島根大農研報 (Bull. Fac. Agr. Shimane Univ.) 24 : 204−211, 1990

TRENDS IN WOOD INDUSTRY OF JAPAN DURING 30 YEARS (PART I)

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この30年間における日本の木材工業の趨勢（I）

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This is the first of two parts of an article dealing with the Japanese wood industry during 30 years. The first part, after an introductory overview, discusses the wood industry in relation to other industries, trends in wood demand, sources and kinds of imported woods. The second concluding part deals with the Japanese wood industries, such as sawmill, wood furniture, chipmills, plywood, pulp and paper, laminated wood, flooring mills and wood industry industrial parks.

Japan demands on imports to fill two-thirds of its demand for wood. The main suppliers are Southeast Asia, North America, Siberia, and New Zealand. Since wood consumption is high because of extensive use of wood in building construction, this becomes a major factor on the world market for wood.

1. INTRODUCTION

In Japan, the entire wood industry consists of about 36,700 establishments and has about 305,000 employees. As compared to heavy industry (chemicals, iron and steel), the electronics industry, the wood industry is not very imposing. This is because it is largely made up of small units and has relatively simple processes of manufacture and technology. Another limitation is that government export policy does not include efforts to promote the export of wood products.

On the other hands, because of recent economic activity and the fact that wood and wood products are used frequently to build houses, the wood industry is making an important contribution to the domestic economy. Investment in housing stimulates demand for related products, and as a secondary effect, demand is created in other fields.

For example, the effective demand created in other sectors for each monetary

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unit of investment in construction of housing amounts to 0.384 unit in the same 3-month period (quarter) and to 0.239 unit in the following quarter. The initial investment has an economic influence that ranges widely into other sectors and continues for a fairly long time as shown in Table 1.

Among imports of principal commodities into Japan, wood and wood products rank fourth after petroleum, foodstuffs, and chemicals. Japanese wood imports amount to 50% of the world shipments of roundwood, which put Japan in first place as a wood importer among all the nations of the world. In Japan, as in other developed countries, almost all wood is used in manufacture, and very little is used as fuel.

Demand for wood in Japan increased continuously from 1955 to 1980, but the

Table 1. Impact of Direct Investment in Housing on Effective Demands in Other Sectors

Period	Direct investment in housing	Effective demand in other sectors
First quarter	1.00	0.384
cond quarter		0.293
Third quarter		0.262
Fourth quarter		0.186
Fifth quarter		0.163
Sixth quarter		0.147

Data from Daiich Kangyo Ginko of Japan(3)

