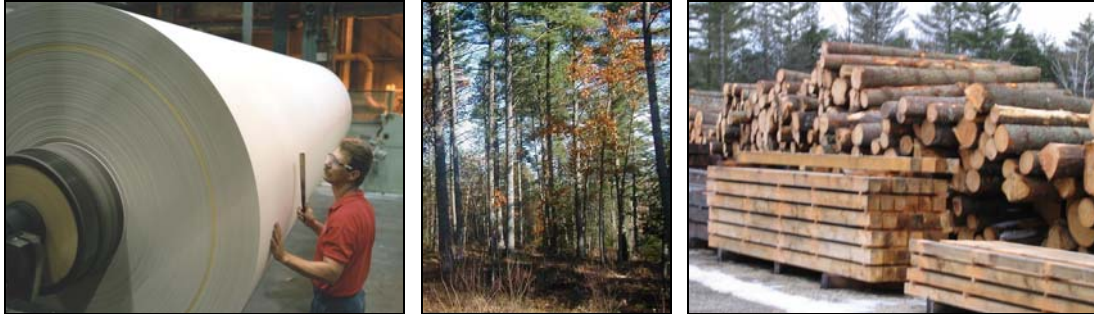


LUMBER & WOOD PRODUCTS SECTOR
MAINE FUTURE FOREST ECONOMY PROJECT



**CURRENT CONDITIONS AND FACTORS INFLUENCING THE
FUTURE OF MAINE'S FOREST PRODUCTS INDUSTRY**

MARCH 2005

PREPARED FOR:

**DEPARTMENT OF CONSERVATION – MAINE FOREST SERVICE
AND
MAINE TECHNOLOGY INSTITUTE**



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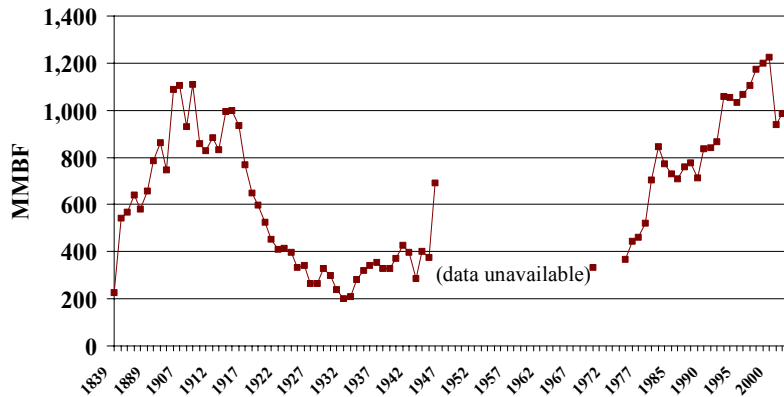


Sawmills and Wood Product Manufacturing

Industry Overview

Maine's sawmills are a critical piece of the state's forest industry, and are located in all regions of the state. Maine has a long history of lumber production; at one point in the early 1900's, thousands of small mills produced as much lumber as is sawn in Maine today. In the era following World War I, lumber production declined. Maine sawmills, both hardwood and softwood, have seen significant increases in production over the past three decades. This trend represents real growth in Maine's forest industry. Maine sawmill production levels have decreased since a peak in 2000 – the bulk of this can be attributed to the closing of two large softwood mills. Anecdotal evidence suggests that production may have rebounded in 2004.

