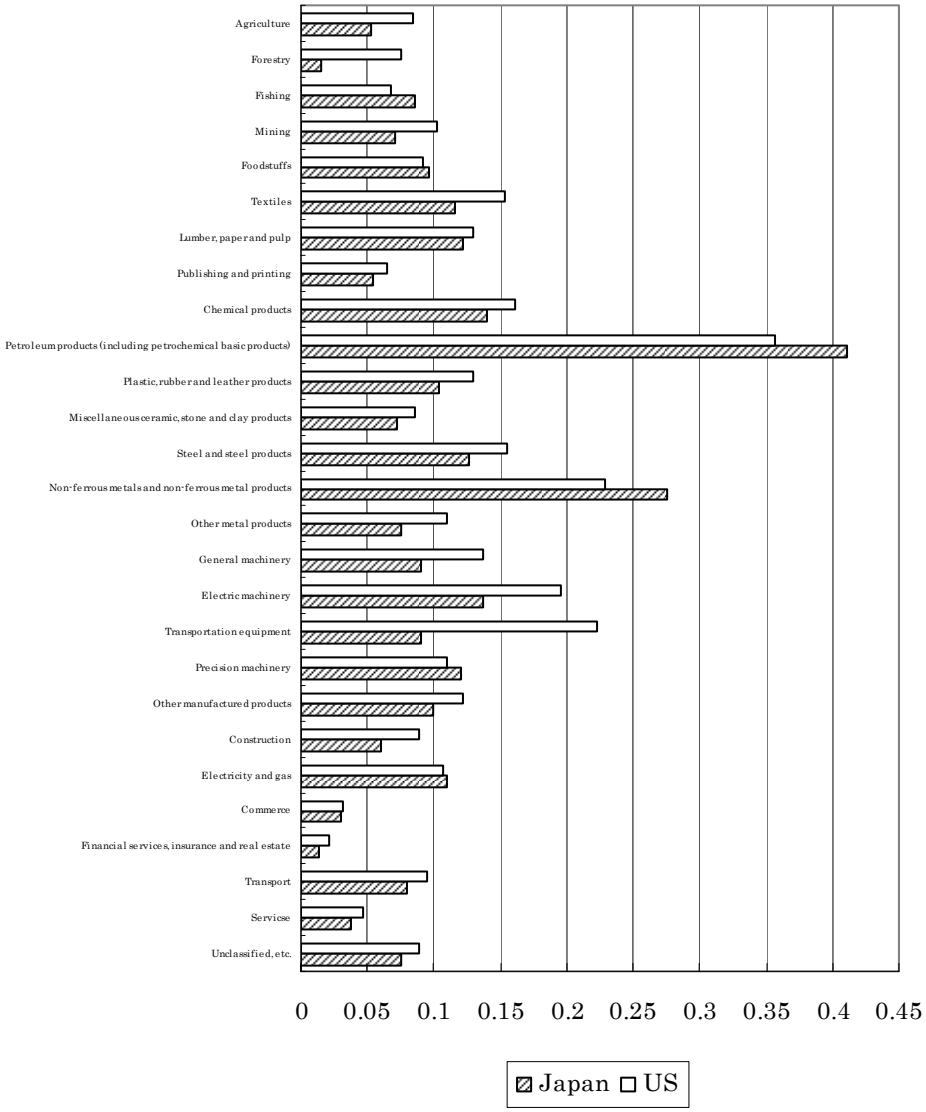
2. Import repercussion coefficient

A unit demand of a specific industry in Japan or the United States induces imports from the whole world or the other country to all domestic industries. This section analyzes the ultimate value of such imports and the repercussions on the production of such other country due to the induced imports. A comparison of import repercussions among industries can be made based on their import repercussion coefficients. Import repercussion coefficients increase in proportion to the percentage of the imports of raw materials and parts from foreign countries out of the raw materials directly necessary for the production activities of a specific industry and also to the percentage of input of foreign products to the raw materials directly necessary for the production of domestic products.

(1) Import repercussion coefficient for imports from the whole world

Fig. 2 shows how much import a unit demand of a specific industry in Japan or the United States induces in all domestic industries.

Fig. 2 Import Repercussion Coefficients of industries in Japan and the United States Regarding Imports to the Respective Countries (from the whole world)



Regarding Japanese industries, such coefficient is the highest in "petroleum products (including petrochemical basic products)," followed by "non-ferrous metals and non-ferrous metal products," "chemical products," and "electric machinery."

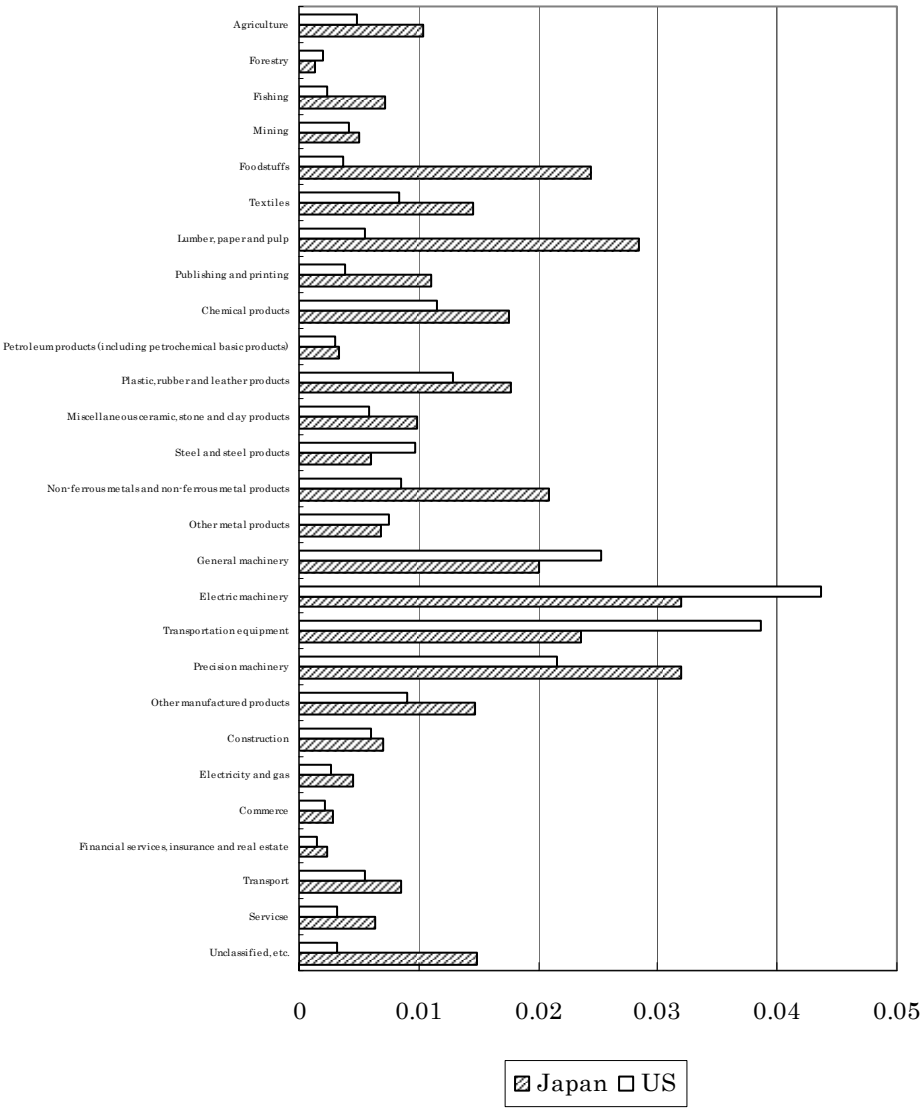
In the case of U.S. industries, such coefficient is the highest in "petroleum products (including petrochemical basic products)," followed by "non-ferrous metals and non-ferrous metal products," "transportation equipment," and "chemical products."

(2) Import repercussion coefficient for imports from the other country

A unit demand of a specific industry in Japan or the United States induces imports from the other country to all domestic industries (import repercussion coefficient for imports to the country where the demand arises). The import repercussion coefficient for imports from the United States to Japanese industries is highest in "precision machinery" and "electric machinery," followed by "lumber, pulp and paper" and "foodstuffs" (Fig. 3).

In the case of imports from Japan to U.S. industries, the import repercussion coefficient is highest in "electric machinery" and "transportation equipment," followed by such machinery sectors as "general machinery" and "precision machinery."

Fig. 3 Import Repercussion Coefficients of Industries in Japan and the United States Regarding Imports from the Other Country



3. Production inducement by demand of a specific industry

The value of the production induced by demand of a specific industry can be calculated by multiplying the actual value of the final demand of each industry in Japan or the United States by the production repercussion coefficient (the column total of the Leontief inverse matrix) of the industry in question. This induced production is herein defined as the value of production repercussions. Even if the production repercussion coefficient of a specific industry is low, the value of production repercussions on domestic production and the other country's production is large as long as the demand for products and services made by that industry is high in value.

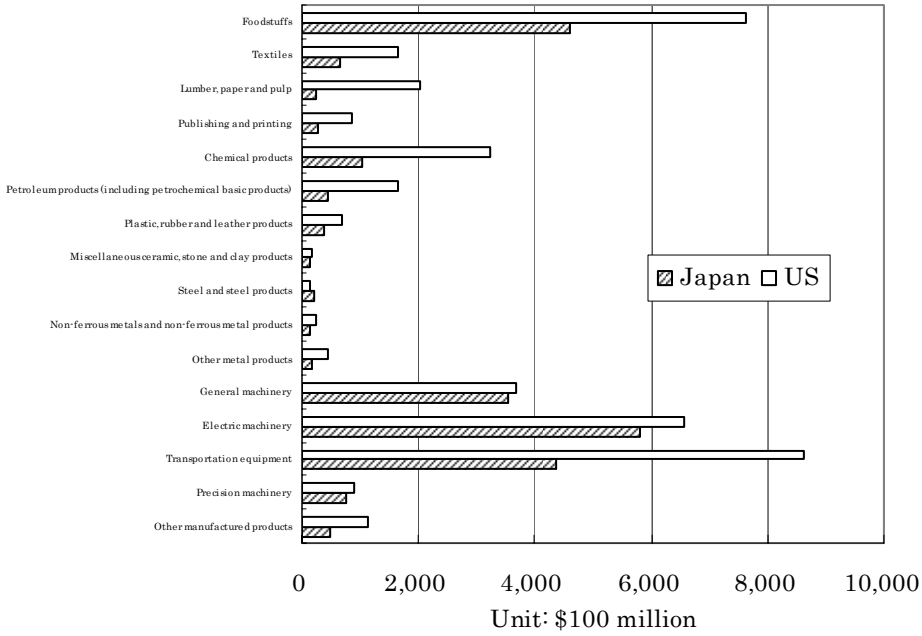
The following section analyzes the manufacturing sectors where production repercussion coefficients are

relatively high.

(1) Comparison of the values of manufacturing sector production repercussions between Japan and the United States

A comparison of the values of manufacturing sector production repercussions in 2000 between Japan and the United States shows that the value of production repercussions is high in "foodstuffs" and such manufacturing sectors as "transportation equipment," "electric machinery," and "general machinery" in both countries. A comparison of the values of each sector between Japan and the United States shows that the value is higher in the United States than in Japan in most sectors (Fig. 4).

Fig. 4 Comparison of the Values of Manufacturing Sector Production Repercussions between Japan and the United States



(2) Values of production repercussions of manufacturing sectors in Japan

An analysis of the values of production repercussions of manufacturing sectors in Japan shows that such value is the highest in "electric machinery," followed by "foodstuffs" and "transportation equipment" (Fig. 5).

Japanese demand also has repercussions on U.S. production (imports from the United States). The value of such production repercussions is largest in "electric machinery," followed by "foodstuffs" and "transportation equipment" (Fig. 6).

Fig. 5　Values of Production Repercussions of Manufacturing Sectors in Japan on Domestic Production

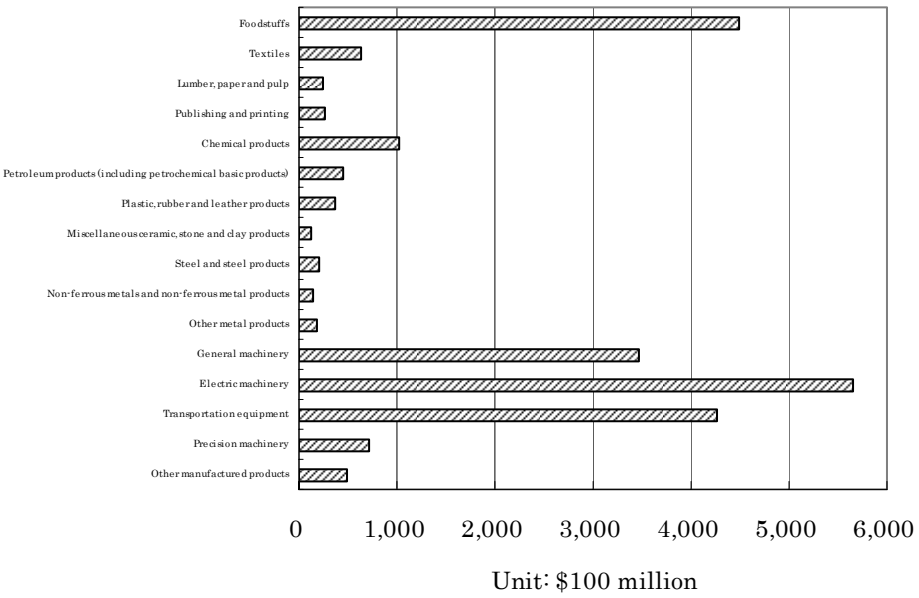
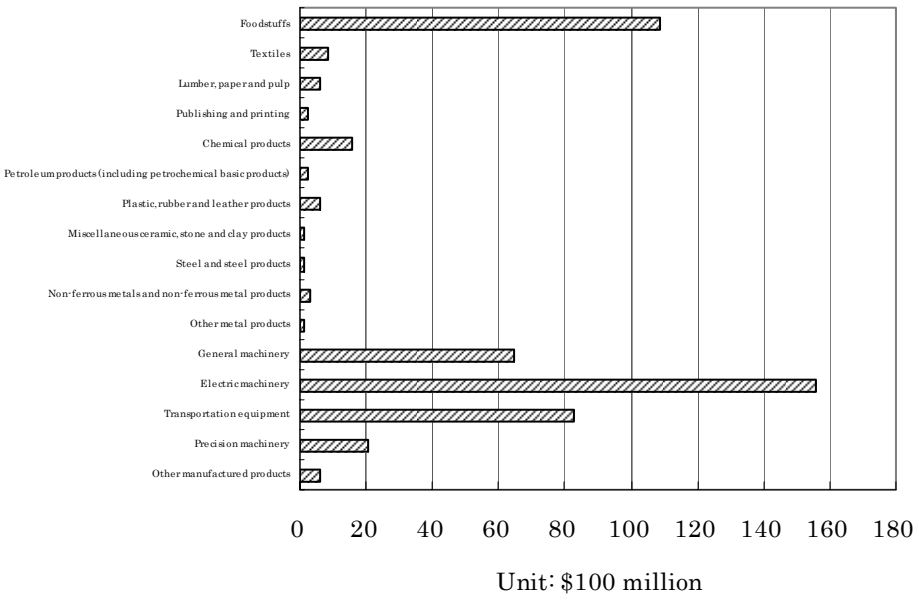


Fig. 6　Values of Production Repercussions of Manufacturing Sectors in Japan on U.S. Production



(3) Values of production repercussions of manufacturing sectors in the United States

A similar analysis of the values of production repercussions of manufacturing sectors in the United States shows that such value is the highest in "transportation equipment," followed by "foodstuffs" and "electric machinery" (Fig. 7).

U.S. demand also has repercussions on Japanese production (imports from Japan). The value of such production repercussions is largest in "transportation equipment," followed by "electric machinery" and "general machinery" (Fig. 8).

Fig. 7　Values of Production Repercussions of U.S Manufacturing Sectors on Domestic Production

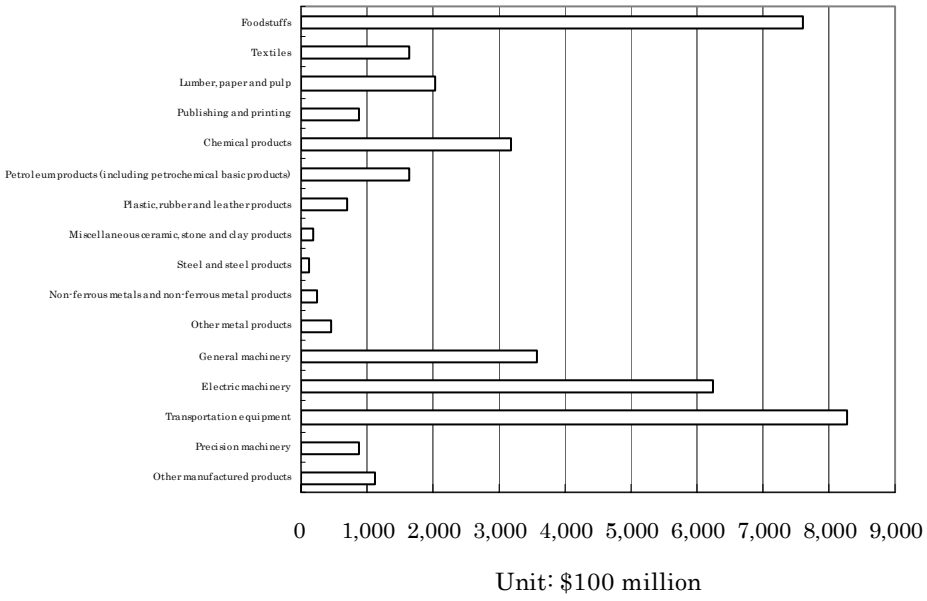
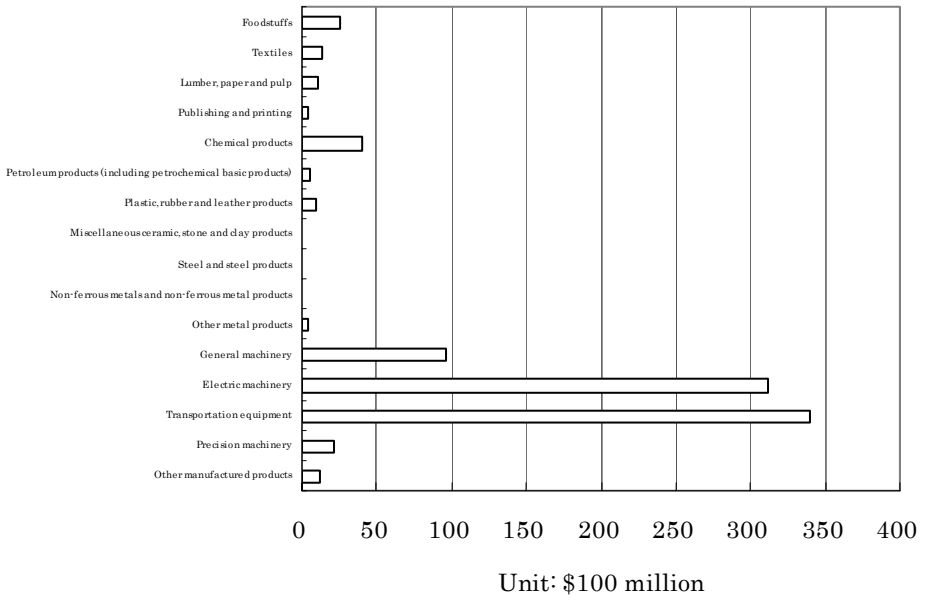


Fig. 8　Values of Production Repercussions of U.S. Manufacturing Sectors on Japan's Production



As shown above, the actual values of manufacturing sector production repercussions are higher in most sectors in the United States than in Japan.

The Japanese sectors that have great production repercussions on the United States are "electric machinery," "foodstuffs," and "transportation equipment." On the other hand, the U.S. sectors that have great production repercussions on Japan are "transportation equipment," "electric machinery," and "general machinery." This suggests that trade in raw materials and products between the two countries is active in these sectors.

4. Imports induced by demand of a specific industry

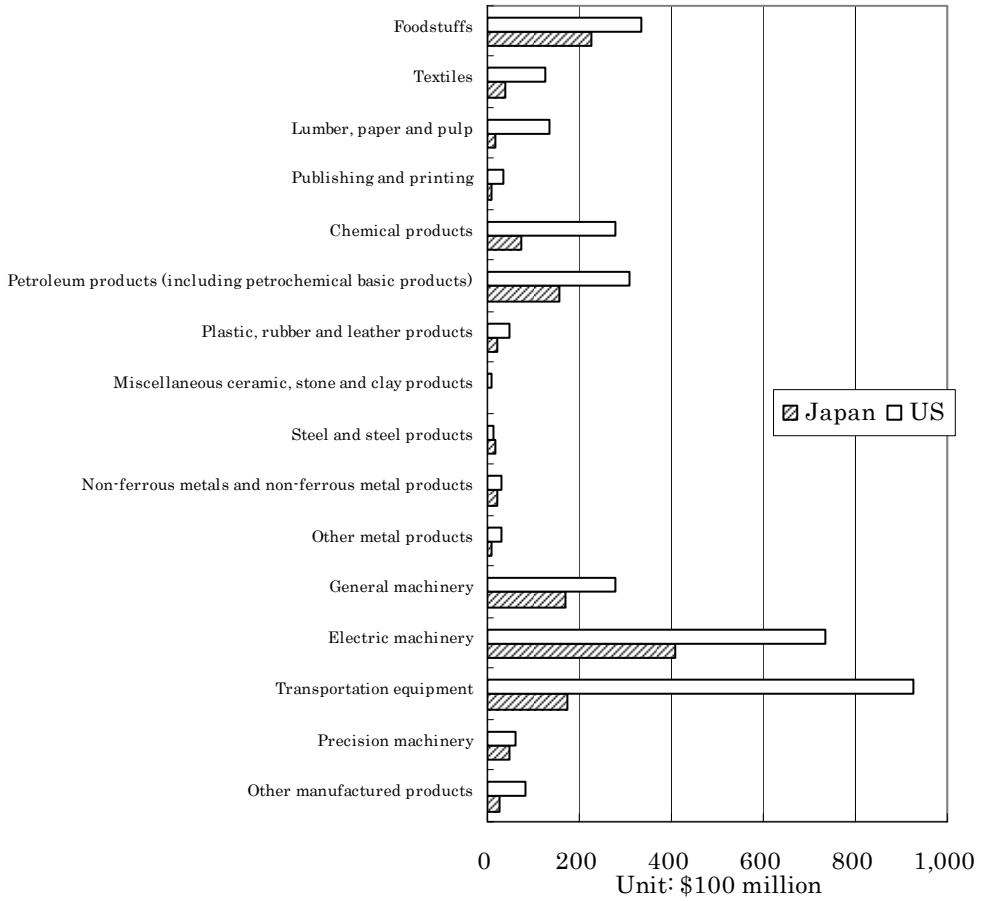
This section analyzes how much import the demand of a specific industry in Japan or the United States induces from the whole world or from the other country to all domestic industries. Such induced imports can be calculated by multiplying the import repercussion coefficient of each industry in Japan or the United States by the value of the final demand for the domestic products. This value of induced imports is defined as the value of repercussions on imports. Like the preceding section on the values of production repercussions, the following section mostly analyzes manufacturing sectors.

(1) Value of repercussions of imports from the whole world

The value of repercussions of imports by Japanese manufacturing sectors from the whole world is high in "electric machinery," "foodstuffs," "transportation equipment," "general machinery," and "petroleum products (including petrochemical basic products)." In the case of the United States, such value is high in "transportation equipment," "electric machinery," "foodstuffs," and "petroleum products." In both countries, such value is high in "electric machinery," "transportation equipment," and "foodstuffs."

In most sectors, the value of repercussions of imports is larger in the United States than in Japan. In particular, such value for the United States is high in "transportation equipment" and "electric machinery" (Fig. 9).

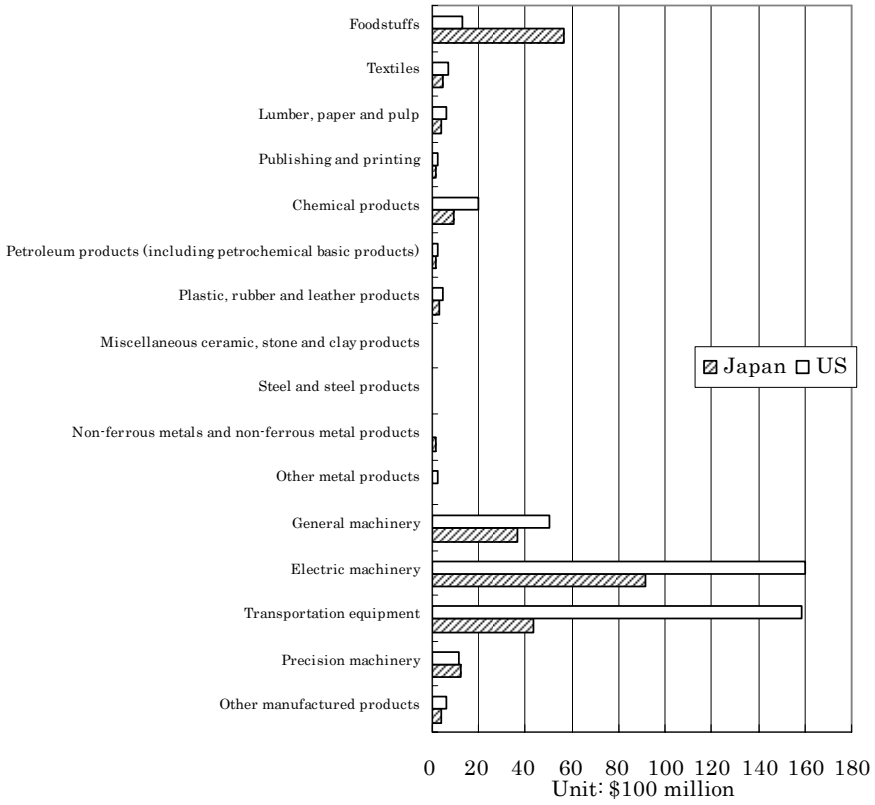
Fig. 9 Comparison of the Value of Repercussions of Imports from the Whole World on Domestic Manufacturing Sectors in Japan and the United States



(2) Value of repercussions of imports from the other country

The value of repercussions of imports on the manufacturing sectors of Japan and the United States from the other country are as follows.

Fig. 10 Value of Repercussions of Imports from Japan or the United States on the Domestic Manufacturing Sectors of the Other Country



① Value of repercussions on imports from the United States to Japan

The value of repercussions on imports from the United States to Japanese manufacturing sectors is highest in "electricity machinery," followed by "foodstuffs" and such machinery sectors as "transportation equipment," "general machinery," and "precision machinery" (Fig. 10).

