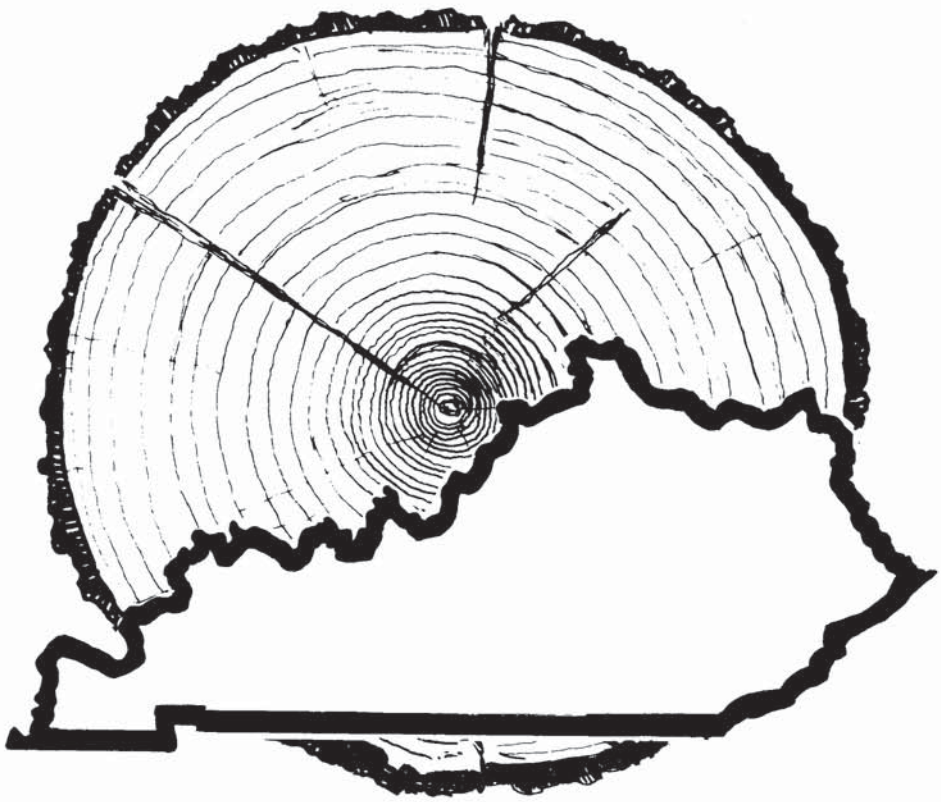
KENTUCKY'S WOOD-USING INDUSTRIES: PROSPECTS FOR EXPANSION



Research Report No. 188

LEGISLATIVE RESEARCH COMMISSION
Frankfort, Kentucky

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KENTUCKY'S WOOD-USING INDUSTRIES: PROSPECTS FOR EXPANSION

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Mary Lynn Collins
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Research Report No. 188

Legislative Research Commission
Frankfort, Kentucky
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FOREWORD

Passage of Senate Concurrent Resolution 18, which called for a study of wood-using industries in Kentucky, was the result of a concern that Kentucky's wood industry is underdeveloped. This report analyzes Kentucky's wood-using industries and shows Kentucky to have potential for more wood processing. Looking toward the 1982 General Assembly, the study suggests ways to encourage the expansion of the Kentucky wood industry.

This report was prepared by Mary Lynn Collins and Linda Kubala. Richard Sims, Beth Wilson and Dr. Charles Bush also assisted in preparation of the report. Special thanks and appreciation are extended to all the wood firms interviewed for the report.

VIC HELLARD, JR.
Director

The Capitol
Frankfort, Kentucky
January, 1982

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SUMMARY

With the passage of Senate Concurrent Resolution No. 18, the 1980 General Assembly directed the Legislative Research Commission to conduct a study of the types of wood-using industries best suited to Kentucky, and recommend incentives to encourage and foster the growth of the industry.

The scope of wood-using industries is broad, including all segments of the industry which use wood as the primary raw material and which by processing this material, increase its value. Kentucky wood-using industries are typically small; and in many cases they are family-owned and managed. Almost every Kentucky county has some wood-processing activity and in some rural areas the only manufacturing activity is wood-related.

While Kentucky is one of the top hardwood producers of the region, it has not developed its wood-using industries as much as many of the surrounding states have. In fact, in the decade of the seventies Kentucky lost over 164 secondary wood manufacturers. Much of Kentucky's lumber is currently shipped to other states for further processing.

Factors which appear to have discouraged wood processing in Kentucky are high costs of workers' compensation insurance; a lack of sources for training; technical expertise and other support services; problems in labor turnover; difficulties in obtaining skilled labor and management personnel; and poor labor relations. The tax structure in Kentucky, measured against those of the surrounding states, is competitive and it is not considered a constraint to increased wood manufacturing.

Very few programs in Kentucky state government are designed to assist wood-using industries. Short training courses for the industry are periodically offered by the University of Kentucky and Morehead State University. The University of Kentucky's Community College System and the Forestry Department jointly offer an associate degree program in Forestry and Wood Technology. The only other program located within state government geared to wood-using industries is the Forest Products Utilization Program in the Kentucky Division of Forestry.

The potential for increased wood processing and manufacturing is good. The state has an abundant hardwood resource. This annual growth rate exceeds removal rate for all species. High shipping costs should make wood processing a more regional activity. This trend, in addition to a worldwide demand for hardwoods, will increase Kentucky's attractiveness as a site for wood processing and manufacturing.

The chapter discussions below led to the following recommendations:

1. A technical assistance program should be developed to assist firms in the wood-using industry. The program could be located within the Commerce Cabinet, or the forest products utilization program in the Forestry Division might be expanded. Such a program should, at a minimum, offer assistance in the interpretation of regulations affec-

ting the industry, disseminate technical, financial and marketing information, and provide individual assistance on such matters where requested.

2. The state should encourage the creation of a non-profit or cooperative association to promote export markets for Kentucky wood products, assist members entering the export market, and maintain a fund for use by members to ease cash flow problems typically associated with lumber exports. Such a program also could be developed within state government, but it would be preferable for such efforts to be carried by the industry itself, with state assistance where needed.

3. Kentucky should be promoted aggressively as a good wood-processing location, especially to foreign wood-using firms seeking a location in this country.

4. Vocational training programs which teach skills required by the wood-using industry should be offered in those schools in areas with a concentration of wood-using firms. The wood utilization program currently offered by the University of Kentucky should be expanded so that students may choose an area of concentration rather than learning a little bit about all aspects of wood processing. This expansion would allow better utilization of the university facilities and equipment at Quicksand, and would produce graduates better equipped to assume responsible positions in the industry.

5. Statutes which mandate or encourage the use of coal as a fuel by industry or state institutions should be expanded to apply also to wood. The burning of wood, particularly scrap and waste from wood processing, should be encouraged.

CHAPTER I

INTRODUCTION

Companies which process wood in Kentucky today, from sawmills to furniture manufacturers, follow a long tradition of wood manufacturing and fine craftmanship in the state. Early settlers were quick to realize the potential of the vast hardwood forests, and developed a thriving industry based on that resource. Even today some Kentucky wood products, such as fine reproduction furniture or quality wood toys, enjoy a national reputation. An increasing volume of Kentucky hardwood is being exported to Europe and Japan.

However, wood processing and manufacturing in Kentucky has been declining for many years. In 1907, the year lumber production in Kentucky reached its peak, the lumber industry alone employed 30,000 people.[1] By 1979, employment in the wood industry was only 16,200, despite a 50 percent increase in population during that period.[2] Between 1961 and 1979, a period of major industrial expansion in the state, employment in the wood industry increased by only 2,400. As a result, employment in wood-using industries fell from 8.3 percent of total Kentucky nonagricultural employment in 1961, to only 1.3 percent in 1979.[3] One sector of the industry, the manufacture of furniture and fixtures, declined in absolute terms during the decade of the '70s, from an employment of 7,000 in 1971 to 5,900 in 1979.[4] A recent study by the University of Kentucky Department of Forestry identified 164 wood-using firms which have either gone out of business or left Kentucky.[5]

The more recent declines in the industry are not due to the availability of raw material. Although the virgin forests are gone, Kentucky remains a major producer of hardwoods. A large portion of the rough lumber produced by Kentucky sawmills is shipped out of state, and additional quantities of timber go directly to mills in other states for processing. This means that Kentuckians do not benefit from income produced by later stages of wood manufacturing.

Concern over the stagnation or decline of this traditional state industry prompted the General Assembly to pass Senate Concurrent Resolution 18 in 1980. This resolution directed a study of the wood industry in order to determine the types of wood-using industries best suited to Kentucky and suggest incentives to encourage and foster the growth of the industry. This report is the result of that study.

Definition of Wood-Using Industries

Conceptually, a wood-using industry is one which uses wood as its principal raw material and which, by processing this material, adds to the value. Tree farms and logging companies would be excluded from such a definition, since they produce the raw material rather than processing it.

Unfortunately, statistics compiled by industrial sectors of the economy utilize Standard Industrial Classifications (SIC codes), which do not neatly categorize industries by the raw material they use. Wood-using industries dominate two of the major SIC categories, SIC 2400, "Lumber and Wood Products," and SIC 2500, "Furniture and Fixtures." Statistics for these two classifications are used in this study where generalizations are made about the wood-using industry as a whole. The Lumber and Wood Products category includes sawmills, dimension mills (where wood is cut to specifications, such as furniture squares), veneer mills and producers of flooring, millwork (such products as stairs, doors, cabinets), and plywood. Logging companies also are included, but make up only a small portion of the total in Kentucky. The SIC Furniture and Fixtures category includes companies which make furniture, shelving, partitions, and similar products, regardless of whether they are made of wood, metal, or some other material. The great majority of firms listed under this category in the *1981 Kentucky Directory of Manufacturers* produce wood products, so data for the category should represent, fairly accurately, the experience of wood-using firms. The two categories cited above omit two large wood-using firms, the pulp mills at Wickliffe and Hawesville. They are classified under SIC 2600, "Paper and Allied Products," a category which includes only a few wood processors. Data for this report is broken out by subcategories which separate wood processing from other manufacturing activities wherever possible.

Studies of the industry often differentiate between "primary" and "secondary" production, although the definition of these terms varies. Where used in this study, the term "primary industry" is used to encompass the first stage of processing generally accomplished by mills—sawmills, planing mills, chip mills, veneer mills. Most other kinds of wood manufacturing are lumped together in the "secondary industry."

Economic Value of the Industry

The main purposes of this analysis are: 1) to determine whether Kentucky's wood-using industry has the potential for expansion, based on available raw materials, manpower and other factors; 2) to identify segments of the industry or particular products which offer a potential for growth; and 3) to suggest actions by state government which could facilitate this growth. The underlying assumption of the study, and one not analyzed in great detail, is that an expanding, thriving wood industry is desirable and will benefit the Commonwealth. This assumption is not wholly self-evident, however, and merits a short discussion at the outset.

Economic development efforts, in Kentucky as in other states, generally are aimed at attracting large, capital-intensive firms which pay high wages. The wood industries, with some exceptions, are dominated by many small firms and are characterized by a very low ratio of capital investment to output. Wages in the industry are low. Nationally, average hourly wages paid in Lumber and Wood Products fall slightly below the average for all

nonagricultural workers, while Furniture and Fixtures pays lower average wages than any major economic sector except Retail Trade.[6]

There are exceptions to these general characteristics, notably a trend towards large, automated mills of various sorts which require heavy investment and a skilled labor force. Such developments should be encouraged where they are feasible. Even ignoring these exceptions, however, the industry is valuable, both in fact and in potential, to Kentucky's economy.

Most important, wood-using industries offer unique opportunities for "home-grown" industrial development, development which can be generated by local resources and involvement, rather than by an outside firm which moves into the area. Almost every Kentucky county, even those with no other industry, has some sort of wood-using activity. Unlike textile firms, which also are characterized by low wages and rural or small-town locations, most of these wood-using firms are independently and locally owned. Sawmills, pallet and dimension mills, and firms producing a wide variety of special wood products have been and still can be started by local entrepreneurs with limited capital and little business experience.

Many of Kentucky's rural areas can be considered overpopulated, in that the local economy is unable to provide sufficient employment or business opportunities for its citizens. These generally are not the areas preferred by large out-of-state firms looking for a Kentucky plant location. The wood industry, which exploits a local resource and local labor to produce a product sold to markets outside the community, can be a catalyst in economic development. The production of wood and metal gates in Casey County and bee supplies in Grayson County are examples of thriving local industries based originally on wood.

The wood industry is a basic industry, in that wages and profits from the industry are "new" money in the economy. If spent locally, this money can stimulate employment in retail and service sectors, and can create opportunities for firms which supply the industry with services or raw materials. The $214 million in value added by Kentucky's wood industry in 1977 (the most recent figures available)[7] thus represents a much larger amount if measured in terms of total economic stimulus.

The industry typically employs unskilled labor, a segment of the workforce with exceptionally high unemployment levels. Skilled labor, especially in the primary wood industry, commands much higher wages, and these skills typically are learned on the job. Thus the industry offers both low-skill jobs and opportunities for training and advancement, which are not available from many low-wage employers.

The wood-using industries may be less glamorous than other conceivable development options, but they can offer solid development potential and should not be overlooked. The high potential for local involvement using local resources makes them a desirable option for many Kentucky localities. At the same time, large firms in some segments of the industry can compete favorably with other manufacturing industries almost anywhere in the state.

Organization of the Report

The fact that employment in Kentucky's wood industry has been fairly stagnant, and that many firms have closed or moved, does not by itself establish that there are problems in the wood industry which can be addressed by state government. The importance of the industry has declined everywhere with the introduction of new materials which compete with wood, and with the rapid growth of other industrial sectors. Therefore, initial steps in the study were to address the question of whether the industry, in fact, shows a potential for expansion. The first step was a look at Kentucky's forest resources and timber production. Reduced availability of timber or reduced demand for the kinds of wood grown in Kentucky could cause stagnation, especially in those branches of the industry which depend on a nearby source of logs. In addition, Kentucky wood industries were compared to similar industries in the adjacent hardwood states to determine whether the composition of the industry in Kentucky differs markedly from that of the region as a whole. Kentucky employment trends were compared with national trends as well, to determine to what extent Kentucky's problems might follow a national malaise in the industry. These basic characteristics of the industry comprise Chapter II of this study.

It became apparent from the initial analysis that Kentucky produces more wood than is processed in the state. Statistical data on wood movements other than rough logs were not available, but people familiar with the wood industry have stated that up to two-thirds of Kentucky's lumber is shipped out of state either directly by logging companies or by sawmills. It was felt that information about these lumber shipments would be valuable in analyzing the potential for expanding wood-using industries in the state, since Kentucky-based industries might be developed to process lumber which currently is leaving the state. Therefore a simple questionnaire was developed and sent to all commercial sawmills in the state to find out how much lumber and what kinds of wood these companies are shipping out of the state, where the lumber is being shipped, and what products are made from the lumber. Chapter III contains results of this survey of commercial sawmills.

In 1979, the Kentucky Department of Commerce contracted with the University of Kentucky Department of Forestry to study the decline of the secondary wood industry in Kentucky. That study still was underway when research for this study began. Every effort was made not to duplicate, but to build upon, the U. of K. Study. The U. of K. report, *The Declining Secondary Wood-Using Industries in Kentucky,* by Joseph Chang and Daniel McCoy, analyzed a number of factors perceived by the industry as problems to doing business in Kentucky. Dr. Chang's findings form the backbone of Chapter IV of the present study, which looks at such items as raw materials and labor availability, taxes, regulation, and workers' compensation rates, which together create the environment for business operations. Dr. Chang's study, however, is based on responses only from firms which went out of business or left the state during the 1970s and thus might reflect neither an objective view of the situation nor the views of successful firms. Therefore other statistical data were

used to clarify survey results. Twenty-one personal interviews with owners or operators of existing wood firms located throughout the state were also conducted. Information from these interviews is used most extensively in Chapter IV, but these wide-ranging and generally informal discussions with wood industry representatives provided a great deal of information, and a basis for understanding aspects of the industry which could not be obtained from published studies or statistical data. Therefore, information from these interviews is used where appropriate throughout the study.

