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Historical Price Trends of Nonconiferous Tropical Logs and Sawnwood Imported to the United States, Europe, and Japan

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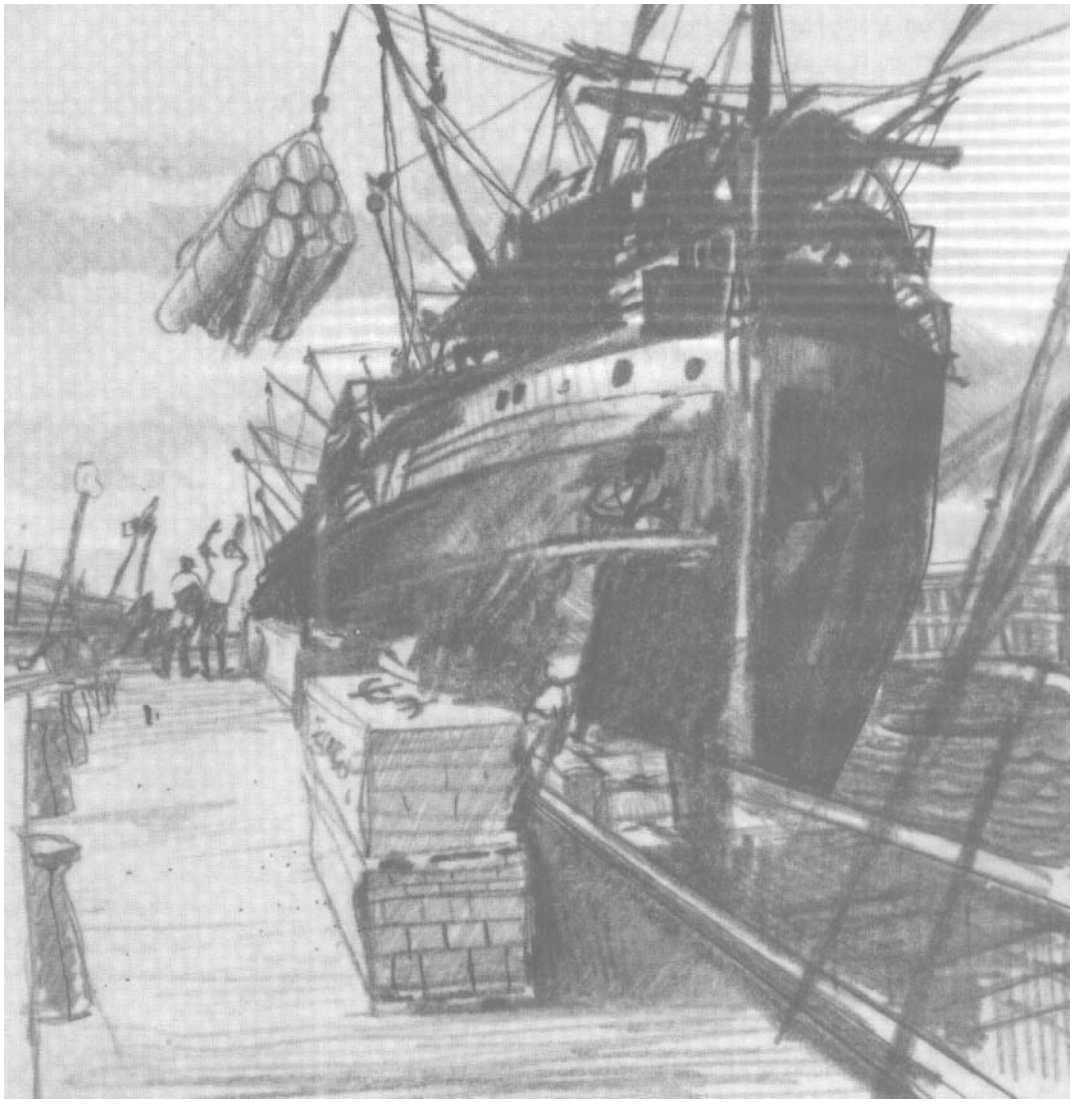

Abstract

This report reviews historical price trends of nonconiferous and tropical sawlogs and tropical sawnwood imports to several major consuming regions of the world. Data on real prices for imports from Africa, Asia, and Latin America to the United States, Europe, and Japan are presented as a reference for policymakers interested in the relative price movements of tropical wood products. The discussion includes an assessment of the data with particular emphasis on indications of economic scarcity evidenced by increasing real price trends. Average real prices of tropical logs doubled in the past 20 years with the majority of the increases occurring from 1970 to 1980. Tropical sawnwood prices increased more than log prices, except for imports to the United States. As a percentage of total hardwood imports to the United States, Europe, and Japan, nonconiferous tropical wood products decreased in every case except tropical log imports to Japan.