Figure 46. Maine Lumber Production, 1839 - 2002

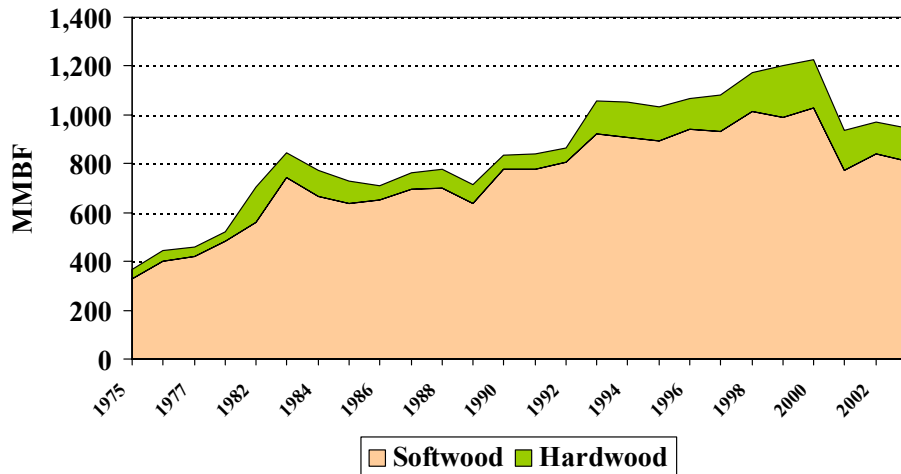


Data Source: U.S. Department of Commerce, Census Division



Over eighty percent of Maine’s lumber production is softwood – structural lumber from spruce and fir and white pine for pine boards. Maine mills have increased production by 250% since 1975. By volume, most of this increase has been in softwood lumber, but hardwood lumber production has increased by over 400% during this same time period.

Figure 47. Maine Lumber Production, 1975 - 2002



Data Source: U.S. Department of Commerce, Census Division

According to data from the U.S. Commerce Department, Census Division, Maine sawmills have seen a decline in the number of employees, payroll and value of shipments in recent years⁴⁸.

	1997	2002
Number of Employees	2,369	1,786
Payroll	\$69,228,000	\$51,291,000
Value of Shipments	\$427,044,000	\$297,453,000

Interestingly, combining this employment information with the production data shows that Maine mills have become noticeably more productive per employee, increasing annual output per employee from 466 MBF per employee in 1997 to 525 MBF per employee in 2002. This represents a 13% increase in just five years, and is likely the net effect of capital investments made during the late 1990’s.

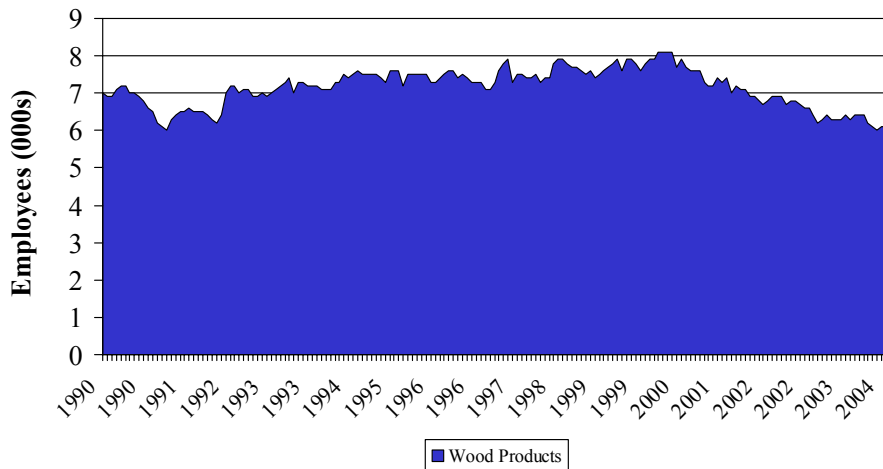
⁴⁸ NAICS code 3211, sawmills and wood preservation



While capital investment may lead to loss of some jobs, it is a key component of the future success of Maine’s sawmill sector⁴⁹. Maine has comparatively high electricity and labor costs, and one way that mills can control these costs is through the use of technology. In order for Maine mills to be competitive in the global marketplace, mills will need to use technology to control costs and be as efficient and productive as possible.

Maine’s solid wood sector generally, which includes both sawmills and wood product manufacturers⁵⁰, has shown employment levels between 6,000 and 8,000 over the past decade, with a loss of nearly 2,000 jobs since a peak in the spring of 2000.

