

THE HOME CENTER MARKET FOR HARDWOOD SPECIALTY PRODUCTS

by

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(ABSTRACT)

Hardwood specialty buyers representing 1600 home centers and lumber yards including the Top 100 home centers according to 1985 sales were surveyed. The objectives of the survey were to characterize the home center market for hardwood specialty products and to obtain an idea of the future direction of this market regarding hardwood specialty products. The results of the survey indicated that a new potential market for hardwood manufacturers exists. For example, the total home center market for the four major hardwood product lines was approximately \$1 billion in 1986 and the hardwood board market segment is predicted to grow at a 12% compounded annual growth rate from 1986 to 1991. Oak is the dominant wood species in this marketplace.

Merchandising strategies between typical firms and Top 100 home centers varied considerably. Top 100 home centers were merchandising standardized product lines in display racks with available point-of-purchase literature, but the majority of typical firms were not. These typical firms have a need for standard products, display racks and point-of-purchase literature.

Currently, the home center market is fragmented with a large percentage of home centers having annual sales of less than \$3 million and owning only one store. Future demand for hardwood products should

be greatest for moulding, plywood and boards. Future demand should be greatest in the urban and suburban market segments. The most important customers in this marketplace were the Do-It-Yourselfer and the professional-remodeler. High price and poor quality were common customer complaints. Lack of reliable suppliers and inconsistent quality were prevalent purchasing difficulties for hardwood specialty buyers.

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PREFACE

This thesis was prepared as three potential manuscripts ready to be submitted for consideration for publication. As a result, several unavoidable redundancies have occurred. Certain information was repeated in the chapters due to the fact that each chapter will be submitted as an individual article thus requiring similar background material.

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INTRODUCTION

The home center market has seen considerable growth during the past several years. Also growing, but at an unknown rate, is the home center hardwood lumber and specialty product (including products such as mouldings, edge-glued panels, plywood, and flooring) market segment. This relatively small segment of the home center market has generated considerable interest from home center stores. As the home center hardwood lumber and specialty product market segment continues to grow, an increasing number of home center stores are merchandising these product lines. However, the surge of increased activity and sales of hardwood lumber and specialty products are causing several problems for home center dealers and manufacturers of these product lines.

First, specific information about the home center hardwood lumber and specialty product market is lacking. Little information for manufacturers and distributors of hardwood lumber and specialty products is available. Second, lumber and moulding are among the three most difficult product lines to merchandise effectively (Anon 1984b). Third, to properly function manufacturers of hardwood lumber and specialty products need a clear understanding of their customer's needs and wants. However, little information about the home center market for hardwood lumber and specialty product customers is available. These problems are major deterrents in developing marketing strategies needed for successful product lines; consequently, the following research objectives have been formulated.

RESEARCH OBJECTIVES

1. To characterize the retail hardwood lumber and specialty product market in terms of its volume, value, and species composition.
2. To better understand the retail market for hardwood lumber and specialty products with emphasis on product type and quality concerns.
3. To estimate the potential for growth in this market and its impact on the hardwood resource.

LITERATURE REVIEW

Trends in the Hardwood Lumber Market

In contrast to the commercially more important softwoods, only modest attention has been given to the markets for hardwood lumber and specialty products. As a result, the scientific, economic and governmental literature is somewhat deficient in describing these hardwood markets. Limited information describing the home center market for hardwood lumber and specialty products has occasionally been collected as part of other studies. However, sufficient information is available to briefly overview the hardwood lumber market in general.

The production of hardwood lumber has been relatively stable since 1960 (Anon 1985b). During this time, the markets for hardwood lumber have undergone considerable changes. The flooring market declined strongly while pallets, ties and timbers, and the export market consumed increasing amounts of hardwoods. Hardwood use in furniture had risen very slowly over this time while miscellaneous products such as handles for sporting and athletic goods declined (Cardellicchio and Binkley 1984). In 1948, approximately 1.6 billion board feet of hardwood lumber

was used by the furniture industry and by 1977 this had grown to approximately 1.9 billion board feet (Phelps and Spelter 1984). However, during this same period, furniture production tripled indicating a significant decline in hardwood lumber consumed per unit of furniture. The decline was primarily due to the replacement of lumber by cheaper substitutes such as plywood and particle board (Phelps and Spelter 1984).

Table 1 shows the market segments for hardwood lumber in 1960 and 1980. The table shows that significant increases in products which utilize low-grade lumber occurred between 1960 and 1980. Conversely, consumption of products which utilize high-grade lumber decreased substantially. Reasons for these occurrences include the increase of shipping and handling industrial and consumer goods on pallets (Anon 1982). For example, in 1948 the pallet industry consumed 220 million board feet of lumber compared to an estimated 3.5 billion board feet in 1980 (Phelps & Spelter 1984). Second, as the price for high-quality lumber increased, manufacturers of products which incorporated high-grade lumber began to use cheaper substitutes (Anon 1982). At the same time, consumer tastes changed while expensive prices of the final goods drove consumers away. Consequently, the overall U.S. trend for hardwood lumber between 1960 and 1980 was a reduction in per capita consumption (Anon 1985b).

Table 1. Hardwood Lumber Market Shares for 1960 and 1980.

	Estimated shares	
	1960	1980
		%
Shipping & materials handling	29.9	37.8
Pallets	14.0	31.9
Containers	11.8	3.2
Dunnage	4.1	2.7
Furniture	25.6	26.9
Mines & ties	11.2	15.2
Crossties	7.2	11.2
Switch ties	0.9	1.0
Coal mines	3.1	3.0
Construction	19.4	6.7
Flooring	12.8	1.2
Millwork	6.6	5.5
Miscellaneous	11.6	9.1
Export	2.3	4.3

Source: Cardellichio and Binkley 1984

The High Grade Lumber Market

High grade hardwood lumber consists of three major grade categories; factory lumber, dimension parts, and finished market products (Wenger 1984). The factory lumber grade is geared to the cutting of lumber into smaller pieces used to make furniture and panels. Dimension parts are processed pieces of wood usually cut from factory lumber into usable sizes for furniture or flooring. Finished market products such as hardwood flooring, boards and mouldings are graded or sold in a finished form with little further processing needed (Wenger 1984). The important point is that the finished product such as clear

and surfaced hardwood lumber and mouldings is derived from factory lumber grades or dimension parts. Consequently, the production of finished hardwood boards and mouldings for the home center market is not a drastic production change, but a change in the basic marketing philosophies for hardwood lumber. Bush and Houston (1985) refer to new product developments of this nature as dynamically continuous innovations. Meaning, the product is similar yet different from previous products and its success depends on altering previous marketing strategies.

Hardwood moulding, such as poplar moulding, may be an example of a dynamically continuous product. Currently, softwoods, particularly ponderosa pine, are the preferred species used in the production of mouldings (Cassens and Feist 1983). However, due to changing prices and the increasing availability of yellow poplar and the decreasing availability of ponderosa pine, an increasing amount of poplar is being converted into moulding (Cassens et al. 1980). Thus, the production of moulding is the same, but the success of hardwood moulding will depend on price in comparison with softwood moulding, it's marketability as a decorative moulding, and the development of alternative marketing strategies directed specifically towards hardwood moulding.

Another example of a dynamically continuous innovation is with the production of hardwoods for framing lumber. This concept is not new, in fact hardwood framing lumber, particularly poplar lumber, can be found in localized areas. However, due to the traditional use of softwood as framing lumber, poplar framing is not a highly demanded product. In 1979, a study conducted in West Virginia on the yellow poplar framing lumber market concluded that poplar lumber would be favorable if it was

properly manufactured and dried, sufficient quantities were produced to supply the needs of the market, and that it be cost competitive with softwood structural lumber (Schick and Grinell 1979). Once again, the technology to produce the specific hardwood product is there, but the problem lies with the economics of the product and market acceptance of the product.

The Growth of the Repair and Remodeling Market

There are 92 million housing units in the United States. Of the 92 million, 45 million are single-family houses 20 or more years old, which make them prime candidates for spending on upkeep and improvement (Rich 1984). As the average age of housing units continues to increase, the repair and remodeling market continues to grow. Reasons for the growth are due to necessary upkeep and maintenance and the tendency of residential property owners to renovate or build new additions. This is especially prevalent after a property changes owners.

Annual expenditures for all types of repairs, additions and replacements derived from residential property owners grew by 188 percent during the 1970's (Rich 1981). The repair and remodeling market is predicted to grow at a compound rate of at least seven percent during the years 1986 to 1990 (Payless 1986). Major categories of the repair and remodeling market include: exterior remodeling, room additions, room remodeling, garage/porch conversion or additions, and room furnishings (Rich 1982). All of the categories require a significant proportion of wood. With projected sales of the repair and remodeling market for 1990 at \$122.4 billion, the sale of lumber and moulding should increase proportionately (Anon 1985a).

Evolving from the repair and remodeling market are the one-stop home improvement centers which cater specifically to the individual or Do-It-Yourself (DIY) customer. The local retail lumber dealers of years past had to diversify and change their marketing strategies to meet the changing demands placed on them or else they perished. In 1985 home center sales were \$62.2 billion of which 29% was generated from lumber sales and an additional 11% was in doors, windows and millwork sales (Franta & Johnson 1986). In 1985, the total home improvement market reached \$76 billion with nearly \$45.6 billion (60%) representing the DIY market segment (Payless 1986).

With appropriate marketing strategies, innovative forest products firms can capitalize on this trend; however, the retail side of the forest products industry is controlled by retail firms which have little manufacturing capabilities (Sinclair 1986). In 1985, there were 9,619 retail firms representing 23,938 individual stores (Franta & Johnson 1986). The current trend among the larger retail firms is the opening of new stores with larger amounts of floor space. Scotty's, for example, is currently opening new stores that consist of 49,000 square feet of shopping space and merchandise approximately 14,000 items (Scotty's 1986). In comparison, a typical firm's store averages 14,880 square feet of shopping space (Franta and Johnson 1986).

The Do-It-Yourself Customer

The DIY boom has created a favorable market segment for hardwood lumber. As the cost for professional help continues to rise and as the difficulty of finding professional help to do small jobs increases, more homeowners are turning to themselves to accomplish needed repairs and remodeling (Anon 1985a). In fact 85 percent of homeowners of

single-family dwellings have one or more do-it-yourselfers in their household (Franta 1981). Consequently as the DIY market was increasing, marketing and advertising strategies used by home centers added to the overall success of the repair and remodeling market. The larger firms such as Scotty's and Lowe's placed particular emphasis on advertising and promotional strategies to improve their identity in the marketplace.

According to a 1978 survey conducted by Home Center magazine, 76.3% of home center customers are between 20 and 49 years old, 82.7% of the customers are home owners, 70.1% are college-educated, and 61.9% of the customers handle 80% or more of their home improvement projects themselves. The important conclusion of this data is that home center customers are relatively young and affluent (Anon 1979). Continued growth of home center sales will depend upon the additional growth of the DIY market. The growth of the DIY market will depend on the growth in number of households, the growth in household income, the age distribution of the heads of households, and housing turnover rate (Anon 1985a). DIY sales are predicted to reach \$74.5 billion by 1990 (Anon 1984a), while the total home improvement market is predicted to exceed \$100 billion in 1990 (Payless 1986).

As home centers emerged, and DIY customers evolved, and the repair and remodeling market grew, new products and services emerged to meet these new and changing demands. Remanufactured hardwood lumber for the retail market became one of these new product lines. The process involves kiln-drying the lumber and remanufacturing it into specific board widths and lengths and moulding types. The lumber is then surfaced either on two, three, or four sides. The finished product is then distributed to home center stores for retail sale. Home center

stores may use hardwood lumber and specialty products in their merchandise gap strategy where the retailers specifically plan their merchandise assortments to fill unmet consumer needs (Mason and Mayer 1984).

SUMMARY

With the building materials market increasing at a rate twice that of retailing in general (Payless 1986), individual segments of this market such as hardwood lumber and other hardwood specialty products like moulding and plywood are also growing, but at unknown rates. Specific information about the hardwood lumber and specialty product market segments is almost nonexistent. Secondary information provides insight on the overall hardwood lumber market, home center market, and the DIY boom.

Statistical data about the hardwood lumber market, home center market and DIY boom are available in the public domain. This information includes production statistics, consumption statistics, sales volumes, growth rates of the markets, merchandising information, and DIY trends, but once again no information pertaining specifically to the retail hardwood lumber and specialty product market is available.

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**HARDWOOD SPECIALTY PRODUCTS: A BILLION DOLLAR
PRODUCT LINE FOR HOME CENTER RETAILERS**

(For potential submission to the Forest Products Journal)

ABSTRACT

A new potential market for hardwood manufacturers may exist within the home center market. This market was studied using a mail survey. The hardwood products which were examined included boards, panels, moulding and flooring. The results of this study are reported in two separate articles. The objectives of the first phase of the study were to characterize the hardwood specialty product market segment in terms of its value and to obtain a better understanding of the home center market for these specialty products with emphasis on product types. Most notably, the Top 100 home centers' merchandising strategies were quite different from typical firms. Oak is "King" in the home center marketplace. Suggestions for improving hardwood specialty products were centered around standardizing product lines and improving product quality. Customers need to be educated about the proper uses of the hardwood products they purchase. The total home center market for the four major product lines was approximately \$1 billion in 1986 and growth in the fastest growing segment, hardwood boards, is predicted to reach a 12% compounded annual growth rate from 1986 to 1991.

INTRODUCTION

High grade hardwood lumber consists of three major grade categories; factory lumber, dimension parts, and finished market products (Wenger 1984). Factory lumber is geared to the cutting of lumber into smaller pieces used to make furniture and panels. Dimension parts are processed pieces of wood usually cut from factory lumber into usable sizes for finished products. Finished products such as hardwood flooring, boards and mouldings are graded or sold in a finished form with little further processing needed (Wenger 1984). The important point is that the finished product such as clear and surfaced hardwood boards and mouldings is derived from factory lumber grades or dimension parts. Consequently, the production of finished hardwood boards and moulding for the home center market is not a drastic production change, but rather a change in the basic marketing philosophies for hardwood lumber. Bush and Houston (1985) refer to new product developments of this nature as dynamically continuous innovations. Meaning, the product is similar yet different from previous products and its success depends on altering previous marketing strategies. Thus, many secondary and some primary hardwood manufacturers would need practically no modifications to their production lines to produce hardwood products of this nature.

During the past several years, the home center market has seen considerable growth in the hardwood lumber and specialty product (including products such as mouldings, edge-glued panels, plywood, and flooring) market segment. As the home center hardwood lumber and specialty product market segment continues to grow, an increasing number

of home center stores are merchandising these product lines.

In contrast to the commercially more important softwoods, only modest attention has been given to the markets for hardwood lumber and specialty products. As a result, the scientific, economic and governmental literature is somewhat deficient in describing these hardwood markets. Limited information describing the home center market for hardwood lumber and specialty products has occasionally been collected as part of other studies. Sufficient information is available to understand the hardwood lumber market in general but almost no information describing the home center market for hardwood lumber and specialty products has been collected.

The objectives of this study were to characterize the home center hardwood lumber and specialty product market segment in terms of its value and to better understand the home center market for hardwood lumber and specialty products with emphasis on product types. The four major hardwood products analyzed in this study were boards, panels including plywood, veneer-overlay panels and edge-glued solid wood panels, moulding and flooring.

SUMMARY OF METHODS

Formulation of Survey and Sample Frame

An initial survey dealing with the home center market for hardwood boards and moulding was developed and pretested by a random sample of 50 hardwood specialty buyers employed at home centers throughout the U.S. Two additional sections pertaining to panels and flooring were incorporated into the survey after the initial pretest. The survey was further reviewed by nine professionals in both the forest products and

marketing fields. The survey was revised based on the pretest and comments from the reviewers. The final draft of the survey was mailed in October 1986 to hardwood specialty buyers for 1600 home centers and lumber yards. These home centers and lumber yards were divided into two samples. First, a 100 percent sample of the Top 100 home centers according to 1985 sales and second, 1500 home centers were randomly selected from the remainder of the sample population. The study's sample frame was The 1985 Directory Of Home Center Operators & Hardware Chains (Friedman 1985). This directory lists all home centers and lumber yards, a total of 6053, located in the United States with sales over \$1 million. These firms control approximately 14,000 retail stores. Approximately 27% of the home centers and lumber yards in the sample frame received a survey. A follow-up survey and reminder letter were used to increase response rates.