Keywords: Tropical logs, tropical sawnwood, real prices, consumption, United States, Europe, Japan

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Introduction

Tropical forests are rapidly disappearing as tropical countries develop the value-added sectors of their forest industries. However, world concern for conservation and global warming demands has increased preservation of forest resources (Sharma 1992). Increasing long-term real price (net of inflation or deflation) trends indicate that tropical forest resources (see Appendix A) may become economically scarce by the end of the 1990s.

Significantly increasing real price trends for tropical wood products are of concern to producers and consumers. Management strategies in producer countries are affected by the expected value of future harvests from extensive compared with intensive forestry (natural compared with plantation) and by the competition for forest land by alternative land uses. Primary tropical forest products, such as logs and sawnwood, have decreased in supply as producer countries exercise various export restrictions to protect resources and develop domestic industries (ITTO 1990).

As of 1990, only 4 of 16 major tropical timber producing countries continue to export tropical logs free of trade restrictions, including the Malaysian states of Sabah and Sarawak as separate trading "countries" (Table 1). Further, 10 of these countries impose trade barriers on rough sawn and kiln-dried lumber exports. Many of these impediments have occurred in the past decade when some developing countries began to rely more heavily upon their forest sectors for national economic development.

Increasing real prices of tropical wood products also affect markets in consuming countries. When supplies of unfinished tropical hardwood plywood become uncertain, demand for U.S. hardwood plywood increases (ITTC 1990). When additional Southeast Asian countries ban exports of sawlogs and veneer logs, Japan relies more heavily upon conifer logs for plywood processing (ITTO 1990). Also, assumptions regarding the degree of substitution between tropical and temperate wood products in forest-sector models must be reconsidered as real prices for tropical woods increase (Vincent and others 1991).

To observe the signs of significant price movements, this report reviews historical real price trends of nonconiferous tropical logs and sawnwood imports to the United States, selected countries in Europe, and Japan. This review provides information to policymakers and forest managers regarding forest sector and market activities. In addition, the report provides (a) an initial assessment of the data with particular consideration for price indications of the economic scarcity of tropical wood products and (b) indications of substitution, if any, between tropical and nontropical wood products in consumer countries.

Data Description

The price *data* for *this* report *are* from *the United Nations Commodity* Trade Statistics (United Nations 1969- 1989) series, which provides import and export quantities and U.S. dollar values for international trade in all commodities. Although wood products are not indicated as tropical, the detail of type of products and country of origin allows adequate distinction of the nonconiferous tropical wood products trade.

Table 1—Export restrictions of selected tropical timber exporting countries[a]

Location	Logs	Lumber: Rough sawnwood	Lumber: Rough kiln-dried	Lumber: Planed
Southeast Asia				
Philippines	B[b]	B	B	B[c]
Peninsula Malaysia	B	ET	ET	ET
Sabah	F	F	F	F
Sarawak	F	F	F	F
Indonesia	B	ET	ET	ET
Solomon islands	F	F	E[d]	F[e]
Papua New Guinea	F[f]	F	F	E[e]
Thailand	B	B	B	B
India	B	ET	ET	ET
Latin America				
Brazil	B	F	F	F
Bolivia	B	na	na	na
Ecuador	B	B	B	F
Africa				
ivory Coast	Q,ET	ET	ET	ET
Ghana	Q	F	F	F
Gabon	na	na	na	na
Cameroon	Q	na	na	na

a B - Banned; F - free of restrictions; ET - export tax; Q - export quota regulated by government, some species banned; na - not applicable (ITTO 1990). Table shows all timber-producing countries in Southeast Asia with significant exposure to Japan and only selected countries from Africa and Latin America.

[b] Except plantation logs mainly for pulpwood.

[c] Planed lumber 2 in. (51 mm) thick is banned.

[d] Export taxes are specified in source publication.

[e] No production of these products.

[f] Log exports were sharply restricted in 1992.

In the United Nation's data series, import quantities are expressed in cubic meters or metric tons. In this report, all quantities are converted to cubic meters based on the standard rates' of the United Nations Food and Agriculture Organization (FAO 1991). Prices are unit values calculated from the quantities and U.S. dollar values from the trade data, then weighted by import quantities from each producing country (or region where appropriate). All prices are adjusted to U.S. dollars by applying the U.S. Gross National Product (GNP) deflator for the corresponding year (International Monetary Fund 1988,1991).

[1] Conversion rates for nonconiferous sawlogs and sawnwood are 1.37 and 1.43 m^3/t, respectively.

Real prices in this report for nonconiferous sawlogs and sawnwood[2] imported to the United States, Europe,[3] and Japan from Africa, Asia, and Latin America were collected from 1969 through 1989 (21 years). Missing data are replaced with average prices from the preceding and following years. Data for consumption and trade are compared to these price trends for further analysis (FAO 1983,1990; ITTO 1989).

Tropical Timber Product Prices

The following highlights the changes in real prices for key importers of tropical wood products. Appendix B provides additional detail.

