

# **CONDITIONS RELATING TO THE IMPORTATION OF SOFTWOOD LUMBER INTO THE UNITED STATES**

**Report to the Senate Committee  
on Finance on Investigation  
No. 332-134 Under Section 332  
of the Tariff Act of 1930**

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## Preface

On December 2, 1981, the Committee on Finance of the U.S. Senate requested the United States International Trade Commission to conduct a study pursuant to section 332 of the Tariff Act of 1930 on the conditions relating to the importation of Canadian softwood lumber into the United States, as well as to compare the competitive status of the U.S. and Canadian softwood lumber industries. The committee requested that special emphasis be placed on determining the impact of Canadian softwood lumber importations from British Columbia. In addition, the chairman of the Subcommittee on Trade of the Committee on Ways and Means of the U.S. House of Representatives requested an investigation under section 332 of the lumber industry in the Northwest and in British Columbia that would provide a useful basis for evaluating the current situation. 1/ On December 16, 1981, the Commission instituted an investigation on Canadian softwood lumber imports, focusing on areas of interest as outlined in the requests. 2/

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1/ The requests from the Committee on Finance and the chairman of the Subcommittee on Trade are reproduced in app. A.

2/ A copy of the notice of the Commission's investigation as it appeared in the Federal Register is reproduced in app. B.



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## Executive Summary

Softwood lumber production in the United States began to decline in late 1979 in response to low demand in the U.S. home-building industry. Continued low demand during 1980 and 1981 and thus far in 1982 has resulted in further production curtailments and mill closings.

Softwood lumber consumption in the United States increased from 30.0 billion board feet in 1975 to over 41.2 billion board feet in 1978, followed by a decline from 1979 to 1981, the year in which consumption totaled 29.8 billion board feet. Imports of softwood lumber accounted for almost 19 percent of U.S. consumption in 1975, and continued to increase as a share of consumption to 30 percent in 1981. During 1976-80, the cost of raw materials, as reflected in average prices bid for U.S. Forest Service timber in Oregon and Washington, increased, rising from an average of \$104 per 1,000 board feet in 1976 to \$254 per 1,000 board feet in 1980.

The information presented in this report was obtained from fieldwork and Commission data files, and from information obtained from private individuals and organizations and Government sources in the United States and Canada. A listing of written submissions, statements presented at the hearing held in Portland, Oreg., and other sources of information are given in appendix C. The principal issues raised by U.S. producers concerning the importation of softwood lumber from Canada were (1) the lower prices that Canadian producers pay for timber and (2) the lower transportation costs generally available for Canadian lumber shipments. Representatives of Canadian producers and railroads countered that Canadian producers pay comparative prices for comparable species of wood when all factors are taken into consideration, and that competitive bidding for timber from U.S. Government sales is a more significant reason for U.S. producers' difficulty in competing with imports. <sup>1/</sup>

The major findings of this study are summarized below in accordance with questions posed by the Senate Finance Committee request:

1. The U.S. market

- o There are virtually no barriers to trade in softwood lumber between the United States and Canada. The two countries constitute a single market in which softwood lumber is distributed according to conditions of supply and demand. The United States is the net importer, owing in large part to a much smaller timber resource per capita and the strong export orientation of the Canadian lumber industry. The supply of economically harvestable timber in Canada significantly exceeds its domestic demand, and exports accounted for nearly 70 percent of its production during 1976-80. During those 5 years, an annual average of 80 percent of Canada's exports were to

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<sup>1/</sup> These issues are discussed in this report principally in the sections entitled Timber Procurement, Production Methods and Costs, and Transportation and Distribution.

the United States. Such exports to the United States have decreased each year since 1978, although the Canadian share of U.S. consumption has been in an upward trend since 1975. It would appear from material and data collected during the course of the investigation that the primary reason for Canada's increasing market share is the lower cost of raw materials for Canadian lumber producers. Such factors as product differentiation, marketing and pricing policies, transportation costs, and tax policies appear to have less significant impact on the competitive posture of the industries in both countries.

- o Since 1979, production of softwood lumber in both the United States and Canada has been declining. During 1979-81, U.S. production declined 24 percent, from 29.9 billion to 22.7 billion board feet, and Canadian production declined 11 percent, from 18.5 billion to 16.4 billion board feet. Canadian exports to the United States as a share of Canadian production declined from 58 percent in 1979 to 51 percent in 1980, and then increased to 55 percent, totaling 9.0 billion board feet in 1981.
- o The U.S. supply situation is complicated by the variety of timberland ownership, which differs significantly by region. In the North and South, private ownership dominates. In the West, two segments of the sawmilling industry emerge: Those producers dependent on others, especially Government, for timber, and those producers with significant holdings of their own. In Canada, with a few exceptions, the sawmilling industry is entirely dependent on public timber.
- o Major lumber producers who own large holdings of timber have better capital resources and lower cost timber which enable them to weather poor lumber markets much better than smaller producers who are dependent upon public timber sales. For example, U.S. Forest Service, Region 6 bid stumpage prices rose 60 percent during 1977-81, dramatically increasing future raw material costs for those mills dependent upon public timber. In Region 6 over half of the mills are dependent on public timber for their raw materials supply. The increase was even more dramatic from 1977 to 1980 when prices bid for stumpage rose 82 percent prior to a moderation in 1981 when bid prices declined due to weak lumber markets.
- o The exchange rate of the U.S. dollar per the Canadian dollar fell from near par in 1972 to approximately 0.83 in 1981. This has given the Canadian producers an advantage in pricing lumber for the U.S. market.

- o The industries in both countries are organized along similar lines, use similar technology, and produce a product virtually indistinguishable by mill, much less by country. The labor force in both countries is comparably skilled, and compensation tends to be similar. Major competitive conditions differ primarily because of factors controlling the raw-material supply, and secondarily because of laws and regulations relating to commerce in each country.

2. A comparison of U.S. and Canadian stumpage prices and appraisal methods

- o In the United States, about 72 percent of the commercial timberlands are managed and owned principally by private industry and individuals. In the Western United States, however, only about 32 percent of the commercial timberland is so owned. Nearly 90 percent of Canada's commercial timberland is publicly owned, principally administered by the Provinces.
- o Standing timber on public land in the United States is auctioned to the highest bidder, but in Canada it is offered under license to private companies, which generally pay an appraised price, usually set by the Provinces. As long as they comply with Provincial regulations concerning their licenses, these companies are certain of a given supply of timber over extended periods of time. The supply of timber available now in most regions of Canada is more than sufficient to meet the productive capacity of the license holders. However, in the United States, the supply from Government lands has been held at fairly constant levels in recent years, resulting in intense competitive bidding for sales of Government timber.
- o Timber on lands owned by U.S. lumber producers is generally carried on company books at acquisition cost, but valued at current market prices when processed. Timber sold from private lands to lumber processors is sold at a negotiated price which generally reflects market conditions.
- o The appraisal systems used for sales of timber from Government lands in the United States and Canada are similar. Both are based on a residual system in which costs of converting the standing timber to final products, plus an allowance for profit and risk, are deducted from a price determined for the final products, resulting in an appraised price for the standing timber.

- o After appraisal, standing timber on public lands in the United States is auctioned to the highest bidder (the appraised price is the minimum at which the timber will be sold). In Canada, timber is offered and usually sold at the appraised price. After appropriate adjustment, the 1981 average price for coastal British Columbia stumpage was about one-sixth the comparable U.S. Forest Service price per 1,000 board feet for western Oregon and Washington stumpage: US\$18 versus US\$118. In better market years, such as 1979, British Columbia prices were roughly half of comparable U.S. prices: US\$60 versus US\$127.

### 3. Fixed and variable costs of production in the United States and Canada

- o Variable production costs such as material costs and wages for coastal British Columbia and Oregon and Washington were the highest for all Provinces and States. In 1980 the average variable costs for the two areas were US\$261 and US\$313 per 1,000 board feet of lumber produced, respectively.
- o Information obtained during the course of this investigation indicates that the costs for wood delivered to the mill are lower in Canada than in the United States. For example, in 1980 the average delivered wood costs for Canada were US\$146 per 1,000 board feet of lumber produced and those for the United States were US\$173.
- o When neighboring Provinces and States are compared, similar differences in average delivered wood costs to the mill are apparent: \$138 per 1,000 board feet of lumber produced for British Columbia compared with US\$205 for Oregon and Washington, US\$77 for the interior of British Columbia compared with US\$148 for Idaho and Montana, and US\$93 for Quebec compared with US\$155 for Maine.
- o Canadian statements that logging costs are higher in coastal British Columbia than in western Oregon and Washington seem to be confirmed when stumpage prices are compared with the price of logs in log markets, which incorporates such costs. In 1981, for instance, average Forest Service stumpage prices in western Oregon and Washington exceeded those for coastal British Columbia (adjusted for species differences) by about US\$100 per 1,000 board feet, whereas average domestic prices in western Washington log markets exceeded those in the Vancouver, British Columbia, log market (adjusted for species differences) by about US\$65 per 1,000 board feet.

This reduction in the difference between stumpage prices and log prices is attributed to higher logging costs in British Columbia.

- o Wages are the second most important variable cost of production after wood costs. In general, these averaged US\$12 per 1,000 board feet of production higher in Canada than in the United States and accounted for 28 and 22 percent of production costs, respectively, in 1980.
- o Other variable costs of production such as fuel, work contracted to others, incidental materials, and packaging do not significantly differ for the U.S. and Canadian softwood lumber industries. On the average, these other costs accounted for 24 and 23 percent of total variable costs or US\$72 and US\$69 per 1,000 board feet of lumber produced for the United States and Canada, respectively, in 1980.
- o Fixed costs appear to be higher for the United States than for Canada. This may be partly due to costs associated with ownership of timberlands for many U.S. firms.

#### 4. U.S. and Canadian transportation costs

- o Canadian lumber shippers to markets in the Eastern United States generally have lower costs for rail and water transport than do Western U.S. lumber shippers. The higher U.S. costs are a result of the U.S. regulatory environment.
- o Rail shipments are the preferred method of shipment over long distances. Canadian shippers have lower in-country freight charges than do shippers in the United States. However, recent changes in U.S. regulations concerning freight charges may lead to more competitive rates in the United States.
- o Waterborne shipments of lumber from the U.S. west coast to the U.S. Atlantic coast are small and sporadic. The required use of U.S. ships in intracoastal trade under the provisions of the Merchant Marine Act of 1920 have had an effect of reducing waterborne shipments, and lumber shipments from British Columbia are now virtually the only shipments by water to the U.S. Atlantic coast.

#### 5. A comparison of U.S. and Canadian marketing practices

- o The U.S. and Canadian industries use virtually the same marketing practices; competition for sales of similar lumber sizes and grades is almost entirely by price. When demand for lumber is declining, as it has been since late 1979, price competition is intense.

- o Canadian imports are shipped predominantly into the Northeastern and North Central States. In this market area, the imports compete strongly with local production and shipments from producers in the West and South.
- o Over the last 10 years, shipments by producers in the Western United States into the Northeastern and North Central States have gradually decreased. This is due to several factors, including high transportation costs, competition from Canadian and Southern U.S. shipments to these States, and, at least until 1979, growing markets in the Southwestern United States.
- o Shipments from British Columbia to the Northeastern and North Central States have also declined in recent years. These have been replaced mostly by shipments from Eastern Canada. It is likely that these shipments will continue to compete strongly with Western and local U.S. supplies as well with shipments from British Columbia, owing to shorter transport distances and lower production costs.

6. A comparison of U.S. and Canadian Government policies and regulations

- o For Government-controlled lands in the United States, management functions are retained by the Government, and timber is put up for auction on a sale-by-sale basis. Purchasers compete for each sale. In Canada, cutting rights are leased or licensed under a variety of arrangements to private companies that hold these rights over extended periods.
- o Policies to reserve Government-controlled forest land in the United States for purposes other than timber production limit the availability of supplies from these lands. In Canada, although there are similar policies, no constraints in the supply to producers have yet been apparent.
- o Policies to promote or assist industries exist in both countries. These are generally instituted to improve economic conditions in certain regional locations, but are also instituted to improve employment opportunities and industrial expansion.
- o The tax rates differ between the United States and Canada, but the net effect of taxes on the competitiveness of the industries is small. Taxes paid by the U.S. and Canadian industries are a small percentage of sales, and differ at most by a few percentage points.

## Description and Uses

### Description

The term "softwood lumber" (imports, exports, or production) relates to a wide variety of products--such as boards, planks, timbers, framing materials, moldings, flooring, or siding--produced from coniferous species of trees. However, for purposes of this investigation, the term "softwood lumber" refers only to those products included in the Tariff Schedules of the United States Annotated (1982) (TSUSA) in items 202.03-202.30 (rough, dressed, or worked softwood lumber). 1/ Specifically excluded are drilled and treated lumber, wood siding, and edge-glued or end-glued wood not over 6 feet in length or over 15 inches in width.

The term "softwood lumber," when associated with U.S. exports, generally will refer only to articles covered by Schedule B items 202.0420-202.3140 (rough, dressed, or worked softwood lumber), 2/ which again excludes drilled and treated lumber, wood siding, and edge-glued or end-glued wood not over 6 feet in length or over 15 inches in width.

The U.S. softwood lumber production figures presented in this investigation are reported by the National Forest Products Association on a basis comparable with import and export data.

According to the extent or stage of manufacture, lumber (both softwood and hardwood) is classified in the TSUSA as follows:

Rough lumber--lumber just as it comes from the saw, whether in its original sawed size or edged, resawn, crosscut, or trimmed to smaller sizes.

Dressed lumber--lumber which has been dressed or surfaced by planing on at least one edge or face.

Worked lumber--lumber which has been matched (tongue-and-grooved), shiplapped (rabbeted or lapped joint), or patterned on a matching machine, sticker, or molder.

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1/ For statutory descriptions of these item numbers, see the excerpt from the TSUSA in app. D.

2/ For descriptions of these item numbers, see the excerpt from Schedule B in app. E.

Most lumber is also classified into three general size categories--board, dimension, or timber. The term "board" is generally used to describe lumber less than 2 inches thick and 2 or more inches wide. Boards less than 6 inches wide may be called strips. Dimension lumber generally refers to lumber 2 inches thick, but can include lumber up to but not including 5 inches thick, and over 2 inches wide. Dimension lumber may be classified as framing, joists, planks, studs, rafters, and so forth. Timbers are 5 inches or more in the smallest surface dimension and are sometimes referred to as beams, posts, girders, and so forth.

Lumber is classified according to its moisture content as green or dried. <sup>1/</sup> Often, more than half the weight of green lumber is moisture. Some lumber is used green, because various characteristics of the wood make such use easier or more economical. However, to prevent warping, most lumber is seasoned by drying before retail sale.

Generally, lumber is measured by the board foot, a three-dimensional unit which, for tariff purposes, is described as--

The quantity of lumber contained in, or derived (by drying, dressing, or working, or any combination of these processes) from a piece of rough green lumber 1 inch in thickness, 12 inches in width, and 1 foot in length, or the equivalent of such piece in other dimensions. <sup>2/</sup>

The above description of a board foot is on a rough green basis. In addition, the American Lumber Standards for Softwood Lumber <sup>3/</sup> sets forth minimum measurements for dressed lumber. For example, a rough 2"x4" piece of lumber can be a minimum of 1-1/2"x3-1/2" when dressed.

Softwood lumber is usually graded at the sawmill on characteristics which affect its strength, durability, utility, and/or appearance. Some common defects that lower the grade are knots, splits, shake (separation of annual rings), wane (bark or lack of wood on corner or edge), and pitch pockets. Standard rules for grading of lumber are published by regional lumber manufacturing or marketing organizations; they vary with geographic regions and species of lumber.

### Uses

Softwood lumber is readily workable, has a high strength-to-weight ratio, and is moderately durable; hence, it is widely used in the construction, shipping, and manufacturing industries. In years of normal construction

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<sup>1/</sup> Generally, lumber with a moisture content of 18 percent or under is considered dried.

<sup>2/</sup> Tariff Schedules of the United States Annotated (1982), p. 116.

<sup>3/</sup> These standards are published by the U.S. Department of Commerce in cooperation with manufacturers, distributors, and users.



activity, it is estimated that about 45 percent of the annual consumption of softwood lumber is used in new housing, as shown in the following tabulation: 1/

<u>End use</u>	<u>Percentage distribution of U.S. consumption</u>
Construction:	
New housing-----	45
Residential upkeep and improvement-----	15
New nonresidential construction-----	10
Shipping-----	10
Manufacturing-----	5
Other-----	15
Total-----	100

In years of poor housing starts, the amount of softwood lumber used in new homes may be somewhat less than 45 percent.

For a given end use, softwood lumber of different species or from different regions is generally interchangeable. However, for some uses, a specific species is frequently preferred because of its particular characteristics--e.g., Douglas-fir for house framing, redwood for home exteriors, and white pine for moldings.

#### Competitive products

Wood or wood-based products--such as plywood, hardwood lumber, hardboard, particleboard, insulation board, medium density fiberboard, and certain paperboards--as well as nonwood products--such as metal, plastics, and brick--compete with softwood lumber in many of its important uses. In many cases, the substitute products are more economical for a particular use, and in other instances, their unique performance characteristics may be a factor.

Plywood and the various building boards are frequently used in lieu of lumber as sheathing and subflooring or underlayment, as concrete forms in construction, and in the manufacture of furniture and other articles. Plywood and hardboard also replace lumber in some types of containers.

Hardwood lumber competes with softwood lumber in the manufacture of pallets, furniture, and various other articles. In areas where both hardwood and softwood lumber are produced, there is localized competition in some types of rural construction and in shipping (both containers and dunnage).

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1/ U.S. Forest Service, An Analysis of the Timber Situation in the United States 1952-2030, p. 95.

To some extent, paper and paperboard products have replaced lumber in the shipping container market and in construction. For example, paper honeycomb is used as a substitute for wood cores in plywood flush doors.

Nonwood materials have long competed with, and have often been substituted for, lumber. For example, brick and concrete block are important building materials in the construction industry. Aluminum, which to some extent replaced softwood lumber in window frames and sash, particularly in low-cost, mass housing projects, now also competes with wood as a house-siding material. Steel studs compete with wooden ones, especially in nonresidential construction. Plastics and lightweight metals, such as aluminum and magnesium, have replaced lumber in many manufactured items.

## Tariff Treatment

### U.S. tariff treatment

As shown in appendix D, not one of the items covered in this investigation has a column 1 rate of duty other than free. Rates of duty for softwood lumber entered under column 2 (from countries under Communist domination or control) range from \$1 to \$4 per 1,000 board feet. The amount of softwood lumber imported dutiable at the column 2 rate is negligible. The United States has virtually no nontariff restrictions on imported softwood lumber. However, most lumber entering the United States is subject to inspection for wood-boring insects (not a major problem for most imports).

### Canadian tariff treatment

The Canadian tariff provides duty-free treatment for imports of softwood lumber. The Canadian tariff classifications for softwood lumber are shown in appendix F.

### Foreign tariffs affecting U.S. and Canadian exports

The major markets for U.S. or Canadian softwood lumber exports use the Customs Cooperation Council Nomenclature (CCCN) as the basis for their tariff classifications. The CCCN classifies softwood lumber under heading 44.05 (wood sawn lengthwise, sliced or peeled, but not further prepared, of a thickness exceeding 5mm), and 44.13 (wood planed, tongued, grooved, rebated, chamfered, v-jointed, centre v-jointed, beaded, centre-beaded or the like, but not further manufactured). The present rates of duty for the major export markets for the United States and Canada--the European Community and Japan--are given in appendix G.

## Consumption, Production, and Trade

United States

Consumption.--In 1981, U.S. consumption of softwood lumber was 29.8 billion board feet, 6 percent below 1980 consumption of 31.8 billion board feet. During 1977-81, consumption averaged 36.3 billion board feet per year, with a high of 41.2 billion board feet in 1978 and a low of 29.8 billion in 1981.

The recent decrease in consumption of softwood lumber is, for the most part, a result of the decrease in residential housing construction since late 1979 associated with increased interest rates. <sup>1/</sup> The close relationship of interest rates and housing starts is recognized throughout the wood products industry as pointed out in the Commission's March 3-4, 1982, hearings. For instance, one expert witness expressed the view widely held by the domestic industry that "High (interest) rates make it impossible to finance homebuilding at a normal pace, and homebuilding is the principal market for lumber and plywood." <sup>2/</sup> During 1977-81, the consumption of softwood lumber had a positive .99 correlation coefficient (.91 during 1972-82) with housing starts, thus displaying an almost perfect correlation. <sup>3/</sup> The following tabulation shows housing starts and softwood lumber consumption for 1977-81:

<u>Year</u>	<u>Housing starts</u> <u>(million units)</u>	<u>Softwood lumber consumption</u> <u>(billion board feet)</u>
1977-----	2.0	39.8
1978-----	2.0	41.2
1979-----	1.8	39.1
1980-----	1.3	31.8
1981-----	1.1	29.8

Imports have accounted for an average of 25 percent of consumption during the last 10 years. However, imports increased their share of U.S. consumption during 1977-81, accounting for an average of over 28 percent of consumption (table 1). Canada supplies virtually all U.S. softwood lumber imports. Although the species mix may differ somewhat, most imported softwood lumber is used interchangeably with domestic lumber.

In comparison with the trends of the 1940's and 1950's, when consumption in competitive building board products, in particular softwood plywood, increased due to cost factors and labor saving (e.g., a 4'x8' sheet of plywood can be applied as roof decking much more economically than can 1"xl0" boards),

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<sup>1/</sup> In recent years, an average of about 11,000 board feet of softwood lumber was consumed in building a new one-family home in the United States, although it is widely believed that the average house size will become smaller in future years.

<sup>2/</sup> Transcript of Hearings on Conditions Relating to the Importation of Canadian Softwood Lumber into the United States, p. 265, lines 14-20.

<sup>3/</sup> The least squares linear regression method was used to arrive at the correlation coefficients presented in this report.

the recent trend of lumber use in relation to competitive products has been more moderate. Consumption of softwood lumber relative to that for the principal competitive board materials is indicated in the tabulation below, which presents the index of consumption in all uses of softwood lumber, softwood plywood, and particleboard, including medium density fiberboard (MDF) (1977=100): 1/

<u>Year</u>	<u>Softwood lumber</u>	<u>Softwood plywood</u>	<u>Particle board and MDF</u>
1972-----	93	95	75
1976-----	89	92	83
1977-----	100	100	100
1978-----	104	103	110
1979-----	98	98	102
1980-----	80	83	90
1981-----	75	<u>1/</u> 82	<u>1/</u> 90

1/ Estimated by the staff of the U.S. International Trade Commission.

A relative plateau appears to have been reached over the last 5 years in the substitution of softwood plywood for softwood lumber. Particleboard and MDF, on the other hand, are still in the developmental stage, with increased acceptance of these products resulting in the substitution of some lumber, but to a greater degree they replace other board products, such as plywood, rather than softwood lumber.

Production.--U.S. production of softwood lumber averaged 27.8 billion board feet during 1977-81, ranging from a high of 31.0 billion board feet in 1977 to a low of 22.7 billion board feet in 1981. Production in 1981 was 18 percent below the 1977-81 average and 27 percent below the high for the period.

The West produced an estimated 15.4 billion board feet, or 68 percent of U.S. softwood lumber production in 1981. Washington and Oregon have accounted for over half of the West's total production during the last 10 years (table 2). In 1981, the South accounted for an estimated 6.3 billion board feet, or 28 percent of the remaining U.S. softwood production. The North accounted for the smallest share of production in 1981--about 1.0 billion board feet (4 percent), with Maine accounting for about 30 percent of the production in this region.

Although total U.S. production of softwood lumber varied somewhat during 1977-81, the percentage distribution of regional production did not vary significantly, as shown in the following tabulation:

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1/ Derived from U.S. Forest Service, Outlook for Timber Products, Annual Outlook, 1979-82.

Region <u>1/</u>	1977	1978	1979	1980	1981
West-----percent--:	69 :	69 :	69 :	2/ 68 :	2/ 68
South-----do-----:	27 :	27 :	27 :	2/ 28 :	2/ 28
North-----do-----:	4 :	4 :	4 :	2/ 4 :	2/ 4
Total <u>3/-do-----</u> :	100 :	100 :	100 :	100 :	100
Quantity	:	:	:	:	:
million bd. ft.	30,987 :	30,899 :	29,879 :	24,335 :	22,710

1/ A map of the United States outlining the regions discussed in this report is on p. 24.

2/ Estimated by the staff of the U.S. International Trade Commission.

3/ Because of rounding, figures may not add to totals shown.

Production by species group.--Douglas-fir, southern pine, and ponderosa pine, in that order, are the leading species, or species groups, of softwood lumber produced in the United States (table 3). In 1979, the shares of total output accounted for by these species were 28 percent, 26 percent, and 13 percent, respectively. The remaining 33 percent was accounted for by hemlock, true firs, redwood, cedar, other pines, and spruce, among others.

Except for a relatively large decline in redwood lumber production, which is due in part to increasing acreage of redwood forest land being set aside for noncommercial use, the broad species mix of U.S. softwood lumber production has not changed significantly in the last 10 years (table 3).

Shipments and inventories.--Data published by the National Forest Products Association (NFPA) show that shipments of softwood lumber have not varied more than 1 percent from production in any year since 1976. Producers' inventories, as measured by gross mill stocks, tend to be somewhat seasonal. The highest inventories are generally built up in the spring months in anticipation of the increase in spring and summer construction activity. The opposite occurs in the fall months, when inventories decline in expectation of slack demand in the winter months.

Producers' yearend inventories during 1977-81 varied from a high of 4.2 billion board feet in 1979 to a low of 3.9 billion board feet in 1981. 1/ The ratio of yearend inventories to production historically has been higher during years of low production, as shown below:

<u>Year</u>	<u>Production</u> (million board feet)	<u>Dec.1 Mill stocks</u> (million board feet)	<u>Ratio of mill stocks</u> <u>to total production</u> (percent)
1977-----	30,987	4,077	13
1978-----	30,899	3,999	13
1979-----	29,879	4,175	14
1980-----	24,335	4,063	17
1981-----	22,710	3,870	17

1/ NFPA, Fingertip facts and figures, February 1982.

### U.S. imports

U.S. imports of softwood lumber have generally moved in the same direction as the level of U.S. construction activity in recent years--particularly the number of new homes built in the United States. During 1977-81, imports of softwood lumber had a positive .87 correlation coefficient with housing starts (The correlation for 1972-81 was .33). The following tabulation shows imports and housing starts during 1977-81:

<u>Year</u>	<u>Imports</u> <u>(billion board feet)</u>	<u>Housing starts</u> <u>(million units)</u>
1977-----	10.2	2.0
1978-----	11.6	2.0
1979-----	10.9	1.8
1980-----	9.4	1.3
1981-----	9.0	1.1

During 1977-81, softwood lumber imports averaged 10.2 billion board feet per year. In 1981, they totaled 9.0 billion board feet, valued at \$1.7 billion dollars, down from 11.6 billion board feet, valued at \$2.3 billion, in 1978, the peak year for imports (table 4).

Unit values of softwood lumber imports generally reflect both inflation and demand for timber products. Value per 1,000 board feet increased steadily during 1977-79, but fell in 1980 and 1981 as U.S. and world markets deteriorated, as shown in the following tabulation:

<u>Year</u>	<u>Average value,</u> <u>(per 1,000 bd. ft.)</u>
1977-----	US\$172.08
1978-----	200.89
1979-----	224.92
1980-----	187.84
1981-----	187.72

The ratio of imports to domestic consumption averaged 28.2 percent during 1977-81. In 1975 the ratio was at a 10-year low of 18.7 percent, but it rose fairly steadily during 1977-81, to an all time high of 30.3 percent in 1981 as shown in the following tabulation:

<u>Year</u>	<u>Imports as a share</u> <u>of consumption</u> <u>(percent)</u>
1975-----	18.7
1977-----	25.7
1978-----	28.2
1979-----	28.0
1980-----	29.6
1981-----	30.3

Historically, Canada has supplied nearly all imports of U.S. softwood lumber. During 1977-81, it provided over 99 percent (by both quantity and value). In 1981, total softwood lumber imports amounted to 9,029 million board feet, and imports from Canada totaled 9,008 million board feet. Central and South American countries account for most of the remainder.

In 1981, 67 percent of U.S. softwood lumber imports were classified as spruce. Nevertheless, it is believed that most such imports are actually a mix of spruce-pine-fir, known in the trade as SPF. SPF is manufactured in British Columbia and Eastern Canada in dimension sizes primarily for the U.S. market. Imports of softwood lumber from all sources in 1981, by types, are shown in the following tabulation:

<u>Type</u>	<u>Imports</u> <u>(billion board feet)</u>	<u>Percent</u>
Spruce-----	6.0	67
Pine-----	.9	10
Cedar-----	.6	7
Hemlock-----	.5	6
Douglas-fir-----	.5	6
True fir-----	.5	6
All other-----	1/	1/
Total-----	9.0	100

1/ Less than 50 million board feet, or 0.5 percent.

Imports of softwood lumber enter the United States primarily by rail through Midwest customs districts. In 1981, the Duluth, Minn., customs district accounted for imports of 2.7 billion board feet, followed by Seattle, Wash., with 1.4 billion board feet. The following tabulation shows the top 10 customs districts for all softwood lumber imports in 1981:

<u>Customs district</u>	<u>Imports</u> <u>(billion board feet)</u>	<u>Percent</u>
Duluth, Minn-----	2.7	30
Seattle, Wash-----	1.4	15
Detroit, Mich-----	1.2	14
Pembina, N. Dak-----	.7	8
Buffalo, N.Y-----	.6	7
Ogdensburg, N.Y-----	.6	7
St. Albans, Vt-----	.5	5
Portland, Maine-----	.2	2
Los Angeles, Calif-----	.2	2
New York, N.Y-----	.2	2
All other-----	.7	8
Total-----	9.0	100

Table 5 shows imports by customs districts for 1976-81.



Related-party imports.-- Imports of softwood lumber by related parties 1/ were 946 million board feet in 1980, 10 percent of total U.S. imports (table 6). It is believed that most related-party transactions occur between large multinational corporations operating in both Canada and the United States. Related-party imports as a share of total imports are shown for 1976-80 in the following tabulation: 2/

<u>Year</u>	<u>Related-party imports (billion board feet)</u>	<u>Related-party imports as a share of total imports (percent)</u>
1976-----	1.7	22
1977-----	1.9	18
1978-----	1.6	14
1979-----	1.5	13
1980-----	.9	10

Related party-imports as a share of total imports decreased from 22 percent in 1976 to 10 percent in 1980. Some of this decline can probably be attributed to efforts by U.S.-owned producers in Canada to market their Canadian-made lumber in offshore markets when U.S. demand dropped due to low housing starts.

#### U.S. exports

Exports of softwood lumber totaled 1.9 billion board feet in 1981, representing a 4-percent decline from the record export level of 2.0 billion board feet in 1980 (table 7). The average level of exports was 1.7 billion board feet during 1977-81.

Exports as a share of U.S. production were relatively small during 1977-81, averaging about 6 percent. The ratio of exports to production generally increases during periods of slack U.S. demand, as U.S. producers try to maintain or expand their lumber sales.

The principal species exported is Douglas-fir, which in 1981 accounted for 0.5 billion board feet, or 27 percent of total softwood lumber exported in 1981. Other important species or species groups exported are hemlock and Southern pine. Together, these account for about 60 percent of U.S. softwood lumber exports.

Most softwood lumber exported from the United States exits from Seattle, Wash., Portland, Oreg., and Anchorage, Alaska. Collectively, these three customs districts accounted for 59 percent of the quantity and 63 percent of the value of U.S. softwood lumber exports in 1981. In 1981, Japan received 27

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1/ Generally, any transaction not considered arm's length--defined in sec. 402(g)(2) of the Tariff Act of 1930 (reproduced in app. H).

2/ The figures for 1981 were not available at the time of publication.

percent of U.S. softwood lumber exports. The top five U.S. markets for lumber exports in 1981 (ranked by value) are shown in the following tabulation:

<u>Market</u>	<u>Volume</u> (million board feet)	<u>Value</u> (million \$US)	<u>Percent of</u> <u>total value</u>
Japan-----	506	176	27
Canada-----	495	123	19
Italy-----	88	55	8
Australia----	123	48	7
Mexico-----	199	44	7
All other----	484	207	32
Total-----	<u>1,895</u>	<u>653</u>	<u>100</u>

Table 7 shows U.S. exports of softwood lumber by destinations and table 8, by customs districts.

#### Canada

Consumption.---Apparent Canadian consumption of softwood lumber was 5.3 billion board feet in 1981 (table 9), 15 percent below 1980 consumption of 6.2 billion board feet. Canadian consumption has declined, like U.S. consumption, in large measure because of high interest rates and the associated poor demand for building materials. During 1977-81, apparent consumption averaged 5.5 billion board feet.

Production.---Canadian production of softwood lumber averaged 17.7 billion board feet during 1977-81, increasing from 17.2 billion board feet in 1977 to a high of 18.5 billion board feet in 1979 before dropping to 16.4 billion board feet in 1981.

In 1981, British Columbia accounted for 10.4 billion board feet, or 64 percent of total Canadian production. During 1977-81, British Columbia accounted for 67 percent of Canada's total softwood lumber production.

Softwood lumber production in British Columbia and in all of Canada in 1977-81 is shown in table 9 and in the following tabulation (in billions of board feet):

<u>Year</u>	<u>British Columbia</u>	<u>Other Provinces</u>	<u>Total Canada</u>
1977-----	12.0	5.2	17.2
1978-----	12.5	5.9	18.4
1979-----	12.5	6.0	18.5
1980-----	12.0	6.2	18.2
1981-----	10.4	6.0	16.4

Production by species or species group.--In 1980, the spruce-pine-fir classification of lumber was the leading species group of softwood lumber produced in Canada, 1/ as shown in the following tabulation:

Species group	Percentage distribution of of production in--	
	British Columbia	Canada (total)
SPF-----	55 :	69
Hem-fir-----	23 :	15
Douglas-fir-----	11 :	7
Cedars-----	9 :	6
Other-----	2 :	2
Total <u>1/</u> -----	100 :	100

1/ Because of rounding, figures may not add to the totals shown.

In 1980, SPF accounted for 55 percent of softwood lumber produced in British Columbia and 69 percent of total Canadian production. The hem-fir, the cedars, and Douglas-fir accounted for much of the remainder. The largest part of the overall increase in Canadian production in the last 20 years has been accounted for by SPF lumber as previously inaccessible timber lands (a large part of which are in British Columbia) have become available for harvesting.