② Value of repercussions on imports from Japan to the United States

The value of repercussions on imports from Japan to U.S. manufacturing sectors is highest in "electricity machinery," followed by "transportation equipment," "general machinery," "chemical products," and "foodstuffs" (Fig. 10).

This shows that the value of repercussions on imports from the whole world to manufacturing sectors is high in "electric machinery," "foodstuffs," and "transportation equipment" in Japan, whereas in the United States, it is high in "transportation equipment," "electric machinery," and "foodstuffs." In most sectors, such value is higher in U.S. industries than in Japanese industries.

The value of repercussions of imports from the United States to Japan is large in "electric machinery," "foodstuffs," and "transportation equipment." On the other hand, the value of repercussions of imports from Japan to the United States is high in "electric machinery," "transportation equipment," and "general machinery."

Chapter 4. Analysis of Japanese Companies Through Recomposition of the Japan-U.S. Input-Output Table for 2000

In order to analyze the activities of Japanese companies in the U.S., we recomposed the Japan-U.S. I-O Table to show data on three economic entities: (1) companies in Japan (hereafter referred to as "Japan"), (2) Japanese affiliated companies in the United States (hereafter referred to as "Japanese affiliated companies"), and (3) Companies in the United States excluding all Japanese affiliated companies (hereafter referred to as "the U.S. (excluding Japanese affiliated companies)"). The recomposed table helps us analyze the interrelations among the Japanese economy, the economic activities of Japanese companies operating in the United States, and the U.S. economy.

This analysis was carried out with reference to the "Analysis of Japanese Companies Based on Japan-U.S. Input-Output Table" (Mitsuo Yamada, the Institute of Economics, Chukyo University, Discussion Paper No.12).

1. The recomposed Japan-U.S. Table shows data on Japanese affiliated companies

Fig. 11 shows the conceptual scheme for the recomposed Japan-U.S. Table. In that table, the section on the United States has two subsections for Japanese affiliated companies and the rest. In this way, the table shows the economic activities of Japan, Japanese affiliated companies, and the U.S. (excluding Japanese affiliated companies) separately. From this table, we can identify the "re-importing effect" by checking the exports of intermediate goods and final goods from Japanese affiliated companies to Japan and also the "export inducement effect" by checking the exports of intermediate goods from Japan to Japanese affiliated companies. In addition, the table shows data on local procurement of intermediate goods, local sales of intermediate goods and final goods, and exports to third countries. For further information about the recomposition method, please refer to Reference 2.

Fig.11.Recomposed Japan-U.S. I-O Table Showing Separate Data on Japanese Affiliated Companies

			Intermediate demand				Final demand			Exports to ROW		Domestic production
			Production Activity (Japan)		Production Activity (US)		Japan		US	Japan	US	
					US (excluding JAC)	JAC						
Intermediate input	Products (Japan)				External trade sector (Japan→US)				External trade sector (Japan→US)			
					C	F						
	Products (US)	US (excluding JAC)	External trade sector (US→Japan)	A	D	G	External trade sector (US→Japan)	I	K		M	O
		JAC		B	E	H		J	L		N	P
	Tariffs & transp. costs											
	Imports from ROW											
	Tariffs of ROW											
Gross value added												
Domestic production												

Note: JAC stands for Japanese affiliated companies.

Key to table

A. Input of U.S. (excluding Japanese affiliated companies) products for production activities in Japan

B. Input of Japanese affiliated companies' products for production activities in Japan

C. Input of Japanese products for production activities in the U.S. (excluding Japanese affiliated companies)

D. Input of U.S. (excluding Japanese affiliated companies) products for production activities in the U.S. (excluding Japanese affiliated companies)

E. Input of Japanese affiliated companies' products for production activities in the U.S. (excluding Japanese affiliated companies)

F. Input of Japanese products for production activities of Japanese affiliated companies

G. Input of U.S. (excluding Japanese affiliated companies) products for production activities of Japanese affiliated companies

H. Input of Japanese affiliated companies' products for production activities of Japanese affiliated companies

I. Consumption/Investment of U.S. (excluding Japanese affiliated companies) products for final demand in Japan

J. Consumption/Investment of Japanese affiliated companies' products for final demand in Japan

K. Consumption/Investment of U.S. (excluding Japanese affiliated companies) products for final demand in the U.S.

L. Consumption/Investment of Japanese affiliated companies' products for final demand in the U.S.

M. Export of U.S. (excluding Japanese affiliated companies) products to ROW

N. Export of Japanese affiliated companies' products to ROW

O. Output of the U.S. (excluding Japanese affiliated companies)

P. Output of Japanese affiliated companies

2. Analysis of Japanese affiliated companies based on the recomposed table

(1) States of Japanese affiliated companies based on the recomposed table

Table 24 shows the actual figures to outline the recomposed Japan-U.S. Input-Output Table for 2000, while Tables 25 and 26 show the supply-demand relationships and the breakdown of inputs regarding each sector of Japanese affiliated companies listed in the 2000 Japan-U.S. Table. In both tables, the figures show the percentage of the value in question to the total output excluding domestic output.

① **Output of Japanese affiliated companies**

In 2000, Japanese affiliated companies produced $318.87 billion worth of goods and services, accounting for 1.89% of total production in the U.S. ($16.87534 trillion) (Table 25). According to a breakdown by sector, the largest production is observed in "cars" ($63.79 billion), followed by "commerce" ($62.4 billion), "electronic machinery" ($48.97 billion), and "services" ($40.15 billion).

② **Supply-demand relations of Japanese affiliated companies**

According to data on the supply-demand relationships of Japanese affiliated companies, the largest portion of the products of Japanese affiliated companies goes to the U.S. domestic market to meet final demand there (54.77%), with the second largest portion going to the U.S. (excluding Japanese affiliated companies) to meet intermediate demand there (37.58%). These data show that more than 90% of the products and services of Japanese affiliated companies were consumed domestically in the U.S. (excluding Japanese affiliated companies) (Table 25).

Industrial sectors that targeted intermediate demand in the U.S. (excluding Japanese affiliated companies) included such manufacturing sectors as "steel" (90.80%), "mining" (86.76%), "other manufactured products" (74.91%), and "non-ferrous metals" (60.07%). On the other hand, industrial sectors that targeted final demand included "construction" (87.72%), "commerce" (71.74%), "other transportation equipment" (68.45%), "services" (65.39%), "foodstuffs"(61.97%), and "cars" (60.79%).

Regarding exports to the Japanese market, exports targeting intermediate demand accounted for 1.22%. Those exports came mostly from "agriculture, forestry and fishing" (70.71%), "lumber, pulp and paper" (31.36%), and "non-ferrous metals" (19.45%). On the other hand, exports targeting final demand accounted for 0.76%, even smaller than those that targeted intermediate demand. Those exports came mainly from "agriculture, forestry and fishing" (13.74%) and "foodstuffs" (4.96%).

③ **Breakdown of inputs in Japanese affiliated companies**

According to a breakdown of inputs in Japanese affiliated companies, intermediate inputs accounted for 52.91%, the largest portion of which (33.46 percentage points) goes to investments among Japanese affiliated companies, followed by 14.27 percentage points to investments from Japan, 3.21 percentage points to investments from ROW, and 1.38 percentage points to investments from the U.S. (excluding Japanese affiliated companies) (Table 26).

A breakdown by sector shows that "petroleum products" have the highest intermediate input rate (89.43%), followed by "cars" (75.81%), and "non-ferrous metals" (69.81%). Nine sectors out of 20 have an intermediate input rate higher than 60%. Intermediate inputs largely consist of transactions between Japanese affiliated companies, except for such sectors as "general machinery," "electronic machinery," "electric machinery," and "precision machinery," where intermediate inputs largely consist of imports from Japan.

Table 24 Outline of the Recomposed 2000 Japan-U.S. Input-Output Table

(Unit: 100 thousand dollars)

Japan-US table for analysis (20 sectors)		Japan	JAC	US (excluding JAC)	Japan and US	Japan		US		
		Total of intermediate demand	Total of intermediate demand	Total of intermediate demand	Total of intermediate demand	Total of domestic final demand	Total of exports (007+008+009)	Total of domestic final demand	Total of exports (007+008+009)	Domestic production
Japan	Agriculture, forestry and fishing	815,606	49	893	816,548	517,832	6,810	439	0	1,342,381
	Mining	129,754	69	128	129,951	1,315	1,280	0	0	132,641
	Construction	830,985	0	0	830,985	6,340,475	0	0	0	7,171,463
	Foodstuffs	984,691	146	1,987	986,824	2,301,695	12,107	3,083	0	3,301,765
	Textiles	350,868	1,207	4,045	356,120	269,061	65,800	1,293	0	691,448
	Lumber, paper and pulp	1,187,984	1,111	3,541	1,192,636	99,106	21,850	490	0	1,315,050
	Chemical products	1,634,226	30,248	20,060	1,684,534	230,370	255,137	25,671	0	2,175,643
	Steel	685,910	6,978	6,745	699,633	-795	126,419	309	0	825,711
	Non-ferrous metals	422,170	3,595	4,439	430,204	3,317	70,107	51	0	510,258
	General machinery	415,448	34,850	28,891	479,189	1,210,643	483,729	93,155	0	2,296,596
	Electronic machinery	1,050,914	165,519	44,772	1,261,205	1,098,900	803,468	156,299	0	3,281,930
	Electric machinery	296,287	18,269	8,857	323,413	528,757	259,141	15,120	0	1,158,802
	Cars	1,042,483	95,321	12,277	1,150,081	821,111	446,504	289,664	0	2,729,569
	Other transportation equipment	129,703	9,287	5,889	144,879	70,834	175,613	18,671	0	419,481
	Precision machinery	75,104	3,964	1,914	80,982	216,960	110,413	39,324	0	459,488
	Petroleum products (including petrochemical basic products)	724,885	104	210	725,199	360,956	17,336	592	0	1,110,515
	Other manufactured products	3,884,531	20,977	17,863	3,923,371	504,285	183,495	43,077	0	4,641,264
	Commerce	4,066,982	26,134	15,658	4,108,774	6,610,205	290,145	90,395	0	11,099,458
	Services	7,347,319	1,806	5,599	7,354,724	14,723,131	75,048	25,314	0	22,214,836
	Others	8,285,066	35,269	67,317	8,387,652	8,512,263	316,167	33,501	0	17,237,417
JAC	Agriculture, forestry and fishing	1,842	2	351	2,195	358	0	51	0	2,605
	Mining	0	20	2,522	2,542	0	0	366	0	2,907
	Construction	0	21	2,373	2,394	0	0	17,100	0	19,494
	Foodstuffs	2,741	305	16,272	19,318	3,029	0	37,862	885	61,094
	Textiles	36	73	4,592	4,701	71	0	5,237	813	10,822
	Lumber, paper and pulp	2,383	35	3,267	5,685	93	0	1,235	587	7,600
	Chemical products	4,709	2,123	105,947	112,779	842	0	53,516	11,985	179,123
	Steel	201	4,376	97,193	101,770	0	0	2,948	2,324	107,042
	Non-ferrous metals	4,595	622	14,191	19,408	192	0	320	3,704	23,624
	General machinery	454	1,358	43,467	45,279	865	0	66,237	12,019	124,399
	Electronic machinery	7,753	5,660	165,526	178,939	6,675	0	245,067	59,066	489,747
	Electric machinery	1,093	396	23,647	25,136	450	0	20,439	6,312	52,335
	Cars	6,449	18,069	204,312	228,830	4,730	0	387,755	16,574	637,887
	Other transportation equipment	773	138	25,000	25,911	846	0	63,266	2,402	92,427
	Precision machinery	325	202	11,541	12,068	453	0	17,528	2,923	32,971
	Petroleum products (including petrochemical basic products)	27	24	2,192	2,243	2	0	1,228	357	3,830
	Other manufactured products	1,860	2,304	126,646	130,810	2,168	0	30,994	5,090	169,061
	Commerce	3,117	5,421	153,773	162,311	3,226	0	447,677	10,773	623,990
	Services	156	1,929	136,652	138,737	217	0	262,559	0	401,513
	Others	231	880	58,890	60,001	168	0	85,006	1,094	146,270
US (excluding JAC)	Agriculture, forestry and fishing	45,920	17,180	1,961,577	2,024,677	8,941	0	284,826	179,733	2,489,684
	Mining	7,677	13,036	1,622,095	1,642,808	10	0	234,454	38,517	1,913,963
	Construction	0	10,290	1,106,392	1,116,682	0	0	7,973,197	993	9,090,999
	Foodstuffs	33,065	27,287	1,455,437	1,515,789	36,548	0	3,386,453	208,673	5,136,725
	Textiles	2,699	9,430	589,577	601,706	5,352	0	672,447	166,349	1,444,371
	Lumber, paper and pulp	18,329	23,345	2,209,766	2,251,440	715	0	835,667	196,292	3,283,014
	Chemical products	36,137	40,163	2,005,180	2,081,480	6,455	0	1,012,930	617,225	3,723,974
	Steel	1,251	28,159	625,698	655,108	0	0	18,976	49,491	723,182
	Non-ferrous metals	13,762	26,583	607,019	647,364	573	0	13,635	113,584	767,134
	General machinery	24,514	24,897	796,130	845,541	46,515	0	1,213,117	671,107	2,753,049
	Electronic machinery	68,590	35,258	1,031,482	1,135,330	59,022	0	1,527,161	1,239,147	3,946,087
	Electric machinery	10,701	6,730	398,793	416,224	4,401	0	344,694	171,817	929,951
	Cars	5,849	95,800	1,083,138	1,184,787	4,289	0	2,055,603	579,769	3,828,169
	Other transportation equipment	18,816	975	175,827	195,618	20,573	0	444,943	507,634	1,169,196
	Precision machinery	12,755	3,417	195,563	211,735	17,741	0	297,029	186,554	711,884
	Petroleum products (including petrochemical basic products)	9,376	15,098	1,334,443	1,358,917	245	0	748,073	115,900	2,218,381
	Other manufactured products	20,874	102,234	5,619,180	5,742,288	24,295	0	1,375,230	476,101	7,603,765
	Commerce	39,578	108,367	5,312,831	5,460,776	44,918	0	14,380,658	910,419	20,801,704
	Services	22,362	274,547	19,446,740	19,743,649	30,979	0	37,364,610	860,601	58,055,924
	Others	52,991	204,068	13,654,255	13,911,314	39,144	0	19,709,136	1,256,293	34,973,531
ROW	Agriculture, forestry and fishing	141,312	2,084	167,455	310,851	64,206	0	76,315	0	451,372
	Mining	708,852	832	1,023,766	1,733,450	-2,021	0	3,408	0	1,734,837
	Construction	0	0	0	0	0	0	0	0	0
	Foodstuffs	103,405	2,455	155,563	261,423	81,616	0	188,266	0	531,305
	Textiles	37,270	1,810	161,391	200,471	210,586	0	663,546	0	1,074,603
	Lumber, paper and pulp	112,837	1,958	343,492	458,287	22,246	0	186,616	0	667,149
	Chemical products	149,277	4,901	528,626	682,804	22,344	0	389,091	0	1,094,239
	Steel	39,665	3,287	182,220	225,172	-87	0	5,401	0	230,486
	Non-ferrous metals	137,302	4,708	261,670	403,680	3,813	0	4,620	0	412,113
	General machinery	37,973	2,994	231,311	272,278	48,825	0	347,503	0	668,606
	Electronic machinery	218,207	42,504	981,840	1,242,551	283,830	0	870,669	0	2,397,050
	Electric machinery	35,818	2,171	173,069	211,058	51,660	0	145,296	0	408,014
	Cars	19,609	10,228	419,357	449,194	62,083	0	915,453	0	1,426,730
	Other transportation equipment	6,624	1,407	149,945	157,976	11,366	0	122,307	0	291,649
	Precision machinery	20,095	810	56,110	77,015	44,304	0	147,182	0	268,501
	Petroleum products (including petrochemical basic products)	122,492	708	159,674	282,874	25,482	0	80,825	0	389,181
	Other manufactured products	96,930	6,404	507,803	611,137	156,749	0	687,319	0	1,455,205
	Commerce	67,194	0	0	67,194	49,534	0	134,850	0	251,578
	Services	226,455	989	79,591	307,035	100,609	0	272,341	0	679,985
	Others	172,146	12,172	998,252	1,182,570	90,785	0	279,236	0	1,552,591
[Japan]	Total of intermediate inputs	34,360,916	454,903	251,085	35,066,904	44,420,421	3,720,569	836,448	0	84,115,716
[JAC]	Total of intermediate inputs	38,745	43,958	1,198,354	1,281,057	24,385	0	1,746,391	136,908	3,188,741
[US]	Total of intermediate inputs	445,246	1,066,864	61,231,123	62,743,233	350,716	0	93,892,839	8,546,199	165,564,687
[Japan-US]	Total amount of intermediate inputs	34,844,907	1,565,725	62,680,562	99,091,194	44,795,522	3,720,569	96,475,678	8,683,107	252,869,144
[Other]	Customs duties (foreign trade sector)	30,918	5,258	5,059	41,235	46,795	0	14,456	0	102,486
[Other]	International freight charges, insurance (foreign trade	20,552	12,723	6,379	39,654	8,002	0	19,185	0	66,841
[ROW]	Total of intermediate inputs	2,453,463	102,422	6,581,135	9,137,020	1,327,930	0	5,520,244	0	15,985,194
[Other]	Customs duties (Import to ROW)	184,054	885	55,396	240,335	94,161	0	130,117	0	464,613
[Other]	Total amount of intermediate inputs	37,533,894	1,687,013	69,328,531	108,549,438	46,272,410	3,720,569	102,159,680	8,683,107	269,488,278
[Japan-US]	Compensation for employees	25,571,979	930,721	56,087,251	82,589,951	0	0	0	0	82,589,951
[Japan-US]	Property income (002+003+004)	17,294,600	453,432	32,974,597	50,722,629	0	0	0	0	50,722,629
[Japan-US]	Indirect taxes	3,715,243	117,575	7,174,308	11,007,126	0	0	0	0	11,007,126
[Japan-US]	Gross value added	46,581,822	1,501,728	96,236,156	144,319,706	0	0	0	0	144,319,706
[Japan-US]	Domestic production	84,115,716	3,188,741	165,564,687	252,869,144	46,272,410	3,720,569	102,159,680	8,683,107	413,807,984

Note: JAC stands for Japanese affiliated companies.

Table 25 Supply-demand Relationships of Japanese Affiliated Companies according to the 2000 Japan-U.S. Input-Output Table

(Unit: 100 thousand dollars, %)

Japan-US table for analysis (20 sectors)	(Reimport) Intermediate demand of Japan	Intermediate demand of JAC	Intermediate demand of US (excluding JAC)	(Reimport) Final demand of Japan	Final demand of US	Exports to ROW	Domestic Productions	(Induced import) Intermediate demand from Japan	(Local procurement) Intermediate demand of US	(Procurement from third countries) Intermediate demand of ROW
Agriculture, forestry and fishing	70.71	0.08	13.47	13.74	1.96	0.00	2,605	1.88	659.50	80.00
Mining	0.00	0.69	86.76	0.00	12.59	0.00	2,907	2.37	448.43	28.62
Construction	0.00	0.11	12.17	0.00	87.72	0.00	19,494	0.00	52.79	0.00
Foodstuffs	4.49	0.50	26.63	4.96	61.97	1.45	61,094	0.24	44.66	4.02
Textiles	0.33	0.67	42.43	0.66	48.39	7.51	10,822	11.15	87.14	16.73
Lumber, paper and pulp	31.36	0.46	42.99	1.22	16.25	7.72	7,600	14.62	307.17	25.76
Chemical products	2.63	1.19	59.15	0.47	29.88	6.69	179,123	16.89	22.42	2.74
Steel	0.19	4.09	90.80	0.00	2.75	2.17	107,042	6.52	26.31	3.07
Non-ferrous metals	19.45	2.63	60.07	0.81	1.35	15.68	23,624	15.22	112.53	19.93
General machinery	0.36	1.09	34.94	0.70	53.25	9.66	124,399	28.01	20.01	2.41
Electronic machinery	1.58	1.16	33.80	1.36	50.04	12.06	489,747	33.80	7.20	8.68
Electric machinery	2.09	0.76	45.18	0.86	39.05	12.06	52,335	34.91	12.86	4.15
Cars	1.01	2.83	32.03	0.74	60.79	2.60	637,887	14.94	15.02	1.60
Other transportation equipment	0.84	0.15	27.05	0.92	68.45	2.60	92,427	10.05	1.05	1.52
Precision machinery	0.99	0.61	35.00	1.37	53.16	8.87	32,971	12.02	10.36	2.46
Petroleum products (including petrochemical basic products)	0.70	0.63	57.23	0.05	32.06	9.32	3,830	2.72	394.20	18.49
Other products	1.10	1.36	74.91	1.28	18.33	3.01	169,061	12.41	60.47	3.79
Commerce	0.50	0.87	24.64	0.52	71.74	1.73	623,990	4.19	17.37	0.00
Services	0.04	0.48	34.03	0.05	65.39	0.00	401,513	0.45	68.38	0.25
Others	0.16	0.60	40.26	0.11	58.12	0.75	146,270	24.11	139.51	8.32
Total	1.22	1.38	37.58	0.76	54.77	4.29	3,188,741	14.27	33.46	3.21

Note: JAC stands for Japanese affiliated companies.

Table 26 Breakdown of Inputs to Japanese Affiliated Companies according to the 2000 Japan-U.S. Input-Output Table

(Unit: 100 thousand dollars, %)

Japan-US table for analysis (20 sectors)	Intermediate inputs from Japan	Intermediate inputs from US (excluding JAC)	Intermediate inputs from JAC	Intermediate inputs from ROW	Total amount of intermediate inputs	Compensation for employees	Property income	Indirect taxes	Total of added value	Value of domestic production
Agriculture, forestry and fishing	0.50	0.58	59.00	0.00	60.12	12.74	24.88	2.26	39.88	2,605
Mining	0.00	0.72	37.08	0.00	37.81	18.95	34.57	8.67	62.19	2,907
Construction	0.06	1.07	55.63	0.55	57.32	36.79	5.10	0.80	42.68	19,494
Foodstuffs	0.44	0.36	58.60	3.37	62.87	15.66	17.33	4.14	37.13	61,094
Textiles	8.04	0.50	41.87	11.06	63.07	26.27	9.92	0.74	36.93	10,822
Lumber, paper and pulp	1.49	0.68	60.24	0.00	62.51	25.30	11.12	1.07	37.49	7,600
Chemical products	14.74	0.93	42.52	1.57	60.40	15.52	22.07	2.01	39.60	179,123
Steel	1.32	0.82	58.87	0.90	62.03	27.66	9.26	1.04	37.97	107,042
Non-ferrous metals	4.28	1.33	62.46	1.39	69.81	22.13	6.97	1.08	30.19	23,624
General machinery	29.92	1.08	21.82	2.00	56.17	29.68	13.30	0.86	43.83	124,399
Electronic machinery	32.51	0.92	15.25	8.56	58.11	22.94	17.94	1.01	41.89	489,747
Electric machinery	29.19	0.76	19.58	8.68	59.41	27.33	12.39	0.87	40.59	52,335
Cars	19.25	4.27	48.63	2.69	75.81	17.52	6.02	0.65	24.19	637,887
Other transportation equipment	18.55	1.78	36.33	2.13	59.39	32.83	7.14	0.64	40.61	92,427
Precision machinery	35.16	0.31	9.31	2.47	48.08	32.69	18.34	0.89	51.92	32,971
Petroleum products (including petrochemical basic products)	4.91	0.31	71.49	12.40	89.43	4.31	5.30	0.97	10.57	3,830
Other manufactured products	18.16	0.74	26.37	3.06	49.70	31.12	18.18	1.01	50.30	169,061
Commerce	0.09	0.32	33.40	1.54	35.36	41.24	10.90	12.50	64.64	623,990
Services	6.47	0.42	24.43	2.67	34.27	46.39	17.67	1.67	65.73	401,513
Others	2.84	0.27	28.59	0.06	31.82	22.49	37.83	7.86	68.18	146,270
Total	14.27	1.38	33.46	3.21	52.91	29.19	14.22	3.69	47.09	3,188,741

Note: JAC stands for Japanese affiliated companies.

(2) Comparison of production repercussion coefficients

Table 27 and Figures 12 through 14 show inverse matrix coefficients calculated based on the recomposed Japan-U.S. I-O Table and also present the sums of the figures contained in the same column. Table 27 shows the production repercussion coefficients resulting from a one-unit increase in the final demand. In the table, the coefficients are broken down by sector listed in the left column and also by type of economic entity (Japan, Japanese affiliated companies, and the U.S. (excluding Japanese affiliated companies)).

The average production repercussion coefficient of Japanese affiliated companies is 1.9134, higher than that of Japan (1.8354) and the U.S. (excluding Japanese affiliated companies) (1.8050).

Table 27 Comparison of Production Repercussion Coefficients (Leontief inverse matrix)

	Japan				JAC				US (excluding JAC)			
	Japan	JAC	US (excluding JAC)	Total	Japan	JAC	US (excluding	Total	Japan	JAC	US (excluding JAC)	Total
Agriculture, forestry and fishing	1.6668	0.0006	0.0163	1.6838	0.0143	1.0116	1.0515	2.0773	0.0084	0.0110	2.0051	2.0246
Mining	1.8531	0.0003	0.0074	1.8608	0.0044	1.0115	0.5904	1.6062	0.0074	0.0095	1.4756	1.4924
Construction	1.8951	0.0007	0.0119	1.9077	0.0083	1.0177	0.9201	1.9460	0.0105	0.0167	1.8679	1.8951
Foodstuffs	1.9036	0.0015	0.0443	1.9493	0.0123	1.0096	1.0534	2.0752	0.0060	0.0095	2.0424	2.0580
Textiles	1.9842	0.0010	0.0269	2.0121	0.1578	1.0096	0.7334	1.9008	0.0143	0.0121	1.9249	1.9514
Lumber, paper and pulp	1.9631	0.0025	0.0508	2.0163	0.0339	1.0135	1.0450	2.0923	0.0101	0.0123	1.9408	1.9633
Chemical products	1.9577	0.0017	0.0279	1.9873	0.2731	1.0142	0.7080	1.9952	0.0087	0.0162	1.8140	1.8389
Steel	1.6429	0.0005	0.0088	1.6522	0.0278	1.0137	0.9121	1.9536	0.0147	0.0114	1.7596	1.7858
Non-ferrous metals	1.6287	0.0031	0.0319	1.6638	0.0779	1.0203	1.0133	2.1114	0.0125	0.0166	1.8300	1.8592
General machinery	1.8676	0.0015	0.0331	1.9022	0.5674	1.0148	0.3781	1.9603	0.0233	0.0303	1.7869	1.8404
Electronic machinery	1.9534	0.0044	0.0549	2.0127	0.6262	1.0129	0.2633	1.9024	0.0289	0.0324	1.6863	1.7476
Electric machinery	1.8898	0.0031	0.0345	1.9273	0.5447	1.0110	0.3360	1.8918	0.0132	0.0259	1.8250	1.8641
Cars	2.3273	0.0041	0.0240	2.3554	0.4441	1.0596	0.8928	2.3966	0.0347	0.0698	2.0509	2.1553
Other transportation equipment	2.0216	0.0048	0.0940	2.1204	0.3682	1.0244	0.6167	2.0093	0.0297	0.0282	1.7172	1.7751
Precision machinery	1.8717	0.0023	0.0510	1.9250	0.6702	1.0055	0.1692	1.8449	0.0122	0.0189	1.6699	1.7009
Petroleum products (including petrochemical basic products)	1.1479	0.0001	0.0053	1.1532	0.0909	1.0096	1.0703	2.1709	0.0051	0.0079	1.8811	1.8940
Other products	1.8955	0.0011	0.0185	1.9151	0.3353	1.0107	0.4440	1.7900	0.0070	0.0172	1.7199	1.7441
Commerce	1.5455	0.0003	0.0089	1.5548	0.0040	1.0062	0.5292	1.5394	0.0040	0.0062	1.5292	1.5394
Services	1.5728	0.0005	0.0083	1.5816	0.1147	1.0070	0.3875	1.5092	0.0054	0.0089	1.4965	1.5108
Others	1.5194	0.0002	0.0083	1.5279	0.0478	1.0052	0.4416	1.4946	0.0039	0.0053	1.4499	1.4591
Total (Average)	1.8054	0.0017	0.0284	1.8354	0.2212	1.0144	0.6778	1.9134	0.0130	0.0183	1.7737	1.8050

Note: JAC stands for Japanese affiliated companies.