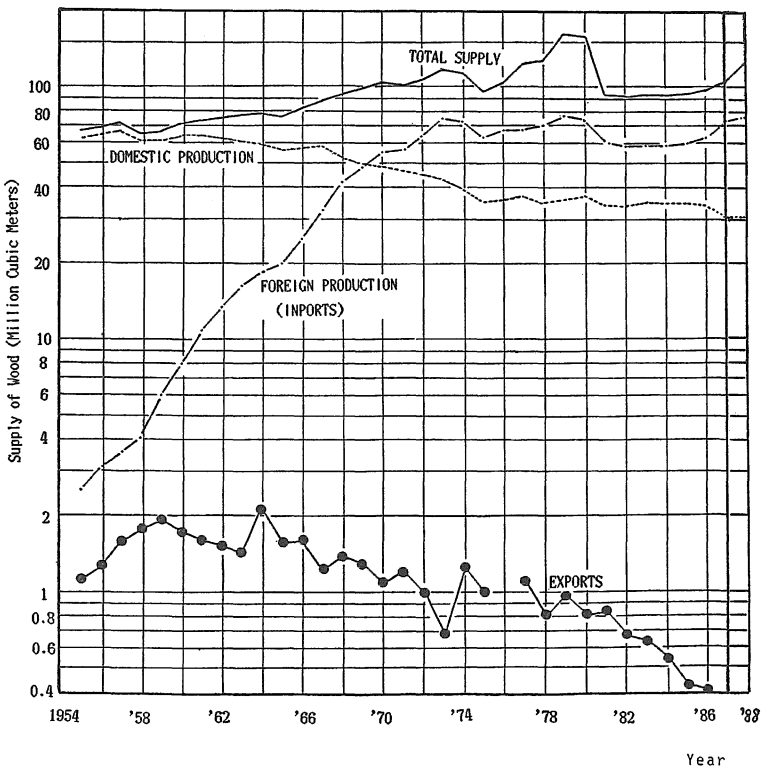

Figure 1. Supply of Wood and Wood Products in Japan

Table 2. Trends in Wood (Log and Lumber) Imported into Japan Unit 1000 m³

Year	1983	1984	1985	1986	1987	1988	1989	
North	11,864	11,659	12,759	13,692	16,792	16,490	18,580	Total
American	(8,428)	(8,393)	(9,193)	(9,767)	(11,601)	(10,689)	(11,910)	(Log)
Woods	[3,436]	[3,266]	[3,566]	[3,925]	[5,191]	[5,800]	[6,669]	[Lumber]
U. S. A.	9,115	8,528	9,209	10,165	12,106	12,084	13,968	
Canada	2,749	3,131	3,550	3,528	4,686	4,406	4,612	
South East	14,853	13,732	14,202	12,995	14,770	13,339	14,156	
Asia	(14,215)	(13,102)	(13,245)	(12,143)	(13,516)	(11,821)	(12,266)	
Woods	[639]	[631]	[957]	[851]	[1,255]	[1,519]	[1,735]	
Indonesia	2,475	1,739	656	487	664	807		
Malaysia	10,631	9,933	11,664	10,911	12,670	11,253		
Philippines	903	1,180	783	424	252	275		
Siberian	6,535	5,933	5,718	6,476	6,306	6,024	5,510	
Woods	(6,406)	(5,786)	(5,565)	(6,306)	(6,125)	(5,799)	(5,246)	
U. S. S. R.	[129]	[147]	[153]	[170]	[181]	[224]	[263]	

Table 3. Principal Exports and Imports of Japan

Exports		Imports	
226 billion U. S. dollars		160 billion U. S. dollars	
Iron and steel	5.8(%)	Crude petroleum	13.6(%)
Automobile	16.0	Foodstuff	15.6
Ships	1.5	Wood	3.8
Television	2.0	Coal	2.9
Fiber & textile	2.6	Chemicals	7.9
Nonmetallic minerals	1.4	Iron ore	1.6
		Gas, natural & manufactured	3.8

Data from Customs and Triff Bureau of 1988(2) one U. S. $ = 150 yen

market has been stagnant since 1981. The production of domestic wood has decreased, and thus the percentage of consumption filled by imports is now more than 70%. Foreign wood is imported mainly from Southeast Asia, North America, and Siberia, as shown in Figure 1 and Table 2.

2. THE WOOD INDUSTRY IN JAPAN

The composition of Japanese industry can probably best be shown by comparing its imports and exports (Table 3). Exports consist of industrial goods, in contrast, imports are foodstuffs and raw materials for industry. These patterns, namely the importing of raw materials and the exporting of industrial goods, determine the direction of national economic activities. As already noted, wood and wood products rank fourth in terms of the value of imports into Japan. In fact, the export of wood and wood products is below only 1% of the total wood supply.

