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A PROFILE OF LUMBER MARKETING IN WESTERN MONTANA

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Errata sheet for:

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Page 7. Table 1. Number of firms in the 25 to 40 MMBM size class should be 6.

Page 7. Text Insert. Tabulated percent of 1963 sales should sum to 65 and number of firms should sum to 23.

Page 14. Figure 3. The key to the bar chart is reversed. Shaded bars are for one-inch boards.

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MONTANA FOREST AND CONSERVATION EXPERIMENT STATION

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Introduction

Montana is currently undergoing a reevaluation of many of its natural resources. A number of traditional forestland uses are under pressure from a variety of new influences. The orderly reallocation of forest resources will be necessary to maintain a reasonable balance in the overall development of the state's economy. If changes are to be efficient and economic, they must be based on detailed knowledge of the traditional uses and their allied industries.

Lumber is one of the historic forest-resource industries in Montana. It is a primary manufacturing industry composed of 40 relatively large sawmills and several hundred smaller sawmills, employing a total of approximately 8,800 people (4,7). During the two decades following World War II, the annual production of softwood lumber in Montana increased from 341 million board feet in 1945 to over one billion board feet in 1963 (3). Western Montana accounted for most of the state's lumber production throughout this period: in 1963 approximately 1.0366 billion board feet, or 93 percent of the state's total production, was sold by sawmills located west of the Continental Divide.¹

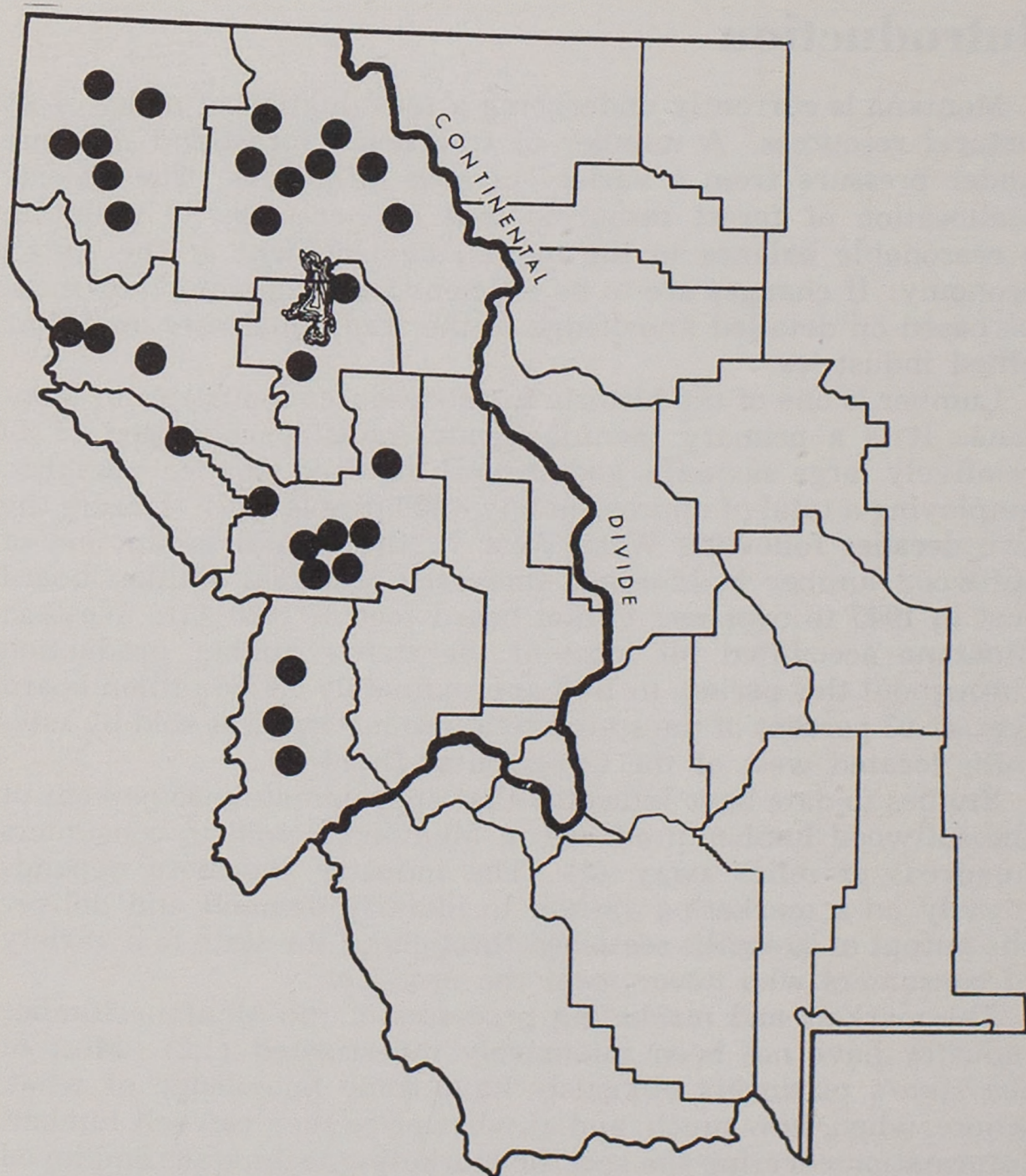
Studies to date have indicated that approximately 85 percent of the softwood lumber produced in Montana is sold to consumers hundreds of miles away (5). The industry therefore depends heavily on a marketing system to identify demand and deliver the output of sawmills scattered throughout the state to a variety of consumers who never meet the producer.

