

Forest Service

Southern Forest Experiment Station

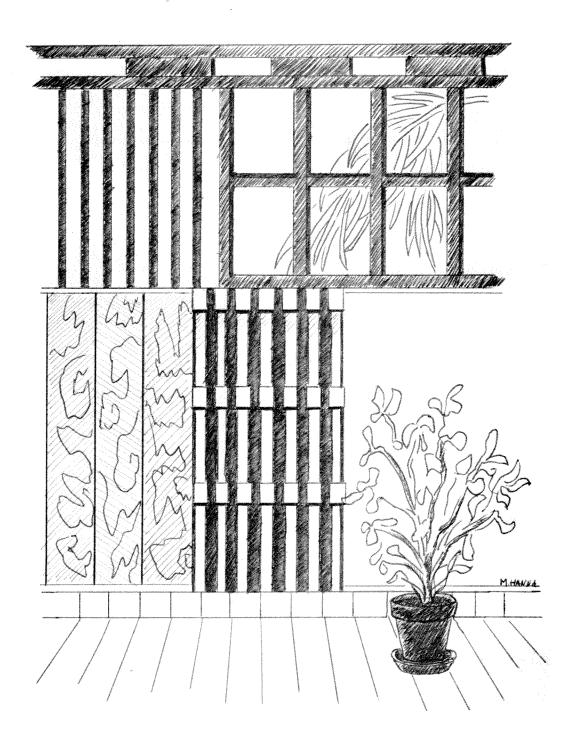
New Orleans, Louisiana

Research Paper SO-201 December, 1983



Wood Shipments to Puerto Rico

Harold W. Wisdom, James E. Granskog and Keith A. Blatner



SUMMARY

Puerto Rico's importance as an offshore market for U.S. wood products is often overlooked. Because of Puerto Rico's unique Commonwealth status, trade flows between the United States and Puerto Rico are recorded separately and are not counted in the U.S. foreign trade statistics. In 1981, wood product shipments from the United States to Puerto Rico totaled more than \$61 million. Softwood plywood and lumber, primarily southern pine, accounted for more than one-half of the total value.

CONTENTS

1	Page
INTRODUCTION	Ĭ
BACKGROUND	. 1
WOOD USE	
U.S. SHIPMENTS.	. 2
Roundwood	. 2
Lumber	
Wood Panels	. 3
Miscellaneous Manufactured Products	. 4
FOREIGN SOURCES	. 5
Lumber	. 5
Plywood	
DISCUSSION	
LITERATURE CITED	. 7
APPENDIX: Statistics on Wood Product Shipments from	
the United States to Puerto Rico, 1971 – 1981.	9

Wood Shipments To Puerto Rico

Harold W. Wisdom, James E. Granskog and Keith A. Blatner

INTRODUCTION

The Commonwealth of Puerto Rico enjoys a unique political relationship with the United States. As a "freely associated state," it has unrestricted access to the U.S. market. Goods flow freely between the island and the mainland, although certain goods entering Puerto Rico may be subject to Puerto Rico's excise taxes (e.g., automobiles).

The special political arrangement between Puerto Rico and the United States creates confusion in reporting trade between the two political units. U.S. export statistics include exports from Puerto Rico to foreign countries. That is, Puerto Rico is treated merely as one more U.S. customs district, and exports from Puerto Rico are counted as part of total U.S. exports. Trade flows between the United States and Puerto Rico, recorded separately, are not counted in the U.S. foreign trade statistics, since Puerto Rico is not a foreign country.

However, the reality that Puerto Rico is an island, dependent on ocean shipping for much of its needs, distinguishes its market from that of the continental states. Rather than as a region within the U.S. economy, Puerto Rico is perhaps more associated with exporting by mainland wood shippers. But because shipments to Puerto Rico are not listed among export statistics, its importance as an offshore market—particularly for the southern forest products industry—can be overlooked.

This report describes wood product shipments from the United States to Puerto Rico. Data sources were unpublished microfiche copies and computer tapes of the Bureau of Census report EA 694, "U.S. Trade with Puerto Rico and the U.S. Virgin Islands," and selected issues of the Puerto Rico Planning Board annual report, "Puerto Rico External Trade Statistics."