The large sample of 1500 home centers was stratified based on the four regional classifications of the United States as defined by the U.S. Bureau of Census (Figure 1). Stratified random sampling was chosen to determine regional differences in the merchandising of hardwood products in the home center marketplace. Stratified random sampling involves dividing the population elements (i.e., Home Centers) into nonoverlapping groups, called strata (i.e., census regions), and then randomly selecting elements from each group (Scheaffer et. al. 1986). The number of home centers selected from each region was determined by multiplying the percent of home centers in that region by 1500. Therefore, from the 1500 home centers selected for the large sample, 284 (18.9%) were located in the northeastern region, 446 (29.7%) were

located in the north central region, 228 (15.2%) were located in the western region, 542 (36.1%) were located in the southern region.

Response Rates

Of the 1500 surveys mailed, 401 usable surveys were returned. Adjusting for undelivered surveys (less than 1% of the total mailed) and unusable surveys (less than 1% of the total mailed) resulted in a 27% response rate. This yielded a regional response rate of 23.6% (67) for the northeastern region, 29.4% (131) for the north central region, 25.4% (58) for the western region and 26.4% (143) for the southern region. The regional location of two respondents could not be determined.

Of the surveys sent to the Top 100 home centers, 42 usable surveys were returned. This yielded a 42% response rate for the Top 100 home center mailing and resulted in a total of 443 usable surveys returned.

Survey Bias

Analysis of the first returned surveys indicated a potential nonresponse bias. A higher percentage of hardwood specialty buyers from the first returned surveys reported selling hardwood products than hardwood specialty buyers returning surveys later. This problem was addressed in the second mailing by including a note directed to firms who did not sell hardwood products asking them to return the survey even if they did not sell hardwood products. The strategy was effective due to the fact that a higher percentage of respondents not selling hardwood products completed the survey after the second mailing. Early return bias of this nature is not uncommon for self-administered questionnaires (Fowler 1984).

To determine the degree of variation in the survey caused by time dependent trends the Chi-square test for independence was incorporated. Fifteen key items were tested for time dependent relationships. Of the fifteen items tested, only four items were found to be time dependent at the .05 level of significance. These four items were percentage of firms selling hardwood boards, plywood, moulding and flooring. These results were expected, since the potential bias was detected previously. Consequently, 35 nonresponding hardwood specialty buyers were contacted by telephone to check if the percentages of firms selling these hardwood products resulting from the mail survey were accurate.

An interval estimation technique for two binomial proportions as described by Lentner 1984 to compare the specific proportions from two populations, responding typical firms (mail survey results) and nonresponding firms (telephone follow-up results) who sold the four products, was used to detect differences between the two populations. The result of the test indicated with 95% confidence that no significant differences between the responding firms and nonresponding firms exist.

Terms and Procedures

The results of the 401 usable surveys received from the large mailing to 1500 home centers and lumber yards will be referred to as the results for typical home centers and lumber yards. The results of the 42 usable surveys from the Top 100 home centers will be referred to as the Top 100 home center results.

Tables listed in this article will consist of the following format. First, regional responses for the typical firms are presented with the following abbreviations; NE = Northeast, NC = North Central, W = West, S

= South. Following the regional results will be the combined results for All Regions followed by results for the Top 100 home centers.

RESULTS AND DISCUSSION

The Hardwood Board Product Line

Product line characteristics varied considerably between typical firms and Top 100 home centers. The most common board length among typical home centers was 8 feet and the most common board length among Top 100 home centers was 6 feet (Table 1). Typical firms were stocking a higher number of lengths greater than 8 feet while the Top 100 home centers were stocking more shorter lengths (8 feet or less). A larger percentage of typical firms (57.9%) stocked random lengths in comparison with the Top 100 home centers (17.6%).

The most common width stocked among typical firms and Top 100 home centers was 6 inches (Table 2). The Top 100 home centers stocked a greater number of narrower widths than typical firms. Overall, board widths stocked by Top 100 home centers tended to be in two inch intervals similar to softwood lumber widths. A higher percentage of typical firms (58.5%) stocked random widths in comparison with the Top 100 home centers (14.7%).

A combination of the above facts may potentially indicate that the Top 100 home centers were being serviced by suppliers of a standard hardwood board product designed for the DIY customer (ie. shorter lengths and narrower widths). Franta and Johnson 1986 indicated that the largest home center firms in terms of selling space and stock keeping units, which would include the majority of the Top 100 home

center firms, had a heavy DIY orientation with 75% or more of their sales coming from the DIY customer. A larger number of typical firms were being serviced by local suppliers such as sawmills. These local suppliers were more likely to supply boards in random lengths and widths with little remanufacturing for the home center market.

The most prevalent actual thickness stocked by typical firms and the Top 100 home centers was 3/4 inch followed distantly by one inch. Typical firms stocked a much wider range of thicknesses. A large number of these firms reported stocking unsurfaced boards which were 4/4, 5/4, 6/4, 8/4 and 12/4 thick.

Table 3 indicates hardwood board quality types which respondents stocked in their stores. The most commonly stocked quality type among responding typical firms was clear two faces, surfaced two sides (40.0%) followed by clear two faces, surfaced four sides (37.3%). The most commonly stocked quality type among the Top 100 home centers was clear two faces, surfaced four sides (70.6%). Typical firms and Top 100 home centers stocking patterns indicated the importance of having boards with clear faces. The Top 100 home centers were almost twice as likely to stock boards which were surfaced on all four sides. Once again, the above facts may potentially indicate that Top 100 home centers were more frequently serviced by established suppliers.

Approximately 21% of the typical firms stocked other quality types not listed in Table 3. These firms reported stocking boards which were surfaced two sides with one edge straight, FAS grade boards surfaced two sides, and custom surfacing of stocked boards. Many customers will not accept FAS lumber surfaced on two sides, since FAS lumber may not be totally clear or defect free. The quality of boards these customers,

particularly the DIYs, demand must go above and beyond the FAS lumber grading rule in terms of clear surface.

A significant difference between mean species importance in relationship to hardwood board sales at the .05 level of significance among typical firms and Top 100 home centers was detected using a one-way analysis of variance. ² Further analysis using the Tukey multiple comparison technique ³ indicated significant groupings of species. For typical firms, oak was significantly more important than all other species followed by birch, mahogany ⁴ and poplar (Table 4). For Top 100 home centers oak was significantly more important than all other species followed by poplar, birch and mahogany. Other species which firms reported stocking included alder, teak, cypress, basswood, cottonwood, purple heart and rosewood.

Hardwood Board Sales and Market Size

Table 5 gives a synopsis of hardwood board sales reported by responding firms. Since the sales range for typical firms during the 12 months preceding the survey was from \$1,000 to \$3 million, both the mean and the median values were reported. The median is the value where half of the reported values are above it and half are below it. All sales and market size estimates are based on the mean or average values.

Average hardwood board sales for a typical firm were approximately \$85,700 and approximately \$294,300 for a Top 100 home center during the 12 months preceding data collection. A one-way analysis of variance indicated no significant relationship ($p < .05$) among average regional board sales for typical firms. An average customer purchase for a typical firm was \$138 and \$65 for a Top 100 home center.

There was a considerable difference between the average customer purchase size between typical firms in comparison with Top 100 home centers. Average customer purchase size for typical firms was double the average customer purchase size for the Top 100 home centers. Particularly high purchase sizes were present among typical firms in the Northeast and South. Where the DIY was the most important customer, average purchase size was considerably less. This is due to the smaller size projects which DIYs undertake in comparison to those of professionals. Typical firms were catering more to the professional customer while Top 100 home centers were catering to the DIY customer. Sales of hardwood boards by 1991 among typical firms were predicted to increase approximately 74% ^s and 138% ^s among Top 100 home centers (Figure 2).

Table 6 lists minimum, average and maximum total board sales estimates for typical firms based on 95% confidence intervals about the average sales estimate and percentage of typical firms who sold boards. Table 7 lists the same for the Top 100 home centers. To obtain an approximate estimate of the total market size for hardwood boards, the two average estimates were combined.

	<u>Dollars</u>	<u>% of Market</u>
Typical Firms	\$338,258,000	93.4
Top 100 Home Centers	\$ 23,838,000	6.6
	-----	-----
Estimate of Total Market Size	\$362,096,000	100%

Improvements for the Hardwood Board Product Line

Suggestions for improving the hardwood board product line among responding firms included modifying the existing product by merchandising standard widths and lengths, provide more product literature about hardwood boards and customer projects and improve quality by reducing knots, splits, etc.

Hardwood Panel Product Line

Hardwood plywood was the most commonly stocked panel product with hardwood veneer-overlay panels a distant second among typical firms and Top 100 home centers (Table 8). Plywood far exceeded the other panel types and few firms were stocking edge-glued panels. The most prevalent length stocked among typical firms and Top 100 home centers was 8 feet. However, a higher percentage of the Top 100 home centers stocked 2, 4 and 6 feet lengths than typical firms and no responding Top 100 home center stocked uneven lengths.

Forty-eight inches is the most prevalent width stocked by both typical firms and Top 100 home centers. However, 12 and 24 inch widths were stocked by approximately 25% of the Top 100 home centers. A higher percentage of typical firms from the northeastern region stocked 12 and 24 inch widths than the other regions.

Hardwood panel thicknesses ranging from 1/2 inch to 1 1/2 inch were most commonly stocked followed by a thickness of less than 1/2 inch for both typical firms and the Top 100 home centers.

An analysis of variance ($p < .05$) indicated a significant difference between mean species importance for both typical firms and Top 100 home centers (Table 9). The Tukey test indicated that for typical firms,

oak and birch were significantly more important than all other species followed by mahogany and walnut. For Top 100 home centers, oak was significantly more important than all other species followed by birch, mahogany and ash. Other panel species stocked by several responding firms included teak and alder.

Hardwood Panel Sales and Market Size

Table 10 gives a synopsis of hardwood panel sales reported by responding firms, both the mean and median values are reported. Average hardwood panel sales for a typical firm were approximately \$54,700 and approximately \$382,700 for a Top 100 home center during the 12 months preceding data collection. An average customer purchase size of hardwood panels for a typical firm was \$135 and \$164 for a Top 100 home center.

Tables 6 and 7 lists minimum, average and maximum panel sales estimates for all typical firms and for Top 100 home centers. To obtain an approximate estimate of the total market size for hardwood panels, the two average estimates were combined.

	<u>Dollars</u>	<u>% of Market</u>
Typical Firms	\$249,432,000	89.8%
Top 100 Home Centers	\$ 28,320,000	10.2%
	-----	-----
Estimate of Total Market Size	\$277,752,000	100%

Improvements for the Hardwood Panel Product Line

Suggestions for improving the hardwood panel product line among responding firms included improving quality by reducing the number of

voids in the inner plies, developing a standardized grading system, improving the appearance of panels by better matching face veneers and informing the customer about hardwood panel uses.

The Hardwood Moulding Product Line

Hardwood moulding types which respondents stocked in their stores are listed in Table 11. The four most common moulding types stocked by responding typical firms and Top 100 home centers were:

<u>Typical Firms</u>	<u>Top 100 Home Centers</u>
1. Base (84%)	1. Base (97%)
2. Door/window casing (81%)	2. Cove (97%)
3. Cove (71%)	3. Chair rail (90%)
4. Outside corner (67%)	4. Door/window casing (90%)

Top 100 home centers were stocking a wider variety of moulding types than typical firms. Other moulding types stocked by respondents included special moulding for boats, full round, panel moulding, and custom design moulding. A higher percentage of typical firms stocked these moulding types than Top 100 home centers. Over 28% of the responding typical firms from the western region stocked moulding types not listed. This may indicate that moulding usage in the West is different than the other regions.

The most prevalent length stocked among typical firms and Top 100 home centers was 8 feet. A higher percentage of typical firms tended to stock lengths greater than 8 feet while a higher percentage of Top 100 home centers tended to stock lengths 8 feet and shorter.

Once again, an analysis of variance ($p < .05$) detected significant differences in mean species importance for both the typical firms and Top 100 home centers. The Tukey multiple comparison technique

indicated significant species groupings. For typical firms, oak was significantly more important than all other species followed by mahogany, birch and poplar (Table 12). For Top 100 home centers, oak was significantly more important followed by mahogany, poplar and birch.

Hardwood Moulding Sales and Market Size

Table 13 gives a synopsis of hardwood moulding sales reported by responding firms. Average hardwood moulding sales for a typical firm were approximately \$45,900 and approximately \$316,500 for a Top 100 home center during the 12 months preceding data collection. On a regional basis, a one-way analysis of variance test indicated no significant difference between average moulding sales. Average customer purchase of hardwood moulding for a typical firm was \$248 and only \$53 for a Top 100 home center. An average purchase for typical firms was almost five times higher than Top 100 home centers indicating again that typical firms were likely catering to the professional customer while Top 100 home centers were likely catering to the DIY customer.

Once again, Tables 6 and 7 list minimum, average and maximum moulding sales estimates for typical firms and Top 100 home centers. The average estimates from each table were combined to obtain an approximate estimate of the total market size for hardwood moulding.

	<u>Dollars</u>	<u>% of Market</u>
Typical Firms	\$160,099,000	86.5%
Top 100 Home Centers	\$ 25,004,000	13.5%
Estimate of Total Market Size	\$185,103,000	100%

Improvements for the Hardwood Moulding Product Line

Suggestions for improving the hardwood moulding product line among responding firms included increasing the variety of hardwood moulding styles and species and the manufacturing of consistent lengths. For example, if a home center buys 96 inch moulding, all pieces should be 96 inches and should not range from 95 to 97 inches. Also, splits, twists and chipped moulding need to be prevented.

The Hardwood Flooring Product Line

Strip flooring was the most prevalent flooring type stocked by typical firms and parquet flooring was the most prevalent flooring type stocked by Top 100 home centers (Table 14). Sixty percent of the responding Top 100 home centers also stocked strip and plank flooring. A larger percentage of the Top 100 home centers stocked all three flooring types than typical firms. On a regional basis, the West had the highest percentage of typical firms stocking parquet and plank flooring while the Northeast had the highest percentage of firms stocking strip flooring. Customer preferences seem to differ between the two regions.

Oak is stocked by approximately 93% of both responding typical firms and Top 100 home centers (Table 15). Approximately 14% of the responding typical firms stocked maple flooring along with small quantities of birch and pecan. Approximately 7% of the Top 100 home centers stocked walnut flooring. Twenty percent of the responding Top 100 home centers who sold hardwood flooring stocked teak and other exotic species. The northeastern region had the highest percentage (25%) of typical firms stocking maple flooring.

Hardwood Flooring Sales and Market Size

Table 16 gives a synopsis of hardwood flooring sales. Average hardwood flooring sales for a typical firm was approximately \$42,800 and approximately \$264,500 for a Top 100 home center during the 12 months preceding data collection. A one-way analysis of variance test indicated a significant difference ($p < .05$) between mean regional flooring sales estimates for typical firms. The Tukey multiple comparison technique ($p < .05$) indicated that mean flooring sales for western firms were significantly greater than mean flooring sales for northeastern and north central firms. However, the statistical test may be misleading due to the small number of responses (10) from typical western firms who sold hardwood flooring and because the western region had the lowest stocking rate for flooring. An average customer purchase of hardwood flooring for a typical firm was \$694 and \$437 for a Top 100 home center.

Tables 6 and 7 contain minimum, average and maximum market sales estimates for hardwood flooring for typical firms and Top 100 home centers. To obtain an approximate estimate of the total market size for hardwood flooring the two average estimates were combined.

	<u>Dollars</u>	<u>% of Market</u>
Typical Firms	\$173,511,000	91.1%
Top 100 Home Centers	\$ 16,928,000	8.9%
	-----	-----
Estimate of Total Market Size	\$190,439,000	100%

Improvements for the Hardwood Flooring Product Line

Suggestions for improving the hardwood flooring product line among responding firms included longer lengths for strip and plank flooring,

increased availability of product information literature, increased advertising and promotions, improved quality such as uniform moisture content, uniform thickness and better finishing characteristics.

SUMMARY/CONCLUSIONS

Merchandising strategies for hardwood specialty product lines varied considerably between typical firms and Top 100 home centers. Top 100 home centers were merchandising standardized product lines, for example, boards in specific lengths, widths and thicknesses. A large percentage of typical firms were not. The distinction is due to different hardwood specialty product manufacturers catering to these home centers and the different customers attracted to individual home centers. The Top 100 home centers want high quality, convenient products to suit the needs of their hardwood customers, mainly the DIY.