Tropical Logs

Real prices of nonconiferous tropical log imports to the United States, Europe, and Japan nearly doubled from 1969 to 1989 (Fig. 1), with the majority of the increase attributed to the higher than average prices in Europe during the first 10 years and in the United States during most of the last 10 years. Average real prices for tropical log imports to the United States increased substantially between 1972 and 1980, followed by a sharp decline until 1986. At this time, real prices returned to 1969 levels before increasing again in the latter part of the 1980s.

More than 90 percent of tropical log imports to Japan were from Asia in 1990 (FAO 1991); therefore, data for Africa and Latin America are not included in the discussion for Japan. Real prices for nonconiferous tropical log imports to Japan showed moderate net change from 1969 to 1989; the largest annual increase occurred between 1978 and 1979. A 5-year decline followed as real prices reached their lowest level in 1984. Although prices during the next 5 years increased, by 1989 real prices for nonconiferous tropical logs in Japan returned only to levels slightly higher than those in 1969.

Recent econometric studies show that countries face a single world price for imports or exports of some internationally traded commodities (Goodwin and others 1990, Pick and Park 1991, Buongiorno and Uusivuori 1992). Therefore, real price trends of tropical wood products may not differ significantly for imports from different producing regions. This theory seems to be supported by the real price trends of log imports to the United States from different exporting regions.

[2] Standard International Trade Classification (SITC) 247.5 for nonconiferous sawn and veneer logs, and SITC 248.4 for nonconiferous sawnwood; Revision 3 as of 1988.

[3] Data for Europe represent imports for France, Italy, and the United Kingdom.

Real prices for tropical logs imported to the United States from Africa, Asia, and Latin America followed similar trends and price levels from 1969 to 1989 (Fig. 2). Only the price of log imports from Asia diverged noticeably from the price of log imports for Africa and Latin America in 1970, 1972, 1978, 1980, and 1983. However, these differences may not be statistically significant overall.

Real prices for log imports to Europe were similar for Africa, Asia, and Latin America throughout most of the study period. Prices diverged noticeably only during 1974 to 1977 and 1986 to 1989. The lengthy physical distance between Europe's and Asia's markets may have produced a strong response to the reduction in the supply of tropical logs from Asia (for example, as a result of log export restrictions in the region after 1985). For instance, the volume of logs imported to France fell from approximately 50,400 to 2,500 m^3 between 1986 and 1987. However, the value of those shipments fell from US$9.3 to 1.6 x 10^6. In 1986, the volume of imports to France from Asia accounted for 88 percent of the total volume for Europe represented in these data. This drastic change in trade between France and Asia accounted for the sharp increase in prices for Europe after 1986 (Fig. 3).

Tropical Sawnwood

Average real prices of nonconiferous tropical sawnwood imports show variations in trends among importing regions similar to that of price trends for tropical log imports. The major difference among log import prices for the United States, Europe, and Japan occurred between 1979 and 1988 (Fig. 1). However, aggregate real prices for tropical sawnwood imports to these regions converged to nearly one price by 1989 (Fig. 4).

This trend is not entirely unexpected given that from 1969 to 1979 few tropical countries had well-developed sawnwood industries. Exports from tropical countries were predominantly sawlogs. As tropical timber resources diminished, the number of log suppliers decreased and prices became less stable. After 1980, many tropical countries increased their exports of sawnwood as forest industries expanded, therefore increasing price competition and approaching a "fixed" world price for tropical sawnwood producers and consumers in the late 1980s.

Twenty years ago, the price of tropical sawnwood imports to Europe was about 40 percent greater than that of imports to the United States and 40 percent less than those of Japan (Fig. 4). The price gap narrowed in 1973, mainly as a result of price increases in the United States. Between 1973 and 1979, prices increased at a faster rate for the United States than for Japan until 1978, when all importing regions had similar real price levels. However, after 1979, the price gap increased again. From 1982 to 1988, the United States faced higher real prices than did Europe and Japan. From 1969 to 1989, average real prices almost doubled for the United States, slightly increased for Europe, and slightly decreased for Japan.

The majority of the increase in real prices of tropical sawnwood imports to the United States can be attributed to the price of imports from Asia (Fig. 5). Real prices of nonconiferous tropical sawnwood imported from Asia were consistently greater than prices for African and Latin American imports from 1972 to 1989 (except for 1981, 1984, and 1987). In fact, the increase in real prices for Asian imports occurred almost entirely from 1973 to 1974. Prices in 1989 varied little from prices in 1974.

Real prices for tropical sawnwood imports to the United States from Africa were more than one and one-half times greater in 1987 than were prices in the early 1970s but declined substantially to near 1969 levels by 1989. From 1978 to 1989, prices fluctuated widely between approximately $200 and $400/$m^3$ (Fig. 5).