The structure of Japanese industry may be said to consist of two strata. The uppermost is composed of the huge monopolistic enterprises. The wood industry formerly consisted almost entirely of relative poor, small-and mediumsize enterprises (except for the pulp and paper industry) but in the last 20 years, along with the

Table 4. Number of Establishments of Selected Industrial Groups in Japan 1985[a]

Industrial group	No. of establishments	Total No. employees (X 1000)	Sales (million $ U. S.)[b]	Annual income per person ($ U. S.)[b]	Establishments with under 30 employees (%)
Food and kindred products	80262	1071	138640	14958	91
Textiles	91106	720	56283	13381	96
Apparel and related products	50977	582	25455	10243	92
Lumber and wood products	36707	305	27775	14946	97
Furniture and fixture	41869	269	26413	14869	97
Pulp, paper and allied products	17039	287	49625	21181	89
Chemicals and allied products	6077	397	137195	30111	66
Petroleum and coal products	1176	38	86581	33421	89
Iron and steel	8794	392	118602	30709	84
Electric machinery, equipment, and supplies	42274	1843	272991	19930	78
Transport equipment	22614	976	241648	26790	85

[a] Data from Bureau of Statistics (1).
[b] Based on 1 U. S. dollar = 150 Yen

general enlargement of the Japanese industrial world, some relatively large-scale enterprises (with a capitalization of from 1 to 10 billion Yen) have come into existence. The wood industry is largely controlled by a group of huge general commercial establishments (trading corporations) that supply trading capital for both the supply of raw materials and marketing channels for manufactured goods. Accordingly, where there are huge enterprise such as in the automobile, iron and steel, pulp and paper, and electric machinary industries, markets are controlled by the manufacturers, but markets in the wood industry are controlled by the large trading corporations.

Data relating to size and scale of selected industries in Japan are shown in Table 4. In the lumber and fruniture industries, the average number fo worker per unit is very small; 74% of all firms employ fewer than 10 persons. This is near the mean for all Japanese industries. The processing technology (except for pulp, paper and fiberboard) is generally not very complex. The average annual wage was 14,946 U.S.$ in 1985, putting it among the lower group of light industries. In contrast the annual wage in the fields of petroleum and iron & steel was slightly more than twice as great.

Table 5 shows indices of gross product and value added over the last few years for the electric machinery, and some other typical major industries, for comparison with the wood industry. And also recently Japanese enterprises have some side job or treat some business, as shown in Table 6. Japanese enterprise goes to invest heavily of new mills in the area of North America, Europe, Asia, and Latain America. The amount of the investment attained about 8,000,000,000 U.S. dollars in 1987.

3. TRENDS IN WOOD DEMANDS

As shown in Figure 1, wood imports amounted to 10% of total supply in 1960, but

Table 5. Production Indexes of Selected Industries in Japan

Year	All Industries	Lumber & Wood Products	Pulp & Paper	Electric Machinery	Transportation Equipment
	Index of Gross Product				
1965	23	29	26	21	19
1970	54	62	54	68	49
1975	100	100	100	100	100
1980	168	151	161	205	169
1985	208	111	176	377	245
1986	200	107	171	381	237
	Index of Value Added				
1965	23	29	27	21	21
1970	58	65	58	71	54
1975	100	100	100	100	100
1980	168	151	148	201	155
1985	213	126	177	359	225
1986	211	128	189	355	200

Data from Bureau of Statistics of Japanese Government (1)

rose to more than 70% by 1988. In the roughly speaking, for three decades from 1954 to 1980, the total supply of wood in Japan about 2 or 3 times from 66 million m^3 to 100–150 million m^3. During this time the domestic wood supply decreased from 61 million m^3 to 35–37 million m^3, while wood importation increased about 30-fold from 2.5 million m^3 to 75 million m^3

The main consumption of wood and wood products in Japan thus shift from domestic to imported woods. The reasons for increased imports and decreased domestic production, together with the social and economic background, are summarized five reasons in next.

1) Due to a policy of economic expansion, investments in the public domain, in consumer durable goods, and in private housing were at high level in 1961 and 1962. This brought about a rapidly rising demand for wood, and the prise of Japanese softwoods increased greatly. Therefore, new policies for the promotion of logging of domestic wood and importation of roundwood, and for the expansion of port facilities to handle wood imports were undertaken. Restriction on the import of North American wood were lifted in 1962, and in 1965, the Japanese Ministry of International Trade and Industry extended permission for unresticted import of roundwood from all sources. Wood imports were accelerated because with increases in the price of domestic wood profits could be made on imported wood as well.