Figure 48. Maine Wood Products Manufacturing Employment, 1990 - 2004



Data Source: US Department of Labor

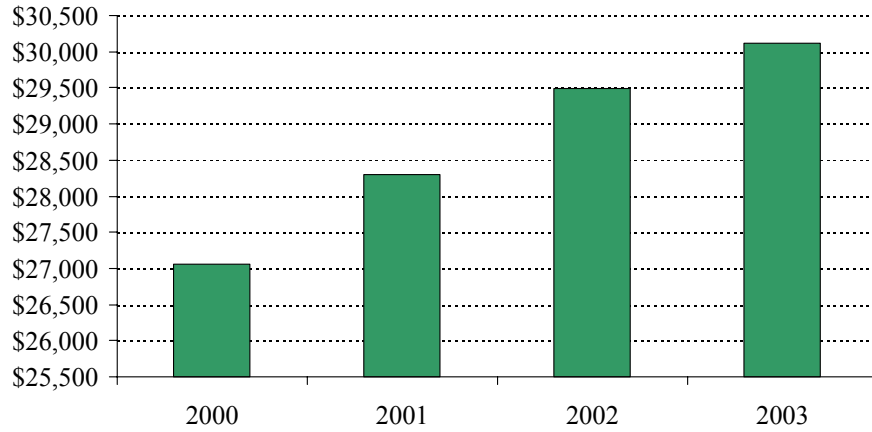
⁴⁹ It should be noted that capital investment in technology can lead to increased output with lower per-unit costs, new product lines, or more efficient production at existing levels.

⁵⁰ NAICS Code 321



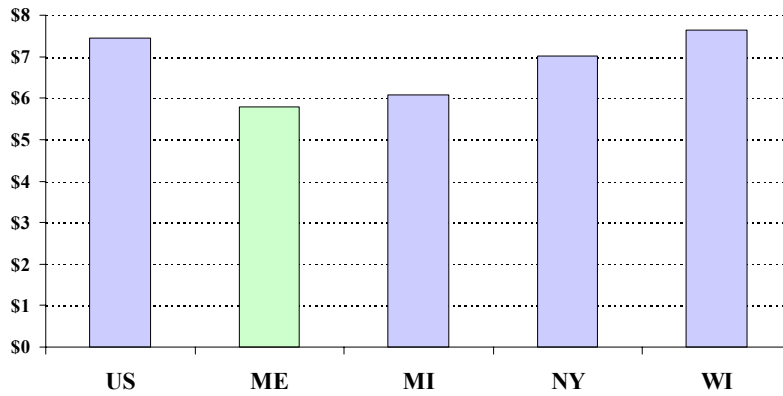
While there has been a loss of jobs, wages for retained positions in the wood products manufacturing industry have risen steadily, with the average wage rising from \$27,054 in 2000 to \$30,121 in 2003.

Figure 49. Average Annual Wage, Maine Wood Products Manufacturing



According to information from the U.S. Census Bureau, Maine sawmills ship \$5.80 for every dollar of payroll, slightly lower than what other states with a similar forest type ship.

Figure 50. Value of Shipments Per Dollar of Payroll, Sawmills, 2001⁵¹.



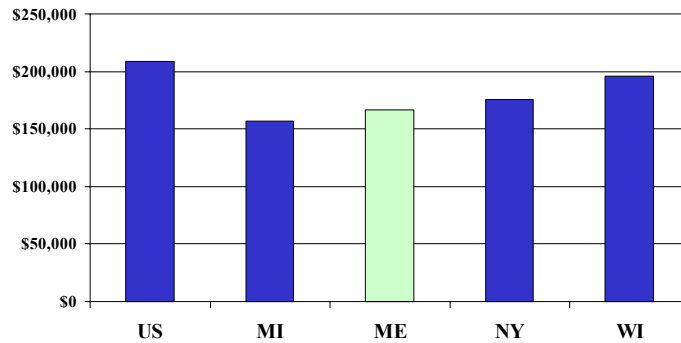
Data Source: United States Census of Manufacturing, 2001

⁵¹ Information on New Hampshire, Vermont, and Minnesota is unavailable.