The home center market for the four major hardwood product lines had estimated retail sales exceeding \$1 billion in 1986. Average sales for all hardwood products per respondent were considerably higher for Top 100 home centers in comparison to typical firms. This is due to the higher number of stores operated by individual Top 100 home centers in comparison to typical firms and due to more active merchandising strategies which attracted more hardwood customers into their stores to make up for the smaller average purchase sizes.

Overall, relatively few regional differences existed between product line characteristics among typical firms. However, the northeastern and western regions had several distinctive characteristics. Typical firms from the northeastern region were more

actively pursuing hardwood specialty product lines, particularly boards and panels, as evidenced by high purchase sizes and differences in stocking characteristics. The western region had distinctive merchandising characteristics for moulding and flooring. These differences result from different customer preferences in different regions, a phenomenon well known in other wood product categories.

Oak is "King" in the home center marketplace. Oak was ranked approximately 1.75 times more important than all other species for hardwood boards and mouldings by hardwood specialty buyers. Birch, mahogany and poplar are the species following oak in importance, but none of these species come close to oak in this marketplace.

Point-of-purchase literature is needed for hardwood specialty products at the home center marketplace. With the large number of DIY customers attracted to home centers, information describing the versatility and proper uses of hardwood specialty products is a must. These customers need to be educated and point-of-purchase literature is an effective method to accomplish this problem.

Suggestions for improving hardwood product lines center around improving quality. The appearance of hardwood products is especially important in this marketplace. Consequently, improving quality ultimately means that the general appearance of the product needs improved. Defects such as knots and splits which detract from the product's appearance are unacceptable.

FOOTNOTES

¹The Chi-square test for independence is a nonparametric test whose assumptions are less stringent than for parametric tests (Hinkel et al. 1979). Assumptions include that variables are broken into mutually exclusive categories, each response logically falls into one of the defined categories and the responses are independent (Churchill 1983).

²The one-way Analysis of Variance is a common statistical procedure used in behavioral science research. This statistical procedure involves the analysis of mean scores of one independent variable consisting of more than two levels ($k > 2$). Assumptions according to Hinkel et al. 1979 include: 1) The observations are random and independent samples from the population. 2) Measurement of the dependent variable is on at least an interval scale. 3) The populations from which the samples are selected are normally distributed. 4) The variance of the populations are equal.

³The Tukey test is a post hoc multiple comparison technique used to compare means of k -groups only after a significant difference between the means was detected using an analysis of variance test. Level of significance for each comparison was set at .05. The Tukey test was chosen because this method maintains the Type I error rate (probability of rejecting the null hypothesis when it is true) at the .05 level (Hinkel et al. 1979).

⁴Mahogany represents all varieties of mahogany and luan throughout this article.

⁵Sales estimates for hardwood boards varied considerably among firms; consequently, the highest current sales and the highest future sales estimates were removed prior to calculating this percentage in order to give a more conservative estimate of sales growth.

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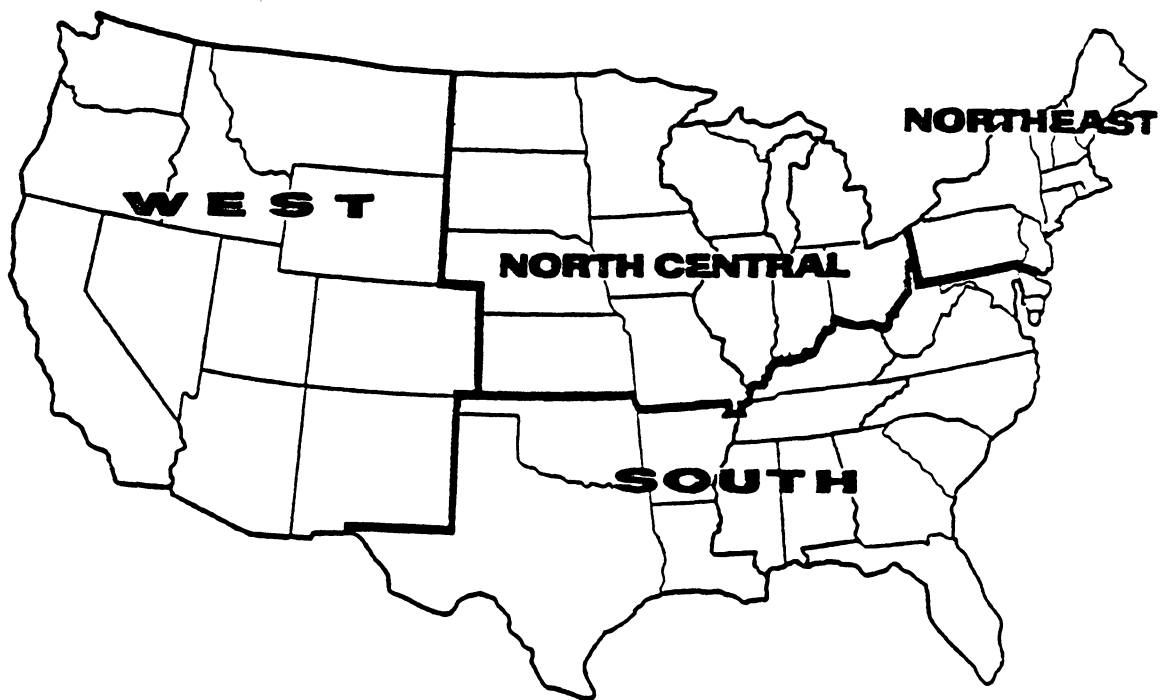


Figure 1. U.S. Bureau of Census' regional breakdown of the United States.

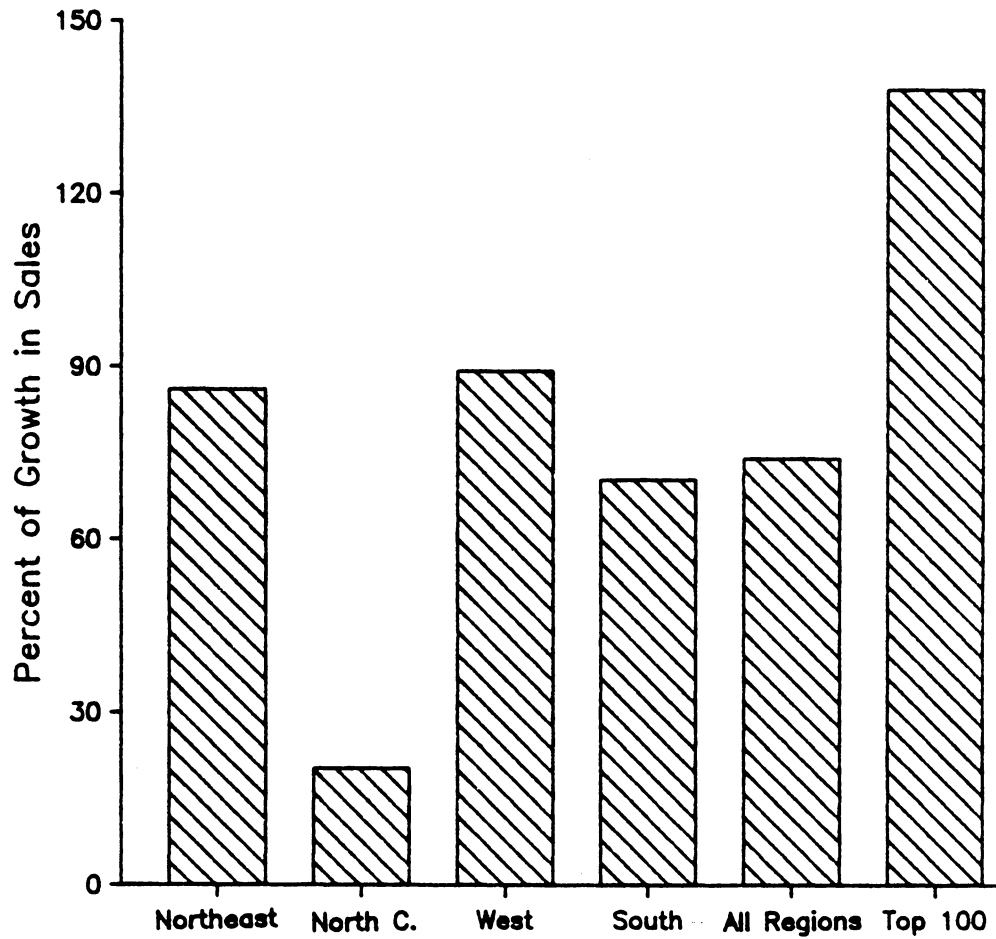


Figure 2. Average sales increase estimates by respondents for hardwood boards by 1991.

Table 1. Hardwood board lengths in feet stocked by respondents.

Lengths	Percent of respondents stocking specified lengths ^a					
	NE (53) ^b	NC (95)	W (44)	S (59)	All Regions (251)	TOP100 (34)
3'	32.0%	16.7%	26.1%	21.7%	23.6%	53.6%
4'	33.3	27.8	47.8	30.4	34.0	82.1
5'	33.3	25.0	43.5	26.1	31.1	60.7
6'	66.7	77.8	60.9	52.2	66.0	96.4
7'	41.7	44.4	52.2	17.4	39.6	39.3
8'	100.0	100.0	95.6	78.3	94.3	64.3
10'	79.2	94.4	78.3	60.9	80.2	25.0
12'	79.2	97.2	60.9	69.6	79.2	25.0
14'	54.2	77.8	34.8	43.5	55.7	21.4
16'	58.3	66.7	21.7	34.8	48.1	21.4
> 16'	04.2	02.8	08.7	04.3	04.7	07.1
Random Length	54.7	62.1	47.7	61.0	57.9	17.6

^aRespondents which reported stocking random lengths are not represented in these percentages except where stated random.

^bNumber of responses per category.

Table 2. Hardwood board widths in inches stocked by respondents.

Widths	Percent of respondents stocking specified widths ^a					
	NE (53) ^b	NC (95)	W (44)	S (60)	All Regions (252)	TOP100 (34)
2"	30.8%	44.7%	50.0%	27.3%	38.1%	78.6%
3"	23.1	28.9	44.4	22.7	28.6	60.7
4"	73.1	81.6	66.7	54.5	70.5	96.4
5"	30.8	21.0	55.6	27.3	30.5	10.7
6"	96.2	100.0	100.0	90.9	97.1	100.0
7"	26.9	23.7	61.1	18.2	30.5	07.1
8"	88.5	97.4	100.0	90.9	94.3	96.4
9"	26.9	26.3	61.1	13.6	29.5	03.6
10"	84.6	76.3	94.4	68.2	79.0	57.1
12"	76.9	78.9	55.6	63.6	70.5	78.6
> 12"	15.4	10.5	05.6	13.6	12.4	07.1
Random Width	50.9	60.0	59.1	63.3	58.5	14.7

^a Respondents which reported stocking random widths are not represented in these percentages except where stated random.

^b Number of responses per category.

Table 3. Hardwood board quality types stocked by respondents.

Quality Type	Percent of respondents stocking specific quality types ^a					
	NE (53) ^b	NC (95)	W (44)	S (62)	All Regions (254)	TOP100 (34)
Clear two faces surfaced 4 sides	45.3%	37.9%	29.5%	35.5%	37.3%	70.6%
Clear two faces surfaced 2 sides	39.6	43.2	43.2	33.9	40.0	11.8
Clear one face surfaced 4 sides	15.1	16.8	00.0	09.7	12.2	26.5
Clear one face surfaced 2 sides	17.0	22.1	22.7	19.4	20.4	08.8
No clear faces surfaced 2 sides	05.7	07.4	04.5	12.9	07.8	02.9
Other types	26.4	13.7	20.5	27.4	20.8	00.0

^aMany firms reported stocking more than one quality type.

^bNumber of responses per category.

Table 4. Hardwood board species ranked by respondents according to mean sales importance (1 = not at all important, 5 = extremely important).

Species	Average ranking					
	NE (46) ^a	NC (84)	W (38)	All S (51)	Regions (219)	TOP100 (31)
Ash	1.60	1.48	1.93	2.26	1.77	1.87
Birch	2.48	2.78	2.82	2.87	2.75	2.38
Cherry	2.07	1.84	1.74	1.94	1.90	1.68
Mahogany	2.40	2.80	2.82	2.57	2.66	2.34
Maple	2.35	2.14	1.91	2.92	2.19	1.94
Oak	4.39	4.56	4.43	4.33	4.45	4.53
Poplar	2.38	2.09	1.61	2.59	2.21	2.94
Walnut	1.89	2.04	2.39	2.40	2.14	1.70

^aNumber of responses per category.

Table 5. Sales estimates in dollars for hardwood boards.

		NE	NC	W	S	All Regions	TOP100
Average Sales ^a	Number of Responses	36	74	31	50	191	25
	Mean	49,972	69,622	130,355	108,660	85,703	294,320
	Median	17,500	15,000	12,000	13,500	15,000	120,000
Average Sales in 1991	Number of Responses	36	71	31	50	188	25
	Mean	90,333	95,648	224,839	216,920	147,614	770,200
	Median	25,000	20,000	20,000	25,000	20,000	180,000
Average Customer Purchase Size ^a	Number of Responses	34	76	31	47	188	19
	Mean	248.03	90.41	60.03	188.36	138.30	65.00
	Median	90.00	50.00	30.00	75.00	60.00	40.00

^aSales estimates and purchase sizes are for the 12 months preceding data collection.

Table 6. Minimum/maximum sales estimate ranges for typical firms based on 95% confidence intervals.

95% Confidence Range	Sales Value(\$)	% of Firms ^a Selling Products	# of Firms in ^b Study Sample Selling Products	Minimum/Maximum Range(\$)
<u>Boards</u>				
Low ^c	44,800	61.7	3673	164,550,400
Mean ^d	85,700	66.3	3947	338,257,900
High ^e	126,600	70.9	4221	534,378,600
<u>Panels</u>				
Low	20,000	72.5	4316	86,320,000
Mean	54,700	76.6 ^f	4560	249,432,000
High	89,300	80.7	4804	428,997,200
<u>Moulding</u>				
Low	24,800	53.8	3203	79,434,000
Mean	45,900	58.6	3488	160,099,200
High	67,000	63.4	3774	253,235,400
<u>Flooring</u>				
Low	21,400	63.6	3786	81,020,400
Mean	42,800	68.1	4054	173,511,200
High	64,100	72.6	4322	277,040,200

^aPercentages were obtained from data collected from questionnaire.

^bNumbers were derived from the total number of firms listed in The 1985 Directory of Home Center Operators & Hardware Chains minus the Top 100 home centers multiplied by the percent of firms who sold the specified product.

^cThe number represents the lowest value for a 95% confidence interval.

^dMean sales estimates for individual products were taken from Table 5.

^eThe number represents the highest value for a 95% confidence interval.

^fThis value represents only firms who sold hardwood plywood, the most widely stocked hardwood panel product.

Table 7. Minimum/maximum sales estimate ranges for Top 100 home centers based on 95% confidence intervals.

95% Confidence Range	Sales Value(\$)	% of Top 100 ^a Home Centers Selling Products	Minimum/Maximum Range(\$)
<u>Boards</u>			
Low ^b	150,800	72	10,857,600
Mean ^c	294,300	81	23,838,300
High ^d	437,800	90	39,402,000
<u>Panels</u>			
Low	207,600	64	13,286,400
Mean	382,700	74 ^e	28,319,800
High	557,900	84	46,863,600
<u>Moulding</u>			
Low	22,600	69	1,559,400
Mean	316,500	79	25,003,500
High	610,300	88	53,706,400
<u>Flooring</u>			
Low	32,700	53	1,733,100
Mean	264,500	64	16,928,000
High	496,300	76	37,718,800

^aPercentages were obtained from data collected from questionnaire.

^bThe number represents the lowest value for a 95% confidence interval.

^cMean sales estimates for individual products were taken Table 5.

^dThe number represents the highest value for a 95% confidence interval.

^eThis value represents only firms who sold hardwood plywood, the most widely stocked hardwood panel product.

Table 8. Hardwood panel products stocked by respondents.

Panel Products	Percent of respondents stocking specific products					
	NE (49) ^a	NC (91)	W (43)	S (82)	All Regions (265)	TOP100 (31)
Hardwood veneer- overlay panels	40.8%	48.4%	39.5%	34.1%	41.4%	35.5%
Edge-glued hardwood panels	04.1	06.6	11.6	04.9	06.4	06.5
Hardwood plywood	83.7	89.0	93.0	86.6	87.8	96.8
Other types	00.0	00.0	00.0	03.7	01.1	03.2

^aNumber of responses per category.