The markets and marketing processes of the Montana lumber industry have not been intensively investigated (1,2). Most of the state's producers obviously have some knowledge of what, where, when, how much, and at what price they can sell lumber. Information covering the specific marketing techniques employed in the sale and distribution of Montana-produced lumber is not available, however, although it is essential if the opportunities for improved marketing efficiency and market expansion are to be identified.

The purpose of this report is to describe the initial market for western-Montana lumber and to define the methods by which manufacturers introduce their products into regional and national

¹Estimated sales for respondents in the present study as reported by Census Bureau data for 1963 (3).

Figure 1. Approximate location of sampled mills.



markets. The study is based on interviews with 31 lumber producers in western Montana (Figure 1). Since some of these firms own more than one sawmill and/or act as exclusive marketing agents for several smaller mills, nearly all of the lumber sold by western-Montana sawmills during 1963 is included (see Footnote 1).

The Montana Lumber Producer

During recent years the number of active sawmills in Montana has declined while annual production has increased. This fact reflects a trend toward larger sawmills in the state. For instance, in 1948 five sawmills, each with an annual production of 10 million board feet, accounted for 35 percent of the state's total lumber production (5); in 1962, 40 mills were included in this size-class and accounted for 87 percent of the total. The 31 firms interviewed exemplify the increase in size. Although their lumber sales in 1963 ranged from less than one million to over 150 million board feet, most of the total volume was sold by a few large companies (Table 1).

Table 1. Lumber sales by size-class, 1963, western Montana.

Size-class	Number of firms ¹	Percent
MMBM		
Over 40	7	55
25 to 40	7	19
15 to 24	10	18
14 and less	8	8
Total	31	100

¹Firms owning more than one sawmill are reported as one firm.

The largest lumber producers in the state typically own more than one sawmill. Thus the trend toward greater size has been advanced not only by expansion of existing facilities and investment in new, specialized, high-volume mills but also by consolidation of diverse ownerships. The importance of these structural changes in the industry is evident; approximately two thirds of the 1963 lumber sales were made by companies that were established or changed ownerships during the postwar expansion period:

Time under present ownership	Percent of 1963 sales	Number of firms
20 years or more	37	9
11 to 19 years	14	7
10 years or less	14	7
	100	31

The difference in ownership categories is illustrated by lumber sales in 1963: generally, firms in the 10-years-or-less group are highly specialized, and concentrated on the sale of dimension lumber; those in the 11-to-19-years group are less specialized,

and sold approximately equal amounts of dimension and one-inch lumber; and those in the 20-years-or-more group sold about twice as much one-inch as dimension lumber (Table 2).

Table 2. Dimension and one-inch lumber sales by length of ownership classes, 1963.

Length of ownership	Dimension	One-inch	Total
Years	Percent	Percent	MMBM
20 and over	32	63	380.0
11 to 19	51	49	525.6
10 and less	76	24	131.0
All	48	52	1036.6

It is apparent that new investment in the Montana sawmill industry has been made in order to satisfy consumer demand at the lowest possible price. The result is an industry that is more competitive due to specialization in the newer mills and more adaptable due to diversity in the established mills. These two types of sawmills basically complement one another in terms of the entire industry, which may help to explain the increased importance of Montana lumber in national markets.

Historically, the one-inch ponderosa pine board was the mainstay of the Montana lumber industry, but species production has changed substantially over the years. Since World War II, both Douglas-fir and western larch have surpassed ponderosa pine in importance. A large-scale effort to salvage Engelmann spruce killed in the insect epidemic of the 1950s has also increased the volume of spruce lumber relative to pre-1950 levels. Finally, other species such as lodgepole pine and the true firs now comprise a significant share of the state's total lumber production (Table 3).