When viewed as value of shipments per employee, Maine is comparable with other states with a similar forest type. In 2001, Maine sawmills shipped \$166,547 of product for each employee. The difference in Maine's position when measured as a function of payroll and as a function of employees is most likely related to Maine's higher labor costs, particularly benefits.

Figure 51. Value of Shipments Per Employee, Sawmills, 2001

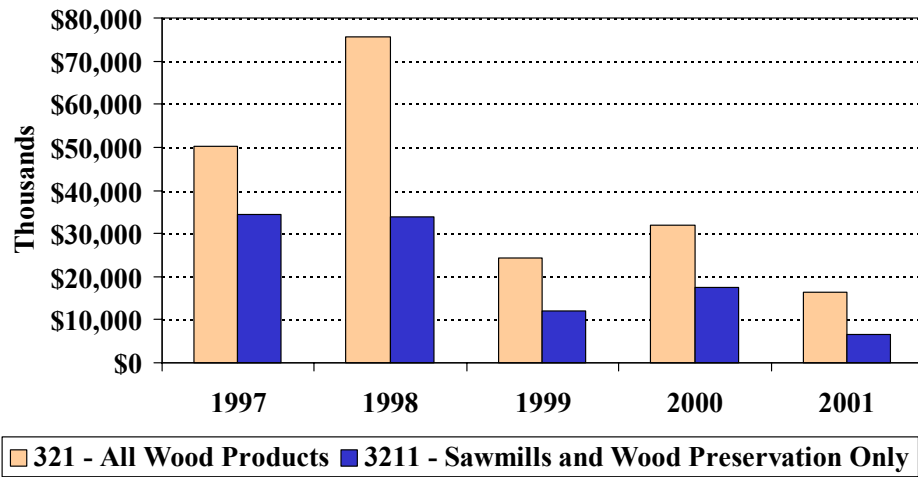


Data Source: United States Census of Manufacturing, 2001



Maine sawmills and wood product manufacturers have been making investments in their facilities, with investment levels largely following economic conditions in the nation.

Figure 52. Capital Investments in Maine Wood Product Manufacturing Facilities, 1997 – 2001