Real price trends of tropical sawnwood imported to Europe differed substantially by producer regions. In 1970, real prices for tropical sawnwood imports to Europe from Latin America were more than twice the average price for imports from Africa and Asia (Fig. 6). This gap remained quite substantial throughout the 21 years except for 1973 and 1979 to 1981. Price trends for African and Asian imports to Europe differed noticeably only between 1975 and 1978.

Real price trends of tropical sawnwood imported to Japan increased steadily from 1970 to 1978 (Fig. 4). The next 7 years showed declining real prices, which recovered again by 1989 to more than double the 1970 price levels.

Real Price Trends and Consumption Patterns

The substitution of one product for another in international markets is normally demonstrated through the statistical significance of cross-price elasticities developed from multivariate regressions of demand-supply models. A critical analysis of real price trends and product consumption patterns often provides some insight into areas of further theoretical econometric applications.

United States

The United States has little dependence on tropical log imports in the domestic hardwood log markets. Total hardwood log consumption in the United States changed little between 1969 and 1990, and the proportion of nonconiferous tropical log imports to apparent consumption

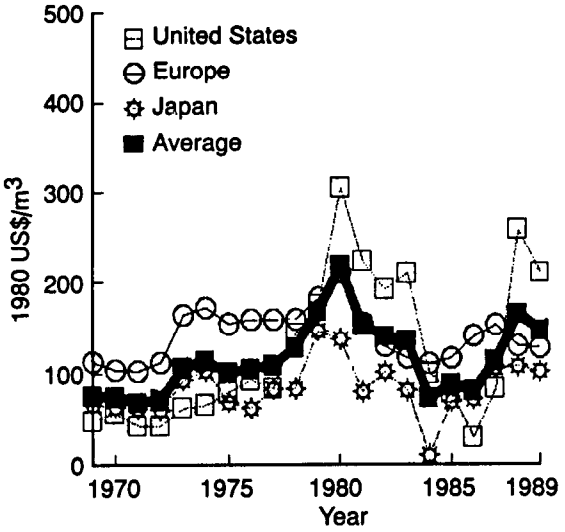

Figure 1-Real price trends of tropical logs imported to the United States, Europe, and Japan, from Africa, Asia, and Latin America.

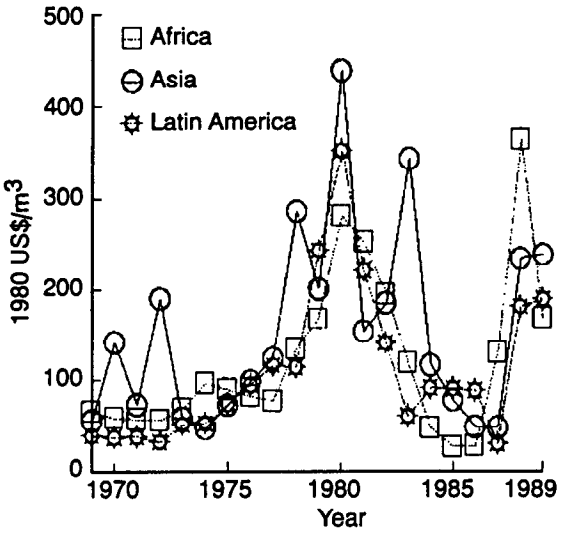

Figure 2—Real price trends of tropical logs imported to the United States from Africa, Asia, and Latin America.

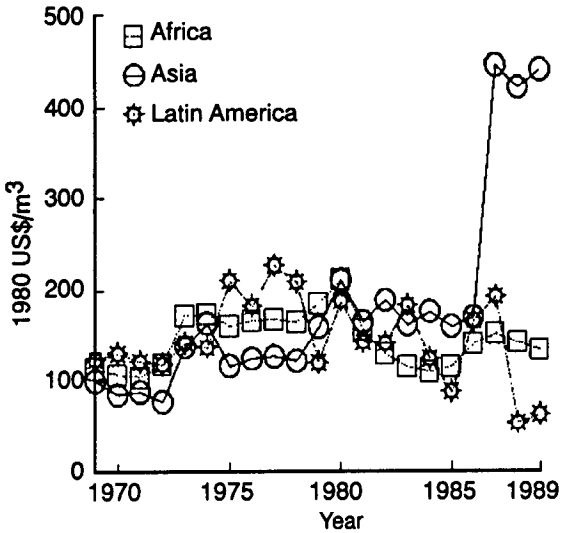

Figure 3—Real price trends of tropical logs imported to Europe from Africa, Asia, and Latin America.