Table 9. Hardwood panel species ranked by respondents according to mean sales importance (1 = not at all important, 5 = extremely important).

Species	Average ranking					
	NE (40) ^a	NC (80)	W (37)	S (65)	All Regions (222)	TOP100 (26)
Ash	1.50	1.56	2.00	2.54	1.91	2.00
Birch	4.28	3.54	3.71	4.31	3.95	3.47
Cherry	2.08	1.86	1.65	1.66	1.80	1.29
Mahogany	2.51	2.85	2.74	2.52	2.68	2.52
Maple	1.81	1.46	1.49	1.66	1.58	1.50
Oak	4.02	4.30	4.29	3.42	3.99	4.28
Poplar	1.46	1.33	1.34	1.37	1.37	1.69
Walnut	2.26	2.03	2.03	1.82	2.01	1.54

^aNumber of responses per category.

Table 10. Sales estimates in dollar for hardwood panel products.

		NE	NC	W	S	All Regions	TOP100
Average ^a Sales	Number of Responses	31	63	27	57	178	15
	Mean	31,774	26,206	147,600	58,842	54,669	382,733
	Median	18,000	8,000	10,000	13,000	10,000	250,000
Average ^a Customer Purchase Size	Number of Responses	28	62	28	56	174	13
	Mean	163.36	110.18	99.54	165.39	134.71	164.54
	Median	80.00	80.00	80.00	100.00	100.00	75.00

^aSales estimates and purchase sizes are for the 12 months preceding data collection.

Table 11. Hardwood moulding types stocked by respondents.

Moulding Type	Percent of respondents stocking moulding types					
	NE (35) ^a	NC (91)	W (35)	S (52)	All Regions (213)	TOP100 (30)
Base	74.3%	95.6%	88.6%	67.3%	84.1%	96.7%
Chair rail	57.1	78.0	54.3	55.8	65.4	90.0
Cove	62.9	82.4	74.3	53.8	71.0	96.7
Crown	54.3	51.6	51.4	55.8	53.3	76.7
Shelf edge	31.4	25.3	42.9	21.1	28.0	46.7
Door/window casing	71.4	97.8	77.1	61.5	81.3	90.0
Door/window stop	48.6	84.6	54.3	44.2	64.0	86.7
Quarter round	48.6	51.6	62.9	42.3	50.9	63.3
Half round	08.6	18.7	31.4	15.4	18.2	40.0
Picture framing	14.3	36.3	22.9	30.8	29.0	40.0
Base shoe	48.6	79.1	51.4	63.5	65.9	70.0
Inside corner	54.3	59.3	68.6	48.1	57.5	80.0
Outside corner	57.1	73.6	80.0	51.9	66.8	86.7
Other types	08.6	09.9	28.6	18.0	14.6	03.3

^aNumber of responses per category.

Table 12. Hardwood moulding species ranked by respondents according to mean sales importance (1 = not at all important, 5 = extremely important).

Species	Average ranking					
	NE (32) ^a	NC (77)	W (27)	S (39)	All Regions (175)	TOP100 (24)
Ash	1.19	1.27	1.64	2.34	1.57	1.62
Birch	1.64	2.31	1.75	2.13	2.07	1.63
Cherry	1.39	1.36	1.29	1.49	1.38	1.09
Mahogany	2.00	2.68	2.72	1.73	2.37	2.12
Maple	1.42	1.44	1.36	1.53	1.44	1.09
Oak	4.28	4.46	4.62	4.04	4.36	4.33
Poplar	2.00	1.74	1.56	2.00	1.82	2.00
Walnut	1.67	1.39	1.44	1.51	1.48	1.04

^aNumber of responses per category.

Table 13. Sales estimates in dollars for hardwood moulding.

		NE	NC	W	S	All Regions	TOP100
Average ^a Sales	Number of Responses	24	61	21	38	144	17
	Mean	12,792	60,754	56,333	38,421	45,938	316,471
	Median	5,000	15,000	9,000	9,000	10,000	100,000
Average ^a Customer Purchase Size	Number of Responses	17	55	21	31	124	13
	Mean	144.41	331.56	62.71	286.36	248.04	53.00
	Median	100.00	100.00	40.00	100.00	100.00	10.00

^aSales estimates and purchase sizes are for 12 months preceding data collection.

Table 14. Hardwood flooring types stocked by respondents.

Types	Responses in percents					
	NE (44) ^a	NC (62)	W (18)	S (68)	All Regions (192)	TOP100 (15)
Parquet	25.0%	29.0%	55.6%	30.9%	31.1%	66.7%
Plank	29.5	26.2	44.4	30.9	30.2	60.0
Strip	90.9	70.5	66.7	75.0	76.6	60.0
Other types	00.0	00.0	11.1	05.9	03.1	00.0

^aNumber of responses per category.

Table 15. Hardwood flooring species stocked by respondents.

Species	Responses in percents					
	NE (44) ^a	NC (66)	W (19)	S (67)	All Regions (196)	TOP100 (15)
Oak	97.7%	89.4%	100.0%	94.0%	93.9%	93.3%
Maple	25.0	07.6	15.8	11.9	13.7	00.0
Beech	00.0	00.0	00.0	03.0	01.0	00.0
Birch	04.5	01.5	00.0	04.5	03.0	00.0
Pecan	02.3	00.0	05.3	06.0	03.0	00.0
Walnut	00.0	01.5	10.5	03.0	02.5	06.7
Other species	11.4	03.0	00.0	05.9	05.5	20.0

^aNumber of responses per category.

Table 16. Sales estimates in dollars for hardwood flooring.

		NE	NC	W	S	All Regions	TOP100
Average ^a Sales	Number of Responses	38	48	10	52	148	10
	Mean	33,921	16,417	167,900	49,500	42,770	264,500
	Median	20,000	5,500	5,000	10,000	9,500	67,500
Average ^a Customer Purchase Size	Number of Responses	36	44	8	54	142	8
	Mean	807.86	500.59	390.25	820.43	693.90	437.00
	Median	700.00	400.00	400.00	550.00	500.00	250.00

^aSales estimates and purchase sizes are for 12 months preceding data collection.

THE HOME CENTER MARKETPLACE FOR HARDWOOD SPECIALTY PRODUCTS

(For potential submission to the Forest Products Journal)

ABSTRACT

Another market for hardwood specialty products, the home center market, is available to hardwood manufacturers if they understand it. The purpose of this article, the second of a two-part series concerning hardwood specialty products in the home center marketplace, is to provide a clearer understanding of the home center market and the future direction of this market regarding hardwood specialty products.

The home center market is a fragmented market with a high proportion of home centers having annual sales of less than \$3 million and owning only one store. The most active region in terms of the percentage of firms selling specific hardwood products was the Northeast and the least active was the South. Future demand among ten hardwood products is predicted to be highest for moulding, plywood and boards and least for edge-glued panels and parquet flooring. Future demand in the urban and suburban market segments is predicted to be higher than the rural market segment. Important hardwood customer types were the Do-It-Yourselfer and the professional-remodeler. Customer projects included cabinets and shelving. High price and poor quality were the most prevalent customer complaints while lack of reliable suppliers and inconsistent quality were important purchasing difficulties for hardwood specialty buyers.

INTRODUCTION

A new market is emerging for manufacturers of some hardwood products; the home center market. Maximizing the opportunities in this market will require knowledge concerning past and current activity in the home center market. Consequently, this article characterizes the home center market in general, the current merchandising of hardwood specialty products and presents future demand trends for hardwood specialty products in the home center market.

BACKGROUND

In 1980, there were 92 million housing units in the United States. Of the 92 million, 45 million were single-family houses 20 or more years old, which made them prime candidates for spending on upkeep and improvement (Rich 1984). As the average age of housing units continues to increase, the repair and remodeling market continues to grow. Annual expenditures for all types of repairs, additions and replacements derived from residential property owners grew by 188 percent during the 1970's (Rich 1981).

The home improvement market, which incorporates a large part of the repair and remodeling market, is predicted to grow at a compound rate of at least seven percent during the years 1986 to 1990 (Payless 1986). Major categories of the repair and remodeling market include: exterior remodeling, room additions, room remodeling, garage/porch conversion or additions, and room furnishings (Rich 1982). All of the categories require a significant proportion of wood. With projected sales for the

repair and remodeling market for 1990 at \$122.4 billion, the sale of lumber and wood products should increase proportionately (Anon 1985).

Evolving from the repair and remodeling market are the one-stop home improvement centers which cater specifically to the individual or Do-It-Yourself (DIY) customer. The local retail lumber dealers of years past had to diversify and change their marketing strategies to meet the changing demands placed on them or else they perished. As seen in Figure 1, home center retail sales have grown dramatically between the years 1975 and 1985 (Franta & Johnson 1986). Of the \$62.2 billion in home center sales in 1985, 29% was generated from lumber and an additional 11% from doors, windows and millwork (Franta & Johnson 1986). In 1985, the total home improvement market reached \$76 billion with nearly \$45.6 billion (60%) representing the DIY market segment (Payless 1986).

The retail side of the forest products industry is controlled by retail firms which have little manufacturing capabilities (Sinclair 1986). In 1985, there were 9,619 retail firms representing 23,938 individual stores (Franta & Johnson 1986). The current trend among the larger retail firms is the opening of new stores with larger amounts of floor space. Scotty's, for example, is currently opening new stores that consist of 49,000 square feet of shopping space and merchandise approximately 14,000 items (Scotty's 1986). In comparison, a typical firm's store averages 14,880 square feet of shopping space (Franta and Johnson 1986).

The Do-It-Yourself Customer

The DIY boom has created a favorable market segment for hardwood specialty products. As the cost for professional help continues to rise and the difficulty of finding professional help to do small jobs increases, more homeowners are turning to themselves to accomplish needed repairs and remodeling (Anon 1985). In fact, 85 percent of homeowners of single-family dwellings have one or more do-it-yourselfers in their household (Franta 1981). Therefore, as the DIY market increased, marketing and advertising strategies used by home centers added to the overall success of the repair and remodeling market. The larger firms such as Scotty's and Lowe's placed particular emphasis on proper advertising and promotional strategies to improve their identity in the marketplace.

According to a 1978 survey conducted by Home Center magazine, 76.3% of home center customers are between 20 and 49 years old, 82.7% of the customers are homeowners, 70.1% are college-educated, and 61.9% of the customers handle 80% or more of their home improvement projects themselves. The important conclusion of this data is that home center customers are relatively young and affluent (Anon 1979). Continued growth of the DIY market will have an impact on the growth of home center sales in general. During the years 1984-85, DIY sales grew \$3.5 billion and accounted for 50% of the total 1985 home center sales (Franta & Johnson 1986). The growth of the DIY market will depend on the growth in number of households, the growth in household income, the age distribution of the heads of households, and the housing turnover rate (Anon 1985).

As home centers emerged, DIY customers evolved, and the repair and remodeling market grew, new products and services were developed to meet these new and changing demands. Remanufactured hardwood lumber for the home center market became one of these new product lines. The process involves kiln-drying hardwood lumber and remanufacturing it into specific board widths and lengths. The lumber is then surfaced either on two, three, or four sides and distributed to home center stores for retail sale. Home center stores may use hardwood lumber and specialty products in their merchandise gap strategy where retailers specifically plan their merchandise assortments to fill unmet consumer needs (Mason and Mayer 1984).

SUMMARY OF METHODS

Hardwood specialty buyers representing 1500 home centers and lumber yards and the Top 100 home centers according to 1985 sales were surveyed by mail during the months of October and November 1986. The 1500 home centers and lumber yards were stratified according to the Bureau of Census' regional breakdown of the United States. The home centers and lumber yards represented by these hardwood specialty buyers were randomly selected in each stratum from The 1985 Directory of Home Center Operators and Hardware Chains (Friedman 1985). A total of 443 usable surveys were returned, yielding a 42% response rate for the Top 100 home centers and a 27% response rate for the 1500 sample. A more detailed description about the methodology behind the study and the questionnaire was given in the initial article, "Hardwood Specialty Products: A Billion Dollar Product Line For Home Center Retailers."

Terms and Procedures

The results from the mailing to 1500 home centers and lumber yards will be referred to as the results for typical firms. Tables include regional responses from the results for the typical firms with the following abbreviations: Northeast (NE), North Central (NC), West (W), South (S). Results for All Regions follow with results from the Top 100 home centers last.

RESULTS AND DISCUSSION

Home Center Characteristics

Home centers operating in the U.S. vary considerably according to their annual sales, number of stores owned and customer types attracted to their stores. Approximately 60% of responding typical firms had 1985 retail sales of less than \$3 million (Table 1). Conversely, 97.6% of the Top 100 home centers had 1985 retail sales in excess of \$25 million. Approximately 76% of the responding typical firms owned one retail store while approximately 97% of the Top 100 home centers owned two or more stores (Table 2).

The home center market is a fragmented market with many small firms owning one store and having sales of less than \$3 million. There are relatively few large home centers. No individual or combination of individual home centers truly dominate this market. For example, the largest home center firm, Lowe's, had 1985 sales of \$2.1 billion (Lowe's 1986); however, this amount represents only 3.4% of the \$62.2 billion home center sales for 1985 (Franta & Johnson 1986).

Customer Types

Customer types (urban, suburban and rural) who were attracted to respondents' stores and generated the most sales for them varied considerably (Table 3). Typical firms attracted approximately equal number of customers from all three population groups. However, 73% of the Top 100 home centers attracted mostly urban customers. Among typical firms the Chi-square test for independence ¹ indicated a significant difference at the .05 level between customer population groups and regional location. A higher percentage of northeastern firms attracted customers from suburban areas while a higher percentage of north central firms attracted customers from rural areas. A higher percentage of western firms attracted customers from urban areas while southern firms attracted approximately equal number of customers from each population group. This fact is important for manufacturers of hardwood specialty products since product demand varied depending on the customer population group attracted to home centers' stores. Notice that the largest home centers operated in urban and suburban areas close to large population masses, while the smaller home centers were relatively evenly scattered across all three population groups.

The Kruskal-Wallis one-way analysis of variance test ² indicated a significant difference at the .05 level between retail sales and customer population groups (urban, suburban or rural). The data indicates that firms which attracted mostly urban customers tended to have higher annual sales than firms which attracted either suburban or rural customers and that firms which attracted mostly suburban customers tended to have higher annual sales than firms which attracted rural

customers. Thus, hardwood manufacturers' potential market may be greatest among home centers operating in urban and suburban areas.

Promotional Strategy

To attract specific customer types and to maximize sales, home centers employ a variety of promotional strategies. Consequently, respondents' beliefs concerning the most effective in-store promotional strategy for hardwood products varied considerably. Nevertheless, the general consensus among typical firms and the Top 100 home centers was that the most effective strategy is a combination of an attractive display rack and informed salespersons. In order to maximize sales hardwood manufacturers should develop a strong relationship with the home centers they service by providing display racks and by providing training and product literature for their salespersons.

Merchandising of Hardwood Products

Table 4 lists the percentages of responding firms merchandising eight hardwood products. At least 58% of typical firms and Top 100 home centers sold hardwood boards, flooring, moulding and plywood. A significant regional difference ($p < .05$) existed between the percentage of typical firms who sold hardwood boards, moulding and flooring but not for plywood. The test indicated that a higher percentage of typical firms who sold hardwood boards were located in the northeast (79.1%), north central (74.8%) and western regions (74.1%), while fewer firms located in the southern region (49.7%) sold the product. A higher percentage of firms in the northeast (86.6%) and north central region (71.0%) sold hardwood flooring, while fewer firms located in the western (48.3%) and southern region (65.0%) sold the product. A higher

percentage of typical firms located in the northeast (68.7%), north central (74.0%) and western regions (65.5%) sold hardwood moulding, while fewer firms located in the southern region (37.1%) sold the product.

Regional variations were probably due to differences in customer preferences as well as the availability of these products from hardwood product manufacturers who cater to the home center market. Taking all eight products listed in Table 4 into consideration reveals that the northeastern region is most actively involved with the merchandising of these products followed by the north central, western and southern region, respectively. The southern firms were by far the least active with respect to merchandising of hardwood products.