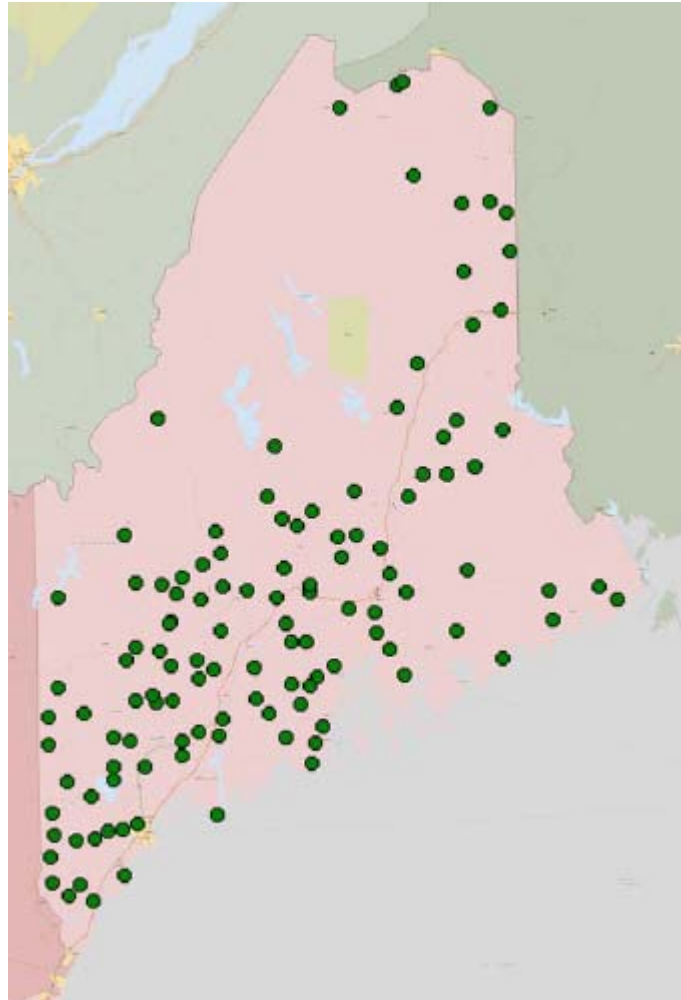


Data: U.S. Census of Manufacturers



Maine sawmills are located throughout the state (including a concentration in Southern Maine), and are a critical economic component of many rural communities. The following map shows the location of existing Maine sawmills.

Figure 53. Geographic Distribution of Maine Sawmills⁵²



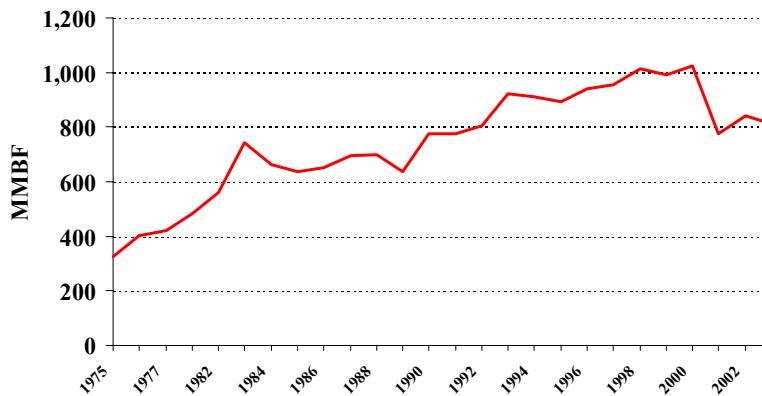
⁵² Data Source: Maine Forest Service, Department of Conservation. This map shows all mills with production greater than or equal to 10 thousand board feet of production per year. Placements on map are generally in the center of the Zip Code, so may not perfectly reflect the location of a facility.



Softwood Lumber

Softwood lumber is the bulk of Maine’s lumber production by volume, and has enjoyed significant increases in volume in the past three decades. Softwood lumber production has grown from 326 MMBF in 1975 to a peak of 1,026 MMBF in 2000. Production has dropped to 813 MMBF in 2003; much of this can be accounted for through the closing of two large mills.

Figure 54. Maine Softwood Lumber Production, 1975 - 2002



Data Source: U.S. Department of Commerce, Census Division

Maine’s softwood lumber production is primarily two products: structural lumber from spruce and fir, and white pine lumber. Structural lumber is the traditional “2x” lumber used in home construction, and competes directly against structural lumber from other parts of the U.S., Canada and offshore sources. White pine lumber is used to make boards, sheathing, siding, furniture, millwork, crates, and toys, among other products.

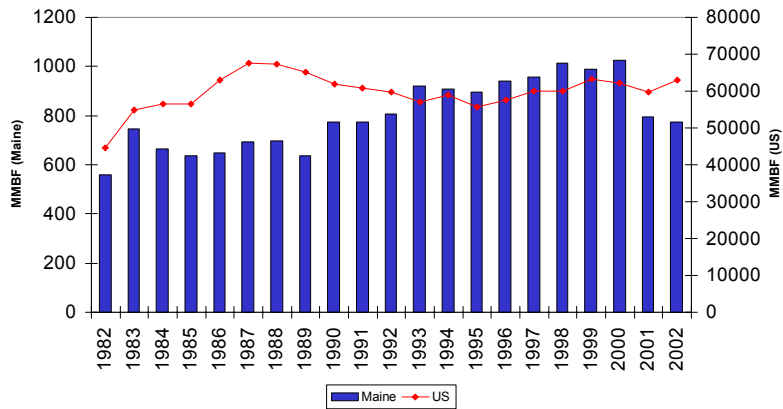
Softwood lumber, particularly structural lumber, is largely sold as a commodity. The largest market for softwood structural lumber is the U.S. housing market, as structural lumber is highly preferred in residential construction (particularly single-family residential construction). When sold in traditional lengths, structural lumber is a very difficult product to differentiate, and to date there has not been significant consumer demand for differentiated (e.g., certified wood or “American made”)⁵³ structural lumber. If a large market for differentiated wood products develops, it may impact consumer-ready markets such as flooring and furniture before structural lumber.