Fig. 12 shows the production repercussion coefficient of each sector with the main axis (the scale on the left) indicating the figures of the economic entity in question while the secondary axis (the scale on the right) indicates the figures of the other economic entities. According to this figure, the effect of the final demand of Japan on the production of the U.S. (excluding Japanese affiliated companies) is the greatest in "other transportation equipment," followed by "electronic machinery," "lumber, pulp and paper," and "precision machinery." On the other hand, the effect of the final demand of Japan on the production of Japanese affiliated companies is so small as a whole that it is difficult to compare the effect. However, a close observation reveals that the effect is relatively large in "other transportation equipment," "electronic machinery," and "cars."

Fig. 12　Production Repercussion Coefficients Resulting from Japan's Final Demand

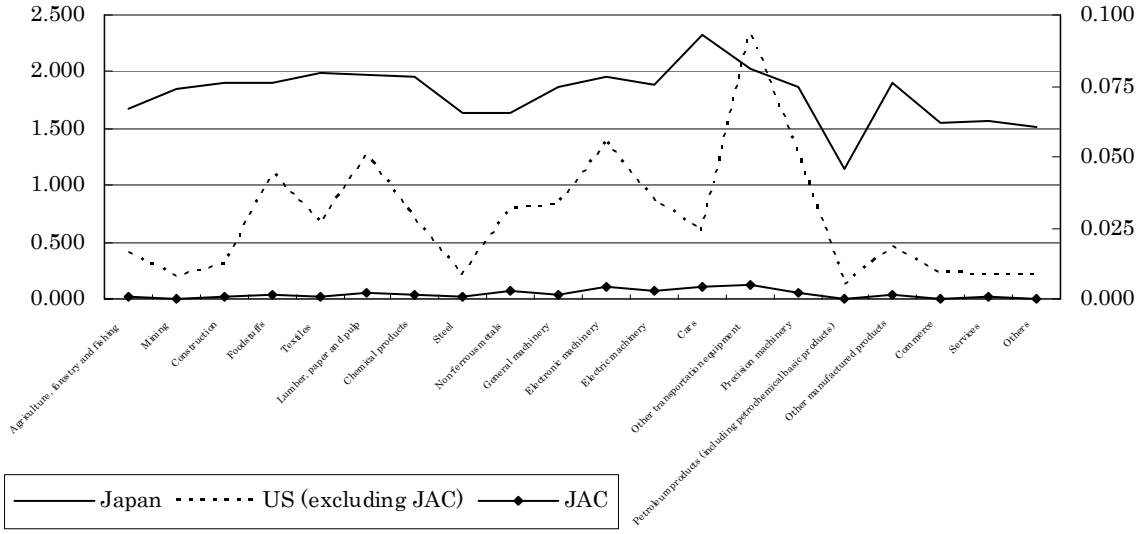


Fig.13 shows the effect of the final demand for products of the U.S. (excluding Japanese affiliated companies). According to this figure, the effect on Japan's production is greatest in "cars," followed by "other transportation equipment," "electronic machinery," and "general machinery." As in the case with Japan, such an effect on Japanese affiliated companies is greatest in "cars," followed by "electronic machinery," "general machinery," and "other transportation equipment." In sum, the effects of the final demand for products of the U.S. (excluding Japanese affiliated companies) on Japan and Japanese affiliated companies are similar in all sectors except for "cars."

Fig. 13　Production Repercussion Coefficients Resulting from the Final Demand for Products of the U.S. (excluding Japanese affiliated companies)

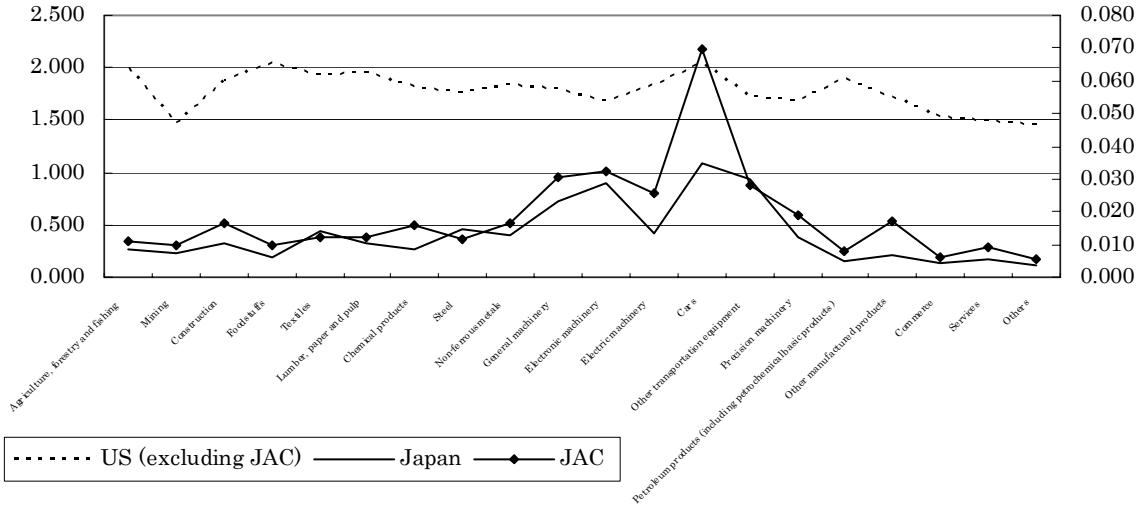
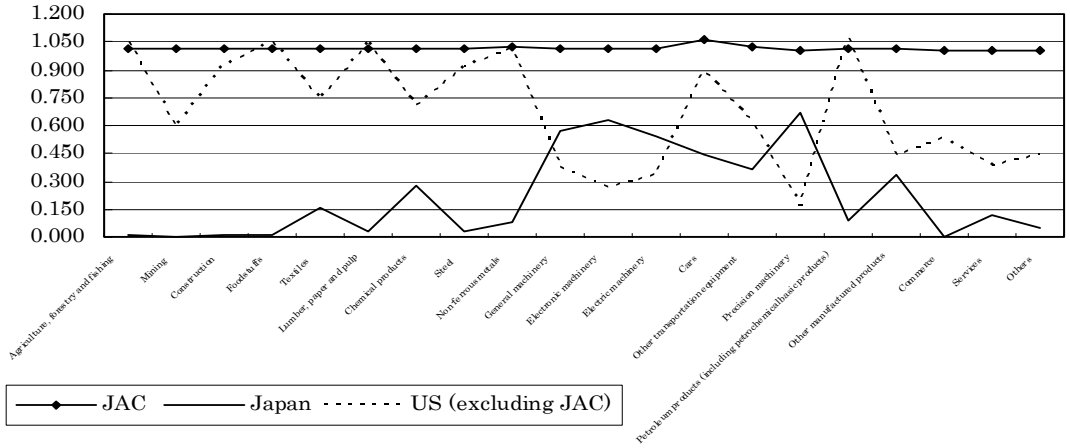


Fig.14 shows the effect of the final demand for the products of Japanese affiliated companies. According to this figure, the effect on the U.S. (excluding Japanese affiliated companies) is greatest in "petroleum products," "foodstuffs," "lumber, pulp and paper," and "agriculture, forestry and fishing." Such an effect on Japan is large in machinery sectors such as "precision machinery," "electronic machinery," "general machinery," and "electric machinery." This suggests that Japanese affiliated companies procure raw materials such as agricultural products, lumber and pulp/paper, and petroleum products mostly from the United States, while procuring machinery parts from Japan.

Fig. 14 Production Repercussion Coefficients Resulting from the Final Demand for the Products of Japanese Affiliated Companies



(3) Final demand and production inducement value

Table 28 shows the final demand for products of Japan, products of Japanese affiliated companies, and products of the U.S. (excluding Japanese affiliated companies) as well as the resulting production inducement value and the ROW imports inducement value. If the scale of the final demand of Japan is assumed to be 100.00 (the total final demand is $4.90488 trillion), the U.S. (excluding Japanese affiliated companies) stands at 209.63 ($10.28215 trillion), while Japanese affiliated companies stand at 3.89 ($190.77 billion). If the resulting production inducement value of Japan is assumed to be 100.00 (the total inducement value is $8.73981 trillion), the U.S. (excluding Japanese affiliated companies) stands at 203.44 ($17.78067 trillion), while Japanese affiliated companies stand at 4.18 ($364.95 billion). In short, according to the figures relative to Japan's, the production inducement value is smaller than the final demand in the case of the U.S. (excluding Japanese affiliated companies), whereas it is the other way around in the case of Japanese affiliated companies.

According to a breakdown of the production inducement value resulting from the final demand for products of Japan, Japan accounted for 94.73%, the U.S. (excluding Japanese affiliated companies) for 0.89%, Japanese affiliated companies for 0.05%, and ROW for 4.33%.

According to a breakdown of the production inducement value resulting from the final demand for the products of Japanese affiliated companies, Japanese affiliated companies themselves account for 53.34%, the U.S. (excluding Japanese affiliated companies) for 28.95%, Japan for 14.90%, and the rest of the world for 2.81%.

Table 28 Production Inducement Value of Japan, Japanese Affiliated Companies, and the U.S. (excluding Japanese affiliated companies)

(Unit: 100 thousand dollars)

Japan-US table for analysis (20 sector)		Value of final demand			Value of production inducement				Composition ratio of production inducement		
		Japan	JAC	US (excluding JAC)	Japan	JAC	US (excluding JAC)	Total	Japan	JAC	US (excluding JAC)
Japan	Agriculture, forestry and fishing	525,833			1,337,604	1,281	3,496	1,342,381	1.53	0.04	0.00
	Mining	2,690			130,907	589	1,145	132,641	0.16	0.11	0.15
	Construction	6,340,478			7,159,673	4,206	7,583	7,171,463	8.65	0.77	0.97
	Foodstuffs	2,314,941			3,292,153	2,781	6,831	3,301,765	3.98	0.51	0.88
	Textiles	335,328			680,749	2,591	8,107	691,448	0.82	0.48	1.04
	Lumber, paper and pulp	122,414			1,294,540	6,188	14,322	1,315,050	1.56	1.14	1.84
	Chemical products	491,109			2,092,643	24,072	58,928	2,175,643	2.53	4.43	7.58
	Steel	126,078			792,510	12,119	21,082	825,711	0.96	2.23	2.71
	Non-ferrous metals	80,054			486,694	9,118	14,446	510,258	0.59	1.68	1.86
	General machinery	1,817,407			2,224,276	26,252	46,068	2,296,596	2.69	4.83	5.92
	Electronic machinery	2,020,725			3,018,216	134,144	129,570	3,281,930	3.65	24.67	16.66
	Electric machinery	835,389			1,121,089	15,825	21,889	1,158,802	1.35	2.91	2.81
	Cars	1,579,488			2,572,397	92,989	64,183	2,729,569	3.11	17.10	8.25
	Other transportation equipment	274,602			403,423	7,057	9,002	419,481	0.49	1.30	1.16
	Precision machinery	378,506			452,561	3,045	3,882	459,488	0.55	0.56	0.50
	Petroleum products (including petrochemical basic products)	385,316			1,101,362	3,200	5,954	1,110,515	1.33	0.59	0.77
	Other products	717,893			4,533,667	40,809	66,788	4,641,264	5.48	7.50	8.59
	Commerce	6,990,684			10,986,900	44,614	67,944	11,099,458	13.27	8.20	8.73
	Services	14,860,112			22,106,494	41,150	67,192	22,214,836	26.70	7.57	8.64
	Others	8,849,765			17,006,137	71,825	159,455	17,237,417	20.54	13.21	20.50
JAC	Agriculture, forestry and fishing		410		1,835	417	352	2,605	0.00	0.01	0.00
	Mining		365		17	390	2,500	2,907	0.00	0.01	0.00
	Construction		17,100		9	17,127	2,359	19,494	0.00	0.47	0.00
	Foodstuffs		41,776		2,841	42,094	16,158	61,094	0.00	1.15	0.01
	Textiles		6,121		60	6,204	4,558	10,822	0.00	0.17	0.00
	Lumber, paper and pulp		1,915		2,368	1,967	3,264	7,600	0.00	0.05	0.00
	Chemical products		66,344		5,550	68,289	105,284	179,123	0.01	1.87	0.06
	Steel		5,272		1,005	9,122	96,915	107,042	0.00	0.25	0.05
	Non-ferrous metals		4,216		4,582	4,805	14,237	23,624	0.01	0.13	0.01
	General machinery		79,120		732	80,280	43,386	124,399	0.00	2.20	0.02
	Electronic machinery		310,808		9,032	315,952	164,763	489,747	0.01	8.66	0.09
	Electric machinery		27,200		1,174	27,600	23,562	52,336	0.00	0.76	0.01
	Cars		409,057		6,941	424,241	206,705	637,887	0.01	11.62	0.12
	Other transportation equipment		66,516		802	66,751	24,874	92,427	0.00	1.83	0.01
	Precision machinery		20,903		356	21,105	11,510	32,971	0.00	0.58	0.01
	Petroleum products (including petrochemical basic products)		1,587		39	1,613	2,178	3,830	0.00	0.04	0.00
	Other products		38,251		2,432	40,469	126,160	169,061	0.00	1.11	0.07
	Commerce		461,678		4,227	466,371	153,390	623,989	0.00	12.78	0.09
	Services		262,776		718	264,805	135,990	401,513	0.00	7.26	0.08
	Others		86,269		530	87,159	58,581	146,270	0.00	2.39	0.03
US (excluding JAC)	Agriculture, forestry and fishing			465,007	72,255	24,624	2,392,805	2,489,684	0.08	0.67	1.35
	Mining			271,155	18,407	16,305	1,879,251	1,913,963	0.02	0.45	1.06
	Construction			7,974,317	4,128	12,784	9,074,086	9,090,999	0.00	0.35	5.10
	Foodstuffs			3,620,936	43,626	27,915	5,065,184	5,136,725	0.05	0.76	2.85
	Textiles			842,665	5,803	10,648	1,427,920	1,444,371	0.01	0.29	0.80
	Lumber, paper and pulp			1,031,574	31,208	27,533	3,224,273	3,283,014	0.04	0.75	1.81
	Chemical products			1,642,494	53,450	36,304	3,634,220	3,723,974	0.06	0.99	2.04
	Steel			68,074	6,426	24,775	691,980	723,182	0.01	0.68	0.39
	Non-ferrous metals			119,770	20,128	22,203	724,803	767,134	0.02	0.61	0.41
	General machinery			1,907,508	29,141	21,437	2,702,471	2,753,049	0.03	0.59	1.52
	Electronic machinery			2,810,757	75,038	32,822	3,838,227	3,946,087	0.09	0.90	2.16
	Electric machinery			513,726	12,413	6,600	910,938	929,950	0.01	0.18	0.51
	Cars			2,643,382	9,728	79,757	3,738,683	3,828,169	0.01	2.19	2.10
	Other transportation equipment			973,578	18,520	1,873	1,148,803	1,169,196	0.02	0.05	0.65
	Precision machinery			500,149	13,200	3,462	695,222	711,884	0.02	0.09	0.39
	Petroleum products (including petrochemical basic products)			859,464	17,034	15,632	2,185,715	2,218,381	0.02	0.43	1.23
	Other products			1,861,477	47,604	97,795	7,458,366	7,603,765	0.05	2.68	4.19
	Commerce			15,340,929	74,750	98,859	20,628,096	20,801,705	0.09	2.71	11.60
	Services			38,312,275	102,347	288,785	57,664,793	58,055,924	0.12	7.91	32.43
	Others			21,062,217	122,260	206,394	34,644,877	34,973,531	0.14	5.66	19.48
ROW	Agriculture, forestry and fishing				205,518	2,084	243,770	451,372	0.24	0.06	0.14
	Mining				706,831	832	1,027,174	1,734,837	0.81	0.02	0.58
	Construction				0	0	0	0	0.00	0.00	0.00
	Foodstuffs				185,021	2,455	343,829	531,305	0.21	0.07	0.19
	Textiles				247,856	1,810	824,937	1,074,603	0.28	0.05	0.46
	Lumber, paper and pulp				135,083	1,958	530,108	667,149	0.15	0.05	0.30
	Chemical products				171,621	4,901	917,717	1,094,239	0.20	0.13	0.52
	Steel				39,578	3,287	187,621	230,486	0.05	0.09	0.11
	Non-ferrous metals				141,115	4,708	266,290	412,113	0.16	0.13	0.15
	General machinery				86,798	2,994	578,814	668,606	0.10	0.08	0.33
	Electronic machinery				502,037	42,504	1,852,509	2,397,050	0.57	1.16	1.04
	Electric machinery				87,478	2,171	318,365	408,014	0.10	0.06	0.18
	Cars				81,692	10,228	1,334,810	1,426,730	0.09	0.28	0.75
	Other transportation equipment				17,990	1,407	272,252	291,649	0.02	0.04	0.15
	Precision machinery				64,399	810	203,292	268,501	0.07	0.02	0.11
	Petroleum products (including petrochemical basic products)				147,974	708	240,499	389,181	0.17	0.02	0.14
	Other products				253,679	6,404	1,195,122	1,455,205	0.29	0.18	0.67
	Commerce				116,728	0	134,850	251,578	0.13	0.00	0.08
	Services				327,064	989	351,932	679,985	0.37	0.03	0.20
	Others				262,931	12,172	1,277,488	1,552,591	0.30	0.33	0.72
	Total of Japan	49,048,812	0	0	82,793,994	543,856	777,867	84,115,717	94.73	14.90	0.44
	Total of JAC	0	1,907,684	0	45,252	1,946,761	1,196,728	3,188,741	0.05	53.34	0.67
	Total of US (excluding JAC)	0	0	102,821,454	777,468	1,056,508	163,730,711	165,564,687	0.89	28.95	92.08
	Total of ROW	0	0	0	3,781,393	102,422	12,101,379	15,985,194	4.33	2.81	6.81
	Total	49,048,812	1,907,684	102,821,454	87,398,107	3,649,546	177,806,685	268,854,338	100.00	100.00	100.00
	Relative scale	100.00	3.89	209.63	100.00	4.18	203.44				

Note: JAC stands for Japanese affiliated companies.

(4) Regional distribution of value-added

Table 29 shows the value-added inducement of Japan, Japanese affiliated companies, and the U.S. (excluding Japanese affiliated companies) respectively. The table also shows a comparative assessment of the import inducement value and the inducement value of the freight charges and insurance premiums necessary for international trade with ROW.

Table 29 Value-added Inducement of Japan, Japanese Affiliated Companies, and the U.S. (excluding Japanese affiliated companies)

Japan-US table for analysis (20 sector)		(Comparative assessment) Value-added inducement						(Actual values) Value-added inducement					
		Japan	JAC	US (excluding JAC)	ROW	Tariffs, transp. & insurance costs	Total	Japan	JAC	US (excluding JAC)	ROW	Tariffs, transp. & insurance costs	Total
Japan	Agriculture, forestry and fishing	96.38	0.09	0.25	2.91	0.36	100.00	776,570	744	2,029	23,457	2,919	805,719
	Mining	96.72	0.43	0.85	1.83	0.17	100.00	56,418	254	494	1,067	100	58,332
	Construction	96.35	0.06	0.10	3.26	0.23	100.00	3,270,292	1,921	3,464	110,523	7,872	3,394,072
	Foodstuffs	88.79	0.08	0.18	9.13	1.82	100.00	1,313,683	1,110	2,726	135,086	26,875	1,479,480
	Textiles	84.09	0.32	1.00	13.09	1.50	100.00	255,483	973	3,043	39,757	4,571	303,826
	Lumber, paper and pulp	85.19	0.41	0.94	12.05	1.41	100.00	477,586	2,283	5,284	67,525	7,923	560,601
	Chemical products	78.66	0.90	2.21	17.00	1.22	100.00	740,511	8,518	20,852	160,014	11,530	941,426
	Steel	79.91	1.22	2.13	15.85	0.90	100.00	390,102	5,965	10,377	77,368	4,373	488,186
	Non-ferrous metals	59.09	1.11	1.75	35.93	2.12	100.00	178,836	3,350	5,308	108,733	6,403	302,631
	General machinery	90.25	1.07	1.87	6.29	0.53	100.00	986,162	11,639	20,425	68,719	5,760	1,092,705
	Electronic machinery	77.16	3.43	3.31	14.99	1.11	100.00	1,101,486	48,955	47,286	213,922	15,889	1,427,538
	Electric machinery	85.07	1.20	1.66	11.24	0.82	100.00	459,756	6,490	8,976	60,765	4,434	540,421
	Cars	89.01	3.22	2.22	5.11	0.44	100.00	788,731	28,512	19,679	45,314	3,893	886,129
	Other transportation equipment	88.94	1.56	1.98	6.27	1.25	100.00	145,034	2,537	3,236	10,225	2,041	163,073
	Precision machinery	86.98	0.59	0.75	10.80	0.89	100.00	188,519	1,268	1,617	23,408	1,933	216,746
	Petroleum products (including petrochemical basic products)	47.97	0.14	0.26	44.45	7.18	100.00	481,227	1,398	2,601	445,929	72,038	1,003,193
	Other products	92.06	0.83	1.36	5.27	0.49	100.00	2,003,460	18,034	29,514	114,664	10,698	2,176,370
	Commerce	96.43	0.39	0.60	2.34	0.24	100.00	7,046,708	28,614	43,578	170,761	17,746	7,307,407
	Services	98.31	0.18	0.30	1.14	0.07	100.00	14,273,989	26,570	43,385	165,423	9,505	14,518,872
	Others	95.00	0.40	0.89	3.54	0.16	100.00	11,024,330	46,561	103,368	410,803	19,021	11,604,082
JAC	Agriculture, forestry and fishing	70.38	16.00	13.52	0.00	0.10	100.00	732	166	141	0	1	1,040
	Mining	0.58	13.41	86.01	0.00	0.00	100.00	10	243	1,555	0	0	1,808
	Construction	0.04	86.71	11.94	1.28	0.02	100.00	4	7,310	1,007	108	2	8,430
	Foodstuffs	4.25	63.02	24.19	8.29	0.25	100.00	1,055	15,631	6,000	2,056	62	24,804
	Textiles	0.41	42.69	31.37	22.30	3.22	100.00	22	2,291	1,684	1,197	173	5,367
	Lumber, paper and pulp	31.08	25.81	42.83	0.00	0.28	100.00	888	737	1,224	0	8	2,857
	Chemical products	2.93	36.11	55.67	3.75	1.55	100.00	2,198	27,046	41,697	2,806	1,159	74,906
	Steel	0.91	8.30	88.17	2.30	0.32	100.00	382	3,463	36,796	959	132	41,732
	Non-ferrous metals	18.34	19.23	56.98	4.36	1.09	100.00	1,383	1,451	4,298	329	82	7,543
	General machinery	0.55	59.96	32.40	4.24	2.85	100.00	321	35,186	19,015	2,489	1,674	58,685
	Electronic machinery	1.51	52.66	27.46	16.69	1.69	100.00	3,783	132,351	69,018	41,941	4,251	251,344
	Electric machinery	1.80	42.42	36.21	17.21	2.36	100.00	476	11,202	9,563	4,545	623	26,410
	Cars	0.94	57.75	28.14	9.65	3.51	100.00	1,679	102,623	50,001	17,156	6,237	177,696
	Other transportation equipment	0.81	67.67	25.22	4.91	1.39	100.00	326	27,106	10,101	1,966	557	40,056
	Precision machinery	1.01	60.17	32.81	4.48	1.52	100.00	185	10,957	5,975	816	277	18,210
	Petroleum products (including petrochemical basic products)	0.47	19.12	25.82	53.25	1.35	100.00	4	171	230	475	12	892
	Other products	1.32	22.00	68.59	5.58	2.50	100.00	1,224	20,358	63,465	5,165	2,313	92,524
	Commerce	0.66	72.98	24.00	2.33	0.03	100.00	2,732	301,455	99,149	9,607	116	413,060
	Services	0.17	63.13	32.42	3.89	0.40	100.00	472	174,066	89,391	10,724	1,090	275,744
	Others	0.36	59.48	39.98	0.08	0.10	100.00	361	59,426	39,941	83	97	99,908
US (excluding JAC)	Agriculture, forestry and fishing	2.70	0.92	89.43	6.87	0.08	100.00	28,811	9,819	954,120	73,288	898	1,066,936
	Mining	0.86	0.76	88.11	10.20	0.06	100.00	11,449	10,142	1,168,881	135,353	773	1,326,598
	Construction	0.04	0.13	91.98	7.70	0.15	100.00	1,762	5,456	3,872,711	324,400	6,175	4,210,504
	Foodstuffs	0.76	0.49	88.10	10.46	0.19	100.00	16,200	10,366	1,880,893	223,390	4,102	2,134,951
	Textiles	0.32	0.59	79.36	18.36	1.36	100.00	2,143	3,933	527,390	122,050	9,071	664,587
	Lumber, paper and pulp	0.79	0.70	82.00	16.35	0.15	100.00	11,695	10,318	1,208,254	240,947	2,193	1,473,407
	Chemical products	1.14	0.78	77.83	20.09	0.16	100.00	21,169	14,378	1,439,316	371,571	2,955	1,849,389
	Steel	0.68	2.62	73.13	23.27	0.30	100.00	2,440	9,407	262,731	83,611	1,079	359,268
	Non-ferrous metals	1.68	1.85	60.33	35.92	0.23	100.00	6,077	6,703	218,816	130,274	829	362,699
	General machinery	0.92	0.68	85.15	13.01	0.25	100.00	12,772	9,395	1,184,451	181,048	3,413	1,391,079
	Electronic machinery	1.46	0.64	74.87	22.93	0.09	100.00	31,433	13,749	1,607,806	492,439	1,965	2,147,392
	Electric machinery	1.12	0.60	82.29	15.79	0.20	100.00	5,038	2,679	369,754	70,961	881	449,313
	Cars	0.17	1.36	63.74	34.37	0.37	100.00	2,353	19,293	904,378	487,598	5,245	1,418,867
	Other transportation equipment	1.19	0.12	73.93	24.55	0.21	100.00	7,521	761	466,507	154,876	1,309	630,973
	Precision machinery	1.67	0.44	88.16	9.64	0.09	100.00	6,853	1,797	360,950	39,454	353	409,408
	Petroleum products (including petrochemical basic products)	0.20	0.18	25.56	73.93	0.13	100.00	1,803	1,655	231,370	669,324	1,140	905,292
	Other products	0.57	1.17	88.85	9.28	0.14	100.00	23,947	49,196	3,751,948	391,800	5,863	4,222,754
	Commerce	0.35	0.46	96.83	2.33	0.03	100.00	48,317	63,901	13,333,632	320,253	3,897	13,770,000
	Services	0.17	0.48	96.10	3.22	0.03	100.00	67,277	189,830	37,905,371	1,268,380	11,431	39,442,288
	Others	0.34	0.57	95.83	3.25	0.01	100.00	83,357	140,720	23,620,963	800,118	3,262	24,648,420
	Total of Japan	93.28	0.50	0.77	4.98	0.48	100.00	45,958,882	245,697	377,243	2,453,463	235,524	49,270,809
	Total of JAC	1.12	57.50	33.90	6.31	1.16	100.00	18,238	933,237	550,253	102,422	18,866	1,623,016
	Total of US (excluding JAC)	0.38	0.56	92.60	6.40	0.06	100.00	392,418	573,496	95,270,242	6,581,135	66,834	102,884,125

Value-added is induced by the final demand for products of Japan, products of Japanese affiliated companies, and products of the U.S. (excluding Japanese affiliated companies). For example, regarding Japan's value-added worth of $4.92708 trillion, 93.28% is induced by the final demand of Japan, while 0.50% is induced by the final demand of Japanese affiliated companies, and 0.77% is induced by the final demand of U.S. (excluding Japanese affiliated companies). On the other hand, with regard to Japanese affiliated companies' value-added worth of $162.30 billion, 57.50% is induced by the final demand of Japanese affiliated companies, while 1.12% is induced by the final demand of Japan, and 33.90% is induced by the final demand of the U.S. (excluding

Japanese affiliated companies) This indicates that Japanese affiliated companies have a great effect in the United States. Regarding the United States' value-added worth of $10.28841 trillion (excluding Japanese affiliated companies), 92.60% is induced by the final demand of U.S. (excluding Japanese affiliated companies), whereas only 0.38% is induced by the final demand of Japan and 0.56% is induced by the final demand of Japanese affiliated companies.