Table 3. Montana softwood lumber production by species, selected periods, and years.

Species	1904-1944 average	1945	1950 (million board feet)	1956	1962
Ponderosa pine	135	144	192	157	171
Douglas-fir	49	67	126	237	363
Western larch	96	110	160	147	235
Engelmann spruce	10	13	36	340	150
Other species	21	7	22	98	150
Total, softwood lumber	311	341	536	979	1069

Source: Total volume from Bureau of Census. Species breakdown based on reported sawlog receipts for 1962.

Essentially, the lumber produced by Montana firms resembles a commodity rather than a highly differentiated product: the lumber sold by all mills is concentrated in relatively few grade and quality classes. In 1963, 83 percent of the one-inch board volume was sold as common lumber; 65 percent of the dimension lumber was sold as standard and better; and 65 percent of the total lumber sold by Montana producers was kiln-dried (Table 4).

Table 4. Lumber sales by grade and type of drying, western Montana, 1963.

Type and grade	Volume MMBM	Percent
4/4 boards		
Selects	94.3	17.4
Commons	447.0	82.6
Sub-total	541.3	100.0
Dimension		
Standard and better	323.4	65.2
Utility and economy	171.9	34.8
Sub-total	495.3	100.0
Total	1036.6	
Drying		
Kiln-dried	674.0	65.0
Air-dried or partially air-dried	157.0	15.0
Green	205.6	20.0
Total	1036.6	100.0

Marketing Policies and Practices

Volume and stability of sales at acceptable prices are management goals that may be realized through extensive product exposure in many markets or through intensive exposure in one or a few major markets.

In extensive sales management, movement of a given volume of sales in sequential time periods is left to chance, on the theory that continuous product display over a broad spectrum of market areas will result in sufficient purchases in each time period to maintain a relatively uniform volume of sales. Extensive sales management is based on the successful completion of random sales opportunities encountered during each planning period.

In intensive sales management, movement of a given volume of sales in sequential time periods is consciously developed as a definite objective by the individual seller. Important markets, either on an individual or an area basis, are defined and developed through concentrated sales promotion and other marketing efforts. Fundamentally, intensive sales management seeks to attain

sufficient penetration in given markets to insure continuity and volume of sales during stated periods of time. The immediate aim of this form of management is to minimize the element of chance or probability associated with the identification of successful sales opportunities.

Extensive sales management is the common practice of lumber producers in Montana. The number of outlets utilized by individual producers averaged 192 and ranged from a low of one to a high of 500 during 1963. Producers thus distributed their lumber through a relatively large number of outlets. Also, sawmills using one or a few outlets were generally subsidiaries of large corporations or under contract to specific market intermediaries. This finding substantiates statements by Bolle (1) and others, which indicate that sawmills owned by nonresident brokers and wholesalers are still prevalent in Montana.

Not all sales outlets are used with equal frequency, and even the mills reporting the largest number of outlets concentrated sales among relatively few individuals. Primary outlets, through which producers sold 72 percent of their lumber in 1963, averaged 13 and ranged from a low of one to a high of 50. It therefore appears that either the extensive marketing practiced by producers was countered by relatively intensive purchasing policies of buyers or that an average of 179 additional outlets were required to move 28 percent of the total volume of sales.

The latter assumption is unrealistic. The former seems to be borne out by the fact that while many Montana producers market through many outlets, purchasers buy from only a few suppliers and develop continuing contacts with them. Half of the 1963 sales volume was sold through outlets with which the producer had been associated for 11 years or longer; one fourth was sold through outlets the producer had been utilizing for six to 10 years; and the remainder was sold through outlets the producer had been using for five years or less. This long-term relationship between primary outlets and producers represents an institutional stability not usually associated with extensive marketing of highly competitive, fungible products. It may indicate that patronage is as strong a motive as profit, and equally important to the overall success of the total sales effort.

Primary outlets are the most important single source of market information for the individual producer. Communication between outlets and producers is usually continuous, with information concerning current prices, products, and expected demand in specific market areas relayed to the producer on request. In this manner the producer is apprised of the initial market for Montana-produced lumber at the time of each sale and even between sales.