Hardwood Specialty Buyers' Perceptions Towards the Merchandising of Hardwood Products

Table 5 indicates responding firms agreement/disagreement on statements concerning the merchandising of hardwood boards and related products. Of the six statements, responding typical firms and Top 100 home centers agreed the most with the statement that customers purchased hardwood boards based on quality rather than on price. Surprisingly, this agreement was almost universal regardless of geographic regions. The second statement which respondents were in most agreement with is that hardwood panels, either edge-glued, plywood or veneer-overlay, are a good complementary product for hardwood boards. However, responding firms disagreed with the statement that customers have a need for edge-glued hardwood panels wider than 12 inches. It was found that firms agreed that they sold hardwood moulding and panels to basically the same customer types as hardwood boards.

Top 100 home centers did not believe that displaying hardwood boards was a problem in their stores; however, responding typical firms tended to agree with the statement. This is probably due to the fact that typical firms were supplied by local suppliers who generally offer random length/width material with no display rack (Cesa & Sinclair 1988). The Top 100 home centers were probably buying their hardwood board products from an established supplier who provides a display rack which is designed for boards of specific widths and lengths. It seems apparent that there is a need among typical firms for an appropriate display strategy.

Future Demand for Ten Hardwood Products Based on Regional Location

Table 6 presents detailed data concerning the future demand of ten hardwood products. Future demand was predicted by respondents to be relatively stable for the four primary hardwood product categories as shown in Figure 2. However, future demand for these products varied depending on several characteristics. A one-way analysis of variance ³ indicated significant differences ($p < .05$) in relationship to future demand of the listed products within the regions. The Tukey multiple comparison technique ⁴ indicated significant groupings for the products.

Northeastern hardwood specialty buyers future demand ranking was significantly higher for hardwood moulding and significantly lower for parquet flooring and edge-glued panels ⁵ in relationship to all other products. North central hardwood specialty buyers future demand ranking was significantly higher for hardwood moulding and significantly lower for plank and parquet flooring. Western hardwood specialty buyers future demand ranking was significantly higher for plywood and moulding

and significantly lower for landscape timbers and strip flooring. Southern hardwood specialty buyers future demand ranking was significantly higher for plywood and significantly lower for edge-glued panels. Overall, future demand for moulding, plywood and boards at the home center level should increase while future demand for hardwood flooring may decrease.

Hardwood flooring manufacturers may have to develop alternative marketing strategies to maintain future market share in the home center marketplace. Improvements in the hardwood flooring product line as suggested by hardwood specialty buyers included increasing the availability of longer length material in strip and plank flooring, increase the availability of hardwood flooring product information literature, increase advertising and promotion, improve the quality of flooring products by maintaining uniform moisture content, uniform thickness and better finishing characteristics (Cesa and Sinclair 1988). If manufacturers more actively promote and advertise their product to home centers and home center customers as well as take steps to improve the quality of their product, the trend that hardwood specialty buyers suggested may be overcome.

Future Demand for Ten Hardwood Products Based on Customer Location

Future demand of the ten hardwood products listed in Table 6 varied depending on customer types attracted to firms' stores. The Tukey multiple comparison technique ($p < .05$) indicated significant hardwood product groupings. Hardwood specialty buyers for typical firms who attracted mostly urban customers future demand ranking was significantly higher for moulding and significantly lower for edge-glued panels in

relationship to all ten products. Hardwood specialty buyers for firms who attracted mostly suburban customers future demand ranking was significantly higher for moulding and significantly lower for parquet flooring. No significant differences existed between hardwood specialty buyers for firms who attracted mostly rural customers in relationship to future demand for hardwood products listed in Table 6.

Once again, the Tukey multiple comparison technique indicated significant groupings ($p < .05$) for the ten hardwood products in relationship to future demand among the Top 100 home centers. Boards and mouldings had a significantly higher future demand ranking and strip flooring had a significantly lower ranking in relationship to all ten products. Overall, demand trends for typical firms and Top 100 home centers were relatively similar. Therefore, hardwood board, moulding and plywood manufacturers catering to home centers who target urban and suburban customers should enjoy increased sales in the next few years provided that hardwood specialty buyers' beliefs about future demand are correct.

Customers of Hardwood Products

Table 7 indicates hardwood board customer types in relation to board sales for responding firms. The three most important customer types in relation to hardwood board sales reported by typical firms were:

1. Professional-Remodeler
2. Professional-New Construction
3. DIY Customer

The three most important customer types in relation to hardwood board sales as reported by Top 100 home centers were:

1. DIY Customer
2. Professional-Remodeler
3. Professional-New Construction

Table 8 indicates hardwood flooring customer types. The three most important customer types for typical firms were:

1. Residential-new construction
2. Residential-remodeler
3. DIY customer

The three most important customer types reported by Top 100 home centers were:

1. Residential-new construction
2. DIY customer
3. Residential-remodeler

The responding typical firms in the western region ranked the DIY customer as most important to hardwood flooring sales and the responding typical firms in the northeast ranked the residential-remodeler as most important to hardwood flooring sales.

Hardwood Customer Projects

Table 9 indicates customer projects which generated the most hardwood board sales for responding firms. Customer projects which generated the most hardwood board sales for responding typical firms were:

1. Cabinets
2. Furniture
3. Other projects - such as interior trim, stairways,
flooring, boat building

Customer projects which generated the most hardwood board sales for responding Top 100 home centers were:

1. Shelving
2. Cabinets
3. Other projects - such as interior trim and
novelties

Variation among customer projects between typical firms and Top 100 home centers was expected due to their differences in customer types. For example, shelving was an important project for the DIY customer; consequently, if a hardwood board product line is manufactured for the home center market and is directed toward the DIY customer, then point-of-purchase information on shelving construction should be made available.

Customer Complaints

Approximately 59% of the responding typical firms (149) reported customer complaints with hardwood boards. The most prevalent complaints were price and quality problems such as cup, bow, checks, and splits. Nineteen (56%) of the responding Top 100 home centers reported customer complaints. The most prevalent customer complaints were price and inferior quality characteristics such as knots, cupping and splits.

Ninety (33%) responding typical firms reported customer complaints with hardwood panels. High price and quality problems such as delamination, twist, core voids, cupping and poor appearance were most commonly mentioned. Approximately 26% (8) of the responding Top 100 home centers reported customer complaints which were mainly dealing with quality.

Approximately 25% (55) of the responding typical firms reported customer complaints with hardwood moulding. High price and quality problems were the most prevalent complaints. Approximately 27% (8) of the responding Top 100 home centers reported customer complaints mainly pertaining to high price and poor quality.

Customer complaints for hardwood flooring were reported by 31% (66) of the responding typical firms. High price and confusion pertaining to estimating costs and square footage of installation, waste factors, and a general lack of information on wood flooring were common customer complaints. A major complaint with strip and plank flooring was the over abundance of short lengths and not enough longer lengths. Top 100 home centers' customer complaints included poor quality and the over abundance of short flooring lengths.

Overall, hardwood specialty product customers want quality products free of defects and blemishes which affect the appearance of the product. Opportunistic hardwood manufacturers will take advantage of this fact by manufacturing high quality hardwood products. This will give these hardwood manufacturers a competitive edge in the home center marketplace.

Purchasing Difficulties

Hardwood specialty buyers for both typical firms and Top 100 home centers reported several purchasing difficulties with hardwood specialty products. The most prevalent purchasing problems were lack of reliable suppliers and inconsistent quality. The quality problem relates directly back to customer complaints of poor quality products. The other purchasing problem, lack of reliable suppliers, is also extremely important. Not only should hardwood manufacturers produce a quality product, they need to do it consistently. Manufacturers who can supply quality products consistently will be most successful in this marketplace.

SUMMARY/CONCLUSIONS

The home center market for hardwood specialty products is a fragmented market with the majority of home centers owning only one retail store with annual sales of less than \$3 million. Several large home center firms do exist; however, the largest represented only 3.4% of the total home center sales in 1985.

Customer population groups attracted to home centers varied considerably with Top 100 home centers attracting mostly urban and suburban customers. The home centers which were most active and had the highest annual sales were those located in urban and suburban areas. The majority of the Top 100 home centers were located in these areas.

A combination of an attractive display rack and informed salespersons is the most effective in-store promotional strategy for hardwood products according to hardwood specialty buyers. To maximize potential benefits of this market, manufacturers need to develop a strong working relationship with the home centers they service and aid them with training sales staff and developing display strategies.

At least 58% of all respondents sold hardwood boards, flooring, moulding and plywood. The Northeast was the most active region. The South was the least active region regarding the merchandising of boards and moulding. The West was the least active region regarding the merchandising of flooring. These regional variations were due to differences in customer population groups attracted to respondents' stores, customer preferences and the availability of hardwood specialty products to home centers. The data may indicate a potential

market for hardwood manufacturers in these particular regions due to the low percent of firms currently selling the products.

Merchandising trends for typical firms may be shifting to similar strategies which Top 100 home centers employ due to the fact that typical firms have a need for an effective display strategy. To meet this changing trend, hardwood specialty products will have to be merchandised in standard sizes which fit into display racks. This trend is especially prevalent for typical firms who attract customer groups similar to the Top 100 home centers.

Future demand among ten hardwood products is predicted to be highest for moulding, plywood and boards and least for edge-glued panels and parquet flooring according to hardwood specialty buyers. Future demand for hardwood moulding, boards and plywood in urban and suburban market segments should be higher than rural market segments.

Typical firms' major board customer was the professional remodeler and their most important customer projects were cabinets. Top 100 home centers' major board customer was the DIY and their most important projects were shelving and cabinets. Consequently, manufacturers servicing home centers who cater to the DIY customer may want to develop point-of-purchase literature on shelving and cabinet projects.

The most prevalent customer complaints were poor quality and high price. Typical firms reported a greater number of customer complaints than Top 100 home centers. This could be due to the fact that buyers for typical firms are closer to their customers and more aware of the problems their customers have with the product.

The most prevalent purchasing difficulties among responding firms were a lack of reliable suppliers and inconsistent quality. Home

centers have a strong need for reliable suppliers who can supply a consistent product. Hardwood manufacturers who can meet this need will be most successful.

FOOTNOTES

- ¹The Chi-square test for independence is a nonparametric test used with nominal data and whose assumptions are less stringent than for parametric tests (Hinkel et al. 1979). Assumptions include that variables are broken into mutually exclusive categories, each response logically falls into one of the defined categories and the responses are independent (Churchill 1983).
- ²The Kruskal-Wallis one-way analysis of variance test is a nonparametric test whose assumptions include that responses are from a random sample and that the dependent variable is measured on at least an ordinal scale (Norusis 1983). The test determines whether significant differences exist between median values and total distributions of scores (Hinkel et al. 1979).
- ³The one-way analysis of variance statistical procedure involves the analysis of mean scores of one independent variable with more than two levels. Assumptions according to Hinkel et al. 1979 include: 1) The observations are random and independent samples from the population. 2) Measurement of the dependent variable is on at least an interval scale. 3) The populations from which the samples are selected are normally distributed. 4) The variance of the populations are equal.
- ⁴The Tukey test is a post hoc multiple comparison technique used to compare means of k-groups only after a significant difference between the means was detected using an analysis of variance test. Level of significance for each comparison was set at .05. The Tukey test was chosen because this method maintains the Type I error rate (probability of rejecting the null hypothesis when it is true) at the .05 level of probability (Hinkel et al. 1979).
- ⁵The results of the survey indicated that some confusion existed among hardwood specialty buyers as to what the definition of an edge-glued panel was; consequently, a lower demand ranking for edge-glued panels may exist due to that fact or due to the fact that many buyers may not be familiar with edge-glued panels.

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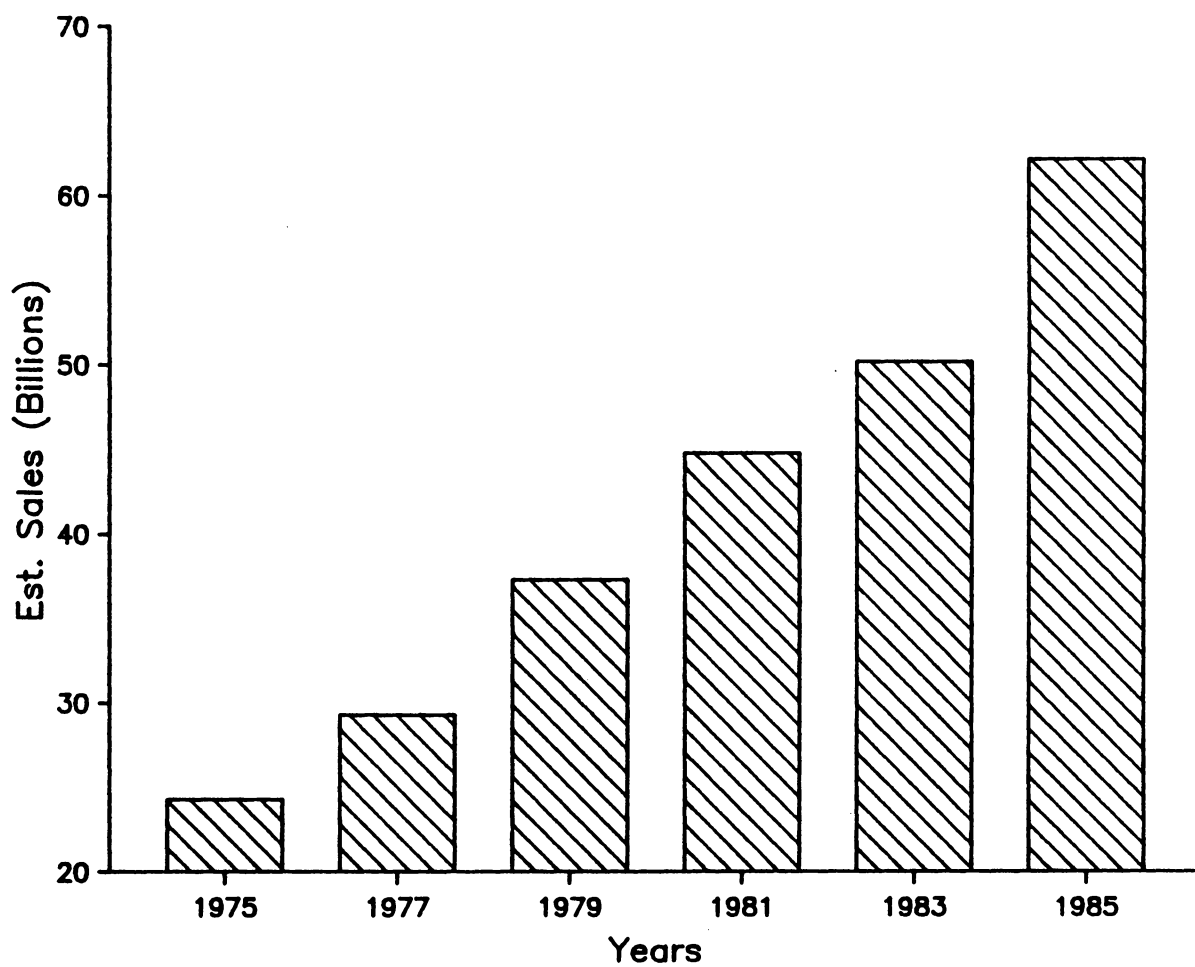


Figure 1. Home Center Sales from 1975 to 1985.
(Franta and Johnson 1986)

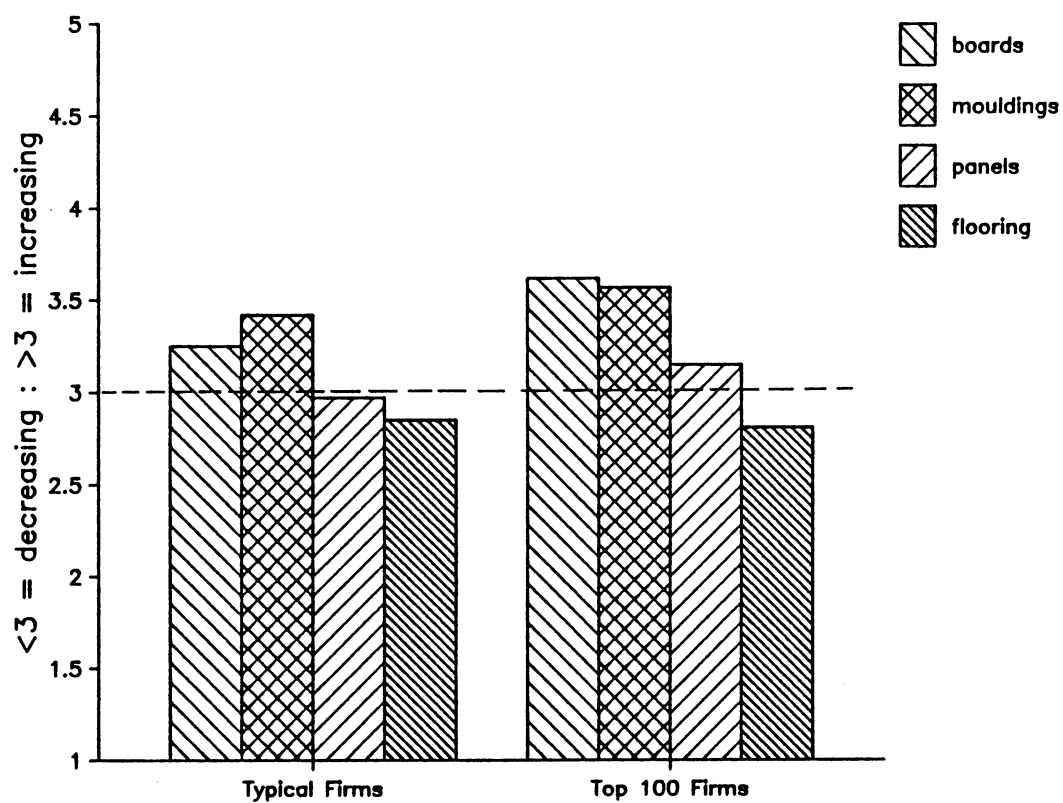


Figure 2. Predicted future demand for hardwood boards, mouldings, panels and flooring by respondents on a scale of 1 to 5; 1 = strongly declining demand, 5 = strongly increasing demand and 3 = stable demand.