BACKGROUND

Although Puerto Rico originally was largely forested with tropical species containing high quality timber, its harvesting and processing of timber products in significant quantities ceased long ago. Clearing of privately owned lands for agriculture and the removal of timber from public lands early in this century left timber harvesting a marginal economic activity in Puerto Rico. By the 1940's, the natural forest area of Puerto Rico had declined to 6 percent of the land area (Birdsey and Weaver 1982).

To encourage economic development and to reduce dependence on agriculture, Puerto Rico began to promote rapid industrialization in the late 1940's. The inability of wood products manufacturing to compete with new industries caused further decline of wood processing on the island. Fuelwood was replaced first by kerosene and later by electrical energy. Mass importation of furniture, beginning in the 1950's, almost eliminated what was formerly an important industry, the manufacture of furniture from local and other tropical woods. Rural workers migrated to the towns and cities to find jobs in the rapidly expanding industrial sector and wage rates increased rapidly. The remaining furniture and millwork industry modernized its equipment, making it intolerant of domestic lumber produced on crude mills with low quality control standards. A shift to concrete housing and the trend toward modern furniture styles further limited the market for domestic production. Increasingly, imported plywood replaced solid wood in the manufacture of furniture and in concrete forming. By the end of the 1950's, except for locally-grown posts for agriculture, these factors left the island virtually dependent upon imports to meet its wood needs.

Harold W. Wisdom is Associate Professor, Keith A. Blatner is Graduate Research Assistant, Department of Forestry and Wildlife Resources, Virginia Polytechnic Institute and State University, Blacksburg, Virginia. James E. Granskog is Principal Economist, Southern Forest Experiment Station, USDA Forest Service, New Orleans, Louisiana. This research was funded in part by cooperative agreement No. 19-351 between Virginia Polytechnic Institute and State University and the USDA Forest Service, Southern Forest Experiment Station, New Orleans, LA. The authors thank Ralph C. Schmidt, Chief, Forest Service, Department of Natural Resources, Commonwealth of Puerto Rico, for providing Puerto Rico import statistics for lumber and plywood.

WOOD USE

Puerto Rico's use of wood is tempered by culture and climate. Concrete is the preferred housing construction material. The susceptibility of traditional wood houses to termites and hurricane damage has discouraged wood construction, except in the rural interior of the island.

Softwood lumber and plywood, meanwhile, have become important in construction, but largely for scaffolding and concrete forming (fig. 1 and 2). Structural use of lumber and plywood has been limited primarily to roof framing and roof sheathing. A smaller but active market is the decorative use of lumber, such as carports, fences, and recreation areas, where southern pine and Douglas-fir often are stained to look like redwood (fig. 3).

However, tentative evidence suggests that the strong preference for concrete housing may be weakening. In very recent years, a growing use of wood in the construction of second floors on suburban homes has occurred (fig. 4). Wooden vacation homes also have increased in the interior of the island. Whether these changes represent an aberration or a beginning

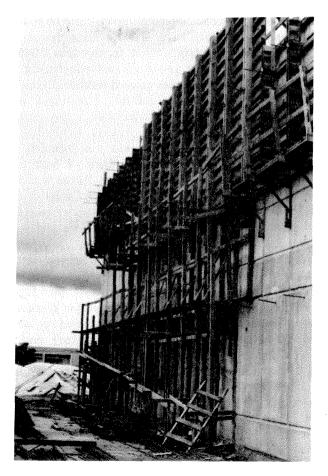


Photo by John Wisdom

Figure 1.—The use of lumber in housing construction in Puerto Rico.

trend, due to the current disparity in the costs of the two types of construction, remains to be seen.

Given its almost complete dependence upon imports, Puerto Rico today is an important market for wood products. With more than 3 million inhabitants and the highest per capita income in the Caribbean, the island has significant purchasing power. The absence of trade barriers and proximity to the United States make Puerto Rico an attractive offshore market for wood products.

U.S. SHIPMENTS

U.S. shipments of wood products—roundwood, lumber, wood-based panels, and miscellaneous manufactured products—to Puerto Rico were valued above \$61 million in 1981. Shipments by major commodity group since 1971 are illustrated in figure 5. Panel products accounted for about one-half of the total value in 1981, followed by lumber with one-quarter of the value. Roundwood products, the smallest group, have exhibited the fastest growth over the decade, while miscellaneous manufactured products have experienced the slowest.