Chapter IV points to a number of areas where state assistance or state programs might assist wood-using firms. Chapter V describes those programs within state government and the state's educational institutions which provide assistance or training for the wood industry.

The intent of the study, once again, was not only to determine whether there is a potential for growth in the wood-using industry, but also to suggest types of firms and products which would be suitable for the state. Several types of information were used to identify products or services which seem to have a potential for expanded production in the state. First, rapidly-growing industry segments in the state, such as kiln drying or sales of firewood, were identified. Secondly, national trends in hardwood utilization, and U.S. Forest Service projections of wood product demands over the next fifty years were analyzed to suggest segments of Kentucky's wood industry which might be developed or expanded to exploit these trends. Finally, the wood-using firms listed in the *Kentucky Directory of Manufacturers* were analyzed for each of the seven Kentucky regions used by the U.S. Forest Service in its analysis of timber resources. These regional comparisons of forest resources were made and the existing industry and its products and general characteristics of the region were examined in a preliminary attempt to identify specific areas which might support additional or new kinds of wood manufacturing. The results of these investigations are reported in Chapter VI.

During the course of this study, a number of problems which seem to hamper the development of the wood industry and which could be alleviated by state programs were discovered. Several possible state programs or incentives to the industry are discovered in Chapter VII.

CHAPTER II

KENTUCKY'S WOOD INDUSTRY

The Timberland

Ownership Patterns

Kentucky is rich in its timber resources. Forty-seven percent of the land in Kentucky (11.9 million acres) is classified as commercial forest land,[8] meaning that the land is currently wooded, and that terrain and soil are such that the land conceivably could be used to produce commercial timber crops. This definition includes some land owned by individuals who have no plans for harvesting timber in the near future. Ninety-two percent of the commercial forest land is privately owned by 455,600 individuals or companies. Fifty-seven percent of these individuals and companies own fewer than twelve acres each and account for only 7 percent of the privately held commercial forest land.[9] Corporations account for only 1 percent of all private owners, but control almost 9 percent of the commercial forest land.[10]

Species

Kentucky is predominantly a hardwood state. Forty-four percent of the growing stock* in its forests is red and white oak.[11]. Other species abundant in Kentucky forests, in order of volume, are hickory, yellow poplar, maple, and beech. Less abundant but commercially important native species are ash, walnut, black cherry, basswood, sweet gum, blackgum, and elm.

The timber varies by species, volume, and quality throughout the state. The eastern third of the state is the most heavily forested, but the Pennyroyal region in the west central portion of Kentucky contains a greater proportion of quality hardwoods. Growth, for all species, exceeded removals, according to the 1975 survey of Kentucky by the U.S. Forest Service.

Quality

Although that survey reported an increase in volume of timber since the last inventory done in 1963, the inventory also indicated that the quality of the Kentucky timber had decreased slightly from that of previous inventories. The 1975 survey found that thirty percent of the hardwood sawtimber is grade 1 and 2 quality, suitable for furniture, veneer, dimension, and flooring. Fifty percent of the hardwood sawtimber is grade 3 quality,

* *Growing stock* includes all live trees of commercial species except rough and rotten ones; to be classified as *sawtimber* a hardwood tree must be of commercial species, 11 inches in diameter at breast height and contain at least one 12-foot or two noncontiguous 8-foot sawlogs.

typically used in products where appearance is not important, such as pallets, upholstered furniture, and some dimensional and flooring products. Twenty percent of the hardwood sawtimber is grade 4, a construction grade used for beams, posts, planks, and other structural products.[12]

A Comparison of the Kentucky Wood Industry to That of Other States

Kentucky is part of the eastern hardwood forest region. Most states in this region have faced similar patterns of development in their wood industry. In order to find out how Kentucky stands in relation to other states in the region, both as a producer and processor of wood, Kentucky was compared to the contiguous states of Ohio, Missouri, Indiana, Tennessee, Illinois, Virginia, and West Virginia. It is with these states that Kentucky competes for markets for its wood products, since the types of hardwood produced are similar throughout the region. Also, wood-using firms which have left Kentucky often have moved to these contiguous states.

Production

Table 1 indicates the volume of hardwood sawtimber (logs of sufficient size and quality to be suitable for conversion into lumber) in Kentucky and the contiguous states for 1977. With the exception of Virginia, Kentucky had more hardwood sawtimber than any of the other contiguous states.

Table 1

Net Volume of Hardwood Sawtimber on Commercial Timberland in Selected States, 1977

STATE	1977 (Million Board Feet)
Illinois	7,064.4
Indiana	10,712.4
Kentucky	26,850.0
Missouri	13,977.3
Ohio	13,907.7
Tennessee	26,289.0
Virginia	37,636.5
West Virginia	26,032.8

SOURCE: United States Department of Agriculture, Forest Service, *Forest Statistics of the United States,* 1977.

The volume of hardwood sawtimber does not in itself indicate the amount available for harvest, since commercial timberland includes forest land held by owners not interested in harvesting timber. Table 2 shows actual removal of hardwood sawtimber and total sawtimber removal in 1976. Compared with the contiguous states, Kentucky ranked third in the amount of sawtimber cut, behind Virginia and Tennessee.

Table 2

Removals of Sawtimber on
Commercial Timberland by Selected States, 1976
(Thousand Board Feet)

State	Removal of Hardwood Sawtimber	Removal of All Sawtimber
Illinois	341,000.0	342,000.0
Indiana	236,000.0	242,000.0
Kentucky	589,807.0	625,589.0
Missouri	406,000.0	431,000.0
Ohio	507,891.0	510,327.0
Tennessee	665,336.0	790,857.0
Virginia	965,974.0	1,680,482.0
West Virginia	406,455.0	434,767.0

SOURCE: United States Department of Agriculture, Forest Service, *Forest Statistics of the U.S.*, 1977.

Processing

Although a leading hardwood producer, Kentucky is not a leading processor of hardwood. Table 3 provides industrial statistics based on the 1977 Census of Manufactures for Kentucky and the surrounding states in selected categories. Value added is a measure of payments for wages, equipment and other factors of production that increase the value of a product purchased and processed by a business enterprise.

In sawmill and planing mill activity, Kentucky ranked fifth in number of employees, but seventh of eight states in terms of the amount of value added. This is somewhat surprising since Kentucky is such a heavy sawtimber producer. Kentucky's performance in this category closely resembled Indiana's—a state which produced less than half the volume of sawtimber (see Table 2). Inclusion of both sawmills and planing mills in this category may explain this discrepancy. Planing mills receive lumber from sawmills and smooth the rough surfaces, thus producing a product with a higher value added than rough lumber. Mr. C. J. Lohr, Chief of the Forest Production Utilization Program, Kentucky Division of Forestry, indicated that while Kentucky has an active and productive sawmill industry, it does not have many planing mills. Many of the surrounding states produce a more finished lumber product. Some of the lumber that is received by planing mills in Ohio, Tennessee, and Indiana is a product of Kentucky sawmills.

Throughout the study, the observation was frequently made that there is a scarcity of wood furniture manufacturing activities in Kentucky. Table 3 underscores this observation. Only 24 establishments reported producing furniture in 1977. Of those states reporting statistics for value added, Kentucky ranked the lowest.

Table 3

Statistics by Selected Industry Group by State, 1977

State	Number of Establishments	Number of Employees (1000)	Average Employees per Firm	Value Added (Million Dollars)
Sawmills and Planing Mills (SIC 2421)				
Illinois	86	.7	8.1	12.8
Indiana	161	1.6	9.9	30.0
Kentucky	224	1.7	7.6	29.7
Missouri	283	1.7	6.0	33.0
Ohio	217	1.9	8.8	35.2
Tennessee	423	3.6	8.5	57.3
Virginia	516	5.8	11.2	111.4
West Virginia	207	2.2	10.6	37.5
Lumber and Wood Products (SIC 2400)				
Illinois	589	13.9	23.6	291.1
Indiana	697	20.6	29.5	432.9
Kentucky	555	8.3	15.0	133.0
Missouri	733	8.9	12.1	161.4
Ohio	854	13.7	16.0	292.0
Tennessee	979	16.7	17.0	261.6
Virginia	1,424	21.9	15.4	415.3
West Virginia	465	5.1	11.0	88.0
Wood Household Furniture (SIC 2511)				
Illinois	84	1.9	22.6	31.1
Indiana	75	*	*	*
Kentucky	24	1.1	45.8	13.4
Missouri	45	1.2	26.7	18.2
Ohio	55	*	*	*
Tennessee	113	6.9	61.1	95.8
Virginia	67	18.1	270.1	267.0
West Virginia	**	**	**	**

SOURCE: U. S. Department of Commerce, Bureau of the Census, *Survey of Manufactures*, Geographic Area Series, 1977.

* Data withheld to avoid disclosure.
** This industry group contained less than 150 employees and was not included.

Kentucky also ranked seventh of eight states in the production of lumber and wood products, a broad category which includes all types of wood processing except furniture and pulp mills. Kentucky had few establishments in millwork, wood buildings, kitchen cabinets, veneer or plywood manufacture. Those lumber and wood products in which Kentucky was a leader in production were pallets, skids, and wood containers. In fact, Kentucky was a leader in the nation for the manufacture of wood containers. However, this segment of the industry is small, accounting for only 7.2 percent of Kentucky's employment in the lumber and wood products industry group.[13]

A final point made by Table 3 is that, overall, firms in the wood industries are small. Kentucky's 224 sawmills and planing mills employed only 1,700 in 1977, an average of 7.6 employees per firm. Lumber and Wood Products firms averaged 15 employees, and Wood Furniture companies employed, on the average, 45.8 employees. Average employment figures for Kentucky are representative of those throughout the region. Low average employment, especially for sawmills, indicates an industry dominated by very small firms.

The Wood Industry in the 1970s

The U. of K. study by Joseph Chang determined that 164 secondary wood-using companies left the state or went out of business between 1970 and 1979. Firms producing dimension lumber, flooring, millwork, and miscellaneous wood products accounted for over half of these closures. The 164 firms are listed by type of establishment and number of closures in Table 4. These closures were fairly evenly distributed throughout the state.

Table 4

Number of Secondary Wood-Using Firm Closures
By Category

Category	Number of Closures
Hardwood dimension and flooring	25
Barrel staves, headings	10
Millwork	27
Wood kitchen cabinets	1
Wood boxes	7
Wood pallets and skids	19
Wood containers	3
Prefabricated wood buildings	10
Miscellaneous wood products	24
Wood household furniture	18
Upholstered wood household furniture	10
Wood office furniture	2
Public building furniture	3
Wood partitions and fixtures	4
Furniture and fixtures	1

SOURCE: Daniel McCoy, Research Assistant,
University of Kentucky Forestry Department.

Employment figures available for 158 of the 164 firms revealed an employment loss of 5,100.[14] In this same period and for the same categories, the *Kentucky Directory of Manufacturers* reported 93 new wood-using firms, employing 2,496 people.[15] While the *Kentucky Directory of Manufacturers* is the most comprehensive listing of the Commonwealth's manufacturing industries, it is recognized that the listing is dependent upon the cooperation of the manufacturing firms and may not be complete. The employment data does not indicate that there was a net loss in the number of jobs in the wood industry. Total employment in the industry, according to census information, declined from 16,300 in 1971 to 16,200 in 1979.[16]

Problems in the wood-using industry during the 1970s were not confined to Kentucky. Figures 1 and 2 illustrate the impact of the 1974 recession on the wood industry of Kentucky and the United States as a whole. Kentucky's wood industry, particularly the furniture segment, was slower to recover from this recession than was the industry as a whole. In 1979, employment in Kentucky's furniture industry still was well below its 1972 level, long after the national industry had resumed its growth.

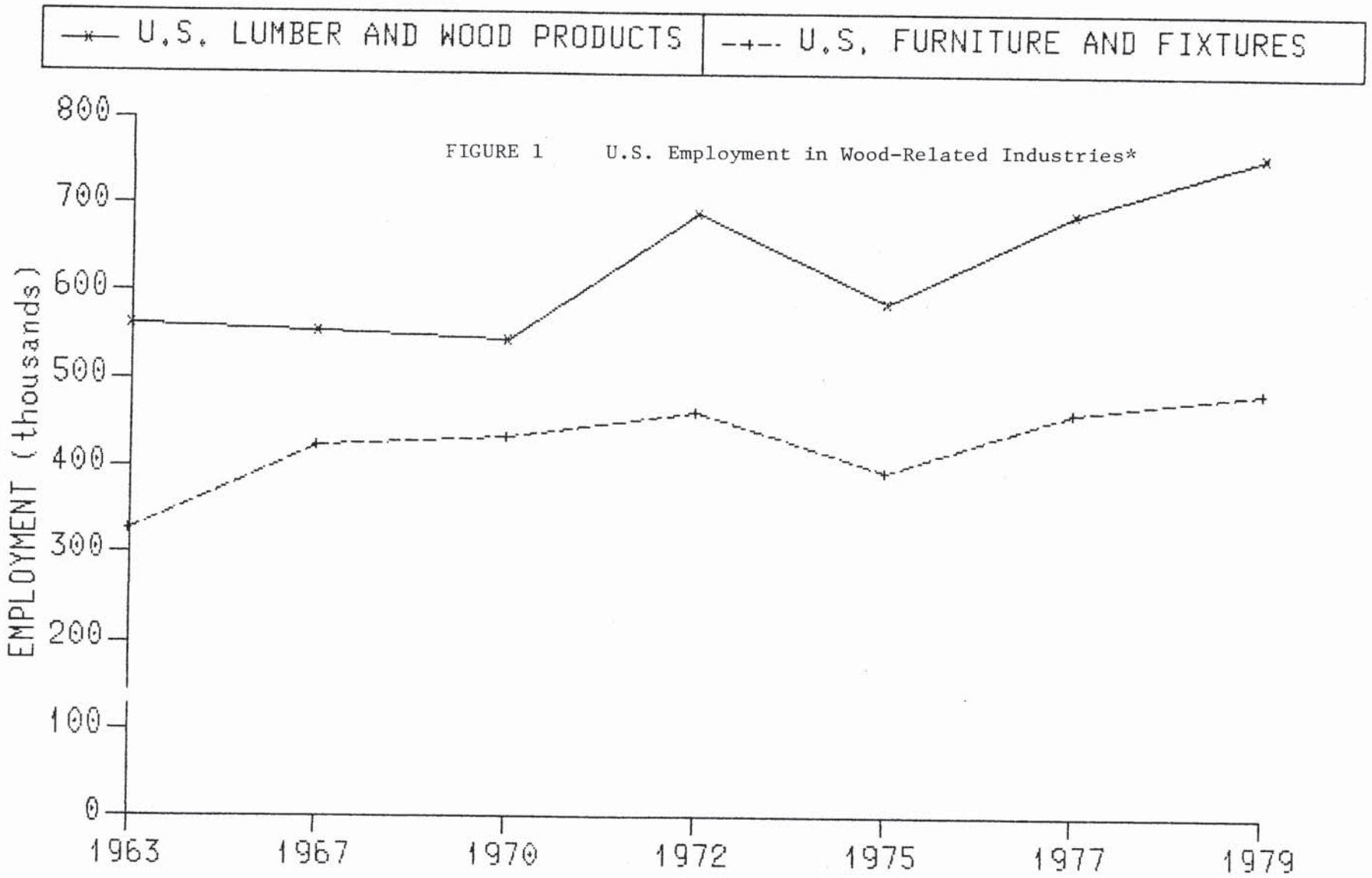


FIGURE 1 U.S. Employment in Wood-Related Industries*

Source: U.S. Department of Commerce, Bureau of the Census, Census of Manufactures, 1967, 1972, 1977; Annual Survey of Manufactures 1963, 1970, 1975. 1979 figures from unpublished data provided by the Bureau of the Census.