In markets where numerous buyers bargain with numerous sellers, there is considerable opportunity for negotiation on price, quantity, timing, shipment, and other details of the sales agreement. There are, therefore, unique aspects to every sale, although a pattern of similarity exists. Description of the specific details of individual transactions is beyond the scope and intent of this study. The evident similarities are germane to the report, however, and can be described by the following typical 1963 transaction between a western-Montana lumber producer and his primary market outlet:

	Percent of 1963 sales volume
The sale is initiated by a call-in from the buyer . . .	
A. Buyer call-in	73
B. Seller call-out	27
... to the producer's sales department . . .	
A. Producer's sales department	80
B. Owner contacted	13
C. Manager contacted	6
D. Seller's representative	1
... and the order involves stock lumber items:	
A. Stock items	99
B. Custom-order items	1
C. Mill-run items(less than 0.5 percent)	
A seller's price list usually forms the basis for price . . .	
A. Seller's price list	68
B. Market index	24
C. Negotiated	8
... and other terms of sale such as time of shipment, cash discounts, etc. are negotiated:	
A. Negotiated terms	69
B. Seller determined	31
C. Buyer determined(less than 0.5 percent)	
The sale is made on a contingent basis, with various discounts for quantity purchases, prompt payment, and buyer acceptance of the shipment allowed by the seller . . .	
A. Contingent sale	92
B. Cash and carry	8
... and finally, the sale fee is usually a percent commission based on sale price:	
A. Percent commission	82
B. No fee required	17
C. Flat rate/MBM	1

A single characteristic is predominantly exhibited in each of the various sale groupings listed above. Combined, these dominant characteristics describe 69 percent of the total 1963 sales volume, indicating relatively uniform policies and practices in the initial market for Montana-produced lumber. The remaining 31 percent of the total sales volume reflects individual deviations from the industry composite. The deviations may indicate specific purchaser or producer requirements and may also denote the flexibility inherent in the initial market. In essence, the 31 percent can be considered an expression of the extent and importance of non-price competition within an essentially homogeneous market situation.

In addition to exhibiting common sale characteristics, Montana lumber producers provide standard seller services. For instance, all producers interviewed graded their lumber, and 96 percent identified their product with the seller's stamp. Also, many firms provide packaging, end-sealing, and other services designed to make their product more competitive, attractive, and easy to handle.

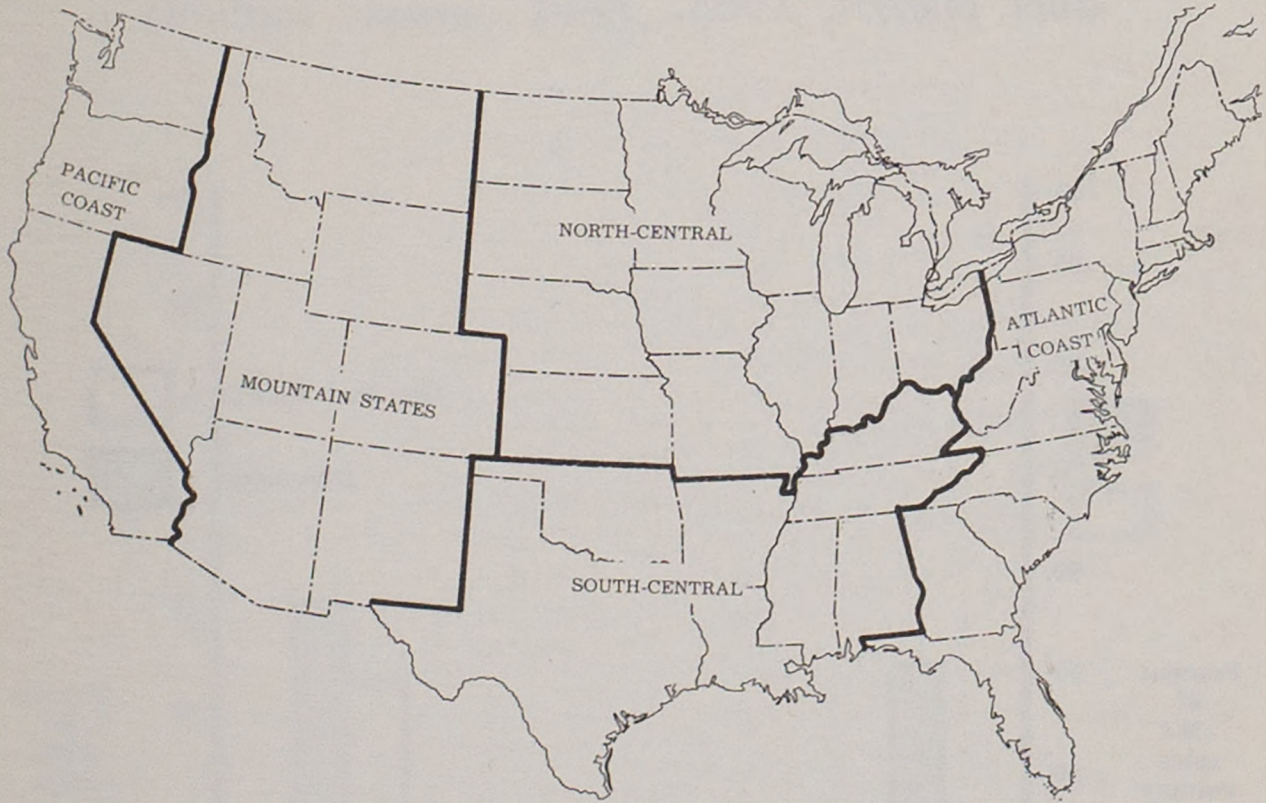
Service provided by seller	Percent of sellers
Grading	100
Grade-stamping	96
Packaging	77
End-sealing	51
Branding:	
Seller's name	54
Buyer's name	13