Table 1. Breakdown of respondents' 1985 retail sales.

Sales (\$ Millions)	Responses (%)					
	NE (67) ^a	NC (127)	W (54)	S (139)	All Regions (387)	TOP100 (41)
< 3 Million	53.7%	67.7%	61.8%	56.1%	60.4%	00.0%
3 to 5	25.4	15.7	14.5	21.6	19.3	00.0
5 to 10	10.4	06.3	12.7	14.4	10.7	00.0
10 to 25	07.5	08.7	09.2	07.2	08.0	02.4
> 25 Million	03.0	01.6	01.8	00.7	01.6	97.6

^aNumber of responses per category.

Table 2. Number of retail stores owned by respondents.

# of Stores	Responses (%)					
	NE (67) ^a	NC (131)	W (58)	S (142)	All Regions (398)	TOP100 (42)
1	82.1%	73.3%	72.4%	77.5%	76.2%	02.4%
2 to 5	16.4	20.6	20.7	21.1	20.1	26.2
6 to 15	01.5	05.3	03.4	01.4	03.0	19.0
16 to 50	00.0	00.8	03.4	00.0	00.7	26.2
51 to 100	00.0	00.0	00.0	00.0	00.0	16.7
> 100	00.0	00.0	00.0	00.0	00.0	09.5

^aNumber of responses per category.

Table 3. Distribution of customers attracted to respondents' stores.

Customer	Responses in Percents					
	NE (66) ^a	NC (130)	W (58)	S (141)	All Regions (395)	TOP100 (41)
Urban	30.3%	30.8%	55.2%	38.3%	37.1%	73.2%
Suburban	40.9	29.2	25.9	26.2	29.6	17.1
Rural	28.8	40.0	19.0	35.5	33.3	09.7

^aNumber of responses per category.

Table 4. Percent of respondents selling hardwood products.

Product	Responses (%)					
	NE (67) ^a	NC (130)	W (58)	S (141)	All Regions (398)	TOP100 (41)
Hardwood boards	79.1%	74.8%	74.1%	49.7%	66.3%	81.0%
Hardwood flooring	86.6	71.0	48.3	65.0	68.1	64.3
Hardwood moulding	68.7	74.0	65.5	37.1	58.6	78.6
Hardwood plywood	86.6	78.6	77.6	70.6	76.6	73.8
Hardwood veneer- overlay panels	38.8	41.5	32.8	32.9	36.7	31.0
Edge-glued hardwood panels	11.9	13.8	12.1	09.8	11.7	19.5
Hardwood T & G strip paneling	43.3	39.2	24.1	14.0	28.7	31.7
Hardwood landscape timbers	43.3	16.9	08.6	18.2	20.7	17.1

^aNumber of responses per category.

Table 5. Mean scores for respondents' agreement/disagreement towards statements related to their hardwood board product line (mean scores are based on the scale of 1 = strongly disagree, 5 = strongly agree).

Statement	Average score					
	NE (50) ^a	NC (91)	W (42)	S (59)	All Regions (242)	TOP100 (34)
Our customers have a need for edge-glued hardwood panels wider than 12 inches	2.62	2.66	2.76	2.69	2.67	2.79
Displaying hardwood boards is a problem in our store(s)	3.44	3.32	3.05	3.10	3.23	2.46
Yellow poplar boards are a good substitute for pine boards.	2.76	2.52	2.46	2.59	2.58	2.53
Customers purchase hardwood boards on quality rather than price.	4.04	3.97	3.70	3.75	3.88	3.97
We sell hardwood mouldings and panels to basically the same customer types as hardwood boards.	3.10	3.60	3.69	3.55	3.50	3.18
Hardwood panels, either edge-edge-glued, plywood or veneer-overlay are good complementary product for hardwood boards.	3.61	3.67	3.95	3.53	3.68	3.97

^a Average number of responses per category.

Table 6. Mean scores for respondents' indication of future demand trends for selected hardwood products.
(Mean scores are based on the scale of 1 = strongly decreasing, 3 = stable, 5 = strongly increasing.)

Product	Mean scores					
	NE (50) ^a	NC (90)	W (36)	S (88)	All Regions (265)	TOP100 (31)
Boards	3.51	3.33	3.27	3.02	3.25	3.62
Mouldings	3.60	3.50	3.57	3.16	3.42	3.57
Edge-glued panels	2.67	2.65	3.67	2.44	2.58	3.09
Parquet flooring	2.71	2.60	2.72	2.94	2.75	2.87
Plank flooring	3.25	2.67	2.69	2.96	2.88	2.85
Strip flooring	3.38	2.69	2.54	2.98	2.91	2.72
Plywood	3.48	3.26	3.61	3.33	3.38	3.31
Veneer-overlay panels	2.95	2.99	3.06	2.89	2.95	3.04
T & G strip paneling	3.16	2.79	2.83	2.62	2.82	3.15
Landscape timbers	3.33	2.97	2.64	3.12	3.07	2.96

^aNumber of responses per category.

Table 7. Mean ranking of customer types which generate the most hardwood board sales for respondents (1 = least sales, 5 = most sales).

Customer Type	Mean ranking					
	NE (48) ^a	NC (85)	W (38)	S (55)	All Regions (226)	TOP100 (30)
Cabinet shop	2.85	2.57	2.84	3.27	2.85	2.17
Do-it-yourselfers	3.25	3.14	3.97	3.44	3.38	4.28
Professional - new construction	3.29	4.05	3.03	3.48	3.58	3.28
Professional - remodeler	3.83	3.86	3.47	3.26	3.65	3.59
Miscellaneous	1.81	1.43	1.68	1.73	1.63	1.76

^a Average number of responses per category.

Table 8. Mean ranking of customer types which generate the most hardwood flooring sales for respondents (1 = least sales, 6 = most sales).

Customer Type	Mean ranking					
	NE (37) ^a	NC (58)	W (11)	S (50)	All Regions (156)	TOP100 (15)
Do-it-yourselfer	4.35	4.31	5.50	3.88	4.30	4.76
Mobile home	1.28	1.30	1.60	1.41	1.34	1.53
Non-residential contractor	3.49	3.34	3.20	3.43	3.40	3.40
Residential - new construction	5.05	5.07	4.20	5.53	5.16	5.06
Residential - remodeler	5.14	5.03	5.23	4.92	5.04	4.67
Miscellaneous	2.00	2.09	1.40	2.00	1.99	1.73

^a Average number of responses per category.

Table 9. Customer projects which generated the most hardwood board sales for respondents.

Project	Responses (%)					
	NE (50) ^a	NC (88)	W (40)	S (61)	All Regions (239)	TOP100 (27)
Cabinets	56.0%	51.2%	69.2%	50.8%	54.9%	25.9%
Furniture	16.0	17.4	12.8	19.7	16.9	07.4
Novelties	00.0	07.0	10.3	06.5	05.9	03.8
Shelving	08.0	07.0	05.1	03.3	06.3	48.1
Other	20.0	17.4	02.6	19.7	16.0	14.8

^aNumber of responses per category.

HARDWOOD SPECIALTY PRODUCTS AND

THE HOME CENTER MARKETPLACE

(For potential submission to a Trade Journal)

INTRODUCTION

During the last decade, the building materials market has seen considerable growth in consumer demand and overall sales. Also growing, but at an unknown rate, is the home center hardwood lumber and specialty product (including products such as mouldings, edge-glued panels, plywood, and flooring) market segment. This high-value segment of the building materials market has generated considerable interest from home center/building material stores. As the home center hardwood lumber and specialty product market segment continues to grow, an increasing number of home center/building material stores are merchandising these product lines. Consequently, a new market for the hardwood lumber industry is developing.

METHODOLOGY

To understand and characterize this new market, a mail questionnaire addressing the home center market for hardwood specialty products was sent to hardwood specialty buyers representing 1600 home centers and lumber yards throughout the country during October and November 1986. The home centers and lumber yards were divided into two parts; first, a 100 percent sample of the Top 100 home centers according to 1985 sales and second, 1500 home centers and lumber yards (referred to as typical firms) randomly selected from the remainder of the sample

population. The study's sample frame was The 1985 Directory of Home Center Operators and Hardware Chains (Friedman 1985). The directory lists all home centers and lumber yards in the United States with sales over \$1 million.

The large sample of 1500 home centers was stratified based on the four regional classifications of the United States as defined by the U.S. Bureau of Census. The four strata were the northeast, north central, western and southern regions. Stratified random sampling was chosen to determine regional differences in the merchandising of hardwood products in the home center marketplace.

Of the 100 surveys mailed to the Top 100 home centers, 42 usable surveys were returned. Of the remaining 1500 surveys mailed, 401 usable surveys were returned. Adjusting for undelivered surveys and unusable surveys resulted in a 27% response rate for typical firms and a 42% response rate for Top 100 home centers.

RESULTS AND DISCUSSIONS

The Home Center Marketplace

Home centers operating in the U.S. vary considerably according to their annual sales, number of stores owned and customer types attracted to their stores. To effectively meet the needs of this growing market, hardwood manufacturers need to understand these variations. The majority of typical firms own only one store and have annual sales of less than \$3 million. Conversely, the majority of the Top 100 home centers own more than two stores and have sales in excess of \$25 million. Consequently, the home center market is a fragmented market with many small firms and few large firms. No individual or combination

of home centers dominate this market. The largest home center firm (Lowe's) only represented 3.4% of total 1985 home center sales.

Customer types (urban, suburban and rural) attracted to respondents' stores varied considerably. Typical firms attracted approximately equal number of customers from all three population groups while 73% of the Top 100 home centers attracted mostly urban customers. The most lucrative markets for hardwood specialty products lie in urban and suburban areas where a large number of Do-It-Yourself (DIY) customers reside.

Merchandising Hardwood Specialty Products

At least 58% of all home centers responding to the questionnaire sold hardwood boards, flooring, moulding and plywood (Table 1). The northeastern region was the most active region while the South was the least active. Regional variations were probably due to differences in customer preferences as well as the availability of these products from hardwood product manufacturers who cater to the home center market. Due to low stocking rates, the South may have the highest potential growth for hardwood boards and moulding and the West may have the highest potential growth for hardwood flooring.

Sales of Hardwood Specialty Products

The importance of the home center market for high-value hardwood products seems to be overlooked by many hardwood manufacturers as well as the forest products industry in general. For example, the total home center market for the four major hardwood product lines in 1986 was estimated at over \$1 billion in retail sales (Figure 1). Individual product sales estimates are indicated below.

<u>Hardwood Product</u>	<u>Dollar Value</u>
Boards	\$362,096,000
Panels	\$277,752,000
Moulding	\$185,103,000
<u>Flooring</u>	<u>\$190,439,000</u>
Total Market Value	\$1,015,390,000

Hardwood specialty buyers predicted that hardwood board sales from 1986 to 1991 will grow at a compound annual rate of approximately 12%. The predicted growth for hardwood boards may provide opportunities to innovative hardwood lumber manufacturers willing to produce high quality boards for the home center market.

Future Demand for Hardwood Specialty Products

Future demand among ten hardwood products is predicted to be highest for moulding, plywood and boards and least for edge-glued panels and parquet flooring according to responding hardwood specialty buyers (Table 2). Future demand for hardwood boards, moulding and plywood in urban and suburban market segments should be higher than rural market segments. Hardwood specialty buyers predicted that future demand for all ten hardwood products will remain relatively stable in the rural market segment. Rural home center markets were not as active as urban and suburban markets. This could be due to a lack of affluence, due to the availability of hardwood lumber at local sawmills in rural areas or due to fewer potential customers.

Buyer's Perceptions of Hardwood Specialty Products

Responding typical firms and the Top 100 home centers agreed that customers purchase boards based on quality rather than price. They also agreed that hardwood panels, either edge-glued, plywood or veneer-overlay, are a good complementary product for hardwood boards. Respondents agreed that they sold hardwood moulding and panels to basically the same customer types as hardwood boards. Responding firms disagreed with the statement that yellow poplar boards are a good substitute for pine boards.

Top 100 home centers did not believe that displaying hardwood boards was a problem in their stores; however, responding typical firms tended to agree that displaying hardwood boards was a problem. This is probably due to the fact that typical firms are supplied by local suppliers who offer random length/width material and no display rack. The Top 100 home centers are probably buying their hardwood board products from an established supplier who provides a display rack which is designed for boards of specific widths and lengths. It seems apparent that there is a need among typical firms to find an appropriate display strategy. Hardwood specialty buyers indicated that their customers were demanding quality hardwood products free of defects such as splits, checks, knots and warpage.

SUMMARY/CONCLUSIONS

The home center market is a dynamic and changing marketplace. Currently, the market is fragmented with a high proportion of small firms with sales of less than \$3 million who own only one store.

Relatively few large home center firms were in operation with the largest representing only 3.4% of total 1985 sales.

At least 58% of all home centers sold hardwood boards, flooring, moulding and plywood. The most active region was the Northeast. The least active was the South. The highest growth for hardwood boards and moulding may be in the South.

Total 1986 home center sales for hardwood specialty products was estimated to be over \$1 billion and hardwood boards sales are expected to grow at a compound annual rate of 12% from 1986 to 1991. This predicted growth may provide opportunities to hardwood lumber manufacturers.

Future demand trends indicate that moulding, plywood and boards will have the highest demand while edge-glued panels and parquet flooring will have the least demand. Future demand is predicted to be highest in urban and suburban market segments perhaps due to the higher concentration of potential customers. Consequently, hardwood manufacturers entering into this market probably will be most successful if they cater to the urban and suburban market segments.

Hardwood specialty buyers indicated that their customers were demanding high quality hardwood specialty products and that merchandising a variety of hardwood products provides a good complementary effect.

A large number of typical firms were not being serviced by established hardwood manufacturers. This is evident in the fact that typical firms have a problem in displaying hardwood products while Top 100 home centers do not. Manufacturers who can supply a standard, high

quality product line which will fit nicely into a display rack will have a competitive advantage in this marketplace.

LITERATURE CITED

Friedman, R. J. 1985. The 1985 Directory of Home Center Operators & Hardware Chains. Labhar-Friedman Inc., New York, NY.