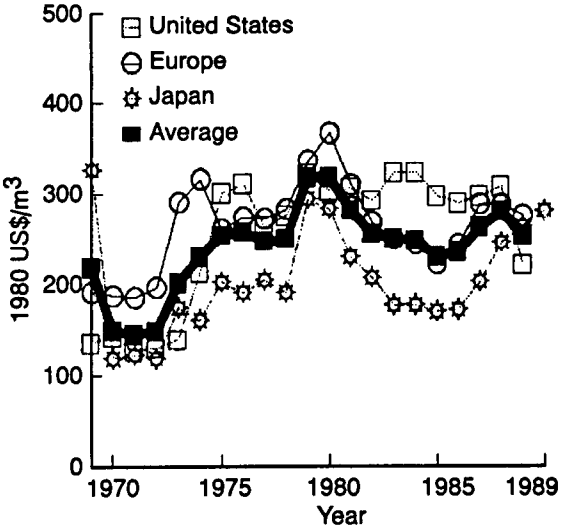

Figure 4—Real price trends of tropical sawnwood imported to the United States, Europe, and Japan, from Africa, Asia, and Latin America.

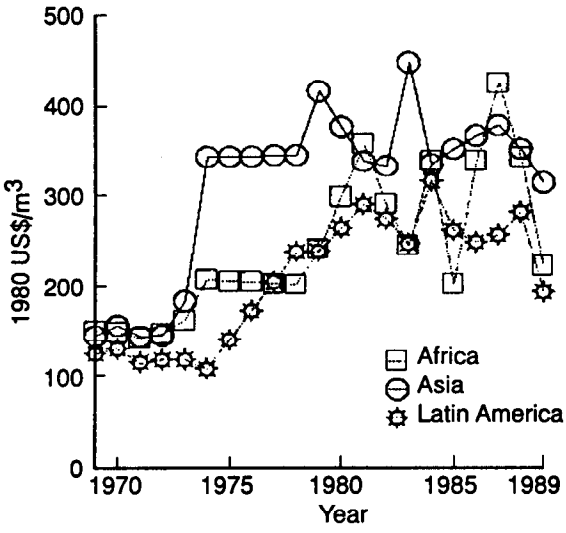

Figure 5—Real price trends of tropical sawnwood imported to the United States, from Africa, Asia, and Latin America.

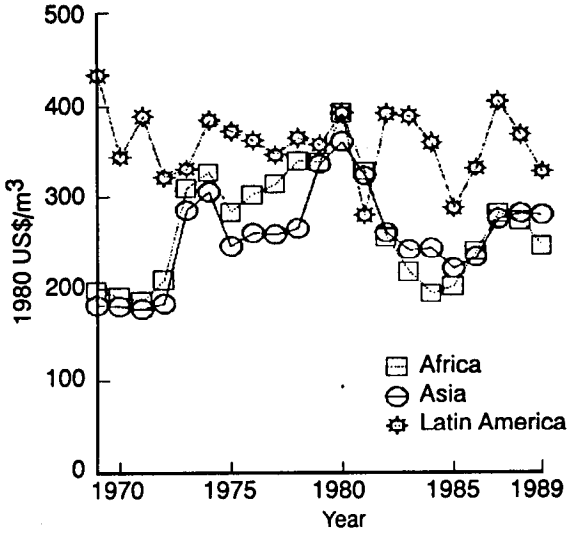

Figure 6—Real price trends of tropical sawnwood imported to Europe from Africa, Asia, and Latin America.

Table 2—Real prices, production, consumption, imports, and exports of nonconiferous logs and sawnwood for the United States[a]

	1970	1980	1990	Percentage change
Nonconiferous logs				
Average 1980 US$/$m^3$ for tropical imports[b]	57	304	209[c]	267
Tropical imports (x10^3 m^3)	132	5	12	-91
As a percentage of apparent consumption	neg[d]	neg	neg	
As a percentage of total imports	77	8	26	
Total production (x 10^3 m^3)	34,551	37,241	35,000	1
Total imports (x10^3 m^3)	172	81	46	-73
Total exports (x10^3 m^3)	312	688	994	219
Apparent consumption (x10^3 m^3)	34,411	36,614	34,052	-1
Nonconiferous sawnwood				
Average 1980 US$/m3 for tropical imports[b]	143	304	220[c]	54
Tropical imports (x10^3 m^3)	420	233	40	-90
As a percentage of apparent consumption	2	1	neg	
As a percentage of total imports	53	35	2	
Total production (x10^3 m^3)	18,846	17,221	17,322	3
Total imports (x10^3 m^3)	792	675	1,930	144
Total exports (x10^3 m^3)	279	885	1,930	592
Apparent consumption (x10^3 m^3)	17,359	17,011	17,322	neg

[a]FAO 1983,1990; ITTO 1989.
[b]See Appenidx B.
[c]1989 data.
[d]neg is less than half of 1 percent.

of all nonconiferous logs was negligible. Although the quantity of tropical log imports decreased about 91 percent from 1970 to 1990 (Table 2), the actual decrease was only 120,000 m^3, barely 1 percent of the tropical log import levels for Japan in 1990.

The percentage of tropical log imports in all hardwood log imports declined substantially from 77 percent in 1970 to 26 percent in 1990. Nevertheless, this decrease in tropical log imports accounted for the majority of the 73 percent reduction in total nonconiferous log imports to the United States between 1970 and 1990.