It is interesting to note that 54 percent of the sellers identified their product by branding with the seller's name and only 51 percent end-sealed their lumber. Although many sellers actually do both, it is evident that more individual firms practiced sales promotion (product identification) than product improvement (end-sealing).

Regional Sales Patterns

A prominent feature of Montana lumber marketing is the regional concentration of sales outlets for both one-inch and dimension lumber. More than half of the 1963 sales volume of one-inch lumber was sold through outlets located in the north-central United States (Figure 2). Conversely, 50 percent of the total sales volume of dimension lumber in 1963 was sold through outlets in Montana, Washington, Oregon, and California (Figure 3).

Figure 2. Regional market areas for Montana lumber, 1963.

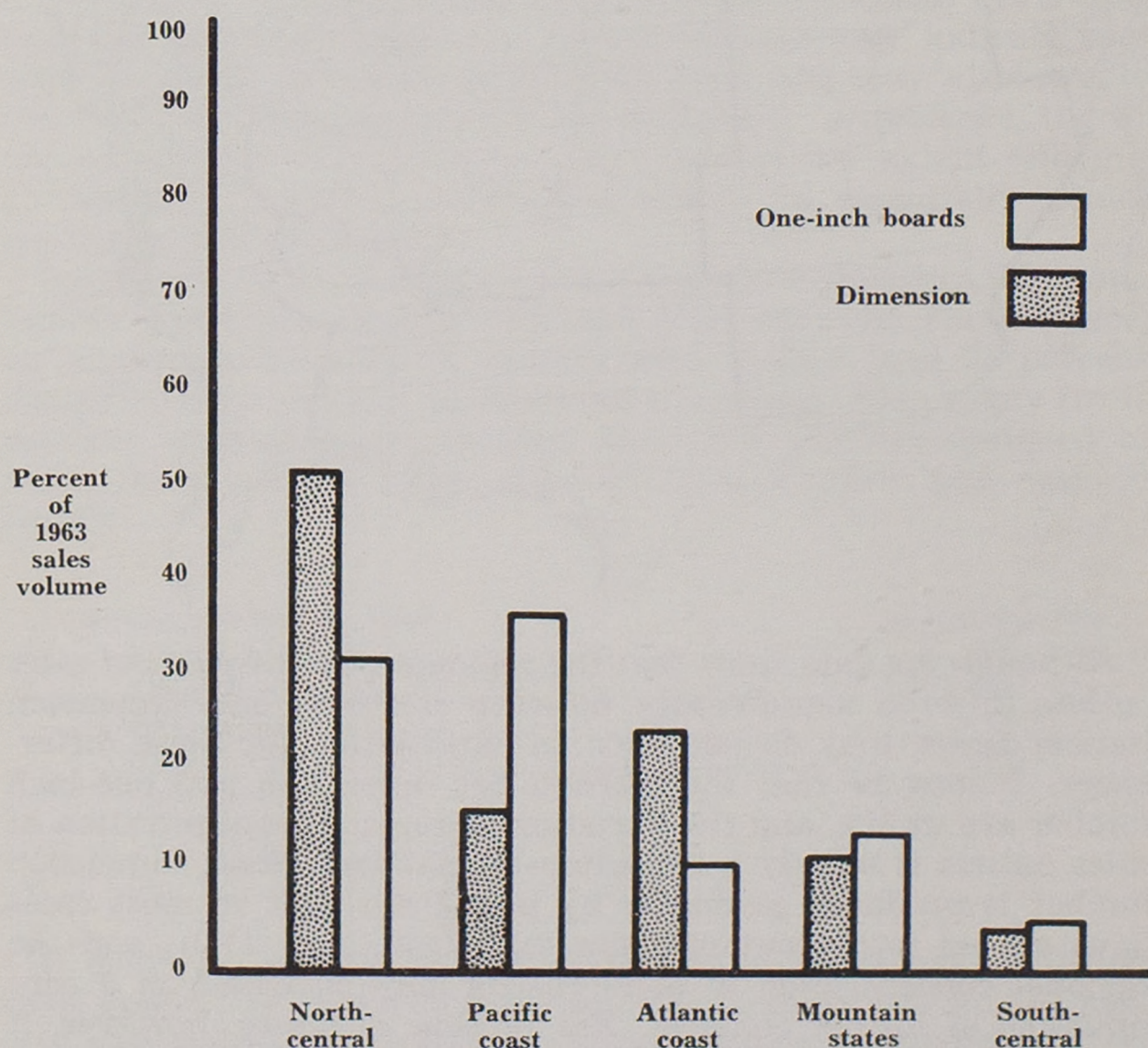


Although the data show that the regional concentration of sales outlets differed significantly between one-inch and dimension lumber firms, they do not offer an explanation for these differences. It may be that the