2) In the period from 1965 to 1970 the demand for wood, along with investments in equipment, increased at a steady pace. On the other hand, even though construction with materials other than wood was progressing, the construction of wood frame hausing was also increasing owing to the establishment of housing loans not previously available. The supply of domestic wood decreased in this period, but the supply of imported wood more than doubled in three years from 1965 to 1968. By

Table 6. Trends in the Imported Woods from South-East Asia

Year	1983	1984	1985	1986	1987	1988
Total	14, 853	13, 732	14, 202	12, 995	14, 770	13, 340
Philippines	903 (6. 1)	1, 180 (8. 6)	783 (5. 5)	424 (3. 3)	252 (1. 7)	275 (2. 1)
Malaysia	10, 631 (71. 5)	9, 933 (72. 3)	11, 664 (82. 1)	10, 991 (84. 6)	12, 670 (85. 8)	11, 253 (84. 4)
Indonesia	2, 475 (16. 7)	1, 739 (12. 7)	656 (4. 6)	487 (3. 7)	664 (4. 5)	807 (6. 0)
Others	844 (5. 7)	880 (6. 4)	1, 099 (7. 8)	1, 092 (8. 4)	1, 184 (8. 0)	1, 004 (7. 5)

From Japanese Ministry of Finace: Customs and Tariff Bureau (2) Unit 1000 m^3, ( ): %

1969 imported wood had come to constitute half of the total supply (Fig. 1).

3) Because of large-scale housing developments by public authorities and major private corporations, there was a change to large-scale trading units in the marketing of wood. From this a demand arose for standardization lumber of uniform quality. Domestic wood represent commodities of excellent value with respect to quality, color, tone, and familiarity for Japanese tastes. However, since the domestic roundwood trade is carried on in small-scale transactions operating on limited resources, there was no economic structure to meet the new demand for large-scale trading of a standardized commodity. Therefore the supply of imported roundwood and wood products gradually became of paramount importance.

4) There was a problem of price difference between domestic and foreign woods. For construction lumber, the price of SUGI-wood was higher by 20%, and the price of HINOKI-wood was twice that of US western hemlock. Accordingly, in order to reduce the unit building cost, combination of domestic and foreign wood came into use. There was also a tendency to increase the number of western style rooms in the traditional wood house because of changes in lifestyle. This caused a decrease in the demand for Japanese, knotfree, straight-grained finish lumber necessary for the Japanese traditional wooden house, and permitted greater inroads by imported wood into the Japanese market.

5) Imported wood generally had an advantage in commercial transactions, because consumers had confidence in the big trading corporations. Even at the manufacturing and distribution stages the trend to utilization of imported wood became accelerated.

The import trade in wood was carried on generally by the big general or specialized trading corporations, the roundwood wholesalers, and a few other entrepreneurs. The general trading corporations gained such monopolistic control because they inspired trust and confidence, they had the capital, the organization, and the ability to gather information. Also, they were able to afford the change to large-scale trading including use of ships specially constructed for roundwood, and they were able to withstand price fluctuations. In this way the big corporations, by providing a continuous and stable supply of imported timber, were able to gain systematic control, one by one, over the wholesalers of roundwood, over the secondary man-

Table 7. Trends in the Exported Hardwood Lumbers of Japan[5)]