In addition to decreasing demand for tropical logs in the United States, total hardwood exports increased by more than 200 percent, while real prices for tropical logs increased by more than 250 percent. The higher tropical log prices may have indicated scarcities in some domestic and international markets to which U.S. temperate species responded.

From 1970 to 1990, nonconiferous tropical sawnwood imports in the United States changed similarly to nonconiferous tropical log imports (Table 2). Tropical sawnwood imports decreased by 90 percent from 1970 to 1990 and prices increased by 54 percent. At the same time, U.S. exports of nonconiferous sawnwood increased dramatically by almost 600 percent. Although the exact reason for this increase cannot be determined from this data analysis, increasing real prices for tropical sawnwood in other consuming regions may indicate economic scarcities that provided opportunities for increased exports of U.S. lumber products. United States exports may have been capitalizing on increased world prices for nonconiferous lumber by increasing their market share in other consuming markets such as Europe and Japan, whose import levels are increasing (Tables 3 and 4).

Overall consumption of U.S. nonconiferous sawnwood changed little from 1970 to 1990. However, nonconiferous tropical sawnwood imports as a percentage of apparent consumption of total nonconiferous sawnwood in the United States decreased to negligible amounts, while also decreasing from 53 to 2 percent as a percentage of total imports. Such sharp declines allowed for increased production of domestic hardwoods in the United States as well as increased imports of nontropical sawnwood.

Table 3—Real prices, production, consumption, imports, and exports of nonconiferous logs and sawnwood for Europe[a]

	1970	1980	1990	Percentage change
Nonconiferous logs[b]				
Average 1980 US$/$m^3$ for tropical imports[c]	104	210	127[d]	22
Tropical imports (x10^3 m^3)	5,145	4,673	2,279	-58
As a percentage of apparent consumption	24	22	11	
As a percentage of total imports	85	68	36	
Total production (x10^3 m^3)	18,312	15,355	16,626	2
Total imports (x10^3 m^3)	6,047	6,910	6,356	5
Total exports (x10^3 m^3)	881	1,045	2,287	160
Apparent consumption (x10^3 m^3)	21,478	21,220	20,695	-4
Nonconiferous sawnwood[e]				
Average 1980 US$/$m^3$ for tropical imports[c]	188	368	276[d]	47
Tropical imports (x10^3 m^3)	1,212	2,415	1,815	50
As a percentage of apparent consumption	12	20	17	
As a percentage of total imports	44	49	33	
Total production (x10^3 m^3)	8,412	8,386	6,429	-24
Total imports (x10^3 m^3)	2,769	4,884	5,505	99
Total exports (x10^3 m^3)	661	1,150	1,422	115
Apparent consumption (x10^3 m^3)	10,520	12,120	10,512	neg[f]

[a]FAO 1983,1990; ITTO 1989.
[b]Average for Italy, Spain, France, former German Federal Republic, and Portugal.
[c]See Appendix B.
[d]1989 data.
[e]Average for Belgium-Luxembourg, Italy, France, former German Federal Republic, the Netherlands, and the United Kingdom.
[f]neg is less than half of 1 percent.

Europe

From 1970 to 1990, Europe's overall increase in real prices for tropical log imports (22 percent) was accompanied by a substantial decrease (56 percent) in quantity of imports (Table 3). Total consumption levels of nonconiferous logs in Europe changed little (slight decrease of 4 percent), while tropical log imports as a percentage of consumption decreased from 24 to 11 percent.

Tropical logs as a percentage of total nonconiferous log imports into Europe declined about 50 percentage points from 1970 to 1990, indicating possible substitution opportunities for nontropical hardwoods from other suppliers (Table 3).

The change in apparent consumption of nonconiferous sawnwood in Europe was negligible from 1970 to 1990 (Table 3). Total imports and exports increased 99 percent and 115 percent, respectively, while domestic production decreased 24 percent.

Tropical lumber imports as a percentage of apparent consumption actually increased from 1970 to 1980 but decreased slightly to 17 percent in 1990. Although the quantity of tropical sawnwood imports increased from 1.2 to 1.8 x 10^6 m^3, tropical lumber as a percentage of total imports decreased from 44 percent in 1970 to 33 percent in 1990. In other words, while Europe's import market for nonconiferous sawnwood expanded, the role of tropical sawnwood declined as real prices increased by 47 percent.