markets for dimension and one-inch lumber are unlike, and the variation in regional concentration of sales outlets is merely a reflection of that fact. Also, dimension lumber is produced primarily by new firms that in most cases have moved into Montana from the West Coast (1,2), and the regional concentration of sales outlets may be based on a continuation of former contacts. For present purposes, however, it is not necessary to explain the differences in sales outlets for one-inch and dimension lumber but simply to recognize that they exist.

Regional Shipment Patterns

The distribution pattern for initial sales of Montana-produced lumber is also characterized by regional concentration. In 1963 nearly 80 percent of both one-inch and dimension lumber sales, on a volume basis, was shipped into the north-central and Atlantic coast regions of the United States (Figure 2). The remaining 1963 sales volume was distributed fairly evenly throughout the rest of the nation (Figure 4).

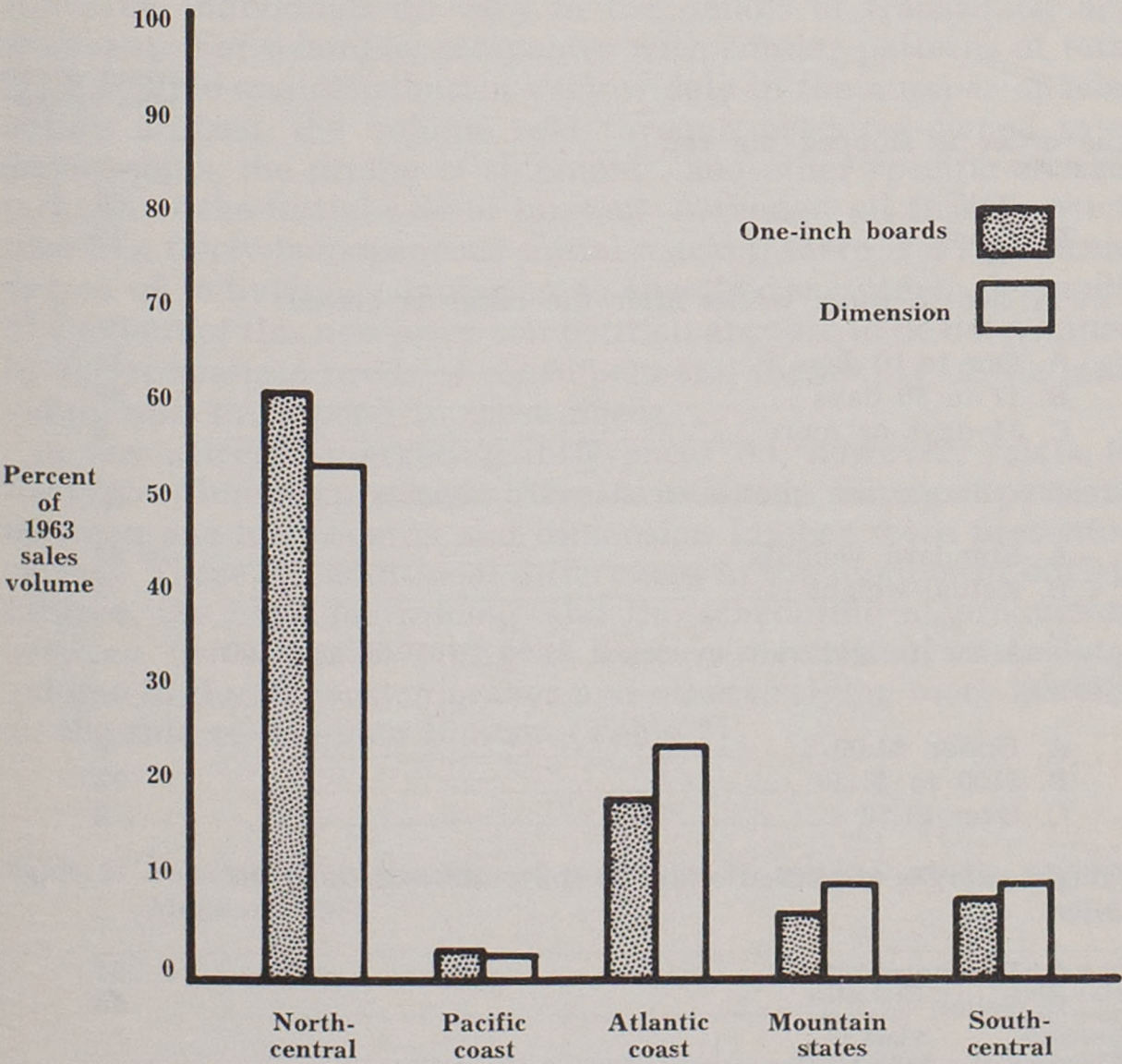
Figure 3. Regional sales of Montana-produced lumber by product classes, 1963.