Among individual products, softwood plywood and softwood lumber have accounted for more than half of the value of shipments in recent years. The values by year for the principal products shipped, as well as volume figures cited in the following discussion of product groupings, are reported in the appendix tables.

Roundwood

Roundwood shipments in 1981 totaled \$3.3 million, of which 90 percent was poles used by the government-owned electric-power utility. Shipments fluctuate according to the utility's program of line expansion and pole replacement.

Prior to 1978, shipments of poles, piling, and posts were identified separately and by different measurement units (table 1). Since 1978, these products have been regrouped according to length and treatment. Most shipments in the remaining pole and post categories are treated products.

The modest quantity of logs sent to Puerto Rico reflects the absence of a primary wood manufacturing industry. Except for a brief surge in 1975 – 78, log shipments have been less than 1 million board feet annually. Most softwood logs are southern pine; most hardwoods are oak. A substantial volume of the softwood logs may be poles and piling that have been incorrectly classified.

Lumber

Lumber shipments rose from 26 million board feet in 1971 to 55 million in 1980, before slumping to 41 million board feet in 1981. Shipments have been



Photo by John Wisdom

Figure 2.—The use of plywood in housing construction in Puerto Rico.

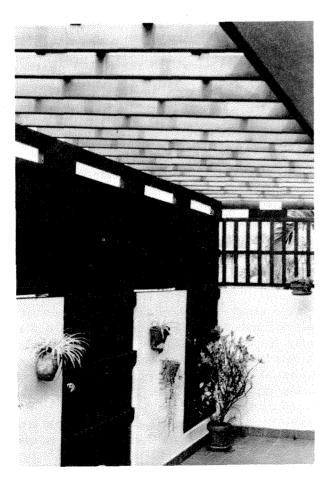


Photo by John Wisdom

Figure 3.—The use of lumber for decorative purposes in housing in Puerto Rico (redwood and southern pine).

Table 1.—Roundwood shipments from the United States to Puerto Rico, 1971, 1980, and 1981

Product	1971	1980	1981
Logs (thousand bd. ft., Scribner)	37	160	14
Piling (thousand linear ft.)	38	*	*
Poles and posts (thousands, no.)	2	27	23
Wood chips (tons)	0	213	0

^{*}Piling is included under poles and posts.

largely softwood, although hardwood climbed to 20 percent of the total in 1981 (fig. 6).

An increasing percentage of the softwood lumber shipments has been southern pine. Since 1974, the peak year for other softwood species, southern pine jumped from 63 to 95 percent in 1981. Douglas-fir is the other principal softwood lumber species shipped. A large majority of all softwood is dressed lumber, which is typical of lumber exports to Caribbean markets.

Although hardwood lumber shipments are relatively small, they have been rising in recent years. Hardwood lumber is used almost entirely by the furniture and millwork industry. The bulkiness of assembled furniture compared with the raw material and high ocean freight rates have left furniture manufacture as one of the few wood-using industries to survive in Puerto Rico. Oak has been the most important hardwood lumber species shipped.

Wood Panels

Softwood plywood, hardwood veneer, and particleboard dominate U.S. panel shipments to Puerto Rico. Hardwood plywood shipments have been less than

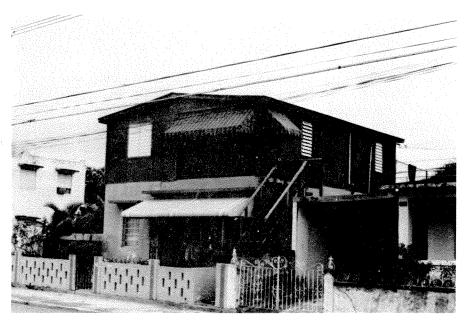


Photo by John Wisdom

Figure 4.—The use of lumber in the second story of urban housing in Puerto Rico.

one million square feet annually in recent years, although volume was up in 1981. Softwood veneer shipments have been minimal.

Substantial changes were made in the softwood plywood shipping classifications in 1978. Prior to 1978, softwood plywood shipments were contained in two categories—interior and exterior plywood. A third category covered shipments of plywood faced with other materials and wood veneer panels.