Canadian imports.--Historically, Canadian imports have been under 400 million board feet per year and are small relative to the magnitude of Canadian production and exports. Canadian imports in 1980 (317 million board feet) were 5 percent of apparent consumption and were equal to 2 and 3 percent of production and exports, respectively,. Canadian imports are estimated to have totaled about 430 million board feet in 1981 (table 10).

Canadian exports.--Canadian exports of softwood lumber amounted to 11.6 billion board feet in 1981, representing a 6-percent decline from those in 1980 (table 11). The average level of exports was 12.5 billion board feet during 1977-81. Exports as a share of Canadian production averaged about 71 percent during 1977-81.

Canadian exports to the United States were 9.0 billion board feet in 1981, accounting for 78 percent of total softwood lumber exports. 2/ These and other Canadian exports to world areas in 1981 are shown below:

1/ Statistics Canada, 1980. Figures for production by species in 1981 were not available.

2/ Official Canadian export and import statistics may vary somewhat from comparable U.S. statistics because of differences in shipment recordings, timing, classification, and so forth.

<u>Area</u>	<u>Exports</u> (billion board feet)	<u>Percent</u>
United States-----	9.0	78
European Community-----	1.0	9
Japan-----	.9	8
All other-----	.6	5
Total-----	11.6	100

Of the 9.0 billion board feet exported to the United States in 1980, 1/ the SPF species group was the leading export category, as shown in the following tabulation:

<u>Species</u> <u>group</u>	<u>Percentage distribution</u> <u>of total exports</u>
SPF-----	77
Hem-fir-----	11
Cedars-----	7
Douglas-fir-----	4
Other-----	1
Total-----	100

Canadian exports to the United States increased from 10.3 billion board feet in 1977 to 11.4 billion board feet in 1978 before dropping to 9.0 billion board feet in 1981, as shown in the following tabulation:

<u>Year</u>	<u>Canadian exports</u> <u>to the United States</u> (billion board feet)
1977-----	10.3
1978-----	11.4
1979-----	10.8
1980-----	9.3
1981-----	9.0

Most of the increase in Canadian softwood lumber exports to the United States that has occurred since 1970 (when exports were only 5.4 billion feet) has been in the SPF classification. Such imports increased from 3.2 billion board feet in 1970 to 7.2 billion board feet in 1980 (1981 figures are unavailable).

British Columbia exports.--Of Canada's total exports to the United States of 9.0 billion board feet in 1981, 5.3 billion board feet (58 percent) was supplied by British Columbia. This amount accounted for 51 percent of total British Columbia shipments in 1981. From data of Statistics Canada, the following tabulation shows British Columbia exports to the United States, the

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1/ Figures for export by species in 1981 were not available; the percentages shown are based on 1980 statistics.

share of British Columbia production accounted for by these exports, and the share of U.S. consumption accounted for by these exports during 1977-81:

<u>Year</u>	<u>Quantity</u> <u>(billion board feet)</u>	<u>Share of total</u> <u>British Columbia production</u> <u>(percent)</u>	<u>Share of</u> <u>U.S. consumption</u> <u>(percent)</u>
1977-----	8.0	66	20
1978-----	8.5	67	21
1979-----	7.7	62	20
1980-----	6.3	53	20
1981-----	5.3	51	18

Both the quantity of British Columbia exports of softwood lumber to the United States and their share of total British Columbia production decreased from 1977 to 1981. However, British Columbia exports approximately maintained their share of U.S. consumption during that period. Total Canadian exports to the United States increased from 26 to 30 percent of U.S. consumption.

British Columbia shipments to the United States and other world areas are shown in the following tabulation, based on Statistics Canada data on 1980 production: 1/

<u>Area</u>	<u>Percent distribution</u> <u>of total exports</u>
Canada-----	26
United States-----	53
Japan-----	9
European Community-----	8
Other-----	4
Total-----	<u>100</u>

A comparison of the softwood lumber trade patterns  
of the United States and Canada

The following tabulation gives a brief comparison of U.S. and Canadian softwood lumber trade statistics for 1981 (in billions of board feet):

	<u>United States</u>	<u>Canada</u>
Production-----	22.7	16.4
Imports-----	9.0	.4
Exports-----	1.9	11.6
Apparent consumption--	29.8	5.3

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1/ Figures for 1981 were not available.

The most apparent differences are that Canada exports about 70 percent of its production compared with 8 percent for the United States and that imports account for about 30 percent of apparent U.S. consumption compared with Canada's 8 percent.

Canada's principal export market by far is the United States, with the European Community (EC) and Japan being important secondary markets. The United States' largest export market is Japan, followed by Canada and the EC.

### Industry Comparisons

Both the U.S. and Canadian softwood lumber industries have been faced with declining demand since late 1979. As discussed in the preceding section, U.S. softwood lumber production declined from 30 billion to 23 billion board feet during 1979-81, and Canadian softwood lumber production declined from 18 billion to 16 billion board feet during the same period. Production curtailments and permanent mill closings have led to high rates of unemployment and declining profits. U.S. employment fell from 164,000 in 1979 to 132,000 in 1981, compared with a Canadian drop from 57,000 to 44,000 in 1981. Profits as a percent of return on capital fell in the United States industry, dropping from 12.0 percent in 1979 to 9.4 percent in 1980. The Canadian return on capital dropped in a similar fashion from 16.5 percent in 1979 to 11.4 percent in 1980. The current market, thus far in 1982, is viewed by both the U.S. and Canadian industry as continuing its downward trends. A detailed analysis of each industry is discussed below.

#### United States

The figure on the following page shows the six softwood-lumber-producing regions of the United States and the three major geographic regions as used in this report. United States Department of Commerce data indicate that approximately 7,000 establishments produce softwood and hardwood lumber in the United States. <sup>1/</sup> Of these, fewer than 1,900 had more than 20 employees. Since 1977, the number of mills has steadily decreased due to a variety of factors, but mainly because of increased technology resulting in stiff competition and centralization and, since 1979, decreased demand for wood products in the United States and in important foreign markets. The number of establishments in selected years is shown in the following tabulation:

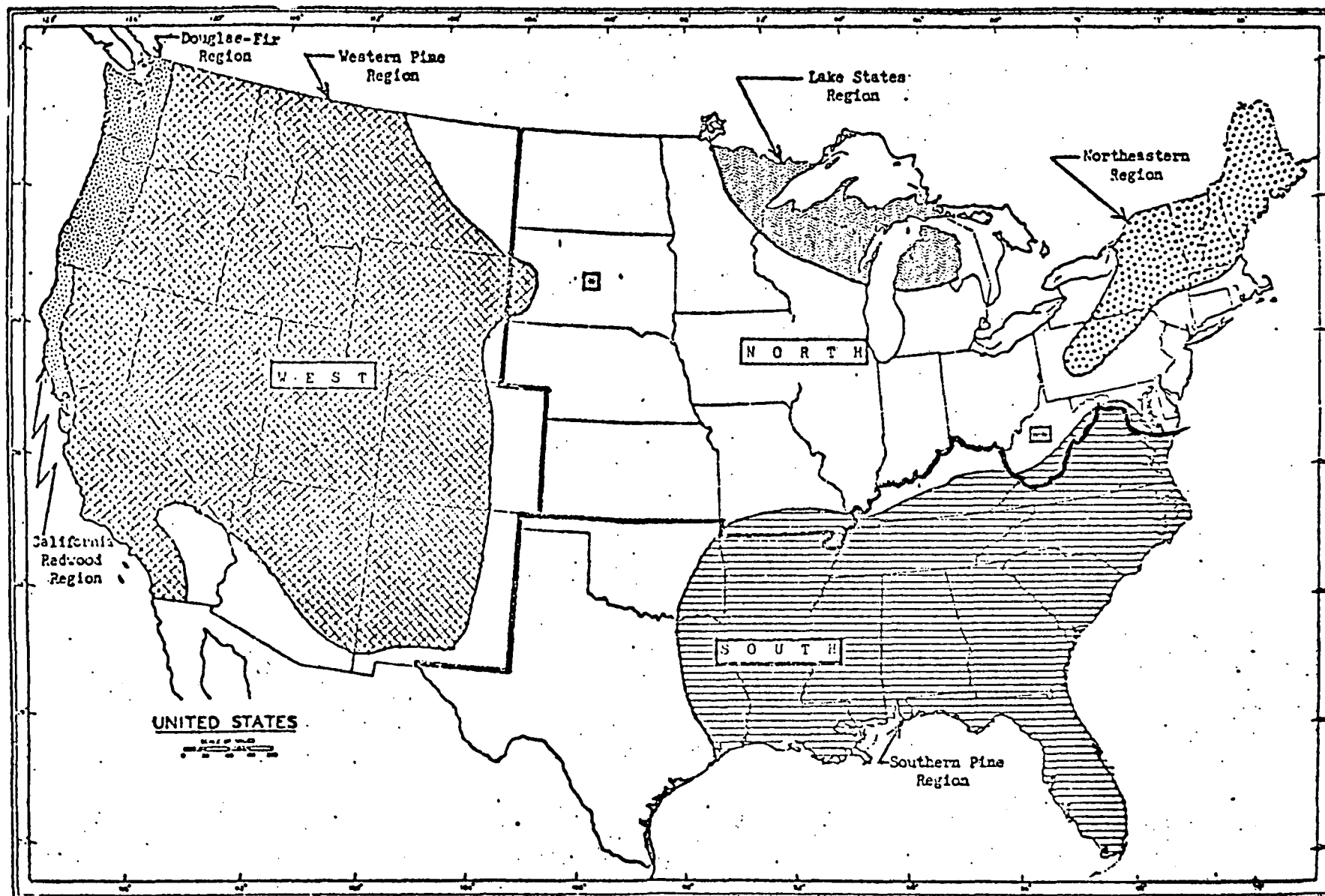
<u>Year</u>	<u>Establishments</u>
1972-----	8,071
1977-----	7,508
1978-----	7,500
1979-----	7,280
1980-----	7,050

These establishments are located throughout the United States, but are concentrated in the major softwood-lumber-producing regions. These

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<sup>1/</sup> There are numerous mills, some of which are portable, that the U.S. Bureau of the Census does not include in its data. These have been estimated to number approximately 25,000, and account for less than 10 percent of production.

Figure.--The 6 softwood lumber-producing regions and the 3 major geographic divisions of the United States.



Note.—Lumber regions are hatched or shaded.

1 South Dakota is included with the West in the lumber-production statistics of the U.S. Bureau of the Census; otherwise it is considered part of the North.

2 Delaware, Maryland, District of Columbia, and West Virginia are included with the South in the lumber-production statistics of the U.S. Bureau of the Census; otherwise they are considered part of the North.



concentrations in selected States in 1977 are shown in the following tabulation: 1/

<u>Region and State</u>	<u>Establishments</u>
North-----	2,394
Maine-----	152
South-----	3,815
North Carolina and South Carolina-----	800
Georgia, Alabama, and Mississippi-----	834
Texas and Arkansas-----	449
Virginia-----	516
West-----	1,299
Oregon and Washington-----	587
Montana and Idaho-----	206

Although there are large corporations with high volumes of production, most of the softwood lumber producers are small firms. In 1980, the five largest producers accounted for approximately 28 percent of U.S. production, and the 50 largest firms accounted for approximately 67 percent (table 12). There were 115 mills with annual production exceeding 50 million board feet, and 582 mills with annual production greater than 10 million board feet. 2/

U.S. production of softwood lumber is concentrated in the West, where the remaining old-growth high-quality timber is located. This area accounts for approximately 68 percent of U.S. softwood lumber shipments. The highest concentration of large mills is also in this region; in 1980, 190 mills each produced 25 million board feet or more in the West, compared with 86 mills in the South and 10 in the North.

According to Department of Commerce statistics, employment in the sawmill and planing mill industry increased from 142,000 production workers in 1975 to 163,500 in 1979 before falling to a 10-year low of approximately 132,000 production workers in 1981.

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1/ U.S. Department of Commerce, 1977 Census of Manufactures, 1980.

2/ Annual Lumber Review and Buyers Guide, Forest Industries, Miller Freeman Publications, San Francisco, May 1981.

General comparative data from the Department of Commerce for sawmills and planing mills in 1979 are shown in the following tabulation, along with other selected important segments of the forest products industry: 1/

Industry	Pro- duction workers	Man- hours worked	Wages	Value added per production worker	Value added per production worker hour
	<u>Number</u>	<u>Millions</u>	<u>Million</u> <u>dollars</u>		
Sawmills and planing: mills-----	163,500	331.9	2,013.6	\$35,318	\$17.40
Softwood veneer and plywood-----	43,300	87.8	679.9	34,256	16.89
Particleboard-----	5,100	10.6	67.9	50,078	24.09
All wood products---	632,200	1,221.0	6,989.9	31,815	16.47

Average value added per production worker's hour in the sawmill and planing mill industry exceeded the average for all wood products by almost \$1.00. However, until 1979, the value added in the sawmill and planing mill industry was exceeded by that of the softwood veneer and plywood industry. This reversal may be attributed in part to increased use of labor-saving technological improvements, particularly during the last 5 years. In addition, the softwood plywood industry is now using a higher volume of smaller logs, which cost more to process.

#### Canada

Statistics Canada reports that in 1979 there were 1,308 sawmills and planing mills in Canada, concentrated principally in Quebec (381), British Columbia (350), and Ontario (243). 2/

1/ U.S. Bureau of the Census, Annual Survey of Manufactures, 1979, 1981.

2/ Statistics Canada, Sawmills and Planing Mills and Shingle Mills, 1979, 1981.

Total employment in the Canadian sawmill and planing mill industry was 49,000 in 1975 and increased to approximately 60,000 in 1977 and 68,000 in 1979. Concentration by size among the Canadian producers is similar to that for the U.S. producers, even though there are fewer Canadian mills overall. In 1980, the five largest Canadian producers accounted for about 22 percent of all Canadian softwood lumber production, and the 50 largest producers accounted for 67 percent (table 12). Comparative data for sawmills and planing mills in Canada and the principal producing Provinces in 1979 are given in the tabulation below: 1/

Item	Pro- duction workers	Man- hours worked	Wages (in U.S. dollars)	Value added per production worker	Value added per production worker hour
	Number	Millions	Million dollars	-----U.S. dollars-----	
Canada-----	57,441	122.0	\$889.6	\$38,780	\$18.26
British Columbia:					
Coast-----	14,083	28.7	263.5	39,652	19.46
Interior-----	18,360	37.7	330.9	45,405	22.11
Quebec-----	12,668	28.8	147.5	34,637	15.23
Ontario-----	5,956	12.9	73.4	34,696	16.05

The value added per production worker's hour in the interior and coastal regions of British Columbia exceeds the average for all Canada and for Ontario and Quebec.

U.S. ownership in the Canadian sawmill industry accounts for about 10 percent of all lumber production in Canada. In British Columbia, U.S. ownership is even more significant; 10 U.S.-owned firms produce nearly 20 percent of that Province's production, representing about 2.5 billion board feet in 1980. 2/ Total production of firms in British Columbia in which U.S. companies held some ownership was 5.7 billion board feet in 1980. 3/

1/ Ibid.

2/ Annual Lumber Review and Buyers Guide, Forest Industries, Miller Freeman Publisher, San Francisco, May 1981.

3/ "Consolidation of material presented to the International Trade Commission," Canadian Softwood Lumber Committee, February 1982, p. 3.

### Comparison of U.S. and Canadian industries

In general, the Canadian and U.S. industries are similar in structure. The Canadian industry is slightly more concentrated but not to an extent that changes the competitive nature of these industries. The U.S. and Canadian sawmill and planing mill industries are not highly concentrated, produce a similar product, and serve a wide market characterized by many buyers and sellers.

A comparison of the value-added per production worker hour for the U.S. and Canadian sawmill and planing mill industries indicates that Canadian mills have a slightly higher value added per production worker than do U.S. mills. The several factors that may have a bearing on this condition include differences in technology, production costs, material costs, labor skills, and the quality of raw materials. These matters are discussed in other sections of this report. In the following tabulation, the value added by U.S. and Canadian sawmills and planing mills is compared for 1972 and 1977-81: 1/

#### Value added per production worker hour in--

<u>Year</u>	<u>United States</u>	<u>Canada</u>
1972-----	\$ 9.62	\$ 8.50
1977-----	14.11	14.98
1978-----	17.33	16.81
1979-----	17.40	18.26
1980 <u>1/</u> -----	17.95	18.87
1981 <u>1/</u> -----	19.09	20.24

1/ Estimated using the trend since 1972.

This indicator shows a close similarity between the two industries. The value added for the Canadian production worker trended upward at a slightly higher rate, but from 1972 to 1981 the average difference between the U.S. and Canadian value added was less than \$1.00.

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1/ U.S. Bureau of the Census, Annual Survey of Manufactures, 1979, 1981, and Statistics Canada, Sawmills and Planing Mills and Shingle Mills, 1979, 1980.

Employment in both the U.S. and Canadian industries has declined since 1979. In the tabulation below, employment, employment indexes, and production indexes for the United States 1/ and Canada 2/ were as follows:

Year	United States			Canada		
	Production index (1977=100)	Production workers		Production index (1977=100)	Production workers	
		Number	Index (1977=100)		Number	Index (1977=100)
1975-----	83	:142,300	91	63	: 40,788	79
1976-----	95	:150,700	97	87	: 47,832	93
1977-----	100	:155,800	100	100	: 51,532	100
1978-----	100	:153,300	98	107	: 56,101	109
1979-----	96	:163,500	105	107	: 57,441	111
1980-----	79	:140,600	90	106	: <u>1/</u> 50,000	97
1981-----	73	:131,600	84	95	: <u>1/</u> 44,200	86

1/ Estimated from data provided by the National Forest Products Association.

The number of production workers in both countries peaked in 1979. Thereafter, the number declined to a 10-year low in the United States and to the second lowest level in Canada.

Three financial indicators are shown in table 13 for the U.S. and Canadian sawmill and planing mill industries. These indicate that in recent years the Canadian industry has had a better financial return than the U.S. industry. The median return on capital employed is shown for the United States, Canada, and 15 mills in British Columbia. The median returns (in percent) for the United States and Canada, shown in the following tabulation, are extracted from table 13, and the returns for British Columbia mills were developed by Peat, Marwick, Mitchell & Co. for the Council of Forest Industries of British Columbia:

<u>Year</u>	<u>United States</u>	<u>Canada</u>	<u>British Columbia</u>
1975-----	1.5	1.8	4.6
1976-----	8.2	3.6	8.8
1977-----	8.1	9.5	8.0
1978-----	10.3	15.9	12.1
1979-----	12.0	16.5	19.4
1980-----	9.4	11.4	9.6

1/ U.S. Department of Commerce, Industrial Outlook, 1982.

2/ Statistics Canada, 1979.

## Forest Resources

United States 1/

The resource base.--Of the 2,264 million acres of land area in the United States, 740 million acres are classified by the U.S. Forest Service as forest land. Of this 740 million acres, 488 million acres are classified as commercial forest land. 2/ The commercial forest land is fairly well distributed among the three major regions of the United States, as shown in the following tabulation:

<u>Region</u>	<u>Acres</u> <u>(millions)</u>
South-----	188
North-----	171
West-----	129
Total-----	<u>488</u>

Oregon and Washington have the most commercial forest land in the West, with 24 million and 18 million acres, respectively; in the North, Michigan (19 million), Pennsylvania (17 million), and Maine (17 million) are the leading States; while in the South, Georgia (25 million), Alabama (21 million), and North Carolina (20 million) have the largest acreages.

Forest inventory. 3/--Although the preceding data provide an overall view of the extent of commercial forest land of the United States, for the purposes of this investigation, the net volume of softwood sawtimber 4/ is a more important measure of resource supply. The net amount of softwood sawtimber on commercial forest land in the United States, as reported by the U.S. Forest Service for 1977, was 1,983 billion board feet, 77 percent of the 2,569 billion board feet of all sawtimber (including hardwoods) on U.S. commercial forest land.

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1/ Data presented are based on Forest Statistics of the U.S. 1977-Review Draft, U.S. Department of Agriculture Forest Service.

2/ Commercial forest land is defined as land which is producing or is capable of producing crops of industrial wood and not withdrawn from timber utilization by statute or administrative regulation. Areas qualifying as commercial forest land have the capacity of producing in excess of 20 cubic feet per acre per year of industrial wood in natural stands.

3/ All inventory figures represent 1977 data (latest available from the U.S. Forest Service).

4/ Softwood sawtimber is defined as live trees of commercial species containing at least a 12-foot saw log, or two noncontiguous saw logs, each 8 feet or longer, and with at least one-third of the gross board-foot volume between the 1-foot stump and minimum saw-log top being sound. Softwoods must be at least 9.0 inches in diameter at breast height (4-1/2 feet above ground level).

The softwood sawtimber, however, is not distributed evenly over all forest lands. The West has by far the greatest volume of softwood sawtimber--1,546 billion board feet, accounting for 78 percent of the total sawtimber resource. The South accounts for 340 billion board feet (17 percent), and the North (97 billion board feet--5 percent) accounts for the remainder. Table 14 shows the volume of softwood sawtimber, by regions and specified States, in 1977.

The total volume of all softwood growing stock <sup>1/</sup> on commercial timberland in the United States is 456 billion cubic feet. As shown in the following tabulation, Washington and Oregon constitute 133 billion cubic feet (29 percent) of the total:

<u>Region</u>	<u>Softwood growing stock</u> <u>(billion cubic feet) <sup>1/</sup></u>
West:	
Washington and Oregon-----	133
All other-----	182
South-----	97
North-----	46
Total-----	<u>456</u>

<sup>1/</sup> Because of rounding, figures may not add to totals shown.

Forest ownership.-- <sup>2/</sup>Ownership of the 488 million acres of commercial forest land in the United States is concentrated in farmer and all other private ownerships (excluding forest industry). This group owned 283 million acres, or 58 percent of total U.S. commercial forest land. Another 68 million acres (14 percent) are owned by forest industries. Of the remaining 137 million acres, 89 million (18 percent) are in the national forests, and 48 million acres (10 percent) are in other public lands.

Ownership of softwood sawtimber is again not in direct proportion to ownership of all commercial forest land. Of the total 1,983 billion board feet, 1,008 billion board feet (51 percent) is in national forests, 549 billion board feet of which is in national forests in the Pacific Northwest

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<sup>1/</sup> The volume of all softwood growing stock is included for comparison purposes. It includes timber which does not meet the requirements for sawtimber.

<sup>2/</sup> Data presented are based on Forest Statistics of the U.S. 1977-Review Draft, U.S. Department of Agriculture Forest Service.

(including 162 billion board feet in Alaska). This and other major ownership classifications of softwood sawtimber are shown in the following tabulation:

<u>Ownership</u>	<u>Board feet</u> <u>(billions) 1/</u>	<u>Percent</u> <u>of total 1/</u>
National forest-----	1,008	51
Farm and other private-----	430	22
Forest industry-----	310	16
Other public-----	236	12
Total-----	<u>1,983</u>	<u>100</u>

1/ Because of rounding, figures may not add to the totals shown.

The following tabulation shows that the ownership of all softwood growing stock is distributed in nearly the same manner as softwood sawtimber:

<u>Ownership</u>	<u>Cubic feet</u> <u>(billions) 1/</u>	<u>Percent</u> <u>of total 1/</u>
National forest-----	208	46
Farm and other private-----	124	27
Forest industry-----	74	16
Other public-----	51	11
Total-----	<u>456</u>	<u>100</u>

1/ Because of rounding, figures may not add to the totals shown.

Log exports.--For purposes of this investigation, discussion of log exports will focus on the effects of softwood log exports on raw material price and supply for U.S. lumber manufactures.

Log exports have increased in volume from approximately 300 million board feet per year in the 1960's to over 3 billion board feet annually during 1978-80. Exports of softwood logs in 1981 declined to 2.4 billion board feet, valued at \$1.0 billion. The average value per 1,000 board feet was \$421.88 in 1981 (down from \$466.92 in 1980), which is significantly higher than average softwood log prices for domestic sales in the United States. Generally, the exports are very high-quality logs destined for Japan, which received about 74 percent of the quantity of 1981 softwood log exports (table 15). About 95 percent of such log exports originate in Oregon and Washington, but between 0.2 billion and 0.3 billion board feet of logs are exported annually from Maine to the Province of Quebec.



Since October 1973, Congress has banned the export of unprocessed timber from Federal lands in the West. 1/ Before this ban, exports from Federal land west of the 100th meridian had been restricted (since January 1, 1969) to 350 million board feet annually by the Morse Amendment (82 Stat. 966). Softwood log exports from Federal lands in Alaska have been restricted since the late 1920's and from State-owned lands since 1960; currently there is a court order suspending this law to allow the export of logs from State lands in Alaska. Oregon and California applied restrictions on log exports from their State-owned lands beginning in 1963 and 1974, respectively, and continuing to the present time.

Nationally, less than 5 percent of the total softwood log harvest is exported. In the western parts of Oregon and Washington, however, softwood log exports account for about 20 percent of the total harvest, and in Maine, log exports have accounted for between 30 and 50 percent of that State's total harvest in recent years, although the trend is diminishing. 2/

The effect of log export restrictions on resource supply, employment, and on lumber and stumpage prices is a subject of much debate. On one side of the issue, proponents of further restrictions in the Northwest claim that additional restrictions would lower stumpage prices by increasing the supply of available logs and through lower lumber prices enhance the competitive position of Pacific Northwest producers in both U.S. and foreign markets.

On the other hand, opponents of restrictions maintain that further restrictions would not guarantee lower stumpage and lumber prices, because Japan possibly would start importing lumber from the United States in the necessary quantities to replace its lost log imports, thereby continuing the demand on U.S. timber resources. As an additional point, some opponents claim that higher U.S. prices caused by log exports have led to increased incentives for management on U.S. forests (higher prices justify increased management, which in turn yields greater per acre volumes of better grade timber). If incentives were removed, it is claimed, management would deteriorate, resulting in decreased supply and higher prices in future years.

A similar situation occurs in Maine, where Quebec sawmills pay a higher price for some species of logs than many Maine mills can afford to pay (although a great deal of Maine's sawlogs that are exported to Quebec have no market in Maine because of their remote location). Landowners and logging contractors are better off because of the higher prices received for their timber, while Maine mills' log costs increase, detracting from their competitive position.

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1/ Department of the Interior and Related Agencies Appropriations Act, 1974 (P.L. 93-120, Oct. 4, 1973), sec. 301.

2/ Aley, Jack, The Export of Maine Sawlogs to Quebec, State of Maine Department of Conservation, April 1981.

In a 1980 study by the Forest Service, 1/ projections of the effects of a log export ban were made using a multiple scenario approach. The scenarios are based on various of assumptions ranging from Japan purchasing no additional softwood lumber from the United States to Japan purchasing the lumber equivalent of the log export volume that would have been exported. The results of this study indicate that prices for both lumber and stumpage could be expected to vary with a log export ban, dependent on each scenario. Stumpage prices in the Douglas-fir region were predicted to decline in all scenarios, although all other regions examined had mixed stumpage price changes depending on the conditions of the scenario. The most likely scenarios indicate a stumpage price change of less than  $\pm 15$  percent (except for stumpage prices in the Douglas-fir areas, which could be expected to decline by more than 15 percent). The magnitude of the price changes found for lumber in the most likely scenarios would amount to less than a  $\pm 2$ -percent change in the 1980's.

In addition to price changes, total U.S. timber harvest could be expected to decline (primarily in the Douglas-fir region) under all scenarios during a log export ban. In analyzing the results from these reports, it is important to note that although a ban on log exports would certainly affect the price and supply of lumber and stumpage to some degree, changes in the U.S. economy and in levels of housing activity would more greatly affect prices and supplies.

#### Canada

The resource base.--Of the 2,278 million acres of land area in Canada, 2/ 844 million acres are classified as forest land of which 776 million acres are available for the growing and harvesting of forest crops (production forest land). Of the 776 million acres, however, only 490 million acres (59 million of which are currently unstocked) are classified as being able to produce a merchantable stand of timber within a reasonable length of time (productive forest land). These 490 million acres of productive forest land are distributed among the regions of Canada as shown in the following tabulation:

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1/ Darr, David R., Richard W. Haynes, and Darius M. Adams, The Impact of the Export and Import of Raw Logs on Domestic Timber Supplies and Prices, U.S. Department of Agriculture Forest Service Research Paper, PNW-277, 1980.

2/ Statistics Canada, Catalogue 25-202, 1979. 1 square kilometer = 247.105 acres.

<u>Region</u>	<u>Productive forest land</u> <u>(million acres) 1/</u>	<u>Percent</u>
British Columbia-----	119	24
Ontario-----	106	22
Quebec 2/-----	92	19
Alberta-----	50	10
Other Atlantic Provinces 3/-----	45	9
Manitoba-----	33	7
Other 4/-----	44	9
Total-----	490	100

1/ Because of rounding, figures do not add to the total shown.

2/ The data on about 44 million uninventoried acres of Quebec are not available and hereinafter will not be included.

3/ Includes Newfoundland, Nova Scotia, and New Brunswick (Prince Edward Island is excluded).

4/ Includes Saskatchewan, Northwest Territories, and Yukon.

Forest inventory.--The volume of softwood timber on Canada's stocked productive forest land is about 608 billion cubic feet. Of this total, 477 billion cubic feet are softwood timber on economically accessible lands. The following tabulation shows that over half of this economically accessible timber is in British Columbia:

<u>Region</u>	<u>Volume</u> <u>(billion cubic feet) 1/</u>	<u>Percent</u>
British Columbia---	252	53
Ontario-----	73	15
Quebec-----	67	14
Other Atlantic 2/--	35	7
Alberta-----	33	7
Manitoba-----	8	2
Other 3/-----	10	2
Total-----	477	100

1/ Because of rounding, figures may not add to the totals shown.

2/ Includes Newfoundland, Nova Scotia, and New Brunswick (Prince Edward Island is excluded).

3/ Includes Saskatchewan, Northwest Territories, and Yukon.

Forest ownership.--The productive forest land in Canada is almost entirely Provincial Crown land. 1/ Of the 490 million acres of productive forest land, 426 million acres or 87 percent are Provincial Crown lands, with 38 million acres (8 percent) of private holdings and 28 million acres (about 6 percent) of Federal Crown lands. 2/

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1/ Public lands under Provincial Government jurisdiction.

2/ Public lands under Federal Government jurisdiction.

Ownership of timber in Canada is concentrated in Provincial Crown lands, which contain 440 billion cubic feet out of a total 477 billion cubic feet of softwood timber volume in Canada on economically accessible lands. Private lands account for about 34 billion cubic feet; Federal Crown lands contain only 4 billion cubic feet.

Log exports.--Provincial laws prohibit the export of any unprocessed logs except when the log is considered surplus to Canadian needs. In order to receive a permit for export, logs must first be advertised and refused for sale in Canada for a specified period of time. For all practical purposes, Canada's log exports are of minor volumes, although logs can be exported from some Indian-owned lands. The United States generally imports less than 0.1 billion board feet of logs per year from Canada.

#### A comparison of the forest resources of the United States and Canada

The land areas of the United States and Canada each consist of about 2.3 billion acres. This and other points of comparisons of the forest resources of the two countries are summarized in the following tabulation: 1/

<u>Resource</u>	<u>United States</u>	<u>Canada</u>
Total land area -----million acres-----	2,264	2,278
Commercial forestland -----do-----	488	490
Softwood timber inventory (billion ft <sup>3</sup> )----	456	477
Land ownership:		
Public -----percent-----	28	93
Private -----do-----	72	8
Total -----do-----	<u>100</u>	<u>100</u>
Timber ownership:		
Public -----do-----	63	93
Private -----do-----	38	7
Total -----do-----	<u>100</u>	<u>100</u>

1/ Because of rounding, figures may not add to the totals shown.

### Overview of Government Resource and Tax Policy

Probably the most significant way in which the Governments of the United States and Canada influence the competitive conditions in the forest products industry is through the control of the timber supply from Government controlled lands. This is particularly visible for the softwood lumber producing industry because the U.S. Federal and the Canadian Provincial governments control significant portions of the softwood sawtimber supply. The administration of timber sales is presented in the next section. This section covers Government resource management policies, industrial policies, and tax policies.

#### Comparison of U.S. and Canadian land management policies

Both the United States and Canada are committed to maintaining an adequate supply of timber in perpetuity for a wide variety of uses. Accomplishment of this goal in the United States, especially in the Western States, is through policies of the Federal Government. In contrast, however, management of the timber resource in Canada is primarily the responsibility of the Provinces.

U.S. land management policy.--The principal agencies of the U.S. Government charged with administering forest lands are the U.S. Forest Service of the Department of Agriculture and the Bureau of Land Management (BLM) of the Department of the Interior. The BLM has a significant impact only in the State of Oregon where the BLM administers approximately 9 percent of the commercial timberlands. Other Federal agencies and the States have less influence owing to the limited acreage of timberland they control in the United States. 1/ Management of private timberland is at the discretion of the landowners, although the tax and environmental policies of the Federal and State governments do affect the way landowners do business and harvest timber from their land.

The Federal Government is the significant softwood timber resource owner in the Western United States, therefore this analysis deals primarily with the effect of Federal policies in the West. The Federal agencies administering the Government's timberlands are charged with more than management of the timber resource and often must weigh other demands for the use of the forest against the management of timber for sale. The following data from the U.S. Forest Service's annual report shows revenues collected, by various major uses, of the National Forests in fiscal 1980: 2/

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1/ Forest statistics of the U.S., 1977, Review Draft, USDA Forest Service, Washington, D.C., 1978, table 2, p. 7.

2/ Report of the Forest Service, Fiscal Year 1980, USDA, Forest Service, Feb. 15, 1981.

<u>Use</u>	<u>Receipts</u> <u>1,000 dollars</u>	<u>Percent</u>
Timber and forest products-----	600,333	92
Mineral leases and permits-----	20,160	2
Recreation-----	18,308	1/
Grazing-----	13,973	3
Land uses-----	2,205	1/
Power-----	459	3
Total-----	655,438	100

1/ Less than .05 percent.

An additional \$203.7 million was collected, mostly from timber sales, for forest improvements (cleanup and reforestation made necessary by logging). In addition, there are many uses, mostly recreational, for which no revenue is collected. Activities on the National Forests other than timber sales affect the competitive conditions in industry when they may limit the supply of timber available, or when the revenue spent in the administration of these other uses is needed and not available for the administration of timber sales.