These proportions were calculated on a value-added basis to show the direct and indirect effects induced by the final demand of each sector. These proportions are sometimes called international specialization ratios based on the value-added standard.

The following is a breakdown of value-added by sector. Fig.15 presents graphs showing how much each economic entity is affected by an increase in the final demand in each sector of Japan. The bar graphs showing Japanese affiliated companies and the U.S. (excluding Japanese affiliated companies) are measured by the secondary axis (the scale on the right), while the line graphs showing Japan and ROW are measured by the main axis (the scale on the left). On the basis of value-added, the effect of Japan's final demand on the U.S. (excluding Japanese affiliated companies) is greatest in "electronic machinery," followed by "cars," "chemical products," and "steel." Such an effect on Japanese affiliated companies is especially great in "electronic machinery" and "cars."

Fig.15 Value-added Inducement by Final Demand in Japan

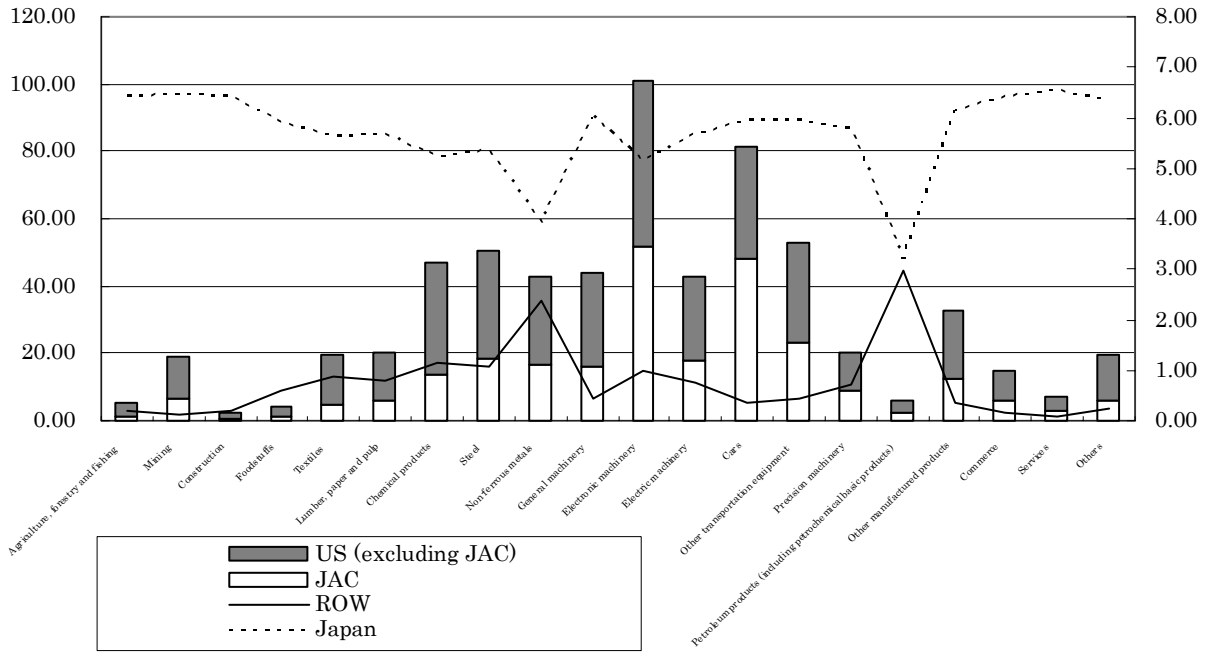
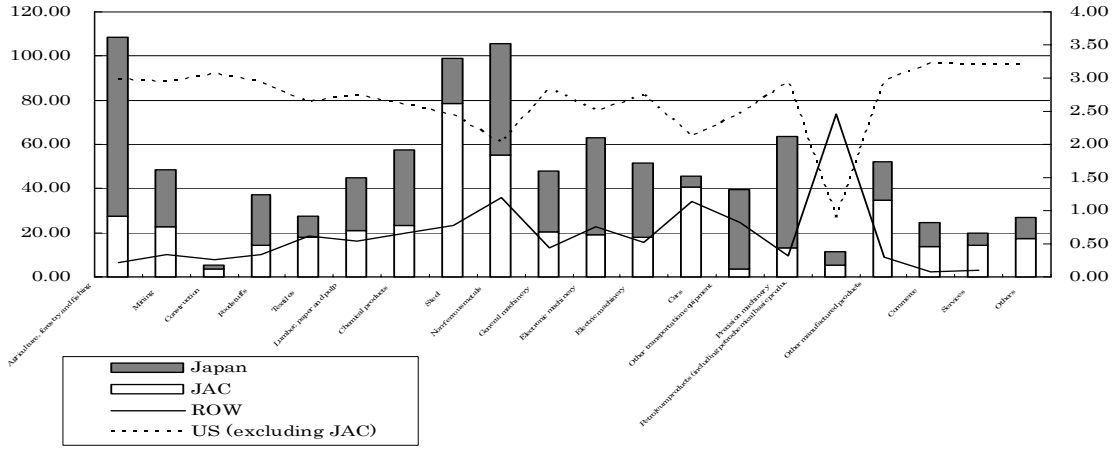


Fig.16 presents graphs showing how much each economic entity is affected by an increase in the final demand in each sector of the U.S. (excluding Japanese affiliated companies). Like the previous graphs, bar graphs showing Japan and Japanese affiliated companies are measured by the secondary axis. On the basis of value-added, the graphs show that Japan and Japanese affiliated companies are influenced by somewhat different sectors.

Fig.16 Value-added Inducement by Final Demand in the U.S. (Japanese affiliated companies)

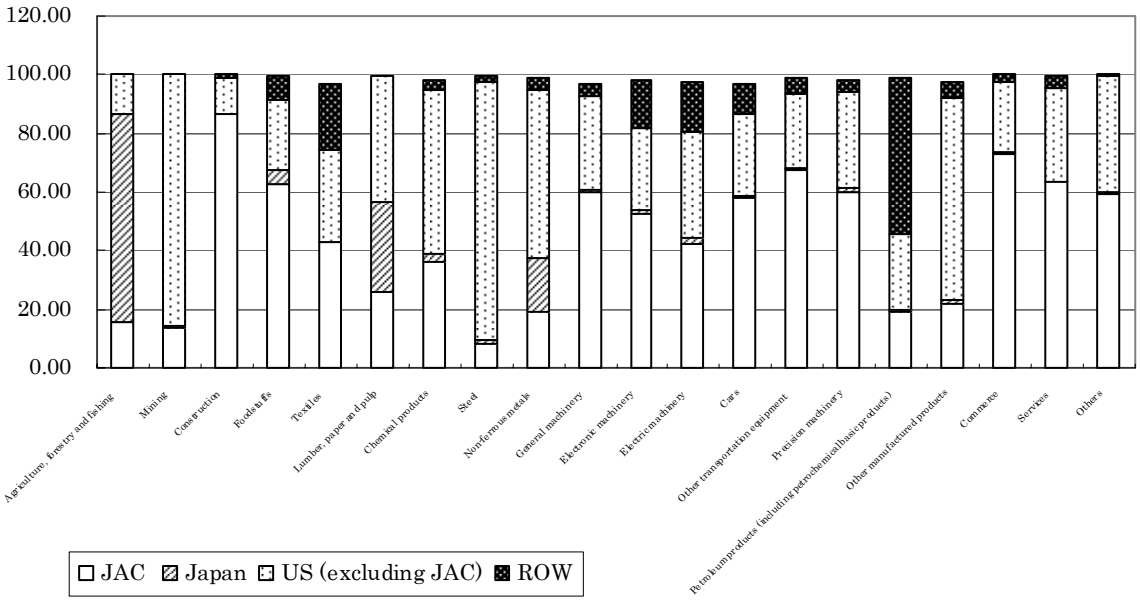


A breakdown by sector shows that final demand in the sector of "agriculture, forestry and fishing" has the greatest effect on Japan, followed by "non-ferrous metals," and "precision machinery." On the other hand, "steel," "non-ferrous metals," and "cars" have the greatest effect on Japanese affiliated companies.

Fig. 17 presents a cumulative bar graph showing the effect of Japanese affiliated companies in each sector on final demand. The sector that has the largest effect on Japan is "agriculture, forestry and fishing," followed by "lumber, paper and pulp," and "non-ferrous metals." The sector that has the largest effect on the United States is "steel," followed by "mining" and "other manufactured products."

This indicates that Japanese affiliated companies generate value-added by supplying electronic machinery and cars to Japan and steel and non-ferrous metals to the United States. The data also suggests that Japanese affiliated companies induce the creation of value-added in the relevant sector of the respective country by purchasing "agriculture, forestry and fishing" products, "lumber, paper and pulp," and "non-ferrous metals" from Japan, and "steel," "mining" products, and "other manufactured products" from the United States.

Fig.17 Value-added Inducement by Final Demand of Japanese affiliated companies

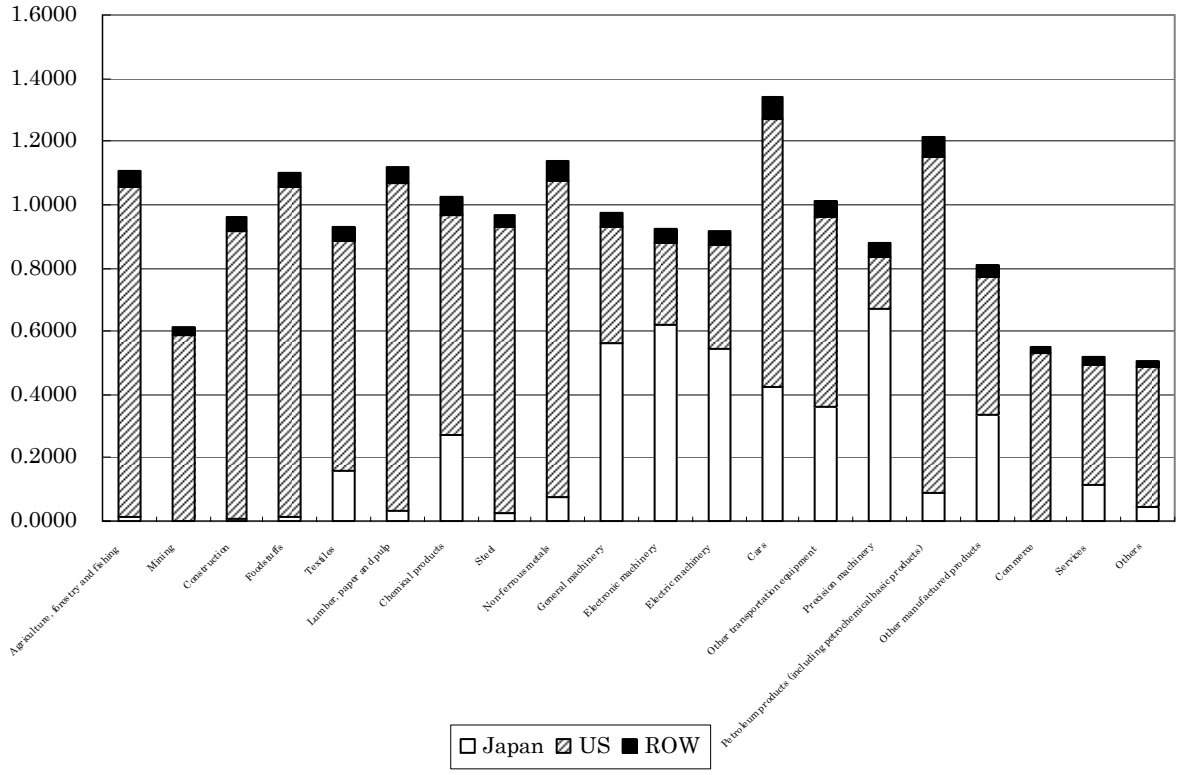


(5) Ramifications of the production of Japanese affiliated companies

In this section, we will confirm the ramifications of the production of Japanese affiliated companies by use of an outsourcing model (see Reference 2 for the model formula). Fig. 18 presents a graph showing how the production of Japan, the U.S. (excluding Japanese affiliated companies) and imports from ROW are affected by a one-unit increase in the production of Japanese affiliated companies in each sector as a result of outsourcing. The sectors that have the greatest effect on Japan are machinery sectors such as "precision machinery." On the other hand, such an effect on the U.S. (excluding Japanese affiliated companies) is great in "agriculture, forestry and fishing," "foodstuffs," and "petroleum products." Such an effect on ROW is relatively large in "cars" and "non-ferrous metals."

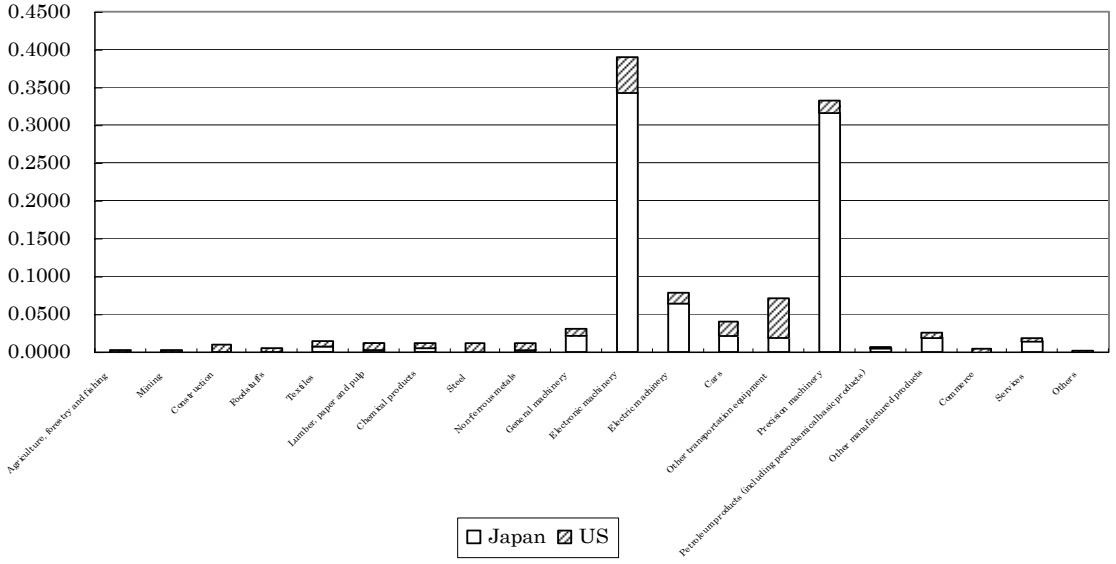
This suggests Japanese affiliated companies purchase materials for machinery production mostly from Japan and other materials that fall under "agriculture, forestry and fishing," "foodstuffs," and "petroleum products" largely from the United States.

Fig. 18 Ramifications of an Increase in the Production of Japanese Affiliated Companies in each Sector



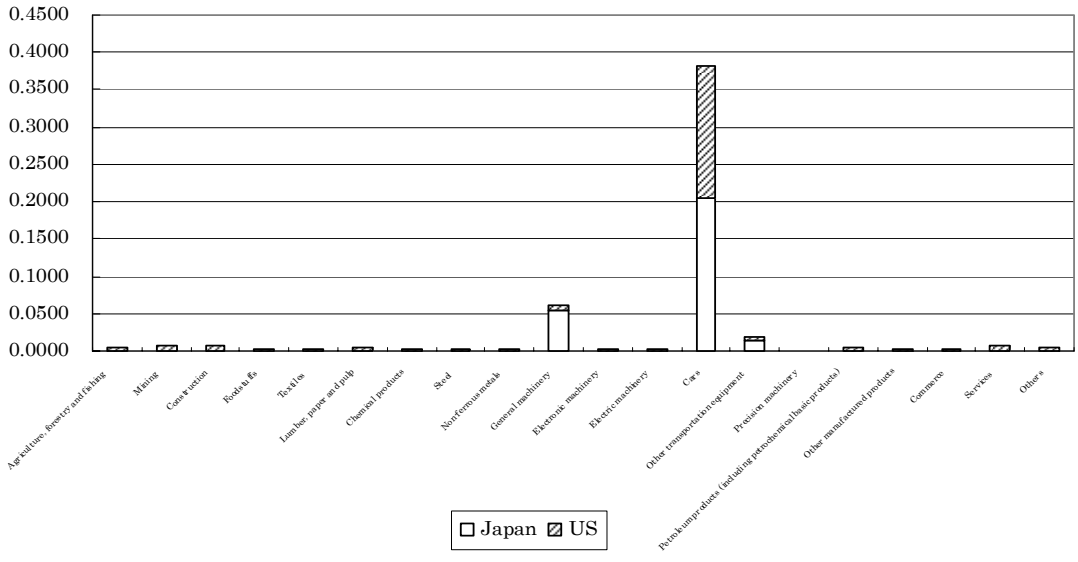
Figures 19 and 20 assess the effect of a production increase by the outsourcing model. The assessment is made on "electronic machinery" and "cars" because the production of Japanese affiliated companies is particularly large in those sectors in terms of value. An increase in the production of "electronic machinery" by Japanese affiliated companies has the largest effect on "electronic machinery" and the second largest effect on "precision machinery" of Japan.

Fig. 19 Ramifications of an Increase in the Production of Japanese Affiliated Companies (electronic parts)



On the other hand, an increase in the production of "cars" by Japanese affiliated companies has a great effect on "cars" from both Japan and the United States. An increase in the production of "cars" by Japanese affiliated companies has a great effect on "cars" from the United States as well as Japan, whereas an increase in the production of "electronic machinery" of Japanese affiliated companies mostly affects Japanese companies.

Fig. 20 Ramifications of an Increase in the Production of Japanese Affiliated Companies (cars)



3. Conclusion of analysis

In this chapter, we analyzed the production activities of Japanese affiliated companies and also the effect of such activities on Japan and the United States within the framework of input-output analysis by recomposing the 2000 Japan-U.S. Input-Output Table into a table that clearly shows the relations between Japanese affiliated companies and companies in Japan or the United States. The results of the analysis are as follows.

A change in final demand for the products of Japanese affiliated companies affects Japan and the United

States differently in terms of the affected sector. In the case of Japan, such a change has the greatest effect on the machinery sector. In the case of the United States, however, it has a particularly great effect on such sectors as "petroleum products," "foodstuffs," "lumber, pulp and paper," and "agriculture, forestry and fishing." A change in the final demand has a greater effect on Japanese affiliated companies if such a change occurred in the U.S. (excluding Japanese affiliated companies) rather than in Japan. In particular, a change in the final demand in the U.S. (excluding Japanese affiliated companies) has a strong effect on Japanese affiliated companies engaging in the car business.

According to a breakdown of the production inducement value resulting from final demand for the products of Japanese affiliated companies, Japanese affiliated companies themselves account for 53.34%, while the United States accounts for 28.95%, Japan for 14.90%, and ROW for 2.81%. The production repercussion coefficients calculated based on the final demand for the products of Japanese affiliated companies suggest that the repercussions on the U.S. (excluding Japanese affiliated companies) are particularly large.

According to a breakdown of the import demand and value-added resulting from final demand for the products of Japanese affiliated companies on the basis of value-added, Japan accounted for 1.12%, while the United States accounted for 33.90%, Japanese affiliated companies for 57.50%, and ROW for 6.31%, showing that the United States' share is larger than Japan's.

Furthermore, an outsourcing model was used to assess how a one-unit increase in the production of Japanese affiliated companies as a result of outsourcing would influence Japan and the United States. In the case of Japan, it had a large effect on machinery sectors including "precision machinery," whereas, in the case of the United States, it had the largest effect on "agriculture, forestry and fishing," "foodstuffs," and "petroleum products."

[Reference 1] Guidelines for the use of the 2000 Japan-U.S. Input-Output Table and the model formulas for analysis

1. Guidelines for the use of the 2000 Japan-U.S. Input-Output Table

(1) If you glance over the columns of the transaction table presented as Fig. 1, you will see the types and value of products that have been consumed by each sector in Japan and the United States to produce their respective products and services. The table also informs you of the types and value added by the production activities (cost structure)[1].

(2) If you glance over the rows of the transaction table presented as Fig. 1, you will see the sales of products produced by each sector in Japan and the United States and the purchasing region (Japan, the United States, or the rest of the world) (sales channel structure).

(3) Part of the table is surrounded by the sections of intermediate demand and the section of intermediate input. This area is called the Japan-U.S. and U.S.-Japan foreign trade sector, and it shows the level of interdependence of production activities of the Japanese and U.S. sectors. The customs duties and marine freight charges, and insurance premiums are listed in a separate document.

Transactions of services and other non-goods between Japan and the United States used to be included in transactions with the rest of the world (hereinafter "ROW," meaning countries other than Japan and the United States) due to a restraint on data. Such transactions between Japan and the United States are estimated and separately shown for the first time in the 2000 Japan-U.S. Table.

(4) The prices of goods are the prices of the producers in Japan or the United States. This means that Japanese producers' prices are applicable to such cases where Japanese goods are sold in Japan or where Japanese goods are input to the United States. On the other hand, U.S. producers' prices are applicable to such cases where U.S. goods are sold in the United States or where U.S. goods are input to Japan. Regarding the commerce sector and the transportation sector, the transaction value between Japan and the United States is the total of domestic commercial margins and freight charges that are charged for the exports from Japan to the United States and vice versa. Regarding the transactions with ROW, the transaction value is calculated based on the producers' prices of the exporting countries listed in the left column of the table in the case of exports. In the case of imports, the calculation is made based on the CIF prices (import on a customs duties-clearance basis) on the side of the importing countries listed in the table head[2].

(5) The prices in the table are shown in dollars. The prices in the Japan-U.S. Table are converted into dollars at the IMF average exchange rate of ¥107.77/dollar for the year 2000. (The prices in the 1990 Japan-U.S. Table were converted at the exchange rate of ¥144.79/dollar, while the prices in the 1995 Japan-U.S. Table were converted at the rate of ¥94.06/dollar.)

Ideally, international input and output should be analyzed by using a common price assessment method, such as purchasing power parity or the international uniform price for each product. However, the method and other details are still being studied at this moment. The prices in the 2000 Japan-U.S. Table are therefore converted at the annual average exchange rate as was the case with the 1995 Japan-U.S. Table

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[1] This type of table, which shows the products of its own country and those of other countries separately, is referred to as "non-competitive import" (or as "Isard").

[2] Producers' prices are so-called shipment prices (direct-from-warehouse prices) excluding margins such as freight charges and commercial margins.

(Revised Report).

(6) The number of sectors listed in the standard classification table of the Japan-U.S. Table is 175, increasing by nine from the 1995 Japan-U.S. Table (Revised Report). Several changes were made to the sector classification adopted in the 1995 Japan-U.S. Table (Revised Report) in order to create the 2000 Japan-U.S. Table. These changes were made because the United States changed the definition of the sector classification from SIC to NAICS and started using the new definition from the 1997 U.S. Input-Output Table.

In addition to the standard classification table, two types of integrated classification tables, the "54-Sector Table" and the "27-Sector Table" are prepared.

(7) In the most detailed version of the 2000 Japan-U.S. Table for 175 sectors, transactions within the same sector are disregarded as long as they are diagonal elements. The value equivalent to the disregarded transactions is subtracted from the total output of the relevant sector.

(8) As an attached table, an import-export matrix (table concerning imports and exports with 18 countries and regions) was prepared for both Japan and the United States. The producers' prices were used for exports, while CIF prices were used for imports.