Since 1978, softwood plywood shipments have been classified according to species—Douglas-fir, southern pine, and other. Table 2 shows that southern pine accounts for most of the shipments. The other species category includes plywood covered with other materials, but not reinforced or backed wood veneer panels, which are now included under softwood veneer. Since most shipments are exterior grades used for concrete forming, southern pine likely constituted most softwood plywood shipped prior to 1978. Douglas-fir may represent minimal interior grade shipments.

Particleboard shipments almost equalled the value of softwood lumber shipments in 1981. Like softwood lumber, particleboard shipments are probably composed primarily of southern pine material, but source materials are not identified. Thus, Puerto Rico probably represents by far the largest offshore market for southern particleboard. Particleboard shipments to Puerto Rico averaged 34 million square feet in 1980–81, while annual exports of southern particleboard recently have totaled only about 11 million square feet (Wisdom, Granskog, and Peeler 1983). Particleboard is widely used for furniture manufacture and in cabinet construction.

Table 2.—U.S. softwood plywood shipments to Puerto Rico, by species group, 1978-81

Year	Total					
		Douglas-fir	Southern pine	Other species		
		thousand	l square feet			
1978	88,202	1,005	83,572	3,652		
1979	52,039	544	49,617	1,878		
1980	46,726	698	43,574	2,454		
1981	72,025	721	55,271	19,033		

Hardwood veneer shipments also are largely used in furniture making. Hardwood plywood shipments have been relatively small, since Puerto Rico, like the United States, imports most of its hardwood plywood from foreign sources.

Miscellaneous Manufactured Products

A wide range of miscellaneous wood articles shipped to Puerto Rico reflects the nearly total dependence of the island on outside sources for needed wood. As a group, these shipments have had the slowest growth. Although some shipments show increases in terms of current dollars, they actually have decreased when adjusted for inflation (table 3).

Among the various products, decorative wood articles—carved figures, picture frames, bookends, and jewelry boxes—are a large item. This category reflects importance, in part, of sales of wood carvings and curios to tourists. Fuelwood and charcoal shipments—mostly charcoal briquettes—also have increased significantly.

On the other hand, builders' woodwork—once the most important product category—and cooperage have declined. The growth of the millwork and joinery industry in Puerto Rico has reduced imports of doors, window units, and other millwork. Cooperage imports by the island's large rum industry have slowed in recent years.

FOREIGN SOURCES

A review of the Puerto Rico wood market requires a look at foreign sources for lumber and plywood, the two largest imports. Of particular interest to U.S. producers have been the changes among the suppliers of softwood lumber.

Lumber

Table 4 shows average annual lumber shipments to Puerto Rico from all sources for the period 1979 – 81. Receipts of hardwood lumber are small relative to softwood. The United States supplies half of the hardwood lumber, while Latin America provides the other half. Being a more heterogeneous product than softwood lumber, the desired characteristics of the various hardwood species imported—primarily oak

Table 3.—Actual and deflated value of miscellaneous manufactured product shipments

Product	Act	tual	Deflated*
	1971	1981	1981
	the	ousand dol	lars
Fuelwood & charcoal	71	700	342
Cooperage	268	282	125
Builders' woodwork	1,688	780	344
Prefab. wood structures	284	322	159
Decorative wood articles	402	874	386
Wood handles	152	388	149
Other	2,295	5,808	2,843
Total	5,178	9,104	4,348

^{*}Deflated using Producer Price Indexes for Wood Products, 1971 = 100.

Table 4.—Average annual lumber shipments to Puerto Rico from all sources, FY 1979 – 81

Source	Hardwo	Softwood		
	Thousand bd. ft.	07/0	Thousand bd. ft.	070
United States	5,854	51	39,906	39
Canada	2	*	58,399	57
Central America	270	2	2,113	2
South America	5,329	47	2,455	2
Total	11,455	100	102,873	100

^{*}Less than 0.5 percent.

from the United States and mahogany from Latin America—determine sources of supply more so than for softwood.