In general, Federal timber sale policies are based primarily on biological as opposed to economic standards. Since 1973, the U.S. Forest Service has been managing sales of timber according to a principal called nondeclining even flow. 1/ Under this concept, principal harvests are based on the productive capacity of the forest rather than economic conditions. Current harvests are managed to assure that future harvests will be no smaller. Public pressure for increased cutting during periods of high demand is largely ignored by this process. This limits the supply during periods of high demand and thereby puts additional upward pressure on stumpage prices. In the administration of timber sales on Federal lands, the U.S. Forest Service bears most of the costs of such sales; however, certain environmental regulations and the Forest Service requirements in logging practices and in cleanup after logging add costs to the timber purchasers that might not be incurred in logging on private lands.

In the regulation and administration of timber sales, the Forest Service must take into account the effect sales will have on communities that are dependent on the lumber industry, as well as on individual businesses wholly dependent on the Forest Service sales for logs. At the present time, the Forest Service has a program which assures preferential bidding to small businesses (Small Business Set Aside) when sales to businesses so defined (500 or less employees) fall below historic levels. 2/

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1/ Cutler, Elliot, "The Federal Timber Program," paper presented at the Forest Products Research Society conference on Timber Supply, San Francisco, Calif., Oct 2-4, 1979.

2/ Leonard, George M., Timber Management Staff, U.S. Forest Service, from statement in hearings on H.R. 2799, the Federal Timber Sales Act of 1979, Washington, D.C., Mar. 19, 1979, pp. 11-35.

U.S. policy regarding timber sales is under two conflicting concerns. U.S. industry generally wants increased sales to both meet capacity requirements and to reduce pressure on raw material costs. 1/ Groups broadly classified as environmentalists argue for more reserves for recreational and conservation purposes. According to the U.S. Forest Service, about 24.2 million acres of productive forest land were reserved or deferred from timber harvesting for wilderness, parks, wildlife refuges and other uses as of 1976. 2/ If no other conditions were to change, the net effect of these timberland withdrawals would reduce timber supply and likely result in increased prices for stumpage, both public and private. In practice, the effect of timberland withdrawals is offset to some extent by more intensive management methods 3/ which in turn leads to higher timber yields on remaining timberlands. The higher prices paid for stumpage could result in additional standing timber being brought into the market from private lands.

Canadian land management policy.--In contrast to the U.S. Government, the Government of Canada has retained title to most of its forest lands, and the Provincial government under the British North American Act of 1887 controls and administers the use of these lands. Provincial control encompasses 90 percent of the land classified as commercial forests.

Provincial laws and the degree to which Provinces administer control differ significantly from one Province to the next. In Ontario, for instance, about 85 percent of the forest land is under public control. Three types of management are exercised: 1) Company units, in which a single company is licensed to harvest timber from a tract of land; 2) Crown management units, in which several companies are licensed to operate within a single unit; 3) and Agreement Forests in which tracts under various small ownerships are grouped and administered by the Province. Crown and Company management units are the most prevalent, constituting approximately 52 and 48 percent, respectively, of the Provincially controlled lands (Agreement Forests being less than 1 percent). 4/ Ontario requires management plans for all units. These plans must provide for environmental and recreational interests and are updated to reflect accepted practices. Regeneration and stand management is the responsibility of the Province, which leaves only harvesting to be carried out by private industry. 5/

The Province of Quebec controls about 90 percent of the forest lands, nearly all of which are managed by private companies under license. This form

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1/ This issue and the effect on consumer prices are discussed in Lumber Products and the Lumber Products Industry, Interim Report, Council on Wage and Price Stability, Washington, D.C., Oct. 1977.

2/ An Assessment of the Forest and Rangeland Situation in the United States, Review Draft, USDA Forest Service, Washington, D.C., 1979, p. 33.

3/ These include thinning, increased forest protection, more modern logging practices, and utilization of material not formerly removed from the forest.

4/ F.L.C. Reed and Associates, LTD., Forest Management in Canada, vol. 1, Ottawa, January 1978, pp. 44-47.

5/ Ibid., p. 44

of control gradually is being replaced by a volume allocation system in which private companies will be granted 20-year contracts with a harvest allocation controlled by the Province. 1/

In British Columbia, a complex system of licenses and tenures exists. These developed over time, reflecting changing conditions in the Province. Older forms are being gradually phased out, and today, three systems dominate: Timber Sale Harvesting Licences (TSHL), Timber Sale Licences (TSL), and Tree Farm Licences (TFL). 2/

The first two types accounted for approximately 62 percent of the timber volume removed from Provincial lands in 1980. Under Timber Sale Harvesting Licences, the British Columbia Ministry of Forests determines the inventory and allowable cut and approves a management plan provided by the licensee. A cutting permit is then issued by the Ministry based upon volume compilations made by the licensee. Harvesting and forest management, including reforestation, are carried out by the licensee. Timber Sale Licences are similar to the TSHL's.

Tree Farm Licences are management agreements in which the licensee carries out virtually all management functions on a tract consisting of both his own and Crown lands. Costs are shared by the Province with the licensee according to the acreage of Crown land included under the license. The Tree Farm Licences accounted for approximately 25 percent of timber removals in the Province in 1980 and are concentrated heavily in the coastal region of the Province.

#### Comparison of U.S. and Canadian industrial policy

Under the U.S. and Canadian Federal, State, and Provincial Governments there are numerous policies and programs designed to advance economic and social goals. Many of these are for specific industries or specific regions. Some of these policies are promoted through tax laws and others through direct loans or grants. The broad range of these, their variety of application, and the extent to which they are used, makes it difficult to ascertain their net effect on the competitiveness between the U.S. and Canadian industries.

Softwood lumber producers in the northern United States, particularly in Maine, have been more concerned with these programs and their effect than have those in the West. These northern producers have been aware of apparent industry assistance programs in neighboring Provinces and have documented several instances of such programs for the Commission. 3/ One such program, the Regional Development Incentives Act, administered by the Department of Regional Economic Expansion (DREE), is often cited as an example of Government subsidization of the forest products industry in Canada. This act came into effect in 1969 with the purpose of assisting in the expansion and modernization

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1/ Ibid., pp. 48-50.

2/ "British Columbia Forest Tenures and Licence Characteristics," Notes prepared for the U.S. International Trade Commission by the Ministry of Forests of British Columbia, January 1982.

3/ Lumbert, C. Charles, Written submission to the Commission, Mar. 3, 1982.



of Canadian mills. According to one report on this program, DREE had granted \$652.9 million to the Canadian forest industry during 1969-78. <sup>1/</sup> This was approximately 16 percent of an estimated \$4,000 million in capital improvement and repairs to the Canadian sawmill and planing mill industry during the same period, and an undetermined but lesser percentage of capital improvement and repair expenditures for the entire Canadian forest industry. Similar programs exist for the industry in the United States, as is pointed out in the submission by the Canadian Softwood Lumber Committee. <sup>2/</sup> That submission covers both U.S. and Canadian programs some of which are now defunct, but the point made is that they exist in both countries at the Federal, State, Provincial, and municipal levels. The exact effect of these on the competitive conditions between the U.S. and Canadian softwood lumber industries is difficult to assess. It can be said, however, that they may have some positive effect on mills in direct competition in regard to the ability of the assistance-receiving mill to compete with the nonassistance-receiving mill.

Within the tax structure of both countries certain benefits are provided in terms of deductions or credits against taxable income. In 1978, the last year for which comparable data for both countries are available, U.S. corporations engaged in logging and sawmilling took investment credits valued at \$96 million and job (employment) credits valued at \$11 million, while similar Canadian corporations took investment credits of \$17 million and employment credits of less than \$100,000. The effect of taxes on competitive conditions are discussed in the next part of this section.

#### Comparison of U.S. and Canadian taxes

Both the United States and Canada have Federal income taxes which apply generally to all firms regardless of product line. Firms operating in both countries may also be subject to widely varying State and Provincial income and other taxes. The variety of provisions in several tax codes, and the financial situation of various firms, preclude conclusions other than very general ones. In the following tabulation, the Federal taxes paid and a ratio of these taxes to business receipts (sales) are given for U.S. <sup>3/</sup> and Canadian <sup>4/</sup> corporations classified as being in the logging and sawmilling industries:

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<sup>1/</sup> Aley, Jack, The Export of Maine Sawlogs to Quebec, Department of Conservation, Augusta, Maine., April 1981, p. 43.

<sup>2/</sup> Consolidation of Material Presented to the International Trade Commission, op. cit, pp. 124-127.

<sup>3/</sup> "Corporation Source Book," I.R.S., U.S. Department of Treasury, Washington, D.C., 1975-1978.

<sup>4/</sup> Corporation Financial Statistics, Statistics Canada, Ottawa, 1975-1979.

Year	United States			Canada		
	<u>Tax</u>	<u>Sales</u>	<u>Ratio</u>	<u>Tax</u>	<u>Sales</u>	<u>Ratio</u>
	(million	(million	(percent)	(million	(million	(percent)
	U.S. dollars)	U.S. dollars)		U.S. dollars)	U.S. dollars)	
1975-----	78	9,581	0.8	26	3,018	0.9
1976-----	189	12,506	1.5	83	3,712	2.3
1977-----	306	15,345	2.0	139	4,589	3.0
1978-----	385	18,701	2.1	244	5,546	4.4
1979 1/---	495	20,600	2.4	328	6,174	5.3

1/ Estimated by the staff of the United States International Trade Commission.

The tax shown for the United States is calculated from a tax computed by the Statistics of Income Division of the Internal Revenue Service, and is the tax after deducting for such items as foreign taxes, investment credits, and job credits. Such credits amounted to about \$128 million in 1978.

When credits for taxes paid, which include State, Provincial, municipal, and Federal taxes other than income taxes, are included in the U.S. and Canadian taxes, as shown above, the ratio of tax to sales for the United States and Canada are much closer. With the inclusion of these taxes, the ratios for the United States and Canada were 5.0 and 4.8, respectively, in 1978.

#### Comparison of methods of taxation of income

Canadian logging firms pay a considerably higher effective rate of income tax than their U.S. counterparts, but U.S. and Canadian sawmill and plywood mill firms are taxed at similar effective income tax rates. Firms engaged in both logging and milling operations generally are taxed at a lower effective rate in the United States than in Canada because of lower U.S. taxes on logging operations.

The primary reason for the difference in effective tax rates on logging operations is that in the United States it is possible for firms that cut their own timber to treat the cutting as a sale of the timber cut if it has been held for more than one year prior to cutting. The gain determined for this hypothetical transaction is reported as a long-term capital gain. If the alternative tax applies, this gain is taxed at the long-term capital gain rate of 28 percent. Otherwise it is taxed the same as other income of the operation. The basic Federal rate on other income is 46 percent for large profitable operations. In the case of individuals, capital gains are taxed at a maximum rate of 20 percent rather than the maximum ordinary income rate of 50 percent. Canadian tax law does not make such a distinction for timber.

The Canadian Provinces levy a much higher effective rate of income tax than do the U.S. States, but the effective rate of the Canadian Federal income tax is considerably lower than the U.S. Federal income tax rate. British Columbia Provincial taxes account for about 40 percent of the income taxes paid by the Canadian firms logging and processing in that Province. In the Northwest United States, on the other hand, Washington State has no corporate income tax, and Oregon levies an income tax that equals about 15 to 20 percent of the total income tax that a firm operating in that State is likely to pay. In the United States, State income taxes are deductible in calculating U.S. Federal taxes, but in Canada, Provincial income taxes are not deductible in calculating Canadian Federal taxes.

The Federal and Provincial or State taxation systems applying to firms operating in British Columbia, Washington, and Oregon are discussed below. The U.S. and Canadian systems are similar in many respects but different in others. Since firms seek to minimize taxes, these differences will influence corporate behavior, and firms operating in the different jurisdictions will behave differently when it is in their best interest to do so. High rates and onerous provisions in a particular system may not be as high or onerous as they appear, because firms may be able to structure their operations in a way that minimizes or even completely avoids them. Thus, one should not draw too many conclusions from the apparent differences in tax systems.

Taxes on firms operating in British Columbia.--Firms operating in British Columbia are subject to a basic Federal income tax of 36 percent and a basic Provincial income tax of 16 percent. Firms engaged in logging operations are eligible for a 6.6-percent Federal logging tax credit which, when coupled with the 1.47-percent Federal surtax, results in an effective Federal rate of 30.87 percent before depreciation. Provincial taxes are not deductible in calculating Federal taxes. Manufacturing and processing deductions would be nil, because the logging operation would not involve any significant manufacturing or processing. The Provincial rate would be reduced by a 3.33-percent logging tax credit, but would be increased by a Provincial logging tax of 10 percent, resulting in an aggregate Provincial rate of 22.67 percent. The combined Federal-Provincial effective tax rate for logging operations would be 53.54 percent before deductions for depreciation.

Firms operating sawmills and plywood mills but not engaged in logging would similarly start with a basic Federal tax rate of 36 percent and a Provincial rate of 16 percent. The Federal rate would be reduced by a manufacturing and processing deduction of 6 percent and a logging tax credit of 4.33 percent, and increased by a surtax of 1.28 percent, resulting in a net effective rate of 26.95 percent before depreciation. The Provincial rate would be reduced by a logging tax credit of 2.17 percent and increased by a Provincial logging tax of 6.50 percent, resulting in an aggregate Provincial effective rate of 20.33 percent. The aggregate combined effective rate for milling operations would be 47.28 percent before deductions for depreciation.

Integrated firms engaged in both logging and processing operations would expect to pay tax at a combined Federal-Provincial rate of between 47.28 and 53.54 percent before deductions for depreciation. A hypothetical firm deriving two-thirds of its income from logging and one-third from processing could be expected to pay tax at an aggregate combined effective rate of 51.45 percent before deductions for depreciation.

Canadian firms are generally permitted to depreciate plant and equipment over a shorter period than U.S. firms. Logging equipment can be depreciated at a 30-percent rate under the declining balance method (versus over a 5-year period in the United States). <sup>1/</sup> New machinery used in sawmills and pulp and paper mills can be fully depreciated in 2 years (versus over 5 years in the United States). However, mill buildings generally would be depreciated at a rate of 5 percent under the declining balance method, a rate less liberal than that allowed in the United States (the United States permits buildings to be depreciated over 15 years).

Taxes on U.S. firms.--U.S. logging firms are subject to a basic Federal income tax of 46 percent on their ordinary gain and 28 percent on long-term capital gain when they are in the alternative tax situation. The United States has no logging tax credit or manufacturing and processing deduction similar to that of the Canadian Federal tax system. State income taxes are deductible, but generally are not large enough to reduce the effective Federal rate by more than 2 or 3 percentage points. As stated earlier, Washington State does not impose a State income tax, but Oregon imposes an income tax of 7.50 percent. The effective Federal income tax rate before depreciation on logging firms operating in Washington and Oregon will be between 28 and 46 percent. The aggregate combined Federal-State rate in Oregon will vary, but could be as low as 33.40 percent before depreciation, considerably lower than the combined Federal-Provincial rate of 53.54 percent (before depreciation) applicable in British Columbia.

U.S. firms operating sawmills and plywood mills but not engaged in logging operations are subject to the basic Federal rate of 46 percent as reduced by any deductions, including the deduction for State income taxes. This results in an effective Federal tax rate (before depreciation) of 46 percent in Washington, where there is no State income tax, and 42.55 percent

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<sup>1/</sup> Under the declining balance method, the taxpayer would subtract each year's depreciation from the cost or other basis before figuring the next year's depreciation. Thus, in the case of a piece of logging equipment costing \$1,000, the taxpayer would take \$300 depreciation the first year ( $\$1,000 \times 30$  percent), \$210 the second year ( $\$1,000 - \$300 \times 30$  percent), and so forth.

The comparative U.S. periods are those permissible under the new accelerated cost recovery system (ACRS), established by the Economic Recovery Tax Act of 1981 and in effect since Jan. 1, 1981. The annual percentage rate of depreciation is set by statute. For example, in the case of 5-year property, a taxpayer would deduct 15 percent of the basis of the property in the first year, 22 percent in the second year, and 21 percent each year in the third, fourth, and fifth years. An alternative ACRS method is available to taxpayers seeking to depreciate assets over a longer period of time. The straight-line, declining balance, and sum-of-the-digit methods are not generally applicable to property placed in service after Dec. 31, 1980. Prior to Jan. 1, 1981, depreciation of industrial buildings depended on the useful life of the building as determined by the Internal Revenue Service, which could have been as long as 40-60 years for new buildings.

in Oregon, where there is a State income tax of 7.50 percent. The aggregate combined Federal-State rate in Oregon is 50.05 percent before depreciation. The equivalent aggregate combined Federal-Provincial effective rate in British Columbia is 47.28 percent.

Integrated firms having two-thirds of their income long-term gain from timber and one-third from other gain could expect to pay tax at an aggregate combined effective rate before depreciation as low as 34.00 percent in Washington and as low as 38.51 percent in Oregon (before depreciation). This compares with an aggregate combined effective rate of 51.48 for a similar firm in British Columbia (before depreciation).

U.S. firms are required to depreciate plant and equipment. Under the ACRS method, in effect since January 1, 1981, most equipment placed in service after December 31, 1980, is depreciated over 5 years, and most buildings are depreciated over 15 years at pre-set statutory rates.

## Timber Procurement

U.S. prices and trends (emphasis on the Pacific Northwest)

Definition and inventory review.--"Stumpage" is the term generally applied to standing timber. Prices paid for standing timber (stumpage) vary across the United States and are determined by such factors as volume per acre to be cut, size of timber, species, terrain, location, and markets.

Softwood sawtimber removals (harvest) in the United States for 1976 totaled 52 billion board feet, or 2.7 percent of total softwood sawtimber volume (table 16). 1/ This volume as it was harvested is shown by ownership, in the following tabulation:

<u>Ownership</u>	<u>Percentage distribution of volume</u>
Forest industry-----	37
Farm and other private-----	30
National forests-----	23
Other public-----	10
Total-----	<u>100</u>

Forest industry stumpage prices.--The prices paid for stumpage removed from land owned by forest industry are difficult to assess. Since many companies own timber at a book value much below current market values, actual stumpage price trends of forest-industry-owned timber are hard to determine. In many instances, companies are better off financially by accounting for stumpage at as high a price as permissible in order to pay a capital gains tax (maximum 28 percent) on timber rather than pay a corporate income tax (as high as 46 percent) on gross sales of finished products. Lumber producers with their own timberland, therefore, generally use market prices in accounting methods rather than original costs. Currently, the Internal Revenue Service uses U.S. Forest Service bid stumpage prices for capital gains calculations.

Farm and other private land stumpage prices.--Generally, the prices paid for stumpage on farms and nonindustrial lands result from interactions between buyers and sellers. The State of Maine will be used in this report as an example of stumpage prices received by nonindustrial private landowners. 2/ The price paid for softwood sawtimber stumpage in Maine averaged US\$44.23 per 1,000 board feet (international 1/4" rule) in 1980. 3/ This was a price increase of 71 percent from the average US\$25.91 per 1,000 board feet paid in 1975. In Maine, as in most States, a private nonindustrial timber owner can get an idea of the current market price of stumpage from the local State forester.

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1/ U.S. Department of Agriculture, Forest Service, Forest Statistics of the U.S., 1977. Table 35, p. 86. International 1/4" log rule. Inventory and removal statistics are collected every 7 years. The latest published statistics included forest inventory as of Jan. 1, 1977, and removals for 1976.

2/ Included in the figures presented, however, are receipts from other private and State lands.

3/ State of Maine, Report of Annual Timber Stumpage Sales.

Appraisal system on public lands.—Timber on public Forest Service lands is appraised on a residual value basis. In the Western United States, an end-product selling price is generally calculated from lumber, plywood, and chip prices collected from producers. Data on prices and costs (milling and logging) are collected on a contractual basis by allowing the Forest Service access to company books and verification of accuracy by auditors. Before 1957, the Forest Service used log prices rather than end-product prices for appraisals on west coast timber, but because truly independent log sellers had become scarce, the Forest Service turned to the end-product-based system.

The Forest Service appraisal system uses a profit and risk allowance of between 9 and 18 percent for sawtimber appraisals. The rate is variable due to the many different conditions that occur from sale to sale. In simplified terms, all costs and the allowance for profit and risk are deducted from the end-product index price to arrive at an appraised (residual) stumpage value.

If appraised stumpage values fall below certain minimums, base stumpage rates are enforced. These minimum stumpage rates vary between US\$1 and US\$10 per 1,000 board feet in national forests, depending on the species, although some salvage sales, such as timber blown down by Mt. St. Helens or fire-damaged timber, may be sold at prices below these minimums. In all cases, the minimum amount to be collected for the U.S. Treasury must be 50 cents per 1,000 board feet plus site preparation and reforestation (sale area betterment) costs.

Forest Service timber sales are generally put out for public bid. An advertised price, which is generally equal to the appraised price plus estimated road costs, is included on the timber sale prospectus. The bidding starts at the advertised price (generally by oral bidding on the west coast, although sealed bidding occurs in other parts of the country) and continues until a final price is determined. The purchaser generally has the option to either build the required roads and receive the assigned road credits against stumpage payments or pass the road-building responsibility on to the Forest Service.

In the Pacific Northwest, the average price of timber sold has had little relationship to appraised values in recent years. Because of intense competition for Forest Service timber, bid prices regularly have exceeded appraised values. Two of the primary reasons for this "over bidding" are (1) past rates of inflation have fueled speculation of much higher timber values in the future and (2) industries' concerns over raw materials shortages in the future which results in a willingness to bid high prices to secure future supplies. Speculation in anticipation of higher future prices is further fueled by sales contracts of up to 7 or 8 years in length, the lack of stumpage rate adjustment mechanisms to reflect changing lumber prices (in western Washington and western Oregon), and small bid deposit requirements on sales.

The following tabulation shows the advertised price, bid price, and bid ratio of U.S. Forest Service sales on the west side of Region 6 1/ during 1977-81: 2/

<u>Year</u>	<u>Advertised</u> <u>(Per 1,000</u> <u>board feet)</u>	<u>Bid</u> <u>(Per 1,000</u> <u>board feet)</u>	<u>Bid</u> <u>ratio</u>
1977-----	US\$112.78	US\$181.76	1.6:1
1978-----	120.13	214.95	1.8:1
1979-----	131.24	335.00	2.6:1
1980-----	99.42	350.46	3.5:1
1981-----	97.50	275.14	2.8:1

Advertised prices (appraised value plus road credits) increased 16 percent from 1977 to 1979, but then dropped 26 percent in price from 1979 to 1981, reflecting decreased end-product prices, but bid prices (including road costs) increased 93 percent from 1977 to 1980, before dropping 21 percent in 1981. For the entire 1977-81 period, the average advertised price dropped 14 percent, while average bid prices increased 51 percent. These expectations for much higher prices by many timber buyers have not materialized in increased end-product prices, causing many timber harvest contracts to become uneconomical. Because of the potential number of contract defaults, the Forest Service has been granting extensions to many contract holders.

As a result of these and other problems related to timber sales, the Forest Service has proposed a new set of rules to govern the sale of timber from National Forests. These proposed regulations are designed to:

1. Encourage a regular flow of products manufactured from National Forest timber into the market place.
2. To provide a corresponding flow of timber receipts to governments.
3. Help ensure financial responsibility of bidders.
4. Encourage purchasers of Forest Service timber sales to harvest timber early in the contract term.
5. Reduce the need for further extensions of timber contracts.

The full Forest Service proposal, as it appeared in the Federal Register, is reproduced in appendix I.

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1/ U.S. Forest Service (USFS) Region 6 includes all National Forests in Washington, Oregon, and a small section of California.

2/ Unweighted year averages compiled from quarterly data supplied by USFS Region 6. Includes road credits; if road credits were not included, bid ratios would be higher.



Stumpage prices on public lands.--The prices paid for stumpage on public lands are generally published in a variety of ways. In the Pacific Northwest, timber is sold on a bid basis, with the highest bid generally awarded the sale. Timber sale contracts can range in length from 1 to 8 years, but the average length is about 3-1/2 years. Bid stumpage prices are available from the U.S. Forest Service and most public owners, by regions and by species. 1/

On all types of publicly owned land in Washington and Oregon (Forest Service data include a small portion of California), bid prices for stumpage increased steadily during 1977-80, despite declining lumber markets in late 1979 and 1980 (table 17). In 1981, however, producers began feeling the effects of 2 poor years back to back, and the prices bid for stumpage dropped as shown in the following tabulation (per 1,000 board feet):

<u>Year</u>	<u>Forest Service 1/</u>	<u>All public lands 2/</u>
1977-----	US\$140.29	US\$146.03
1978-----	173.59	184.01
1979-----	251.69	267.66
1980-----	254.71	267.21
1981-----	<u>3/</u> 224.98	<u>4/</u> 225.90

1/ Forest Service Region 6, Timber Cut and Sold Reports, 1977-81. Includes deposit for sale area betterment. Road credits have been deducted.

2/ Production, Prices, Employment, and Trade in Northwest Forest Industries, second quarter 1981.

3/ Fiscal year 1981 (November 1980-October 1981).

4/ Estimated by the staff of the U.S. International Trade Commission.

In other States, where the bidding is less intense and the species mix less valuable, stumpage prices have not risen as rapidly nor as high as they have in Washington and Oregon. For example, the average stumpage price for public timber sold in Montana and Idaho was US\$50.11 per 1,000 board feet in

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1/ Bid and paid prices for individual species may be misleading because of the method of timber sale employed by the Forest Service. When a stand of timber is sold, the successful bidder may only bid on a single species which, particularly in western Washington and western Oregon, is often bid to rather high levels. These high prices are somewhat moderated by the other species of the sale which, when harvested, are billed at the appraised price, generally below the price on the bid-on species. In addition, on most Forest Service sales, a certain amount of timber is sold as per acre material. This material is below utilization standards and is sold on a per acre basis rather than on a scaled basis. Forest Service bid and cut prices presented in this report are obtained from Region 6 cut and sold reports.

1980, well below the US\$267.21 reported for Washington and Oregon. Average bid stumpage prices for timber sold from public lands in Montana and Idaho are shown below (per 1,000 board feet): 1/

<u>Year</u>	<u>Forest Service</u>	<u>All public lands</u>
1977-----	US\$42.96	US\$45.35
1978-----	56.00	63.16
1979-----	62.09	68.63
1980-----	41.80	50.11
1981 (January-June)---	59.60	60.02

Although bid stumpage prices similar to those shown above are the most often quoted, they are not indicative of prices currently being paid for timber harvested. Bid stumpage prices (especially where there are no escalation clauses) can be interpreted as the expectations of market conditions at some time in the future, up to 7 or 8 years in some Forest Service sales. A more accurate indicator of actual stumpage prices being paid for timber currently harvested is the Forest Service cut and sold reports, where prices are given for cut and removed timber (table 18). Although these prices paid for cut timber may not be truly representative of the actual market value of stumpage because the price being paid was determined by past bidding, they are indicative of the actual dollars being paid for stumpage being harvested at present. 2/ Shown in the following tabulation are prices paid for timber cut in USFS Region 6 during 1977-81 (per 1,000 board feet): 3/

<u>Year</u>	<u>Westside</u>	<u>Eastside</u>	<u>Total Region 6</u>
1977-----	US\$113.50	US\$89.64	US\$106.26
1978-----	131.90	106.32	124.36
1979-----	140.69	123.28	135.53
1980-----	138.55	94.43	125.36
1981 (Fiscal year)----	137.64	101.86	126.02

1/ Although the species mix is not as valuable in Montana and Idaho as it is in Washington and Oregon, the method of timber sale also influences the prices being bid. East of the Cascade Mountains (eastside) timber is generally sold with a rate adjustment clause. Simply put, with an escalation clause, the timber purchaser will only realize 50 percent of any increase in timber value. West of the Cascade Mountains (westside) the rate adjustment clause usually is not included in timber sales, sometimes resulting in speculation and "over bidding." Montana and Idaho data obtained from Production, Prices Employment, and Trade in Northwest Forest Industries, second quarter 1982.

2/ There are also claims that because of the current economic conditions, the wood now being harvested is the lowest priced stumpage available and is, therefore, not representative of a normal harvest.

3/ Figures include deposits for sale area betterment (about 10 percent of the total).

In the western part of Region 6, 1/ an average of US\$137.64 per 1,000 board feet was paid for timber cut in 1981, 35 percent above the US\$101.86 paid for cut timber in eastern Region 6. In all of USFS Region 6, 2/ the average price paid for cut timber in fiscal year 1981 was US\$126.02 per 1,000 board feet, only 56 percent the price of timber sold at auction in the same period.

If the prices paid for timber cut are compared with the prices for timber sold, the difference is quite large for Region 6, as shown in the following tabulation (per 1,000 board feet):

<u>Year</u>	<u>Cut</u> <u>(per 1,000</u> <u>board feet)</u>	<u>Sold</u> <u>(per 1,000</u> <u>board feet)</u>	<u>Sold</u> <u>to cut</u> <u>ratio</u>
1977-----	US\$106.22	US\$140.29	1.3:1
1978-----	124.36	173.59	1.4:1
1979-----	135.53	251.69	1.9:1
1980-----	125.36	254.71	2.0:1
1981-----	126.02	224.98	1.8:1

Market log prices. 3/—In the Pacific Northwest, the Industrial Forestry Association (IFA) publishes data on log transactions for western Washington and western Oregon. These data are submitted to the IFA on a voluntary basis. In 1981, the IFA reported 0.5 billion board feet of log sales (logs harvested from private and public land), about 5 percent of the sawtimber harvest in western Washington and western Oregon. The average price thus reported of logs sold in 1981 was US\$304.61 per 1,000 board feet, 21 percent below that in 1980, but 17 percent above the 1977 average price. Average price of logs sold, during 1977-81, as reported by IFA, are shown in the following tabulation:

<u>Year</u>	<u>Volume</u> <u>(billion board feet)</u>	<u>Average U.S. price</u> <u>(per 1,000 board feet)</u>
1977-----	1.1	\$259.76
1978-----	1.1	294.28
1979-----	1.1	400.87
1980-----	.8	386.62
1981-----	.5	304.61

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1/ West of the Cascade Mountains.

2/ Includes Forest Service land in Washington, Oregon, and a small area in California.

3/ Although IFA statistics are believed to be the best available for market log prices in the Pacific Northwest, there is some question as to whether the data represent the average price being paid for logs. These log sales are transacted in market areas, either on towable waters or on inland market areas for domestic sales, and on a f.a.s. or loaded-on-ship basis for export sales.

The above volumes and average prices include export sales. If only domestic sales were considered, the 1981 IFA price would have been US\$263.50 per 1,000 board feet, 13 percent below the average of all 1981 sales, as shown in the following tabulation:

<u>Year</u>	<u>Volume</u> (billion board feet)	<u>Average U.S. price</u> (per 1,000 board feet)
1977-----	0.5	\$225.71
1978-----	.5	247.57
1979-----	.5	292.98
1980-----	.4	297.29
1981-----	.3	263.50

Hemlock was the primary species sold in 1980, as reported by the IFA, accounting for 44 percent of total sales (32 percent of domestic sales). <sup>1/</sup> Other major species sold were Douglas-fir (26 percent of total sales, 28 percent of domestic sales), and redcedar (18 percent of total sales, 32 percent of domestic sales), with all other species accounting for 12 percent of total 1980 sales (7 percent of domestic sales).

In addition to these log costs, it is estimated that a cost of between \$5 and \$20 per 1,000 board feet is incurred transporting the logs to a mill, depending on the particular sale location.

#### Canadian prices and trends (emphasis on British Columbia)

Appraisal system.--Provincial Crown land includes about 90 percent of the economically accessible softwood timber volume in Canada, over one-half of which is in British Columbia.

In 1980, about 80 percent of British Columbia's timber harvest was from land requiring stumpage payments--Tree Farm Licences, Forest Licences and Timber Sale Harvesting Licences, and Timber Sale Licences. Approximately 10 percent of the harvest is from royalty-bearing lands, and the remaining 10 percent is from private or Crown grant lands. Generally, the timber cut from Royalty lands and Crown grant lands is available to companies at a minimal cost, and is comparable with privately owned lands in the Pacific Northwest. These licences are discussed in more detail in the section on Government resource and tax policy in this report.

Holders of the various sale licenses in British Columbia are entitled to certain volumes of timber (quota) for which they have secured rights, assuming they meet the terms of the license contract. These quotas vary in length of time, but some run as long as 25 years. To maintain a quota, a firm must harvest at least 50 percent of its annual allowable cut each year, not varying by more than plus or minus 10 percent of its allowable cut for each 5-year period.

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<sup>1/</sup> The percentages in 1981 are believed to have been about the same as those in 1980.

In British Columbia, timber appraisal on Provincial lands (about 80 percent of the harvest) is based on a residual method. Basically, an end-product selling price is calculated, and then milling costs (in the interior), operating costs, and a profit allowance are deducted from the selling price to calculate the amount charged for stumpage. Although this simplified explanation is the basic method of appraisal, the actual method is much more complex.

In British Columbia, two separate end products are used as the starting point in the appraisal method. On the coast, the price of logs by species and grade in the Vancouver log market is determined from a monthly survey of sales transactions, with the values for appraisal being the average of the last 3 months. In the interior (east of the Cascade Mountains), the value of random length lumber, studs, and wood chips is taken into account in the appraisal system. 1/

In addition, the British Columbia interior appraisal system (basically based on lumber and chip end-product prices) uses a prelegislated chip price of about Can\$10.50 per Bone Dry Unit (BDU), which is below current market prices of between Can\$40.00 and Can\$60.00 per BDU. 2/ This prelegislated chip price was first developed to compensate for a very weak chip market for British Columbia interior mills, but more recently, most chips produced in the interior have been marketed at a price much above the prelegislated chip price. This difference in chip prices translates to about Can\$20.00 per 1,000 board feet in terms of stumpage price, assuming that rates were sufficiently above minimums. In 1981, however, most prices paid for stumpage in British Columbia were minimums, nullifying any effect this chip differential might have. In other years (1977-80 in particular), some, if not all, of this Can\$20.00 per 1,000 board feet chip differential could be added to appraised stumpage values if a strict residual value based appraisal method was in use.

The British Columbia appraisal system allowance for profit is 10 percent on the coast, and in the interior it is 12 percent. In addition, up to 13 percent can be allowed for risk on the coast and up to 18 percent in the interior. 3/ The risk allowance is broken into a number of different factors, such as market risk, defect risk, risk of chance, pioneering risk, and investment risk.

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1/ There are some appraisals based on pulp logs in the Skeena zone of Prince Rupert District.