*Classification changes were made in SIC code in 1972. The SIC 2500 category, Furniture and Fixtures, also includes metal furniture.

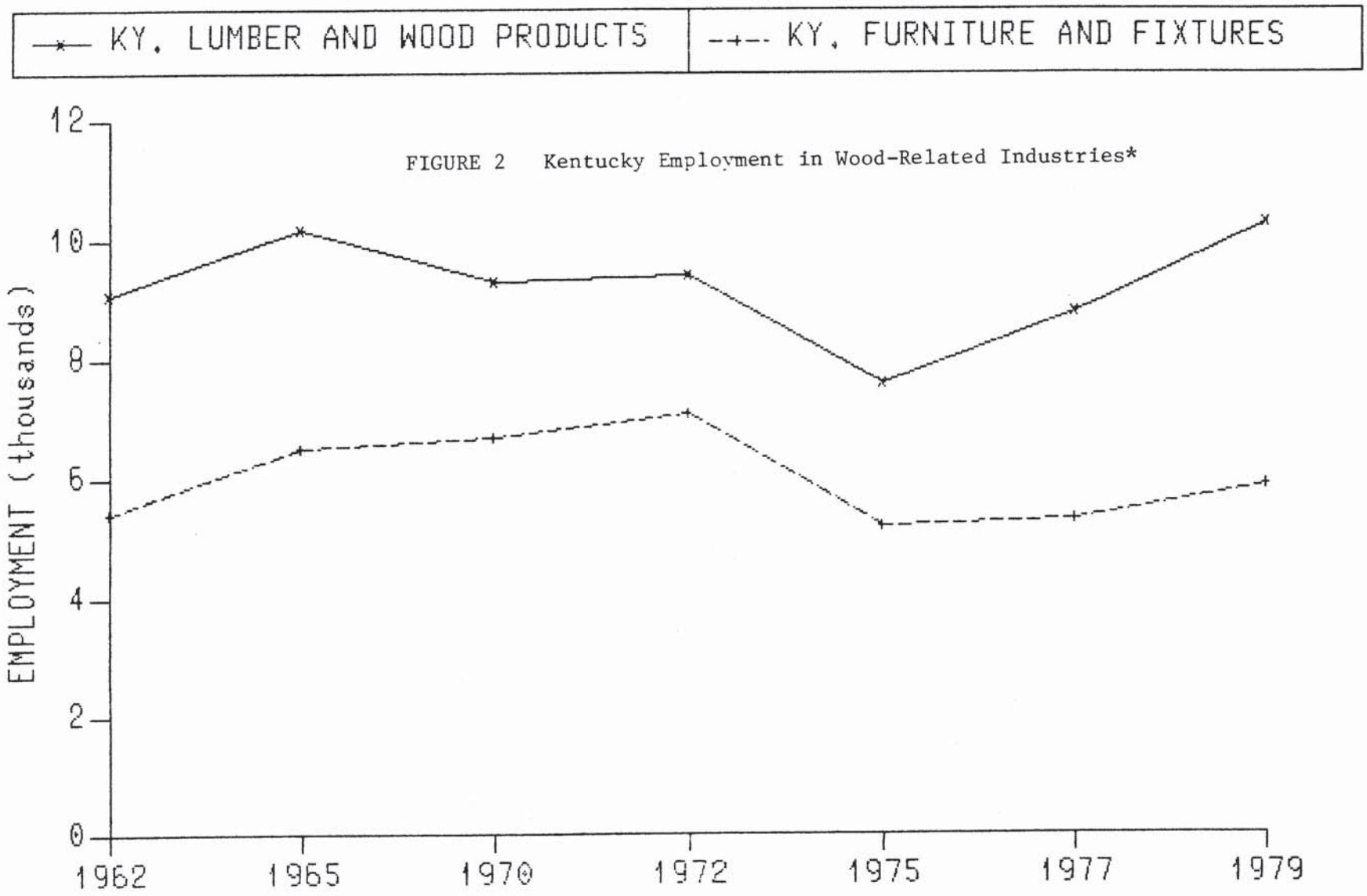


FIGURE 2 Kentucky Employment in Wood-Related Industries*

Source: Kentucky Department of Commerce, Kentucky Deskbook of Economic Statistics, 1965, 1976, 1979, 1980, 1981.

*Classification changes were made in SIC code in 1972. The SIC 2500 category, Furniture and Fixtures, also includes metal furniture.

CHAPTER III

SURVEY OF COMMERCIAL SAWMILLS

Data presented in the previous chapter shows that Kentucky's position in wood processing and manufacturing is less prominent than her status in timber production. Statistical data which could show how much wood is used by Kentucky manufacturers in comparison with the amount of timber cut are not available, but a number of people associated with the wood industry believe that up to two-thirds of Kentucky's lumber is shipped out of state.

A basic assumption behind SCR 18, which directed this study, is that Kentucky's forest resources potentially could support a larger and stronger wood manufacturing industry than currently exists. If more wood remained in the state for processing, Kentuckians would benefit from the jobs and income created by firms which would turn the raw material into finished products. In order to analyze this potential, however, something must be known about the wood which now leaves the state: What kind of wood is exported? Where does it go? What products eventually are made from it?

Very little data is publicly available about lumber leaving the state. To obtain information on this subject, a questionnaire was developed in cooperation with the Kentucky Division of Forestry. The questionnaire was sent to each of the 300 commercial sawmills identified by the Division of Forestry in its directory, *Primary Wood Industries of Kentucky, 1978.*[17] A copy of the questionnaire is in Appendix B.

The questionnaire was purposely kept short and questions were asked in such a way that a mill operator would not have to refer to his records for an answer. Therefore, only the most basic questions could be asked: How much lumber is shipped out of state? Where is it shipped? What kinds of wood are shipped, and what products are made from it?

Questionnaire Responses

Of the questionnaires mailed, twenty-five were returned stamped "address unknown" or with a notation that the sawmill was no longer in operation. One hundred and twelve of the remaining 275 possible respondents answered the questionnaire, for a response rate of 40.7 percent. Such an excellent response rate was probably due in part to the simplicity of the questionnaire, but in large part to the support of the Division of Forestry, and particularly Mr. C. J. Lohr of that Division, who contacted mill operators and urged their cooperation.

The size of the mill was the first question on the form. In order to determine if the respondents were representative of Kentucky sawmills, the distribution of respondents was compared by size to the distribution of sawmills listed in the directory from which the reci-

pients of the questionnaire were originally chosen (*Primary Wood Industries of Kentucky, 1978*). Although this directory contains the most current information available concerning size of mills in Kentucky, it is based on 1977 data. This distribution would be expected to have changed somewhat in the last three years. For example, survey results indicate there are at least four more mills now producing over 5 million board feet of lumber than there were in 1977.

According to Table 5, all of the largest sawmills and about 80 percent of the smallest mills returned the questionnaire. Response rates for all other categories were at least 30 percent, except for the mills producing on to two million board feet. Only eight percent of these mill returned the questionnaire, so results may not be respresentative of this size sawmill.

Table 5

Distribution of Respondents Compared to Population

Annual Mill Production (Thousand Board Feet)	No. of Firms Listed in Forestry Report	No. of Respondents LRC Report	% Response Rates
0-100	27	21	78
101-500	57	17	30
501-1000	54	18	33
1001-2000	66	5	8
2001-5000	78	27	35
Over 5000	18	22	100
Did Not Indicate Production		2	
TOTAL	300	112	

Survey Results

The survey responses provide useful information on the extent of the out-of-state market for Kentucky lumber, destination of Kentucky wood, and final products made from it. The following is a question-by-question summary of the survey results. Since respondents did not all answer all of the questions, the total number of responses tabulated for each question may differ.

Question I. *What was the 1980 Production of your mill?*

The results of this question have already been discussed and are summarized in Table 5.

Question II. *Of the lumber produced by your operation during 1980, approximately what amount did you ship out of the state?*

Sixty-six of the 112 respondents reported that they were shipping at least some of their lumber out of state. This number included more than half of the respondents in all but the smallest size category of mills, as shown on the following table. Since they are the only ones exporting wood, these 66 respondents, rather than the total 112, are the focus for all later questions.

Table 6

Shipping Activities of Respondents
By 1980 Mill Production

1980 Mill Production (Thousand Board Feet)	No. of Respondents Not Shipping Lumber Out of State	No. of Respondents Shipping Lumber Out of State	Percent Shipping Lumber Out of State
All Respondents	46	66	58.9
0-100	17	4	19.0
101-500	8	9	52.9
501-1000	7	11	61.1
1001-2000	0	5	100.0
2001-5000	4	22	81.5
Over 5000	7	14	63.6
Did Not Indicate Production	1	1	

Nine respondents indicated that they ship wood out of state, but did not estimate the amount shipped. Of the remaining fifty-seven, 70 percent reported exporting over half of their production. These responses are tabulated below; they suggest that a large part of the market for Kentucky sawmills lies outside the state.

Table 7

Distribution of Mills Shipping
Out of State, by Percentage of
Lumber Produced Which is Shipped

1980 Mill Production (Thousand Board Feet)	No. of Respondents Shipping Less Than 50% of Lumber Produced	No. of Respondents Shipping More Than 50% of Lumber Produced
0-100	0	4
101-500	3	3
501-1000	2	8
1001-2000	2	2
2001-5000	6	13
Over 5000	4	10
TOTAL	17	40

Question III. *What was the approximate value of these shipments?*

The amounts respondents reported as the value of out-of-state shipments ranged from as low as $2,500 to as high as $16,000,000. The median value of shipments, however, was $205,000. Together, the fifty-one mill operators who answered this question reported a total value of $42,898,035.00 for their out-of-state lumber shipments.

Question IV. *Please indicate the percentage of wood that you shipped out of state, by species.*

Respondents were provided with a list of 17 species of wood. They were asked to give percentage amounts, but a large number merely checked the species which they exported, or listed quantities. Because of this, percentages could not be tabulated, so the table below lists the number of mills which reported shipping each species of wood out of the state.

Table 8

Number of Mill Shipping Lumber out of State, by Species

Cottonwood	6
Basswood	7
Birch	7
Elm	9
Sweet Gum	16
Chestnut Oak	16
Walnut	19
Sycamore	20
Soft Maple	25
Hard Maple	26
Ash	33
Hickory	36
White Oak	44
Yellow Poplar	44

While all of the listed species are being exported, those reported by the most mills are white oak, yellow poplar, ash, and hickory.

Question V. *Please indicate by percentage the principal market area for the lumber you shipped out of state during 1980.*

A number of mill operators sell their product through brokers and were not sure of the final destination of the lumber. Respondents reported sending lumber in 1980 to at least twenty states and seven countries. The number of mills shipping to major market areas (those most commonly mentioned) are as follows:

West Virginia	11
Virginia	13
Illinois	16
North Carolina	28
Ohio	30
Indiana	37
Tennessee	39

While most mills indicated they shipped lumber to more than one state, Indiana was the exclusive market for nine mills.

North Carolina is a major center of the furniture industry. All of the other commonly listed states are contiguous to Kentucky. This information corresponds to the observation in Chapter IV that most wood-using firms obtain their materials from locations no more than 150 miles away.

The most common export markets for lumber mentioned were Germany and Canada. Other countries using Kentucky lumber are Holland, Italy, France, Japan, and Sweden.

Question VI. *For what manufactured product(s) was the majority of the lumber shipped out of the state used?*

Although lumber leaving Kentucky is being processed into numerous wood products, including caskets and shoe trees, the major products and the number of mills reporting these products as being produced from their lumber are as follows:

Flooring	14
Furniture	37
Pallets	25

Solid furniture requires the best grades of lumber. Pallets and flooring, typically, use the lower grades of lumber.

Survey Findings and Analysis

The questionnaire responses certainly support the hypothesis that a large portion of Kentucky's lumber production is shipped out of state directly from sawmills. Much of this lumber apparently is used for such products as furniture and specialty items, which require relatively large inputs of labor, and add greatly to the value of the raw material. The implication is that, at least on the basis of its resources, Kentucky could support many more such manufacturing firms than presently operate in the state.

Though it was noted earlier that 40.7 percent of the mill operators responded to the survey, that percentage indicates only the number of mills and does not directly consider the proportion of the state's production represented by these respondents. It can be noted from Table 5, for example, that the smallest size mills, the 0-100,000 board feet range, had almost exactly the same number of respondents as the largest classification, the over 5 million board feet range. Though the production of one mill in this largest category might exceed that of fifty or more of the smallest size mills, this difference in size is not explicitly accounted for in the previous tables. Information on production distribution by size of mill and the proportion of the state's total mill production accounted for by this survey might be useful in placing this data in perspective.

The Primary Wood Industries of Kentucky, 1978, reports the percentage of sawmills falling into each size classification and the percentage of total materials processed by each size classification. Table 9 compares the percentage distribution and number of firms by size category from that report and from the current survey. Though we are looking at different years (1977 and 1980, respectively), the industry has been fairly stable and the findings should be reasonably comparable.

Table 9

Kentucky Sawmills, Number and Percent Distribution by Size

Annual Production (Thousand Board Feet)	LRC Survey Number	LRC Survey Percent	Forestry Survey Number	Forestry Survey Percent
0-100	21	19	27	9
101-500	17	15	57	19
501-1000	18	16	54	18
1001-2000	5	4	66	22
2001-5000	27	24	78	26
Over 5000	22	20	18	6
Did Not Indicate Production	2	2	—	—
	112	100%	300	100%

By taking the Forestry numbers as the maximum possible number of respondents (though the over 5 million board feet category exceed this maximum), an estimate can be made of the response rate by category. By then adjusting this categorical response rate by the percentage of total production attributable to each category (from the Forestry Report), an estimate of the population of the state's total production represented by the respondents is then derived.

Table 10

Estimate of Total Production

Annual Production (Thousand Board Feet)	(A) LRC Survey % Response Rate	(B) % of Total Production by Category	(A) x (B) % of Total Factor
0-100	78	1	.8
101-500	30	2	.6
501-1000	33	7	2.3
1001-2000	8	19	1.5
2001-5000	35	49	17.2
Over 5000	100	22	22.0
		100%	44.4%

Thus, the respondents to this survey accounted for approximately 44.4 percent of the total board feet of production of Kentucky's sawmills. These respondents (representing 44 percent of the total amount of lumber produced) reported in Question III that they shipped lumber valued at $42,898,035 out of state in 1980. It would be reasonable to assume that this dollar amount represents 44 percent of the total out-of-state shipments and thus that close to $100,000,000 worth of lumber was shipped out of state in 1980. If that lumber could have been retained and further processed into finished or semi-finished products

before shipping to regions outside the state, the contribution of Kentucky wood to the state's economy would have been greatly enhanced.

Most of the exports were to contiguous states, but Kentucky lumber is being shipped to the east and west coast and to foreign countries. Not surprisingly, the species most commonly shipped, white oak, yellow poplar, and hickory, are also predominant species in Kentucky forests.

The survey does not show the total picture, however. Some sawmills, especially those located near the Kentucky borders, probably obtain logs from out of state, and some Kentucky wood-using firms obtain materials from Indiana, Tennessee, or elsewhere. Cross-border shipments of logs are not tracked. A net analysis of wood movements and a more detailed look at the species and grades of wood which go out of state, compared with those which find markets in Kentucky, are needed, if this aspect of the wood industry is to be explored more fully.

CHAPTER IV

THE CLIMATE OF KENTUCKY'S WOOD-USING INDUSTRY

As Chapter II indicates, Kentucky seems to fall short of its potential as a wood-processing state, if this potential is measured in terms of timber production. Dr. Chang's study of wood-using firms identified 164 businesses which closed or left the state during the 1970s. This loss shows only part of the problem, however. Many of the closings during the mid-70s were probably due to the nationwide recession. The graphs in Chapter II, however, show that the recession was followed nationally by renewed growth, while in Kentucky, there seemed to be a reluctance to reenter or expand wood manufacturing operations.