Canada currently supplies a majority of the softwood lumber. The United States and Latin America, primarily Honduras and Nicaragua, follow. In past years, however, substantial changes have occurred in the market shares held by the three major softwood lumber suppliers (table 5 and fig. 7). Southern pine from the United States dominated the softwood lumber market in Puerto Rico until the mid 1950's. But at that point, Canadian and Central American softwood imports began to increase until, by 1974, they constituted 83 percent of the market. Since 1974, the United States has recovered in part, increasing its share to about 40 percent, despite an overall decline in softwood lumber imports due to a recession in Puerto Rico's housing industry.

Decline in the U.S. share of the Puerto Rico softwood lumber market resulted from differences in ocean freight costs between foreign and U.S. shipping, a decline in the availability of southern pine lumber, and aggressive marketing by export-oriented Canadian producers. First, the Jones Act requires U.S. shippers to use relatively expensive U.S. lines, whereas Canadian and Central American shippers can use less expensive carriers. Second, following World War II, the declining southern pine lumber industry was dominated by many small operators who focused attention on domestic markets, while developing lumber industries in the competing supply areas included large-scale export operations. Thus, Puerto Rico's lumber importers could fill orders through a single supplier in Canada and Central America, whereas they often had to contact several southern suppliers. Lastly, Canadian suppliers in particular looked upon their export trade as a longterm commitment, whereas southern producers gained a reputation as "in-and-outers." That is, southern producers were perceived as interested in the Puerto Rico market only as an alternative to a depressed domestic market.

The partial recovery of market share by the United States since 1974 reflects a decline in imports from Central American and more interest by southern lumbermen in shipping to overseas markets. Lumber from Honduras has risen in cost while quality has declined as the most accessible high-quality stands have been harvested; and political unrest has disrupted the flow of lumber from Nicaragua. Since 1975, southern pine exports have risen dramatically, which demonstrates producers have increased efforts to sell lumber to all overseas markets in recent years (Granskog 1981). Canadian lumber has maintained its market share, although the volume imported has followed the overall decline in lumber imports due to the slowdown in housing construction.

Table 5.—Softwood lumber shipments to Puerto Rico from all sources, selected fiscal years

Fiscal	Total,	United		Fore	eign sources	
year	all sources	States	Total	Canada	Latin America	Other
			thousa	nd bd. ft		
1947	65,019	56,857	8,162	0	5,808	2,354
1950	76,443	65,381	11,062	5,294	5,017	751
1955	96,917	47,837	49,080	38,545	9,102	1,433
1960	117,550	27,243	90,307	68,513	20,383	1,411
1974	174,005	29,557	144,448	87,862	56,586	0
1975	120,474	32,166	88,308	65,513	22,780	15
1977	138,869	52,186	86,683	62,245	24,438	0
1978	116,094	32,830	83,264	69,851	13,413	0
1979	98,730	36,944	61,786	54,514	7,272	0
1980	126,434	48,536	77,898	72,795	5,103	0
1981	83,451	34,234	49,217	47,887	1,330	0

 ${\it Table 6.-Shipments of plywood to Puerto Rico from all sources, FY~1980}$

Source	Hardwood	Softwood		
	Thousand sq. ft.	070	Thousand sq. ft.	0/0
United States	†	Ť	55,230	94
Central America	3,139	5	965	2
South America	28,721	45	508	1
Asia	32,259	50	1,932	3
Other	195	*	0	0
Total	64,314	100	58,635	100

 $[\]dagger$ Although Puerto Rico government reports do not show receipts of U.S. hardwood plywood during the 1980 fiscal year, table A5 indicates average U.S. shipments for calendar years 1979 and 1980 may account for about 1 percent of Puerto Rico's hardwood plywood imports.

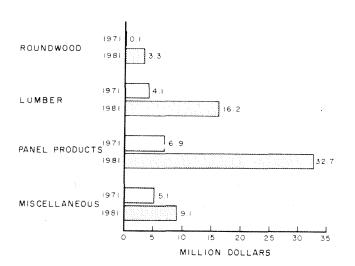


Figure 5.—Value of wood shipments to Puerto Rico, by major products, 1971 and 1981.

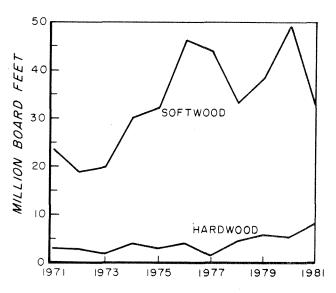


Figure 6.—Lumber shipments from the United States to Puerto Rico.