⁵³ Personal communication with Dr. Henry Spelter, USDA Forest Products Laboratory, March 17, 2004



Maine softwood lumber production has generally followed U.S. softwood lumber production through 2000. At that point, U.S. softwood lumber production remained relatively flat, while Maine production made a noticeable decline.

Figure 55 . Maine and U.S. Softwood Lumber Production, 1982 - 2002



Data Source: USDA Forest Products Laboratory and U.S. Census Division

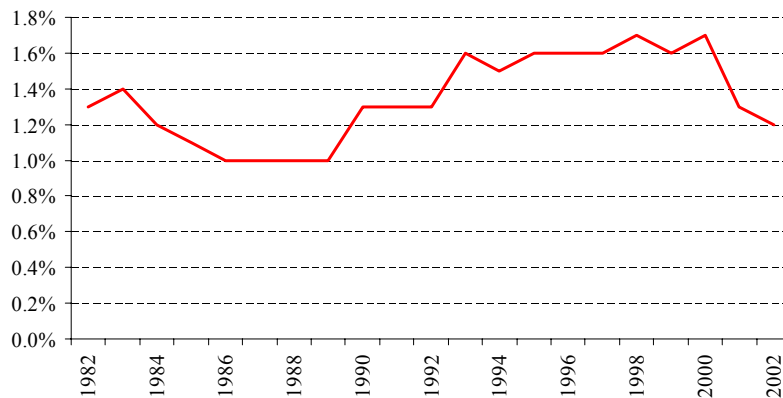
Nationwide, 2004 was a record year for lumber use, with 59.7 billion board feet, an increase of 4.8% over 2003. This was the sixth time in the last eight years that national lumber consumption set a new record. This was led by a strong housing market, which used an all-time high of 25.6 billion board feet of lumber in residential construction. With interest rates expected to rise, lumber use is forecast to drop by 4.2% for 2005. At 57.2 billion board feet, this would still be the second strongest year in history for U.S. lumber consumption.⁵⁴

⁵⁴ Shell, Dan. "Lumber Demand May Dip in 2005." *Timber Processing Magazine*. January / February 2005.



Maine is home to three of the nation’s “Top 200” softwood sawmills⁵⁵ (as measured by production), with another company recently announcing plans to develop a new facility in Maine that would be in the nation’s top 30, as measured by MMBF production⁵⁶. While softwood lumber production is critical to Maine’s forest economy, it is a relatively small percentage of U.S. softwood lumber production. Maine’s share of U.S. production grew steadily during the 1990’s, from 1.0% of U.S. production in 1989 to 1.7% in 2000. That has since fallen to 1.2% in 2002; reflecting Maine’s softwood lumber production decline while U.S. production remained relatively flat.

Figure 56. Maine Softwood Lumber as a Percentage of U.S. Production



Data Source: USDA Forest Products Laboratory and U.S. Census Division

Across the country, 2.4 billion board feet of new lumber capacity is expected in 2004 – 2005. This increase represents about 3.3% of U.S. consumption.⁵⁷

⁵⁵ Donnell, Rich. “Top 200 U.S. Softwood Sawmills”. *Timber Processing Magazine*. July / August 2004.