The following chapter examines a number of factors that may have hampered the recent growth of the industry. It is based primarily on information provided by owners and managers of wood manufacturing firms in Kentucky, and leans heavily on Dr. Chang's study. Chang located 89 of the 164 firms that went out of business in the 1970s and sent each of them a mail questionnaire with a series of questions concerning factors which he expected might be important in their decision to close their Kentucky operations. Seventy-one firms returned the questionnaire, for a response rate of 79.8 percent. That questionnaire is found in Appendix C. Its results are examined in this study in order to determine the problems perceived by these operators. Because responses to questions were not cross tabulated by size or type of establishment, it was not possible to determine whether problems cited were peculiar to a specific segment of the wood industry.

In order to get a more current view of the industry, over twenty personal interviews were conducted with a variety of wood-using firms. These companies represent a cross-section of the industry as well as geographic diversity. Several out-of-state firms who had looked at Kentucky as a potential site, but eventually located elsewhere, were also contacted. Informal discussions were held with several out-of-state firms during the 1980 International Woodworking Machinery and Furniture Supply Fair in Louisville. A list of the interviewees can be found in Appendix D.

The factors discussed in this chapter correspond roughly to those identified by Dr. Chang and included in his questionnaire. Together, they describe a business climate for the wood industry, and good and bad points about doing business in Kentucky. Both Chang's questionnaire results and the interviews are, of course, based upon perceptions of those in the industry or formerly in the industry. In order to present a more balanced picture, Kentucky is compared statistically to the contiguous states or to the nation as a whole whenever possible.

Raw Materials

Chang asked former wood entrepreneurs if they had had problems acquiring raw materials. Only 14 of the 71 firms that returned the questionnaire indicated they had experienced problems in this area. Surprisingly, 8 of these 14 indicated that failure to obtain wood was a major factor for the closing of their firm. Unfortunately, Chang does not report what these firms produced or what kinds of wood they required. They may have required large amounts of wood types not abundant in Kentucky forests. In the interviews conducted with current wood entrepreneurs, no one reported supply problems. Veneer mills, because of the high value and the small amount of waste in veneer logs, reported obtaining logs from as far away as New York. Most firms interviewed, however, acquired their lumber within a 150-200 mile radius. Many of the furniture and dimensional firms interviewed operate their own sawmills to insure a stable supply of raw materials.

Labor

Labor Supply

Twenty-six of the 71 respondents of the UK study reported difficulties in obtaining qualified workers. Eleven of these respondents cited this problem as the most significant factor influencing their decision to shut down their operation.

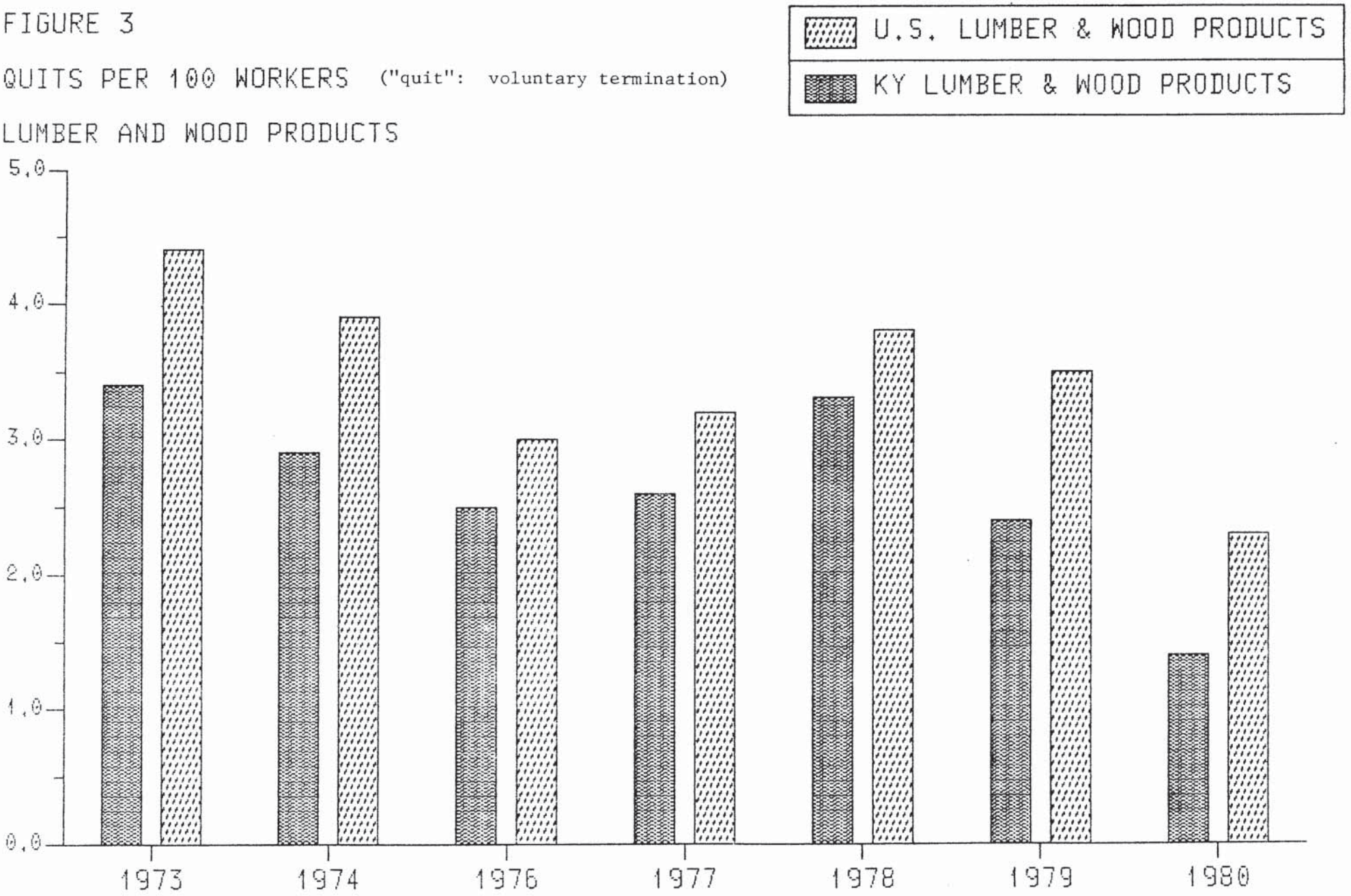
Labor availability seems to be a selective problem, and it is unfortunate that Chang's results are not broken down by size or type of firm. Figures 3 and 4 show that labor turnover was unusually high in part of Kentucky's wood industry in 1977 and 1978, but otherwise, figures compare favorably with national averages. No specific answer could be found for the temporary high turnover rates. According to James Rice of the Bureau for Manpower Services in the Department for Human Resources, high "quit rates" often characterize an expanding industry employing relatively unskilled, low-wage labor. As the industry expands, it goes through a period of high turnover until it acquires a mature labor force or until a sluggish economy limits the workers' employment opportunities. If this is the case, firms in the furniture and fixtures category may have problems with employee retention again as the general economy improves.

Interviews with the industry indicated that maintaining an adequate supply of labor may still be a problem. In the "coal counties," the available labor supply is influenced by the amount of activity in mining. When coal booms, the availability of labor for wood firms drops, since wood firms cannot compete with wages in mining. One wood entrepreneur reported that this problem forced him to automate his firm, so that he requires only one-half the labor force of a typical similar size plant.

FIGURE 3

QUITS PER 100 WORKERS ("quit": voluntary termination)

LUMBER AND WOOD PRODUCTS

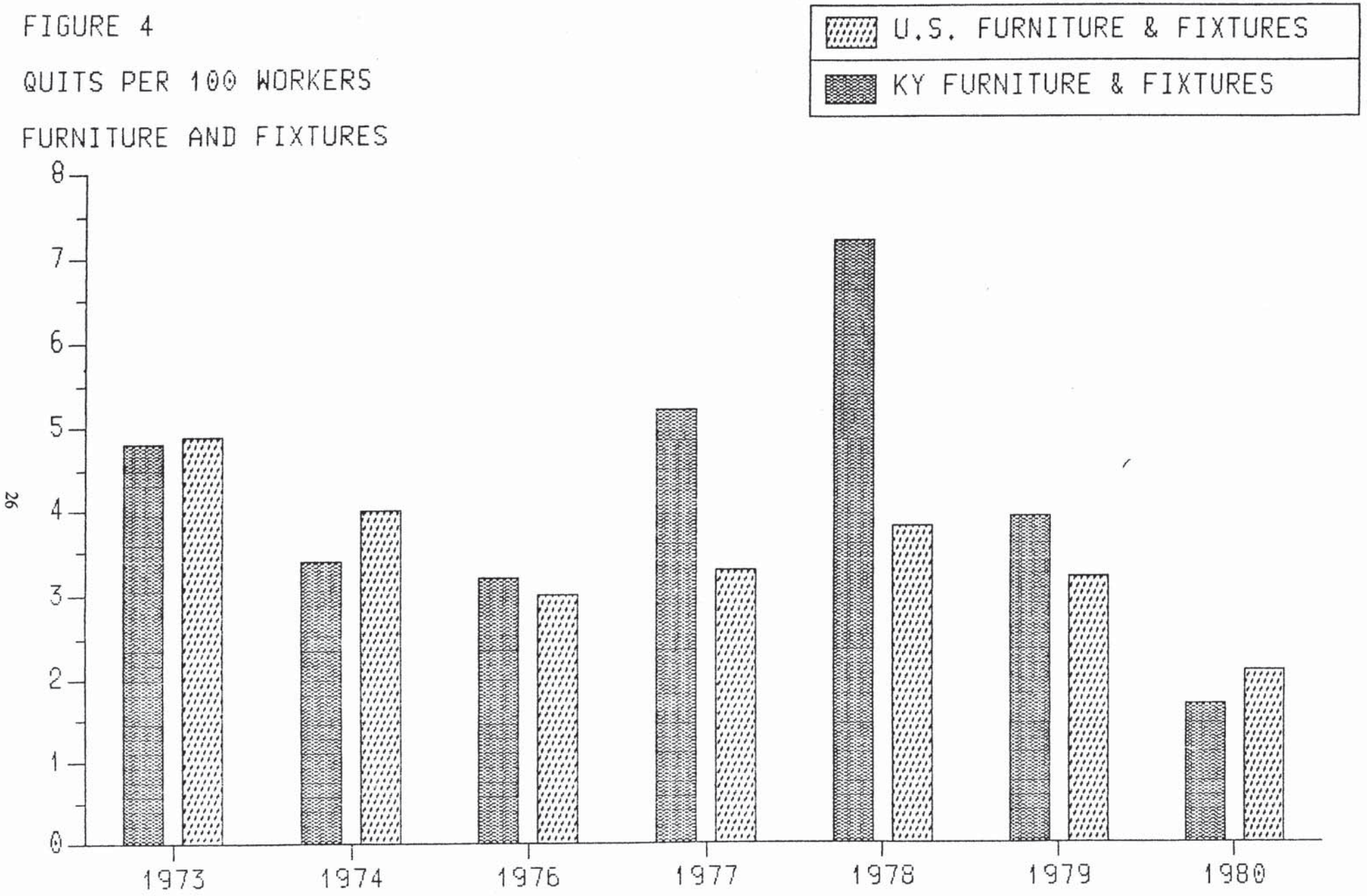


Source: Kentucky Department of Commerce, Kentucky Directory of Manufacturers, 1979-1981; Bureau of Labor Statistics, Employment and Earnings, March, 1981; 1980 Kentucky data supplied by the Kentucky Bureau for Manpower Services, Research and Statistics Branch.

FIGURE 4

QUITS PER 100 WORKERS

FURNITURE AND FIXTURES



Source: Kentucky Department of Commerce, Kentucky Directory of Manufacturers, 1979-1981; Bureau of Labor Statistics, Employment and Earnings, March, 1981; 1980 Kentucky data supplied by the Kentucky Bureau for Manpower Services, Research and Statistics Branch.

More of the firms interviewed reported problems finding adequate managerial personnel rather than basic labor. One eastern Kentucky businessman reported operating seven years without a foreman because he could not find a qualified person. Another owner complained that his firm is limited in size because of a shortage of management. At one time, he reported, his operations went to two shifts but he had to pull back to one bacause he could not obtain enough supervisory help.

Vocational Educational Needs

In the personal interviews, the managers/owners of firms were asked if they felt their operation could benefit from vocational training. The larger secondary industries interviewed generally indicated that they prefer to do their own training. They have a large labor pool from which to select and train managers, and can pay the wages required to attract managers from elsewhere, if needed. The smaller manufacturing firms, employing 50 employees or less, generally were receptive to vocational training for their employees or potential employees. The primary industry, including sawmills, veneer mills, and similar firms, requires skilled labor to operate sophisticated equipment. They reported a concern about the lack of programs in Kentucky for the training of sawyers, edgermen, log graders, kiln operators, and workers for other skilled positions. Existing state vocational training programs are discussed in Chapter V.

Labor Relations

When asked if they had ever considered Kentucky as a potential business site, several of the out-of-state firms at the 1980 International Woodworking Machinery and Furniture Supply Fair, held in Louisville, responded that they had not because of Kentucky's "labor problems." Perhaps because Kentucky is a coal state, it is perceived as a state with an uncooperative labor force. This image may not be totally undeserved. While Kentucky is not as heavily unionized as some of the surrounding states, it lost more man-hours per non-agricultural worker in 1977 because of work stoppages than any neighboring state except West Virginia. In fact, Kentucky and West Virginia lost more man-hours due to work stoppage in 1977 than any of the other 46 continental states.[18] Not all of the wood firms inteviewed had unionized workers. Most of those who did voiced apprehension about new contracts and the possibility of a strike, and would like to see Kentucky adopt a right-to-work law. They felt that the adoption of such a law, which would allow non-union members to work in a unionized plant, would, in part, help overcome Kentucky's bad labor image.

Workers' Compensation Insurance

Dr. Chang's study concluded that high workers' compensation rates were a contributing factor in the closing of half of the secondary wood-using firms. Nine firms

reported they would have been able to stay in business had it not been for the high cost of workers' compensation insurance.

Two out-of-state firms contacted for the current study stated that the high cost of workers' compensation had prevented them from locating in Kentucky, and another indicated that it was a factor in their decision to locate elsewhere.

Workers' compensation insurance, required by law, provides for the payment of medical costs and cash benefits to workers or their dependents for injuries sustained on the job. The system varies from state to state, but in Kentucky and thirty-three other states, the National Council on Compensation Insurance is the rate-making agency for workers' compensation insurance. Within these thirty-four states, rates vary according to a complex set of factors, including the degree of risk involved in an industry, the experience record of the industry, and the benefit levels set by the state.

In the '70s, Kentucky businessmen faced steadily increasing workers' compensation costs. Workers' compensation insurance rates for Kentucky began to go up in 1972 when the General Assembly mandated that benefits be paid on partial disabilities for the lifetime of the injured worker. Previously, such benefits were paid for a limited time. In 1980, however, this trend was reversed when the General Assembly passed House Bill 532, which mandated a 27 percent reduction in the rates for one year and, by reducing the time period during which benefits would be paid on permanent partial disabilities, laid a foundation for a permanent lowering of rates.

The high workers' compensation rates of the past made Kentucky an expensive place to do business, particularly for industries that are labor-intensive or high risk. Table 11 compares 1976 and 1980 basic premium rates for Kentucky and those surrounding states, tabulated by the National Council on Compensation Insurance. The rates in Table 11 are "manual" rates, which, although useful for comparing states, do not necessarily reflect the exact premiums paid by industrial firms. Actual premiums charged to specific companies also reflect the experience records for the company and other factors.