2/ The prelegislated chip price ranges from about Can\$9.00 per BDU to about Can\$11.00 per BDU for all species except cedar which ranges from Can\$0.00 to Can\$8.00 per BDU.

3/ Note that coastal profit and risk allowances are based on log rather than lumber values.

In the case of very low or negative stumpage appraisals, minimum stumpage rates are set by the Province. On the coast, minimum stumpage is set at 8 percent of the average value of the log for each species. 1/ In the interior, a minimum rate is set by taking 3 percent of the total product unit value (in most cases, lumber and chips). In unusual circumstances such as salvage operations, minimum stumpage may be waived.

Generally, British Columbia stumpage rates are adjusted monthly (up or down) in response to a change in market value of not less than plus or minus Can\$1.00 per cubic meter (about Can\$5 per 1,000 board feet) for log-based appraisals (coast) and plus or minus Can\$5.00 per 1,000 board feet or more for lumber-based appraisals (interior). 2/ These adjustments moderate for the buyer both the potential for profit in rising markets and losses in falling market.

Stumpage prices and trends.--The available published stumpage prices for British Columbia are those prices received from stumpage from Tree Farm Licences, Timber Sale Harvesting Licences (Forest Licences) and Timber Sale Licences. In 1981, these sales represented 51 million cubic meters, or about 9 billion board feet, 3/ as reported in the Ministry of Forests' annual report.

In 1981, 4/ the average price received for all species of timber in British Columbia was US\$11.38 per 1,000 board feet, representing a 65-percent drop from the 1980 price. Stumpage prices for all species during 1977-81 are shown below:

<u>Year</u>	<u>Price per 1,000 board feet <u>1/</u></u>
1977-----	US\$9.14
1978-----	22.73
1979-----	38.84
1980-----	32.76
1981 <u>2/</u> -----	11.38

1/ Road and silviculture activity expenses (under sec. 88 of the British Columbia Forest Act) are included in these figures.

2/ In 1981, because of poor end-product prices, the rate adjustment mechanism allowed many British Columbia stumpage payments to be reduced to minimums. Actual appraised values on some timber stands may be negative (also true for some U.S. timber stands).

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1/ Six percent in the Prince Rupert Forest Region.

2/ Alternatives for Crown Timber Pricing, A White Paper for Discussion Purposes, Province of British Columbia, Ministry of Forests, July 1980.

3/ All cubic meter log measurements are converted to board feet Scribner log scale on the following basis:  $5.66 \text{ m}^3 = 1,000 \text{ board feet}$ . A more detailed conversion discussion is included in app. J.

4/ Data for 1981 are preliminary British Columbia Ministry of Forests' stumpage prices.

In British Columbia there is a variation in the type of timber stands that occur in the coastal and interior regions of the Province. In the coastal region, Douglas-fir, hemlock, and cedar predominate, and in the interior, white spruce, true firs, lodgepole pine, and Douglas-fir are the primary species.

Primarily because of these differences, the prices paid for timber from these two regions differ substantially. In 1981, the average price paid for stumpage on the British Columbia coast was US\$21.39 per 1,000 board feet, compared with an average of US\$6.99 per 1,000 board feet in the British Columbia interior. The following tabulation shows the prices paid for stumpage on the British Columbia coast and in the interior during 1977-81:

<u>Year</u>	<u>Price 1/</u> (per 1,000 board feet)	
	<u>Coast 2/</u>	<u>Interior</u>
1977-----	US\$15.82	US\$5.91
1978-----	22.56	22.82
1979-----	47.68	34.69
1980-----	66.25	18.83
1981-----	21.39	6.99

1/ Roads and silviculture activities (under sec. 88 of the Forest Act) are included in these figures.

2/ Stumpage prices for coastal British Columbia include some interior data from TFL No. 1 in Prince Rupert Forest District, but this is not believed to significantly affect the prices presented.

Market log prices.--In British Columbia, the Council of Forest Industries (COFI) collects data on sales of logs in the Vancouver log market. The data are submitted on a voluntary basis for "arm's-length" transactions and represent about 15 percent of all logs sold in the Vancouver log market. The majority (about 85 percent) of logs traded on the Vancouver log market are not arm's-length transactions and are primarily intracompany transfers.

In 1981, COFI reported about 0.6 billion board feet of logs sold at an average of US\$215.70 per 1,000 board feet, 19 percent below the price in 1980, but 22 percent above the 1977 price. Average prices of logs sold in the Vancouver log market during 1977-81, as reported by COFI, are shown below:

<u>Year</u>	<u>Volume</u> (billion board feet)	<u>Average price</u> (per 1,000 board feet)
1977-----	0.9	US\$176.87
1978-----	.8	204.76
1979-----	.7	291.66
1980-----	.8	266.66
1981-----	.6	215.70

Cedars (including cypress) were the primary species sold on the Vancouver log market in 1981, as reported by COFI, accounting for 47 percent of sales (compared with about 37 percent of the coastal TSHL, TFL, and TSL harvest). Other major species were hemlock (26 percent of sales, 41 percent of harvest), Douglas-fir (12 percent of sales, 9 percent of harvest), and all other species, (15 percent of sales, 13 percent of harvest).

It is estimated that after purchase, a cost of between \$5 and \$10 per 1,000 board feet is incurred transporting the logs to a mill.

#### Timber procurement comparisons between the United States and Canada

Stumpage appraisal and selling comparisons.--The basic method of U.S. and British Columbia Forest Service stumpage appraisal systems is very similar. Both begin with an index of end-product values, deducting costs of production to arrive at a residual stumpage value. However, the British Columbia appraised value generally represents the price at which timber is sold, while in U.S. Forest Service Region 6 timber sales, the average price at which timber is sold is well above the average appraised value. Key differences between the two appraisal and selling procedures are highlighted below:

- o Generally, U.S. Region 6 sales are sold on a competitive bid basis, with final stumpage selling prices often more than double the appraised value of the timber. British Columbia stumpage rights are granted in longer term tenures, with payments made at appraised values.
- o Profit and risk allowances range between 9 and 18 percent in USFS appraisals compared with a range of between 10 and 30 percent in British Columbia.
- o British Columbia stumpage sales have stumpage rate-adjustment mechanisms, eliminating much of the market risk in poor years, while limiting profit in good years. U.S. Region 6 westside sales currently do not have this feature, although eastside sales do.
- o Coastal British Columbia appraisals are based on Vancouver log market data; British Columbia interior and USFS sales are based on lumber and chip (sometimes plywood and pulp) prices.
- o British Columbia interior sales use a prelegislated chip price of about Can\$10.50 per Bone Dry Unit rather than market chip prices (currently about Can\$50.00 per BDU). If market chip prices were used in British Columbia, the appraised value of stumpage would undoubtedly be higher because of the increased end-product index that would occur.
- o British Columbia public timber accounts for over 90 percent of the total harvest in that Province. U.S. public timber sales in the Pacific Northwest account for about 47 percent



of the total harvest in the Pacific Northwest. Privately controlled fee timber is utilized by companies much more so in the United States than Canada. This fee timber is generally available at a much lower cost than most publicly available timber.

- o Most companies in British Columbia hold long-term licenses (tenures) granting timber rights on public land, whereas in the Northwest United States, companies harvesting public timber are required to continually bid on timber and generally have no long-term supply of public timber.

Stumpage and log price comparisons.--Because of the differences in the measurement systems and the types of timber harvested between the United States and Canada, direct comparisons between the prices paid for stumpage and logs are difficult to make. Of particular concern are the differences of species mix and quality or grade of timber between the U.S. Pacific Northwest and British Columbia.

In general, the species mix of the U.S. Pacific Northwest is considered more valuable than that of British Columbia. Douglas-fir, a relatively high-valued species, occurs more frequently in Washington and Oregon. In British Columbia, Douglas-fir reaches its northern range limitation and therefore occurs less frequently, and when it does occur, it generally yields a lower quality wood. In the fiscal year 1981 sawtimber harvest, about 42 percent of the Region 6 harvest was Douglas fir, compared with about 8 percent of the harvest in British Columbia. Other major species differences are that the generally less valuable white spruce and lodgepole pine occur more frequently in British Columbia than in the Pacific Northwest, while a higher percentage of the generally more valuable cedars is harvested in British Columbia.

Because of these and other differences, an adjustment of the average British Columbia stumpage prices must be made to put them on a comparable basis with U.S. figures. Appendix K gives the detailed adjustments for the comparison of stumpage rates between total British Columbia and total Region 6, and Coastal British Columbia and Western Region 6. In 1981, if stumpage prices for all of British Columbia are to be compared with these for Region 6, a 105-percent adjustment (upward) must be made on the average price paid for timber in British Columbia. When comparing data for coastal British Columbia with data for Western Region 6, a 20-percent adjustment (upward) is needed to put British Columbia stumpage on a species-comparable basis with western Region 6.

Both of these adjustment factors are determined by taking the percent of each species harvested in Region 6 and multiplying this percentage by the price paid for the most similar species in British Columbia to arrive at an adjusted comparable average price. These adjustments vary in each year according to the share of each species harvested and the price paid for each species.

The price paid for stumpage or logs depends on the grade as well as the species. Since log prices vary significantly from the lowest grade to the highest, even average prices paid for stumpage with adjustments for species

are not completely comparable. There are many different opinions and little quantifiable data on the differences in stumpage and log quality between Region 6 and British Columbia. To complicate the situation, the log grade specifications of the two areas are different, thus making any comparison a somewhat subjective one.

Timber quality in each area has some advantages over that in the other area. For example, U.S. producers point out that trees in British Columbia have a better growth ring count (due to slower growth), giving British Columbia lumber better strength characteristics than U.S. lumber. British Columbia producers, on the other hand, point out that U.S. producers get a higher percentage of knot-free wood. Differences such as these are extremely difficult to evaluate, but it is important to note that the stumpage prices presented here have not been adjusted for grade differences.

Stumpage prices.--A summary of the stumpage prices paid on USFS Region 6 and on TFL's and TSHL's in British Columbia is shown in the following tabulation (per 1,000 board feet):

Year	USFS Region 6			British Columbia		
	Westside	Eastside	Average	Coastal	Interior	Average
1977-----	US\$113.50	US\$89.64	US\$106.26	US\$15.82	US\$5.91	US\$9.14
1978-----	131.90	106.32	124.36	22.56	22.82	22.73
1979-----	140.69	123.28	135.53	47.68	34.69	38.84
1980-----	138.55	94.43	125.36	66.25	18.83	32.76
1981 1/----	137.64	101.86	126.02	21.39	6.94	11.38

1/ USFS 1981 figures are on a fiscal year basis. Canadian figures are preliminary.

In the above comparison, it is apparent how much more responsive to changing market conditions British Columbia stumpage prices are than USFS Region 6 stumpage prices. The difference is best seen by comparing the price change in the British Columbia interior and USFS Region 6 westside during 1979-81.

British Columbia interior stumpage prices decreased 80 percent from 1979-81, but USFS Region 6 westside prices declined by only 2 percent. In general, the method of selling stumpage in British Columbia is more responsive to market price changes than the majority of USFS Region 6 sales.

Before adjusting the stumpage prices for species differences, an additional credit must be deducted from both the Region 6 and British Columbia figures. The U.S. figures include credits for "sale area betterments" of about 14 percent in 1981, and the British Columbia figures include road credits of about 34 percent of the stumpage price in 1981. (These deductions vary in other years.) The following tabulation showing stumpage prices (per 1,000 board feet) includes deductions for these credits and the adjustments

for species differences previously mentioned for TFL's, TSHL's and TSL's for all of Region 6 and British Columbia and for the western part of these two regions: 1/

Year	Western (coastal) Region 6	British Columbia a share of Region 6 Percent	British Columbia as a share of Region 6 Percent	Total Region 6	British Columbia a share of Region 6 Percent	British Columbia as a share of Region 6 Percent
1977-----	US\$102.15	US\$16.70	16	US\$95.63	US\$13.35	14
1978-----	121.35	22.24	18	114.41	26.64	23
1979-----	126.62	60.43	48	121.98	67.12	55
1980-----	120.54	54.66	45	109.06	47.84	44
1981 <u>1/</u> ---	118.37	18.35	16	108.38	10.82	10

1/ USFS 1981 figures are on a fiscal year basis.

Key differences between stumpage prices on USFS Region 6 and British Columbia timber are highlighted below:

- o Adjusted for currency, species, and road costs, average 1981 British Columbia stumpage prices are about one-sixth roughly comparable USFS Region 6 stumpage prices.
- o In better market years, 1979 in particular, British Columbia stumpage prices are about one-half that of USFS Region 6 prices.
- o British Columbia stumpage price adjustment have allowed stumpage payments to react to recent poor end-product markets. USFS Region 6 prices have remained relatively high.
- o Before any definitive conclusions concerning competitive conditions are drawn from stumpage comparisons, both harvesting and transportation costs to the mill should be considered. 2/ These costs can vary both within the United States and Canada and between the two countries. Generally, when comparable market log prices are available, they serve as a better indicator of a producer's relative raw material cost than do stumpage prices.

1/ It is important to note that differences in grade have not been included and some administrative costs may be included in USFS figures (not believed to be more than \$20.00 per 1,000 board feet stumpage). Also, when comparing stumpage prices, other substantial costs (such as the physical process of harvesting and delivering the trees to the mill) must be considered when figuring total wood costs for mills on both sides of the border.

2/ Estimated average coastal British Columbia and western Oregon and Washington log harvest and transportation costs are shown in app. L.

Log prices.—The available market log prices indicate that prices in western Washington and western Oregon, as reported by IFA, are somewhat higher than those collected by COFI on the Vancouver log market. In 1981, the average IFA reported price of all log sales (including exports) was \$304.61 per 1,000 board feet, 41 percent above the average \$215.70 per 1,000 board feet reported by COFI. However, the average price for domestic log sales was \$263.50 per 1,000 board feet, 22 percent above the COFI price. The comparison is shown in the following tabulation:

Year	IFA log price	IFA price	COFI	COFI as a	COFI as a
	all sales	domestic sales	log price	share of all IFA sales	share of IFA domestic sales
	Per 1,000 board feet			Percent	
1977----	US\$259.76	US\$225.71	US\$176.87	68	78
1978----	294.28	247.57	204.76	70	83
1979----	400.87	292.98	291.66	73	100
1980----	386.62	297.29	266.66	69	90
1981----	304.61	263.50	215.70	71	82

Because certain species are more valuable than others and the percentages of species sold, as reported by IFA and COFI, are different, an adjustment must also be made when discussing average log values. According to 1981 data, an 8-percent downward adjustment should be made on Vancouver log market prices for comparison purposes. Most of the adjustment in this case is due to the high-valued spruce and cypress that are sold in higher proportion on the Vancouver log market. <sup>1/</sup>

With an 8-percent downward species adjustment, the 1981 COFI log prices would be US\$198.90 per 1,000 board feet. This price would then equal 65 percent of the average price of all log sales, as reported by IFA, and 75 percent of the average domestic selling price of IFA logs. Shown in the following tabulation are reported COFI log prices adjusted for species (as reported by IFA):

Year	Adjustment <sup>1/</sup> (percent)	Original	Adjusted	Adjusted COFI
		COFI price	COFI price	as a share of IFA domestic sales (percent)
1977-----	2/	US\$176.87	US\$176.21	78
1978-----	-5	204.76	195.08	79
1979-----	-14	291.66	250.12	85
1980-----	-14	266.66	229.54	77
1981-----	-8	215.70	198.90	75

<sup>1/</sup> Details of the species adjustment calculations are given in app. K.

<sup>2/</sup> Less than -.5 percent.

<sup>1/</sup> In 1980, for example, 9 percent of logs sold on the Vancouver log market were Cypress valued at an average US\$629.83 per 1,000 board feet (US\$429.22 in 1981), but the IFA reported less than 1 percent of all logs sold as cypress. So, while in general the species mix of the U.S. Pacific Northwest is more valuable, it is not true in all situations.

In addition to the species difference, logs also vary in grade. Problems of determining differences and adjustments for grade were discussed in the stumpage section. Quantifiable data are not available and are extremely difficult to estimate.

Key items to note when comparing the above U.S. Pacific Northwest and British Columbia coastal log market selling prices are highlighted below:

- o Adjusted for species and currency differences, the average 1981 price of logs sold in the Vancouver log market appears to be about 25 percent below the average price of logs sold in the U.S. Pacific Northwest, as reported by IFA.

- o In better market years, Vancouver log market prices are about 15 to 20 percent below roughly comparable Pacific Northwest log market prices.

- o When differences in the available coastal log prices are compared with coastal stumpage prices, the price gap between British Columbia and the Pacific Northwest western regions appears to lessen. The adjusted coastal British Columbia average stumpage price in 1981 was US\$18.35 per 1,000 board feet, only 16 percent of comparable U.S. prices, while the average adjusted coastal Vancouver log market price was US\$198.90 per 1,000 board feet, 75 percent of comparable U.S. figures. This would indicate that costs such as harvesting and transporting the log from the stump to the market (and possibly some profit) account for at least part of the stumpage price differential between the two regions.

### Production Methods and Costs

In general, the U.S. and Canadian softwood lumber industries use the same production methods. Both industries have access to the same technology. Plant size, layout, and capital equipment differ no more between U.S. and Canadian mills than they do between mills in different regions within each country. Conditions found in processing and product mix do not vary significantly when mill size and the quality and volume of raw material available are similar. When mills in adjacent areas along the U.S.-Canadian border are compared, differences noted in production methods are minimal.

Differences in costs of production result mostly from the quality of material available, product mix, and Federal, State, and Provincial regulations. For two similar mills in proximity to each other but on different sides of the border, the quality of raw materials is essentially the same, and the output or product mix of these mills will be similar if they are operated at optimum efficiency. The United States has both a slightly larger supply of softwood growing stock, as well as material of higher quality. In addition, the growth rates for much of the U.S. softwood supply are significantly higher than those for Canada, due generally to a more favorable climate. This will most likely continue to give the United States a competitive advantage in raw material supply as old growth timber is removed and the industry becomes more reliant on faster growing second-growth timber for raw material supplies. (A discussion of the quality and extent of resources available to the U.S. and Canadian industries is presented in this report in the "Forest Resources" and "Timber Procurement" sections.

At the present time, the product mix differs significantly from region to region within the United States and to a lesser extent in Canada. Significant volumes of old-growth, large-diameter timber in the coastal areas of western Oregon, western Washington, and British Columbia make these regions important suppliers of large dimension lumber. The amount of high-grade clear lumber that can be cut from this material is significantly greater than that for second-growth or smaller diameter timber. In the interior of British Columbia, slower growing white spruce, and to some extent fir and pine, yield a product with certain higher strength characteristics than similar species found in the Northern and Central Rocky Mountain regions of the United States. This timber, on the average, is of a smaller diameter and yields a smaller proportion of large dimension lumber, but due to its high structural qualities is very suitable for 2"x4" framing lumber. As a result, this region produces a predominance of 2"x4" material.

U.S. and Canadian Government regulations regarding the forest resource affect costs in two ways. First, any regulation requiring operations not normally undertaken by loggers or manufacturers adds to the cost of production. Second, the regulation and management of forest resources owned by Government agencies can have significant cost effects. In the United States, Government ownership of the resource is most significant in the West. In the western United States, ownership is nearly equally shared between the Federal Government and all other ownerships, although the Government holds the highest volume of old growth material. In Canada, although there are important private holdings, the Provincial Government is by far the leading forest resource owner (See "Forest Resources").

In the western United States, two segments of the industry are apparent. They are those dependent on the Government and others for timber, and those with sufficient or nearly sufficient supplies to meet their own needs. Many of the larger producers fall in the latter category. The largest 40 producers in the United States own about 60 percent of the industry-owned timber-lands. <sup>1/</sup> Such a condition gives these firms much more flexibility in keeping costs to a minimum, especially the delivered cost of wood. These firms have the choice of cutting their own timber or purchasing timber from the Government, or from other sources. The timber owned by these firms (fee timber) was often acquired at a low cost and as such represents a cost advantage to these firms when processed in their mills. Even so, the cost to these firms could be considered to be the income given up by not selling their timber or logs to other processors. These firms have the option of getting the highest return on their investment by processing logs into lumber, selling the logs outright, or by some combination of these.

#### Comparison of variable costs between the United States and Canada

The costs of materials and wages were determined from statistics of the United States and Canadian Governments (tables 19 and 20). All values are stated in U.S. dollars. The costs per thousand board feet were determined by dividing the total amount paid by reported lumber production. Although these do not exactly reflect the actual average costs, they were determined from comparable primary data and provide a useful basis for comparison. The relationships between costs within States and Provinces, and between countries are consistent with those determined by others, such as Data Resources, Inc. (DRI) of Lexington, Mass., in their model for the forest products industry, FORSIM, and with submissions made to the Commission by the International Woodworkers of America (IWA) and the Canadian Softwood Lumber Committee (CSLC).

Table 19 outlines the selected costs of production for U.S. and Canadian sawmills. In 1980, materials and labor accounted for 78 and 22 percent, respectively, of U.S. production costs, and 72 and 28 percent, respectively, of Canadian production costs. Logs harvested and delivered to the mill, purchased logs, and rough lumber (collectively called-wood) accounted for 55 and 49 percent, respectively, of U.S. and Canadian production costs in 1980. Delivered wood costs have increased as a share of total costs in the United States since 1972. In Canada, however, wood costs decreased from 54 percent in 1977 to 49 percent in 1980.

Table 20 shows production costs for selected States and Provinces. These costs are for softwood and hardwood sawmills, but Idaho, Montana, Oregon, Washington, and British Columbia produce relatively little hardwood, and the costs presented are, therefore, representative of softwood sawmills. Maine and Georgia were selected because the high proportion of softwood lumber production in those States make their costs representative for softwood lumber producers in the North and South. Ontario and Quebec have similar proportions of softwood to hardwood lumber production as do Maine and Georgia. State data

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<sup>1/</sup> Clephane, Thomas P., Ownership of Timber: A Critical Component in Industrial Success, Forest Industries, Miller Freedman Pub., San Francisco, Calif., August 1978.

for 1979 and 1980 are estimates using Department of Commerce aggregate costs and DRI projections. Data for the Provinces were estimated in the same manner for 1980.

A comparison of costs for Oregon and Washington, and British Columbia in 1980 are shown in the following tabulation (per 1,000 board feet):

Item	Oregon and Washington		British Columbia	
	Dollars	Percent	Dollars	Percent
Materials and other costs-----	US\$244	78	US\$193	74
Wood-----	205	65	138	53
Energy-----	8	3	6	2
Contract work-----	1/	1/	29	11
All other-----	31	10	21	8
Wages-----	69	22	68	26
Total 2/-----	313	100	261	100

1/ Included with all other materials.

2/ Because of rounding, figures may not add to the totals shown.

In 1980, Oregon and Washington collectively had the highest average material and labor costs of all selected States and Provinces. These two States had an average cost of \$313 per 1,000 board feet of production compared with lows of \$234 for Idaho and Montana, and \$216 for Quebec.

Delivered wood costs.---The previous "Timber Procurement" section dealt in detail with stumpage costs on national forests in the Northwest United States and on Provincial lands in British Columbia, and, to the extent possible, compared log prices in such markets as exist in these two regions. This section deals specifically with the cost of logs and other wood delivered to the mill. As with other costs of production presented in this section, they are expressed in terms of the cost per 1,000 board feet of lumber produced, and will therefore differ from the stumpage and log market prices reported in the previous section because they are based on an actual rather than an estimated yield basis. Adjustments are not made for species as was done for the log market prices in the previous section, and the quality differences remain difficult to quantify. Further, the delivered cost of wood incorporates log harvesting and hauling costs and so differs significantly from the prices reported for stumpage.

Delivered wood costs were by far the most significant of all variable costs, ranging from 54 to 68 percent of the cost of materials and wages in the selected States and from 41 to 64 percent of these costs for the selected Provinces in 1980. The differences in delivered wood costs between the States and Provinces are more significant than the differences in any other of these costs. The differences between total material and wage costs and delivered wood costs for the United States and Canada and for selected States and Provinces in 1980 are compared in the following tabulation (per 1,000 board feet):



<u>Geographic areas and items compared</u>	<u>United States</u>	<u>Canada</u>	<u>Difference</u>
United States-Canada:			
Delivered wood cost-----	US\$173	US\$146	US\$27
Total material and wage cost-----	315	297	18
Maine-Quebec:			
Delivered wood cost-----	155	93	62
Total material and wage cost-----	289	216	73
Idaho and Montana-(interior)			
British Columbia:			
Delivered wood cost-----	148	77	71
Total material and wage cost-----	234	189	45
Oregon and Washington-			
British Columbia:			
Delivered wood cost-----	205	138	67
Total material and wage cost-----	313	261	52

In each comparison, except that between Maine and Quebec, the total difference was exceeded by the difference in wood costs.

In general, wood costs have risen faster in the United States than in Canada. In the United States, such costs rose from US\$59 to US\$173 per 1,000 board feet produced during the 1972-80, representing an average annual increase of nearly 13 percent. In Canada, on the other hand, costs increased from US\$55 to US\$146 during the same period, representing an average annual increase of about 11 percent. The difference in wood costs between the United States and Canada widened during this period from US\$4 to US\$27 per 1,000 board feet produced.

The difference in delivered wood costs for Maine when compared with those of Quebec increased from US\$32 in 1977 to US\$62 in 1980. However, the difference in delivered wood costs for selected Western States when compared with those of British Columbia narrowed or remained relatively close during 1977-80. During that period, the difference for Oregon and Washington declined from US\$76 to US\$67 and the difference for Idaho and Montana increased from US\$70 to US\$71.

Because the data used to compile table 20 are not separately reported for eastern and western Oregon and Washington, a comparison using this data for coastal areas in the Northwestern United States and British Columbia is not possible. However, using data supplied in part by subscribers to their FORISM Service, DRI shows delivered wood costs to be higher for U.S. coastal mills than for British Columbia coastal mills, and the difference in these costs to be rising from US\$12 to US\$33 per 1,000 board feet produced during 1977-80.

Fuel and energy costs.--Fuel and energy costs constitute about 3 percent of total manufacturing costs in the United States and Canada, a percentage which has not changed significantly in the last 10-year period in spite of significant increases in the price of crude oil during the period. Actual costs increased from US\$4 to US\$8 per 1,000 board feet of production in the United States, and US\$3 to US\$8 per 1,000 board feet of production in Canada.

The share of fuel by types, used in British Columbia mills is shown in the following tabulation (in percent): 1/

<u>Year</u>	<u>Total</u>	<u>Fuel oil</u>	<u>Gasoline</u>	<u>Kerosene</u>	<u>Electricity</u>	<u>Liquefied petroleum gases</u>
1979-----	100	82	14	2	1	1
1980-----	100	82	14	2	1	1
1985-----	100	83	13	2	1	1

No similar figures were found for Oregon and Washington, but the mix should be similar for the major items. The principal fuel oils used by the sawmill industry are diesel and light grades number 2 and 3.

A comparison of 1980 prices between the United States and Canada for certain fuel oils are shown in the following tabulation (per barrel): 2/

<u>Type</u>	<u>United States</u>	<u>Canada</u>
Distillate fuel oil-----	US\$35.28	US\$21.95
Marine diesel fuel-----	36.00	36.33
Heavy fuel oil-----	20.58	14.22
Marine fuel oil-----	20.50	20.87

1/ British Columbia Energy Supply and Requirements Forecast, 1980-1995, Ministry of Energy, Mines, and Resources, April 1981.

2/ U.S. Department of Energy, 1980 International Energy Annual, 1980.

Even though prices in Canada are lower for the important industrial fuels, tables 19 and 20 show total energy costs to be relatively close. Lower prices in Canada may be offset to some extent by more severe climatic conditions.

Contract work and other costs.--These include such things as work contracted out to others, products bought and resold in the same condition, other materials used such as glues and packaging, and operating and maintenance expenses. These costs vary widely due to regional differences in doing business such as contracting work out and packaging products for sale.

In 1980, these expenses were US\$64 and US\$61 per 1,000 board feet of production in the United States and Canada, respectively. These varied widely by States, from US\$57 per 1,000 board feet in Maine to US\$12 per 1,000 board feet in Georgia. For Canada, the variation was smaller--from US\$34 to US\$52 per 1,000 board feet in coastal and interior British Columbia, respectively.

Wages.--Wages accounted for 22 and 26 percent of costs in Oregon and Washington, and British Columbia, respectively, in 1980. In general, the close communication between trade unions in the western United States and Canada tends to keep wage rates fairly comparable. The IWA, which represents workers in both countries, provided extensive material which confirms the slightly higher wage rates for workers in British Columbia. In addition, the IWA points out that labor constitutes a significant component of the delivered cost of wood to the mill. This component, however, is accounted for in the delivered wood costs and thus, for the purposes of this study, need not be separately considered.

Average hourly earnings for production workers in the United States and Canada are shown in the following tabulation:

<u>Year</u>	<u>Sawmills and planing mills</u>	
	<u>United States</u>	<u>Canada</u>
1977-----	US\$5.14	US\$6.75
1978-----	5.79	6.75
1979-----	6.07	7.29
1980-----	6.65	7.97
1981-----	7.28	8.48

Data were calculated from survey data collected by the U.S. Department of Commerce and Statistics Canada. U.S. data for 1980 and 1981 are from projections made by the U.S. Department of Commerce, and Canadian data are based on the trend since 1972.

Comparisons for the Eastern United States and Canada in 1980 show the wage component of production costs per 1,000 board feet to have been slightly higher in Maine (US\$70) than in neighboring Quebec (US\$68) in 1980. Ontario and Georgia had slightly higher and lower wage costs, respectively, than those for Maine and Quebec (table 20).

Comparison of fixed costs for the United States and Canada

Statistics on the fixed costs of manufacture are unavailable. This is due in part to differences of opinion on costs to be considered as fixed. Even for items generally considered to be fixed costs, such as compensation of officers and office staff, differences exist. Costs for certain housekeeping and equipment upkeep also vary, though these generally are considered as fixed costs.

If fixed costs are considered to be those incurred whether or not production occurs, a rough measure of them can be made by subtracting the cost of sales from total expenses. Such a measure is shown in the following tabulation using data of the U.S. Treasury Department and Statistics Canada for 1978, the last year for which comparable data are available (in millions of U.S. dollars):

	<u>United States 1/</u>	<u>Percent</u>	<u>Canada 2/</u>	<u>Percent</u>
Total expenses----	\$18,138.9	100	\$5,070.1	100
Cost of sales-----	13,392.7	74	4,100.1	81
Residual costs-----	4,746.2	26	970.0	19

1/ U.S. Department of the Treasury, Corporation Source Book, Washington, D.C., 1978.

2/ Data for Canada are from Corporation Financial Statistics, Statistics Canada, Ottawa, 1979.

As can be seen from this tabulation, the residual costs, an estimation of fixed costs, amounted to 26 and 19 percent of total expenses for the United States and Canada, respectively.

A significant fixed cost to many U.S. producers is the cost of land and timber. Due to Government ownership in Canada of approximately 90 percent of the timberland, ownership costs associated with timberland fall on few Canadian producers. Some of the advantages attributed to U.S. firms' ownership of timberland might be offset by the fixed costs of such ownership.

## Pricing and Marketing

United States

The price received for lumber at the mill (generally f.o.b.) is determined by many factors. The price paid f.o.b. mill for softwood lumber varies with the size, species, and grade of lumber and the transportation costs associated with marketing the lumber. Generally, lumber which is larger sized and most free of defect commands the highest price. Wholesale lumber prices are quoted either f.o.b. mill or on a delivered price basis, but usually the day-to-day market supply and demand will determine the price of lumber.

Most lumber is bought and sold by wholesalers that arrange for delivery to the area of destination, although some companies act as their own wholesalers by marketing their lumber and at times buy lumber from other mills to meet their customers' demands. Larger integrated forest products companies often have distribution and/or building centers for marketing their lumber.

The f.o.b. mill prices for lumber are extremely variable and usually change on a day-to-day basis. For example, the price of unseasoned standard and better Douglas-fir random length 2"x4", f.o.b. west coast mill, ranged between \$155 and \$207 per 1,000 board feet in 1981 as shown in the following tabulation: 1/

<u>Period</u>	<u>Price 1/</u>
January-----	207
February-----	193
March-----	187
April-----	193
May-----	183
June-----	198
July-----	194
August-----	180
September-----	170
October-----	164
November-----	155
December-----	162

1/ Random Lengths 1981 Yearbook, Random Lengths Publications, Inc., Eugene, Oreg., 1982. (Prices net f.o.b. mill, Portland rate).

It is not feasible to present prices for all the different softwood lumber products produced in the United States; however, table 21 shows some prices for some selected representative lumber products. It is important to note that there is a wide range in prices for the different types of lumber produced, and although most dimension lumber trade flows from Canada to the

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1/ An example is made of lumber 2"x4" because it is a common size used in construction. The price of other types of lumber, such as clear boards suitable for moldings, may be much higher per 1,000 board feet.

United States, some U.S.- produced lumber is marketed in Canada at competitive prices. For example, in January 1982, clear Douglas-fir boards produced in the U.S. Pacific Northwest were being sold in the Vancouver, British Columbia, market at prices competitive with locally produced lumber.

### Canada

Prices received for lumber by Canadian mills from U.S. customers generally are quoted in U.S. dollars. Basically, Canadian mills set prices the same way as do U.S. mills--through interaction with wholesalers. Typical prices for Canadian lumber also fluctuate with market conditions. Prices for unseasoned, standard and better Douglas-fir random length 2"x4", f.o.b. B.C. mill, ranged between \$140 and \$187 per 1,000 board feet in 1981 as shown below:

<u>Item</u>	<u>Price 1/</u>
January-----	187
February-----	180
March-----	170
April-----	175
May-----	167
June-----	163
July-----	174
August-----	177
September-----	156
October-----	140
November-----	144
December-----	158

1/ Random Length 1981 Yearbook, Random Lengths Publications, Inc., Eugene, Oreg., 1982. (Prices net f.o.b. mill, British Columbia to United States).