2. Model Formulas for Calculations and Analyses in This Report

In this document, analysis model formulas are created based on the following table. The formulas use the symbols included in the table.

		Intermediate demand		Final demand				Domestic output
				Japan		U.S.A		
		Japan	U.S.A	Japan	Export to ROW	U.S.A	Export to ROW	
Intermediate input	Japan	C^{JJ}	C^{JU}	F^{JJ}	E^{JR}	F^{JU}	O	X^{J}
	U.S.A	C^{UJ}	C^{UU}	F^{UJ}	O	F^{UU}	E^{UR}	X^{U}
	ROW	C^{RJ}	C^{RU}	F^{RJ}	O	F^{RU}	O	
	Customs duties, international freight charges and insurance	T_C^J	T_C^U	T_F^J	O	T_F^U	O	
Gross value added		V^{J}	V^{U}					
Domestic output		X^{J}	X^{U}					

(1) Input coefficient and value-added coefficient

If you pay attention to the columns of the transaction table, you will see that the input coefficient and value-added coefficient can be calculated by dividing the value of intermediate input or the value-added of each sector in Japan and the United States by the total domestic output of the relevant sector. These coefficients show the amount of intermediate input or value-added necessary (basic unit) to increase the production by one unit.

The coefficient can be expressed by the following formula:

If intermediate transactions between Japan and the US $\begin{bmatrix} C^{JJ} & C^{JU} \\ C^{UJ} & C^{UU} \end{bmatrix}$ is C, and domestic output $\left(X^{J}, X^{U}\right)$ is X, input coefficient $A = C \cdot \hat{X}^{-1}$.

The result of the calculation is broken down into $A = \begin{bmatrix} A^{JJ} & A^{JU} \\ A^{UJ} & A^{UU} \end{bmatrix}$

(2) Leontief inverse matrix

The Leontief inverse matrix coefficient shows how much the output rises in one sector as a direct or indirect result of a one-unit increase in the demand for the intermediate goods necessary to increase production in order to meet the one-unit worth of demand in another sector.

The coefficient can be expressed by the following formula:

Leontief inverse matrix:

$B = (I - A)^{-1}$

The result of the calculation is broken down into $B = \begin{bmatrix} B^{JJ} & B^{JU} \\ B^{UJ} & B^{UU\cdot} \end{bmatrix}$

(3) Inducement values in Japan and the U.S.

① Production inducement

The production inducement value is the ultimate output induced by final demand. It shows the output induced by the consumption and investment by other countries and also a breakdown of the induced output

by country.

The coefficient can be expressed by the following formula:

Final demand in Japan and the U.S. by item:

$$F = \begin{bmatrix} F^{JJ} & E^{JR} & F^{JU} & O \\ F^{UJ} & O & F^{UU} & E^{UR} \end{bmatrix}$$

Japanese production induced by each final demand item of Japan and the U.S. (abbreviated as F):

$$X_F^J = \left(B^{JJ}, B^{JU}\right) \cdot F$$

US production induced by F:

$$X_F^U = \left(B^{UJ}, B^{UU}\right) \cdot F$$

② Value-added inducement

The value-added inducement is the value added through production induced by final demand. It shows the value-added induced by consumption and investment by other countries and also a breakdown of the induced value-added by country.

Japanese and U.S. value-added rate by sector can be represented by $iV^J \cdot \hat{X}^{J^{-1}}, iV^U \cdot \hat{X}^{U^{-1}}$ respectively.

Japanese value-added induced by F:

$$V_F^J = (iV^J \cdot \hat{X}^{J^{-1}}) \cdot X_F^J$$

US value-added induced by F:

$$V_F^U = (iV^U \cdot \hat{X}^{U^{-1}}) \cdot X_F^U$$

③ Induced Imports

The "value of induced imports" is the ultimate imports induced by final demand. It shows imports induced by consumption and investment by other countries and also a breakdown of induced imports by country.

The coefficient can be expressed by the following formula:

1) Japanese coefficient of input of imports from the U.S. $= C^{UJ} \cdot \hat{X}^{J^{-1}}$

U.S. coefficient of input of imports from Japan $= C^{JU} \cdot \hat{X}^{U^{-1}}$

$$M_U^J = \left(F^{UJ}, O\right), M_J^U = \left(O, F^{JU}, O\right)$$

With regard to O, a zero matrix with the matrix size designed to be consistent with the table head of final demand F. The same applies hereinafter.

Japanese imports from the U.S. induced by F:

$$M_{FU}^J = C^{UJ} \cdot \hat{X}^{J^{-1}} \cdot X_F^J + M_U^J$$

U.S. imports from Japan induced by F:

$$M_{FJ}^J = C^{JU} \cdot \hat{X}^{U^{-1}} \cdot X_F^U + M_J^U$$

2) Japanese coefficient of input of imports from ROW $=C^{RJ}\cdot\hat{X}^{J^{-1}}$ 、

U.S. coefficient of input of imports from ROW $=C^{RU}\cdot\hat{X}^{U^{-1}}$ 、

$$M_R^J=\left(F^{RJ},O\right),M_R^U=\left(O,F^{RU},O\right)$$

Japanese imports from ROW induced by F :

$$M_{FR}^J=C^{RJ}\cdot\hat{X}^{J^{-1}}\cdot X_F^J+M_R^J$$

U.S. imports from ROW induced by F :

$$M_{FR}^U=C^{RU}\cdot\hat{X}^{U^{-1}}\cdot X_F^U+M_R^U$$

3) Japanese imports from the whole world induced by F :

$$M_{FW}^J=M_{FU}^J+M_{FR}^J$$

U.S. imports from the whole world induced by F :

$$M_{FW}^U=M_{FJ}^U+M_{FR}^U$$

(4). Dependence on inducement

① Dependence on production inducement

The dependence on production inducement is calculated by dividing the output induced by each item of the final demand by the total production inducement of each industry in Japan and the United States (percentage of the output induced by each item of the final demand to the total of the row). It shows the degree of direct or indirect dependence of the production activities of each industry in Japan and the United States on the final demand of other countries and also a breakdown of the final demand by country and by demand item.

The dependence can be expressed by the following formula:

Japanese dependence on production inducement by each final demand item:

$$R_X^J=\hat{X}^{J^{-1}}\cdot X_F^J$$

U.S. dependence on production inducement by each final demand item:

$$R_X^U=\hat{X}^{U^{-1}}\cdot X_F^U$$

② Dependence on value-added inducement

The dependence on value-added inducement is calculated by dividing the value-added induced by each item of the final demand by the total value-added inducement of each industry in Japan and the United States (percentage of the value-added induced by each item of the final demand to the total of the row). It shows the degree of direct or indirect dependence of the value-added of each industry in Japan and the United States on the final demand of other countries and also a breakdown of the final demand by country and by demand item.

The dependence can be expressed by the following formula:

Japanese dependence on value-added inducement by each final demand item:

$$R_V^J=i\hat{V}^{J^{-1}}\cdot V_F^J$$

U.S. dependence on value-added inducement by each final demand item:

$$R_V^U=i\hat{V}^{U^{-1}}\cdot V_F^U$$

③ Dependence on import inducement

The dependence on import inducement is calculated by dividing the imports induced by each item of the final demand by the total import inducement of each industry in Japan and the United States (percentage of the import value induced by each item of the final demand to the total of the row). It shows the degree of direct or indirect dependence of the imports of each industry in Japan and the United States on the final demand of other countries and also a breakdown of the final demand by country and by demand item.

The dependence can be expressed by the following formula:

1) Japanese import of each commodity from the U.S.:

$$M_T^{UJ} = C^{UJ} j + F^{UJ} j$$

U.S. import of each commodity from Japan:

$$M_T^{JU} = C^{JU} j + F^{JU} j$$

Japanese dependence on imports from the U.S. induced by each final demand item:

$$R^J MU = \hat{M}_T^{UJ^{-1}} \cdot M_{FU}^J$$

U.S. dependence on imports from Japan induced by each final demand item:

$$R^U MJ = \hat{M}_T^{JU^{-1}} \cdot M_{FJ}^U$$

2) Japanese imports of each commodity from ROW:

$$M_T^{RJ} = C^{RJ} j + F^{RJ} j$$

U.S. imports of commodity from ROW:

$$M_T^{RU} = C^{RU} j + F^{RU} j$$

Japanese dependence on imports from ROW induced by each final demand item:

$$R^J MR = \hat{M}_T^{RJ^{-1}} \cdot M_{FR}^J$$

U.S. dependence on imports from ROW induced by each final demand item:

$$R^U MR = \hat{M}_T^{RU^{-1}} \cdot M_{FR}^U$$

3) Japanese imports of commodity from the world:

$$M_T^{JW} = M_T^{UJ} + M_T^{RJ}$$

U.S. imports of commodity from the world:

$$M_T^{UW} = M_T^{JU} + M_T^{RU}$$

Japanese dependence on imports from the world induced by each final demand item:

$$R^J MW = \hat{M}_T^{JW^{-1}} \cdot M_{FW}^J$$

U.S. dependence on imports from the world induced by each final demand item:

$$R^U MW = \hat{M}_T^{UW^{-1}} \cdot M_{FW}^U$$

(5) Various inducement coefficients

① Production inducement coefficient

The production inducement coefficient is calculated by dividing the output induced by each item of the final demand by the total value of the final demand item in question listed in the transaction table. It shows

how many units of production a one-unit demand in a certain item of the final demand of a certain country induces and in which industry of which country the production is induced.

The coefficient can be expressed by the following formula:

Import of final demand products from ROW:

$$F^R = \left(F^{RJ}, O, F^{RU}, O\right)$$

Customs duties, sea freight charges and insurance premiums for final demand products:

$$T = \left(T_F^J, O, T_F^U, O\right)$$

The total by final demand item:

$$Y = iF + iF^R + iT$$

Japanese production inducement coefficient by final demand item:

$$K_X^J = X_F^J \cdot \hat{Y}^{-1}$$

U.S. production inducement coefficient by final demand item:

$$K_X^U = X_F^U \cdot \hat{Y}^{-1}$$

② Value-added inducement coefficient

The value-added inducement coefficient shows how many units of value-added a one-unit demand in a certain item of the final demand of a certain country induces and in which industry of which country the production is induced.

The coefficient can be expressed by the following formula:

Japanese value-added inducement coefficient by final demand item:

$$K_V^J = V_F^J \cdot \hat{Y}^{-1}$$

U.S. value-added inducement coefficient by final demand item:

$$K_V^U = V_F^U \cdot \hat{Y}^{-1}$$

③ Import inducement coefficients

The import inducement coefficients show how many units of import a one-unit demand in a certain item of the final demand of a certain country induces and in which industry of which country the production is induced.

1) Japanese import inducement coefficient from the U.S. by final demand item:

$$K_{MU}^J = M_{FU}^J \cdot \hat{Y}^{-1}$$

U.S. import inducement coefficient from Japan by final demand item:

$$K_{MJ}^U = M_{FJ}^U \cdot \hat{Y}^{-1}$$

2) Japanese import inducement coefficient from ROW by final demand item:

$$K_{MR}^J = M_{FR}^J \cdot \hat{Y}^{-1}$$

U.S. import inducement coefficient from ROW by final demand item:

$$K_{MR}^U = M_{FR}^U \cdot \hat{Y}^{-1}$$

3) Japanese import inducement coefficient from the world by final demand item:

$$K_{MW}^{J} = M_{F}^{J} \cdot \hat{Y}^{-1}$$

U.S. import inducement coefficient from the world by final demand item:

$$K_{MW}^{U} = M_{F}^{U} \cdot \hat{Y}^{-1}$$

(6) Various repercussion coefficients

① Production repercussion coefficient

1) Coefficient of repercussion of a Japanese industry's unit demand on the production of all industries in Japan:

$$H_{XJ}^{J} = iB^{JJ}$$

Coefficient of repercussion of a U.S. industry's unit demand on the production of all industries in U.S.:

$$H_{XU}^{U} = iB^{UU}$$

2) Coefficient of repercussion of a Japanese industry's unit demand on the production of all industries in U.S.:

$$H_{XJ}^{U} = iB^{UJ}$$

Coefficient of repercussion of a U.S. industry's unit demand on the production of all industries in Japan:

$$H_{XU}^{J} = iB^{JU}$$

② Value-added repercussion coefficient

1) Coefficient of repercussions of a Japanese industry's unit demand on the value added of all industries in Japan:

$$H_{VJ}^{J} = i(i\hat{V}^{J} \cdot \hat{X}^{J^{-1}} \cdot B^{JJ})$$

Coefficient of repercussion s of a U.S. industry's unit demand on the value added of all industries in the U.S.:

$$H_{VU}^{U} = i(i\hat{V}^{U} \cdot \hat{X}^{U^{-1}} \cdot B^{UU})$$

2) Coefficient of repercussions of a Japanese industry's unit demand on the value added of all industries in the U.S.:

$$H_{VJ}^{U} = i(i\hat{V}^{J} \cdot \hat{X}^{J^{-1}} \cdot B^{UJ})$$

Coefficient of repercussions of a U.S. industry's unit demand on the value added of all industries in Japan:

$$H_{VU}^{J} = i(i\hat{V}^{U} \cdot \hat{X}^{U^{-1}} \cdot B^{JU})$$

③ Import repercussion coefficient

1) Coefficient of repercussions on Japanese imports from the U.S. by a unit demand of a Japanese industry:

$$H_{MJ}^{UJ} = i(i\hat{C}^{UJ} \cdot \hat{X}^{J^{-1}} \cdot B^{JJ})$$

Coefficient of repercussions on U.S. imports from Japan by a unit demand of a U.S. industry:

$$H_{MU}^{JU} = i(i\hat{C}^{JU} \cdot \hat{X}^{U^{-1}} \cdot B^{UU})$$

Coefficient of repercussions on U.S. imports from the Japan by a unit demand of a Japanese industry:

$$H_{MJ}^{JU} = i(i\hat{C}^{JU} \cdot \hat{X}^{U^{-1}} \cdot B^{UJ})$$

Coefficient of repercussions on Japanese imports from the U.S. by a unit demand of a U.S. industry:

$$H_{MU}^{UJ} = i(i\hat{C}^{UJ} \cdot \hat{X}^{J^{-1}} \cdot B^{JU})$$

2) Coefficient of repercussion on Japanese imports from ROW by a unit demand of a Japanese industry:

$$H_{MJ}^{RJ} = i(i\hat{C}^{RJ} \cdot \hat{X}^{J^{-1}} \cdot B^{JJ})$$

Coefficient of repercussion on U.S. imports from ROW by a unit demand of a U.S. industry:

$$H_{MU}^{RU} = i(i\hat{C}^{RU} \cdot \hat{X}^{U^{-1}} \cdot B^{UU})$$

Coefficient of repercussion on U.S. imports from ROW by a unit demand of a Japanese industry:

$$H_{MJ}^{RU} = i(i\hat{C}^{RU} \cdot \hat{X}^{U^{-1}} \cdot B^{UJ})$$

Coefficient of repercussion on Japanese imports from ROW by a unit demand of a U.S. industry:

$$H_{MU}^{RJ} = i(i\hat{C}^{RJ} \cdot \hat{X}^{J^{-1}} \cdot B^{JU})$$

3) Coefficient of repercussions on Japanese imports from the world by a unit demand of a Japanese industry:

$$H_{MJ}^{WJ} = H_{MJ}^{UJ} + H_{MJ}^{RJ}$$

Coefficient of repercussions on U.S. imports from the world by a unit demand of a U.S. industry:

$$H_{MU}^{WU} = H_{MU}^{JU} + H_{MU}^{RU}$$

Coefficient of repercussions on U.S. imports from the world by a unit demand of a Japanese industry:

$$H_{MJ}^{WU} = H_{MJ}^{JU} + H_{MJ}^{RU}$$

Coefficient of repercussions on Japanese imports from the world by a unit demand of a U.S. industry:

$$H_{MU}^{WJ} = H_{MU}^{UJ} + H_{MU}^{RJ}$$

(7) Repercussion value

If the final demand by item, F , is divided into that for Japanese products and that for U.S. products,

$$F = \begin{pmatrix} F^J \\ F^U \end{pmatrix}$$

① **Value of production repercussions**

1) Value of production repercussions of the value of each final demand item of each Japanese commodity (abbreviated as F^J; this applies hereinafter) on all Japanese industries:

$$G_{XJ}^{J} = \hat{H}_{XJ}^{J} \cdot F^{J}$$

Value of production repercussions of F^U on all U.S. industries:

$$G_{XU}^{U} = \hat{H}_{XU}^{U} \cdot F^{U}$$

2) Value of production repercussions of F^J on all U.S. industries:

$$G_{XJ}^{U} = \hat{H}_{XJ}^{U} \cdot F^{J}$$

Value of production repercussions of F^U on all Japanese industries:

$$G_{XU}^{J} = \hat{H}_{XU}^{J} \cdot F^{U}$$

② **Value of repercussions on imports**

1) Value of repercussion of F^J on Japanese imports from the U.S.:

$$G_{MJ}^{UJ} = \hat{H}_{MJ}^{UJ} \cdot F^{J}$$

Value of repercussion of F^U on U.S. imports from the Japan:

$$G_{MU}^{JU} = \hat{H}_{MU}^{JU} \cdot F^{U}$$

Value of repercussion of F^J on U.S. imports from the Japan:

$$G_{MJ}^{JU} = \hat{H}_{MJ}^{JU} \cdot F^{J}$$

Value of repercussion of F^U on Japanese imports from the U.S.:

$$G_{MU}^{UJ} = \hat{H}_{MU}^{UJ} \cdot F^{U}$$

2) Value of repercussion of F^J on Japanese imports from ROW:

$$G_{MJ}^{RJ} = \hat{H}_{MJ}^{RJ} \cdot F^{J}$$

Value of repercussion of F^U on U.S. imports from ROW:

$$G_{MU}^{RU} = \hat{H}_{MU}^{RU} \cdot F^{U}$$

Value of repercussion of F^J on U.S. imports from ROW:

$$G_{MJ}^{RU} = \hat{H}_{MJ}^{RU} \cdot F^{J}$$

Value of repercussion of F^U on Japanese imports from ROW:

$$G_{MU}^{RJ} = \hat{H}_{MU}^{RJ} \cdot F^{U}$$

3) Value of repercussion of F^J on Japanese imports from the whole world:

$$G_{MJ}^{WJ} = G_{MJ}^{UJ} + G_{MJ}^{RJ}$$

Value of repercussion of F^U on U.S. imports from the whole world:

$$G_{MU}^{WU} = G_{MU}^{JU} + G_{MU}^{RU}$$

Value of repercussion of F^J on U.S. imports from the whole world:

$$G_{MJ}^{WU} = G_{MJ}^{JU} + G_{MJ}^{RU}$$

Value of repercussion of F^U on Japanese imports from the whole world:

$$G_{MU}^{WJ} = G_{MU}^{UJ} + G_{MU}^{RJ}$$

[Reference 2] Model used for the recomposition and analysis of the 2000 Japan-U.S. Input-Output Table

1. Recomposition of the 2000 Japan-U.S. Input-Output Table

In order to analyze the interrelationships between the operations of Japanese affiliated companies and the economies of Japan and the United States, the Japan-U.S. Table needs to be recomposed in such a way that shows data for three economic entities: (1) Japan, (2) Japanese affiliated companies, and (3) the United States excluding Japanese affiliated companies (hereinafter "the U.S. (excluding Japanese affiliated companies)").

The recomposition is carried out by use of the 2000 Japan-U.S. Input-Output Table and the FY2001 Basic Survey on Overseas Business Activities. (The figures reflect business activities in FY2000.) First, the Japan-U.S. Table's section for intermediate input of the United States is divided into a subsection for Japanese affiliated companies and one for the rest. Then, the Japan-U.S. Table's section for production in the United States is divided into a subsection for Japanese affiliated companies and one for the rest.

(1) Separation of the data on Japanese affiliated companies

① Sector classification

The first step is sector classification. On the precondition that the result of the FY2001 Basic Survey on Overseas Business Activities (hereinafter the "Overseas Business Survey") is used as basic data, the sector classification should be the same as that adopted by the Overseas Business Survey. The number of sectors is therefore 18.

Because classification should be as detailed as possible for the benefit of analysis, the sector "electric machinery and equipment manufacturing" was divided into two sectors, "electronic machinery" and "electric machinery," while the sector "transportation machinery and equipment manufacturing" was divided into two sectors, "cars" and "other transportation equipment." These two sectors were subdivided because the production of Japanese affiliated companies in these sectors accounted for more than 10% in the United States. As a result of this subdivision, the total number of sectors is now 20.

The order of the 20 sectors in the recomposed table is the same as that in the Overseas Business Survey.

② Sector integration of the Japan-U.S. Table and sector subdivision of the Overseas Business Survey

The Japan-U.S. Table is integrated with the sector classification prepared in ① above.

Regarding the data concerning "electric machinery and equipment manufacturing" and "transportation machinery and equipment manufacturing," data on individual companies was recompiled into "electronic machinery" and "electric machinery" and also into "cars" and "other transportation equipment" respectively.

③ Calculation of the output of Japanese affiliated companies

Regarding the sectors ranging from "agriculture, forestry and fishing" to "other manufactured products", "services" and "others," the output of Japanese affiliated companies is deemed to be the same as the sales of locally incorporated companies in the United States shown in the Overseas Business Survey.

Commercial sector sales are calculated by subtracting the purchase amount from the sales of locally incorporated companies in the United States. The calculated sales are considered to be the output.

④ **Calculation of inputs by Japanese affiliated companies**

The totals of value-added and intermediate input are respectively calculated by multiplying the output of Japanese affiliated companies by the value-added coefficient and the input coefficient of the U.S. sector of the Japan-U.S. Table. The respective totals of the input from Japan, from the United States and from other countries are calculated by multiplying the total intermediate input by the percentage of "imports from Japan," "local procurement," and "imports from third parties" to the total as shown by a breakdown of the purchase amount by supplying country presented in the Overseas Business Survey.

Regarding the commerce sector, the input is not calculated based on such percentage distribution. The total input is divided into the inputs from Japan, the United States, and other countries by using the U.S. input coefficient. The value of input after the regional division is calculated by multiplying the total input of each regional block by the input coefficient shown in the relevant part of the U.S. section of the U.S.-Japan Table.

⑤ **Separation of the input of Japanese affiliated companies from that of the United States**

The respective values of intermediate input and value-added of the U.S. (excluding Japanese affiliated companies) are calculated by subtracting the respective values of intermediate input and value-added of Japanese affiliated companies estimated through the above process of ① to ④ from the respective values of intermediate input and value-added of the United States.

⑥ **Separation of Japan's procurement value of intermediate goods purchased from Japanese affiliated companies from Japan's procurement value of those purchased from non-Japanese companies in the United States**

First, Japan's procurement value of intermediate goods purchased from Japanese affiliated companies is estimated. This estimated amount is subtracted from Japan's procurement value of intermediate goods purchased from the **United States** as a whole in order to calculate Japan's procurement value of intermediate goods purchased from non-Japanese companies.

The value of intermediate goods procured by Japan from Japanese affiliated companies is calculated for each of the three blocks: (1) sectors ranging from "agriculture, forestry and fishing" to "other manufactured products," (2) "commerce," and (3) "services" and "others."

The value of input from the sectors ranging from "agriculture, forestry and fishing" to "other manufactured products" is calculated by the following formula:

$$\text{Input from Japanese affiliated companies to Japan} = \text{Input from US to Japan (intermediate demand import)} \times \frac{\text{Sales from US-based Japanese companies to Japan}}{\text{Exports from the US to Japan}}$$

Regarding the commerce sector, the value of input from Japanese affiliated companies is separated from that from the other U.S. companies based on the percentage of the value of input from Japanese affiliated companies in the sectors ranging from "agriculture, forestry and fishing" to "other manufactured products" to the total value of input from such sectors of the **United States.** With regard to "services" and "others," the input from Japanese affiliated companies is calculated based on the percentage of input from Japanese affiliated companies in each of those sectors to the total input from those respective sectors of the **United States.**

⑦ **The value of intermediate goods input from Japanese affiliated companies to the U.S. (excluding Japanese affiliated companies) and the separation thereof**

First, the value of intermediate goods input from Japanese affiliated companies to the U.S. (excluding Japanese affiliated companies) is estimated. Then, the estimated amount is subtracted from the total value of intermediate goods procured by non-Japanese companies from the **United States** as a whole in order to calculate the value of intermediate goods input from non-Japanese companies to non-Japanese companies.

In regard to the goods sectors ranging from "agriculture, forestry and fishing" to "other manufactured products," the input value of intermediate goods is calculated by the following formula:

$$\text{Input from Japanese affiliated companies to the US (non- Japanese companies)} = \text{US domestic input} \times \frac{\text{Domestic sales of US - based Japanese companies}}{\text{Domestic demand of the US}}$$

Regarding the commerce sector, the value of input from Japanese affiliated companies is separated from that from other U.S. companies based on the percentage of the value of input from Japanese affiliated companies in the sectors ranging from "agriculture, forestry and fishing" to "other manufactured products" to the total value of input from such sectors of the **United States.** With regard to "services" and "others," the input from Japanese affiliated companies is calculated based on the percentage of the input from Japanese affiliated companies in each of those sectors to the total input from those respective sectors of the **United States.**

⑧ **The value of intermediate goods input from Japanese affiliated companies to Japanese affiliated companies and the separation thereof**

First, the value of intermediate goods input from Japanese affiliated companies to Japanese affiliated companies is estimated. Then, the estimated amount is subtracted from the value of intermediate goods procured by Japanese affiliated companies from the United States as a whole in order to calculate the value of intermediate goods input from non-Japanese companies to Japanese affiliated companies

In regard to the goods sectors ranging from "agriculture, forestry and fishing" to "other manufactured products," the input value of intermediate goods is calculated by the following formula:

$$\text{Domestic input from Japanese affiliated companies to Japanese affiliated companies} = \text{Domestic input of Japanese affiliated companies} \times \frac{\text{Domestic sales of US-based Japanese companies}}{\text{Domestic demand of the US}}$$

Regarding the commerce sector, the value of input from Japanese affiliated companies is separated from that from other U.S. companies based on the percentage of the value of input from Japanese affiliated companies in the sectors ranging from "agriculture, forestry and fishing" to "other manufactured products" to the total value of input value from such sectors of the United States. With regard to "services" and "others," the input from Japanese affiliated companies is calculated based on the percentage of input from Japanese affiliated companies in each of those sectors to the total input from those respective sectors of the United States.

⑨ **Value of final goods procured by Japan from Japanese affiliated companies**

First, the value of final goods procured by Japan from Japanese affiliated companies is estimated. Then, the estimated amount is subtracted from the value of final goods procured by Japan from the United States as a whole in order to calculate the value of final goods procured by Japan from non-Japanese companies in the United States.