In 1976, firms in logging and sawtimber production had to pay $52.81 in workers' compensation premiums (manual rates) for every $100 they paid their workers. This rate was higher by far than those levied in any contiguous state, and higher even than Kentucky's rate at that time for underground coal mining. The relatively high rates at all stages of processing might well have discouraged labor-intensive wood industries from considering Kentucky as a plant site. Current rates put Kentucky in a more competitive position with all the neighboring states except Indiana, although the lower rates are offset somewhat by increased assessments for the state Special Fund, which pays for second-injury and occupational disease claims. The tax and assessment charge for the Special Fund increased in July, 1980, from 8.91 percent of the premium to 16.68 percent, and is expected to be 21.31 percent for 1981.

Table 11

Rate Comparison of Workers' Compensation Insurance
for Forest Industries, by Selected States
1976, 1980

Premium Per $100 of Payroll

	Logging, Sawtimber		Sawmills		Veneer Manufacturing		Planing Mill		Furniture Manufacturing		Paper Manufacturing	
	1976	1980	1976	1980	1976	1980	1976	1980	1976	1980	1976	1980
Illinois	28.34	36.40	25.51	20.92	9.90	10.16	6.93	8.38	5.82	6.24	6.30	7.20
Indiana	14.37	7.74	7.52	4.42	3.18	2.93	2.41	1.69	1.72	2.21	1.66	-
Kentucky	52.81	27.83	19.94	15.19	6.23	5.67	9.41	5.12	5.80	4.14	3.64	3.35
Missouri	32.31	17.11	9.71	9.01	4.84	4.10	5.01	3.80	2.76	3.68	2.89	2.57
Tennessee	16.51	22.73	9.56	11.42	4.86	4.93	5.15	5.10	2.83	3.34	1.75	2.33
Virginia	12.99	23.67	5.63	11.49	5.63	4.37	3.79	6.17	1.90	2.97	2.28	3.75

Source: National Council on Compensation Insurance (NCCI), Basic Manual for Workers' Compensation and Employer's Liability Insurance, 1980 edition; 1976 data provided by NCCI.

Note: Ohio and West Virginia have state-operated funds and therefore are not included in tabulations by the NCCI.

Almost all of the owners and managers interviewed brought up the high cost of workers' compensation insurance. Workers' compensation costs apparently were perceived as a constraint throughout the industry, not just in the primary industries, where rates are highest. Secondary wood industries complained that they were affected two ways: the cost of lumber needed for their operation reflected the higher rates, and they had to pay out more in workers' compensation for their own employees. Most of those interviewed were pleased with the reduction in the manual rates, but concerned with increases in the Special Fund assessment.

Taxes

Only one respondent in Dr. Chang's study cited taxes as the reason for closing his business. However, businesses, in considering new site locations, are influenced by the taxing structure of a locality. According to a survey of state manufacturers' associations, state and local taxes were considered the most important factor in assessing business climate.[19]

The West Virginia Research League, Inc., compared the amount of state and local property taxes a hypothetical company would have paid in 1978 in selected states. Of the group including Kentucky and contiguous states (Missouri was not compared), the corporation would have paid the lowest state and local property taxes in Kentucky.[20] According to Tables 12 and 13, Kentucky's state and local tax rate is competitive with those of the surrounding states, and may be a positive factor in attracting and retaining the industry. When current wood industry owners/managers were asked for specific recommendations on taxes, they mentioned only changes in inventory and inheritance taxes.

Table 12

Corporation Income Tax Rates by Selected States, 1978

State	Rate, percent of net income
Illinois	4.0
Indiana*	3.0
Kentucky	4.0 up to $25,000 5.8 above $25,000
Missouri**	5.0
Ohio	4.0
Tennessee	6.0
Virginia	6.0
West Virginia	6.0

SOURCE: Tax Foundation, Inc., *Facts and Figures on Government Finances,* 1979.

* Additional net income tax is imposed on corporation banks, trust companies, savings associations, and insurance insurers, at 3%.

** Federal income tax deductible.

Table 13

State and Local Taxes Per Capita
by Selected States, 1978

State	Amount
Illinois	$916.99
Indiana	706.67
Kentucky	661.90
Missouri	653.06
Ohio	700.52
Tennessee	613.27
Virginia	756.52
West Virginia	675.34

SOURCE: U.S. Bureau of the Census,
Government Finances in 1977-78, 1980.

Financing

Chang reported that 23 of the 71 respondents to his questionnnaire (32%) thought that obtaining capital was a problem in their operation. Eight of these listed problems with obtaining needed capital as the most significant factor contributing to their decision to close their Kentucky operations.

Reported difficulties in obtaining capital may be more of a general small business problem than a problem specific to the wood industry. A number of special sources of capital are available to Kentucky wood firms or potential businesses, but firms vary greatly in their knowledge of these resources and their ability to use them. Sources of capital include, in addition to local banks and financial institutions, the Farmers Home Administration, the Small Business Administration, and the Economic Development Administration. Several options specifically available in Kentucky are listed below:

1. Industrial Revenue Bonds issued by a city or county to finance industrial or commercial development in the community.

2. Kentucky Development Finance Authority (KDFA). This state agency oversees the issuance of tax free bonds and, in some cases, guarantees the bonds. KDFA can provide direct loans for second mortgages and for start-up and expansion capital. In fiscal year 1980-81, KDFA funded three wood-related companies, all in the primary wood industry.

3. The Business Development Corporation of Kentucky. This is a private, non-profit organization which loans money for developing industries throughout Kentucky. Few wood-using companies have applied for financial aid from the corporation. Loans have been made to a pallet plant and a furniture company.

4. Kentucky Highland Investment Corporation (KHIC). This is another private development corporation, but its activities are confined to a nine-county area in southeastern Kentucky. KHIC provides capital for new or expanding ventures and makes

small loans to local businesses. It has invested in only one wood-using firm, a producer of walnut trophy bases and plaques.

5. Mountain Association for Community Economic Development, Inc. (MACED). A private, not-for-profit organization started in 1976, MACED finances the start-up and expansion of small businesses in east Kentucky and the surrounding mountain counties of Tennessee, Virginia, and West Virginia. MACED has a special program to stimulate the growth of the wood products manufacturing industry in east Kentucky.

Wood-using industries in Kentucky may have problems obtaining loans from local banks, as was suggested in some of the personal interviews. If there is a general impression among bankers that the industry as a whole is not growing, this might curtail the availibility of loans. It does appear, however, that many small or would-be wood processors are unaware of sources of capital other than the local bank, which is a problem of small businesses in all fields. One eastern Kentucky interviewee mentioned this problem and noted that he was recently the first man in his county ever to apply for a small business loan through the federal Small Business Administration.

Energy Costs

Only 11 of the 71 respondents of the UK study by Dr. Chang responded that energy was a hindrance to their operation. However, energy costs in the '70s may not have been the concern for business they are today. In the survey of manufacturers by Alexander Grant,[21] energy costs were selected as the second most important factor (after state and local taxes) considered in determining a good business climate. In 1978, U.S. Bureau of the Census figures show that Kentucky manufacturing industries paid more for purchased fuels and electricity than any of the neighboring states. This is surprising, in view of Kentucky's favorable position with respect to at least two forms of energy, electricity and coal.

Because of the increased cost of energy, many firms in the industry, including sawmills, paper mills, furniture factories, and dimensional mills, now burn sawdust, bark, and other wood residue to produce heat and electricity. Only two of the firms interviewed did not burn wood waste to produce the energy for some portion of their process, such as the heating of kilns. Two reported that they produce over 98% of their heat requirements from wood waste.

Table 14

1978 Average Energy Cost Per Million BTUs for Purchased Fuels and Electricity, by Selected States

State	Cost
Illinois	$3.25
Indiana	3.00
Kentucky	3.59
Missouri	2.91
Ohio	3.19
Tennessee	3.00
Virginia	3.07
West Virginia	2.53

SOURCE: United States Department of Commerce, Bureau of the Census, *Annual Survey of Manufactures*, 1980.

Note: Data is based on the quantity, type of energy, and the price, as reported by selected manufacturing establishments.

Regulation

The wood industry, like any other industry, must satisfy a number of regulatory agencies. Almost half of the respondents of the UK study felt that the regulations which affected their operations were too stringent. Twelve respondents cited regulatory agencies and regulations as the most significant factor influencing their decision to shut down. Those areas of regulation that currently are of the most concern to the wood industry are discussed in the following sections.

Air Pollution

A wood industry in Kentucky must apply to the Department for Natural Resources and Environmental Protection (DNREP) for a construction permit and an operating permit before beginning operations. Once the permits are issued, the Division of Air Pollution of DNREP inspects the operation regularly to insure that the operation is in compliance with its standards, set forth in the Kentucky Administrative Regulations (401 KAR Chapter 50). Jefferson County has separate regulations, which are generally more restrictive than those for the rest of the state. Table 15 shows that in 1976 Kentucky's expenditures for pollution abatement were about average, compared to surrounding states, and considerably lower than those in Indiana, Tennessee, or West Virginia. Much of the difference, of course, reflects the industry composition in each state rather than the strictness of regulations. Some of the interviewees complained about long delays in the permitting process and a problem with consistency in interpretation of the standards.

Table 15

1976 Private Pollution Abatement Expenditures as Compared to the Value of Industrial Shipments, by Selected States

State	Cost
Illinois	$0.311
Indiana	.494
Kentucky	.343
Missouri	.218
Ohio	.356
Tennessee	.444
Virginia	.383
West Virginia	1.319

SOURCE: Alexander Grant and Company, *A Study of Manufacturing Business Climates of the Forty-Eight Contiguous States,* 1980.

Solid Waste Disposal

Wood processors generate a good deal of sawdust and other residue which they must dispose of properly. Many processors sell or give away residue to paper mills, flakeboard plants, and charcoal plants. Increasingly, those who generate sufficient amounts of residue are burning the waste for use as energy. None of the interviewees mentioned disposal regulations specifically as a problem.

Health and Safety in the Work Environment

The Division of Occupational Safety and Health Compliance of the Kentucky Department of Labor is responsible for enforcement of those regulations promulgated by the Kentucky Occupational Safety and Health Standards Board. On the whole, these regulations are the same as those which apply anywhere else in the country. A number of the owners and managers interviewed for this study reported special difficulty in complying with the regulation concerning occupational noise exposure. This regulation sets permissible levels of noise exposure by decibels (a measure of loudness) and duration of exposure. If an operation exposes workers to excessive noise, it must either reduce the noise to an acceptable level or limit the number of hours an employee spends in those areas where the noise level is excessive. According to Mr. Salyers of the Kentucky Department of Labor, the wood industry has more problems complying with this regulation than almost any other industry. Several companies interviewed had been cited for noncompliance. If an industry can show, however, that it cannot comply with the regulation, either through administrative or engineering changes, it can come into compliance by providing protective equipment to employees, such as earmuffs or plugs.

Other Factors

There are, of course, other factors that affect the wood industry. One which is often mentioned as a constraint to development generally is a lack of adequate industrial sites in Eastern Kentucky. A surprising factor that surfaced in interviews was the perceived instability of Kentucky state government. This factor is hard to measure. Thus, comparisons with other states are difficult. Several of the firms interviewed complained that state officials in those agencies important to the wood industry change with each new administration and sometimes more often. Some mentioned that there have been three directors of the Kentucky Division of Forestry in the last ten years, and that the Agri-business Division in the Department of Commerce, which was working to open new markets for sawmills and related firms, was abolished by the current administration. High turnovers in regulatory personnel also were noted. Changes in inspectors, according to many in the industry, often bring a change in the interpretation of regulations and hence, unnecessary confusion.

Another factor that could influence the lack of wood manufacturing in a state is lack of support systems. Except for the regional service provided by a community development organization interested in developing the wood industry in eastern Kentucky, the Mountain Association for Community Economic Development, Inc., and those services provided by Morehead State University, the University of Kentucky and the Kentucky Division of Forestry, strong support services for the wood industry in Kentucky are not in evidence. There is one wood-related trade association in the state, the Kentucky Forest Industry Association, made up of growers, harvesters, producers, and marketers of the wood industry. The association was very active in efforts to reduce the workers' compensation insurance rates and does provide some informational services. However, it has not yet created the strong supportive services provided by other trade associations in the state.

CHAPTER V

SUMMARY OF STATE AGENCY ACTIVITIES RELATING TO THE WOOD INDUSTRY

Most of the wood-related programs operated within Kentucky state government are attached to the Division of Forestry of the Department for Natural Resources and Environmental Protection. The focus of this division's work is the maintenance and improvement of the resource itself through such activities as fire prevention, tree planting, and timberstand improvement aid. The Kentucky Division of Forestry also operates a Forest Product Utilization Program, which currently employs five full-time staff persons. This program helps to find markets for Kentucky wood and offers technical expertise to help existing firms increase their proficiency. Activities of the program generally concern the first stage of processing, including log-grading, sawmilling, planing, lumber care and handling, energy production, and rough mill operations. However, secondary wood firms also have used this program as an information source. One activity of the Forest Product Utilization Program is the publication of the marketing guide, *Kentucky's Growing Gold*, which lists timber buyers and sellers.

In accordance with the Cooperative Forestry Assistance Act of 1978 (PL 95-313), the U.S. Forest Service assists states in the development of forest resource plans. The Kentucky Division of Forestry is currently drafting the Kentucky Forest Resource Plan and has formed a State Forestry Advisory Committee to serve as a sounding board in the drafting of the plan. One goal of the committee is to create a favorable operating climate for forestry products. No action had been taken by that committee at the time of this writing. The state plan, which should be completed by 1983, may address the source of the problem of the wood-using industry, though that is not its major focus.

Kentucky Commerce Cabinet

In 1976, the Kentucky Commerce Department established an Agribusiness Division. One emphasis of this division was to encourage wood-processing firms to locate in the state, and help them find suitable locations. The division actively promoted the state as a site for the manufacturing of wood products. In 1980, the Agri-business Division was dissolved and currently there are no programs actively promoting the wood industry in the department. The International Division of the Commerce Cabinet is conducting a survey to determine the level of interest of the industry in the development of export markets. Depending on the outcome of this survey, the Commerce Cabinet may undertake an active campaign to promote Kentucky wood products abroad. Earlier efforts by this division are

credited in part with the location of at least one foreign firm in Kentucky, the German manufacturer, Watz Werke, A.G., which purchased Wood Mosaic in Louisville.

Education

Bureau of Vocational Education

Kentucky's vocational education programs offer little career training in the wood industry. Three high schools offer training in forestry; only one has cabinetmaking. A new state vocational school is proposed for the Morehead area, which, if built, will offer a wood-processing program. This area contains the commercial facilities for outstanding training in all facets of the primary wood industry.

University of Kentucky

The Forestry Department at the University of Kentucky sponsors short training courses for the wood industry. According to those interviewed, the industry is using these courses to train their employees and is supportive of the programs.

The Forestry Department and the University of Kentucky's Community College System together offer an associate degree program in Forestry and Wood Technology. Upon completion of one year at a community college, a student in the Forestry and Wood Technician Program attends classes at the university's woodworking center, in Quicksand, Kentucky. The center at Quicksand includes two sawmills, a dry kiln, and an industrial-type wood utilization plant. Graduates of the two-year program are qualified to work at a mid-management level in forestry or as technicians in a wood plant. Enrollment for the 1980-81 school year was nineteen students, an increase of ten students from the preceding year. Past enrollments have been too small to have had much impact on the industry, but many of the graduates have been hired by Kentucky wood firms.

The location of the technical school within a college system has certain drawbacks. For example, teachers at Quicksand must have academic backgrounds, although the most appropriate instructors in wood technology may actually be experienced wood processors with little or no formal training. In addition, the one-year college requirement with emphasis on science and mathematics courses in a required curriculum discourages many potential students who are interested in careers in forestry or wood technology.

Some of the people interviewed for this study complained that the Forestry and Wood Technician Program offers training which is too broad to be useful. Whether a forester or wood technician, the graduate of the program has received the same basic instruction in all phases of wood processing from the cutting of a tree to the crafting of furniture. This breadth of scope allows very little "hands on" experience with various equipment. If the curriculum were more flexible, a student could concentrate in one area and

become more expert in that field. The owners and managers interviewed generally preferred a more specialized curriculum for this program.