### Comparison of U.S. and Canadian prices in third countries

Although Canada's major export market for softwood lumber is the United States (9.0 billion board feet, or 78 percent of 1981 exports), both the United States and Canada supply large quantities of softwood lumber to Japan and the European Community. In 1981, U.S. shipments of softwood lumber to Japan (0.5 billion board feet) were valued at the U.S. port of export at an average \$347.45 per 1,000 board feet, and Canada's shipments to Japan (0.9 billion board feet) were valued at an average \$351.03 per 1,000 board feet. It is believed that these values are extremely close because both the United States and Canada export a large amount of similar type lumber (squares for Japanese construction) to Japan. The unit price trends of softwood lumber shipped to Japan as reported by U.S. and Canadian export statistics, are shown in the following tabulation (per 1,000 board feet):

<u>Year</u>	<u>United States</u>	<u>Canada</u>
1977-----	US\$239.27	US\$239.64
1978-----	295.39	257.71
1979-----	396.51	387.87
1980-----	349.22	395.79
1981-----	347.45	351.03

The prices of U.S. and Canadian shipments to Europe are not as uniform as those to Japan. In 1981, U.S. shipments of softwood lumber to the EC <sup>1/</sup> were valued at the U.S. port of export at an average US\$578.24 per 1,000 board feet, more than double the average US\$267.36 per 1,000 board feet f.o.b. Canadian port at which Canada's shipments to the EC were valued. This wide disparity is accounted for, in part, by the large percentage of high-valued, clear southern pine and clear Douglas-fir lumber that the United States ships to Europe compared with Canada's shipments of predominately dimension lumber. The unit price trends of softwood lumber shipped to the EC as reported in both governments' export statistics are shown in the following tabulation (per 1,000 board feet):

<u>Year</u>	<u>United States</u>	<u>Canada</u>
1977-----	US\$464.57	US\$227.06
1978-----	513.22	239.33
1979-----	748.04	320.91
1980-----	653.43	329.29
1981-----	578.24	267.36

Tables 4 and 10 give volumes of exports for both countries as well as the average unit values of shipments to all countries.

#### Currency exchange rates

The rate of exchange between the U.S. and Canadian dollars varies from day to day. In 1981, the average rate of exchange was 1.1989 Canadian dollars per 1.0000 U.S. dollars. Shown below are the average rates of exchange between Canadian and U.S. dollars for 1972 and 1977-81: <sup>2/</sup>

<u>Year</u>	<u>Canadian dollars per U.S. dollar</u>	<u>U.S. dollars per Canadian dollar</u>
1972-----	\$0.9899	\$1.0102
1977-----	1.0635	.9403
1978-----	1.1402	.8770
1979-----	1.1715	.8536
1980-----	1.1696	.8550
1981-----	1.1989	.8341

<sup>1/</sup> Exports to Italy, West Germany, and the United Kingdom are used to represent the EC for U.S. prices.

<sup>2/</sup> International Monetary Fund.

In the period between 1972 and 1977, the difference between the two currencies did not vary by more than 6 percent, and in most years it was within 1 or 2 percent of par. Beginning in 1978, the Canadian dollar started declining in value in relation to the U.S. dollar, reaching an average annual low in 1981 of \$1.1989 Canadian per \$1.0000 U.S.

The increasing value of the U.S. dollar improves the competitiveness of Canadian lumber in the U.S. market. Because the U.S. dollar is now worth more Canadian dollars, Canadian producers can reduce their selling price in U.S. dollars and realize the same return in Canadian dollars. However, the Canadian producers may not have decreased their prices by the full extent of the increase in the U.S. dollar's value. If they do not decrease their prices to that extent, the per unit profits on sales to the United States will rise. Additionally, some of the Canadian producers' costs may rise with the U.S. dollar's value. For example, because the lumber producers import some equipment from the United States, their equipment costs may increase with the value of the U.S. dollar. However, most of the Canadian producers' costs are in Canadian dollars, so their costs are not directly affected by changes in the exchange rate.

Furthermore, the Canadian producers may not decrease their prices by the full amount allowed by the appreciation of the U.S. dollar.

#### Pricing and marketing comparisons

Some important points concerning U.S. and Canadian lumber pricing and marketing are shown below:

- o U.S. and Canadian softwood lumber generally is marketed in the same manner, serving similar, if not identical, markets.
- o British Columbia mills generally appear to be the price leaders on such widely used lumber products as 2"x 4", although transportation costs and species of lumber may influence the pricing structure. 1/
- o Although most trade between the United States and Canada flows from Canada to the United States, some U.S.-produced softwood lumber is marketed in Canada.
- o The U.S. dollar premium over the Canadian dollar is an advantage for Canadian producers when they market lumber in the United States.

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1/ Canadian-produced spruce-pine-fir lumber (for which prices are given in table 21), because of strength characteristics, is only usable in about 85 percent of typical uses of such species as Douglas-fir. This accounts for at least part of the price difference shown in table 21.



## Transportation and Distribution

### U.S. distribution

Transportation can account for a considerable portion of the delivered cost of lumber. The following simplified example illustrates this point. In October 1981, dry, random length, standard and better grade Douglas-fir 2"x4" lumber had an average price, f.o.b. mill, of \$173 per 1,000 board feet. Assuming a weight of 1,800 pounds per 1,000 board feet, a 110,000-pound bulkhead rail car could carry 55,000 board feet. Freight charges from Portland, Oreg., to Chicago, Ill., for such a load would have been \$5,010 (table 22). The delivered price would have been \$14,525, exclusive of discounts, making transportation charges nearly 35 percent of the delivered charge. When such lumber brought a higher price, such as in October 1979, when it was about \$285 per 1,000 board feet, these transportation charges still would have been 24 percent of the delivered cost.

Most lumber shipments in the United States from the mill to wholesalers or retailers is by truck or rail, with waterborne shipments of only minor importance. At distances less than 300 miles, over 75 percent of all U.S. shipments are made by truck, and at distances over 500 miles, over 60 percent of lumber shipments are made by rail. Shipment by truck is by far the most common method used in the North and South owing to short hauling distances to major markets. Over 80 percent of all lumber shipments originating in these regions are made by truck. Virtually all of the remaining shipments are made by rail.

Beginning in 1980, Western lumber shipments to U.S. destinations have been predominantly by truck. Even so, rail shipments are much more important in this region than in either the North or South. For 1981, the Western Wood Products Association reported shipments by method of transportation from mills in the West as follows: 1/

<u>Method</u>	<u>Quantity</u> <u>(million board feet)</u>	<u>Percent of total</u>
Truck-----	4,786	56.5
Rail-----	3,426	40.5
Other-----	254	3.0
Total-----	8,466	100.0

Over two-thirds (67 percent) of Western lumber shipments were made to destinations within the region in 1981, with California being the leading market (29 percent). Of the remaining shipments, 14 percent are to the South and 19 percent to the North (table 23). Ten years ago, nearly 60 percent of the shipments from Western mills went to Northern and Southern destinations. The reversal is generally attributed to competition from Canadian and Southern mills and to lower shipping costs for Western Canadian producers. Some shift is also likely as a result of development in and a population shift to the "sun belt" particularly the Southwestern United States in which U.S. mills

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1/ These figures only include production of those mills reporting statistics to the Western Wood Products Association.

would have shipping cost advantages. The following tabulation, based on table 23, shows the regional distribution of Western shipments in recent years (in percent):

	<u>Northeast</u>	<u>North Central</u>	<u>South</u>	<u>West</u>	<u>Total 1/</u>
1977-----	5	22	15	58	100
1978-----	5	21	14	60	100
1979-----	4	18	13	64	100
1980-----	5	15	13	66	100
1981-----	5	14	14	67	100

1/ Because of rounding, figures may not add to the totals shown.

As can be seen from this tabulation, the percentage of shipments within the region increased through the period, which included years of both strong and slack demand. The percentage gain in the West was almost entirely offset by the percentage decline in the North Central States. As more shipments from Western origins went to destinations in the West, rail shipments declined from 58 percent in 1977 to 40 percent in 1981.

#### Canadian distribution

In Canada, shipments are primarily by rail, due in part to the dominance of British Columbia in lumber production and the long distances to its east coast markets. In 1980, about 5 million board feet, approximately 78 percent of all shipments, from British Columbia were by rail (table 24). In contrast, 85 percent of the shipments from Eastern Canada were by truck in 1980. Shipments, by methods of transportation, for all Canada in 1980 are shown in the following tabulation:

<u>Method</u>	<u>Quantity</u> <u>(million board feet)</u>	<u>Percent of total</u>
Truck-----	2,788	30
Rail-----	5,693	61
Other-----	801	9
Total-----	9,282	100

Shipments from British Columbia accounted for 87 percent of all rail shipments, virtually all waterborne shipments, and 21 percent of shipments by truck.

In recent years, rail shipments from British Columbia to the United States averaged 77 percent of all British Columbia shipments; truck and waterborne shipments averaged 8 and 15 percent, respectively. The distribution of all shipments from British Columbia to the United States is shown in the following tabulation (in percent):

<u>Year</u>	<u>Northeast</u>	<u>North Central</u>	<u>South</u>	<u>West</u>	<u>Total</u>
1976-----	15	42	35	8	100
1977-----	17	40	28	15	100
1978-----	15	29	38	18	100
1979-----	15	30	36	18	100
1980-----	13	27	41	19	100

This shows declining shipments from British Columbia to markets in the North, and increases in shipments to the South and West. The decline in shipments to the North has been filled by increases in shipments from Eastern Canada. Shipments from Eastern Canada are mostly made by truck.

#### Comparison of U.S. and Canadian transportation costs

Truck and rail costs.--It is generally agreed that neither the U.S. nor Canadian industries has any cost advantages in shipping by truck, other than proximity to the market, in which case the advantage is usually with the U.S. producers. On the other hand, it has been often contended that Canadian rail rates are lower than those available to U.S. shippers, and as a result, shipments from British Columbia to the Eastern United States have displaced shipments from the Western United States. Transcontinental tariff rates for lumber shipments by rail from specified origins and destinations are given in table 22. These rates, from Spokane, Wash., and Kamloops, British Columbia, to certain U.S. destinations are shown in the following tabulation (per 110,000-pound bulklead car):

<u>Destination</u>	<u>Origin</u>	
	<u>Spokane, Wash.</u>	<u>Kamloops, British Columbia</u>
<b>North</b>		
Chicago, Ill-----	US\$4,834	US\$4,966
Green Bay, Wisc-----	4,812	4,834
Detroit, Mich-----	5,744	5,755
Baltimore, Md-----	6,014	6,025
Syracuse, N.Y-----	6,014	6,025
<b>South</b>		
Louisville, Ky-----	5,744	5,755
Augusta, Ga-----	5,307	5,571

Rates shown from Portland, Oreg., and Vancouver, Wash., are identical for all listed destinations. The rates in table 22 do not reflect special contract rates and discounts generally available to large-volume shippers. Neither do they reflect lower rates available for domestic shipments within Canada. Through the development of "reload centers" in Eastern Canada, to which lumber is shipped by rail and then transferred to truck for further shipment (mostly to the United States), Canadian shippers have been able to attain lower rates than those available by shipping transcontinental via U.S. rail lines to markets in the Northeastern States. An example provided by the Canadian

Softwood Lumber Committee illustrates this point. 1/ For a destination of Nashua, N.H., the Transcontinental Freight Bureau Rate (TCFB 4517) from Vancouver, British Columbia, was given as \$6,018 for a 115,000 pound shipment. The Agreed Charge Tariff Rate from Vancouver, British Columbia to LaColle, Quebec, is listed as \$4,590, and trucking charges from LaColle to Nashua, as \$1,277, for a total charge of \$5,867--\$214 lower than the TCFB rate. Using a Canadian Railroad Single Line Rate to Beebe Jct., Quebec, and truck rates from there to Nashua yielded a combined freight rate of \$5,675, or a \$343 lower rate than the TCFB rate.

The Canadian railways have established combination rates with several northeastern regional rail carriers. These rates, which apply to shipments between British Columbia and certain New England destinations, are often lower than the Transcontinental Freight Bureau Rates. 2/ These combination rates were established to compete with the rail-truck rates discussed. 3/

Competition from waterborne transportation has led the Canadian railroads to lower their rates on lumber shipments. For example, CP Rail has established combination rates on green lumber shipped from British Columbia to the U.S. East Coast. These rates, which are substantially below the Transcontinental Freight Bureau rates, were specifically set to meet competition from water carriers. 4/ Furthermore, when negotiating lower rail rates, Western Canadian lumber producers have explicitly threatened to move a larger share of their shipments by water. 5/ This evidence indicates that because the Canadian lumber producers have better access to waterborne transport than the U.S. producers, they also have lower costs for certain rail shipments.

The Staggers Act of 1980 has changed the rate-setting provisions under which U.S. railroads operate. Although it is too soon to determine the effect of this act on the competitiveness of U.S. and Canadian shippers, some general conclusions are possible. The Staggers Act allows open competition between rail carriers for shipments over single rail lines. It may be possible for some lumber manufacturers to use a combination of single line rates that would be lower than the published through rates, and thus ship at lower rates than could Canadian manufacturers. Western shippers may be able to use favorable single line rates to ship to the South or North Central States, and thereby be more competitive with Canadian producers in that region. 6/ In early 1982, two major western rail carriers announced the availability of such rates. 7/

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1/ Consolidation of Material Presented to the International Trade Commission, Canadian Softwood Lumber Committee, February 1982, p.36.

2/ Letter from D. A. Behnisch of CP Rail, March 17, 1982, pp. 2-3.

3/ "Transportation Issues Associated With the Sale of B. C. Lumber in U.S.A.", "CP Rail, March 1982, p. 46.

4/ Letter from D. A. Behnisch, *op. cit.*, p. 3.

5/ Sec. T. D. Heaver and J. C. Nelson, Railway Pricing Under Commercial Freedom: The Canadian Experience, (Vancouver, Canada, Center for Transportation Studies, 1977, pp. 202-5.

6/ "Crows Weekly Letter", Friday, Jan. 29, 1982, p. 10.

7/ *Ibid.*, Friday, Mar. 5, 1982, and American Logger and Lumberman, Dec.-Jan. 1981-1982, p. 15.

In the Northeastern United States, however, it is likely that the Canadian rail-truck combination through eastern "reload centers" will continue to give a delivery cost advantage to lumber producers in British Columbia over producers in the Western United States.

Waterborne costs.—Waterborne shipments to U.S. destinations are important only to producers in the Western United States and in British Columbia. Waterborne shipments in the West are for the most part between west coast ports or exported. As reported by the Pacific Lumber Inspection Bureau, shipments from U.S. west coast ports have declined steadily from 849 million board feet in 1960 to 4 million board feet in 1979. This decline is attributed by most sources to the effects of the Merchant Marine Act of 1920, commonly known as the Jones Act, which requires the use of U.S. ships in intracoastal trade. This limits the supply of shipping available to U.S. lumber shippers, and generally results in higher costs than that of ships of other flags. The degree to which the higher costs attributed to U.S.-flag ships gives the Canadian lumber shipper a competitive advantage in U.S. markets depends on several factors, including rates paid by Canadian shippers. It appears that Canadian shippers have more flexibility in rate competition. Canadians have taken several steps to minimize the effect of waterborne shipping rates. Even if U.S. and Canadian rates were competitive, it is likely that Canadian shippers would have certain advantages which are inherent in the distribution system they have developed. This includes cargo assembly centers, at least one of which is jointly owned by Canadian lumber producers. 1/ Lumber is delivered by truck or rail in standardized packages where it is kept in inventory to be assembled according to order at dockside for loading. These centers allow one-step loading, and standard packaging allows rapid loading and efficient space utilization. Time savings in loading and offloading ships considerably reduces the total charges for waterborne shipments. U.S. producers could most likely develop a similar system in time, but appear unlikely to do so as long as the higher costs and limited shipping associated with the provisions of the Jones Act continue. 2/

Costs of shipping by water from Canada to the United States for 1981 are shown in table 25. These were calculated from official U.S. import statistics. The average transportation cost was 22 percent of the total landed value of such imports. Waterborne transportation charges to Baltimore, Md., accounted for 31 percent of the landed value of softwood lumber imports, whereas rail charges from Portland, Oreg., to Baltimore, Md., for Douglas-fir lumber would have been nearly 40 percent of the delivered price.

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1/ Information obtained from Mr. E.A. Cameron, Senior Vice President, Seaboard Lumber Sales Co. Ltd., during a visit to Seaboard in Vancouver, British Columbia, Jan. 22, 1982.

2/ Interview with Mr. Stanley Bishoprick, consultant to Dant & Russell, Inc., Portland, Oreg., Mar. 5, 1982.



Appendix A

Requests from the Senate Committee on Finance and the Subcommittee  
on Trade of the Committee on Ways and Means of the U.S. House  
of Representatives

ROBERT J. DOLE, KANS., CHAIRMAN

74

BOB PACKWOOD, ORIG.  
WILLIAM V. ROTH, JR., DEL.  
JOHN C. DANFORTH, MO.  
JOHN M. CHAFFEE, R.I.  
JOHN HEINZ, PA.  
MALCOLM WALLOP, WYO.  
DAVID DURENBERGER, MINN.  
WILLIAM L. ARMSTRONG, COLO.  
STEVEN D. SYMMS, IDAHO  
CHARLES E. GRASSLEY, IOWA

RUSSELL B. LONG, LA.  
HARRY F. RYD, JR., VA.  
LLOYD BENTSEN, TEX.  
SPARK M. MATSUMAGA, HAWAII  
DANIEL PATRICK MOYNIHAN, N.Y.  
MAX BAUCUS, MONT.  
DAVID L. DOREN, OKLA.  
BILL BRADLEY, N.J.  
GEORGE J. MITCHELL, MAINE

ROBERT E. LIGHTNIZER, CHIEF COUNSEL  
MICHAEL STERN, MINORITY STAFF DIRECTOR

United States Senate

COMMITTEE ON FINANCE

WASHINGTON, D.C. 20510

December 2, 1981

The Honorable William Alberger  
U.S. International Trade Commission  
701 E Street, N.W.  
Washington, D.C. 20436

Dear Mr. Chairman:

The United States Senate Committee on Finance requests that the United States International Trade Commission conduct an investigation under section 332 of the Tariff Act of 1930 on the importation of Canadian softwood lumber into the United States.

The Commission's study should analyze all relevant conditions relating to the importation of Canadian softwood lumber into the United States as well as compare the competitive status of the U.S. and Canadian softwood lumber industries. The Committee requests that special emphasis be placed on determining the impact of such importations from British Columbia. In particular, the following topics should be included in the Commission's report of its investigation:

1. The U.S. market (United States and Canadian factors of competition including a discussion of imports, production including multinational operations, and consumption).
2. A comparison of stumpage prices and appraisal methods.
3. A comparison of fixed and variable costs of production.
4. A comparison of transportation costs.
5. A comparison of marketing practices (including a discussion of the impact of Canadian softwood lumber of the various regions of the U.S. market).
6. A comparison of Government policies and regulations and their influence on the softwood lumber industry.

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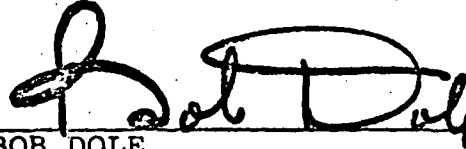
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In the course of conducting this investigation, the Commission may wish to consider the desirability and usefulness of conducting a field hearing to facilitate the development of relevant data.

The final report should be transmitted to the Committee on Finance not later than four months after receipt of this request.

Sincerely yours,



BOB DOLE  
Chairman



BOB PACKWOOD



JOHN DANFORTH

COMMITTEE ON WAYS AND MEANS  
RECEIVED

U.S. HOUSE OF REPRESENTATIVES

WASHINGTON, D.C. 20515 10:13  
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SUBCOMMITTEE ON TRADE

CONGRESSIONAL LIAISON

U.S.I.T.C.

November 30, 1981

BAN ROSTENKOWSKI, ILL.  
JAMES R. JONES, OKLA.  
BO JENKINS, A.  
THOMAS J. DOWNEY, N.Y.  
DON J. PEASE, OHIO  
RENT HANCE, TEX.  
WILLIAM M. BROOKEHEAD, MICH.  
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BILL ARCHER, TEX.  
BILL FRENZEL, MINN.  
L. A. (SKIP) BAFALIS, FLA.  
RICHARD T. SCHULZ, PA.

EX OFFICIO  
BARBAR B. COMBLE, JR., N.Y.

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OFFICE OF  
COMMISSIONER GENERAL  
U.S.I.T.C.

The Honorable Bill Alberger  
Chairman  
International Trade Commission  
701 E Street, N.W.  
Washington, D. C. 20436

Dear Bill:

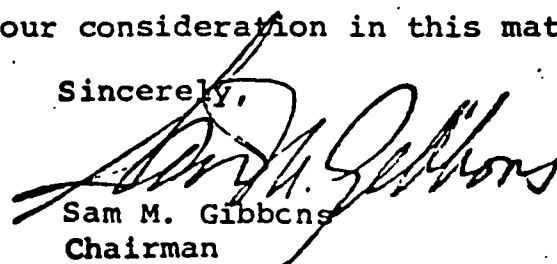
The woods products industry in the Northwest is facing serious economic difficulty given the continued weakness of the U.S. construction sector and the general recessionary status of the economy. However, I understand this economic difficulty has been greatly exacerbated by certain preferential practices in British Columbia that serve to provide Canadian exports of lumber products a substantial price advantage in our market.

Apparently, the practice that has given the domestic industry the most difficulty is that of the assessment of stumpage fees for lumber from provincial lands on a non-competitive basis at rates below the price which U.S. independent producers pay through competitive bidding for timber from our National Forests. Some elements of the U.S. industry maintain that the disparity in stumpage prices gives British Columbia mills a 25 percent advantage in our market.

Accordingly, I would like to request that the ITC conduct an investigation, under sec. 332 of the Tariff Act of 1930, of the lumber industry in the Northwest and in British Columbia that would provide a useful basis for evaluating the current situation. In addition to a review of the composition of the industry in both countries and the pertinent export-import patterns, it would be helpful to have a comparative analysis of the stumpage appraisal systems, industry wage rates, nature of forest resources, forest policy, employment policy as it relates to this industry, methods of taxation, and profit and risk allowances.

I appreciate your consideration in this matter.

Sincerely,

  
Sam M. Gibbons  
Chairman

SMG/DBRm

Appendix B

Federal Register, Notice of Investigation

Issued: December 23, 1981.  
 Kenneth R. Mason,  
 Secretary.  
 [FR Doc. 81-37023 Filed 12-28-81; 8:45 am]  
 BILLING CODE 7020-02-M

[332-134]

**Conditions Relating to the Importation of Canadian Softwood Lumber into the United States**

**AGENCY:** International Trade Commission.

**ACTION:** At the request of the Committee on Finance of the U.S. Senate and following receipt of a request from the Chairman of Subcommittee on Trade of the Committee on Ways and Means of the U.S. House of Representatives on December 4, 1981, and December 8, 1981, respectively, the U.S. International Trade Commission instituted Investigation No. 332-134 under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)), for the purpose of gathering and presenting information on softwood lumber imports from Canada and the factors affecting the competitiveness of U.S. producers of softwood lumber. This study will present a profile of the United States and Canadian markets and industries, with an emphasis on the costs of producing softwood lumber in the U.S. Pacific Northwest and in British Columbia.

**EFFECTIVE DATE:** December 16, 1981.

**FOR FURTHER INFORMATION CONTACT:** Mr. William Hoffmeier or Mr. Jeff Wood, Agriculture, Animals and Forest Products Division, U.S. International Trade Commission, Washington, D.C. 20436, telephone 202-724-1766 or 202-724-0095, respectively.

**SUPPLEMENTARY INFORMATION:**

**Background**

The Committee on Finance requested that the Commission report include, in particular, information with respect to:

1. The U.S. market (United States and Canadian factors of competition including a discussion of imports, production including multinational operations, and consumption).
2. A comparison of stumpage prices and appraisal methods.
3. A comparison of fixed and variable costs of production.
4. A comparison of transportation costs.
5. A comparison of marketing practices (including a discussion of the impact of Canadian softwood lumber on the various regions of the U.S. market).
6. A comparison of Government policies and regulations and their

influence on the softwood lumber industry.

The Committee asked that the Commission transmit its report not later than 4 months after receipt of the request.

The Chairman of the Subcommittee on Trade of the Committee on Ways and Means requested that the report include, in addition to a review of the composition of the industry in both countries, "a comparative analysis of the stumpage appraisal systems, industry wage rates, nature of forest resources, forest policy, employment policy as it relates to this industry, methods of taxation, and profit and risk allowances."

**Public Hearing:** A public hearing in connection with the investigation will be held in Room 223, Federal Center Building, 1220 SW 3rd Street, Portland, Oregon, on February 17, and 18, 1982. All persons shall have the right to appear by counsel or in person, to present information, and to be heard. Requests to appear at the public hearing should be filed with the Secretary, United States International Commission, 701 E Street NW, Washington, D.C. 20436, not later than noon, February 12, 1982.

**Written Submissions:** In lieu of or in addition to appearances at the public hearing, interested persons are invited to submit written statements concerning the investigation. Commercial or financial information which a submitter desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly marked "Confidential Business Information" at the top. All submissions requesting confidential treatment must conform with the requirements of § 201.6 of the Commission's Rules of Practice and Procedure (19 CFR 201.6). All written submissions, except for confidential business information, will be made available for inspection by interested persons. To be ensured of consideration by the Commission, written statements should be submitted at the earliest practicable date, but no later than February 20, 1982. All submissions should be addressed to the Secretary at the Commission's office in Washington, D.C.

Issued: December 18, 1981.

By order of the Commission.

Kenneth R. Mason,

Secretary.

[FR Doc. 81-37079 Filed 12-28-81; 8:45 am]  
 BILLING CODE 7020-02-M

UNITED STATES INTERNATIONAL TRADE COMMISSION  
Washington, D.C.  
(332-134)

Conditions Relating to the Importation of  
Canadian Softwood Lumber into the United States

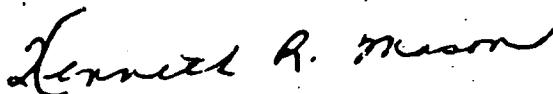
AGENCY: United States International Trade Commission

ACTION: The Commission has rescheduled the hearing dates for the above captioned investigation No. 332-134. The hearing will now be held in Room 223, Federal Center Building, 1220 SW 3rd Street, Portland, Oregon, beginning at 10:00 a.m., on March 3, 1982, and continued on March 4, 1982 as required. Requests to appear at the public hearing should be filed in writing with the Secretary, United States International Trade Commission, 701 E Street NW., Washington, D.C. 20436, not later than noon February 24, 1982. Written statements should be submitted at the earliest practicable date, but no later than March 5, 1982.

The hearing was originally scheduled to begin February 17, 1982. The Commission's initial notice concerning the investigation, including the scope, the hearing, and procedures for submitting information, was published in the Federal Register of December 29, 1981 (46 F.R. 62969-62970).

Transmission of the Commission's report on this investigation to the Committee on Finance is scheduled for April 19, 1982.

By order of the Commission.



Kenneth R. Mason

Secretary

Issued: January 20, 1982



## Appendix C

### Sources of Information

Written Submissions

Stanley Bishoprick, Consultant, Dant and Russell Inc., Portland, Oreg.,  
March 10, 1982

Kenneth J. Cawkell, Mgr. Freight Sales and Service, British Columbia, CN Rail,  
Vancouver, B.C., Feb. 10, 1982.

Brad Holden, President Chamber of Commerce, Jackman, Maine, March 8, 1982.

Paul Kay, Vice President, Wood Products Sales and Distribution, Weyerhaeuser  
Company, Tacoma, Wash., March 11, 1982.

C. Charles Lumbert, President, Moose River Lumber Co., Inc., Jackman, Me.,  
March 3, 1982.

Norman J. Siefken, President, John C. Taylor Lumber Sales, Inc., Beaverton,  
Oreg., Feb. 4, 1982.

Kenneth G. Stratton, Director, Maine Forest Service, Augusta, Me.,  
Jan. 11, 1982.

Submissions at the Commission Hearing  
(in order of appearance) Portland, Oregon

March 3, 1982:

Preston, Thorgrinson, Ellis & Holman--Of Counsel, Washington, D.C.,  
on Behalf of:

Northwest Independent Forest Manufacturers Association  
Aaron Jones, Seneca Sawmill, Eugene, Oregon and President,  
Western Resource Alliance

Thomas J. Westbrook, Cascade West Forest Products, Inc.  
and President, Northwest Independent Forest Manufacturers  
Paul F. Ehinger, Executive Vice President, Western Resource  
Alliance, Eugene, Oregon

M. J. Kuehne, Executive Vice President, Northwest Independent  
Forest Manufacturers, Tacoma, Washington

Robert Boyd, Boyd Lumber Corp., Sedro Woolley, Washington

Richard L. Barnes--of Counsel

Bradley K. Witt, Researcher, Western Council, Lumber,  
Production & Industrial Workers, Portland, Oreg.

Kent Studebaker, Corporate Counsel, Louisiana-Pacific  
Corporation, Portland, Oreg.



Robert K. Hood, Manager, Market Development, Wood Products Group, International Paper Co., New York, N.Y.

Clyde L. Knight, Executive Vice President, United States Shake & Shingle Manufacturers Assoc., Richmond Beach, Wash.

Harlan M. Niebling, Executive Vice President and Secretary North American Wholesale Lumber Assoc., Arlington Heights, Ill.

R.J. Lande, Manager, Economic Development, D.A. Behnisch, Director, Pricing, M.L. Page Regional Marketing Manager, Canadian Pacific Railroad, Vancouver, B.C.

Miner H. Baker, Vice President and Economist (Retired), Seattle First National Bank, Seattle, Wash.

Dr. George E. Taylor, President, Washington Council on International Trade, Seattle, Wash. \*

\*Dr. Taylor's statement was presented by Mr. Miner H. Baker

March 4, 1982:

Herbert A. Fierst--Counsel, Washington, D.C., on behalf of:

W. Michael Robson, Group Vice President, Building Materials Marketing, Canadian Forest Products, Ltd., Vancouver, B.C.  
 Donald A. Dowsley, Vice President, Building Materials/Nanaimo Region, MacMillan Bloedel, Ltd., Vancouver, B.C.  
 Conrad Pinette, President and General Manager, Pinette & Therrien Mills, Ltd., Williams Lake, B.C.  
 Grant L. Ainscough, Vice President and Chief Forester, MacMillan Bloedel, Ltd., Vancouver, B.C.  
 John M. Trask, General Manager, Building Material/Transportation, Canadian Forest Products, Ltd., Vancouver, B.C.  
 Paul Bienvenu, President, Howard-Bienvenu, Inc., La Sarre, Quebec

International Woodworkers of America, Portland, Oreg.

Keith W. Johnson, International President  
 Douglas Smyth, Research Director, Canadian Regional Council #1 of IWA  
 Philip Legg, Assistant Director, Canadian Regional Council #1 of IWA  
 Denny Scott, Research Economist

During the course of the investigation the following people were interviewed and in many instances provided documented statistical and explanatory material to the Commission staff.

British Columbia Ministry of Forests

- Hartley Lewis, Manager Economic Section
- A.C. MacPherson, Assistant Deputy Minister Timber, Range and Recreation
- Various Staff Personnel

Various Mill Managers in British Columbia including

- George Richards, Weldwood of Canada
- John Kerr, Lignum Ltd.
- R. Issacson, Bay Forest Products Division, Whonnock Forest Products, Ltd.

Canadian Log Brokers

- Colin Baxter, Canadian Forest Products Ltd.
- Ian Macdonald, Whonnock Industries, Ltd.
- Jim Patrick, Patrick and Miles Logs Ltd.

Representatives of Canadian National Rail

Representatives of Canadian Pacific Rail

Council of Forest Industries of British Columbia

- N.R. Dusting, Senior Vice-President, Wood Products
- R.A. Shebbeare, Vice-President, Forests and Environment
- K.S. McKeen, Director Lumber and Shingles
- Various COFI Staff Personnel

Dant and Russell Inc.

- Stanley Bishoprick, Consultant
- Ted Wellington, Manager Warrenton Lumber Division

Industrial Forestry Association

- Norm Borjorkland

International Woodworkers of America

- Doug Smyth, Research Director

MacMillian Bloedel limited

- Grant L. Ainscough, Vice President and Chief Forester

State of Maine Executive Department

- Lloyd Irland, State Economist

North West Timber Association

- Arnold Ewing, Executive Vice President
- Member Mill Owners and Managers

**Northwest Independent Forest Manufacturers**

- Gus Kuehne, Executive Vice President
- Member Mill Owners

**Port of Astoria**

- Greg Baker, Deputy Director Finance and Administration

**Seaboard Lumber Sales Company Ltd.**

- E.A. Cameron, Senior Vice President

**U.S. Bureau of Land Management**

- Bob Mitchell

**U.S. Forest Service Pacific Northwest Experiment Station**

- Dave Darr, Forest Economist

**U.S. Forest Service Region 6**

- Fred Spranger, Valuation Specialist
- Gene Balon, Valuation Specialist

**University of British Columbia**

- J. Harry G. Smith, Professor, Faculty of Forestry
- David Haley, Associate Professor, Faculty of Forestry

**State of Washington Department of Natural Resources**

- Loren Gee, Industrial Economist

**Western Resource Alliance**

- Paul Ehinger, Executive Vice President

**Weyerhaeuser Company**

- Dwain Cless, Lumber Business Manager
- Mack Hogans, Resources Issues Manager
- Bob Myhr, Manager, International Projects
- Garry O'Malley, Resources Issues Specialist



## Appendix D

Excerpt from subpart B, Part 1 of the Tariff Schedules of the United States Annotated (1982)

## TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1982)

## SCHEDULE 2. - WOOD AND PAPER; PRINTED MATTER

## Part 1. - Wood and Wood Products

Page 115

2 - 1 - A, B

200.75 - 200.95

C S P	Item	Stat. Suf- fix	Articles	Units of Quantity	Rates of Duty		
					1	LDDC	2
	200.75		Wood fence pickets, palings, and rails, whether or not assembled into fence sections.....	.....	Free		Free
		20	Unassembled.....	X			
		40	Assembled.....	X			
	200.80		Wood railroad ties (except switch or bridge ties).....	.....	Free		Free
		20	Treated.....	M.bd.ft.			
		40	Untreated.....	M.bd.ft.			
	200.85		Wood shingles and shakes.....	.....	Free		Free
		20	Red cedar.....	Square			
		40	Other.....	Square			
			Wood dowel rods and pins, plain, or sanded, grooved, or otherwise advanced in condition:				
			Plain:				
A*	200.91	00	Softwood.....	Lin.ft.	2.5% ad val.		5% ad val.
	200.93	00	Hardwood.....	Lin.ft.	Free		5% ad val.
	200.95		Advanced in condition.....	.....	13.32 ad val.	7.6% ad val.	33-1/3% ad val.
		20	Softwood.....	Lin.ft.			
		40	Hardwood.....	Lin.ft.			
Subpart B. - Lumber, Flooring, and Moldings							
Subpart B headnotes:							
1. This subpart covers lumber, wood siding, wood flooring, wood moldings, and certain wood carvings and ornaments, including such products when they have been drilled or treated.							
2. For the purposes of this part, the following terms have the meanings hereby assigned to them:							
(a) Lumber: A product of a sawmill or sawmill and planing mill derived from a log by lengthwise sawing which, in its original sawed condition, has at least 2 approximately parallel flat longitudinal sawed surfaces, and which may be rough, dressed, or worked, as set forth below:							
(i) rough lumber is lumber just as it comes from the saw, whether in the original sawed size or edged, resawn, crosscut, or trimmed to smaller sizes;							
(ii) dressed lumber is lumber which has been dressed or surfaced by planing on at least one edge or face; and							
(iii) worked lumber is lumber which has been matched (provided with a tongued-and-grooved joint at the edges or ends), shiplapped (provided with a rabbeted or lapped joint at the edges), or patterned (shaped at the edges or on the faces to a patterned or molded form) on a matching machine, sticker, or molder.							
Edge-glued or end-glued wood over 6 feet in length and not over 15 inches in width shall be classified as lumber if such wood as a solid piece without glue joints would be deemed to be lumber as defined above.							
Note: For explanation of the symbol "A" or "A*" in the column entitled "CSP", see general headnote 3(c).							