In regard to the goods sectors ranging from "agriculture, forestry and fishing" to "other manufactured products," the procurement value of final goods is calculated by the following formula:

$$\text{Procurement of final goods by Japan from Japanese affiliated companies} = \text{Procurement of final goods by Japan from the US} \times \frac{\text{Sales to US-based Japanese companies after the deduction of intermediate input}}{\text{Procurement of final goods procured by Japan from the US}}$$

Regarding the commerce sector, the value of final goods procured from Japanese affiliated companies is separated from the value of those procured from other U.S. companies based on the percentage of the value of final goods procured from Japanese affiliated companies in the sectors ranging from "agriculture, forestry and fishing" to "other manufactured products" to the total value of final goods procured from such sectors of the United States. With regard to "services" and "others," the procurement from Japanese affiliated companies is calculated based on the percentage of the procurement from Japanese affiliated companies in each of those sectors to the total procurement from those respective sectors of the United States.

⑩ **Value of final goods procured by the** United States **from Japanese affiliated companies**

First, the value of final goods procured by the United States from Japanese affiliated companies is estimated. Then, the estimated amount is subtracted from the value of final goods procured by the United States from the United States as a whole in order to calculate the value of final goods procured by the United States from non-Japanese companies in the United States.

In regard to the goods sectors ranging from "agriculture, forestry and fishing" to "other manufactured products," the procurement value of final goods is calculated by the following formula:

$$\text{Procurement of final goods by the US from Japanese affiliated companies} = \text{Procurement of final goods by the US from the US} \times \frac{\text{Domestic sales of US-based Japanese companies after the deduction of intermediate input}}{\text{Procurement of final goods procured by the US from Japan}}$$

Regarding the commerce sector, the value of final goods procured from Japanese affiliated companies is separated from the value of those procured from other U.S. companies based on the percentage of the value of final goods procured from Japanese affiliated companies in the sectors ranging from "agriculture, forestry and fishing" to "other manufactured products" to the total value of final goods procured from such sectors of the United States. With regard to "services" and "others," the procurement from Japanese affiliated companies is calculated based on the percentage of the procurement from Japanese affiliated companies in each of those sectors to the total procurement from those respective sectors of the United States.

⑪ **Separation of exports to ROW**

First, the exports from Japanese affiliated companies to ROW are estimated. Then, the estimated amount is subtracted from the exports from the United States to ROW in order to calculate the exports from non-Japanese companies to ROW.

The exports from Japanese affiliated companies to ROW are deemed to be the same as the exports to

third countries shown in a breakdown of the sales by purchasing country presented by the Overseas Business Survey. Japanese affiliated companies are deemed to conduct no general trade.

(2) Recomposed Japan-U.S. Table

The graphic image of the recomposition process of the Japan-U.S. Table specified in (1) is as follows:

① **Standard Japan-U.S. Table**

Japan-US Input-Output Table		Intermediate demand		Final demand		Exports to ROW	Production
		Japan	US	Japan	US		
Intermediate input	Japan	Axjj	Axju	Fdjj	Fdju	Exjr	Xj
	US	Axuj	Axuu	Fduj	Fduu	Exur	Xu
Import	ROW	Axrj	Axru	Fdrj	Fdru		
Value added		Vj	Vu				
Value of production		Xj	Xu				

② **The U.S.-related sections on intermediate demand and final demand are divided into two tables showing information about Japanese affiliated companies and about the rest respectively.**

A. Trade of US (excluding JAC) products in US

Japan-US Input-Output Table		Intermediate demand		Final demand		Exports to ROW	Production
		Japan	US	Japan	US		
Intermediate input	Japan	Axjj	Axju~	Fdjj	Fdju	Exjr	Xj
	US	Axuj~	Axuu~	Fduj~	Fduu~	Exur~	Xu~
Import	ROW	Axrj	Axru~	Fdrj	Fdru		
Value added		Vj	Vu~				
Value of production		Xj	Xu~				

+

B. Trade of Japanese affiliated companies' products in US

Japan-US Input-Output Table		Intermediate demand		Final demand		Exports to ROW	Production
		Japan	US	Japan	US		
Intermediate input	Japan	-	Axju*	-	-	-	-
	US	Axuj*	Axuu*	Fduj*	Fduu*	Exur*	Xu*
Import	ROW	-	Axru*	-	-		
Value added		-	Vu*				
Value of production		-	Xu*				

③ **The two tables on the U.S. and Japanese affiliated companies respectively prepared through the above process specified in ② and the data on Japan are integrated in order to newly create an Input-Output Table.**

Japan-U.S. Input-Output Table showing the data about Japanese affiliated companies separately

Japan-US Table			Intermediate demand			Final demand		Exports to ROW	Production
			Japan	US					
				US (excluding JAC)	JAC	Japan	US		
Intermediate input	Japan		Axjj	Axju~	Axju*	Fdjj	Fdju	Exjr	Xj
	US	US (excluding JAC	Axuj~	Axuu~		Fduj~	Fduu~	Exur~	Xu~
		JAC	Axuj*		Axuu*	Fduj*	Fduu*	Exur*	Xu*
Import	ROW		Axrj~	Axru~	Axru*	Fdrj	Fdru		
Value added			Vj	Vu~	Vu*				
Value of production			Xj	Xu~	Xu*				

2. Model formula used for this analysis

The Japan-U.S. Input-Output Table showing the data about Japanese affiliated companies separately is used for this analysis. The table can be expressed by the following formula. In the formula, the numerical subscripts mean economic entities: 1 means Japan, 2 means the United States, and 3 means Japanese affiliated companies.

$$\begin{bmatrix} A_{11} & A_{12} & A_{13} \\ A_{21} & A_{22} & A_{23} \\ A_{31} & A_{32} & A33 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} + \begin{bmatrix} F_{11} \\ F_{21} \\ F_{31} \end{bmatrix} + \begin{bmatrix} F_{12} \\ F_{22} \\ F_{32} \end{bmatrix} + \begin{bmatrix} E_1 \\ E_2 \\ E_3 \end{bmatrix} = \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} \quad \text{①}$$

In formula □, $A_{31}x_1$ means the intermediate goods imported by Japan from Japanese affiliated companies, while F_{31} means the final goods imported by Japan from Japanese affiliated companies. In short, these show the re-importing effect.

$A_{13}x_3$ means the supply of intermediate goods from Japan to Japanese affiliated companies, showing the import inducement effect. $A_{32}x_2$ and $A_{33}x_3$ mean the local sales of intermediate goods by Japanese affiliated companies, F_{32} means the local sales of final demand goods, E_3 means imports to third countries. This data is useful in measuring the export substitution effect because the data includes transactions substituting exports from Japan. $A_{23}x_3$ and $A_{33}x_3$ show the local procurement of intermediate goods by Japanese affiliated companies. The first means procurement from U.S. companies, while the latter means procurement from Japanese affiliated companies.

(1) Production inducement determined by final demand

$$\begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} I - A_{11} & -A_{12} & -A_{13} \\ -A_{21} & I - A_{22} & -A_{23} \\ -A_{31} & -A_{31} & I - A_{33} \end{bmatrix}^{-1} \left[\begin{bmatrix} F_{11} \\ F_{21} \\ F_{31} \end{bmatrix} + \begin{bmatrix} F_{12} \\ F_{21} \\ F_{31} \end{bmatrix} + \begin{bmatrix} E_1 \\ E_2 \\ E_3 \end{bmatrix} \right]$$

$$\begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} B_{11} & B_{12} & B_{13} \\ B_{21} & B_{22} & B_{23} \\ B_{31} & B_{23} & B_{33} \end{bmatrix} \left[\begin{bmatrix} F_{11} \\ F_{21} \\ F_{31} \end{bmatrix} + \begin{bmatrix} F_{12} \\ F_{21} \\ F_{31} \end{bmatrix} + \begin{bmatrix} E_1 \\ E_2 \\ E_3 \end{bmatrix} \right] \quad \text{②}$$

$$\begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} B_{11}F_J \\ B_{21}F_J \\ B_{31}F_J \end{bmatrix} + \begin{bmatrix} B_{12}F_U \\ B_{22}F_U \\ B_{32}F_U \end{bmatrix} + \begin{bmatrix} B_{13}F_S \\ B_{23}F_S \\ B_{33}F_S \end{bmatrix} \quad \text{③}$$

Formula ③ is made from formula ① from the viewpoint of production. Formula ③ is changed from formula ② by use of the following relational formula.

$F_{11} + F_{12} + E_1 = F_J$ J : Supply of final goods by Japanese companies

$F_{21} + F_{22} + E_2 = F_U$ U : Supply of final goods by U.S. companies

$F_{31} + F_{32} + E_3 = F_S$ S : Supply of final goods by Japanese affiliated companies

The first term of the expression on the right side of formula ③ means the repercussions on each sector as a result of the production of final goods by Japanese companies. The second term of the expression on the right side of the same formula means the repercussions as a result of the production of final goods by U.S. companies. The third term means the repercussions as a result of the production of final goods by Japanese affiliated companies.

(2) Value-added inducement caused by an increase in the final demand

The value-added in relation to the production inducement can be calculated by multiplying the production inducement by the value-added matrix that has the value-added ratio as its diagonal element.

$$\begin{bmatrix} v_1 \\ v_2 \\ v_3 \end{bmatrix} = \begin{bmatrix} \hat{v}_1 & 0 & 0 \\ 0 & \hat{v}_2 & 0 \\ 0 & 0 & \hat{v}_3 \end{bmatrix} \left[\begin{bmatrix} B_{11}F_J \\ B_{21}F_J \\ B_{31}F_J \end{bmatrix} + \begin{bmatrix} B_{12}F_U \\ B_{22}F_U \\ B_{32}F_U \end{bmatrix} + \begin{bmatrix} B_{13}F_S \\ B_{23}F_S \\ B_{33}F_S \end{bmatrix} \right]$$

$$\begin{bmatrix} v_1 \\ v_2 \\ v_3 \end{bmatrix} = \begin{bmatrix} \hat{v}_1 B_{11}F_J \\ \hat{v}_2 B_{21}F_J \\ \hat{v}_3 b_{31}F_J \end{bmatrix} + \begin{bmatrix} \hat{v}_1 B_{12}F_U \\ \hat{v}_2 B_{22}F_U \\ \hat{v}_3 B_{32}F_U \end{bmatrix} + \begin{bmatrix} \hat{v}_1 B_{13}F_S \\ \hat{v}_2 B_{23}F_S \\ \hat{v}_3 B_{33}F_S \end{bmatrix} \quad \cdots\cdots ④$$

The induced imports in relation to ROW are calculated as follows:

$$M_R = \begin{bmatrix} A_{R1} A_{R2} A_{R3} \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix}$$

$$M_R = \begin{bmatrix} A_{R1} A_{R2} A_{R3} \end{bmatrix} \left[\begin{bmatrix} B_{11}F_J \\ B_{21}F_J \\ B_{31}F_J \end{bmatrix} + \begin{bmatrix} B_{12}F_J \\ B_{21}F_J \\ B_{31}F_J \end{bmatrix} + \begin{bmatrix} B_{13}F_S \\ B_{23}F_S \\ B_{33}F_S \end{bmatrix} \right]$$

$$M_R = \begin{bmatrix} A_{R1}B_{11}F_J \\ A_{R2}B_{21}F_J \\ A_{R3}B_{31}F_J \end{bmatrix} + \begin{bmatrix} A_{R1}B_{12}F_U \\ A_{R2}B_{22}F_U \\ A_{r3}B_{32}F_U \end{bmatrix} + \begin{bmatrix} A_{R1}B_{13}F_S \\ A_{R2}B_{23}F_S \\ A_{R3}B_{33}F_S \end{bmatrix} \quad \cdots\cdots ⑤$$

(3) Repercussions on the production of Japanese affiliated companies

Formula ⑧ is used to calculate the effect of a one-unit increase in the production of Japanese affiliated companies on Japan and U.S. companies.

$$\begin{bmatrix} A_{11} & A_{12} & A_{13} \\ A_{21} & A_{22} & A_{23} \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} + \begin{bmatrix} F_{11} \\ F_{21} \end{bmatrix} + \begin{bmatrix} F_{12} \\ F_{22} \end{bmatrix} + \begin{bmatrix} E_1 \\ E_2 \end{bmatrix} = \begin{bmatrix} x_1 \\ x_2 \end{bmatrix} \quad \cdots\cdots ⑥$$

$$\begin{bmatrix} x_1 \\ x_2 \end{bmatrix} = \begin{bmatrix} I - A_{11} & -A_{12} \\ -A_{21} & I - A_{22} \end{bmatrix}^{-1} \left[\begin{bmatrix} A_{13} \\ A_{23} \end{bmatrix} x_3 + \begin{bmatrix} F_{11} \\ F_{21} \end{bmatrix} + \begin{bmatrix} F_{12} \\ F_{22} \end{bmatrix} + \begin{bmatrix} E_1 \\ E_2 \end{bmatrix} \right] \quad \cdots\cdots ⑦$$

$$\begin{bmatrix} \Delta x_1 \\ \Delta x_2 \end{bmatrix} = \begin{bmatrix} I - A_{11} & -A_{12} \\ -A_{21} & I - A_{22} \end{bmatrix}^{-1} \begin{bmatrix} A_{13} \\ A_{23} \end{bmatrix} \Delta x_3 \quad \cdots\cdots ⑧$$

< Chapter 3 > Compilation of The 2000 Japan-U.S. I-O Table

1. Japan-US common classification

Input-Output tables ("I-O tables") are compiled based on each country's conception and reflect each country's industrial structure.

When compiling the 2000 Japan-US I-O Table, we started with the classification of sectors common to Japan and the US. We created a common classification by comparing and examining the concepts and definitions of sectors and the ranges of commodities. We used the most detailed classification (405 column sectors × 517 row sectors in Japan; 490 column sectors × 494 row sectors in the US) among those for the 2000 Japan I-O Table ("2000 Japan I-O Table") made by METI and for the 2000 INFORUM Table[3] of the US ("2000 US I-O Table"). Based on the common classification for the 1995 Japan-US I-O Table (Revised Report) ("1995 Japan-US Table"), we considered the time-series.

Differences in the common classification between the 1995 Japan-US Table (Revised Report) and the 2000 Japan-US Table are as follows:

① Changes in common classification

[Changes such as division, integration, separation, etc.]

・"Dairy farming" and "Other livestock raising"
(Regrouped) → "Livestock raising (cattle)" and "Other livestock raising"

・"Bread" and "Confectionery"
(Integrated) → "Bread and confectionery"

・"Other foodstuffs"(Divided) →
"Seasonings," "Tea and coffee" and "Other foodstuffs"

・"Apparel and apparel accessories"
(Divided) → "Knit fabrics" and "Apparel and apparel accessories"

・"Publishing and printing"
(Divided) → "Publishing" and "Printing"

・"Chemical basic products"
(Divided) → "Inorganic chemical basic products" and "Organic chemical products"

・"Products of petroleum or coal"
(Divided) → "Petrochemical products" and "Products of petroleum or coal"

・"Tires and inner tubes" and "Plastic products and other rubber products"
(Regrouped) → "Rubber products (including tires and inner tubes)" and "Plastic products"

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[3] The 2000 INFORUM Table of the U.S. ("2000 US I-O Table") is an updated table made by the INFORUM research institute of the University of Maryland. The Table was compiled from the 1997 Commodity-by-commodity Table, which was also made by INFORUM, reflecting the 1997 U matrix (a table of commodities inputs from industries or final demand sectors) and the 1997 V matrix (a table of commodities produced by domestic industries), both published by the U.S. Department of Commerce.

・"Electric wires and cables"
(Divided) → "Optical fiber cables" and "Electric wires and cables"
・"Civil engineering/construction and conveyors"
(Divided) → "Farm machinery," "Civil engineering/construction and conveyors"
・"Cars"
(Divided) → "Cars" and "Motor vehicle parts and accessories"
・"Watches and clocks," "Optical instruments and photographic sensitive materials" and "Other precision instruments"
(Regrouped) → "Photographic sensitive materials," "Cameras and copiers" and "Other precision instruments (including optical instruments and watches/clocks)"
・"Railroad construction," "Electric utility facilities construction," "Telecommunications facilities construction" and "Other construction"
(Integrated) → "Other construction"
・"City water" and "Thermal energy supply and other sanitary services"
(Regrouped) →"City water and thermal energy supply" and "Sanitary services"
・"Real estate"
(Divided)→ "Imputed rent" and "Real estate"
・"Other public services" and "Nonprofit organizations"
(Regrouped) → "Medical insurance (including social insurance, public or nonprofit social welfare, nursing, etc.)" and "Other nonprofit organizations"
・"Other amusement and recreation services"
(Divided) → "Other rental services" and "Amusement and recreation services"

[Changes of title/definition]
・"Other livestock raising and sericulture" → "Other livestock raising"
・"Agricultural, forestry and fishery services" → "Agricultural and forestry services"
・"Gravel, quarry and crushed stones" → "Gravel, quarry and minerals for ceramics"
・"Engines and turbines" → "Engines and boilers"
・"Information and computer services" → "Information services"
・"Equipment renting and leasing" → "Equipment renting and leasing (including electronic computing equipment)"

[Abolished]
・The sector "Electrical equipment for internal combustion engines" has been abolished.

② Changes made to each country's standard classifications affecting the common classifications

The 1995 Japan-US Table was compiled from the SIC-based 1992 US Table, while the 2000 Japan-US Table was compiled from the NAICS-based 1997 US Table. Because of this difference in the applied classification system, the following major changes have been made to the common classification for the 2000 Japan-US I-O

Table.

- Common sector "Other foodstuffs"

In the 2000 INFORUM Table of the U.S., "Coffee beans" belong to "005 Fruits." Accordingly, an adjustment was made to the Japanese standard classification, by transferring "0115021 Coffee and cocoa beans (imported)" from the sector "Other edible crops" to the sector "Fruits."

- Common sector "Feeds for animal and poultry"

In the 2000 INFORUM Table of the U.S., "Crops for feed or forage" such as grass and pasture belong to "010 All other agricultural crops." Accordingly, an adjustment was made to the Japanese standard classification, by transferring "0116011 Crops for feed or forage" from the sector "Feeds for animal or poultry" to the sector "Other edible crops."

- Common sector "Forestry"

The code 015 "Cultivation of forest nursery products" in the 2000 INFORUM Table of the U.S. previously belonged to the sector "Forestry" under the 1995 common classification. However, in the 2000 common classification, we put this code into the sector "Other non-edible crops" because we found that HS codes of those commodities mostly corresponded to "0213011 Minor forest products (including hunting)" which includes mushrooms and resins under the Japanese standard classification.

- Common sector "Other livestock raising"

The code 0121051 "Beef cattle" in the Japanese standard classification previously belonged to the common sector "Other livestock raising" under the 1995 Table. However, in the 2000 table, we put it into the sector "Livestock raising (cattle)," which was newly established after the sector "Dairy farming" was abolished.

- Common sector "Chemical basic products"

In the 2000 INFORUM Table of the U.S., "Crude salt and salt" belong to "026 Other nonmetallic mining." Accordingly, "2029031 Crude salt" and "2029032 Salt" in the Japanese standard classification was transferred from the sector "Chemical basic products" to the sector "Other nonmetallic minerals."

- Common sector "Chemical basic products"

In the 2000 INFORUM Table of the U.S., "Nuclear fuels" belong to "150 Manufacturing of other inorganic chemical basic products." Accordingly, "2722041 Nuclear fuels" under the Japanese standard classification was transferred from the sector "Chemical basic products" to the sector "Inorganic chemical basic products."

- Common sector "Steel and steel products"

Previously, "2121011 Coke" and "2121019 Other coal products" in the Japanese standard classification both belonged to the common sector "073 Steel and steel products." However, the code 2121019 "Other coal products" was transferred to the sector "Products of petroleum and coal" while "2121011 Coke" remains in the sector "Steel

and steel products."

- Common sector "Special industrial equipment"

In the 2002 INFORUM Table of the U.S., "Industrial robots" belong to "301 Scales and balances/Other all-purpose machines n.e.c." Accordingly, "3023011 Industrial robots" in the Japanese standard classification was transferred from the "Special industrial equipment" sector to the "Other general machines" sector.

- Changes made to final demand sectors

As for newly-established codes for the 2000 table including "9403000 Depreciation of fixed capital (Depreciation of social overhead capital, etc.)," "913210 Central government collective consumption expenditure (Depreciation of social overhead capital)," "913220 Local governments collective consumption expenditure (Depreciation of social overhead capital)," "913230 Central government individual consumption expenditure (Depreciation of social overhead capital)" and "913240 Local governments individual consumption expenditure (Depreciation of social overhead capital)," we put the code 9403000 together with "9402000 Depreciation of fixed capital," the codes 913210 and 913220 with "913110 (913120) Central government (Local governments) collective consumption expenditure," and the codes 913230 and 913240 together with "913130 (913140) Central government (local governments) individual consumption expenditure" respectively.

2. Adjustments made to the Japanese I-O Table

(1) Private transportation activities enterprises

In the U.S. I-O Table, there is no provisional sector for the private transportation activities of enterprises. Expenses necessary for such activities are included in intermediate transactions made by the industries conducting such activities. For the purpose of making Japanese and US accounts consistent, we adopted the 2000 Japan nationwide I-O Table where expenses for the private transportation activities of enterprises have been excluded.

(2) The "Collection and processing of recyclable resources" sector was broken up and abolished

In the 2000 Japan I-O Table, the "Wastes and byproducts generated" sector counts outputs of wastes and byproducts, and those outputs are collectively distributed to the newly-established "Recyclable resources collection and processing" sector where expenses for collection/processing are added and the total value goes to the input sector of "Wastes and byproducts."

On the other hand, the INFORUM table of the U.S. has the "Scrap" sector which counts all wastes collectively. Here, outputs result in deduction and inputs result in addition, and no processing expenses are included. For the purpose of making Japanese and US accounts consistent, the following procedure was adopted: The 2000 Japan-US Table adopts the conventional "negative input" methodology and reflects the data in "Inputs and outputs of wastes and byproducts" which is a supplementary table to the Japan I-O Table.

① By referring to the supplementary table "Inputs and outputs of wastes and byproducts," inputs and

outputs were identified respectively and were counted in corresponding sectors in the I-O Table.

② Then, values of wastes and byproducts identified in ① were deducted from the row figures and column figures for "Collection and processing of recyclable resources" respectively. Thus, it was possible to calculate the "Collection/processing" values for both the row and column items.

③ The column values of "Collection/processing" include shipping expenses, which can be calculated by determining where this column sector intersects with the row sectors "railway freight transportation," "road transportation (excluding private or in-house transportation)," "coastal or inland water freight transportation," "ocean freight transportation," "freight transport services" and "warehousing" respectively. Those 6 intersecting figures were collectively deducted from the column value to calculate the value of "Wholesaling of recyclable resources." This calculated value was then added to the column value of "Wholesaling."

④ Next, the row values of "Collection/processing" were broken down and divided among corresponding industries in proportion to the share structure of waste/byproduct input values.

1) The row values include collection/processing expenses and transportation costs. To identify the proportion of each, the collective transportation expenses calculated in ③ above, and the total value of "Wholesaling of recyclable resources" should be compared to each other. The latter amount was moved to the "Wholesaling" row.

2) The remaining can be defined as transportation costs. Those transportation costs were then divided into the 6 transportation items mentioned in ③, by using a ratio of 6. The proportionally divided 6 portions were distributed respectively to the corresponding transportation rows.

⑤ Lastly, the "Collection and processing of recyclable resources" sector was deleted.

(3) The "Non-household consumption expenditures" sector was made endogenous.

The "Non-household consumption expenditures" sector in the Japanese Table covers social expenses, entertainment expenses, welfare expenses and per diem expenses for business trips. The new System of National Accounts (SNA) defines them as intermediate input expenses incurred in the process of production, just like fuels and services, and does not count them in value added and final demand sectors.

However, the Japan I-O Table does not treat them as intermediate inputs, and instead includes them in value added and final demand sectors. This approach was derived from the view that such corporate expenditures actually represent personal consumption, because they are similar to consumption expenditures of households. In terms of input, non-household consumption expenditures are not directly connected with production activities and also fluctuate irregularly. Therefore, they were not included in intermediate inputs under the Japan I-O Table, to avoid unstable input coefficients.

The final demand sectors reflect non-household spending, where its value was registered by type of products consumed. Similarly, the value added sectors also reflect non-household spending, where its value was registered by type of expenses incurred. In this way, the column figures and row figures of "Non-household consumption expenditures" are balanced in total value.

On the other hand, the U.S. I-O Table defines "non-household consumption expenditures" as intermediate inputs. Accordingly, expenditures were counted in the accounts of intermediate inputs of the corresponding

industries involved.

It was decided to treat "Non-household consumption expenditures" as a provisional endogenous sector, as was done in the 1995 Japan-US I-O Table, and so the following adjustments were made.

① The column figures of "Non-household consumption expenditures" were moved entirely to the endogenous sectors.

② The row figures of "Accommodation and per diem," "Entertainment expenses" and "Costs for health and welfare" were integrated and collectively grouped as "Non-household consumption expenditures." They were then moved to the endogenous sectors.

(4) The "Office supplies" and "Self-research" sectors have each been broken up

In many Japanese enterprises, office supplies such as pencils, erasers, ruled paper, etc. are usually collectively treated as "consumables" (or "consumable office supplies") in their financial statements. In the Japan I-O Table, those office supplies are firstly distributed as outputs to the "Office supplies" sector and then collectively transferred to the corresponding demand sectors. On the other hand, in the U.S. I-O Table, "office supplies" are directly distributed from production sectors to demand sectors.

Similarly, the account of in-house R&D activities (self-research) was treated differently between Japan and the U.S. In the Japan I-O Table, this account forms a provisional sector named "Self-research" which collectively includes all in-house R&D activities. On the other hand, in the U.S. I-O Table, in-house R&D activities are regarded as one production activity and are therefore included in intermediate transactions made by the industries doing such activities.

In order to make Japanese and U.S. accounts consistent, an adjustment was made to the Japanese Table, where respective values of "Office supplies" and "Self-research" were broken up in proportion to input coefficients and then each portion was distributed across the corresponding industries.

(5) Outputs of "Financial service (imputed interest)" is now counted in the "Household expenditures" sector

The Japan I-O Table applies the system of 1968SNA, where outputs of "imputed interest" are counted in the accounts of industries only (appearing in the upper part of the Table). Therefore, housing loans borrowed by households from financial institutions are firstly counted in "House rent (imputed rents)" sector and then are distributed to "Household expenditures." On the other hand, in the U.S. I-O Table, imputed interest is counted in final demand sectors including household consumption expenditures, and housing loans are directly distributed to the "Household expenditures" sector from the "Financial service" sector. In order to make Japanese and US accounts of "imputed interest" consistent, an adjustment was made to the Japanese Table so that its final demand sectors reflect imputed interest. Similarly, "House rents (imputed rents)" are now reflected in "Household expenditures" directly from "Financial service (imputed interest)." The following is the adjustment procedure.