Morehead State University

Through its Appalachian Development Center, Morehead State University has focused its attention on the wood industry in Eastern Kentucky. Short training courses for the industry are offered periodically. This year the center, in cooperation with the Mountain Association for Community Economic Development, Inc., hosted a conference on wood utilization. The Appalachian Development Center also offers technical assistance to operators in the wood industry and to persons interested in starting a wood-processing business in the region.

Need for More Training Programs

As was discussed in Chapter IV, industry's response regarding more training for workers was mixed. The primary industry has indicated a strong desire for a program to train sawyers, edgermen, sawfilers, lumber graders, and log graders. In a survey taken by the Forest Products Utilization Program several years ago, the primary industry was very supportive of new training programs for the wood industry and was willing to donate machinery.[22] This type of training is currently provided, on a limited basis, at Quicksand, and the Vocational Education Bureau of the Department of Education is proposing to institute such training at a vocational school to be built in Morehead.

The smaller firms of the secondary wood industry also reported training needs for skilled positions that are not easily met by on-the-job training. The larger manufacturing firms, however, appear to prefer to do their own training, and report few problems finding people for management positions.

CHAPTER VI

POTENTIAL GROWTH SECTORS AND REGIONS FOR THE KENTUCKY WOOD-USING INDUSTRY

Earlier parts of this study have shown that Kentucky produces sufficient timber to support a much larger wood-using industry than presently is located in the state, and have identified problems seen by wood-using companies as deterrents to doing business in the state. However, the reduction of workers' compensation rates in 1980 removed one of the most serious problems perceived by the industry. While the current administration has not expanded programs tailored specifically to this industry, the overall emphasis on economic development and the availability of financial and technical assistance through a number of sources should benefit new or expanding wood-using firms. Higher transportation costs also should benefit Kentucky's wood-using industries by increasing the advantages of processing wood near its source, rather than shipping it to other states for sawing, drying, and manufacturing. These trends indicate a potential for expanded processing and manufacturing of wood in Kentucky.

The potential for expansion of the industry, however, is not uniform. The category "wood-using industries" includes such a variety of firms, products, and requirements that generalizations about the whole industry are of little use in making specific policy decisions. In this chapter, therefore, the attempt is made to identify those wood-using industries which offer particular development potential at this time, based on selected national trends in the industry. In addition, the geographical distribution of existing Kentucky firms is analyzed to identify those regions which seem to offer the greatest potential for further expansion of this industry.

Trends in the Use of Wood

The last few years have brought significant changes in patterns of wood utilization. Many of these trends are being exploited by existing or new Kentucky firms, and could provide foundations for an expanded industry. This section considers several industry trends of particular significance to Kentucky.

Increased Use of Dry Kilns

The establishment of more dry kilns is a major development in the primary wood industry. Before processing, wood must be dried, either by air or artifically in kilns. For the secondary manfacturer of wood, the storage of the wood before drying means costs in time and money. If the manufacturer can get the wood already kiln-dried, he saves not only in

storage costs, but in reduced shipping costs, because the weight of green wood is reduced considerably in the drying process. Higher transportation costs have increased the desirability of kiln-drying lumber before delivery. Until recently, a scarcity of commercial dry kilns in Kentucky forced wood manufacturers without kiln facilities or with insufficient capacity to transport lumber long distances for kiln-drying. Ten new dry kilns have been established in Kentucky in the last three years, and there appears to be sufficient demand to support further growth in this area.[23] The availability of more kiln-dried lumber in the state should make Kentucky more attractive as a location for many wood manufacturing firms.

Foreign Trade

Foreign countries offer new markets for Kentucky wood and wood products and, in many cases, offer higher prices for these products than can be obtained domestically. Europe, faced with hardwood shortages, has exhibited a preference for the more familiar temperate hardwoods (over the tropical hardwoods of South America, Asia, and Africa), and the more stable U.S. market. The exporting of hardwood products to Europe increased 320 percent from 1972 to 1978.[24] Although exports leveled off in 1980, due to a recession in Europe, this growth is expected to continue.

Kentucky exports wood products worldwide. The value of manufactured goods exported from Kentucky in 1976 was as follows:

Lumber & Wood Products—$11.9 million
Furniture & Fixtures— 1.1 million[25]

According to Bob Jelley, Special Assistant to the Director of the International Division in the Kentucky Commerce Cabinet, a good deal of top-grade Kentucky oak and walnut that is initially shipped to other states is eventually exported. In these cases, Kentucky sellers do not obtain the full benefit of the higher prices paid for quality wood by foreign buyers. Mr. Jelley indicated there is real potential in Kentucky for direct export of wood products, once European markets revive.[26]

European companies are increasingly looking to the United States for sites at which to establish their own wood-processing ventures. This trend is the result of both an effort to insure stable supplies of American wood and an effort to avoid shipping the waste associated with unprocessed wood. A German company, Watz Werke, A.G., purchased an old Louisville firm, Wood Mosaic, in 1980. Kentucky has the potential to attract more European companies interested in wood processing and manufacturing.

Interest in Hand-Crafted Wood Products

Many craftsmen throughout the state produce handcrafted wood items, from white oak baskets to large pieces of furniture, and continue Kentucky's tradition of excellence in crafts. Berea College Industries and Stanton Wood Products both specialize in handcrafted wood products for this market. Most of the craftsmen, however, are independent wood workers who do not support themselves solely from their craft. They sell

primarily at fairs, craft shows, and specialty shops. The increased interest throughout the country in hand-made items has been felt in Kentucky. Stores like Bloomingdale's of New York and Nieman-Marcus of Atlanta have come to Kentucky seeking crafts to sell in their stores. However, few large pieces of wood furniture made by independent craftsmen have been sold out of state as a result of the renewed interest. Bloomingdale's, for example, bought white oak baskets, quilt racks, and a few pieces of willow furniture. It is uncertain at this time whether the current interest in hand-made items will produce reasonable prices and a stable market for handcrafted wood products, but it may offer opportunities for small business ventures specializing in craft items.

Increased Hardwood Utilization

The U.S. Forest Service projects increasing shortages of softwoods during the next fifty years.[27] During the past several decades, abundant and inexpensive soft woods have dominated the market in construction lumber, while hardwoods have been used primarily for furniture and a variety of special products. As softwood supplies dwindle, hardwoods will be used more and more in products traditionally using softwoods. The trend toward more hardwood utilization already is apparent.

Substituting Poplar for Softwoods. Yellow poplar, once widely used in Kentucky for construction lumber, was displaced after World War II by such inexpensive softwoods as pine. More recently, particle board was substituted for poplar as core stock in the furniture industry. Poplar was little utilized during the 1970s, but indications are that poplar, an abundant and fast-growing Kentucky species, will be used more extensively in the future if builders are assured of a stable supply and a competitive price. One Kentucky entrepreneur interviewed for this study reported that he now uses all the poplar available in his area for millwork, items which previously were made from softwoods.

Reconstituted Wood Products. The market for reconstituted wood products, such as fiberboard, flakeboard, waferboard, and particleboards is growing rapidly. The U.S. Forest Service projects that demand for these products will double the 1976 consumption rate by 1990.[28] More hardwoods are being utilized in the production of reconstituted wood products. Although there are currently no plants in Kentucky producing reconstituted wood products, there is potential for such production as the use of hardwoods in these products increases. Two companies interviewed for this study reported selling their wood residue to particleboard and flakeboard manufacturers in Indiana.

Wood Residue. Increasingly, pulp and papermills have been using more hardwood for pulp. Other markets for sawmill wastes which previously had no market value are charcoal and fuelwood. A potential use for wood residue not yet explored for marketing in Kentucky is as mulch. The Missouri Wood Residue Marketing Corporation has been particularly successful finding markets for the residue of its 420 members. In addition to the fuelwood market, the Corporation has sold sawdust as poultry litter and has promoted the use of residue for mulch. Missouri has two commerical mulch-bagging plants which use

both pine and hardwoods for their product. Missouri has been so successful at finding markets for its residue that there is a strong possibility that it will face a shortage of residue material within two years.

Increased Use of Wood as a Fuel

Wood, a major source of energy for the country until 1900, was gradually replaced as a fuel until, in 1980, it furnished only 2% of total U.S. energy needs.[29] There is, however, a trend back to the use of wood as fuel. Nationally, the sale of wood-burning stoves increased from 200,000 in 1970 to 1,500,000 in 1979.[30] In a recent random survey by Kentucky Rural Electric Cooperatives, 53 percent of the cooperative members reported using a wood-burning stove or fireplace for at least part of their heating needs.[31]

Industry, too, has begun to utilize wood as a fuel. The National Forest Products Association reported in 1980 that fourteen of the nation's largest lumber and wood product companies were supplying an average of 70% of their own energy.[32] There are at least twelve wood industries in the state which burn wood waste for part of their energy needs. Both of the state's large pulpmills, Westvaco Corporation and Willamette Industries, buy bark and sawdust from area sawmills for use in their wood boilers to produce process heat.

One of the state's sawmills is currently installing a generator. It plans to produce sufficient electricity from residue for its own energy needs and to sell surplus electricity to a local utility. Several other sawmills also have indicated they plan to produce their own electricity soon.

In a few cases, wood is burned by industries or institutions other than wood-processing plants. Murray State University currently uses wood in its main steam plant. A Morehead high school has proposed that a wood boiler be installed in its new building.

New Technology. While current use of wood energy is basically restricted to the forest product industry and to residential use, the use of wood is expected to increase as wood-burning technology improves. One of the newest developments in the field is the densification of wood into pellets. These wood pellets are easy to transport and store, and can be burned in coal boilers without retrofitting equipment. There has been some interest in Kentucky in the commercial manufacture of wood pellets, but no actual production as yet.

Amount of Wood Available for Fuel. One of the biggest barriers to the increased use of wood as an energy source is lack of a stable supply of wood. The amount of biomass in Kentucky that could be utilized for energy is very great. The Georgia Institute of Technology, in its feasibility study for wood energy in the southeast, estimates a total of 168 million green tons of biomass in Kentucky from a variety of sources: rotten and diseased timber, logging residue, unused plant residue, and timber less than five inches in diameter.[33] For much of this wood recovery is not, economically feasible, however. According to an unpublished report by the Kentucky Department of Energy, Kentucky could harvest 3-5 million tons of this biomass each year which is not otherwise merchantable, if wood energy were promoted.[34]

Environmental Concerns. Because wood is renewable, it has been embraced by many as an alternative fuel. However, there is some concern that promotion of the use of wood for fuel could cause deforestration, particularly near population or industrial centers. While this is a real possibility for some areas, most timberland actually would benefit, since the lesser quality wood removed from a stand as firewood would provide more room for quality timber. The University of Kentucky's Forestry Department is currently doing experimental research in growing black locust on strip-mined sites. Locust will grow back from a cut stump and can be harvested in a relatively short time. This research could eventually lead to the development of energy tree farms in Kentucky.

In addition to loss of timberland, increased woodburning can affect air quality. Wood produces aldehydes which, although not considered dangerous, cause eye irritation. Because wood has little sulphur, it is a cleaner fuel than coal and produces about the same level of pollutants as fuel oil and natural gas. Residential burning of wood may pose the biggest environmental problems. A Monsanto Research report indicates that incomplete combustion in the newer residential wood-burning stoves creates high emissions of hydrocarbons, carbon monoxide, and polycyclic organic material.[35] The burning of wood, like the burning of fossel fuels, will have to be closely monitored and may require controls and restrictions in areas of heavy fuelwood use. Wood-burning industrial installations are currently monitored by the Division of Air Pollution, Department for Natural Resources and Environmental Protection.

Promotion of Fuelwood. The federal government has promoted fuelwood in a number of ways, the most recent being the passage of the Wood Utilization Act of 1980. This measure authorizes $125 million over a five-year period, beginning in fiscal year 1982, to give incentives to the timber industry to remove the wood residue from the forest that is normally left behind.[36] A number of states are actively promoting the use of wood as a fuel. The Georgia Forestry Commission and the Appalachian Regional Commission financed a wood gasification system in a regional hospital, which extracts gas from green wood chips. The North Carolina Forest Service helped organize and develop the Associated Woodland Owners of Western North Carolina to further the long-term capability of using wood as an industrial boiler fuel. The Tennessee Valley Authority provides interest-free loans for installation of approved wood stoves and has several research activities underway designed to improve woodburning technology. In addition, TVA buys the surplus power produced from sawdust and other waste wood at a Tennessee company that processes wood for furniture. Shelby Jones, of the Missouri Forestry Division, reports a new progressive wood energy program in Missouri.[37] Several schools and state buildings in Missouri use wood for heat. The previously mentioned industry association, the Wood Residue Marketing Corporation, will supply fuel to the wood boilers at a Tennessee gasohol plant.

Kentucky, at this time, has little promotion of fuelwood, but the Division of Alternate Energy of the Kentucky Department of Energy is doing a preliminary assessment of a program to encourage woodburning.

U.S. Forest Projections

The U.S. Forest Service, in its 1980 Timber Assessment, projected that the total U.S. wood consumption (both softwoods and hardwoods) would rise relative to 1976 levels by 57 percent by the year 2000 and would nearly double by 2030.[38] Demand projections for various hardwood products are as follows:

Sawlogs—expected to double by 2030, due to increased demand in furniture and pallet industries;

Hardwood, Plywood, and Veneer—projected increase because of increased use of the products in furniture;

Pallets—expected to triple 1976 consumption level in 2030;

Hardwood Flooring—decreased demand;

Crossties—expected to rise until 1990, then decrease slowly;

Cooperage—stable with moderate increases; and

Pulpwood (Hardwoods)—expected to increase from 2.6 million board feet in 1976 to 12 billion board feet in 2030, due to increased use of hardwoods in the production of pulp.

Kentucky, with its hardwood resources and central location relative to markets, should be in a position to increase its share of production of hardwood products to meet these projected demands.

Potential for Wood Industry Expansion by Geographic Area

Almost every county in Kentucky, even those with no other industrial employer, has some wood-related business. However, the character of the wood industry varies greatly from one part of the state to another, according to lumber availability, access to markets, characteristics of the labor force, and competition with other industries. The following section describes the existing industry in each of the seven regions delineated by the U.S. Forest Service in its forest inventory. The regions are shown in Figure 5. This information is used to suggest the most likely potential for expansion of wood-using industries in each region, and to identify regions with the greatest overall potential.