Table 4—Real prices, production, consumption, imports, and exports of nonconiferous logs and sawnwood for Japan[a]

	1970	1980	1990	Percentage change
Nonconiferous logs				
Average 1980 US$/$m^3$ for tropical imports[b]	64	137	101[c]	58
Tropical imports (x10^3 m^3)	19,785	19,088	11,437	-42
As a percentage of apparent consumption	77	83	92	
As a percentage of total imports	100	99	111[d]	
Total production (x10^3 m^3)	5,910	3,705	2,063	-85
Total imports (x10^3 m^3)	19,851	19,202	10,320	-48
Total exports (x10^3 m^3)	5	1	0	-100
Apparent consumption (x10^3 m^3)	25,756	22,906	12,383	-52
Nonconiferous sawnwood				
Average 1980 US$/$m^3$ for tropical imports[b]	119	284	264[c]	122
Tropical imports (x10^3 m^3)	278	512	1,005	262
As a percentage of apparent consumption	3	7	20	
As a percentage of total imports	91	92	60	
Total production (x10^3 m^3)	9,827	7,015	3,336	-66
Total imports (x10^3 m^3)	306	555	1,669	445
Total exports (x10^3 m^3)	104	47	23	-77
Apparent consumption (x10^3 m^3)	10,033	7,523	4,982	-50

[a]FAO 1983, 1990; ITTO 1989.
[b]See Appendix B.
[c]1989 data.
[d]Inconsistency caused by difference in reports of importers and exporters (FAO 1990).

Japan

The changes in the level of imports for primary tropical wood products in Japan differed from those in the United States and Europe from 1970 to 1990. The presence of nonconiferous tropical logs and sawnwood in Japan expanded as a proportion of the consumption of these hardwood products. Real prices for logs did not increase as significantly as did prices in the United States, while prices for sawnwood increased more than in other importing regions.

From 1970 to 1980, average real prices of nonconiferous tropical logs imported to Japan increased from \$64/m^3 (again, only for imports from Asia) to \$ 137/m^3 and in 1970 decreased to \$101/m^3 (Table 4). The increase in real prices from 1970 to 1990 was 58 percent compared to increases of 267 percent in the United States (Table 2) and 22 percent in Europe (Table 3).

Although quantities of nonconiferous tropical logs imported to Japan decreased by 42 percent, tropical log imports as a percentage of total nonconiferous log consumption increased by 15 percentage points from 1970 to 1990. Total production, imports, and consumption of nonconiferous logs declined by not less than 48 percent each, yet tropical log imports consistently accounted for about 100 percent of nonconiferous imports. Substitution opportunities for nontropical nonconiferous logs seem unlikely in Japan. At the same time, market opportunities for temperate coniferous sawlogs may exist as tropical log prices increase (Vincent and others 1991).

Nonconiferous sawnwood markets in Japan show some substitution possibilities. Real prices of tropical imports increased by 122 percent from 1970 to 1990 (Table 4), more than double the increase experienced by the United States and Europe. As production and consumption decreased, total imports of nonconiferous sawnwood increased from about 3×10^5 m^3 in 1970 to more than 1.6×10^6 m^3 in 1990, an increase of 445 percent.

Although tropical sawnwood accounted for about 60 percent of the total hardwood sawnwood imported to Japan in 1990, the tropical sawnwood share decreased from 91 percent in 1970. This 30-percent decrease, which occurred during a period of increasing imports but decreasing consumption, highlights an area for future studies of possible substitution between tropical and temperate sawnwood.

Conclusions

Average real prices of nonconiferous tropical saw logs imported to the United States, Europe, and Japan increased substantially from 1969 to 1989. The majority of the incresses occurred from 1970 to 1980 when prices diverged considerably. Yet, all three of these importers have faced increasing long-term real prices for tropical logs.

Prices for tropical log imports to the United States were 267 percent higher in 1989 than in 1969. This compared to increases of 58 and 22 percent in Japan and Europe, respectively. All three importing regions faced their greatest price levels in 1980.

Economic scarcities of tropical sawnwood are suggested by increasing real prices in major importing regions. Average real prices for tropical sawnwood imports have increased in all three importing regions but less than tropical log prices in the United States. Tropical sawnwood prices actually decreased slightly from 1987 to 1989.

Compared to Japan, the United States and Europe have faced lower price increases for sawnwood imports from Asia. From 1969 to 1989, real prices for tropical sawnwood imported to Japan increased 122 percent compared to only 54 and 47 percent for the United States and Europe, respectively.

In addition to long-term increases in real prices for primary tropical wood products, changing consumption patterns provide some insight into market opportunities for importing regions. Increasing real prices for tropical logs have been accompanied by a substantial reduction in the role of tropical imports in domestic consumption of hardwood logs for the United States and Europe and hardwood lumber for the United States. Nonconiferous tropical wood products as a percentage of total hardwood imports in the three importing regions have decreased in every case except tropical log imports to Japan.

Nonconiferous log markets in Japan show few opportunities for substitution by domestic or foreign temperate species. Tropical log imports maintained almost a 100-percent share of total hardwood log imports from 1970 to 1990, while total imports and tropical imports decreased by 48 and 42 percent, respectively.

The data in this report are useful to determine areas of further study of specific product markets in importing regions. The degree to which substitution is occurring for specific commodities in hardwood log and lumber markets can be determined by further econometric analysis.

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Appendix A-Common and Scientific Names

The following is a listing of major groups and individual species of some frequently traded tropical timbers by region (Chudnoff 1984, FAO 1989, Borota 1991).