^{*}Less than 0.5 percent.

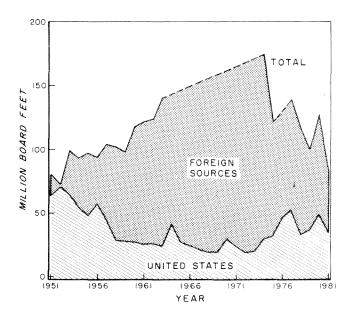


Figure 7.—Softwood lumber shipments to Puerto Rico, from all sources, 1950-81.

Plywood

Shipments of plywood to Puerto Rico from all sources for 1980 are shown in table 6. Most hardwood plywood, as noted, is imported from foreign sources—one-half from Asia and the remainder largely from South America. South Korea and Taiwan are the primary Asian suppliers, while Brazil is the principal source in South America.

Unlike the situation for softwood lumber, almost all softwood plywood is received from the United States. This predominant flow is largely explained by the competiveness of southern pine for the preferred uses and the U.S. tariff on softwood plywood imports from Canada.

DISCUSSION

The combination of a large and rapidly growing population, the highest per capita income in the Caribbean, complete dependence upon imported wood, and an absence of trade barriers make Puerto Rico an attractive market for wood products. For various reasons, however, the U.S. forest products industry has not taken full advantage of the large market at its shores. Despite the advantage of proximity and a virtual monopoly on the market until the 1950's, southern pine lumber steadily lost ground to foreign imports during the 1960's and early 1970's. Although recent events have enabled southern shippers to recapture a portion of that lost market, the statistics presented in this report suggest that southern pine shipments could be increased substantially, perhaps

doubling in volume. Reaching this level will require more attention to marketing services, such as broad product mixes and security of supply.

Lumber buyers in Puerto Rico place a premium on the stability of supply. While lumber normally makes up only a small part of the total cost of housing, it still is an essential ingredient of construction methods used. Delays in construction due to the absence of forming lumber are costly far beyond the direct cost of the material. Keeping in mind that all lumber must be imported and ocean shipments may take from 3 to 4 weeks, one can readily see a secure supply is important to Puerto Rican buyers.

Finally, Puerto Rico's wood imports also may be viewed as representing a potential for the resurgence of a modest wood manufacturing industry on the island, based upon the utilization of domestic woods. Following the retirement of agricultural land, the forest area has been increasing during the past 30 years. About a third of the land area is now forested, almost half of which is classed as timberland (Birdsey and Weaver 1982). However, most desirable species are in young secondary forests, and existing sawtimber of generally poor quality is scattered. Given the nature of the timber and the substantial capital investment needed for economical production of commodity-type products, substitution for softwood plywood and lumber would be difficult; yet, opportunities for small-scale production of specialty items may exist. If forest management opportunities are pursued, Puerto Rico eventually may be partially able to reduce dependence upon wood imports, and provide much needed employment in the rural areas of the island. For the foreseeable future, though, the wood market in Puerto Rico represents a sizeable opportunity for U.S. wood producers.

LITERATURE CITED

Birdsey, R. A.; Weaver, P. L. The forest resources of Puerto Rico. Resource Bull. SO-85. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station; 1982. 59 p.

Granskog, J. E. Southern pine exports revive! So. Lumberman, 242(3016):63 – 65; 1981.

Wisdom, H. W.; Granskog, J. E.; Peeler, R. J., III. Southern exports of wood products 1967 – 80. Res. Pap. SO-193. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station; 1983, 20 p.

Personal interviews by the senior author with Mr. Raphael Del Coro and Mr. Eduardo Molino, major lumber dealers in San Juan, Puerto Rico.