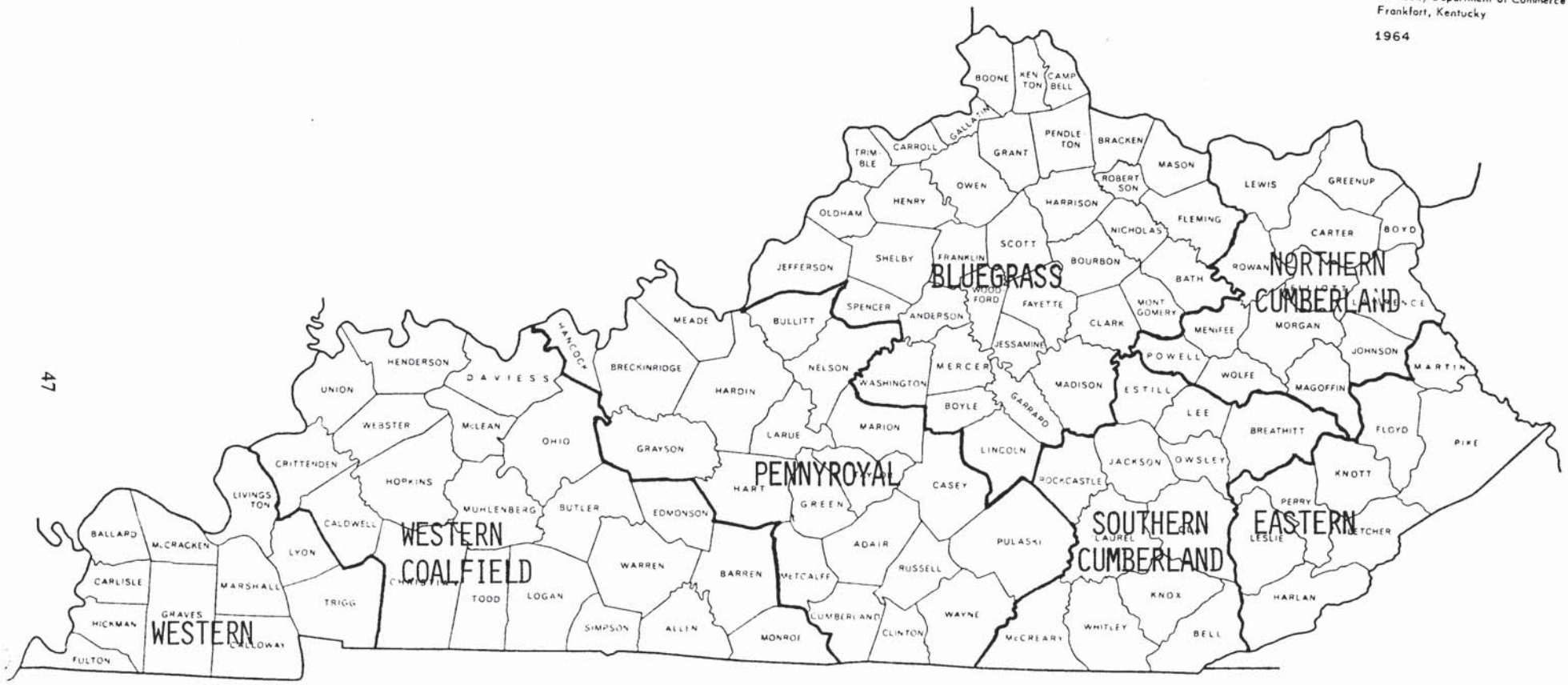


Figure 5. Kentucky Forest Resource Survey Unit Boundaries

Eastern Unit

The Eastern Unit of Kentucky consists of eight counties, heavily forested, and highly dependent on coal mining. Red oaks dominate the area, but it contains all grades of timber in quantity. While timber is abundant, its overall quality is lower than that in some other parts of the state, and logging is difficult in the rough terrain. This area has been hampered in its efforts at industrial development because of a lack of adequate sites for development and by its relative isolation.

The wood industry depends heavily on the coal industry for its markets. There are sawmills producing crossties and mine timbers, but no pallet mills, stave mills, or dimensional mills. Except for those firms that supply the coal industry, very little wood manufacturing takes place in the area. The Kentucky 1981 *Directory of Manufacturers* lists only two wood manufacturing establishments for this area: a hardwood casket manufacturer employing two people and a firm employing sixty people that manufacture upholstered and custom-built furniture.

Northern Cumberland Unit

The Northern Cumberland Unit, a thirteen-county area, is also heavily forested and contains, in the southern part, a heavy coal-producing area. There are sizeable quantitites of lowgrade sawtimber in this area. Most wood processing is concentrated in areas which are not major coal producers. There are several large sawmills and pallet mills in Rowan, Lewis and Wolfe Counties. Several dry kilns have been installed in Rowan County, a boon for the entire area, since lumber buyers are increasingly demanding that lumber be kiln-dried before shipping. In addition to pallet mills and sawmills, this region has a few small producers of kitchen cabinets and a manufacturer of prefabricated homes.

At one time, there was a large market for wood chips in this area. The Meade Corporation in Chillicothe, Ohio, bought chips until the closing of the Ohio River Bridge at Portsmouth. Westvaco Corporation drew pulpwood from this area, but closed its receiving yards three years ago. Wood chips produced in the area still go to pulpmills in Hawesville and Cincinnati.

This area might be an attractive location for a pulp or paper mill, or a manufacturer of reconstituted wood products, such as flake or particleboard. There appears to be a surplus of raw materials for such products in this region, industrial sites are available along the Ohio River, and both rail and water transport could be used to move bulk products to major markets.

Southern Cumberland Unit

The Southern Cumberland Unit is also rural and heavily forested. Most of the twelve counties produce coal. However, wood-related activities are not as dominated by coal in this area as in the Eastern and Northern Cumberland areas. Williamette Industries, the pulp and paper mill located in Hawesville on the Ohio River, is installing a new chip

plant in London, Kentucky, which will expand the pulpwood market for this area. One of the state's largest pallet manufacturers is located in Whitley County. In addition to sawmills and pallet manufacturers, the wood industry of the Southern Cumberland Unit includes manufacturers of church furniture, veneer and plywood, hickory blanks for tool handles; woodbases for trophies and plaques, wooden truck bodies, windows, and door frames. A dimensional plant in Knox County employs eighty-five people. Laurel County's laminated timber plant is one of only four such plants east of the Mississippi. This plant produces beams for use in churches and public buildings. Of the three units in Eastern Kentucky, this one offers the most promise for expanded dimensional and furniture processing.

Bluegrass Unit

The Bluegrass Unit is the least forested area of Kentucky and consequently has the smallest amount of hardwood sawtimber available. It is also the most heavily industrialized area of Kentucky, and the most populous. The *1981 Kentucky Directory of Manufacturers* listed over eighty-five firms engaged in wood processing in the Bluegrass Unit. While most of the sawmills in the area are small custom sawmills, larger commerical sawmills are located in Fleming and Clark Counties. Six firms in the region manufacture pallets.

Some of the biggest firms in the industry are located in this region. The Louisville firm, Gamble Brothers, employs 542 people. Two large veneer manufacturers are located in Jefferson and Clark Counties. Both companies export much of their veneer. Furniture factories are located in Boyle, Carroll, Jefferson, and Gallatin Counties. Berea College produces handcrafted furniture and wooden toys. A number of firms throughout the Bluegrass produce millwork and cabinetry. Four firms in Jefferson County produce barrels, primarily for the storage of whiskey. Other wood products currently being produced in the Bluegrass include ladders, wood gates, dog houses, utility sheds, wooden heads for golf clubs, cabinets for stereos and clocks, flooring, and hickory blanks for tools and guns. Timber in the Bluegrass Unit is sparse, growing in patches. Ash, a species often used to produce dimensional products for the furniture industry, is particularly abundant in this region.

Pennyroyal Unit

The Pennyroyal Unit of Central Kentucky has a higher percentage of quality hardwood timber than any other area of the state. This area produces a number of unique wood products. The Walter T. Kelly Company, in Grayson County, is one of the few manufacturing plants for wooden beehive equipment in the nation. The Campbellsville area is known for its cherry furniture. Casey County has been called the "gate capital of the world;" at least four firms there produce farm gates, both wooden and metal. A small company in Hart County sells its oak truck and cattle racks all over the United States. In Metcalfe County, church steeples are manufactured.

The market for pulpwood is good in this area. The paper mill in Hawesville, Williamette Industries, Inc., recently installed an additional paper machine, increasing its need for raw material. In addition, Westvaco Corporation, located in Wickliffe, in far western Kentucky, draws pulpwood from this area.

Sawmills and pallet mills are scattered throughout the Pennyroyal. Casey County has seven mills, which produce furniture squares and Wayne County has two mills, which produce cedar for cedar chests and other furniture. Other wood-related facilities for the area include a dry kiln and concentration yard, a charcoal plant, furniture factories, stave mills, cooperage plants, and a manufacturer of golf clubs from persimmon wood. The Pennyroyal unit is characterized by high-grade material, a knowledgeable workforce, and a strong existing industry. These factors combined give this region great potential for increased manufacture of furniture and other wood products.

Western Coalfield Unit

The coal deposits of western Kentucky lie within this twenty-county unit. As in east Kentucky, the wood industry in the Western Coalfields produces mining materials, including treated mine timbers. However, unlike that in some parts of east Kentucky, the industry in this region has not restricted itself to producing mining materials.

The region contains a heavy concentration of pallet manufacturers and a number of large sawmills. Strassheim, in Warren County, the largest wood industry employer within the Western Coalfields, produces brush handles, furniture parts, and chairs. There are over ten furniture producers in the Western Coalfield, offering cherry furniture, reproduction furniture, and office furniture. Kitchen cabinets, stairtreads, window frames, guitars, and barrels are also produced in the Western Coalfields. Like the Pennyroyal, this region offers potential for additional wood-manufacturing activity.

Western Unit

The eleven-county area of the Western Unit contains only a little more sawtimber than the Bluegrass Area. The wood industry of the area is typically sawmills producing lumber, railroad ties, and wood chips. Westvaco, a paper mill in Ballard County, uses much of the pulpwood, chips, and mill residue generated in the area. There are a few secondary manufacturers in the Western Unit; a cooperage plant, a company producing face veneers, and a small stake operation. This area contains some fine sawtimber, with most of the low-quality material currently being consumed by the paper mills, and there is some opportunity for expansion of the wood industry in the Western Unit.

CHAPTER VII

OPTIONS OF STATE INVOLVEMENT

Some factors which have discouraged expansion of Kentucky's wood-using industries relate to national and regional trends, and cannot be altered by state governmental actions. Moreover, the closing or migration of wood firms from some parts of the state can actually reflect positive economic trends. In some parts of the state industrial development has increased employment and investment opportunities to the extent that wood-using firms no longer can compete, yet their demise has not harmed the area. However, many of these firms have relocated in contiguous states or have closed when they might as profitably have moved to a less-competitive Kentucky location. Several perceived disadvantages, including labor force problems, high workers' compensation rates, and a lack of state assistance and training for the industry, have discouraged the location of wood firms in Kentucky, and have resulted in a wood manufacturing industry which is disproportionately small compared to the state's timber production or to the wood industries in surrounding states.

A number of options are available to the state if it wishes to promote a thriving wood-using industry. One important step was taken in 1980 with the reduction of workers' compensation rates to levels competitive with surrounding states. High workers' compensation rates were preceived by industry representatives, particularly by those in the primary industry, as an important disincentive to doing business in Kentucky. Other incentives which might be provided to the industry by state government include tax incentives, technical assistance and training programs for the industry, and the promotion of wood products and industrial sites. Several of these options are discussed below.

Tax Incentives

Reductions or exemptions in taxes often are proposed as a method of encouraging desired actions by individuals and companies. However, the materials gathered for this study do not indicate that state and local taxes are particularly burdensome to Kentucky's wood-using firms. Tax rates in Kentucky already compare favorably with those in surrounding states, as shown in Tables 12 and 13 (Chapter IV). The wood industry does not pay any taxes not levied on other industries as well. Equipment for new and expanded industry is exempted from the state sales tax, as are certain fuels (KRS 139.480). Further reductions in taxes would reduce state and local revenues, but there is no indication that a reduction in already low tax rates would lure additional firms to the state or would do much to keep existing industry in business.

Removal of Statutory Disincentive to Woodburning

Chapter VI documented a trend towards the increased use of wood and wood residues as boiler fuels. Increased use of wood residues creates a market for materials which previously were not used and solves a potentially difficult disposal problem. However, two pieces of legislation passed by the 1980 General Assembly inadvertently restrict the use of wood in industrial boilers, while encouraging the use of coal. House Joint Resolution 8 requires that Kentucky industries convert to coal whenever possible, that state facilities use coal, and that the state utilize and test innovative coal-fired boiler designs in state facilities. House Bill 838, which provides a variety of incentives for gasohol production, requires that a fuel alcohol facility must be fueled by Kentucky coal in order to be eligible for these incentives.

It seems advisable that any state legislation which encourages or mandates the burning of Kentucky coal should also allow the burning of Kentucky wood, particularly wood scrap and residue. This is no less a native Kentucky product than coal, and, where available to an industry or institution it may provide a more desirable alternative to imported oil or natural gas than coal would.

The state may wish to go beyond removal of these disincentives and develop a new program to promote the use of wood as a fuel.

Right-to-Work Legislation

Many employees in the Kentucky wood-using industry believe that Kentucky needs right-to-work legislation. Essentially, right-to-work states, which include Indiana, Tennessee, Missouri, Virginia and the Carolinas, allow voluntary membership in unions but prohibit "closed shops," where union membership is a prerequisite to employment. Those in the industry who support a right-to-work law in Kentucky feel that such legislation could improve relationships between labor and management, and would improve Kentucky's competitive position with neighboring states.

Controversy over right-to-work laws is not confined to the wood-using industries, of course, and the topic has been hotly debated in several sessions of the General Assembly. Any recommendations in this area would thus go well beyond the bounds of this study. However, implementation of right-to-work legislation would be preceived by many in the wood-using industry as an important positive action by state government.

Training

As reported in Chapter IV, there are indications that lack of an available pool of skilled labor has limited the growth of some wood industry firms. Since the wood industry is so labor intensive, a trained labor force could increase the productivity of the industry.

There are a number of avenues the state might take to provide training for future wood processors and to upgrade the skills of current wood industry employees. The first efforts should focus on those areas with the greatest needs: skilled positions in the primary wood industry and management positions throughout the industry.

Training for skilled positions in the primary wood industry might best be addressed through the state vocational school system. These schools are regionally located and can tailor programs to meet the training needs of wood-using industries in particular areas. Vocational schools can attract those students who are interested in positions in the wood industry but who do not have a strong academic background or desire to enter college.

The Forest and Wood Technician School at Quicksand, in Breathitt County, offers a non-academic program. The production facilities at Quicksand are excellent, but the program should be restructured to provide more specialized training than currently is being offered. If enrollment in the technical school continues to grow, this program could produce many of the mid-level managers needed by the industry.

Technical Assistance

The processes by which wood is manufactured into final products are changing rapidly. New technology has produced more efficient machinery and methods. Wood entrepreneurs also need to keep up with changing markets, tax laws and sources of capital, and to be able to deal with regulations which affect their firms. Failure to keep up with these changes can render a wood-using firm uncompetitive. For the most part, Kentucky's wood industry is made up of small businessmen who do not have the resources big business has to obtain needed information concerning technical advances. Nor do they have easy access to advice in financial, regulatory, or marketing matters.

Current programs addressing the needs of technical assistance for wood-using industries in the state are limited. The University of Kentucky and Morehead State University periodically offer brief courses for the wood industry, which include information about technological changes. Morehead also provides technical assistance to individual firms, but only to those in that part of the state. The Forest Products Utilization Program in the Kentucky Division of Forestry offers technical assistance on a statewide basis, but, with a small budget and only five employees it too is constrained. In addition, this program is not presently structured to serve the needs of the whole wood industry, but focuses primarily on the primary wood industry.

One of the greatest needs for the secondary wood industry, particularly its new firms, is in the area of marketing. It is not uncommon for small wood manufacturers to have on exclusive market for their product. If for some reason this market fails, the manufacturer is forced to close, at least temporarily, unless he can quickly find new buyers for his product. There is currently no mechanism in the state to link secondary wood manufacturers with suppliers of products they need, nor is there any mechanism to help

them find markets for their products. One relatively new wood manufacturer reported going out of state for months to acquire lumber before he stumbled onto a source only a few miles from his establishment.

A state technical assistance program for wood-using firms might be structured along the lines of assistance currently offered to small coal operators. Five different programs within the Department of Energy are designed to provide technical assistance to small coal operators. One such program, the Kentucky Small Operator's Technical Assistance Project, Inc., is a non-profit, non-governmental corporation. A similar corporation might be created for wood processors and manufacturers, or the current Forest Products Utilization Program in the Division of Forestry might be expanded to provide these services. Activities of a technical assistance program might include coordination of education and training programs within the state, development of market information, on-site expertise, the development of business plans for new ventures, and advice and assistance in financial and regulatory matters.

Promotion of Kentucky as a Location for Wood Industries

The aggressive promotion of Kentucky as a site for wood-processing industries could attract modern, aggressive firms to the state. Besides providing additional employment, such development might stimulate existing firms and expand markets for wood products.