Differences in shipment patterns between one-inch boards and dimension lumber were not as pronounced as those noted for the geographical concentration of sales outlets. As illustrated, although one-inch and dimension lumber are sold through widely separated concentrations of sales outlets, a majority of the total combined sales volume was shipped into the same market regions in 1963.

It must be noted that the regional concentration of shipments relates to only the initial sale of Montana-produced lumber. The existence of railroad diversion points within the north-central region may account for this. If, in fact, most Montana-produced

Figure 4. Regional shipments of Montana-produced lumber by product classes, 1963.



lumber is rerouted from these diversion points to ultimate destinations in other regions, then the total shipment pattern for Montana lumber would differ significantly from that noted for the initial sale. Current data do not contain the information necessary for description of the final distribution pattern for Montana-produced lumber. However, an estimated 42 percent of the total 1958 market for lumber and wood products in the United States originated within the north-central and Atlantic coast regions (8). It can therefore be assumed that these two areas contain important consumption as well as shipment centers for Montana-produced lumber.

Shipment Characteristics

Aside from the geographical aspect of sales outlets and market areas, the shipment of western-Montana lumber follows a fairly uniform pattern. In a typical sale:

	Percent of 1963 sales volume
The order is shipped via rail . . .	
A. Rail	88
B. Truck	12
. . . in two to three weeks after the order is placed:	
A. One to 10 days	14
B. 11 to 30 days	80
C. 31 days or more	6
Freight charges are quoted on standard weights . . .	
A. Standard weights	95
B. Actual weight	5
. . . and the freight rate averages \$1.00 to \$1.50 per 100 pounds:	
A. Under \$1.00	6
B. \$1.00 to \$1.50	92
C. Over \$1.50	2
Freight charges are billed either to the purchaser or to the seller . . .	
A. Purchaser	54
B. Seller	46
. . . and the buyer takes possession at the mill:	
A. F.O.B. mill	98
B. F.O.B. at destination	2

The aggregate of dominant characteristics associated with the shipment of Montana-produced lumber describes approximately 91 percent of the lumber sold by western-Montana sawmills in 1963. Distribution methods as well as sale characteristics follow a uniform pattern. In addition, reliance on rail shipment and the relatively high average transportation costs per 100 pounds indicate that Montana-produced lumber is sold initially to distant consumers, a fact corroborated by the regional concentration of shipments noted in Figure 3.

Comparisons Between Producers of One-Inch and Dimension Lumber

In general, extensive similarities in the selling and distributing of Montana-produced lumber exist for all firms in the state. However, individuals do vary in the details of transaction and shipment. For example, companies with similar patterns of total sales volume and distribution vary widely in the number of sales outlets utilized, the volume sold through producer-owned sales departments, the timing of shipments, and other specific characteristics of the initial sale of lumber. Although all firms participate in a fairly homogeneous initial market, there is a significant degree of individual adaptation to specified consumer demands. The extent of this non-price competition appears to be determined by the specialized needs of consumers and the ability of the individual mill to respond to these needs.