Note.--Shaded area not included in this study.

## TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1982)

SCHEDULE 2. - WOOD AND PAPER; PRINTED MATTER  
Part 1. - Wood and Wood Products

Page 110

2-1-B

202.01 - 202.09

C S P	Item	Stat. Suf- fix	Articles	Units of Quantity	Rates of Duty		
					1	LDDC	2
			<p>(b) <u>Softwood</u>: Wood from trees of coniferous species (order Coniferae).</p> <p>(c) <u>Hardwood</u>: Wood from trees of non-coniferous species.</p> <p>(d) <u>Drilled or treated</u>: Drilled at intervals for nails, screws, or bolts, sanded or otherwise surface processed in lieu of, or in addition to, planing or working, or treated with creosote or other wood preservatives, or with fillers, sealers, waxes, oils, stains, varnishes, paints, or enamels, but not including anti-stain or other temporary applications mentioned in headnote 4 of this subpart.</p> <p>(e) <u>Standard wood moldings</u>: Wood moldings worked to a pattern and having the same profile in cross section throughout their length.</p> <p>3. Lumber, including certain flooring provided for in this subpart, is dutiable on the basis of "<u>board measure</u>" for which the unit of measurement is the board foot. For the purposes of this subpart, a board foot is the quantity of lumber obtained in, or derived (by drying, dressing, or working, or any combination of these processes) from, a piece of rough green lumber 1 inch in thickness, 12 inches in width, and 1 foot in length, or the equivalent of such piece in other dimensions.</p> <p>4. The treatment of lumber or other products provided for in this subpart with anti-stain or other temporary applications which serve only for the purpose of maintaining the products in their rough, dressed, or worked condition until installation or further manufacture shall not affect their classification under any of the provisions of this subpart.</p>				
	202.03		Lumber, rough, dressed, or worked (including softwood flooring classifiable as lumber, but not including siding, molding, and hardwood flooring): Softwood:				
			Spruce ( <i>Pinus</i> spp.).....	.....	Free		\$4 per 1000 ft., board measure
		20	Rough.....	M-bd.-ft.			
		40	Dressed or worked.....	M-bd.-ft.			
	202.04		Pine ( <i>Pinus</i> spp.): Eastern white pine ( <i>Pinus strobus</i> ) and red pine ( <i>Pinus resinosa</i> ).....	.....	Free		\$1 per 1000 ft., board measure
		20	Rough.....	M-bd.-ft.			
		40	Dressed or worked.....	M-bd.-ft.			
	202.09		Other pine.....	.....	Free		\$4 per 1000 ft., board measure
			Lodgepole pine ( <i>Pinus contorta</i> ):				
		25	Rough.....	M-bd.-ft.			
		45	Dressed or worked.....	M-bd.-ft.			
			Other:				
		65	Rough.....	M-bd.-ft.			
		85	Dressed or worked.....	M-bd.-ft.			

## TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1982)

SCHEDULE 2. - WOOD AND PAPER; PRINTED MATTER  
Part 1. - Wood and Wood Products

Page 117

3 - 1 - B

202.12 - 202.38

GSP	Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty		
					1	LDDC	2
	202.12		Lumber, rough, dressed, or worked, etc. (con.): Softwood (con.): Parana pine ( <i>Araucaria angustifolia</i> ).....	.....	Free		\$4 per 1000 ft., board measure
		20	Rough.....	M.bd.ft.			
		40	Dressed or worked.....	M.bd.ft.			
	202.15		Douglas-fir ( <i>Pseudotsuga menziesii</i> ).....	.....	Free		\$4 per 1000 ft., board measure
		20	Rough.....	M.bd.ft.			
		40	Dressed or worked.....	M.bd.ft.			
	202.18		Fir ( <i>Abies</i> spp.).....	.....	Free		\$4 per 1000 ft., board measure
		20	Rough.....	M.bd.ft.			
		40	Dressed or worked.....	M.bd.ft.			
	202.21		Hemlock ( <i>Tsuga</i> spp.).....	.....	Free		\$4 per 1000 ft., board measure
		20	Rough.....	M.bd.ft.			
		40	Dressed or worked.....	M.bd.ft.			
	202.24		Larch ( <i>Larix</i> spp.).....	.....	Free		\$4 per 1000 ft., board measure
		20	Rough.....	M.bd.ft.			
		40	Dressed or worked.....	M.bd.ft.			
	202.27		Cedar ( <i>Thuja</i> spp., <i>Juniperus</i> spp., <i>Chamaecyparis</i> spp., <i>Cupressus</i> spp. and <i>Libocedrus</i> spp.).....	.....	Free		\$3 per 1000 ft., board measure
		20	Western red cedar ( <i>Thuja plicata</i> ): Rough.....	M.bd.ft.			
		40	Dressed or worked.....	M.bd.ft.			
		60	Other: Rough.....	M.bd.ft.			
		80	Dressed or worked.....	M.bd.ft.			
	202.30		Other.....	.....	Free		\$3 per 1000 ft., board measure
		20	Rough.....	M.bd.ft.			
		40	Dressed or worked.....	M.bd.ft.			
	202.32	00	Wartwood: Balsa ( <i>Ochroma lagopus</i> ) and teak ( <i>Tectona grandis</i> ): Rough.....	M.bd.ft.	Free		\$3 per 1000 ft., board measure
	202.33	00	Dressed or worked.....	M.bd.ft.	Free		\$3 per 1000 ft., board measure
	202.34		Mahogany ( <i>Swietenia</i> spp. or <i>Khaya</i> spp.).....	.....	Free		\$3.10 per 1000 ft., board measure
		20	Rough.....	M.bd.ft.			
		40	Dressed or worked.....	M.bd.ft.			
	202.35	00	Spanish cedar ( <i>Cedrela</i> spp.), ebony ( <i>Diospyros</i> spp.), lancewood ( <i>Oxandra</i> spp.), and lignumvitae ( <i>Guaiacum</i> spp.): Rough.....	M.bd.ft.	Free		15% ad val.
	202.37	00	Dressed or worked.....	M.bd.ft.	Free		15% ad val.
A	202.38		Boxwood ( <i>Buxus</i> spp.), Japanese maple ( <i>Acer</i> spp.), and Japanese white oak ( <i>Quercus</i> spp.).....	.....	0.6% ad val.	Free	15% ad val.
		20	Rough.....	M.bd.ft.			
		40	Dressed or worked.....	M.bd.ft.			

Note: For explanation of the symbol "A" or "A\*" in the column entitled "GSP", see general headnote 3(c).



**Appendix E**

**Excerpt from subpart B, part 1 of Schedule B**

## SCHEDULE 2. WOOD AND PAPER; PRINTED MATTER

(2-1-B)

(2-1-B)

Schedule B number	Commodity description	Unit of quantity	Schedule B number	Commodity description	Unit of quantity
	<p>Subpart B--Lumber, Siding, Flooring, and Moldings</p> <p>Subpart B headnotes:</p> <p>1. This subpart covers lumber, wood siding, wood flooring, wood moldings, and certain wood carvings and ornaments, including such products when they have been drilled or treated.</p> <p>2. For the purposes of this part, the following terms have the meanings hereby assigned to them:</p> <p>(a) <u>Lumber</u>: A product of a sawmill or sawmill and planing mill derived from a log by lengthwise sawing which, in its original sawed condition, has at least 2 approximately parallel flat longitudinal sawed surfaces, and which may be rough, dressed, or worked, as set forth below:</p> <p>(i) <u>rough lumber</u> is lumber just as it comes from the saw whether in the original sawed size or edged, re-sawn, crosscut, or trimmed to smaller sizes;</p> <p>(ii) <u>dressed lumber</u> is lumber which has been dressed or surfaced by planing on at least one edge or face; and</p> <p>(iii) <u>worked lumber</u> is lumber which has been matched (provided with a tongued-and-grooved joint at the edges or ends), shiplapped (provided with a rabbeted or lapped joint at the edges), or patterned (shaped at the edges or on the faces to a patterned or molded form) on a matching machine, sticker, or molder.</p> <p>Edge-glued or end-glued wood shall be classified as lumber if such wood as a solid piece without glue joints would be deemed to be lumber as defined above;</p> <p>(b) <u>Softwood</u>: Wood from trees of coniferous species (order Coniferae);</p>			<p>(c) <u>Hardwood</u>: Wood from trees of non-coniferous species;</p> <p>(d) <u>Drilled or treated</u>: Drilled at intervals for nails, screws, or bolts, sanded or otherwise surface processed in lieu of, or in addition to, planing or working, or treated with creosote or other wood preservatives, or with fillers, sealers, waxes, oils, stains, varnishes, paints, or enamels, but not including anti-stain or other temporary applications mentioned in headnote 4 of this subpart.</p> <p>3. For the purposes of this subpart, a board foot is the quantity of lumber contained in, or derived (by drying, dressing, or working, or any combination of these processes) from, a piece of rough green lumber 1 inch in thickness, 12 inches in width, and 1 foot in length, or the equivalent of such piece in other dimensions.</p> <p>4. The treatment of lumber or other products provided for in this subpart with anti-stain or other temporary applications which serve only for the purpose of maintaining the products in their rough, dressed, or worked condition until installation or further manufacture shall not affect their classification under any of the provisions of this subpart.</p> <p>Lumber, rough, dressed or worked, not treated with creosote or other permanent wood preservative, whether or not drilled or otherwise treated (including softwood flooring classifiable as lumber, but not including siding, molding, and hardwood flooring):</p> <p>Softwood:</p> <p>Spruce (<u>Picea</u> spp.):</p> <p>Rough.....</p> <p>Dressed or worked.....</p>	<p>M bd.ft.</p> <p>M bd.ft.</p>
			202.0420		
			202.0440		

## SCHEDULE 2. WOOD AND PAPER; PRINTED MATTER

(2-1-B)

(2-1-B)

Schedule B number	Commodity description	Unit of quantity	Schedule B number	Commodity description	Unit of quantity
	Lumber, rough, dressed or worked, etc.--Continued Softwood--Continued			Lumber rough, dressed or worked, etc.--Continued Softwood--Continued	
	Pine ( <u>Pinus</u> spp.):			Fir ( <u>Abies</u> spp.):	
	Eastern white pine ( <u>Pinus</u> <u>strobus</u> ) and red pine ( <u>Pinus resinosa</u> ):		202.1920	Rough.....	M bd.ft.
			202.1940	Dressed or worked.....	M bd.ft.
202.0720	Rough.....	M bd.ft.		Hemlock ( <u>Tsuga</u> spp.):	
202.0740	Dressed or worked.....	M bd.ft.	202.2220	Rough.....	M bd.ft.
	Southern yellow pine ((loblolly pine) ( <u>Pinus</u> <u>taeda</u> ), longleaf pine ( <u>Pinus palustris</u> ) pitch pine ( <u>Pinus rigida</u> ), shortleaf pine ( <u>Pinus</u> <u>echinata</u> ), slash pine ( <u>Pinus elliotii</u> ), and Virginia pine ( <u>Pinus</u> <u>virginiana</u> )):		202.2240	Dressed or worked.....	M bd.ft.
			202.2520	Larch ( <u>Larix</u> spp.):	
			202.2540	Rough.....	M bd.ft.
				Dressed or worked.....	M bd.ft.
202.0820	Rough.....	M bd.ft.		Cedar ( <u>Thuja</u> spp., <u>Juniperus</u> spp., <u>Chamaecyparis</u> spp., <u>Cupressus</u> spp. and <u>Libo- cedrus</u> spp.):	
202.0840	Dressed or worked.....	M bd.ft.		Western redcedar ( <u>Thuja</u> <u>plicata</u> ):	
	Ponderosa pine ( <u>Pinus</u> <u>ponderosa</u> ):		202.2820	Rough.....	M bd.ft.
			202.2840	Dressed or worked.....	M bd.ft.
202.1020	Rough.....	M bd.ft.		Other cedar:	
202.1040	Dressed or worked.....	M bd.ft.		Rough.....	M bd.ft.
	Other pine:		202.2860	Dressed or worked.....	M bd.ft.
			202.2880		
202.1120	Rough.....	M bd.ft.		Redwood ( <u>Sequoia semper- virens</u> ):	
202.1140	Dressed or worked.....	M bd.ft.		Rough.....	M bd.ft.
	Douglas-fir ( <u>Pseudotsuga</u> <u>muiriana</u> ):		202.2920	Dressed or worked.....	M bd.ft.
	Rough:		202.2940		
				Other softwood:	
202.1620	In least dimension under 2 inches.....	M bd.ft.	202.3120	Rough.....	M bd.ft.
202.1640	In least dimension 2 inches but under 5 inches.....	M bd.ft.	202.3140	Dressed or worked.....	M bd.ft.
202.1660	In least dimension 5 inches and over.....	M bd.ft.			
202.1680	Dressed or worked.....	M bd.ft.			
			202.4312		
			202.4314		



Appendix F

Excerpt from Canadian Tariff Schedules

## Softwood Lumber: Canadian rates of duty, present and negotiated

(Percent ad valorem)

Item	Description	Present Rate of Duty 1/	Negotiated Rate of duty
50040-1	Lumber of any species not further manufactured than sawn.	Free	Free.
50045-1	Lumber of any species not further manufactured than by a planing or matching machine.	Free	Free.
50050-1	Softwood lumber, drilled but not otherwise further manufactured than by a planing or matching machine.	Free	Free.
50055-1	Edge- or end-glued lumber not over 6 feet in length or over 15 inches in width, not drilled and not further manufactured than by a planing or matching machine.	Free	Free.

1/ Rates currently applicable to imports from the United States on Jan. 1, 1982.

Note.-- Duty-free rates applicable to the United States are also applicable to imports from the European Community and Japan.

Appendix G

Lumber Tariffs of selected countries

## Softwood lumber: Foreign rates of duty, present and negotiated

Market	Description	Present rate of duty 1/	Negotiated rate of duty 2/
European Community	Wood sawn lengthwise, sliced		
	or peeled, but not further		
	prepared, of a thickness		
	exceeding 5 mm:		
	Coniferous wood, length less	4.6%	3.8%
	than 125 cm; thickness less:		
	than 12.5 mm (44.05-2000)		
	All other [44.05-	Free	Free
Japan-----	(4011-7999)].		
	Wood, planed, tongued, grooved,	4.6%	4.0%
	etc. but not further manu-		
	factured 44.13 (all).		
	Wood sawn lengthwise, sliced		
	or peeled, but not further		
	prepared, of a thickness		
	exceeding 5 mm:		
	Genera <u>Pinus</u> , <u>Abies</u> <u>Picea</u>	2.5%	2.5%
	and <u>Larix</u> , not more than		
	160 mm in thickness:		
	Genus <u>Pinus</u> (44.05-310)----	2.5%	2.5%
	Genus <u>Abies</u> and <u>Picea</u>	2.5%	2.5%
	(44.05-320).		
	Genus <u>Larix</u> (44.05-330)----	2.5%	2.5%
	All other [44.05 (510-599)]--	Free	Free
	Wood planed, tongued, grooved		
	rebated, chamfered,		
	V-jointed, centre V-joint-		
	ed, beaded, centrebeaded or:		
	the like, but not further		
	manufactured:		
	Genera <u>Pinus</u> , <u>Abies</u> , <u>Picea</u>	2.5%	2.5%
	and <u>Larix</u> , not more than		
	160 mm in thickness		
	(44.13-300).		
	All other [44.13 (510 and	Free	Free
	590)].		

1/ Rates currently applicable to imports from the United States on Jan. 1, 1982.

2/ Final rates negotiated under the Multilateral Trade Negotiations (MTN) effective on Jan. 1, 1987.

Note.--Foreign duty rates applicable to the United States are also applicable to imports between the trading markets of Japan, the EC, and Canada.

Note.--It should be noted that rates on this page were drawn from unofficial sources and may not accurately reflect current rates of duty.



Appendix H

Section 402(g)(2), of the Tariff Act of 1930

(g) Transactions Between Related Persons.--

(1) For the purposes of subsection (c)(1) or (d), as the case may be, a transaction directly or indirectly between persons specified in any one of the subdivisions in paragraph (2) of this subsection may be disregarded if, in the case of any element of value required to be considered, the amount representing that element does not fairly reflect the amount usually reflected in sales in the market under consideration of merchandise of the same general class or kind as the merchandise undergoing appraisement. If a transaction is disregarded under the preceding sentence and there are no other transactions available for consideration, then, for the purposes of subsection (d), the determination of the amount required to be considered shall be based on the best evidence available as to what the amount would have been if the transaction had occurred between persons not specified in any one of the subdivisions in paragraph (2).

(2) The persons referred to in paragraph (1) are:

(A) Members of a family, including brothers and sisters (whether by whole or half blood), spouse, ancestors, and lineal descendants;

(B) Any officer or director of an organization and such organization;

(C) Partners;

(D) Employer and employee;

(E) Any person directly or indirectly owning, controlling, or holding with power to vote, 5 per centum or more of the outstanding voting stock or shares of any organization and such organization; and

(F) Two or more persons directly or indirectly controlling, controlled by, or under common control with, any person.

19 U.S.C. 1402 SEC. 402a. VALUE (ALTERNATIVE).

70 Stat. 943, 946

84 Stat. 288

See list following this section.

(a) Basis.-- For the purposes of this Act the value of imported articles designated by the Secretary of the Treasury as provided for in section 6(a) of the Customs Simplification Act of 1956 shall be--

(1) The foreign value or the export value, whichever is higher;

(2) If the appropriate customs officer determines that neither the foreign value nor the export value can be satisfactorily ascertained, then the United States value;

(3) If the appropriate customs officer determines that neither the foreign value, the export value, nor the United States value can be satisfactorily ascertained, then the cost of production;

(4) In the case of an article with respect to which there is in effect under section 336 a rate of duty based upon the American selling price of a domestic article, then the American selling price of such article.

Appendix I

Forest Service rule changes

located immediately north to northeast of La Grange, Texas, and contains approximately 35,700 acres. It includes all of the following 21 surveys: A. E. Baker A-8, R. C. Baugh A-12, S. P. Brown A-22, Wm. Burnham A-142, W. H. Carson A-28, J. H. Cartwright A-29, S. Darling A-161, N. W. Eastland A-173, W. M. Eastland A-172, Fayette Co. Sch. Land A-183, Jas. Green A-189, Jas. Green A-190, Franklin Lewis A-84, J. P. Longley, A-230, Wm. Nabors A-251, J. R. Phillips A-83, W. J. Russell A-89, John Vanderworth A-312, Ben White A-325, J. C. Wilkinson A-108 and W. J. Williamson A-113.

(B) *Depth.* The top of the Edwards Limestone Formation is present at depths ranging from -10,100 feet subsea in the west to -11,600 feet subsea in the east.

[FR Doc. 82-1352 Filed 1-19-82; 8:45 am]  
BILLING CODE 6717-01-M

## DEPARTMENT OF AGRICULTURE

### Forest Service

#### 36 CFR Ch. II

#### National Forest Timber Sales; New Timber Sale Procedures

**AGENCY:** Forest Service, USDA.

**ACTION:** Notice of proposed policy.

**SUMMARY:** This proposal would revise agency procedures relating to new timber sales. The primary purposes of the new procedures are to encourage a regular flow into the market place of products manufactured from National Forest timber, to provide a corresponding flow of timber sale receipts to the United States and local governments, to help ensure financial responsibility of bidders, to encourage purchasers of Forest Service timber sales to harvest timber early in the contract term, and to reduce the need for future extensions of timber contracts.

Federal Regulations at 36 CFR Part 223 set forth rules and regulations for sale and disposal of timber from National Forests. Timber sale policies and procedures stated in Forest Service Manual 2400 implement those rules and regulations. The revised procedures here proposed will not impact on nor affect the quality of the human environment, do not involve environmental amenities and values, nor do they involve alternative uses of available resources. Therefore, the proposed revisions to timber sale contract procedures here described are outside the requirements of the National Environmental Policy Act (Forest Service Manual 1951.2 (48 FR 56998, November 19, 1981)).

**DATES:** Comments must be received by March 8, 1982.

**ADDRESSES:** Send written comments to: R. Max Peterson, Chief (2400), Forest Service, USDA, P.O. Box 2417, Washington, DC 20013.

**FOR FURTHER INFORMATION CONTACT:** Emil M. Sabol, Timber Management Staff, Forest Service, USDA, P.O. Box 2417, Washington, DC 20013, (202) 447-4051.

All written submissions made pursuant to this notice will be available for public inspection during regular business hours in: Director, Timber Management Staff, South Agriculture Building, Room 3207, 12th and Independence Avenue, SW., Washington, DC.

#### SUPPLEMENTARY INFORMATION:

America's housing market serves as the source of the primary demand for softwood products—chiefly lumber and plywood. Major producing areas in this country are the Pacific Coast, the Intermountain West, and the Southeastern United States. Canada is also a major producer of wood products for American housing. In the last 20 years annual housing starts have varied between 1.1 million and 2.4 million. Softwood lumber and plywood prices have declined during each low point of the market. Producers have reduced output or shutdown operations. Past cycles were of short duration and the marginal producers were usually able to recover and resume production.

The current downturn in housing starts has been much deeper and of longer duration. Hundreds of mills are closed or are on reduced production schedules. Many western producers are dependent in whole or in part on National Forests as their source of timber supply. For many years the Forest Service has been selling timber to individuals or companies who convert the standing timber to logs and then into lumber or plywood. Each sale transaction begins with an advertised timber offering at an appraised fair market value. Prospective purchasers may bid with the high bid being the winner. Timber sales vary in value from a few thousand dollars to several million dollars. Each sale is formalized by execution of a contract between the purchaser and the Forest Service. The contract details the explicit terms and provisions of the sale including volume, price, period of removal, and requirements for road construction (if required), logging, and environmental protection measures to be taken. The average contract period is about 3 years. Many sales are 1 or 2 year contracts, and a few are for as long as 7 or 8 years

duration. Average sale length in the West is about 3 and ½ years.

Intense competition in some geographic areas for Forest Service sales in recent years has caused bid prices to exceed by two or three times the advertised stumpage rates. For example, there is currently 11.286 billion board feet of timber under contract on National Forests in western Oregon and Washington at an average price of \$295 per thousand board feet log scale.

In the face of low demand, decreased product prices and severe competition from Canadian lumber, many purchasers have been unable to operate the sale contracts. In a normal situation an uncompleted sale contract would go into default. The purchaser would be liable for the difference between the contract price and the resale price of the defaulted timber. The spectre of a large number of potential defaults followed by bankruptcies with all of the consequent disruptive effects to employment and the economy in forested regions of the country caused the Forest Service in October 1981 to permit, upon request, extensions of existing timber sale contracts even though specified conditions for extension had not been met.

Many purchasers on the Pacific Coast would be more competitive in the domestic lumber and plywood market if their stumpage costs were closer to the originally appraised price of sales now under contract. There are a number of reasons why prices bid for public timber, especially on the Pacific Coast, are high. Two principal causes have been a combination of the purchaser's expectations of a high level of housing starts (strong demand) and an expectation of continued high inflation rates (high price). These expectations caused some purchasers to bid extremely high rates for longer term sales of 4, 5, or 6 years. This timber is not economical for harvest now. The consequences have been numerous: mill closings, high unemployment, potential bankruptcies and a significant reduction in stumpage receipts to the Federal and County Governments. Many western counties depend heavily on their 25 percent payment of receipts for operation of schools and roads.

Current Forest Service bidding and contracting procedures have been geared to former modest levels of bidding competition. They do not offer the necessary economic incentives for prompt and orderly harvest of timber under market conditions that have existed during the past few years. Current and expected conditions make it necessary to alter these procedures. In

October, the Forest Service developed objectives, criteria, and a list of possible changes to contract procedures. This information has been made available to timber purchasers, County and State officials, and other interested individuals. Meetings and work sessions have been held. In December, Forest Service Chief Peterson sent three of his timber staff West personally to confer with timber purchasers, County and State officials, and others in four States. Approximately 450 producers plus State and County officials were contacted.

Criteria used to judge the effectiveness of the changes now being proposed are: Will the changes tend to temper extreme bid levels for future sales? Is the change consistent with practices already being used by other sellers of timber? Will the new practice help to provide a more even flow of receipts to the Federal Treasury and to County Governments? Is the action reasonably equitable to a wide spectrum of National Forest timber purchasers? Will the actions aid the orderly production of forest products to the benefit of American consumers?

It is anticipated that the changes will result in a reduction in prices bid for National Forest timber in highly competitive areas, principally along the Pacific Coast. At the same time, however, actual revenues from the harvest of this timber are expected both to stabilize and to be received earlier because timber will be economical for operation over more of the business cycle. The ability to compete with imported wood products will be enhanced.

Numerous suggestions for modifying timber sale policies other than those here being formally proposed have been considered, among them being (1) not to award sales to purchasers who already have excessive timber volume under contract, (2) requiring that bidding be on a present net worth value on timber sales in highly competitive areas, (3) discontinuing the sometime use of performance bonds as payment guarantees, (4) imposing rigid harvest or payment schedules through the term of the contract, (5) requiring advance cash payments in considerably larger amounts, (6) the development of a market related contract term adjustment provision, (7) discontinuing the use of stumpage rate adjustment sales, (8) disqualifying defaulters, whose obligation is not being contested and who have not paid their obligation, from bidding on National Forest timber sales, and (9) maintaining the present policies without change.

In addition to the proposed changes in timber sale procedures, positive

measures to reduce the average length of contract terms by reducing the average amount of volume subject to individual sales will be taken by Regional Foresters. Efforts will be made to offer sales of varying volumes and length of term, however. Regional Foresters will issue guidelines to accomplish these objectives, including monitoring sale size and length.

We believe that the policy changes here being proposed for new sales will accomplish the necessary objectives, and that other measures and requirements are not necessary at this time. The Forest Service will continue to monitor the timber sale program to determine the effects of whatever new procedures ultimately are implemented. Conditions will be evaluated as of April 1, 1983, and April 1, 1984, to determine the effectiveness of such new procedures. If additional policy changes are needed in the future to meet the objectives stated in the summary of this notice, other procedures will be developed and announced for public comment. Future consideration will be given to (1) increasing the cash deposit required at time of contract award, (2) increasing the percentage of payment required at contract midpoint, (3) holding some cash until final harvest, and (4) adoption of a market related contract term adjustment provision.

The following numbered items describe the specific changes now being proposed:

1. The basis for calculating the amount of the bid guarantee required of prospective bidders on a Forest Service timber sale contract shall be 5 percent of the advertised value of the contract.

#### Explanation

Current policy is for the bid guarantee to equal the advertised value of 1 month's cut. Thus, the total advertised value is divided by the total number of normal operating months in the sale contract. The current method of calculating the bid guarantee, therefore, requires a greater proportionate share of the advertised value as a bid guarantee for shorter term sales than for longer term sales.

The proposal will make the percentage of bid guarantee to advertised value equal for all sales (FSM 2431.5).

2. The high bidder will be required, as a condition of being awarded the sale, to replace the bid guarantee with cash in the amount of 5 percent of the bid price within 10 business days after bid date. A performance bond must still be provided before the contract is consummated. The cash deposit may be used in payment for the first timber

removed from the sale after all purchaser credit to be earned on the sale has been earned and utilized or, if no purchaser credit is provided for, after 25 percent of the advertised volume is presented for scaling. Purchaser credit earned on the sale may be transferred to and utilized on another sale or sales on the same National Forest held by the purchaser. Purchaser credit earned on another sale may not, however, be used in lieu of the cash deposit.

#### Explanation

Currently, the bid guarantee is replaced by a performance bond at time of contract signing with no cash deposit being required. During the summer of 1980, the policy of replacing the bid guarantee with cash or securities was dropped. Consideration has now been given to suggestions for cash deposits in varying percentages of appraised or bid rates, and to the time and manner in which cash deposits could be used for payment of timber. The proposal here presented is the result of that consideration (FSM 2431.7).

3. The maximum performance bond to be required on a Forest Service timber sale contract will be \$500,000.

#### Explanation

The present maximum performance bond is \$200,000. The increased maximum is needed to protect the Government from possible damages arising from nonperformance. Higher timber prices make the increase desirable. Review of this issue included consideration of a range of different maximum bond amounts, including retaining the present maximum amount (FSM 2432.4).

4. To qualify as a bidder of National Forest timber sales, proof of ability to furnish a performance bond or other performance guarantee will be required for sales of more than \$10,000 of advertised value. Regional Foresters may include this requirement for sales less than \$10,000, if they deem it to be necessary for adequate protection of the Government's interests.

#### Explanation

Present policy requires the successful bidder to furnish a performance bond or other performance instrument at time of signing the contract, rather than at time of bidding. This practice has allowed bidders who may not be able to furnish a performance guarantee to participate in the bidding process, and to influence the final price. It also has delayed operations of sales when the high bidder cannot meet the contract requirements for performance guarantee, and has

sometimes resulted in readvertising of the timber sale, all to the expense and inconvenience of the Government and other bidders (FSM 2432.5).

5. Purchasers who have defaulted a National Forest timber sale must reestablish financial and performance qualifications prior to bidding on National Forest timber sales. The bidder will have to submit a satisfactory showing of financial ability and a showing that the bidder has, or can obtain, equipment and supplies suitable for logging the timber and for meeting the resource protection provisions of the contract.

#### Explanation

Currently, a firm or individual who defaults on a timber sale may immediately bid on subsequent sales. A substantial risk occurs in such instances of a disruption of the orderly marketing of timber. Such action may put other bidders at a disadvantage.

This procedure will require purchasers who have defaulted contract requirements on prior National Forest timber sales to demonstrate that they are able to fulfill the terms of the contract being bid upon (FSM 2431.5).

6. By the end of the normal operating season following the midpoint of any sale term of more than 3 years duration, the purchaser shall have paid the greater of either (1) 50 percent of the bid premium, calculated as of the date the sale was awarded, or (2) 25 percent of the anticipated contract price, calculated as of the date the sale was awarded. Purchaser credit from the sale, or from another sale or other sales on the same National Forest, may be used to meet this obligation.

#### Explanation

Various methods of payment schedules or other incentive systems were considered to provide orderly harvest while providing flexibility for the purchaser to meet market demands. Proposals considered were: Charging interest on the unpaid balance, present net worth bidding with payment schedule submitted by the purchaser at time of bid, and other fixed payment schedules during the life of sale (FSM 2451.4).

7. Timber sales for a term of more than 2 years will require monthly deposits during the final operating season. Each monthly deposit will be equal to the value of timber not paid for at the beginning of the final normal operating season divided by the number of months in the normal operating season. Only if all purchaser credit to be earned on the sale has been earned and

utilized may purchase credit from another or other sales on the same National Forest be used to meet this obligation. Regional Foresters will have discretion to apply the requirement for monthly deposits to sales of 2 years or less, if, in their judgment, extreme levels of bidding are being experienced on a particular Forest.

#### Explanation

This proposal would provide incentive to the purchaser for diligent performance of the sale's requirements (FSM 2451.4).

8. For timber presented for scaling prior to the last year of the sale term, payment rates will be reduced by a factor based on the average rate being paid for borrowings by the United States (as calculated and published by the U.S. Treasury Department in TFRM 6-8020-20). This rate will be specified in the sale advertisement and will remain constant throughout the sale term. For timber presented for scaling during the last 12 months prior to sale termination date, no discount would be earned. For timber presented for scaling in the period 12 to 24 months prior to termination date the rate of payment will be reduced by a factor that is 50 percent of the annual interest rate for U.S. borrowings specified as described above; for timber presented for scaling in the period 24 to 36 months prior to termination date, the price will be reduced by a factor that is 150 percent of the annual interest of U.S. borrowings specified as described above; for timber presented for scaling in the period 36 to 48 months prior to the termination date, the rate of payment will be reduced by a factor that is 250 percent of the annual interest rate paid on U.S. borrowings specified as described above; a progressing schedule of reductions would be established for sales of longer term. However, in no case shall the rate of payment for flat rate sales be reduced below the advertised rates. In no case shall the rate of payment for stumpage rate adjustment sales be reduced below the advertised rates as adjusted to the current quarter by the market indices specified in the timber sale contract.

#### Explanation

Use of an incentive for early timber removal will encourage purchasers to harvest a sale as soon as possible and not delay for possible improvements in market conditions. The incentive will be equitable to the United States because it will be equivalent to the amount the Government would have had to pay to borrow the money (FSM 2451.4).

9. Stumpage rate adjustment shall be

provided for in all National Forest timber sale contracts in western Oregon and Washington awarded after March 31, 1983.

#### Explanation

Stumpage rate adjustment is in effect in all areas in the western United States except for western Oregon and western Washington. Stumpage rate adjustment permits the price paid for National Forest timber to fluctuate, within stated limits, in response to established market indices. Stumpage rate adjustment allows prices paid for timber to be partially responsive to market conditions and promotes stability of production and employment by encouraging operation during the down portion of cycles in the market.

The delay in implementation will permit a suitable index to be developed and tested, and will presumably avoid imposing stumpage rate adjustment provisions at the bottom of the market (FSM 2451.3).