APPENDIX

Statistics on Wood Product Shipments from the United States to Puerto Rico $\,\,1971-81$

List of Appendix Tables

		rage
A1.	Value of wood product shipments from the United States to	
	Puerto Rico, 1971 – 81	. 10
A2.	Roundwood shipments from the United States to Puerto Rico, 1971 – 81	10
A3.	Softwood lumber shipments from the United States to Puerto Rico, 1971 – 81	10
A4.	Hardwood lumber shipments from the United States to Puerto Rico, 1971 – 81	11
	Wood panel shipments from the United States to Puerto Rico, 1971 – 81	11
A6.	Shipments of miscellaneous wood articles from the United States to	
	Puerto Rico, 1971 – 81	11

 ${\bf Table\ A1.} - Value\ of\ wood\ product\ shipments\ from\ the\ United\ States\ to\ Puerto\ Rico,\ 1971-81$

Commodity	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
	***************************************	~~~~~			thouse	and dollar	S				
Roundwood											
Softwood logs	. 1	24	63	101	1,186	1,050	1,062	531	277	27	2
Hardwood logs	21	43	17	158	1,150	956	755	226	143	114	11
Piling & Poles	59	348	963	2,097	5,629	1,711	4,304	917	1,317	3,041	3,022
Other Roundwood	12	<u>15</u>	7	20	0	26	4	175	161	496	299
Total roundwood	93	430	1,050	2,376	7,965	3,743	6,125	1,849	1,898	3,678	3,334
Lumber											
Softwood lumber	3,774	4,208	5,157	7,932	7,959	11,079	12,659	10,994	13,061	17,490	11,337
Hardwood lumber	349	428	410	999	1,011	1,155	802	1,695	2,512	2,506	4,859
Total lumber	4,123	4,636	5,567	8,931	8,970	12,234	13,461	12,689	15,573	19,996	16,196
Wood Panels											
Softwood veneer	4	0	6	0	0.	0	0	6	29	25	41
Hardwood veneer	23	8	4	36	165	3	3	425	1,335	537	523
Total veneer	27	8	10	36	165	3	3	431	1,364	562	564
Softwood plywood	5,865	7,949	10,623	8,897	11,601	14,713	14,114	15,840	18,591	14,752	20,760
Hardwood plywood	566	688	1,300	3,567	939	602	551	272	319	317	833
Total plywood	6,422	8,637	11,923	12,464	12,540	15,315	14,665	16,112	18,910	15,069	21,593
Particleboard*	479	572	745	3,740	733	2,371	2,502	5,036	4,772	6,570	10,568
Total wood panels	6,928	9,217	12,678	16,240	13,438	17,689	17,170	21,579	25,046	22,201	32,725
Miscellaneous Wood Products											
Charcoal & fuelwood	71	112	197	218	363	376	331	114	458	666	700
Cooperage	286	678	730	473	494	660	476	216	779	297	282
Builder's woodwork	1,688	1,351	1,560	1,493	1,183	1,270	810	752	698	873	780
Decorative wood	402	599	775	560	448	418	862	925	1,016	923	874
Other miscellaneous	2,731	3,955	4,242	4,972	4,515	4,176	3,273	4,753	4,769	6,702	6,468
Total miscellaneous	5,178	6,695	7,504	7,716	7,003	6,900	5,752	6,760	7,720	9,461	9,104
Total Wood Products	16,322	20,978	26,799	35,263	37,376	40,566	42,508	42,877	50,237	55,336	61,359

^{*}Includes other reconstructed wood.

Year	Logs	Piling	Poles
	thousand bd. ft.	thousand lin. ft.	No.
1971	37	38	2,366
1972	194	1	6,466
1973	290	5	20,243
1974	623	10	30,674
1975	7,402	36	70,980
1976	6,704	138	28,404
1977	4,881	0	29,452
1978	1,192	*	10,848
1979	400	*	12,069
1980	160	*	26,909
1981	14	*	22,789

^{*}Since 1978, piling has been included under poles.