① By referring to financial and economic statistics released by the Bank of Japan, the ratio of bank loans made for private citizens to all loans was calculated respectively for those loans made from public financial institutions and those from private financial institutions.

② Each ratio identified in ① for "public financial institutions" and "private financial institutions" was then multiplied by the CT of "public financing" and "private financing" respectively to calculate the respective amount of imputed interest to be distributed to "Household expenditures."

③ Next, the amount calculated in ② was added to the account where "Household consumption expenditure" intersects with "Public financing (imputed interest)" or "Private financing (imputed interest)" respectively.

④ The figure at the intersection of the column "House rent (imputed rent)" sector and the row "Public (or Private) financing (imputed interest)" sector can be regarded as the amount borrowed by households as housing loans from public or private financial institutions respectively. These values are actually already included in "Household consumption expenditures" because they were added in ③. Therefore, the figures were deleted. Specifically, the following steps were taken:

・ Those figures that intersect with the column "House rent (imputed rent)" sector were deducted.

・ An equal value to the total of the two deleted intersecting figures was deducted from the figure at the intersection of the row "House rent (imputed rent)" sector and "Household consumption expenditures."

⑤ In the Japanese Table, the figure at the intersection of the row "Private financing (imputed interest)" and the column "Unclassified" sector can be defined as borrowings made by private citizens from consumer finance companies. This figure was already included in "Household expenditures" as it was added in ③. Therefore we deleted that figure as well.

⑥ The value added in ③ to the intersection of the row "Public (or Private) financing (imputed interest)" sector and the column "Household consumption expenditure" sector is referred to as "X" here. And the value deleted at ④ (= the figure that existed at the intersection of the column "House rent (imputed rent)" sector and the row "Public (or Private) financing (imputed interest)" sector) is referred to as "Y" here. Thus, "Y" is deducted from "X" to calculate the amount remaining after imputed interest for housing loans and borrowings from consumer finance companies was deducted from imputed interest for borrowings from public or private financial institutions. The remaining amount should not be counted in "Household expenditures," and thus was already broken up and distributed to corresponding industries. Therefore,, that amount was deleted. Specifically, the following steps were taken:

(i) The remaining amount mentioned above is referred to as "A" here. CT of the "Public financing (imputed interest)" or "Private financing (imputed interest)" is referred to as "B" here. We calculated the ratio of A to B.

(ii) Next, the ratio which we calculated in (i) above was deducted from those figures counted in the endogenous sectors of the row "Public (Private) financing (imputed interest)" sector. In order to maintain the balance of the total column value, we added an equal amount (to the deduction above) to the value added sectors of corresponding industries.

⑦ As a result of the above adjustments, the total value of PCE was increased by the amount of imputed interest for borrowings excluding housing loans. Although the registered GDP value of Japan was increased accordingly, we consider this increase to be acceptable because it conveniently helps correct the underestimated value of Japan's GDP.

3. Adjustments made to the U.S. I-O Table

(1) The "Customs duties" sector was newly established and adjustments were made to "Wholesale trade"

In the Japan I-O Table, input values of import goods include customs duties and commodity taxes. Also, among final demand sectors, deduction items are registered in the form of separate column sectors including "Imports of ordinary trade," "Customs duties" and "Commodity taxes."

On the other hand in the U.S. I-O Table, ,each "(Less) Imports" figure includes CIF and customs duties (including commodity taxes). The intersecting figures of "Wholesale trade" and "(Less) Imports" reflect total customs duties (as an addition), and the total value of the "(Less) Imports" sector is based on CIF. This results in an increment generated in the value of final demand sectors, by the amount of total customs duties. In order to maintain balance, that increment was also reflected equally in the value of the value added sectors. The increment was collectively counted in the intersecting figure of "Indirect business taxes" and "Wholesale trade," instead of divided and distributed separately to value added sectors of corresponding industries.

We decided to make adjustments to the U.S. I-O Table so that its accounts of "Customs duties" and "Commodity taxes" will be consistent with those in the Japan I-O Table. Specifically, the following adjustments were made as well as an estimation of the column "Customs duties" value.

① The total value of customs duties, originally registered at the intersecting points of "Wholesale trade" and "(Less) Imports" within final demand sectors, was entirely removed from the Table. This means that the value becomes "zero." At the same time, an equal value to said omitted amount was deducted from the intersecting figure of "Indirect business taxes" and "Wholesale trade" within value added sectors.

② We calculated the tariff [=customs duties/(imports value + customs duties)] of each sector in the U.S. I-O Table, by referring to customs duties by commodity indicated in the U.S. trade statistics as well as to a conversion table to reconcile the U.S. I-O codes and HS codes.

③ We estimate provisional customs duties by multiplying the column "Imports" figures and the tariffs which we calculated in ②.

④ The total value of customs duties registered at the intersection of "Wholesale trade" and "(Less) Imports" was divided in proportion to the share structure of the customs duties which we calculated in ③. Thus, column distribution of customs duties could be determined.

⑤ Those column figures identified in ④ were respectively deducted from the corresponding column "Imports" figures in the U.S. I-O Table. Thus, we calculated the estimated CIF values or customs duties-exclusive imports.

(2) "Imports of gold"

At "(Less) Imports" in the U.S. Table, we see a positive value of 2.6 billion dollars being registered in the "Gold, silver and other metal ores" sector. The U.S. Department of Commerce makes it a rule to estimate imports of gold by seeking the difference between domestic production and domestic consumption (this difference is called "net imports"), instead of referring to data of U.S. trade statistics. When domestic production is less than domestic consumption (meaning negative net imports), the difference can be regarded

as imports. On the contrary, when domestic production surpasses domestic consumption (meaning positive net imports), the difference can be perceived as either the amount being stocked or exports to foreign countries. According to the U.S. Department of Commerce, net imports of gold in 2000 registered plus 3.1 billion dollars. For the purpose of the Japan-US Table, we regard this value (plus 3.1 billion dollars) as stock within the U.S. So we have deducted 3.1 billion dollars from the intersecting figure of "Gold, silver and other metal ores" and "(Less) Imports," and then added an equal value to the intersection point of "Gold, silver and other metal ores" and "Change in inventories."

(3) Adjustment made to the "Royalties" sector

The U.S. Table has the "Royalties" sector covering royalties on books, license fees for patent rights, etc., while the Japanese Table allocates those royalties collectively to the "Operating surplus" sector. In order to make Japanese and US accounts consistent, we have adjusted the "Royalties" sector in the U.S. Table.

CT of "Royalties" appearing in the 1997 U.S. Table consists of royalties and businesses engaged in franchise-based royalty licensing activities. In order to make Japanese and US accounts consistent, we have divided the US "Royalties" sector into two: a provisional sector that covers royalties only (hereinafter referred to as "the provisional royalties sector"), and a sector that covers business activities of royalty licensing (hereinafter referred to as "the royalty businesses sector"), and then we allocate accounts of the provisional royalties sector to value added accounts of corresponding industries and accounts of the royalty businesses sector to "Other business services," which covers royalty-related businesses just as we use this category in the Japanese Table.

① We assumed that "Compensation for employees" and inputs in endogenous sectors in the U.S. Table all belong to the royalty businesses sector.

② We estimated the CT of the royalty businesses sector by referring to "Compensation for employees" in the royalty businesses sector as well as to a ratio of "Income" to "Compensation for employees" in the Royalties sector based on the U.S. economic census.

③ Endogenous inputs and "Compensation for employees" were deducted from the CT of the royalty businesses sector, and a resulting figure, which can be regarded as a value added amount in the royalty businesses sector, was divided into indirect taxes and other value added items in the proportion of an indirect taxes-other value added items ratio in the Royalties sector.

④ Inputs in the royalty businesses sector was deducted from inputs in the Royalties sector, and the resulting figure was regarded as inputs of the provisional royalties sector.

⑤ Outputs in the provisional royalties sector was divided in the proportion of a CT-CT ratio of the provisional royalties sector and the royalty businesses sector respectively, so that outputs of respective sectors could be calculated.

⑥ Outputs in the provisional royalties sector are divided in proportion to the share structure of inputs. Since inputs in the provisional royalties sector consist of indirect taxes and other value added items only, the share structure of the two was used for dividing. Divided portions were distributed to value added sectors.

⑦ Inputs and outputs in the royalty businesses sector were allocated to the common sector "Other business

services."

(4) Adjustments made to "Water transport"

Treatment of forwarding charges paid to domestic carriers (which compose the value of import goods) was different between the U.S. and Japanese Tables.

In the U.S. Table, the value of import goods is composed of the foreign port price, international freight, insurance and customs duty. Payment of forwarding charges to domestic carriers is considered to be composed of the production amount of the domestic transport sector, and therefore was counted, in the form of a positive value, as imports in the transport (water transport) sector.

On the other hand, in the Japanese Table, the value of import goods is composed of CIF, customs duty and commodity tax. Although the registered value in each cell appears to be the same between the Japanese and US Tables, the Japanese Table allows freight income to be registered as a positive value in "Ocean transport" accounts of exports (special trade). In order to make the Japanese and US accounts consistent, positive values registered in "Imports" accounts in the "Ocean transport" sector in the U.S. I-O Table were moved entirely to "Exports." This means that the "Imports" become zero.

(5) "Enterprise/business management" sector

The U.S. Table has the "Enterprise/business management" sector, which covers holding companies and the headquarters of enterprises. We closely examined the 1997 data of the U.S. economic census, and found that the headquarters of enterprises occupy quite a large proportion. Therefore, we regard the "Enterprise/business management" sector as representing the headquarters of enterprises.

The Japanese Table does not make it possible to identify the portion of the "headquarters of enterprises" explicitly. Therefore, we have decided to reorganize the US "Enterprise/business management" sector by dividing it into activities, just as in the Japanese Table.

① We deleted "Exports" from the "Enterprise/business management" sector, and at the same time deducted the deleted value from "Compensation for employees" in the sector.

② Endogenous outputs from the "Enterprise/business management" sector were divided in proportion to the share structure of input coefficients.

(6) Accounts of "Government consumption expenditures" were partially made endogenous

Government final consumption expenditures categorized as a final demand sector in the U.S. I-O Table were partially made endogenous, for the purpose of making Japanese and US accounts consistent. In the Japanese Table, "Government consumption expenditures" categorized as a final demand sector can be translated as "expenses paid by the government as required for providing services at a non-market price." In the U.S. Table, "Government final consumption expenditures" count not only government consumption expenditures under the Japanese definition but also those which would be treated as endogenous "Government affairs" accounts in the Japanese Table. In order to make Japanese and US accounts consistent, we have decided to make the following adjustments. Note that we performed two separate adjustments for (i) expenditures on national/public education ("Government final consumption expenditures (education)") and (ii) other

expenditures ("Government final consumption expenditures (other)") respectively.

[Education-related accounts]

Outputs of national or public services in the category of education (together with private business-provided education services) are counted in endogenous accounts in the category of education. Expenditures on national/public education services are counted in "Government final consumption expenditures (education)" as a final demand sector. Compensation received by government for its national/public education services are counted, in the form of negative value, at the intersecting account of "Education" and "Government final consumption expenditures (education)." In order to make Japanese and US accounts consistent, we have made the following adjustments.

① All positive values appearing at the intersecting points of "Government final consumption expenditures (education)" and "Education" were moved to endogenous accounts, and were collectively grouped as a new "Education (national/public)" sector.

② The figure at the intersecting point of "Government final consumption expenditures (education)" and "General government industry" went to the accounts of compensation for employees and other value added items in the newly established "Education (national/public)" sector.

③ We established a new "Education (national/public)" sector column as an endogenous account. At the intersecting point where this sector meets "Household consumption expenditures," we allocate a positive value equal to the negative value originally registered at the intersecting point of "Government final consumption expenditures (education)" and "Education."

④ This positive value which we allocated in ③ above, was deducted from the intersecting figure of "Household consumption expenditures" and "Education."

⑤ We identified a difference between CT, calculated from the column distribution of "Education (national/public)," and an aggregated amount of all row figures of "Education (national/public)." This difference can be categorized into "Government final consumption expenditures," which we newly established among final demand sectors.

⑥ As for negative inputs registered in "Government final consumption expenditures (education)," we also find such accounts as "Accommodation" and "Restaurants" provided by national or public schools. Those negative accounts were also put through the above procedure from ① to ④, assuming that they belong to activities under the category of "Education (national/public)."

[Other accounts outside the category of "Education"]

It is impossible to calculate what specific activities are included in "Government final consumption expenditures (other)." Therefore, we have newly established the "Government affairs" sector, where endogenous accounts are created and treated differently from "Education (national/public)."

⑦ Positive values registered in "Government final consumption expenditures (other)" were moved to endogenous accounts, and were collectively grouped into a new column sector titled "Government affairs." The figure registered at the intersection of where "Government final consumption expenditures (other)"

meet "General government industry" went to the accounts of compensation for employees and other value added items in the newly established "Government affairs" sector.

⑧ Negative values registered in "Government final consumption expenditures (other)" were distributed to corresponding sectors so that their intersecting points with "Government final consumption expenditures" in final demand accounts can be counted.

⑨ We established a new column "Government affairs" sector as an endogenous account. The total CT value calculated from the column "Government affairs" distribution was counted at the intersection of the row "Government affairs" sector and "Government final consumption expenditures."

⑩ The row and column for "General government industry" accounts was deleted.

(7) Adjustments made to the "Non-comparable imports" sector and the "Final demand adjustment category"

The U.S. Table has the "Non-competitive imports" sector, which covers purchases of goods and services made by U.S. citizens residing in foreign countries and imports of goods that are not being produced in the U.S. (including expenditures on overseas business trips, fuel for jet planes refueled at foreign airports, etc.). Also, the U.S. Table has the final demand adjustment category that counts purchases of goods and services within the U.S. market made by foreign visitors.

Those two sectors in the U.S. Table correspond to "Exports/imports (direct purchases)" and "Imports (special trade)" respectively in the category of the final demand sectors in the Japanese Table, where accounts are registered by goods. In order to make Japanese and US accounts consistent, we have divided each of the above two row sectors in the U.S. Table by goods, just like in the Japanese Table, and also newly form a column distribution of "Non-ordinary trade" as final demand accounts.

Specifically, the total value of "Imports (direct purchases)" collectively counted in "Household expenditures" was divided by goods. To determine proportions of respective goods, we referred to consumption data for U.S. citizens residing in foreign countries. Those divided portions were then distributed to the "Household expenditures" column accounts. At the same time, a column sector of "Imports (direct purchases)" was newly established. The same adjustment was made to "Exports (direct purchases)". In addition, as for the collectively-registered consumption by foreign visitors in the U.S. market, as a deduction account from "Household expenditures," we divided it by goods also, so that we can identify each deduction by goods. At the same time, a column sector of "Exports (direct purchases)" was newly established.

The problem is that there are no data available in the U.S. on consumption categorized by goods by U.S. citizens residing in foreign countries or by foreign visitors in the U.S. market. Therefore, we use ratios of direct purchases categorized by good indicated in the Japanese Table.

[Adjustment of the final demand adjustment category]

① The value (negative value) registered at the intersecting point of "Household consumption expenditures" and "Final demand adjustment category" is regarded as the total value of "Exports (direct purchases)." This value was divided in proportion to the share structure of "Exports (direct purchases)" in the Japanese Table, to calculate U.S. exports (direct purchases) distribution. At the same time, the figure registered in the final demand adjustment category in "Household consumption expenditures" was replaced with "zero."

② The value of "Exports (direct purchases)," established at ④, was deducted from "Household consumption expenditures."

③ The intersecting figure of "Final demand adjustment category" and "Exports," which indicate the total value of "Exports (direct purchases)" was replaced with "zero," because we already had a new "Export (direct purchases)" sector.

④ "Final demand adjustment category" was deleted.

[Adjustments made to "Non-competitive imports"]

① The value registered at the intersecting point of "Household consumption expenditures" and "Non-competitive imports" is regarded as the total value of "Imports (direct purchases)." This value was divided in proportion to Japan's share structure of "Imports (direct purchases)," to calculate "Imports (direct purchases)" distribution in the U.S. Table.

② The calculated distribution of "Imports (direct purchases)" was reversed as a way to replace the positive/negative sign of all figures with their opposite, and the reversed distribution was established as a new final demand sector.

③ The figure registered at the intersection of "Household consumption expenditures" and "Non-competitive imports" was replaced with "zero."

④ Each of the "Imports (direct purchases)" figures we calculated in ① was respectively added to the corresponding "Household consumption expenditures" cells in the Import Table.

⑤ Figures registered in endogenous accounts in "Non-competitive imports" and final demand accounts were placed in "Other unclassified" in the Imports Table.

⑥ The value registered at the intersecting point of "Imports of goods and services" and "Non-competitive imports" was moved to "Imports (direct purchases)." At the same time, direct purchases made by households were deducted from the intersecting value of "Non-competitive imports" and "Imports (direct purchases)," since such direct purchases are already included in the I-O Table in the form of divided portions by goods.

Thus, "Household final consumption expenditures" accounts are now GNP-based, where "Imports (direct purchases)" and "Exports (direct purchases)" are respectively registered by goods.

4. "Survey on the demand structure of Japanese exports" and "Survey on the demand structure of imported goods in Japan"

(1) Survey contents and results

The surveys only cover those commodities that register one million yen of traded value or more, and aim to find how imports and exports were consumed and for what purposes, under the Japanese classification of HS codes.

(2) Estimating the demand structure of imported goods (from the U.S.) by HS code

Based on the results of the survey, we estimated how row-sector imported goods (as categorized by HS code) were distributed to respective column demand sectors. We tried to calculate a share structure not only for those covered by the survey but also for those not covered by the survey or those not answered by respondents.

① For those imported goods which were found to be consumed for the same purposes as their domestic counterparts, their respective share in the demand structure was determined based on detailed categorization (in accordance with the fundamental classification, a broader classification based on small-sized integrated groups or another broader classification based on medium-sized integrated groups under the updated version of the 2000 simplified Japan I-O Table and the 2000 Japan I-O Table).

② For those imported goods which were found to be consumed for different purposes to their domestic counterparts or for diverse purposes depending on the importing countries, we received data on their consumption from respondents under a broad classification. We reviewed the relevant domestic consumption data as well as product characteristics of those goods, and made adjustments, based on that information, to the classifications in the responses for calculating the respective shares in the demand structure on the basis of the above-mentioned broader classification based on medium-sized integrated groups.

③ For those imported goods that were not covered by the survey (because of the small amount of imports) or were not answered by respondents, we collected as much relevant data as possible by referring to industrial specialists, other published research results, etc., and calculated their estimated share in the demand structure on the basis of the broader classification based on medium-sized integrated groups.

④ Those estimated shares, which we calculated in ①, ② and ③ above under the 93-sector classification, were converted into more rigorously-calculated shares under the detailed standard classification, by referring to information in the imports matrix of the 2000 Japan I-O Table.

(3) Identifying demand sectors according to the HS classification (Japanese exports to the U.S.)

Similar to the estimation procedure for imported goods, we examined the results of the Survey on the demand structure of Japanese exports and also referred to data in the Japan I-O Table as well as product information of respective exported goods, so that we could identify their demand sectors in the U.S. market. Note that we only tried to identify who (which demand sector) consumed goods, and did not calculate their estimated share structure in the U.S.

① For Japanese exports to the U.S., we did not try to calculate their share of demand, because we cannot estimate that share without examining the production performance of corresponding demand sectors in the U.S., and also because Japan's demand structure is not applicable to the U.S. market. Therefore, we decided to only

identify demand sectors.

② We tried to calculate demand sectors not only for those covered by the survey but also for those not covered by the survey (because of the small size of exports) or not answered by respondents, by using the common classification.

5. Estimation of Japan-US and Japan-ROW (Rest of the world) foreign trade accounts

Foreign trade accounts between Japan and the U.S. can take the form of the imports matrix for US goods to Japan, based on US producer prices. The estimation procedure consists of the following three steps.

① We divided the Imports Matrix of the 2000 Japan I-O Table into two: the ordinary trade matrix (CIF + customs duties + commodity taxes) and the non-ordinary trade matrix.

② Next, we took the imports-from-U.S. matrix (ordinary trade at CIF) out of the ordinary trade matrix, and then estimated international freight, insurance and U.S. domestic distribution margins accruing from U.S. exports to Japan separately and converted them into U.S. producer prices.

③ We took the imports-from-U.S. matrix (non-ordinary trade) out of the non-ordinary trade matrix.

The Japan-ROW trade accounts were calculated by excluding Japan-US accounts from the Imports Matrix. We would like to mention that Japan and the United States have successfully improved their respective region-specific data on the balance of international payments, which has made it possible for us to estimate non-ordinary trade accounts in our trade with the U.S. We carried out this estimation for the first time since starting the project of making the Japan-US I-O Table.

(1) Constructing the "Ordinary trade imports matrix"

We have divided the Imports Matrix of the 2000 Japan I-O Table into ordinary trade accounts and other accounts.

(2) Constructing the "Primary imports-from-U.S. matrix (ordinary trade)" and a supplementary table of imports matrix of Japan

Column imports-from-U.S. accounts (ordinary trade) were respectively broken up in proportion to the share structure of outputs in the "Ordinary trade imports matrix," to construct the Primary imports-from-U.S. matrix. The following is the detailed procedure.

① The column imports accounts for eighteen countries and regions were established under the IO classification by referring to imports statistics (by country and commodity) and the IO-HS conversion table.

② Column imports (ordinary trade) accounts in the Japan I-O Table were divided into 18, in proportion to the share structure of eighteen countries/regions calculated in ①, to establish 18 column distributions (of imports accounts) for the respective countries/regions.

③ The imports-from-U.S. accounts were taken out of the 18 column distributions established in ②, and then each account was divided in proportion to the share structure of outputs in the "Ordinary trade imports matrix." Thus, the "Primary imports-from-U.S. matrix" was established.

(3) Compiling the "Secondary imports-from-U.S. matrix"

We put the survey results on the demand structure of imported goods in Japan into the "Primary imports-from-U.S. matrix," to establish the "Secondary imports-from-U.S. matrix."

① From said survey results, we compiled a matrix for demand sectors consuming imports from the U.S.

② Within each I-O sector, imports were divided into "demand-identified and "demand-unidentified" by HS code. All "demand-identified" imports were integrated into the distribution of row "demand-identified imports-from-U.S." accounts, and all "demand-unidentified" imports were combined to establish a single "demand-unidentified imports-from-U.S." account.

[Demand-identified imports as classified by HS code]

③ For those demand-identified imports, we could automatically form the distribution of row "demand-identified imports-from-U.S." accounts by multiplying an import value of each HS-classified commodity and its share in the demand structure.

[Demand-unidentified imports as classified by HS code]

④ The row "demand-identified imports-from-U.S." accounts, which were established in ③, were deducted from the "Primary imports-from-U.S. matrix."

⑤ Any negative values among the resulting row values after the deduction in ④ were replaced with "zero." Then, the structure of those row accounts (each account's share) was calculated.

⑥ This share structure was used to divide the "demand-unidentified imports-from-U.S." account, to establish the distribution of row "demand-unidentified imports-from-U.S." accounts.

[Combining identified and unidentified commodities]

⑦ Within each I-O sector, "demand-identified" row accounts and "demand-unidentified" row accounts were combined, to compile the "Secondary imports-from-U.S. matrix (based on trade statistics)."

⑧ Next, we referred to the "Primary imports-from-U.S. matrix" and concentrating on the final column distribution that shows the totals of row accounts (meaning "the total import value" by I-O sector). Then, those column accounts were respectively divided in proportion to the share structure of the "Secondary imports-from-U.S. matrix" (compiled in ⑦), to establish the I-O-based "Secondary imports-from-U.S. matrix (ordinary trade)" which is different from the imports matrix in share structure.

⑨ Accounts of this "Secondary imports-from-U.S. matrix (ordinary trade)" were deducted from the "Ordinary trade imports matrix" of the 2000 Japan I-O Table, to establish the "Imports-from-ROW (ordinary trade) matrix."

(4) Deducting international freight and insurance, and establishing row accounts of international freight and insurance

Accounts of international freight and insurance accrued from Japanese imports from the U.S. were deducted from the "Secondary imports-from-U.S. matrix (ordinary trade)" for calculating FOB values. For international freight and a ratio of insurance to CIF, we made estimates from U.S. trade records on their imported goods from Japan, instead of the data from the Japan Maritime Research Institute which we used for the 1995 Japan-US I-O Table. We did not refer to the latter data this time because of its insufficiencies.

① We extracted the import values for the respective HS-classified commodities imported from Japan as well as their accruing international freight and insurance by referring to U.S. trade statistics. Then, we calculated values for each U.S. I-O sector based on the U.S. standard classification.
② We estimated the ratio of international freight and insurance to CIF for each I-O sector.
③ We extracted the export values for respective HS-classified commodities exported to Japan by referring to U.S. trade statistics. Then, we calculated values for each U.S. I-O sector based on the U.S. standard classification.
④ The ratio calculated in ② was multiplied by the corresponding export value calculated in ③ to determine international freight and insurance accruing from U.S. exports to Japan.
⑤ The exports values calculated in ③ and the international freight and insurance calculated in ④ were then converted to the common classification-based values.
⑥ By referring to the export values calculated in ③ and their international freight and insurance, the ratio of international freight and insurance to CIF for US exports to Japan was calculated based on the common classification.
⑦ Assuming that U.S. exports to Japan are equivalent to Japanese imports from the U.S., the ratio calculated in ⑥ can be regarded as applicable to Japanese imports from the U.S.
⑧ International freight and insurance, which we calculated using the ratio in ⑥, were deducted from the "Secondary imports-from-U.S. matrix (ordinary trade)," to establish the "Tertiary imports-from-U.S. matrix (ordinary trade)."
⑨ For the deducted international freight and insurance from each account, we combined all column deductions to form a distribution of "international freight and insurance" row accounts.

(5) Converting to U.S. producer prices in the "Imports-from-U.S. matrix (ordinary trade)"

U.S. domestic business profit margins and freight shares, as shown in the table of U.S. domestic distribution margins, were deducted from the accounts of the "Tertiary imports-from-U.S. matrix (ordinary trade)."

① We calculated the share of wholesalers' profit margins, railway freight, road freight, ocean freight and airfreight respectively by referring to a table of business profit margins and freight accrued from U.S. exports.
② Those shares (%) were applied to the "Tertiary imports-from-U.S. matrix" accounts, to determine respective margins. Those margins were deducted from each account.
③ Those deducted business profit margins and freight shares were combined. We made it so that they were counted in corresponding business and transport sectors.
④ We used an exchange rate of 107.77 yen to the dollar.