Region	Species group	Common	Scientific
Africa	Okume/Azobe	Acajou d'Afrique	*Khaya* spp.
		Iroko	*Chlorophora excelsa*
		Makore	*Dumoria* spp.
		Obeche	*Triplochiton scleroxylon*
		Okume	*Aucoumea klaineana*
		Sapelli	*Entandrophragma cyclindricum*
		Sipo	*Entandrophragma utile*
	Tiama/Azobe	Azobe	*Lophira alata*
		Dibetou	*Lovoa trichilioides*
		Ilomba	*Pycnanthus angolensis*
		Limba	*Terminalia superba*
		Mansonia	*Mansonia altissima*
		Tiama	*Entandrophragma angolensis*
Asia			
	Red Meranti	Red meranti	*Shorea* spp.
		Meranti bakau	*Shorea* spp.
	White Lauan/Alan	White lauan	*Parashorea* spp.
		White meranti	*Shorea* spp.
		White seraya	*Pentacme* spp.
		Yellow meranti	*Shorea* spp.
		Alan	*Shorea albida*
	Keruing/Kempas	Keruing	*Dipterocarpus* spp.
		Ramin	*Gonystylus* spp.
		Kapur	*Drylobalanops* spp.
		Teak	*Tectona grandis*
		Merbau	*Afzelia xylocarpa*
South America			
	Baboen/Balsa	Baboen	*Virola* spp.
		Mahogany	*Swietenia* spp.
		Imbuia	*Phoebe porosa*
		Balsa	*Ochroma lagopus*
Other		Palissandre do Brazil	*Dalbergia nigra*
		Bois de rose femelle	*Aniba rosaeodora*

Appendix B-Real Price Data From 1969 to 1989

Real price data of nonconiferous tropical logs and sawnwood imported to the United States, Europe, and Japan are found in the following tables.

Table 5—Real prices of nonconiferous tropical logs and sawnwood Imports from 1969 to 1978[a]

Imported			1980 prices by year (US$/m^3)									
Type	To	From	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Logs	United States		49	57	43	43	63	66	80	93	84	143
		Africa	66	59	58	57	69	97	90	83	77	134
		Asia	56	142	74	190	59	48	73	99	124	286
		Latin America	40	38	39	33	52	53	74	95	116	114
	Europe		113	104	103	112	164	172	154	159	159	159
		Africa	114	107	105	118	172	174	160	166	167	164
		Asia	101	86	89	78	137	163	116	124	126	121
		Latin America	124	130	121	118	141	136	209	181	225	207
	Japan											
		Asia	66	64	62	60	93	103	69	62	83	83
Sawnwood	United States		136	143	128	131	140	213	302	312	265	277
		Africa	149	148	141	146	161	206	204	203	201	200
		Asia	144	155	143	144	182	343	343	343	344	344
		Latin America	124	129	114	117	117	107	139	171	203	236
	Europe		192	188	186	197	292	317	262	275	274	284
		Africa	198	191	187	209	309	327	283	302	313	340
		Asia	182	181	178	184	285	305	246	260	258	265
		Latin America	434	345	389	321	331	385	373	363	347	365
	Japan											
		Asia	328	119	123	119	175	161	203	191	205	191

[a]United Nations 1969-1989; average prices are weighted by quantity of imports.

Table 6—Real prices of nonconiferous tropical logs and sawnwood Imports from 1979 to 1989[a]

Imported			1980 Real prices by year (US$/m^3)										
Type	To	From	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Logs	United States		175	304	222	191	209	99	78	30	83	257	209
		Africa	167	281	252	194	119	48	27	28	129	363	167
		Asia	200	439	153	184	342	116	78	49	48	233	237
		Latin America	242	351	220	140	60	91	90	88	30	180	188
	Europe		182	210	155	129	116	110	116	140	152	129	127
		Africa	184	210	155	128	114	109	114	139	150	140	132
		Asia	158	209	164	187	160	174	158	168	444	419	439
		Latin America	119	186	141	140	181	122	87	164	190	53	62
	Japan												
		Asia	146	137	80	101	81	10	69	71	105	107	101
Sawnwood	United States		323	304	307	293	324	324	298	290	298	308	220
		Africa	239	298	357	289	243	337	200	337	425	341	220
		Asia	416	376	337	332	447	334	351	366	377	351	313
		Latin America	237	263	289	273	246	315	260	247	255	280	191
	Europe		338	368	311	269	250	244	222	244	289	288	276
		Africa	339	392	328	255	217	194	202	240	281	273	245
		Asia	336	361	323	260	241	243	221	233	275	281	279
		Latin America	358	392	279	391	388	360	287	331	404	368	327
	Japan												
		Asia	295	284	230	207	177	177	170	172	202	246	264

[a]United Nations 1979-1969; average prices are weighted by quantity of imports.

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