Years	1983	1984	1985	1986	1987	1988
England	5,787 (950)	2,584 (549)	1,748 (411)	1,136 (242)	329 (78)	
Belgium	1,685 (327)	560 (131)	532 (132)	264 (64)	117 (27)	
Denmark	6,450 (733)	4,574 (693)	3,850 (632)	2,163 (347)	1,062 (172)	58 (11)
Sweden	1,121 (157)	318 (58)	81 (18)	181 (38)	19 (4)	22 (5)
Norway	757 (124)	522 (106)	344 (71)	393 (73)	340 (62)	
Holland	1,665 (201)	366 (58)	278 (39)	243 (30)	222 (23)	
Germany	4,405 (878)	4,360 (805)	5,550 (1,117)	6,621 (1,311)	4,472 (928)	122 (24)
Korea	1,154 (170)	811 (164)	876 (179)	290 (64)	183 (55)	11 (2)
Taiwan	8,075 (1,208)	7,683 (1,458)	3,129 (586)	5,198 (795)	4,933 (692)	179 (25)
Others	2,450 (356)	1,192 (308)	890 (194)	451 (109)	124 (32)	
Total	33,549 (5,104)	22,970 (4,330)	17,278 (3,379)	16,940 (3,073)	11,801 (2,073)	392 (76)

first line; volume, unit m^3: second line ( ); value, unit one million Yen,

ufacturing sector, and over the wholesalers of wood-base manufactured goods. Thus they exercised control in depth over the entire wood-distribution sector.

The discussion above gives the background that led to increased use of imported timber, but on the other hand, the demand for domestic timber continues to be firm, particularly for use in the construction of traditional wood homes. The demand for these is greater in the provincial cities and in the country than in the big cities. Accordingly, the production facilities for domestic wood have been established mainly in interior locations, while in contrast, the processing industry using imported wood is located in the coastal regions near ports.

4. IMPORTED WOODS AND EXPORTED WOODS

Wood is imported into Japan mainly from Southeast Asia, North America, Siberia, and New Zealand (Fig. 2). If countries exporting small quantities of wood to Japan are also considered, the total number of countries is about 70 and gradually expanding. The wood imported from Southeast Asia comes from the three countries of Malaysia, Indonesia, and Philippines (Table 6). The quantities of imported wood from Southeast Asia are differed by countries, And these were a most quantites from Philippines in 1950s, but almost imported wood from Southeast Asia has recently been coming from Malaysia. The 75 percent of imports from North America are from the U. S., and 25% from Canada in 1989 as shown in Table 2.

The wood and wood products exported from Japan are very fewer quantities than

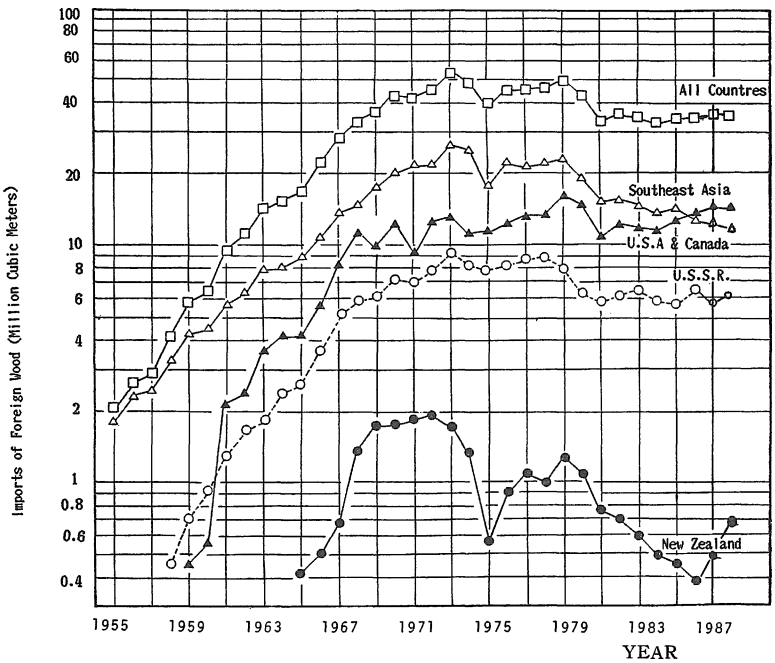

FIGURE 2. Trends in Wood Products Imported into Japan 1955–1988 (4)

the imported wood in Figure 1, and are decreasing year by year as shown in Table 7. The cause of the decreasing export of wood is expensive in international price and in YEN pressure.

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