A few selected marketing differences do, however, relate to the type of lumber produced. The variations in shipment patterns between one-inch boards and dimension lumber were presented earlier. There are additional differences in the number of outlets utilized, the basis for pricing, and the scheduling of production between firms concentrating at least two thirds of their total volume in the dimension grades and others relying more heavily on the sale of one-inch lumber (Table 5).

Table 5. Selected characteristics of producers by product group, western Montana, 1963.

	Firms with 1963 sales $\frac{2}{3}$ or more dimension	Firms with 1963 sales $\frac{2}{3}$ or more one-inch boards
Number of firms	13	18
Sales volume, million board feet	256.5	780.1
Average sales per firms, million board feet	19.7	43.3
Primary outlets (average)	7	19
Sale price basis:		
Market index or negotiated	100 %	12 %
Seller price list	0 %	88 %
	100 %	100 %
Production for:		
Orders	81 %	12 %
Inventory	19 %	88 %
	100 %	100 %

The above table shows that dimension mills generally produce less volume per year than board mills, utilize fewer primary outlets, are completely dependent on market quotations for price information, and produce primarily on the basis of orders received rather than for inventory.

Reasons for these differences are not readily apparent, but it has been shown that 362.6 of the 495.3 million board feet of dimension lumber sold in 1963 was marketed in a surfaced, unseasoned (surfaced green), or partially air-dried condition. A major portion (73 percent) of the dimension lumber sold in 1963 was therefore marketed soon after manufacture. Such marketing requires immediate sale at the time of sufficient volume accumulation to warrant shipment, and accounts for the complete reliance on market quotations for current price information.

Sale of unseasoned dimension lumber may also explain production on the basis of orders received rather than for inventory. That is, elimination of the time required for seasoning means that producers can maintain log inventories rather than lumber inventories. Duplication of inventory investment is thereby avoided, and the producer of unseasoned dimension lumber can market his product at a lower price. This practice is expected to continue until the price differential between seasoned and unseasoned dimension lumber becomes large enough to justify the additional inventory investment required for seasoning.

Two factors may be responsible for the low number of primary outlets utilized by dimension producers: First, the volume of material sold by these producers averages less than half (45 percent) of that sold by the producers of one-inch lumber, and therefore fewer primary outlets are required. Second, 76 percent of the dimension lumber sold in 1963 was marketed by mills that have been under present ownership for 10 years or less (Table 2). Since dimension mills tend to be of more recent origin, they may have fewer market contacts than one-inch mills.

Discussion

The continuing allocation of forest resources in Montana creates current and critical problems for the lumber industry in the state. It is essential that lumber manufacturers obtain maximum value from existing sawtimber in order to compete effectively with other wood-processing as well as non-timber uses of forestland. Inefficiencies in marketing as well as in other phases of lumber production reduce the value of the industry and impair its economic ability to compete for raw materials and profitable markets.

The present description of the initial market for western-Montana lumber may focus attention on possible areas of future investigation. Although current efficiency is important, the report does not attempt to measure it quantitatively. Future efficiency will be determined by the competitive attitudes that develop from recognition of possible methods of increasing existing efficiency. In this respect the report may be useful in illustrating possible areas in which opportunities exist for the industry to enhance its competitive status.

For instance, production for order rather than for inventory is unusual where 99 percent of the orders received involve stock items. An 11-to-30-day lag in the shipment of stock items (see page 16) is also uncommon, although its importance to marketing efficiency is a moot question. Suffice to say that the advertising of "same-day shipment" has proven to be an important element of non-price competition in some other industries and may have advantages in the marketing of Montana-produced lumber. In addition, the geographical separation of sales outlets from initial shipment destinations means that information about the final markets for Montana lumber is obtained from sources not intimately associated with those markets. Montana lumber sellers must therefore rely on market intermediaries for development of current sales opportunities, anticipated demands, price data, market penetration, and other items of information essential to satisfactory servicing of existing and potential markets. The fact that almost twice as much lumber is shipped into the north-central region as is sold through outlets there emphasizes the point. Although some of the larger firms in the state do employ field salesmen, first-hand information about Montana's primary marketing channels and market areas appears to be a generally neglected question. Greater attention to these matters might improve the competitive status of the industry.

While questioning efficiency is important, it is doubtful that gross inefficiencies will be found in the existing marketing process. This assumption is based on the approximate doubling of Montana's share of the national lumber market during the past 15 years. Past accomplishments should not, however, detract from the critical question of future performance. It is hoped that this delineation of current practices and important market areas will help the Montana lumber industry to assure the efficiency of its marketing effort and thereby maintain its stature in the economy of the state.

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