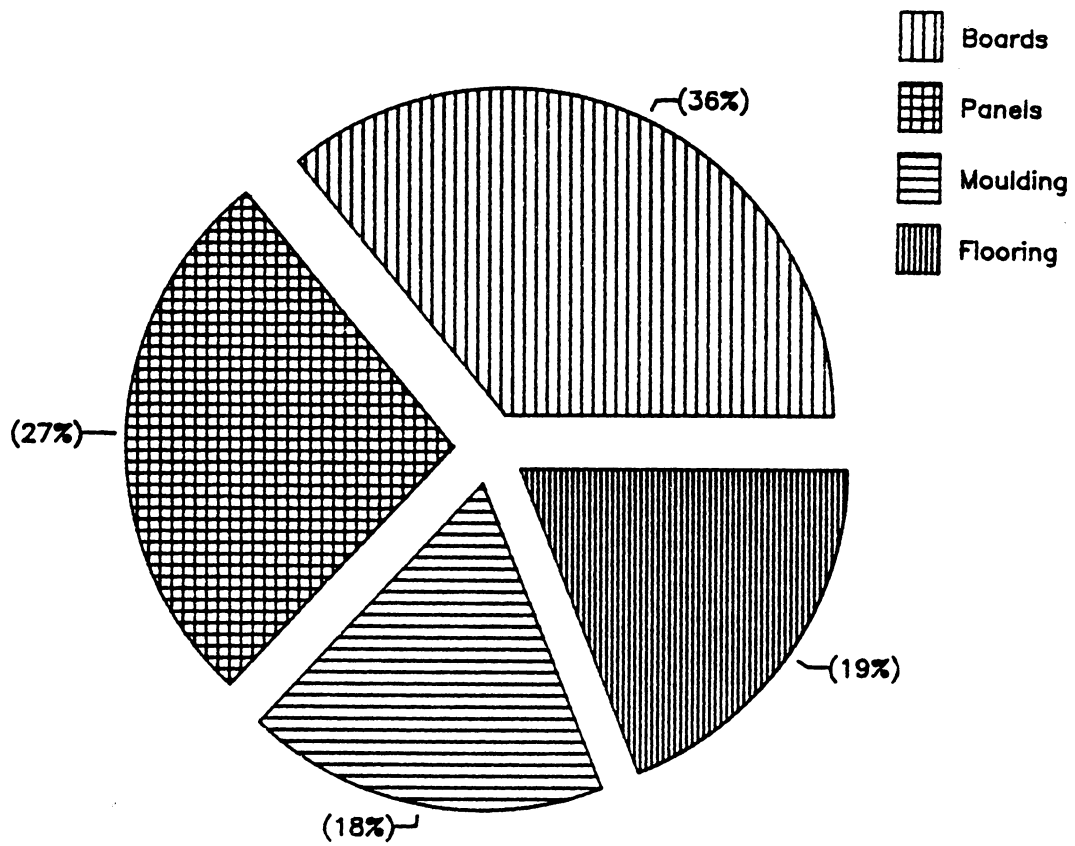


Figure 1. The billion dollar home center market for hardwood boards, moulding, panels and flooring.

Table 1. Percent of respondents selling hardwood products.

Product	Responses in percents					
	NE (67) ^a	NC (130)	W (58)	S (141)	All Regions (398)	TOP100 (41)
Hardwood boards	79.1%	74.8%	74.1%	49.7%	66.3%	81.0%
Hardwood flooring	86.6	71.0	48.3	65.0	68.1	64.3
Hardwood moulding	68.7	74.0	65.5	37.1	58.6	78.6
Hardwood plywood	86.6	78.6	77.6	70.6	76.6	73.8
Hardwood veneer- overlay panels	38.8	41.5	32.8	32.9	36.7	31.0
Edge-glued hardwood panels	11.9	13.8	12.1	09.8	11.7	19.5

^aNumber of responses per category.

Table 2. Mean scores for respondents' indication of future demand trends for selected hardwood products.
(Mean scores are based on the scale of 1 = strongly decreasing, 3 = stable, 5 = strongly increasing.)

Product	Mean scores					
	NE (50) ^a	NC (90)	W (36)	S (88)	All Regions (265)	TOP100 (31)
Boards	3.51	3.33	3.27	3.02	3.25	3.62
Mouldings	3.60	3.50	3.57	3.16	3.42	3.57
Edge-glued panels	2.67	2.65	3.67	2.44	2.58	3.09
Parquet flooring	2.71	2.60	2.72	2.94	2.75	2.87
Plank flooring	3.25	2.67	2.69	2.96	2.88	2.85
Strip flooring	3.38	2.69	2.54	2.98	2.91	2.72
Plywood	3.48	3.26	3.61	3.33	3.38	3.31
Veneer-overlay panels	2.95	2.99	3.06	2.89	2.95	3.04
T & G strip paneling	3.16	2.79	2.83	2.62	2.82	3.15
Landscape timbers	3.33	2.97	2.64	3.12	3.07	2.96

^aNumber of responses per category.

SUMMARY/CONCLUSIONS

A survey was conducted of hardwood specialty buyers representing 1500 typical home centers and lumberyards and the Top 100 home centers according to 1985 sales. The survey objectives were to characterize the home center market for hardwood specialty products and to estimate its size. The percentage of respondents who stocked different products varied as shown below:

Percent of respondents who
stocked the specified products

<u>Hardwood Product Type</u>	<u>Typical Firms</u>	<u>Top 100 Home Centers</u>
Boards	66%	81%
Panels	77	74
Moulding	59	79
<u>Flooring</u>	<u>68</u>	<u>64</u>

The total market size for the primary hardwood product lines was estimated at approximately \$1 billion. Average sales for all four primary hardwood products were considerably higher for Top 100 home centers than typical firms. Sales of hardwood boards are predicted to grow at a compound annual rate of approximately 12 percent from 1986 to 1991.

The home center market for hardwood boards was estimated at approximately \$362 million for 1986. Six and 8 foot lengths were the most prevalent lengths stocked. The most common width was 6 inches and 3/4 inch thickness was the most prevalent thickness. Oak is the species most commonly stocked by respondents, and clear two faces, surfaced four sides or two sides, was the most common quality type. The most

important customer project reported by typical firms was cabinets while shelving was the most important project to Top 100 home center customers. The Southern region had the smallest percentage of firms stocking boards.

The 1986 home center market for hardwood panels was estimated at approximately \$278 million. Hardwood plywood is the most commonly stocked panel. The majority of panels stocked by respondents were in 4 x 8 feet sheets. The most commonly stocked panel thickness ranged from 1/2 inch to 11/12 inch thickness. Oak is the species most commonly stocked by respondents.

The home center market for hardwood moulding was estimated at approximately \$185 million for 1986. Hardwood moulding was generally stocked in a variety of lengths from 6 to 16 feet and in the following basic styles: base, cove, door/window casing, outside corner, door/window stop and base shoe. Again, oak was most commonly stocked by respondents.

The home center market for hardwood flooring was approximately \$190 million in 1986. A greater percentage of Top 100 home centers stocked flooring than typical firms. Oak was overwhelmingly the most popular species. Firms in the West stocked hardwood flooring most infrequently, perhaps indicating an opportunity.

Suggestions for improving all four hardwood product lines mainly emphasized the need for quality products. Defects and degrade need to be minimized in this marketplace.

Merchandising strategies for hardwood specialty products varied considerably between typical firms and Top 100 home centers. The distinction is due to different customers attracted to individual home

centers. Typical firms major hardwood board customer was the professional-remodeler while Top 100 home centers' major customer was the DIY. The DIY customers demand high quality eye-appealing products sanded on all four surfaces while the professional-remodeler are not as demanding in quality. Top 100 home centers are being serviced by manufacturers producing standardized products lines in display racks, but many typical firms are not.

The home center market is a fragmented market with a large percentage of home centers owning only one store with annual sales of less than \$3 million. No individual firm dominates the market.

Future demand in the home center market is predicted to be highest for moulding, plywood and boards and least for edge-glued panels and parquet flooring. Demand for these products should be highest in urban and suburban areas.

The most prevalent customer complaints were concerning poor quality and high price. The most prevalent purchasing difficulties were lack of reliable suppliers and inconsistent quality. Hardwood manufacturers, who can produce a standard, consistent and high quality product catered to the home center market and able to supply it to home centers promptly, will be the most successful operators in the market.

APPENDIX I

Retail Market Survey for Hardwood Specialty Products



COLLEGE OF AGRICULTURE AND LIFE SCIENCES

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

SCHOOL OF FORESTRY AND WILDLIFE RESOURCES (703) 961-5481
DEPARTMENT OF FOREST PRODUCTS, 210 CHEATHAM HALL (703) 961-5330

Dear Hardwood Specialty Buyer:

This survey is designed to collect information about the retail market for hardwood specialty products from experts like yourself. Currently, little information about the retail market for high value hardwood products is known. To adequately characterize this market, we need your thoughtful response. By completing this survey, producers of hardwood specialty products may be able to better meet your needs for hardwood specialty products.

The survey is designed for easy completion. You are asked to circle a number or fill in a blank for most questions. Only a few questions request written comments. The survey is divided into five sections. These sections are:

Section I: General information about your retail store(s)
and your hardwood product line.

Section II: Hardwood boards.

Section III: Hardwood panels/plywood including edge-glued panels
and veneer-overlay panels except wall paneling.

Section IV: Hardwood mouldings.

Section V: Hardwood flooring.

The last page of the survey is for additional comments on any aspects of the retail market for hardwood specialty products which you believe are important. We are especially interested in your opinion of this market and its future direction. Fill free to write your comments anywhere on the page.

Please complete the first part of the survey and the sections of the survey which apply to your firm. When you have completed the survey, please staple and drop it in a mailbox. We pay the postage!

Thank you for your prompt response!

Edward T. Cesa
Research Assistant

SECTION I: GENERAL INFORMATION

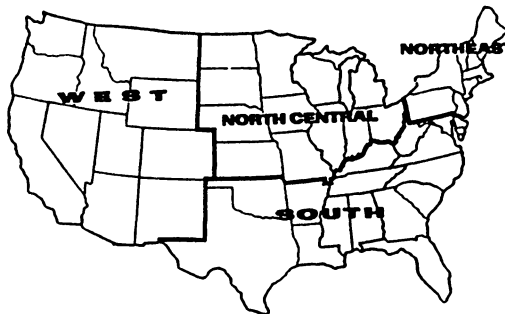
The following questions pertain to general information about your retail store(s) and the hardwood product line which you may sell.

1. Please indicate your company's number of retail stores. Please circle one.

- | | | |
|-------------------|---------------------|----|
| 1. 1 STORE | 4. 16 TO 50 STORES | /1 |
| 2. 2 TO 5 STORES | 5. 51 TO 100 STORES | |
| 3. 6 TO 15 STORES | 6. OVER 100 STORES | |

2. Based on the map below, please indicate the region in which the majority of your company's retail store(s) are located. Circle only one.

1. NORTHEAST
2. NORTH CENTRAL
3. WEST
4. SOUTH



3. Do your store(s) attract customers from mostly urban, suburban, or rural areas? Please circle the one category most important to your firm.

1. URBAN - consists of a city or group of contiguous communities that have a combined population of at least 50,000. /3
2. SUBURBAN - similar to urban but with population less than 50,000.
3. RURAL - population is scattered over a wide area, sparsely populated as compared to urban.

4. Please indicate your company's total 1985 sales. Circle one.

- | | |
|--------------------------------|---------------------------------|
| 1. LESS THAN \$3 MILLION | 4. \$10 MILLION TO \$25 MILLION |
| 2. \$3 MILLION TO \$5 MILLION | 5. \$25 MILLION TO \$50 MILLION |
| 3. \$5 MILLION TO \$10 MILLION | 6. OVER \$50 MILLION |

5. Which of the following products does your firm sell?
Please check all that apply.

() HARDWOOD BOARDS /5
 () HARDWOOD FLOORING
 () HARDWOOD MOULDING
 () HARDWOOD PLYWOOD
 () HARDWOOD VENEER-OVERLAY PANELS
 () EDGE-GLUED HARDWOOD PANELS
 () HARDWOOD T & G STRIP PANELING
 () HARDWOOD LANDSCAPE TIMBERS
 () PINE OR OTHER SOFTWOOD MOULDING
 () VINYL/PLASTIC MOULDING
 () WOOD MOULDING WITH VINYL OVERLAY
 () PINE OR OTHER SOFTWOOD BOARDS /16

6. Please circle the appropriate number which best describes the future demand for the following hardwood products.

<u>Hardwood Products</u>	<u>Strongly Decreasing</u>	<u>Moderately Decreasing</u>	<u>Stable</u>	<u>Moderately Increasing</u>	<u>Strongly Increasing</u>
BOARDS . . .	1 . . .	2 . . .	3 . . .	4 . . .	5
MOULDINGS . .	1 . . .	2 . . .	3 . . .	4 . . .	5
EDGE-GLUED PANELS	1 . . .	2 . . .	3 . . .	4 . . .	5
PARQUET FLOORING	1 . . .	2 . . .	3 . . .	4 . . .	5
PLANK FLOORING .	1 . . .	2 . . .	3 . . .	4 . . .	5
STRIP FLOORING .	1 . . .	2 . . .	3 . . .	4 . . .	5
PLYWOOD . . .	1 . . .	2 . . .	3 . . .	4 . . .	5
VENEER-OVERLAY PANELS	1 . . .	2 . . .	3 . . .	4 . . .	5
T & G STRIP . .	1 . . .	2 . . .	3 . . .	4 . . .	5
PANELING					
LANDSCAPE TIMBERS	1 . . .	2 . . .	3 . . .	4 . . .	5

7. Please circle the single most effective in-store promotional strategy for hardwood boards and specialty products.

1. ATTRACTIVE DISPLAY RACKS /27
 2. INFORMATION AND OPINIONS FROM SALESPERSON
 3. POINT-OF-PURCHASE PRODUCT LITERATURE
 4. SEASONAL DISCOUNTS AND SALES
 5. OTHER (PLEASE SPECIFY) _____

8. Please circle the single most effective out-of-store advertising strategy for hardwood boards and specialty products.

1. ADVERTISEMENT INSERTS IN LOCAL NEWSPAPER /28
2. ADVERTISEMENT IN STORE FLYER
3. WORD-OF-MOUTH
4. YELLOW PAGES
5. OTHER (PLEASE SPECIFY) _____

SECTION II: HARDWOOD BOARD INFORMATION

The following questions pertain to hardwood boards. If you do not sell hardwood boards, please skip to Section III.

1. What hardwood board lengths (in feet) do you normally stock? Please check all that apply.

- | | | | | |
|-----------------------------|-----------------------------|------------------------------|--|-----|
| ☐ 3' | ☐ 6' | ☐ 10' | ☐ 16' | /32 |
| ☐ 4' | ☐ 7' | ☐ 12' | ☐ OVER 16' | |
| ☐ 5' | ☐ 8' | ☐ 14' | ☐ RANDOM LENGTH | |

2. What hardwood board widths (in inches) do you normally stock? Please check all that apply.

- | | | | | |
|-----------------------------|-----------------------------|------------------------------|---|-----|
| ☐ 2" | ☐ 5" | ☐ 8" | ☐ 12" | /44 |
| ☐ 3" | ☐ 6" | ☐ 9" | ☐ WIDER THAN 12" | |
| ☐ 4" | ☐ 7" | ☐ 10" | ☐ RANDOM WIDTH | |

3. What hardwood board actual thicknesses (in inches) do you normally stock? Please check all that apply.

- | | | |
|-------------------------------|--------------------------------------|-----|
| ☐ 1/2" | ☐ 1-1/4" | /56 |
| ☐ 3/4" | ☐ 1-5/8" | |
| ☐ 1" | ☐ OTHER _____ | |

4. Please indicate the importance of the wood species below to your hardwood board sales by circling the appropriate number.

	<u>Not at all</u>		<u>Important</u>		<u>Extremely</u>	
	<u>Important</u>		<u>Important</u>		<u>Important</u>	
ASH	1		2		3	
BIRCH	1		2		3	
CHERRY	1		2		3	
MAHOGANY	1		2		3	
MAPLE	1		2		3	
OAK	1		2		3	
POPLAR	1		2		3	
WALNUT	1		2		3	
OTHER:						
	1		2		3	
					4	
						5

5. What was your total sales of hardwood boards during the past 12 months?

_____ (DOLLARS) /71

6. If you had to guess, what dollar value of hardwood boards do you think your firm will be selling five years from now? (Assume no inflation in estimating this amount).

_____ (DOLLARS) /77

7. What hardwood board quality groups do you normally stock? Please check all that apply.

() CLEAR TWO FACES, SURFACED 4 SIDES /82
() CLEAR TWO FACES, SURFACED 2 SIDES
() CLEAR ONE FACE, SURFACED 4 SIDES
() CLEAR ONE FACE, SURFACED 2 SIDES
() NO CLEAR FACES, SURFACED 2 SIDES
() OTHER (PLEASE EXPLAIN) _____

8. Do you have any difficulties in purchasing hardwood boards, such as unreasonable minimum order sizes, excessive lead times, inconsistent quality, lack of reliable supplier, etc.?