10. Contract term extensions obtainable under timber sale contracts hereafter awarded shall, in addition to prerequisites now provided for, require agreement by the purchaser (1) to pay in cash an amount equal to any costs caused by delay of harvest, including interest at the current rate being paid for borrowings by the United States (as calculated and published by the U.S. Treasury Department in TFRM 6-8020-20) on the value of timber remaining on the sale until such timber is paid for at contract rates, and (2) under contracts providing for stumpage rate adjustment, to pay for timber removed from the sale area during the period of extension at rates not subject to downward adjustment nor subject to any ceilings on upward rate adjustment. The procedure for establishing payment rates following a rate redetermination for contract term extensions shall be revised to preclude an increase in purchaser credit as part of the rate redetermination.

#### Explanation

The National Forest Management Act requires as prerequisites for the granting of extensions on sales longer than 2 years that the purchaser have diligently performed in accordance with an approved plan of operation, or that the substantial overriding public interest justifies the extension. Costs caused by delay of harvest will vary by individual timber sale; they may include items such as the cost of keeping planting stock an additional time, higher costs for planting the area due to delays, and

consequences to other natural resources caused by prolonging timber sale operations (FSM 2433.1). The provision for payment of interest will reimburse for delay in receipt of stumpage payments and for delay in establishing growth on the regenerated stand.

The timber sale appraisal includes an estimate for costs of constructing specified roads. During inflationary periods, the costs of constructing roads often are higher at the time of extension than they were at the time of the original appraisal and sale. Under present practice, an increase in specified road costs and purchaser credit at time of extension results in a decrease in receipts to the Government. This proposal will eliminate that loss to the Government (FSM 2433.1).

11. Purchasers who default a timber sale contract will, in addition to liability for other damages currently specified in provision B9.4 of the timber sale contract, be liable (1) for any increase in costs attributable to originally specified roads at resale of the defaulted contract, and (2) for the Government's loss caused by delay in receipt of stumpage payments, measured by interest from the date the contract would have terminated had it not been defaulted, to the midpoint of the term of the resold contract. Such interest will be at the rate paid for borrowings by the United States (as calculated and published by the U.S. Treasury Department in TFRM 6-8020-20) during the period of delay.

#### Explanation

Presently, defaulting purchasers are assessed the cost of reselling the remaining timber plus the difference between the resale receipts and the receipts the Government would have received if the original purchaser had harvested the timber in a timely manner. Now, the defaulter will also be assessed interest on the value of the remaining timber. The cost of resale and the interest assessment will be specified as liquidated damages.

The timber sale appraisal includes an allowance for construction of specified roads. During inflationary periods, the costs of constructing the same roads would be higher at the time of default than they were at the time of the original appraisal and sale. Under present practice, an increase in specified costs and purchaser credit for the same roads at time of resale results in a decrease in receipts to the Government. This proposal requires the defaulting

purchaser to be liable for this loss (FSM 2433.5).

Douglas R. Lajer,

Associate Chief,

December 21, 1981

(FR Doc. 82-1288 Filed 1-19-82; 9:45 am)

BILLING CODE 3410-11-0

## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Part 65

[A-9-FRL 2033-6]

Compliance Order; Hawaiian Electric Co.; Public Hearing

AGENCY: Environmental Protection Agency, Region 9.

ACTION: Notice of public hearing on proposed delayed compliance order.

**SUMMARY:** A public hearing will be held to consider public comments on a proposed delayed compliance order for Hawaiian Electric Company, Inc. (HECO) power plant at Kahe, Hawaii. Notice of the proposed order was given by publication in the Federal Register, Vol. 47, No. 5, at pages 969-972, on Friday, January 8, 1982. For supplementary information and the text of the proposed order please see that entry. The Regional Administrator, Region 9, has found that there is a significant public interest in the proposed order.

**DATE:** The hearing is scheduled to commence on Thursday, February 11, 1982. Written comments on the proposed order must be received on or before the close of business on February 11, 1982, or they may be submitted to the Presiding Officer at the hearing on February 11, 1982.

**ADDRESSES:** The hearing is scheduled to commence on Thursday, February 11, 1982, at 9:30 a.m. local time, at the State Capitol Auditorium, Honolulu, Hawaii, and, after a recess, to continue on the same date at 7:30 p.m. local time at the Waipahu High School Cafetorium, 94-1211 Farrington Highway, Waipahu, Hawaii.

Send written comments on the proposed order to the Offices of EPA, Region 9, 215 Fremont Street, San Francisco, CA 94105.

#### FOR FURTHER INFORMATION CONTACT:

Proposed order: David P. Howekamp, Acting Director, Air Management Division, EPA, Region 9, 215 Fremont Street, San Francisco, CA 94105, Phone: (415) 974-8250.

Public hearing: Lorraine Pearson, Regional Hearing Clerk, EPA, Region

9, (415) 974-8042, or the Pacific Islands Contact Office, (808) 546-8910.

**SUPPLEMENTARY INFORMATION:** The hearing may be continued from time to time or from place to place to accommodate the needs of EPA or the public.

The comment period may be extended by the President Officer by an announcement at the public hearing. After the comment period has closed, all comments, both oral and written, will be considered and final Agency action will be published in the Federal Register pursuant to 40 CFR Part 65.

The proposed order and supporting materials, including the research, monitoring, and contingency plans may be inspected and copied Monday through Friday, from 9:00 a.m. to 12:00 M. and from 1:00 p.m. to 4:00 p.m., at the Pacific Islands Contact Office, EPA, Region 9, Room 1302, Prince Kuhio Federal Building, 300 Ala Moana Boulevard, Honolulu, Hawaii, Phone: 546-8910.

(Sec. 113 and 301 of the Clean Air Act, as amended (42 U.S.C. 7413 and 7601))

Dated: January 14, 1982.

Frank M. Covington,

Acting Regional Administrator,

Environmental Protection Agency, Region 9.

(FR Doc. 82-1272 Filed 1-19-82; 9:45 am)

BILLING CODE 6560-36-0

### 40 CFR Part 180

[OPP-300058; PH-FRL-2031-6]

Corn Syrup; Proposed Exemption From the Requirement of a Tolerance

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

**SUMMARY:** This notice proposes that the inert ingredient corn syrup presently listed as exempted from the requirement of a tolerance under 40 CFR 180.1001(e) also be included under 40 CFR 180.1001(c). This exemption was requested by Tuco Products Co., Division of the Upjohn Co.

**DATE:** Written comments must be received on or before February 19, 1982.

**ADDRESS:** Written comments to: Richard F. Mountfort, Product Manager (PM) 23, Registration Division (TS-767C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460.

**FOR FURTHER INFORMATION CONTACT:** Richard Mountfort (703-557-1830).

**SUPPLEMENTARY INFORMATION:** At the request of Tuco Products Co., Division of Upjohn Co., the Administrator proposes





**Appendix J**  
**Conversion factors**

Conversions from cubic meter log scale to 1,000 board feet scribner log scale

$$1 \text{ cunit} = 100 \text{ ft.}^3$$

$$1 \text{ m}^3 = 35.3147 \text{ ft.}^3$$

Log to Log

The Price Waterhouse 1973 Report, 1/ based on actual log measurement, found typical relationships between cubic scale and Scribner scale for coastal regions of British Columbia and coastal Washington to range between 1.9 and 2.1 cunits per 1,000 board feet Scribner. This is equivalent to a range of about  $5.38\text{--}5.95 \text{ m}^3 = 1,000 \text{ board feet scribner}$ . 2/

Professor David Haley of the University of British Columbia in his October 1980 paper 3/ used a conversion factor of  $1.85 \text{ cunits} = 1,000 \text{ board feet}$  ( $5.24 \text{ m}^3 = 1,000 \text{ board feet scribner}$ ) for a comparison of British Columbia and the U.S. Pacific Northwest.

For purposes of this investigation,  $2.0 \text{ cunits} (5.66 \text{ m}^3) = 1,000 \text{ board feet Scribner}$  has been used as a conversion (this assumes an average log size of about 15 inches). 4/ It is noted that for coastal British Columbia the average log size is larger, which would lower the  $\text{m}^3$  per 1,000 board feet Scribner, and in the interior, the opposite would be generally true due to a smaller average log size. Ideally, a representative sample of logs should be

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1/ A Regional Comparison of Stumpage, Taxation and Other Factors in the Forest Industries of British Columbia and the U.S. Pacific Northwest, Price Waterhouse & Co., March 1973.

2/ Theoretical conversion factors range from about  $9.9 \text{ m}^3 = 1,000 \text{ board feet Scribner}$  for a 4" top diameter 40 ft. log to about  $3.7 \text{ m}^3 = 1,000 \text{ board feet Scribner}$  for a 40" top diameter 40 ft. log. Actual conversions would also vary with the deductions scaled from logs, the log scaler, and other variables associated with log scaling.

3/ Haley, David, A Regional Comparison of Stumpage Values in British Columbia and the United States Pacific Northwest, Forestry Chronicle, October 1980.

4/ These conversions are based on a long log (40') Scribner scale, for the short log (20') Scribner scale the conversion would be about  $4.81 \text{ m}^3 = 1,000 \text{ board feet Scribner}$ .

scaled using both metric and Scribner scales to arrive at workable conversion, but neither the time or the resources were available during this investigation for that type of data collection.

### Lumber yield

Although a log-to-log conversion is used for stumpage comparisons in this report, some researchers use a lumber-yield basis for conversion. The lumber yield conversion is based on mill efficiencies and scale overrun (the amount of lumber recovered from a log) as shown below:

Washington and Oregon lumber yields per 1,000 board feet, Scribner scale

(In millions of board feet)			
Area	Lumber produced	Logs consumed	Yield
Washington 1/-----	4,187	3,134	1.34
Oregon 2/-----	7,097	5,404	1.31
Total, Washington			
and Oregon-----	11,284	8,538	1.32

1/ Based on 1978 Washington Mill Survey (latest available).

2/ Based on 1976 Oregon Mill Survey (latest available).

British Columbia lumber yield per m<sup>3</sup> log scale.1/

$$\text{Average yield interior} \rightarrow \frac{5.8 \text{ board feet lumber}}{1 \text{ ft}^3 \text{ logs}} = \frac{204.8 \text{ board feet lumber}}{1 \text{ m}^3 \text{ logs}}$$

$$\text{Average yield coast} \rightarrow \frac{6.4 \text{ board feet lumber}}{1 \text{ ft}^3 \text{ logs}} = \frac{226.0 \text{ board feet lumber}}{1 \text{ m}^3 \text{ logs}}$$

Average British Columbia yield 2/

$$\text{Interior} - \frac{7,722 \text{ million board feet lumber production}}{11,974 \text{ million board feet (total British Columbia) lumber production}} \times \frac{5.8 \text{ bd. ft}}{\text{ft}^3} = \frac{3.74 \text{ board feet}}{\text{ft}^3}$$

$$\text{Coast} - \frac{4,252 \text{ million board feet lumber production}}{11,974 \text{ million board feet (total British Columbia) lumber production}} \times \frac{6.4 \text{ board feet}}{\text{ft}^3} = \frac{2.27 \text{ board feet}}{\text{ft}^3}$$

$$\frac{3.74 \text{ bd. ft}}{\text{ft}^3} + \frac{2.27 \text{ board feet}}{\text{ft}^3} = \frac{6.01 \text{ board feet}}{\text{ft}^3} = \frac{212.3 \text{ board feet}}{\text{m}^3}$$

Conversion based on lumber yield

Washington and Oregon - 1,320 bd. ft. of lumber produced from 1,000 bd. ft. logs Scribner scale.

British Columbia - 212.3 bd. ft. lumber produced from 1 m<sup>3</sup> logs  
British Columbia log scale

$$\frac{\frac{1,320 \text{ board feet lumber}}{1,000 \text{ board feet log}}}{\frac{212.3 \text{ board feet lumber}}{1 \text{ m}^3 \text{ log}}} = \frac{6.41 \text{ m}^3}{1,000 \text{ board feet Scribner}}$$

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1/ Yield information supplied by Council of Forest Industries.

2/ 1980 production data.

Comparison between conversions.--The difference between the conversion used in this report,  $5.66 \text{ m}^3=1,000$  board feet Scribner, based on a log-to-log comparison and the conversion  $6.41 \text{ m}^3=1,000$  board feet Scribner based on lumber yields, is about 13 percent.

This report, in comparing published stumpage prices, is attempting to look at actual raw material costs for softwood lumber producers. A lumber yield based conversion would not only take into account the absolute stumpage costs, but would also be accounting for efficiencies within the manufacturing process. For example, it would be possible for two mills to saw two logs of similar dimensions, with one mill producing twice the amount of lumber from the log as the other mill. It should be noted as well, however, that the quality of lumber sawn may be better in the mill with the lower recovery. As a consequence, one can see that variables other than wood cost must be taken into account with the lumber-yield conversion factor.

Although a lumber-yield-based conversion factor may have merits for other comparisons, for purposes of comparing the price at which stumpage is sold, a log-to-log conversion is more appropriate.



Appendix K  
Species Adjustments

Species adjustments 1/

Because different species of timber demand varying prices and the species mix varies between British Columbia and the Pacific Northwest, an adjustment is called for when comparing stumpage and log prices. The base for stumpage comparisons will be the mix of timber sold on Timber Sale Harvesting Licence (TSHL), Tree Farm Licence (TFL), and Timber Sale Licence (TSL) cutting permits in British Columbia, and the species of sawtimber cut on U.S. Forest Service region 6. The base for log price comparisons will be the mix of timber sold on the Vancouver log market in British Columbia and domestic log sales reported by the Industrial Forestry Association (IFA) in the Pacific Northwest. Three comparisons will be made: A.--all regions of B.C. adjusted to the species mix of total region 6, B.--the coastal region of B.C. adjusted to western region 6, and C.--log prices in the Vancouver log market adjusted to the species mix reported by the IFA.

A. Species adjustment for timber harvested from USFS Region and TSHL's and TFL's in British Columbia in 1980.

<u>Region 6 harvest:</u>		<u>B.C. TSHL, TFL and TSL harvest 2/</u>	
		<u>Unadjusted average price</u>	<u>Adjusted average price</u>
<u>Species</u>	<u>Ratio to</u>	<u>Ratio to</u>	<u>Ratio to</u>
	<u>total</u>	<u>Total</u>	<u>total</u>
	<u>volume</u>	<u>volume</u>	<u>volume</u>
		<u>Price per</u>	<u>Price per</u>
		<u>1,000 bd. ft.</u>	<u>1,000 bd. ft.</u>
Doug-fir (w)----	0.37	X \$102.84 = 2.05	X \$102.84 = 38.05
Doug-fir (e)----	.07	X 36.45 = 1.82	X 36.45 = 2.55
True fir-----	.09	X 29.93 = 4.19	X 29.93 = 2.69
Cedar-----	.03	X 69.22 = 7.61	X 69.22 = 2.08
Larch-----	.01	X 20.38 = -	X 20.38 = .20
Spruce-----	.01	X 43.07 = 11.63	X 43.07 = .43
Lodgepole pine--	.03	X 11.15 = 2.45	X 11.15 = .33
Hemlock-----	.14	X 43.24 = 7.78	X 43.24 = 6.05
Other (mostly			
pine)-----	.25	X 61.58 = .62	X 61.58 = 15.40
Total-----	1.00	38.26	67.78
(3,057 MM-		(11,042 MM-	
board feet):		board feet)	

$$\frac{67.78-38.26}{38.26} \times 100 = 77 \text{ percent adjustment for species.}$$

1/ At the time of publication 1981 data were preliminary, so 1980 is used for the purpose of these examples.

2/ B.C. figures include \$74 million in road credits (\$6.68/1,000 bd. ft.).

Sources: USDA Forest Service Region 6, cut and sold report, Calendar 1980 and B.C. Ministry of Forests Annual Report, 1980.

Note.--All volumes have been converted to a 1,000 bd. ft. Scribner basis, all dollars are Canadian.



B. Species adjustment for timber harvested in USFS Western Region 6 and coastal TSHL's, TFL's, and TSL's in British Columbia for 1980

<u>Western Region: 1/</u>				<u>Coastal B.C. TSHL, TFL and TSL harvest 2/</u>			
		<u>: Unadjusted average price</u>		<u>: Adjusted average price</u>			
		<u>Ratio to--</u>	<u>Ratio to</u>	<u>Price per</u>	<u>Ratio to</u>	<u>Price per</u>	
		<u>total</u>	<u>Total</u>	<u>1,000</u>	<u>total</u>	<u>1,000</u>	
<u>Species</u>	<u>volume</u>	<u>volume</u>	<u>volume</u>	<u>bd. ft.</u>	<u>volume</u>	<u>bd. ft.</u>	
Doug-fir-----	.49	:	0.07	X \$102.84 = 7.20	:	0.49	X \$102.84 = 50.39
True fir-----	.12	:	.18	X 58.98 =10.62	:	.12	X 58.98 = 7.08
Cedar-----	.04	:	.23	X 102.39 =23.55	:	.04	X 102.39 = 4.10
Spruce-----	.01	:	.05	X 205.05 =10.25	:	.01	X 205.05 = 2.05
Hemlock-----	.19	:	.46	X 55.02 =25.31	:	.19	X 55.02 = 10.45
Other-----	3/ .16	:	.01	X 22.30 = .22	:	.16	X 22.30 = 3.57
Total-----	1.00	:	1.00	77.15	:	1.00	38.26 77.64
(2,317 MM-		(3,245 MM-					
bd. ft.)		bd. ft.)					

$$\frac{77.64 - 77.15}{77.49} \times 100 = 0 \text{ percent adjustment for species.}$$

Shown below are the species adjustments based on harvests from USFS Region 6 and British Columbia TSHL's, TFL's, and TSL's during 1977-81:

<u>Year</u>	<u>Upward adjustment for B.C. prices</u> <u>when compared with Region 6 (in percent)</u>	
	<u>B.C. coast</u>	<u>Total B.C</u>
1977-----	20	66
1978-----	6	26
1979-----	32	80
1980-----	0	77
1981 4/-----	20	105

1/ Rogue River, Siskiyou, Mt. Hood, Siuslaw, Umatilla, Umpqua, Willamette, Gifford Pinchot, Mt. Baker-Snoqualmie, and Olympic Forests.

2/ B.C. figures include road credits.

3/ Estimated by the staff of the U.S International Trade Commission.

4/ 1981 data is preliminary.

Sources: USDA Forest Service Region 6, cut and sold report, Calendar 1977-80, Fiscal 1981, and B.C. Ministry of Forests Annual Reports, 1977-80 (preliminary 1981).

Note.--All volumes have been converted to a 1,000 bd. ft. scribner basis, all dollars are Canadian.

C. Species adjustment for logs sold in the Vancouver log market as reported by COFI and domestic logs sales in the Pacific Northwest as reported by IFA in 1980.

<u>1980 IFA domestic</u> <u>log sales</u>		<u>1980 COFI Vancouver log market sales</u>					
		:	<u>Unadjusted average price</u>		:	<u>Adjusted average price</u>	
<u>Species</u>	<u>Ratio to</u> <u>total</u> <u>volume</u>	:	<u>Ratio to</u> <u>total</u> <u>volume</u>	<u>Price per</u> <u>1,000</u> <u>bd. ft.</u>	:	<u>Ratio to</u> <u>total</u> <u>volume</u>	<u>Price per</u> <u>1,000</u> <u>bd. ft.</u>
Hemlock-----	.32	:	.23	X \$247.28 = 56.87	:	.32	X \$247.28 = 79.13
Red Cedar-----	.32	:	.40	X 240.94 = 96.38	:	.32	X 240.94 = 77.10
Douglas-fir-----	.28	:	.12	X 276.42 = 33.17	:	.28	X 276.42 = 77.40
Other-----	.07	:	1/.25	X 497.78 =124.44	:	.07	X 497.78 = 34.84
Total-----	1.00	:	1.00	311.88	:	1.00	268.47
	(399 MM- board ft)		(751 MM- board ft)				

$$\frac{268.47-311.88}{311.88} \times 100 = -14 \text{ percent adjustment.}$$

Shown below are the species adjustments based on sales on the Vancouver log market and as reported by IFA during 1977-81:

<u>Year</u>	<u>Adjustment for</u> <u>Vancouver log market</u>
1977-----	0
1978-----	- 5
1979-----	-14
1980-----	-14
1981 <u>2/</u> -----	- 8

1/ Of which, 70 million board feet were high priced cypress logs.

2/ 1981 data is preliminary.

Sources: USDA Forest Service Region 6, cut and sold report, Calendar 1980 and B.C. Ministry of Forests Annual Report, 1980.

Note.--All volumes have been converted to a 1,000 bd. ft. scribner basis, all dollars are Canadian.

Appendix L

Estimated Average Coastal B.C. and Western Oregon and Washington

Log Harvest and Transportation Costs

Estimated Average Coastal B.C. and Western Oregon and Washington  
Log Harvest and Transportation

A rough estimation of log harvest and transportation costs can be made for the Pacific Northwest and British Columbia by using available log market and stumpage price data. The following tabulation shows these estimated costs for 1977-81 (in U.S. dollars per 1,000 board feet): 1/

	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>
Coastal B.C. (Vancouver market) logs <u>1/</u> -----	176.21	195.08	250.12	229.54	198.90
Coastal B.C. stumpage <u>2/</u> ---	<u>16.70</u>	<u>22.24</u>	<u>60.43</u>	<u>54.66</u>	<u>18.35</u>
Estimated B.C. coast harvest & transportation <u>3/</u> -----	159.51	172.84	189.69	174.88	180.55
Western Ore. & Wash. IFA logs-----	225.71	247.57	292.98	297.29	263.50
Western Ore. & Wash. USFS Region 6 stumpage-----	<u>102.15</u>	<u>121.35</u>	<u>126.62</u>	<u>120.54</u>	<u>118.37</u>
Estimated West. Ore & Wash. harvest & trans. <u>3/</u> -----	123.56	126.22	166.36	176.85	145.13
Difference in B.C. & (Ore. & Wash.) harvest & trans.-----	35.95	46.62	23.33	-1.97	35.42
Coastal B.C. stumpage-----	<u>16.70</u>	<u>22.24</u>	<u>60.43</u>	<u>54.66</u>	<u>18.35</u>
Adjusted B.C. coastal stumpage-----	52.95	68.86	83.76	52.69	53.77

1/ The price shown is adjusted for species differences between Vancouver and IFA logs.

2/ The price shown is adjusted for species differences between Coastal B.C. Stumpage and Western Region 6 Stumpage.

3/ Include profit.

---

1/ These costs are estimated and their use is intended for comparison purposes only.

It would appear from this table that claims of higher average logging costs for the B.C. coast are justified (although different profit margins may affect the figures). In 1981, estimated average coastal B.C. harvest and transportation costs were US\$180.55 per 1,000 board feet compared with US\$145.13 for Western Oregon and Washington. During 1977-81, estimated coastal B.C. harvesting and transportation costs averaged 19 percent higher than those same costs in Western Oregon and Western Washington.

If the differences in estimated harvesting and transportation costs are added to B.C. stumpage payments, the gap between coastal B.C. and Western Oregon and Washington stumpage price lessens. As shown in the timber procurement comparison section of this report, coastal B.C. stumpage prices (adjusted for species) were only 16 percent of U.S. Western Region 6 stumpage in 1981, but when the estimated differences in harvesting and transportation costs is added, B.C. prices increase to 45 percent of U.S. prices. Shown below in percent of U.S. prices are the B.C. stumpage prices unadjusted and adjusted for estimated harvesting and transportation costs:

Coastal B.C. as a percent of Western  
Region 6 Stumpage prices

<u>Year</u>	<u>unadjusted</u>	<u>adjusted</u>
1977-----	16	52
1978-----	18	57
1979-----	48	66
1980-----	45	44
1981-----	16	45

It is important to note that many of the costs calculated are estimates. Actual stumpage, logging, and transportation costs may vary from figures presented, especially if individual timber sales are compared.



**Appendix M**  
**Tables**

Table 1.--Softwood lumber: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1972-81

Year	Production <sup>1/</sup>	Imports	Exports	Apparent consumption	Ratio of imports to apparent consumption
	Million board feet				Percent
1972-----	30,873	8,850	1,151	38,572	22.9
1973-----	31,289	8,871	1,742	38,418	23.1
1974-----	27,193	6,693	1,524	32,362	20.7
1975-----	25,711	5,617	1,366	29,962	18.7
1976-----	29,343	7,829	1,578	35,594	22.0
1977-----	30,987	10,232	1,426	39,793	25.7
1978-----	<sup>2/</sup> 30,899	11,634	1,346	41,187	28.2
1979-----	<sup>2/</sup> 29,879	10,922	1,729	39,072	28.0
1980-----	<sup>2/</sup> 24,335	9,383	1,967	31,751	29.6
1981-----	<sup>2/</sup> 22,710	9,029	1,895	29,844	30.3

<sup>1/</sup> National Forest Products Association (NFPA), Fingertip facts and figures, February 1982.

<sup>2/</sup> Subject to revision by the NFPA.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.



Table 2.--Softwood lumber: U.S. production, by geographic regions and by specified States, 1972-81 <sup>1/</sup>

Year	West					North				South		
	Washing- ton	Oregon	All other	Total	Percent of total United States	Maine	All other	Total	Percent of total United States	Total	Percent of total	Total United States
	Million board feet	Million board feet	Million board feet	Million board feet		Million board feet	Million board feet	Million board feet		Million board feet		Million board feet
1972-----	3,703	7,622	10,513	21,838	70.7	302	640	942	3.1	8,093	26.2	30,873
1973-----	3,686	7,874	10,677	22,237	71.1	317	713	1,030	3.3	8,022	25.6	31,289
1974-----	3,231	7,857	8,097	19,186	70.6	328	689	1,017	3.7	6,991	25.7	27,193
1975-----	3,370	5,942	8,583	17,895	69.6	313	665	979	3.8	6,838	26.6	25,711
1976-----	3,936	7,069	9,567	20,572	70.1	394	737	1,130	3.9	7,641	26.0	29,343
1977-----	4,030	7,437	9,962	21,429	69.2	418	815	1,233	4.0	8,324	26.9	30,987
1978-----	4,217	7,331	9,629	21,178	68.5	476	898	1,374	4.4	8,347	27.0	30,899
1979-----	3,820	7,278	9,412	20,511	68.6	438	881	1,320	4.4	8,049	26.9	29,879
1980-----	2/	2/	2/	3/ 16,435	67.5	2/	2/	1,076	4.4	3/6,824	3/ 28.0	24,335
1981-----	2/	2/	2/	3/ 15,440	68.0	2/	2/	1,000	4.4	3/6,270	3/ 27.6	22,710

<sup>1/</sup> Figures have been adjusted to match National Forest Products Association data.<sup>2/</sup> Not available.<sup>3/</sup> Estimated.Source: Current Industrial Reports, U.S. Department of Commerce-1979, and National Forest Products Association, Fingertip facts and Figures, February 1982.

Note.--Because of rounding, figures may not add to the totals shown.

Table 3.--Softwood lumber: U.S. production, by species, 1972-81

(In millions of board feet)										
Species	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Douglas-fir-----	8,431	8,604	7,755	7,045	8,060	8,484	8,498	8,278	1/	1/
Southern pine-----	7,858	7,821	6,793	6,697	7,462	8,182	8,168	7,893	1/	1/
Ponderosa pine-----	3,988	2,992	3,514	3,407	3,960	4,138	4,125	3,897	1/	1/
Hemlock 2/-----	2,683	2,686	2,066	1,942	2,410	2,422	2,695	2,688	1/	1/
White fir 3/-----	2,299	2,415	2,033	1,934	2,066	2,169	2,074	2,103	1/	1/
Redwood-----	1,238	1,265	1,148	1,013	1,108	1,140	906	880	1/	1/
Eastern white										
pine-----	655	687	695	618	713	770	881	859	1/	1/
Western cedar 4/---	754	778	797	789	917	960	918	822	1/	1/
Lodgepole pine-----	632	690	559	525	594	682	711	725	1/	1/
Western spruce 5/---	719	731	579	470	571	550	486	458	1/	1/
Other soft-										
woods 6/-----	1,617	1,620	1,252	1,271	1,482	1,489	1,436	1,296	1/	1/
Total-----	30,873	31,289	27,193	25,711	29,343	30,987	30,899	29,879	24,335	22,710

1/ Species breakouts are not available but are believed to be roughly in the same percentage distribution as occurred in 1979.

2/ Includes both western and eastern hemlock.

3/ Includes all western true firs.

4/ Includes western red and incense cedar.

5/ Includes Englemann, blue, and Sitka spruce.

6/ Includes western white pine, sugar pine, larch, other eastern softwoods, and other western softwoods.

Source: U.S. Department of Commerce and National Forest Products Association.

Note.—Because of rounding, figures may not add to the totals shown.

Table 4.--Softwood lumber: U.S. imports for consumption, by principal sources, 1977-81.

Source	1977	1978	1979	1980	1981
Quantity (million board feet)					
Canada-----	10,193	11,572	10,873	9,359	9,008
Hondura-----	15	42	24	11	10
Brazil-----	5	7	9	2	3
Mexico-----	2	3	2	2	1
N Zeal-----	1/	2	2	2	1
Guyana-----	1/	0	1/	1/	1/
Ivy Cst-----	0	0	0	1/	1
Guatmal-----	1/	1/	1/	1/	1
All other-----	11	8	11	7	4
Total-----	10,232	11,634	10,922	9,383	9,029
Value (1,000 dollars)					
Canada-----	1,752,094	2,326,303	2,439,498	1,753,493	1,685,927
Hondura-----	3,622	4,093	5,790	3,674	4,055
Brazil-----	2,362	3,466	5,709	1,670	2,088
Mexico-----	441	889	1,213	801	950
N Zeal-----	15	204	798	690	781
Guyana-----	16	-	17	31	160
Ivy Cst-----	-	-	-	57	148
Guatmal-----	66	44	44	34	32
All other-----	2,214	2,115	3,452	1,827	712
Total-----	1,760,630	2,337,114	2,456,522	1,762,477	1,694,902
Unit value (per m. board feet)					
Canada-----	\$171.80	\$201.02	\$224.36	\$187.35	\$187.17
Hondura-----	235.40	98.13	244.81	346.60	406.06
Brazil-----	444.71	481.40	619.03	718.69	828.75
Mexico-----	269.77	299.33	504.69	451.74	707.26
N Zeal-----	179.75	112.22	408.47	474.02	579.91
Guyana-----	569.25	-	597.68	626.51	421.15
Ivy Cst-----	-	-	-	511.13	106.27
Guatmal-----	368.65	554.60	303.99	362.62	152.85
All other-----	196.29	268.20	320.25	263.61	190.40
Average-----	172.08	200.39	224.92	187.84	187.72

1/ Less than 500.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 5 --Softwood lumber: U.S. imports for consumption, by principal customs districts, 1976-81

SOURCE	1976	1977	1978	1979	1980	1981
QUANTITY (MILLION BOARD FEET)						
Duluth, MN-----	2,215	2,920	3,404	3,321	3,136	2,731
Seattle, WA-----	1,925	2,581	2,510	2,167	1,671	1,363
Detroit, MI-----	461	728	1,057	1,015	979	1,243
Pembina, ND-----	1,125	1,278	1,320	1,186	854	678
Buffalo, NY-----	340	401	540	624	643	631
Ogdensburg, NY-----	199	272	420	441	495	589
St. Albans, VT-----	329	259	302	312	319	496
Portland, ME-----	196	215	298	280	219	203
Los Angeles, CA-----	82	205	227	234	187	173
New York City, NY-----	203	374	357	314	172	202
All other-----	754	999	1,198	1,027	708	719
Total-----	7,829	10,232	11,634	10,922	9,383	9,029
VALUE (1,000 DOLLARS)						
Duluth, MN-----	322,585	494,235	678,458	700,176	537,190	454,715
Seattle, WA-----	303,819	455,639	539,954	517,132	332,669	282,398
Detroit, MI-----	69,240	116,053	194,197	207,453	161,553	239,843
Pembina, ND-----	176,763	232,856	293,984	291,172	170,515	136,501
Buffalo, NY-----	53,237	65,954	107,571	132,734	122,177	121,078
Ogdensburg, NY-----	30,627	45,406	77,616	88,764	93,587	112,758
St. Albans, VT-----	53,299	41,542	56,656	68,375	62,079	93,441
Portland, ME-----	31,423	36,654	52,871	54,419	41,440	38,646
Los Angeles, CA-----	15,008	41,100	51,766	61,170	41,517	33,576
New York City, NY-----	35,526	75,951	75,665	85,312	32,816	36,676
All other-----	108,921	151,643	217,574	243,876	147,787	148,775
Total-----	1,956,861	2,750,830	3,337,114	3,456,522	2,762,477	2,094,902
UNIT VALUE (PER M. BOARD FEET)						
Duluth, MN-----	\$145.67	\$169.26	\$199.29	\$212.56	\$171.28	\$166.50
Seattle, WA-----	157.83	176.53	211.54	238.81	199.08	207.13
Detroit, MI-----	151.17	159.43	183.72	204.25	184.87	192.62
Pembina, ND-----	157.10	182.21	222.66	245.56	199.69	201.91
Buffalo, NY-----	156.64	174.56	199.86	212.75	191.52	191.87
Ogdensburg, NY-----	157.60	166.64	184.96	201.16	189.15	191.39
St. Albans, VT-----	152.93	171.87	197.02	219.20	184.81	188.31
Portland, ME-----	160.15	170.26	177.58	194.52	189.50	189.92
Los Angeles, CA-----	192.17	200.44	227.57	240.92	219.19	191.45
New York City, NY-----	175.28	203.23	212.40	271.28	191.16	182.47
All other-----	143.26	151.18	181.65	237.54	206.78	202.72
Average-----	152.83	172.86	200.85	224.92	187.84	187.72

Source: Compiled from official statistics of the U.S. Department of Commerce.

Note:--Because of rounding, figures may not add to the totals shown.

Table 6.--Softwood lumber: U.S. imports for consumption, by related parties, by principal sources, 1976-1980 1/

Year	Source	Total	Related party	Other	Percent related party
		-----Million board feet-----			
1976	Canada-----	7,786	1,721	6,065	22
	Other-----	43	1	42	2
	Total-----	7,829	1,722	6,107	22
1977	Canada-----	10,198	1,872	8,326	18
	Other-----	34	1	33	2
	Total-----	10,232	1,873	8,326	18
1978	Canada-----	11,572	1,597	9,975	14
	Other-----	62	1	61	1
	Total-----	11,634	1,598	10,036	14
1979	Canada-----	10,873	1,469	9,405	14
	Other-----	48	<u>2/</u>	48	<u>3/</u>
	Total-----	10,922	1,469	9,453	13
1980	Canada-----	9,359	946	8,414	10
	Other-----	24	1	23	3
	Total-----	9,383	946	8,437	10

1/ 1981 figures are unavailable.