At one time the Kentucky Department of Commerce did actively seek to attract wood-using firms to Kentucky. However, the division responsible for activity in this area, the Agribusiness Division, was disbanded in 1980. Since that time, reductions in the cost of workers' compensation premiums have improved the business climate for wood manufacturing in Kentucky. There also are a number of foreign companies currently seeking American sites for wood processing and manufacturing. Efforts should be renewed by the Commerce Department to attract wood-using firms to Kentucky. Kentucky's attractiveness for wood-using industries might be included in the state's promotional campaigns to bring business to the state.

Assistance to Exporters of Wood Products

A number of wood processors and manufacturers have expressed a reluctance to enter the export market because of the high risk and the amount of effort required. The European market is particularly demanding. To be accepted by European buyers lumber must be dried, free of blemish and cut to precise dimensions. Most potential Kentucky exporters are small and lack the required capital reserves for exporting. Payment for wood exports can take up to ninety days, and may be made in foreign currencies. A small wood processor may well have difficulties locating foreign buyers or entering the market. Foreign

buyers generally seek a reliable, steady source of supply; a small producer may not be able to guarantee regular delivery.

In order to facilitate foreign exports of wood products, Kentucky should consider developing methods for assisting small exporters. One alternative would be to encourage the industry to develop its own exporting program. A cooperate or non-profit corporation could be formed which would enable wood processors to pool their financial resources to provide the marketing, legal and technical assistance needed to enter the export market. Buying from an export association would be more attractive to many foreign buyers, since they could be assured of a steady supply.

On the other hand, the state could choose to provide direct support by establishing a wood markets program. Such a program could offer organizational expertise for cooperative marketing ventures, and could provide legal and technical assistance to potential exporters. In addition, a marketing program could promote Kentucky wood products through trade shows and could monitor foreign markets.

One reason given for the reluctance of firms to pursue exporting possibilities is that programs to encourage this have been tried sporadically in the past, and firms which invested time and money to make needed adjustments to enter this market were burned when programs dissolved before accomplishing their objectives. Any state encouragement of exports should thus be seen as a long-term effort.

CHAPTER VIII

CONCLUSIONS AND RECOMMENDATIONS

This study has identified a number of problems which currently confront the wood-using industry, and has examined several initiatives which could be undertaken by the state to encourage renewed industry growth. The study is necessarily broad, since it treats an industry made up of very diverse segments, and one which has attracted little scholarly research in recent decades. Many aspects of the industry treated tentatively in this study could by themselves be the subjects of a detailed research effort. Instead of focussing on a few narrow questions, this report has given an overview of the industry, its problems and potentials. The major findings are summarized below.

Conclusions

1. Segments of Kentucky's wood-using industry have stagnated or declined in recent years. Wood manufacturing in particular is less developed in Kentucky than in surrounding states, and employment trends have lagged behind those of the nation as a whole.

2. Considerable quantities of Kentucky lumber are shipped out of state by sawmills, to be processed elsewhere.

3. Competitive disadvantages perceived by Kentucky wood-using firms include high workers' compensation rates, problems of labor turnover, difficulties in obtaining skilled labor and management personnel, poor labor relations and an unstable regulatory environment. Workers' compensation rates recently were decreased, reducing that problem. However, continual increases in the Special Fund assessment could put Kentucky in an uncompetitive position once more.

4. Advantages to wood firms of a Kentucky location include ample raw materials and low tax rates.

5. The vast majority of Kentucky wood firms are small, with average employment ranging from 7.6 for sawmills to 45.8 for wood furniture manufacturers.

6. National trends towards increased hardwood utilization, increased use of wood residue for fuel, and increased demand for kiln-dried lumber offer opportunities for expansion of the industry in Kentucky. A growing worldwide demand for quality hardwoods also could be exploited by the industry.

7. Expanding markets for handcrafts and the increasing use of firewood for home heating also might support additional business, but the income potential of such activities has traditionally been low.

8. Most segments of the wood industry are not limited to locating immediately near the materials source, but obtain wood from distances up to two hundred miles. In-

creases in transportation costs, however, may encourage some firms to seek locations nearer to raw materials, which could work to Kentucky's advantage in attracting firms.

9. Very few programs in Kentucky state government are designed to assist the wood industry, and existing programs often are short-lived.

10. The most effective assistance the state can provide to the wood industry is not financial but informational. The industry is comprised overwhelmingly of small firms, most of which are located outside the major population centers. The industry as a whole has not developed strong cooperative marketing or supply organizations or strong trade associations to service individual members. Unlike agriculture or mining, the wood industries do not benefit from massive governmental and university research efforts, or governmental agencies created specifically to work with them. It is therefore difficult for many of these firms to learn about new processes, market opportunities, or the intricacies of financial or export markets.

RECOMMENDATIONS

It is recommended that the state take the following actions to encourage renewed growth in the wood-using industry.

1. A technical assistance program should be developed to assist firms in the wood-using industry. The program could be located within the Commerce Cabinet or the Forest Product Utilization Program in the Division of Forestry might be expanded. Such a program should, at a minimum, offer assistance in the interpretation of regulations affecting the industry, and disseminate technical, financial and marketing information, providing individual assistance on such matters where requested.

2. The state should encourage the creation of a non-profit or cooperative association to promote export markets for Kentucky wood products, assist members entering the export market, and maintain a fund for use by members to ease cash flow problems typically associated with lumber exports. Such a program also could be developed within state government, but it would be preferable for such efforts to be carried by the industry itself, with state assistance where needed.

3. Kentucky should be promoted aggressively as a good wood-processing location, especially to foreign wood-using firms seeking a location in this country.

4. Vocational training programs which teach skills required by the wood-using industry should be offered in schools in those areas with a concentration of wood-using firms. The wood utilization program currently offered by the University of Kentucky should be expanded so that students may choose an area of concentration rather than learning a little bit about all aspects of wood processing. This change would allow better utilization of the university facilities and equipment at Quicksand, and would produce graduates better equipped to assume responsible positions in the industry.

5. Statutes which mandate or encourage the use of coal as a fuel by industry or state institutions should be expanded to apply also to wood. The burning of wood, particularly scrap and waste from wood processing, should be encouraged.

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31. Kentucky Association of Electric Cooperatives, Inc., "RECC Annual Meeting Survey," 1981.

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APPENDICES

GENERAL ASSEMBLY

COMMONWEALTH OF KENTUCKY

REGULAR SESSION 1980

Senate Resolution No. 18

March 4, 1980

The following bill was reported to the House from the Senate and ordered to be printed.

A CONCURRENT RESOLUTION directing the Legislative Research Commission to study wood-using industries and incentives for developing wood-using industries in Kentucky.

WHEREAS, Kentucky produces approximately 300 million board feet of grade lumber per year; and

WHEREAS, two-thirds of the grade lumber produced is shipped to other states for use in manufacturing; and

WHEREAS, other wood producing states, notably North Carolina, Michigan, Indiana, Tennessee, and California, have developed significant wood-using industries; and

WHEREAS, the Kentucky Appalachian Development Council has recommended that a study be made of incentives for developing wood-using industries in Kentucky;

NOW, THEREFORE,

Be it resolved by the Senate of the General Assembly of the Commonwealth of Kentucky, the House of Representatives concurring therein:

Section 1. That the Legislative Research Commission shall conduct a study of types of wood-using industries that would be suitable to Kentucky and incentives, including but not limited to tax incentives, which might be used to encourage the development of such wood-using industries in Kentucky.

Section 2. That the findings and recommendations of the study shall be reported to the appropriate interim committee no later than September 1, 1981.

Section 3. Staff services to be utilized in completing this study are estimated to cost seven thousand dollars ($7,000). These staff services shall be provided from the regular commission budget and are subject to the limitations and other research responsibilities of the commission.

LEGISLATIVE RESEARCH COMMISSION

State Capitol Frankfort, Kentucky 40601 502-564-8100

Dear Mill Operator:

The 1980 Kentucky General Assembly passed Senate Resolution No. 18 which directed the Legislative Research Commission to study incentives for developing wood-using industries in Kentucky. In order to accomplish the mandate of Senate Resolution No. 18, there needs to be a clearer picture of the amount of unprocessed wood leaving the state. For this reason the Legislative Research Commission, in cooperation with the Forest Products Utilization Program, Kentucky Division of Forestry, is surveying sawmill operators to determine how much wood is leaving the state to be manufactured elsewhere.

Please fill out the enclosed questionnaire and return it in the self-addressed envelope by March 15, 1981. We recognize the demands we are making on your time and have made every effort to keep the questionnaire brief. The questionnaire has been designed to insure confidentiality. If for any reason you feel an answer to a particular question would identify your mill, please feel free to leave that question unanswered.

If you would like a copy of the wood-utilization study or have any questions concerning the questionnaire, please contact Mary Lynn Collins. Your cooperation in our survey effort is greatly appreciated.

Sincerely,

Mary Lynn Collins
Legislative Aide
Legislative Research Commission

C. Chauncey Lohr
Director
Forest Products Utilization Program

MLC/CJL/bw

Enclosure

SURVEY OF SAWMILLS

(1) I. What was the 1980 production of your mill?

_____(1) 0-100 MBF
_____(2) 101-500 MBF
_____(3) 501-1000 MBF
_____(4) 1001-2000 MBF
_____(5) 2001-5000 MBF
_____(6) Over 5000 MBF

(2-5) II. Of the lumber produced by your operation during 1980, approximately what amount did you ship out of the state?

_____MBF

IF YOUR MILL DID NOT SHIP ANY WOOD OUT OF THE STATE, YOU HAVE COMPLETED THE QUESTIONNAIRE. PLEASE RETURN AS SOON AS POSSIBLE. THANK YOU FOR YOUR COOPERATION.

(6-14) III. What was the approximate value of these shipments? $_____

IV. Please indicate the percentage of wood that you shipped out of state, by species.

(15-17) Ash_____
(18-20) Basswood_____
(21-23) Birch_____
(24-26) Black Oak_____
(27-29) Black Cherry_____
(30-32) Chesnut Oak_____
(33-35) Cottonwood_____
(36-38) Elm_____
(39-41) Hard Maple_____
(42-44) Hickory_____
(45-47) Red Oak_____
(48-50) Soft Maple_____
(51-53) Sweet Gum_____
(54-56) Sycamore_____
(57-59) Walnut_____
(60-62) White Oak_____
(63-65) Yellow-Poplar_____
(66-68) Other, Please Specify_____

V. Please indicate by percentage the principal market areas for the lumber you shipped out of state during 1980.

(69-71) Arkansas_____
(72-74) Illinois_____
(75-77) Indiana_____
(78-80) Michigan_____
(81-83) Missouri_____
(84-86) North Carolina_____
(87-89) Ohio_____
(90-92) Tennessee_____
(93-95) Virginia_____
(96-98) West Virginia_____
(99-101) Another state, please specify_____
(102-104) Out of the United States, Please Indicate Country
(105) _____

VI. For what manufactured product(s) was the majority of the lumber shipped out of the state used for?

(106) _____(a) Handles, Squares
(107) _____(b) Flooring
(108) _____(c) Furniture, Including Cabinets for TV, Radio, and Sewing Machines
(109) _____(d) Millwork
(110) _____(e) Musical Instruments
(111) _____(f) Pallets
(112) _____(g) Wood Buildings and Structural Members
(113) _____(h) Other, Please Specify_____

_____

UNIVERSITY of KENTUCKY • COLLEGE of AGRICULTURE
Resident Instruction • Agricultural Experiment Station • Cooperative Extension Service
International Programs • Regulatory Services • Livestock Diagnostic Center

DEPARTMENT OF FORESTRY
205 Thomas Poe Cooper Building
Lexington, Kentucky 40546
(606) 258-4608

Why are the secondary wood using firms in Kentucky closing down?

In 1979 the Kentucky Department of Commerce allocated a grant to the University of Kentucky at Lexington to study the problem. The primary objective of the project: to identify those factors which significantly affected the individual firms' decision to close or move away from Kentucky. Information will be analyzed by researchers at the University of Kentucky who will then submit an industry-wide explanation for the closing of wood product firms to the Kentucky Department of Commerce and General Assembly. It is hoped that these agencies will then take necessary corrective actions to ease economic pressures which the secondary wood using industries may have been experiencing.

The attached questionnaire is by no means complete: feel free to include any information which you think may be helpful. If the questions are inadequate and/or you would prefer to talk with me personally, indicate so on the questionnaire. As I wish to move quickly on this project, may I have your answer right away?

Sincerely,

Daniel R. McCoy

Daniel R. McCoy
Research Assistant

Encl:

DRM/sc

QUESTIONNAIRE

1. The name of your firm?

2. The year which your firm closed or moved out of state?

3. Did your firm have any problems acquiring the raw materials necessary to produce a finished product?

4. Did you experience difficulties in obtaining qualified workers?

5. Was the wage rate offered at your firm competitive with prevailing wage rates of surrounding industries?

6. Were capital or energy needs ever a hindrance for your operation?

NOTE: If workmen's compensation (W.C.) affected your operation answer questions 7-10; otherwise move on to question 11.

7. Do you feel that Kentucky's W.C. rates are competitive with neighboring states? In other words, do you believe Kentucky rates are higher, lower, or about the same as surrounding states?

8. How much effect did W.C. have on your firm's operation? Circle one of the following: extremely high - above average - moderate - below average - little or none.

9. Were W.C. rates an integral part of your decision to close down or move away?

10. If Kentucky W.C. rates were lower, would your firm have remained in business?

11. Did you ever feel that state or local governmental regulations were too stringent on your operation? (safety standards, pollution standards, etc.)

12. Did the market for your product still exist when you closed shop? Or had it deteriorated to the point where it was no longer profitable for you to remain open?

13. What do you feel was the most significant factor affecting your decision to shut down your firm or move out of Kentucky?

NOTE: Would you prefer talking to me personally? If yes, indicate a time and location that would be convenient to you.

Appendix D

Interviews with the Wood Industry

1. Leroy Anderson
   Anderson Forest Products
   Tompkinsville, KY

2. Anthony Androski, Mill Manager
   D. W. Wells, Central Woodlands Assistant Manager
   Ed B. Taffer, Chip Procurement Manager
   Westvaco Corporation
   Wickliffe, KY

3. Bob Bartley, Purchaser
   Homer Bartley Lumber Company
   Summer Shade, KY

4. Luthar Bauman, Furnituremaker
   Paintlick, KY

5. Sterling Dearst, Vice President of Technical Services
   Gamble Brothers
   Louisville, KY

6. Daniel Dobez
   Wooden Toymaker
   Lexington, KY

7. C. Lynn Frazer, President
   Stanton Woodcraft Products, Inc.
   Stanton, KY

8. E.E. Freeman, Jr., President
   The Freeman Corporation
   Winchester, KY

9. Bob Goodin, Partner
   Charles Goodin, Partner
   Lebanon Oak Flooring Company
   Lebanon, KY

10. Marion Holt
    Willamette Industries, Inc.
    Hawesville, KY

11. Roy Jeffers, President
    EK Wood Products Company
    Barbourville, KY

12. Robert L. Kreileen, Vice President
Kimball International, Inc.
Jasper, Indiana
(Plants in Greensburg, Fordsville, and Henderson)

13. Norman Link, President
O.P. Link Handle Company, Inc.
Salem, Indiana
(Plants in London and Monticello)

14. James McAllister, Plant Manager
Tell City Chair Company
Leitchfield, KY

15. Thomas R. McMahan, Sales Manager
McMahan Furniture Company, Inc.
Campbellsville, KY

16. Odell Merrick, President
Cumberland Wood and Chair Corporation
Somerset, KY

17. W. J. Robinson, President
Forest Products, Inc.
Corbin, KY

18. John P. Stern, President
Kentucky Wood Floors
Louisville, KY

19. Ed Virgil
Universal Woods, Inc.
Louisville, KY

20. C.T. Young, President
Young Manufacturing Company
Beaver Dam, KY

21. Royce Young, President
Bowling Green Pallet Company
Bowling Green, KY