() NO
() YES ➔ IF YES, PLEASE EXPLAIN _____

9. What is an average customer purchase for hardwood boards in both dollars and board feet?

_____ (DOLLARS) /89

_____ (BOARD FEET) /94

10. What customer project generates the most hardwood board sales for your firm? Please circle only one.

1. CABINETS 3. NOVELTIES /99
2. FURNITURE 4. SHELVING
5. OTHER (PLEASE SPECIFY) _____

11. Please indicate your agreement or disagreement with the following statements by circling the appropriate numbers.

	Strongly <u>Disagree</u>	<u>Disagree</u>	Neither Disagree or Agree	<u>Agree</u>	Strongly <u>Agree</u>
Our customers have a need for edge-glued hardwood panels wider than 12 inches.	. . . 1 . . .	2 . . .	3 . . .	4 . . .	5
Displaying hardwood boards is a problem in our store(s).	. . . 1 . . .	2 . . .	3 . . .	4 . . .	5
Yellow poplar boards are a good substitute for pine boards.	. . 1 . . .	2 . . .	3 . . .	4 . . .	5
Customers purchase hardwood boards on quality rather than price.	. 1 . . .	2 . . .	3 . . .	4 . . .	5
We sell hardwood mouldings and panels to basically the same customer types as hardwood boards.	. . . 1 . . .	2 . . .	3 . . .	4 . . .	5
Hardwood panels, either edge-glued, plywood or veneer-overlay, are a good complimentary product for hardwood boards.	1 . . .	2 . . .	3 . . .	4 . . .	5

12. Please rank the following customer types in order of the hardwood board sales they generate for your firm: #1 the most sales, #5 the least sales. Use each # 1,2,3,4,5 only once.

_____ CABINET SHOP	/106
_____ DO-IT-YOURSELFERS	
_____ PROFESSIONAL - NEW CONSTRUCTION	
_____ PROFESSIONAL - REMODELER	
_____ MISCELLANEOUS _____	

13. What improvements or new products in the hardwood board product line would you suggest?

14. What customer complaints have you encountered in selling hardwood boards?

SECTION III: HARDWOOD PANEL/PLYWOOD INFORMATION

The following questions pertain to hardwood panels including edge-glued and veneer-overlay panels and plywood. If you do not sell hardwood panels, please skip to Section IV.

1. What hardwood panel products do you normally stock? /124
Please check all that apply.

- ☐ HARDWOOD VENEER-OVERLAY PANELS (EXCLUDING WALL PANELING)
☐ EDGE-GLUED HARDWOOD PANELS
☐ HARDWOOD PLYWOOD
☐ OTHER (PLEASE EXPLAIN) _____

2. Please indicate the importance of the wood species below to your hardwood panel sales.

	<u>Not at all</u> <u>Important</u>		<u>Important</u>		<u>Extremely</u> <u>Important</u>	
ASH	1	2	3	4	5	
BIRCH	1	2	3	4	5	
CHERRY	1	2	3	4	5	
MAHOGANY	1	2	3	4	5	
MAPLE	1	2	3	4	5	
OAK	1	2	3	4	5	
POPLAR	1	2	3	4	5	
WALNUT	1	2	3	4	5	
OTHER: _____	1	2	3	4	5	

3. What hardwood panel lengths (in feet) do you normally stock? Please check all that apply.

- ☐ 2' ☐ 5' ☐ 8' /137
☐ 3' ☐ 6' ☐ GREATER THAN 8'
☐ 4' ☐ 7' ☐ OTHER _____

4. What hardwood panel widths (in inches) do you normally stock?
Please check all that apply.
- | | | | |
|------------------------------|------------------------------|---|------|
| ☐ 12" | ☐ 30" | ☐ 48" | /146 |
| ☐ 18" | ☐ 32" | ☐ WIDER THAN 48" | |
| ☐ 24" | ☐ 36" | ☐ OTHER _____ | |
| ☐ 26" | ☐ 42" | | |
5. What hardwood panel actual thicknesses (in inches) do you normally stock? Please check all that apply.
- | | | |
|---|--|----|
| ☐ LESS THAN 1/2" | ☐ 1-7/12" TO 2" | /1 |
| ☐ 1/2" TO 11/12" | ☐ GREATER THAN 2" | |
| ☐ 1" TO 1-6/12" | | |
6. What was your total hardwood panel sales during the past 12 months?
- _____ (DOLLARS) /6
7. What is an average customer purchase for hardwood panels in both dollars and surface square feet?
- _____ (DOLLARS) /11
- _____ (SURFACE SQUARE FEET) /16
8. Do you have any difficulties in purchasing hardwood panels such as unreasonable minimum order sizes, excessive lead times, inconsistent quality, lack of reliable supplier, etc.?
- ☐ NO
- ☐ YES ➡ IF YES, PLEASE EXPLAIN _____
- _____
9. What improvements or new products in the hardwood panel product line would you suggest?
- _____
- _____
10. What customer complaints have you encountered in selling hardwood panels?
- _____
- _____

SECTION IV: HARDWOOD MOULDING INFORMATION

The following questions pertain to hardwood moulding. If you do not sell hardwood moulding, please skip to Section V.

1. What hardwood moulding types do you normally stock?
 Please check all that apply.

☐ BASE	☐ QUARTER ROUND	/33
☐ CHAIR RAIL	☐ HALF ROUND	
☐ COVE	☐ PICTURE FRAMING	
☐ CROWN	☐ BASE SHOE	
☐ SHELF EDGE	☐ INSIDE CORNER	
☐ DOOR AND WINDOW CASING	☐ OUTSIDE CORNER	
☐ DOOR AND WINDOW STOP		
☐ OTHER (PLEASE SPECIFY) _____		

2. Please indicate the importance of the wood species below to your hardwood moulding sales.

	<u>Not at all</u> <u>Important</u>		<u>Important</u>		<u>Extremely</u> <u>Important</u>
ASH	1	2	3	4	5
BIRCH	1	2	3	4	5
CHERRY	1	2	3	4	5
MAHOGANY	1	2	3	4	5
MAPLE	1	2	3	4	5
POPLAR	1	2	3	4	5
OAK	1	2	3	4	5
WALNUT	1	2	3	4	5
OTHER: _____	1	2	3	4	5

3. What hardwood moulding lengths (in feet) do you normally stock? Please check all that apply.

☐ 6'	☐ 9'	☐ 14'	/56
☐ 7'	☐ 10'	☐ 16'	
☐ 8'	☐ 12'	☐ Over 16'	

4. What was your total hardwood moulding sales during the past 12 months?

_____ (DOLLARS) /65

5. What is an average customer purchase for hardwood mouldings in both dollars and linear feet?

_____ (DOLLARS) /73

_____ (LINEAR FEET) /78

6. Do you have any difficulties in purchasing hardwood mouldings, such as unreasonable minimum order sizes, excessive lead times, inconsistent quality, lack of reliable supplier, etc.?

() NO

() YES ➡ IF YES, PLEASE EXPLAIN _____

7. What improvements or new products in the hardwood moulding product line would you suggest?

8. What customer complaints have you encountered in selling hardwood mouldings?

SECTION V: HARDWOOD FLOORING INFORMATION

The following questions pertain to hardwood flooring. If you do not sell hardwood flooring, please go to the last page.

1. What hardwood flooring types do you normally stock? /92
Please check all that apply.

() PARQUET

() STRIP

() PLANK

() OTHER _____

2. Do you have any difficulties in purchasing hardwood flooring such as unreasonable minimum order sizes, excessive lead times, inconsistent quality, lack of reliable supplier, etc.?

() NO

() YES ➡ IF YES, PLEASE EXPLAIN _____

3. What species of hardwood flooring do you normally stock?
Please check all that apply.

☐ OAK	☐ PECAN	/97
☐ MAPLE	☐ WALNUT	
☐ BEECH	☐ OTHER _____	
☐ BIRCH		

4. What was your total hardwood flooring sales during the past 12 months?

_____ (DOLLARS) /104

5. What is an average customer purchase for hardwood flooring in both dollars and square feet?

_____ (DOLLARS) /109

_____ (SQUARE FEET) /114

6. Please rank the following customer types in order of the hardwood flooring sales they generate for your firm: #1 the most sales, #6 the least sales. Use each # 1,2,3,4,5,6 only once.

_____ DO-IT-YOURSELFER
_____ MOBILE HOME BUILDERS
_____ NON-RESIDENTIAL CONTRACTORS
_____ RESIDENTIAL - NEW CONSTRUCTION
_____ RESIDENTIAL - REMODELER
_____ MISCELLANEOUS

7. What improvements or new products in the hardwood flooring product line would you suggest?

8. What customer complaints have you encountered in selling hardwood flooring?

ADDITIONAL COMMENTS: If you have any other comments about the hardwood specialty product market such as potential new specialty items or insight on improving the current hardwood product line, please use this space to make your comments.

Please return the postpaid survey by stapling it closed and dropping it in the nearest mailbox. Your response has insured that this study will be a success. Thank you!

APPENDIX II

Sampling Plan And Response Rate Information

Table 1. Home Center Sampling Plan & Response Rates

	NE	NC	W	S	All Regions	Top 100
Total number of firms	1145	1800	921	2187	5953	100
Number of firms sampled	284	446	228	542	1500	100
Number of responses	67	131	58	143	401 ^a	42
% responses	24%	29%	25%	26%	27%	42%

^aThe regional location of two firms could not be determined; therefore, they are omitted from the regional totals but included in the All Regions response category.

Table 2. Percentage of responding typical firms selling hardwood products with time dependent variation.

Product	First Returns (191) ^a	Second Returns (210)	Average for All Returns (401)	Telephone Follow-up (35)
Boards	77%	56%	66%	63%
Panels	85	69	77	74
Moulding	68	50	59	52
Flooring	75	62	68	71

^aNumber of responses per category.

APPENDIX III

Economic Importance of the Home Center Market for Hardwood Boards

The importance of the home center market for high-value hardwood products seems to be overlooked by many manufacturers as well as the forest products industry on a whole. To provide an example of the importance of this market hardwood board sales were analyzed in depth. One important feature about this market segment is that the majority of boards sold were processed from at least one common or better lumber. To obtain an estimate of rough lumber consumed by the home center market, one must start from total sales of the market and work backwards. Tables 1 and 2 indicate that out of all respondents who sold hardwood boards, approximately 58% of typical firms and 16% of the Top 100 home centers sold boards in random length/width. Assuming these boards were of the lowest quality type, one common or better, but surfaced only on two sides, then an average board foot value for an oak board is approximately \$2.50. This value was based on reported prices from home centers who sold boards of this quality type. No yield conversion factor from rough lumber to finish lumber is necessary due to the fact that it is only surfaced. Prices on oak boards were chosen because oak is the most important species to sales and the most commonly stocked board species.

Assuming that firms not stocking random length/width boards were selling the highest quality type, surfaced four sides, clear on one or two sides, then an average board foot value of an oak board at the home

center market is \$4.64 and the percent yield from rough lumber to finished boards is approximately 65%. These figures were obtained from Andrew Miller, Repair and Remodel Division, Weyerhaeuser Company. Consequently, it is assumed that out of all respondents who sold hardwood boards, approximately 42% of the typical firms and 84% of the Top 100 home centers sold the highest quality type.

Hardwood Board Sales and Market Size

	<u>Dollars</u>	<u>% of Market</u>
Typical Firms	\$338,258,000	93.4
Top 100 Home Centers	\$ 23,838,000	6.6
	-----	-----
Estimate of Total Market Size	\$362,096,000	100%

MBF of Finished Boards

	<u>Market Size for High Quality</u>	<u>\$ Value of High Quality</u>	<u>Price/ BF</u>	<u>MBF of Finished Product</u>
Typical Firms	42%	\$142,068,000	\$4.64	30,618
Top 100 Home Centers	84%	\$ 20,024,000	\$4.64	4,316
Total MBF = 34,934				

	<u>Market Size for Low Quality</u>	<u>\$ Value of Low Quality</u>	<u>Price/ BF</u>	<u>MBF of Finished Product</u>
Typical Firms	58%	\$196,190,000	\$2.50	78,476
Top 100 Home Centers	16%	\$ 3,814,000	\$2.50	1,526
Total MBF = 80,002				

MBF of Rough Lumber

	<u>MBF of Finished Product</u>	<u>Yield Conver- sion Factor</u>	<u>MBF of Rough Lumber</u>
Highest Quality	34,934	1.54	53,798
Lowest Quality	80,002	1.00	80,002

Total MBF = 133,800

In 1985, 6.46 billion board feet of hardwood lumber was produced in the U.S. (Forest Industries 1986); consequently, the home center market for hardwood boards represented an estimated 2.1% market share ¹ of the 1985 hardwood lumber production.

If hardwood board demand in five years for typical firms increases by 74% and by 138% for the Top 100 home centers then in 1991 hardwood board sales should be approximately:

	<u>1986 Sales</u>	<u>% Increase</u>	<u>Estimated 1991 Sales</u>
Typical firms	\$338,258,000	x 74%	= \$588,569,000
Top 100 home centers	<u>23,838,000</u>	<u>x 138%</u>	<u>= 56,734,000</u>
Estimate of Total Market Size	\$362,096,000		\$645,303,000

Historical data for hardwood lumber production indicates that it has remain relatively stable since 1960 (Anon 1985b). Thus, it would not be unrealistic to assume that hardwood lumber production probably will remain relatively constant thru 1991. Assuming the price for one board foot of hardwood lumber in this market will remain constant, then approximately 238,041,000 board feet of hardwood lumber will be

consumed. This will represent approximately 3.7% of the hardwood lumber produced in the U.S. in 1991.

References

Anonymous. 1985. U.S. Timber Production, Trade, Consumption, and Price Statistic 1950-84. USDA Forest Service. Miscellaneous Publication No. 1450.

_____. 1986 Lumber's outlook improves - if economy stays stable. Forest Industries. Vol. 113, No. 7:14-16.

Footnotes

¹Market share percent includes imported woods such as mahogany, luan, and rosewood which was sold in the home center market. It is impossible to separate sales estimate for this market by American woods versus imported wood.

Table 1. Hardwood board lengths in feet stocked by respondents.

Lengths	Percent of respondents stocking specified lengths ^a					
	NE (53) ^b	NC (95)	W (44)	S (59)	All Regions (251)	TOP100 (34)
3'	32.0%	16.7%	26.1%	21.7%	23.6%	53.6%
4'	33.3	27.8	47.8	30.4	34.0	82.1
5'	33.3	25.0	43.5	26.1	31.1	60.7
6'	66.7	77.8	60.9	52.2	66.0	96.4
7'	41.7	44.4	52.2	17.4	39.6	39.3
8'	100.0	100.0	95.6	78.3	94.3	64.3
10'	79.2	94.4	78.3	60.9	80.2	25.0
12'	79.2	97.2	60.9	69.6	79.2	25.0
14'	54.2	77.8	34.8	43.5	55.7	21.4
16'	58.3	66.7	21.7	34.8	48.1	21.4
> 16'	04.2	02.8	08.7	04.3	04.7	07.1
Random Length	54.7	62.1	47.7	61.0	57.9	17.6

^aRespondents which reported stocking random lengths are not represented in these percentages except where stated random.

^bNumber of responses per category.

Table 2. Hardwood board widths in inches stocked by respondents.

Widths	Percent of respondents stocking specified widths ^a					
	NE (53) ^b	NC (95)	W (44)	S (60)	All Regions (252)	TOP100 (34)
2"	30.8%	44.7%	50.0%	27.3%	38.1%	78.6%
3"	23.1	28.9	44.4	22.7	28.6	60.7
4"	73.1	81.6	66.7	54.5	70.5	96.4
5"	30.8	21.0	55.6	27.3	30.5	10.7
6"	96.2	100.0	100.0	90.9	97.1	100.0
7"	26.9	23.7	61.1	18.2	30.5	07.1
8"	88.5	97.4	100.0	90.9	94.3	96.4
9"	26.9	26.3	61.1	13.6	29.5	03.6
10"	84.6	76.3	94.4	68.2	79.0	57.1
12"	76.9	78.9	55.6	63.6	70.5	78.6
> 12"	15.4	10.5	05.6	13.6	12.4	07.1
Random Width	50.9	60.0	59.1	63.3	58.5	14.7

^a Respondents which reported stocking random widths are not represented in these percentages except where stated random.

^b Number of responses per category.

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