2/ Less than 0.5 million

3/ Less than 0.5 percent.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 7.--Softwood lumber: U.S. exports of domestic merchandise, by principal markets, 1977-81

Market	1977	1978	1979	1980	1981
Quantity (million board feet)					
Japan-----	437	407	640	634	506
Canada-----	367	373	383	364	495
Italy-----	113	105	161	186	83
Austral-----	107	101	94	90	123
Mexico-----	82	83	96	180	199
Fr Germ-----	64	65	58	71	49
S Arab-----	13	38	31	41	45
U King-----	30	24	37	53	32
All other-----	212	150	229	348	358
Total-----	1,426	1,346	1,729	1,967	1,895
Value (1,000 dollars)					
Japan-----	14,576	120,153	253,260	221,360	175,960
Canada-----	103,570	94,731	122,420	101,383	123,043
Italy-----	52,943	53,337	127,042	138,627	55,447
Austral-----	33,364	37,050	46,483	36,991	47,727
Mexico-----	17,090	19,650	22,497	33,546	43,841
Fr Germ-----	32,254	35,674	42,938	42,417	27,966
S Arab-----	4,948	14,954	12,370	15,945	19,941
U King-----	11,370	10,317	22,104	21,533	14,661
All other-----	83,455	64,612	127,165	165,045	163,982
Total-----	443,783	450,478	776,879	776,867	652,567
Unit value (per m. board feet)					
Japan-----	\$239.27	\$295.39	\$396.51	\$349.22	\$347.45
Canada-----	232.40	253.65	319.85	278.88	248.35
Italy-----	468.05	508.14	788.82	765.11	627.67
Austral-----	311.15	367.11	496.81	409.16	389.34
Mexico-----	207.97	236.68	235.15	186.59	220.65
Fr Germ-----	500.37	549.06	736.08	599.78	569.65
S Arab-----	374.43	394.97	401.76	390.34	447.79
U King-----	375.37	437.12	591.08	404.37	455.63
All other-----	325.15	430.22	554.67	473.73	402.38
Average-----	311.20	334.74	449.31	394.97	344.34

1/ Less than 500.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 8.--Softwood lumber: U.S. exports of domestic merchandise, by principal customs districts, 1976-81

SOURCE	1976	1977	1978	1979	1980	1981
QUANTITY (MILLION BOARD FEET)						
Portland, OR	389	317	274	426	463	458
Seattle, WA	307	254	303	401	514	465
Anchorage, AK	290	263	238	278	255	196
Mobile, AL	44	58	44	42	68	73
Detroit, MI	208	174	146	127	95	126
Wilmington, NC	11	13	22	33	50	18
San Diego, CA	60	71	72	80	91	106
San Francisco, CA	41	44	33	31	34	47
New Orleans, LA	24	16	21	28	38	27
Savannah, GA	13	9	6	26	47	38
All other	192	204	187	257	310	341
Total	1,578	1,426	1,346	1,729	1,967	1,895
VALUE (1,000 DOLLARS)						
Portland, OR	141,538	118,379	121,630	269,054	260,084	198,271
Seattle, WA	82,285	70,895	83,161	162,876	167,722	154,623
Anchorage, AK	67,856	67,812	68,764	103,431	88,587	55,511
Mobile, AL	14,418	21,784	19,008	23,703	34,424	31,085
Detroit, MD	63,846	58,487	46,892	48,628	33,125	30,471
Wilmington, NC	4,773	5,826	11,568	21,372	25,664	9,713
San Diego, CA	10,208	12,145	14,481	16,976	20,895	24,961
San Francisco, CA	20,255	22,563	18,734	23,733	19,274	20,248
New Orleans, LA	8,875	6,555	8,984	13,759	18,846	13,146
Savannah, GA	4,774	3,277	2,629	12,119	19,607	19,768
All other	52,140	56,141	54,625	81,235	68,616	52,359
Total	469,551	443,788	450,478	776,879	776,847	652,567
UNIT VALUE (PER M. BOARD FEET)						
Portland, OR	\$364.28	\$363.33	\$443.60	\$631.43	\$561.95	\$428.69
Seattle, WA	267.56	278.64	274.38	406.53	326.11	332.23
Anchorage, AK	231.22	257.73	289.21	372.08	340.89	305.70
Mobile, AL	325.60	374.71	435.01	559.45	506.40	426.96
Detroit, MI	306.65	335.17	321.53	382.35	347.15	242.05
Wilmington, NC	435.89	437.77	530.82	648.76	514.14	547.57
San Diego, CA	172.26	164.28	200.51	212.35	235.11	234.46
San Francisco, CA	496.66	507.69	576.22	774.62	562.74	430.57
New Orleans, LA	368.08	398.31	425.04	490.50	494.45	483.60
Savannah, GA	315.11	377.35	405.92	458.98	414.74	518.13
All other	271.86	284.63	292.05	316.19	285.69	271.19
Average	297.47	311.20	334.74	449.31	394.97	344.34

Source: Compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown.

Table 9.--Softwood lumber: Canadian production, imports, exports, and apparent consumption, 1972-81

Year	British Columbia <sup>1/</sup>		Total Canada	Imports	Exports to U.S.	Total exports	Apparent consumption	Ratio of exports to production	Ratio of imports to apparent consumption
	Coast	Interior							

<sup>1/</sup> Includes hardwood lumber (less than 1/1000 of total).

<sup>2/</sup> Preliminary.

<sup>3/</sup> Estimate by the staff of the U.S. International Trade Commission on the basis of U.S export statistics.

Source: Statistics Canada.



Table 10.--Softwood lumber: Canadian imports for consumption,  
by principal sources, 1977-81

Source	1977	1978	1979	1980	1981
Quantity (Million board feet)					
United States--	323	263	332	316	1/ 430
All other-----	2/	2	1	1/	2/
Total-----	324	265	333	317	2/ 430
Value (1,000 dollars)					
United States--	96,525	93,408	127,163	97,119	1/ 130,620
All other-----	107	315	169	2	3/
Total-----	96,632	93,723	127,332	97,120	1/ 130,625
Unit value (per 1,000 board feet)					
United States--	\$298.61	\$355.24	\$382.62	\$245.04	\$303.76
All other-----	344.05	170.36	335.98	181.82	3/
Total-----	298.65	353.94	382.55	245.04	3/ 303.76

1/ Estimate based on U.S. export statistics.

2/ Less than 0.5 million.

3/ Unavailable.

Source: Statistics Canada, except as noted.

Note.--Because of rounding, figures may not add to the totals shown.

Table 11.--Softwood lumber: Canadian exports of domestic merchandise  
by principal markets, 1977-81

Market	1977	1978	1979	1980	1981
Quantity (million board feet)					
United States--	10,335	11,401	10,782	9,281	9,033
EC-----	857	803	1,114	1,268	1,036
Japan-----	706	786	1,009	1,083	868
All other-----	315	325	354	632	617
Total-----	12,212	13,314	13,258	12,265	11,555
Value (1,000 dollars)					
United States--	1,868,769	2,614,772	2,794,197	1,997,319	1,960,049
EC-----	206,902	219,172	418,618	503,261	332,198
Japan-----	179,900	230,965	458,271	501,354	365,102
All other-----	83,073	93,333	149,764	260,994	255,843
Total-----	2,338,644	3,158,242	3,820,850	3,262,928	2,913,192
Unit value (per 1,000 board feet)					
United States--	\$180.82	\$229.35	\$259.16	\$215.20	\$216.98
EC-----	241.48	272.94	375.95	396.83	320.98
Japan-----	254.86	293.85	454.37	462.91	420.84
All other-----	264.14	287.28	423.17	413.01	414.46
Average-----	191.51	237.20	288.20	266.05	252.12

Source: Statistics Canada.

Note.--European Community countries, as of Jan. 1, 1982, were included in all European Community data. All values are in Canadian dollars. Because of rounding, figures may not add to the totals shown.

Table 12.--Softwood lumber: U.S. and Canadian production by the five largest, and 50 largest producers, 1972-1980

Year	All producers	5 largest producers	50 largest producers
	Million board feet	Million board feet	Percent of total production
United States			
1972-----	30,873	5,712	18.5
1973-----	31,289	7,206	23.0
1974-----	27,193	6,862	25.2
1975-----	25,711	5,414	21.1
1976-----	29,343	6,610	22.5
1977-----	30,987	7,117	23.0
1978-----	30,899	8,266	26.8
1979-----	29,879	8,078	29.0
1980-----	24,335	6,794	27.9
Canada:			
1972-----	13,390	3,636	27.2
1973-----	14,805	3,245	21.9
1974-----	12,973	2,962	22.8
1975-----	10,908	2,307	21.2
1976-----	15,028	3,546	23.6
1977-----	17,225	3,983	23.1
1978-----	18,412	4,188	22.7
1979-----	18,494	4,143	22.4
1980-----	18,178	3,995	22.0

1/ Estimated by the staff of the U.S. International Trade Commission.

Source: Forest Industries, May of 1973-81.

Table 13.--Lumber: Comparison of U.S. and Canadian companies  
in the logging and sawmilling industry, 1975-80

(In percent)							
Item	1975	1976	1977	1978	1979	1980	
United States:							
Median return on							
stockholders equity-----	2.3	11.4	12.2	14.5	<u>1</u> /19.0	<u>1</u> / 12.5	
Median return on total							
capital-----	1.5	8.2	8.1	10.3	<u>1</u> /12.0	<u>1</u> / 9.4	
Median net profit per							
sale <u>2</u> /-----	1.2	5.4	5.6	6.7	<u>1</u> / 6.7	<u>1</u> / 5.8	
Canada:							
Median return on							
stockholders equity-----	2.7	5.3	14.5	22.8	23.8	<u>1</u> / 14.7	
Median return on total							
capital-----	1.8	3.6	9.5	15.9	16.5	<u>1</u> / 11.4	
Median net profit per							
sale <u>2</u> /-----	1.1	5.4	5.6	7.6	8.0	<u>1</u> / 5.4	

1/ Estimated by the staff of the U.S. International Trade Commission.

2/ Profit after taxes.

Source: Compiled from official statistics of the U.S. Department of the Treasury, I.R.S., Corporation Source Book, 1975-1978, and Statistics Canada, Corporation Financial Statistics, 1975-79, except as noted.

Note.--Percentages for Canada are calculated from Canadian dollars.

Table 14.--Softwood sawtimber on commercial forest land in the United States, by ownership, region, and specified States, 1977

Ownership	West					North				South		
	Washington	Oregon	All other	Total	Percent of total U.S.	Maine	All other	Total	Percent of total U.S.	Total	Percent of total U.S.	Total U.S.
	Million board feet					Million board feet				Million board feet		Million board feet
National forest-----	133,819	252,804	580,634	967,257	95.9	44	7,027	7,071	0.7	33,843	3.4	1,008,172
Other public-----	67,715	72,137	69,026	208,878	88.7	306	12,443	12,749	5.4	13,932	5.9	235,560
Total public-----	201,534	324,941	649,660	1,176,135	94.6	350	19,470	19,820	1.6	47,775	3.8	1,243,732
Forest industry-----	75,974	59,013	64,148	199,135	64.3	13,808	9,268	23,076	7.5	87,329	28.2	309,540
Farm and other private-----	35,792	28,132	106,587	170,511	39.7	11,517	42,953	54,170	12.6	204,867	47.7	429,548
Total private-----	111,766	87,145	170,735	369,646	50.0	25,325	52,221	77,246	10.5	292,196	39.5	739,089
Grand total-----	313,300	412,086	820,395	1,545,781	78.0	25,675	71,691	97,066	4.9	339,971	17.1	1,982,820

Source: Compiled from official statistics of United States Department of Agriculture Forest Service, Forest Statistics of the U.S., 1977, p. 40.

Note.--Because of rounding, figures may not add to the totals shown.

Table 15 --Softwood logs: U.S. exports of domestic merchandise, by principal markets, 1977-81

Market	1977	1978	1979	1980	1981
Quantity (1,000 m. board feet)					
Japan-----	2,454	2,640	3,141	2,533	1,769
China M-----	0	0	0	88	222
Kor Rep-----	203	321	258	200	150
Canada-----	314	325	357	274	209
Hq Kong-----	0	0	1/	1/	11
All other----	10	12	13	15	17
Total----	2,980	3,298	3,768	3,109	2,377
Value (1,000 dollars)					
Japan-----	810,973	950,685	1,468,097	1,290,941	822,869
China M-----	-	-	-	41,435	89,211
Kor Rep-----	49,002	80,391	85,555	75,357	48,020
Canada-----	35,111	38,168	50,023	35,694	31,673
Hq Kong-----	-	-	1	40	4,175
All other----	3,662	7,971	9,879	8,224	6,899
Total----	898,747	1,077,215	1,613,555	1,451,691	1,002,848
Unit value (per m. board feet)					
Japan-----	\$330.48	\$360.09	\$467.41	\$509.72	\$465.24
China M-----	-	-	-	472.00	401.05
Kor Rep-----	241.94	250.52	331.22	376.77	321.04
Canada-----	111.88	117.36	140.32	130.40	151.57
Hq Kong-----	-	-	1,318.00	754.09	383.63
All other----	378.13	655.72	789.31	552.04	417.59
Average--	301.60	326.58	428.20	466.92	421.88

1/ Less than 500.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 16.--Softwood sawtimber: Removals of sawtimber on commercial forestland in the United States by ownership 1976

Ownership	West					North					South			Total United States
	Western	Eastern			Percent				Percent		Percent			
	Oregon and	Oregon and	All	Total	of total:	New	All	Total	of total:	Total	of total:			
	western	eastern	other		United	England	other		United		United			
	Washington	Washington			States				States		States			
										Million				
										board				
										feet				
	-----Million board feet-----						-----Million board feet-----							
National forest-----	3,423	1,653	5,325	10,401	87.0	7	175	182	1.5	1,379	11.5	11,961		
Other public-----	3,094	564	756	4,414	86.7	40	131	171	3.4	508	10.0	5,093		
Total public-----	6,517	2,217	6,081	14,815	86.9	47	306	353	2.1	1,887	11.1	17,054		
Forest industry-----	7,629	951	3,534	12,114	62.8	510	172	682	3.5	6,504	33.7	19,300		
Farm and other														
private-----	1,418	381	1,746	3,545	23.2	797	414	1,211	7.9	10,547	68.9	15,303		
Total private-----	9,047	1,332	5,280	15,659	45.3	1,307	586	1,893	5.5	17,051	49.3	34,603		
Grand total-----	15,564	3,549	11,360	30,473	59.0	1,355	891	2,246	4.3	18,937	36.7	51,656		

Source: USDA, Forest Statistics of the U.S., 1977, table 35, pp. 85 and 86.

Note.--Because of rounding, figures may not add to the totals shown.

Table 17.--Average bid stumpage prices for timber sold on public lands in Washington and Oregon, 1976-81

State-ownership	1976		1977		1978		1979		1980		1981	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
		: Per 1,000 board feet		: Per 1,000 board feet		: Per 1,000 board feet		: Per 1,000 board feet		: Per 1,000 board feet		: Per 1,000 board feet
	Million board feet		Million board feet		Million board feet		Million board feet		Million board feet		Million board feet	
Washington:												
West:												
USFS-----	883	\$93.54	1,067	\$106.12	1,098	\$129.57	1,223	\$224.68	1,114	\$208.06	1/ 1,307	1/ \$190.84
USBLM-----	-	-	-	-	-	-	-	-	-	-	-	-
USBIA-----	18	120.88	17	163.54	67	120.34	23	264.95	7	182.32	2/	2/
State-----	690	159.27	746	159.89	175	231.31	1,151	332.10	504	304.71	2/	2/
Total-----	1,592	122.35	1,830	128.58	1,340	142.84	2,396	276.66	1,625	237.91	3/	3/
East:												
USFS-----	248	39.45	272	56.36	303	186.69	421	104.68	429	90.92	1/ 402	1/ 78.96
USBLM-----	3	69.71	3	77.02	3/	123.48	3	16.80	2	21.25	2/	2/
USBIA-----	351	79.81	301	91.74	157	165.37	140	212.01	211	162.32	2/	2/
State-----	82	101.19	83	107.39	30	162.13	126	210.79	80	207.67	2/	2/
Total-----	684	67.71	658	79.10	571	179.49	689	145.50	722	124.63	2/	2/
Total Wash-												
ington-----	2,276	105.92	2,488	115.49	1,910	153.79	3,086	247.36	2,346	203.06	2/ 1,709	2/ 164.49
Oregon:												
West:												
USFS-----	1,600	141.54	2,213	181.51	2,242	210.96	2,441	332.09	2,644	354.60	1/ 2,631	1/ 292.72
USBLM-----	1,021	157.74	1,130	180.82	1,110	196.36	890	292.59	1,150	323.63	1,000	245.49
USBIA-----	-	-	-	-	-	-	-	-	-	-	-	-
State-----	195	146.11	221	172.37	210	226.23	219	314.93	239	332.25	2/	2/
Total-----	2,817	147.73	3,563	180.73	3,563	207.31	3,550	321.13	4,033	344.44		
East:												
USFS-----	896	65.66	1,127	109.58	1,115	171.04	1,272	169.55	1,168	130.22	2/ 1,129	2/ 156.91
USBLM-----	4	54.33	12	99.54	12	206.17	7	103.25	2	118.72	2/	2/
USBIA-----	96	69.11	110	91.52	152	113.72	15	196.29	25	226.61	2/	2/
State-----	-	-	1	113.64	8	134.91	7	229.38	6	186.29	2/	3/
Total-----	996	65.93	1,250	107.90	1,288	164.36	1,301	169.88	1,202	133.37		
Total												
Oregon-----	3,813	126.06	4,813	161.82	4,851	195.91	4,852	280.57	5,235	295.97	1/ 3,761	1/ 251.92
Total												
Washington-												
ton and												
Oregon:												
USFS-----	3,628	104.13	4,678	139.73	4,838	181.49	5,356	251.12	5,355	254.06	1/ 5,482	1/ 224.98
USBLM-----	1,028	157.09	1,144	179.73	1,123	196.46	899	290.41	1,154	322.75	2/	2/
USBIA-----	465	79.22	428	94.54	377	136.48	179	217.43	244	173.80	2/	2/
State-----	967	151.68	1,051	158.37	424	221.93	1,503	318.95	829	302.38	2/	2/
Total-----	6,089	118.72	7,302	146.03	6,762	184.01	7,937	267.66	7,581	267.21	3/	2/

1/ Forest Service Region 6, Timber Cut and Sold, Fiscal year 1981 (all other years are on a calendar year basis and do not include the entire Region 6).

2/ Not available.

3/ Less than 0.5 million board feet.

Source: USDA Forest Service, Production, prices, employment, and trade in Northwest Forest Industry, second quarter 1982, except as noted.

Note.--Because of rounding, figures may not add to the totals shown.



Table 18.--Timber cut and sold, United States Forest Service, Region 6, 1977-81

Area	1977		1978		1979		1980		1981 <sup>1/</sup>	
	Volume	Per 1,000	Volume	Per 1,000	Volume	Per 1,000	Volume	Per 1,000	Volume	Per 1,000
	Million		Million		Million		Million		Million	
	board feet	board feet	board feet	board feet	board feet	board feet	board feet	board feet	board feet	board feet
Timber sold:										
Oregon-----	3,340	\$157.24	3,358	\$197.70	3,713	\$276.42	3,812	\$285.73	3,761	\$251.92
Washington-----	1,317	97.49	1,472	118.82	1,635	195.07	1,514	176.42	1,709	164.49
Western Region 6--	3,393	154.07	3,442	183.46	3,822	290.46	3,917	300.91	3,950	259.31
Eastern Region 6--	1,270	103.45	1,359	153.44	1,542	156.37	1,410	126.31	1,532	136.47
Total,										
Region 6 <sup>2/</sup> ----	4,663	140.29	4,341	193.59	5,365	251.69	5,327	254.71	5,482	224.98
Timber cut:										
Oregon-----	2,924	115.24	3,235	134.01	3,131	148.48	2,427	139.69	2,336	143.60
Washington-----	1,177	84.54	1,265	99.98	1,245	103.23	1,059	92.48	1,044	86.74
Western Region 6--	2,864	113.50	3,183	131.90	3,225	140.69	2,449	138.55	2,283	137.64
Eastern Region 6--	1,249	89.64	1,331	106.32	1,138	123.28	1,043	94.43	1,098	101.86
Total,										
Region 6 <sup>2/</sup> ----	4,114	106.26	4,514	124.36	4,383	135.53	3,489	125.36	3,382	126.02

<sup>1/</sup> Fiscal year.<sup>2/</sup> Includes a small section of California.Source: U.S. Forest Service, Timber Cut and Sold Reports, 1977-81.

Note.--Because of rounding, figures may not add to the totals shown.

Table 1<sup>a</sup>.--Lumber: Average costs of materials at the mill and wages for the United States and Canada, 1972, 1977, 1979, and 1980

Item	1972	1977	1979	1980 <sup>1/</sup>	1972	1977	1979	1980 <sup>1/</sup>
	Per 1,000 board feet				Percent			
United States:								
Materials and other costs-----	\$95	\$172	\$222	\$245	74	77	77	78
Wood-----	59	119	<sup>1/</sup> 158	173	46	53	<sup>1/</sup> 55	55
Fuel and energy-----	4	6	<sup>1/</sup> 7	8	3	3	<sup>1/</sup> 2	3
Contract work <sup>2/</sup> -----	12	15	<sup>1/</sup> 16	18	9	7	<sup>1/</sup> 6	6
Other-----	20	32	<sup>1/</sup> 42	46	16	14	<sup>1/</sup> 15	15
Wages-----	34	51	65	70	26	23	23	22
Total-----	129	223	287	315	100	100	100	100
Canada:								
Materials and other costs-----	\$75	\$144	\$195	\$215	70	72	72	72
Wood-----	55	107	140	146	51	54	52	49
Fuel and energy-----	3	5	7	8	3	3	3	3
Contract work <sup>2/</sup> -----	10	17	29	36	9	9	11	12
Other-----	7	14	20	25	7	7	7	8
Wages-----	32	56	75	82	30	28	28	28
Total-----	107	200	270	297	100	100	100	100

<sup>1/</sup> Estimated by the staff of the U.S. International Trade Commission using projections provided by Data Resources, Inc.

<sup>2/</sup> Includes resales.

Source: Compiled from official statistics of the U.S. Department of Commerce, Census of Manufactures, 1977, and Annual Survey of Manufactures, 1978-80, and Statistics Canada, Sawmills and Planing Mills and Shingle Mills, 1977-1979, except as noted.

Note.--Because of rounding, figures may not add to the totals shown.

Table 20.--Lumber: Average costs of materials and wages, by specified States and Provinces, 1977, 1979, and 1980

(Per 1,000 board feet)

(Per 1,000 board feet)

Item	United States											
	Maine			Georgia			Idaho and Montana			Oregon and Washington		
	1977	1979	1980 1/	1977	1979	1980 1/	1977	1979	1980 1/	1977	1979	1980 1/
Materials and other costs-----	US\$154	US\$200	US\$219	US\$119	US\$172	US\$189	US\$131	US\$156	US\$169	US\$183	US\$223	US\$244
Wood-----	107	142	155	105	155	170	116	138	148	155	188	205
Fuel and energy-----	6	6	7	5	6	7	5	7	8	6	7	8
Contract work-----	13	14	15	2/	2/	2/	2/	2/	2/	2/	2/	2/
Other-----	29	38	42	8	11	12	10	12	13	22	28	31
Wages-----	51	65	70	50	58	62	48	58	65	52	64	69
Total-----	205	265	289	169	230	251	180	214	234	235	288	313
	Canada											
	British Columbia											
	Coast			Interior			Total			Quebec		
Materials and other costs-----	US\$158	US\$239	US\$254	US\$86	US\$122	US\$135	US\$113	US\$164	US\$193	US\$106	US\$135	US\$148
Wood-----	133	210	216	46	73	77	79	120	138	75	89	93
Fuel and energy-----	3	4	4	5	5	6	4	5	6	6	8	10
Contract work-----	9	9	12	22	29	34	17	22	29	15	23	27
Other-----	13	17	22	13	15	18	13	15	21	11	15	18
Wages-----	62	75	82	45	50	54	51	59	68	52	63	68
Total-----	220	315	336	130	172	189	215	228	261	159	198	216

1/ Estimated by the staff of the U.S. International Trade Commission using projections provided by Data Resources, Inc.

2/ Included with other materials.

Source: Compiled from the Census of Manufactures, 1977, and Annual Survey of Manufactures 1978-80, U.S. Department of Commerce and , Sawmills and Planing Mills and Shingle Mills, 1977-1979, Statistics Canada, except as noted.

Note.—Because of rounding, figures may not add to the totals shown.

Table 21.--Monthly prices for selected U.S. and Canadian lumber products, by months, 1977-81

Year and type	(Per 1,000 board feet)												Unweighted average
	Jan- uary	Feb- ruary	March	April	May	June	July	Aug- ust	Sept- ember	Oct- ober	Nov- ember	Dec- ember	
1977:													
Douglas fir, 2x4 (B.C.) 1/-----	US\$183	US\$184	US\$186	US\$184	US\$174	US\$176	US\$189	US\$210	US\$209	US\$192	US\$184	US\$194	US\$189
Douglas fir, 2x4 (U.S.) 2/-----	205	206	205	192	181	190	224	252	247	229	203	218	213
Spruce-pine fir, 2x4 Western 3/-----	153	157	155	151	146	165	185	213	199	172	179	200	173
Spruce-pine fir, 2x4 Eastern 4/-----	194	195	196	193	188	204	228	246	234	203	206	223	209
1978:													
Douglas fir, 2x4 (B.C.) 1/-----	197	198	197	191	205	208	214	229	225	232	238	226	213
Douglas fir, 2x4 (U.S.) 2/-----	214	213	215	209	234	244	260	268	257	269	261	243	241
Spruce-pine fir, 2x4 Western 3/-----	212	211	211	202	211	195	204	210	211	221	213	206	209
Spruce-pine fir, 2x4 Eastern 4/-----	240	244	245	237	241	232	243	246	243	254	255	247	244
1979:													
Douglas fir, 2x4 (B.C.) 1/-----	221	227	232	228	223	222	235	270	296	258	204	194	234
Douglas fir, 2x4 (U.S.) 2/-----	251	257	263	251	252	257	283	326	310	273	218	219	263
Spruce-pine fir, 2x4 Western 3/-----	211	225	223	217	219	224	238	262	256	234	200	191	225
Spruce-pine fir, 2x4 Eastern 4/-----	250	257	264	261	267	280	302	327	320	277	246	249	275
1980:													
Douglas fir, 2x4 (B.C.) 1/-----	210	205	180	144	166	183	186	184	180	174	179	178	181
Douglas fir, 2x4 (U.S.) 2/-----	214	218	184	162	216	238	224	210	193	203	219	208	207
Spruce-pine fir, 2x4 Western 3/-----	204	199	162	128	152	174	194	175	152	157	168	156	168
Spruce-pine fir, 2x4 Eastern 4/-----	262	264	228	187	212	238	251	237	214	218	232	220	222
1981:													
Douglas fir, 2x4 (B.C.) 1/-----	187	180	170	175	167	163	174	177	156	140	144	158	166
Douglas fir, 2x4 (U.S.) 2/-----	207	193	187	193	183	198	194	180	170	164	155	162	182
Spruce-pine fir, 2x4 Western 3/-----	163	155	155	169	169	169	181	160	141	131	139	141	156
Spruce-pine fir, 2x4 Eastern 4/-----	225	218	220	239	234	241	250	226	206	194	203	202	222

1/ Standard and Btr., Random 8/20' unseasoned f.o.b. Mill (British Columbia to United States).

2/ Standard and Btr., Random 8/20' unseasoned f.o.b. Mill (Portland rate).

3/ Standard and Btr., Random 8/20' kiln dried f.o.b. Mill.

4/ Kiln-dried Std. and Btr., Random 8/20' delivered to Northeast United States.

Source: Random Lengths 1981 Yearbook.

Table 22.--Softwood lumber: Tariff rates for rail shipments from selected U.S. and Canadian origins to selected U.S. destinations, 1980

(Per carload for 110,000 pound bulkhead car)

Destination	Origin				
	United States		Canada		
	Portland	Spokane	Vancouver	Williams Lake	Kamloops
Augusta, Maine-----	US\$6,129	US\$6,014	US\$6,294	US\$6,294	US\$6,025
Augusta, Ga-----	5,637	5,307	5,736	5,813	5,571
Baltimore, Md-----	6,129	6,014	6,294	6,294	6,025
Chicago, Il-----	5,010	4,834	5,010	5,263	4,966
Concord, NH-----	6,129	6,014	6,294	6,294	6,025
Detroit, Mich-----	5,953	5,744	5,953	6,187	5,755
Green Bay, Wis-----	5,010	4,812	5,010	5,263	4,834
Louisville, Ky-----	5,953	5,744	6,187	6,187	5,755
Syracuse, NY-----	6,129	6,014	6,294	6,294	6,025
Topeka, Kan-----	4,504	4,372	4,504	4,757	4,438

Source: Transcontinental Freight Bureau Tariffs, TCFB 4517, TCFB 4518, and TCFB 4520,.

Table 23.--Softwood Lumber: Shipments from Western United States to U.S. destinations, by areas and by methods of transportation, 1977-81

Year	Destination	Method of transportation				Percent of U.S. total
		Rail	Truck	Other	Total	
		Millions of board feet				
1977	North:					
	Northeast-----	513.6	3.2	-	516.9	5
	North Central--	1,667.2	487.8	-	2,154.9	22
	South-----	1,230.0	191.2	-	1,421.2	15
	West-----	1,964.8	3,664.8	-	5,629.6	58
	Total-----	5,375.6	4,347.0	-	9,722.6	100
1978	North:					
	Northeast-----	457.0	2.9	-	459.9	5
	North Central--	1,484.1	518.0	-	2,002.2	21
	South-----	1,234.6	181.8	-	1,416.4	15
	West-----	2,001.6	3,836.3	-	5,837.9	60
	Total-----	5,177.1	4,539.0	-	9,716.3	100
1979	North:					
	Northeast-----	480.5	5.3	-	485.8	4
	North Central--	1,386.9	570.3	-	1,957.2	18
	South-----	1,231.1	169.6	9.1	1,409.7	13
	West-----	2,233.5	4,521.8	232.3	6,987.6	64
	Total-----	5,331.9	5,266.9	231.4	10,840.3	100
1980	North:					
	Northeast-----	416.2	9.3	-	425.5	5
	North Central--	810.9	544.3	-	1,354.9	15
	South-----	980.6	182.7	6.7	1,170.1	13
	West-----	1,752.3	3,923.7	163.8	5,839.8	66
	Total-----	3,960.0	4,660.0	170.5	8,790.2	100
1981	North:					
	Northeast-----	356.9	20.9	3.5	381.2	5
	North Central--	560.1	618.4	-	1,178.5	14
	South-----	947.1	249.3	-	1,205.4	14
	West-----	1,561.4	3,888.7	250.6	5,700.8	67
	Total-----	3,425.5	4,786.2	254.1	8,465.9	100

Source: Western Wood Products Association, Destination of shipments, 1977-81.

Note.--Because of rounding, figures may not add to the totals shown.

Table 24.--Softwood Lumber: Shipments from British Columbia to the United States by areas and by method of transportation, selected years, 1976-80

Year	Destination	Method of transportation			
		Total	Rail	Truck	Other
-----Millions of board feet-----					
1976	North:				
	Northeast-----	1,361.9	732.0	8.1	621.8
	North Central-----	2,108.9	2,093.6	15.3	.0
	South-----	1,982.7	1,714.9	6.1	261.7
	West-----	790.8	416.2	257.7	116.7
	Total-----	6,244.2	4,956.8	287.2	1,000.2
1977	North:				
	Northeast-----	1,350.1	575.9	2.5	771.7
	North Central-----	3,163.5	3,148.0	15.5	0
	South-----	2,259.4	1,829.3	6.3	393.8
	West-----	1,219.2	546.2	449.1	223.9
	total-----	7,992.2	6,129.4	473.4	1,389.4
1978	North:				
	Northeast-----	1,269.3	580.4	5.5	683.4
	North Central-----	2,559.3	2,531.3	28.4	0
	South-----	3,062.5	2,581.2	16.8	464.5
	West-----	1,544.7	717.6	568.7	258.5
	total-----	8,436.2	6,410.5	619.3	1,406.4
1979	North:				
	Northeast-----	1,136.5	539.2	8.5	588.8
	North Central-----	2,228.6	2,178.4	50.2	0
	South-----	2,928.9	2,503.6	23.2	402.1
	West-----	1,432.3	624.9	581.9	225.5
	Total-----	7,726.3	5,846.1	663.8	1,216.4
1980	North:				
	Northeast-----	810.8	450.1	4.8	355.9
	North Central-----	1,683.7	1,645.6	38.1	0
	South-----	2,599.5	2,365.2	19.4	214.9
	West-----	1,232.0	486.9	515.9	229.2
	Total-----	6,326.0	4,947.8	578.2	800.0

Source: British Columbia Industry Statistical Tables, Council of Forest Industries of British Columbia, Vancouver, British Columbia, April 1981.

Note.--Because of rounding, figures may not add to the totals shown.

Table 25.--Softwood Lumber: Transportation costs for waterborne imports from Canada, 1981

District of unloading	Waterborne share of imports	Transportation cost	Transportation costs and a share of value
	Percent	\$ /cwt	Percent
Boston, Ma.-----	96	2.73	25
Providence, R.I.-----	100	2.70	24
Bridgeport, Conn.-----	100	2.81	25
New York, N.Y.-----	100	3.22	30
Philadelphia, Pa.-----	100	2.01	34
Baltimore, Md.-----	100	2.00	31
Norfolk, Va.-----	18	2.50	15
Savannah, Ga.-----	100	3.01	27
Miami, Fla.-----	100	2.49	30
Tampa, Fla.-----	100	2.65	30
Mobile, Ala.-----	100	1.71	26
New Orleans, La.-----	68	.72	16
Houston, Tx.-----	100	2.91	40
Port Arthur, Tx.-----	100	3.00	23
San Diego, Ca.-----	100	1.35	20
Los Angeles, Ca.-----	95	1.07	12
San Francisco, Ca.-----	96	.74	15
Seattle, Wa.-----	14	.48	5
Anchorage, Al.-----	65	3.90	32
San Juan, P.R.-----	100	2.16	28
Virgin Islands-----	100	2.74	17
Total-----	12	1.99	22

Source: Compiled from official statistics of the Bureau of the Census.





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