 ${\bf Table\ A3.} - Softwood\ lumber\ shipments\ from\ the\ United\ States\ to\ Puerto\ Rico,\ 1971-81$

	All softwood				Southern pine			Other softwoods*		
Year	Total	Rough	Dressed	Total	Rough	Dressed	Total	Rough	Dressed	
				thouse	and board fee	et				
1971	23,476	5,439	18,037	16.870	4,111	12,759	6,606	1,328	5,278	
1972	18,656	4,923	13,733	13,733	2,747	10,626	5,283	2,176	3,107	
1973	19,871	5,962	13,909	13,073	2,228	10,845	6,798	3,734	3,064	
1974	30,083	9,610	20,473	19,061	5,539	13,522	11,022	4,071	6,951	
1975	32,166	10,958	21,208	28,016	9,534	18,482	4,150	1,424	2,726	
1976	46,338	8,347	37,991	43,356	7,661	35,695	2,982	686	2,296	
1977	43,938	7,333	36,605	40,947	5,370	35,577	2,991	1,963	1,028	
1978	33,432	4,899	28,533	30,430	4,813	25,617	3,002	86	2,916	
1979	38,615	6,387	32,228	34,507	6,133	28,374	4,108	254	3,155	
1980	49,330	7,121	42,209	44,923	6,568	38,355	4,407	553	3,854	
1981	32,650	5,180	27,470	31,051	4,581	26,470	1,599	599	1,000	

 $[*]Primarily\ Douglas-fir.$

Table A4.—Hardwood lumber shipments from the United States to Puerto Rico, by species, 1971–81

Year	Total	Ash & Hickory	Oak	Walnut	Other
		thc	usand bd. ft		
1971	2,873	96	1,395	9	1,373
1972	2,793	21	1,288	23	1,461
1973	1,907	13	896	0	998
1974	3,877	247	792	1,014	1,824
1975	2,965	358	637	0	1,970
1976	3,953	86	2,138	150	1,579
1977	1,499	38	513	58	890
1978	4,489	14	2,883	97	1,495
1979	5,884	0	4,312	0	1,572
1980	5,411	25	2,254	115	3,017
1981	8,152	18	2,181	25	5,928

 ${\bf Table\ A5.} - Wood\ panel\ shipments\ from\ the\ United\ States\ to\ Puerto\ Rico,\ 1971-81$

Year	Veneer			Plywood				Particleboard
	Total	Softwood	Hardwood	Total	Softwood	Hardwood	Other	
	*********			-thousand so	quare feet	***************************************		
1971	839	16	823	41,648	39,301	1,204	1,143	3,431
1972	184	0	184	46,929	43,663	1,939	1,327	5,135
1973	233	205	28	49,214	44,629	2,380	2,205	4,914
1974	1,280	0	1,280	57,452	48,048	5,408	3,996	22,194
1975	3,340	0	3,340	68,152	64,961	1,122	2,069	4,229
1976	190	0	190	71,384	62,831	709	7,844	13,694
1977	79	0	79	49,500	48,069	442	989	13,167
1978	10,766	136	10,630	89,168	88,202	880	86	4,374
1979	44,808	233	44,575	53,051	52,039	476	536	28,750
1980	19,558	396	19,162	47,866	46,726	839	301	39,538
1981	23,957	383	23,574	78,956	75,025	3,725	206	28,630

 $Table\ A6.-Shipments\ of\ miscellaneous\ wood\ articles\ from\ the\ United\ States\ to\ Puerto\ Rico,\ 1971-81$

Year	Total	Fuelwood & charcoal	Cooperage	Builder's wood work	Prefab wood structures	Decorative wood articles	Wood handles	Other					
	thousand dollars———————————————————————————————————												
1971	5,178	71	286	1,688	284	402	152	2,295					
1972	6,695	112	678	1,351	315	599	707	2,933					
1973	7,504	197	730	1,560	277	775	507	3,458					
1974	7,721	218	473	1,493	263	560	387	4,322					
1975	7,003	363	494	1,183	311	448	238	3,966					
1976	6,900	376	660	1,270	191	418	254	3,731					
1977	5,752	331	476	810	293	862	278	2,703					
1978	6,760	114	216	752	334	925	150	4,269					
1979	7,720	458	779	698	274	1,016	94	4,401					
1980	9,461	666	297	873	306	923	154	6,242					
1981	9,104	700	282	780	322	874	338	5,808					

Wisdom, Harold W.; Granskog, James E.; Blatner, Keith A. Wood Shipments to Puerto Rico. Res. Pap. SO-201. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station; 1983. 11 p.

U.S. shipments of wood products—roundwood, lumber, wood-based panels, and miscellaneous manufactured products—to Puerto Rico are presented for the years 1971 through 1981.

Additional keywords: Foreign trade, forest products, overseas markets.