(6) Compiling the "Imports-from-U.S. matrix (non-ordinary trade)"

We established accounts of Japan's non-ordinary trade with the U.S. by extracting relevant data from the Japanese balance of international payments (hereinafter referred to as "BOP.") From those accounts, we have compiled "Japan-U.S. trade (non-ordinary trade)" accounts.

① We estimated provisional accounts of imports from the U.S. and exports to the U.S. (non-ordinary trade), by extracting relevant data from BOP and also using the share structure of BOP.

② We estimated the total value of Japan's direct purchases from and trade with the U.S. on the basis of the I-O Table. For this estimation, we needed to find out, in advance, the total of Japan's direct purchases from and non-ordinary trade with all foreign countries from the 2000 Japan I-O Table as well as the share of the U.S. among all foreign countries in the BOP.

③ The total value of Japanese imports from the U.S. (non-ordinary trade) identified in ② was divided in proportion to the share structure of the provisional accounts identified in ①. The divided portions form the accounts of imports from U.S. (non-ordinary trade).

④ Similarly, the total value of Japanese exports to the U.S. (non-ordinary trade) was divided in proportion to the share structure of the provisional accounts identified in ①. The divided portions form the accounts of exports to the U.S. (non-ordinary trade).

⑤ From the accounts of imports from the U.S. (non-ordinary accounts), established in ③, we compiled the "Imports-from-U.S. (non-ordinary trade) matrix," to which we applied the share structure of row accounts of non-ordinary trade with all foreign countries.

⑥ The accounts of "Imports-from-U.S. (non-ordinary trade) matrix" were deducted from the direct purchases and non-ordinary trade accounts in the 2000 Japan I-O Table, to compile the "Imports-from-ROW (non-ordinary trade) matrix."

(7) Establishing Japan-U.S. trade accounts

Japan-U.S. trade accounts were established by combining the account of "Imports-from-U.S. (ordinary trade) matrix" established in (5) and the accounts of "Imports-from-U.S. (non-ordinary trade) matrix" established in (6).

(8) Estimating Japan-ROW trade accounts.

Japan-ROW trade accounts were established by combining the accounts of "Imports-from-ROW (ordinary trade) matrix", compiled in (3), and the accounts of "Imports-from-ROW (non-ordinary trade) matrix" compiled in (6).

(9) Establishing row accounts of "Customs duties"

① We established column accounts for "Customs duties" by integrating the column accounts of "Customs duties" and "Commodity taxes" in the 2000 Japanese Table.

② Those column accounts for "Customs duties" established in ① were respectively divided into 18 country/region accounts, in proportion to the share structure of those 18 countries/regions under the I-O classification as obtained from the import statistics.

[Establishing row accounts of "Customs duties for imports from U.S."]

③ We extracted the U.S. accounts from the 18 column distributions of "Customs duties" accounts which we establish in ②. Those U.S. accounts were then respectively divided in proportion to the share structure of row accounts of the "Secondary imports-from-U.S. matrix (CIF)," to establish the matrix of "Customs duties for imports from U.S."

④ Column totals in this matrix of "Customs duties for imports from U.S." constitute row accounts of "Customs

duties for imports from the U.S."

[Establishing row accounts of "Customs duties for imports from ROW"]

⑤ We deducted the U.S. column accounts from the 18 column distributions of "Customs duties" accounts which we established in ②. The remaining 17 column distributions were then integrated into one. Next, the accounts were respectively divided in proportion to the share structure of row accounts of the "Imports-from-ROW matrix (CIF)," to compile a matrix of customs duties for imports from ROW.

⑥ Column totals in this matrix constitute row accounts of "Customs duties for imports from ROW."

(10) Establishing column accounts of "Exports to ROW (ordinary trade)"

① We converted the HS classification of exports statistics into the I-O classification. Also, we calculated export values for the 18 respective countries and regions. Thus, we compiled a matrix of FOB-based export values for each I-O sector for the 18 countries and regions respectively.

② Distribution margins, as shown in the table of business profit margins for exports, were deducted to calculate producers' prices.

③ Those deducted distribution margins were distributed to corresponding business sectors and transport sectors, to establish the exports matrix based on producers' prices for each I-O sector for the 18 respective countries and regions.

④ This exports matrix makes it possible to calculate the share structure of the 18 countries and regions for each I-O sector.

⑤ That share structure was used to divide respective column accounts of exports (ordinary trade) in the Japanese Table into the 18 countries and regions, to compile a matrix.

⑥ This matrix (of exports for 18 countries/regions for each I-O sector) was then reorganized under the common classification. And then, the unit of all figures was converted into the dollar (at the exchange rate of 107.77 yen to the dollar based on the IMF rate in 2000). Thus, we have established a matrix of ordinary trade accounts for 18 countries and regions, attached hereto as a supplementary table.

⑦ We deducted U.S. accounts from this matrix established in ⑥. The resulting column distributions for 17 countries/regions were all combined to form a single column distribution. This constitutes column accounts of "Exports to ROW (ordinary trade)."

(11) Establishing column accounts of "Exports to ROW (non-ordinary trade)"

① We combined accounts of "Exports (special trade)" and "Exports (direct purchases)," to establish accounts of "Exports (non-ordinary trade)."

② From those accounts, we deducted accounts of "Exports to the U.S. (non-ordinary trade)" which we established in (6). The resulting accounts constitute column accounts of "Exports to ROW (non-ordinary trade)."

(12) Establishing column accounts of "Exports to ROW"

We combined column accounts of "Exports to ROW (ordinary trade)" and those of "Exports to ROW (non-ordinary accounts)" to establish column accounts of "Exports to ROW."

6. Estimating U.S.-Japan trade accounts and U.S.-ROW trade accounts

The U.S. I-O Table is based on competitive imports accounts, and does not have a separate "imports matrix." Therefore, we tried to separate accounts of "non-competitive imports" from the U.S. Table. In addition, we decided to estimate U.S.-Japan non-ordinary trade accounts for the first time.

(1) Dividing column accounts of "Imports" into "ordinary trade" and "non-ordinary trade"

Column accounts of "Imports" in the adjustments-reflected INFORUM Table were divided into "goods sectors" and "non-goods sectors." The accounts of the goods sectors constitute column accounts of "Imports (ordinary trade)." Also, we combined the accounts of the non-goods sectors and the accounts of "Imports (direct purchases)" which we established in the process of making adjustments to the U.S. I-O Table. Those combined accounts constitute column accounts of "Imports (non-ordinary trade)."

We also applied the above process to "Exports" . Their accounts of "goods sectors" constitute column accounts of "Exports (ordinary trade)." Integration of "non-goods sectors" and "Exports (direct purchases)" (compiled in the process of making adjustments to the U.S. I-O Table) led to the establishment of column accounts of "Exports (non-ordinary trade)."

(2) Compiling a "provisional imports matrix"

We compiled a provisional imports matrix from the competitive imports-based U.S. Table. Specifically, column accounts of "Imports" in the U.S. Table were reorganized to establish a matrix of imports based on a fixed import coefficient (imports/(intermediate demands + final demands)).

(3) Compiling the "Primary imports-from-Japan (ordinary trade) matrix"

We compiled the "Primary imports-from-Japan (ordinary trade) matrix" based on a fixed import coefficient, by applying the share structure of countries for imports to U.S. trade statistics.

① We established column accounts of "Imports" for the 18 respective countries and regions, by extracting relevant data from U.S. trade statistics (data on imports) and using its country codes. (The resulting matrix is hereinafter referred to as the "imports matrix for 18 countries/regions.")

② The "imports matrix for 18 countries/regions" was then reorganized into I-O sector-based accounts using the IO-HS conversion table.

③ Those reorganized accounts show the share structure of the 18 countries/regions. This share structure was used for dividing respective column accounts of "Imports (ordinary trade)" in the U.S. Table into 18 countries and regions.

④ We extracted Japan's column accounts, and divided the respective accounts in proportion to the share structure

of the "provisional U.S. imports matrix (ordinary trade)," to compile the "Primary imports-from-Japan (ordinary trade) matrix."

(4) Compiling the "Secondary imports-from-Japan (ordinary trade) matrix"

We reorganized the "Primary imports-from-Japan (ordinary trade) matrix" into the "Secondary imports-from-Japan (ordinary trade) matrix" by having the latter reflect the survey results on the demand structure for Japanese exports. This "Secondary imports-from-Japan (ordinary trade) matrix" is different from the provisional U.S. imports matrix in the share structure of row accounts.

① We compiled a matrix of demand sectors for Japanese exports to the U.S., by referring to the results of the survey on the demand structure of Japanese exports as well as to the export statistics of Japan.

② This matrix, based on the common classification, was reorganized, where row accounts were respectively divided into "HS code-identified items" and "HS code-unidentified items" for each common sector.

[Identified items]

a. We determined the share structure of demand sectors, by referring to Japan trade statistics (for exports to the U.S.) as well as to the "Primary imports-from-Japan (ordinary trade) matrix."

b. We calculated the share structure of demand sectors in the matrix.

c. That demand structure was used to divide an export value of corresponding HS-classified goods, to calculate consumption values in respective demand sectors.

d. Those values were added to corresponding column accounts, to complete row accounts of "Export values for demand-identified items" for all common sectors.

[Unidentified items]

a. The share structure of the "Primary imports-from-Japan (ordinary trade) matrix" was used to divide the value of Japanese exports to the U.S., to establish row accounts.

b. From those row accounts, we deducted the row accounts of "Export values for demand-identified items" which we established above in d. Any negative resulting figures were to be replaced with "zero."

c. Now we concentrate on the share structure of the resulting row accounts (after the deduction).

d. This share structure was used to divide the total unidentified accounts respectively, to establish row accounts of "Export values for demand-unidentified items."

③ The row accounts of "Export values for demand-identified items" and the row accounts of "Export values for demand-unidentified items" were then integrated to establish row accounts of "Values of exports to the U.S." The respective shares of those accounts constitute the coefficients for the "U.S. imports-from-Japan matrix."

④ Those coefficients for respective common sectors were applied to the U.S. value of imports from Japan (CIF), to compile the "Secondary imports-from-Japan (ordinary trade) matrix."

(5) Compiling the "Imports-from-Japan (non-ordinary trade) matrix" and the "Imports-from-ROW (non-ordinary trade) matrix"

The "Imports-from-Japan (non-ordinary trade) matrix" and the "Imports-from-ROW (non-ordinary trade) matrix" were compiled respectively from accounts of imports (non-ordinary trade) in the U.S. Table as well as from the U.S. balance of international payments (hereinafter referred to as "U.S. BOP).

① Accounts of "imports from Japan (non-ordinary trade)" were established, where the share structure of import accounts (non-ordinary trade) in the U.S. Table as well as the ratio of U.S. total import value to Japan's total import value in the U.S. BOP are reflected. Those established accounts show the same share structure as that of import accounts (non-ordinary trade) in the U.S. Table, although the aggregated value of accounts are different between them.

② The established accounts of imports from Japan (non-ordinary trade) were respectively divided in proportion of the share structure of the U.S. provisional imports (non-ordinary trade) matrix, to compile the "Imports-from-Japan (non-ordinary trade) matrix."

③ Accounts of this "Imports-from-Japan (non-ordinary trade) matrix were then deducted from the U.S. provisional imports (non-ordinary trade) matrix, to establish the "Imports-from-ROW (non-ordinary trade) matrix."

(6) Combining ordinary trade and non-ordinary trade accounts

We compiled the "Import-from-Japan matrix" from the "Secondary imports-from-Japan (ordinary trade) matrix" and "Imports-from-Japan (non-ordinary trade) matrix." Similarly, we compiled the "Imports-from-ROW matrix" from the "Imports-from-ROW (ordinary trade) matrix" and "Imports-from-ROW (non-ordinary trade) matrix."

① We combined the "Secondary imports-from-Japan (ordinary trade) matrix" and the "Imports-from-Japan matrix (non-ordinary trade)", to establish the "Imports-from-Japan matrix."

② We combined the "Imports-from-ROW matrix (ordinary trade)" and the "Imports-from-ROW (non-ordinary trade) matrix," to establish the "Imports-from-ROW matrix."

(7) Establishing U.S.-Japan trade accounts (producers' prices)

We established the U.S.-Japan trade accounts (producers' prices) by deducting international freight, insurance and Japan's domestic distribution margins (including business profit margins and transportation shares) from the "Imports-from-Japan (CIF) matrix."

[Deducting international freight and insurance]

① The accounts of "Ratio of international freight and insurance to CIF" for respective common sectors were established where U.S. trade statistics (international freight and insurance) are reflected and the US-IO conversion table is referred to.

② Respective accounts in the Imports-from-Japan (CIF) matrix were multiplied by a corresponding ratio of international freight and insurance to CIF, to establish a matrix of values of international freight and insurance. That value was deducted from respective corresponding accounts of the Imports-from-Japan (CIF) matrix. Now, the Imports-from-Japan matrix is FOB-based.

③ Totals of the respective deducted international freight and insurance values constitute row accounts of "International freight and insurance (for imports from Japan)."

[Converting consumers' prices to producers' prices]

④ Japan's domestic distribution margins were deducted from the FOB-based accounts of Imports-from-Japan matrix, which we established in ②.

⑤ Those deducted margins were distributed respectively to corresponding common sectors.

(8) Establishing row accounts of "Customs duties"

We established row accounts of "Customs duties for imports from Japan" and "Customs duties for imports from ROW" respectively.

① Customs duties indicated in U.S. trade statistics were sorted into 18 countries and regions by referring to country codes to establish 18 column distributions of "Customs duties" accounts.
② Those established 18 distributions made it possible to calculate the shares (%) of respective countries/regions.
③ The identified shares were used for dividing column accounts of "Customs duties" in the U.S. Table into 18.
④ From those 18 country/region column distributions, we sorted out the Japanese accounts and integrated them with common sectors.
⑤ The sorted Japanese accounts were respectively divided in proportion to the share structure of the "Imports-from-Japan matrix" which we established in (4). Thus, we established "the Customs duties matrix for imports from Japan."
⑥ Out of the 18 column distributions of accounts, which we established in ③, the 17 other than Japan's were combined into one, to establish a column distribution of customs duties for ROW.
⑦ This column distribution of customs duties for ROW was further sorted in proportion to the share structure of the "Imports-from-ROW matrix," to establish the "Customs duties matrix for imports from ROW."
⑧ Column totals of the "Customs duties matrix for imports from Japan," established in ⑤, constitute row accounts of the "Customs duties for imports from Japan." Similarly, the column totals of the "Customs duties matrix for imports from ROW," established in ⑦, constitute row account of the "Customs duties for imports from ROW."

(9) Establishing accounts of exports to ROW

① We compiled column accounts of exports to 18 countries and regions including Japan, from the U.S. trade statistics (exports), by referring to the HS-IO conversion table.
② We compiled a table of margin rates from the table of margins on exports in the U.S. Table.
③ This table of margin rates made it possible to identify consumer prices, where all distribution margins were deducted from column accounts of exports to the 18 countries/regions, which we compiled in ①. Those deducted distribution margins were respectively counted in corresponding distribution sectors.
④ Accounts of exports (ordinary trade) in the U.S. Table were divided into 18, in proportion to the share structure of the producer price-based exports for 18 countries and regions respectively, which we identified in ③.
⑤ The resulting 18 column distributions of accounts by country/region, when compiled under the common classification, constitute column accounts of exports for 18 countries and regions, which is attached hereto as a supplementary table. Then, the Japan account was deducted from this, and the remaining 17 column distributions of accounts were combined into one distribution, to establish the accounts of "Exports to ROW (ordinary trade)."

[Establishing the accounts of non-ordinary trade]

⑥ Accounts of "Exports to Japan (non-ordinary trade)" were compiled from the accounts of "Non-ordinary trade (exports)" in the U.S. Table as well as from the ratio of the U.S. to Japan total export value in the U.S. BOP. Those compiled accounts show the same share structure as that of the adjustments-reflected accounts of the INFORUM Table (non-ordinary trade: exports), although the total value between the two is different.

⑦ The accounts of exports to Japan (non-ordinary trade) compiled in ⑥ were deducted from the adjustments-reflected accounts of the INFORUM Table (non-ordinary trade: exports), to establish the accounts of "Exports to ROW (non-ordinary trade)."

7. Compilation of "balancing item" and balancing

When making the 2000 Japan-US I-O Standard Classification, we estimated Japanese imports from the US based on Japanese import statistics and estimated US exports to Japan based on US export statistics. In addition, we estimated US imports from Japan based on US import statistics and estimated Japanese exports to the US based on Japanese export statistics. As a result, even after the adjustment of sea freight charges and insurance, there arose a statistical error where the imports and exports of Japan were not equal to those of the US. We included the error as "balancing item."

The statistical error was caused by not only a time lag between the export statistics of the exporting country and the import statistics of the importing countries but also reasons other than those concerning the Japan-US table: difference in range of commodities included in the Japan-US common sector classification, and incomplete correspondence of the I-O table and the trade statistics between Japan and the US.

When compiling the Japan-US table, we used various processes. As a result, some sectors' balances were lost because of rounding-off, though the rows and columns of the original I-O tables of Japan and the US were balanced. Necessary adjustments to balance the table were also included in the "balancing item."

From the viewpoint of the producing country, the "balancing item" corresponds to the "export to ROW" calculated by subtracting domestic demand and exports to the other country from gross output. Therefore we regarded the "balancing item" as an export. If the value of the "balancing item" is positive, it is added to the "export to ROW"; if negative, it is subtracted from the "export to ROW."

As described above, the "balancing item" mainly shows a discrepancy in the trade between Japan and the US, thus its value may be negative. The production inducement value is calculated by multiplying the Leontief inverse matrix by demand. Unless the final demand includes the balancing item, the production inducement value will be inconsistent with gross output in the Japan-US Table. Considering the above, we put the balancing item before the final demand of each country in the tables of results of various analyses in the statistics part of this report. Therefore, attention should be paid to dealing with the balancing item when conducting equation output analysis by integrating final demand items.

8. Supplementary Tables

Since the 2000 Japan-US I-O Standard Classification is a bilateral table, analysis of mutual influence covers only Japan and the US. In order to analyze import and export by chief country or region, we made supplementary tables containing export-import vectors of Japan and the US covering 18 countries and regions.

① Export from Japan (ordinary trade)
② Export from Japan (non-ordinary trade)
③ Export from the US (ordinary trade)
④ Export from the US (non-ordinary trade)
⑤ Import to Japan (ordinary trade)
⑥ Import to Japan (non-ordinary trade)
⑦ Import to Japan (customs duties)
⑧ Import to the US (ordinary trade)
⑨ Import to the US (non-ordinary trade)
⑩ Import to the US (customs duties)

9. Input into the same sector

The output in the I-O table is calculated by adding up output of commodities simply. If a commodity is used for a raw material or a part of another commodity, the output of the commodity is counted twice, For example, the output of tires used for automobiles is counted twice as the output of tires and as part of the output of cars.

This double counting happens even within a sector. The degree depends on what statistics are used as the basis for the I-O table. For example, the automobile industry undertakes various production activities such as car assembling, and manufacturing of bodies, engines and electric parts. When these activities are aggregated into one industry, the degree of the double counting depends on whether there are detailed statistics concerning each activity and how the output is added up.

To have a better understanding, assume that there are statistics on automobiles and engines. Half of all engines are manufactured by independent plants; the other half are manufactured by car assembly plants. Both types of engine are used for automobiles. If the statistics used are from Japan's Industrial Census, which surveys the shipping value of each plant, and in which output is calculated with the formula, [shipping value + inventory change], only half of all engines – those shipped from independent plants – are included in the output of engines, and the other half – those consumed by car assembly plants themselves – are not included in the output. On the other hand, if the statistics are Japan's Current Production Statistics, which cover commodities, and in which the output is calculated with the formula, [amount of production × unit shipping price in market], the output of engines includes consumption by car assembly plants.

The above-mentioned difference concerning the double counting of output is estimated to be too great to overlook when we compare the I-O tables of Japan and the US. Because the difference significantly affects input coefficients and the resulting inverse matrix coefficients, the difference necessitates some adjustments. Otherwise, it will be

impossible to analyze the tables of Japan and the US consistently.

In the 2000 Japan-US Table, the double counting of output appears only at the intersection of rows and columns of the same sector (hereinafter referred to as "input into the same sector"). Therefore, with regard to domestic transactions of domestic products, we adjusted the double counting by replacing the input into the same sector with zero at the stage of the most detailed Japan-US common sector classification.

As a result, the value equivalent to the "input into the same sector" is subtracted from the output of the corresponding row and column. Therefore, each country's output in the Japan-US I-O Table is smaller than that in the I-O table published officially by each government.

< Chapter 4 > Classification of The 2000 Japan-U.S. I-O Table

1. System of the section code

(1) Codes allocated to each other of the table

			Japan		U.S.			Japan				U.S.					
				Total of intermediate demand		Total of intermediate demand	Total of intermediate demand	Domestic FD	Exports to ROW		Total of FD	Domestic FD	Exports to ROW		Total of FD	Total amount of final demand	Value of domestic production
			011-001～011-175	011-200	021-011～021-175	021-200	031-500	043-001～043-006	043-007～043-011	043-012	043-013	053-001～053-006	053-007～053-011	053-012	053-013	063-500	099-700
Japan		0011-001 ～ 0011-175	Japan Domestic Products Table		Foreign Trade Sector (Japan→U.S.)					Adjustment category							
Japan	Total of intermediate input	0011-200															
U.S.		0021-001 ～ 0021-175	Foreign Trade Sector (U.S.→Japan)		U.S. Domestic Products Table									Adjustment category			
U.S.	Total of intermediate input	0021-200															
	Total of intermediate input (Japan & U.S.)	0021-500															
	Tariffs	0031-001															
	Transport cost & insurance	0031-002															
ROW		0041-001 ～ 0041-175	Exports to ROW (Japan)		Exports to ROW (U.S.)												
ROW	Total of intermediate demand	0041-200															
	Tariffs	0051-001															
	Total amount of intermediate input	0061-500															
	Value added	0072-001 ～ 0072-006	VA (Japan)		VA (U.S.)												
	Total of VA	0072-500															
	Value of domestic production	0099-700	Value of domestic production (Japan)		Value of domestic production (U.S.)												

(2) Column code

Column code		Name of sector		Remarks
Area code	Sector code			
011	001			(Note 1)
	～	[Japan]	Industries	Concerning 001～175 Sector name,
	175			see "<Chapter IV> 2. Classification
	200	[Japan]	Total of intermediate demand	of 2000 Japan-U.S. I-O table".
021	001			(Note 1)
	～	[U.S.]	Industries	Concerning 001～175 Sector name,
	175			see "<Chapter IV> 2. Classification
	200	[U.S.]	Total of intermediate demands	of 2000 Japan-U.S. I-O table".
031	500	[Both Countries]	Total of intermediate demands	
043	001	[Japan]	Private consumption expenditures	
	002	[Japan]	Government consumption expenditures	
	003	[Japan]	Gross private fixed investment	
	004	[Japan]	Gross public fixed investment	
	005	[Japan]	Change in inventories	
	006	[Japan]	Total of domestic final demands	
	007	[Japan]	Exports to ROW (ordinary trade)	(Note 2) (Note 3)
	008	[Japan]	Exports to ROW (special trade)	
	009	[Japan]	Exports to ROW (direct purchases)	
	010	[Japan]	Exports to ROW (non-ordinary) (008+009)	
	011	[Japan]	Total of exports to ROW (007+008+009)	
	012	[Japan]	Adjustments	
	200	[Japan]	Total of final demands	
053	001	[U.S.]	Private consumption expenditures	
	002	[U.S.]	Government consumption expenditures	
	003	[U.S.]	Gross private fixed investment	
	004	[U.S.]	Gross public fixed investment	
	005	[U.S.]	Change in inventories	
	006	[U.S.]	Total of domestic final demands	
	007	[U.S.]	Exports to ROW (ordinary trade)	(Note 2) (Note 3)
	008	[U.S.]	Exports to ROW (special trade)	
	009	[U.S.]	Exports to ROW (direct purchases)	
	010	[U.S.]	Exports to ROW (non-ordinary) (008+009)	
	011	[U.S.]	Total of exports to ROW (007+008+009)	
	012	[U.S.]	Adjustments	
	200	[U.S.]	Total of final demands	
063	500	[Both Countries]	Total amount of final demands	
099	700	[Countries]	Total of domestic productions	

(Note 1) Sector codes for Japanese and U.S. industries are shown as "001～054" and "001～027" in the 54 and 27 sector tables respectively. (see "<Chapter IV> 2. Classification of 2000 Japan-U.S. I-O table".)

(Note 2) ROW stands for "Rest of the world industry" which contains the whole world excluding Japan and the U.S.

(Note 3) See "<Chapter 4> 2. Classification of 2000 Japan-U.S. I-O table", concerning the final demand sector of 54 and 26 sector tables.

(3) ROW code

ROW code		Name of sectors		Remarks
Area code	Sector code			
0011	001			(Note 1)
	～	[Japan]	Industries	Concerning 001～175 Sector name,
	175			see "<Chapter IV> 2. Classification
	200	[Japan]	Total of intermediate input	of 2000 Japan-U.S. I-O table".
0021	001			(Note 1)
	～	[U.S.]	Industries	Concerning 001～175 Sector name,
	175			see "<Chapter IV> 2. Classification
	200	[U.S.]	Total of intermediate input	of 2000 Japan-U.S. I-O table".
	500	[Both countries]	Total of intermediate input (Japan & U.S.)	
0031	001	[Japan & U.S.]	Customs duties including commodity taxes on imported goods	Those on trade between tables.
	002	[Japan & U.S.]	International freight charge, insurance	〃
0041	001			(Note 1) (Note 2)
	～	(R.O.W)	Industries	Concerning 001～175 Sector name,
	175			see "<Chapter IV> 2. Classification
	200	(R.O.W)	Total of intermediate input	of 2000 Japan-U.S. I-O table".
0051	001	(R.O.W)	Customs duties including commodity taxes on imported goods	Those on imports from ROW.
0061	500	[Whole countries]	Total amount of intermediate input	
0072	001	[Countries]	Compensation for employees	
	002	[Countries]	Operating surplus	
	003	[Countries]	Depreciation of fixed capital	
	004	[Countries]	(Less) Current subsidies	(Note 3)
	005	[Countries]	Property-type income	
	006	[Countries]	Indirect taxes	
	500	[Countries]	Total of value added sector	
0099	700	[Countries]	Total of domestic productions	

(Note 1) Sector codes for Japanese and U.S. industries are shown as "001～054" and "001～027" in the 54 and 27 sector tables respectively. (see "<Chapter IV> 2. Classification of 2000 Japan-U.S. I-O table".)

(Note 2) ROW stands for "Rest of the world industry" which contains the whole world excluding Japan and the U.S.

(Note 3) See "<Chapter 4> 2. Classification of 2000 Japan-U.S. I-O table", concerning the value added sector of 54 and 26 sector tables.