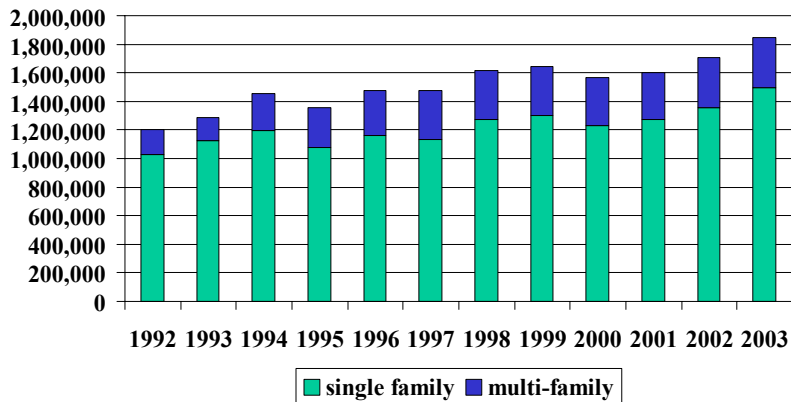
⁵⁶ “Proposed Mill Takes Next Step”. *Timber Processing Magazine*. July / August 2004.

⁵⁷ Spelter, Henry. “Good Vital Signs.” *Timber Processing Magazine*. January / February 2005.



In the U.S., the best and most often used indicator of demand for softwood lumber is housing starts. Since 1992, U.S. housing starts have climbed steadily, from 1.2 million starts in 1992 to over 1.8 million starts in 2003. This has led to a steady increase in market for softwood lumber, particularly from North American lumber.

Figure 57. U.S. Housing Starts, 1992 - 2003

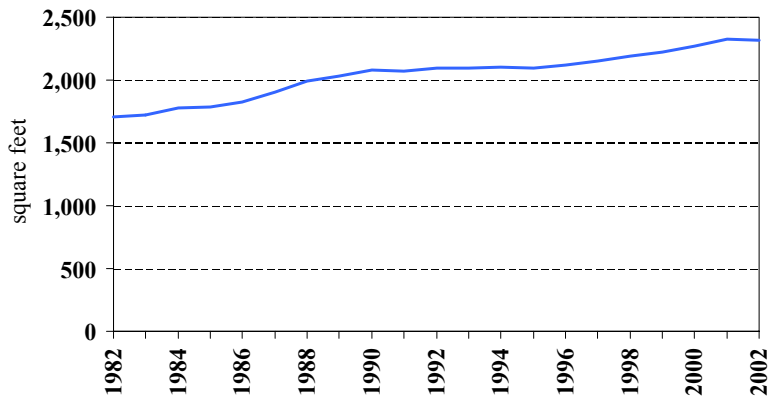


Source: U.S. Census Bureau



The size of the average new U.S. house has steadily increased; meaning more wood and wood products are consumed in construction of each housing unit. In 1982 the average housing start was 1,710 square feet; this had grown by a third to 2,320 square feet in 2002.

Figure 58. Average Floor Area (Feet²) of New U.S. Housing Unit (Single Family)

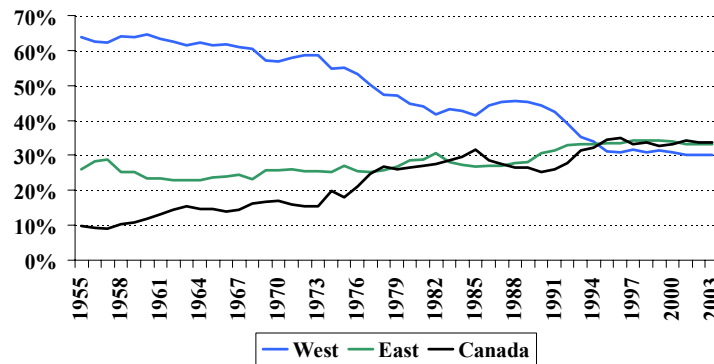


Data Source: USDA Forest Products Laboratory



North American lumber has long dominated the U.S. structural lumber markets, and the market share enjoyed by Eastern U.S. production (a region that includes Maine) has grown from 26% of the structural market in 1955 to 33% today. This increase has come largely at the cost of Western U.S. producers, many of whom have seen drastically reduced raw material availability as the result of decreases in timber harvesting on public lands.

Figure 59. U.S. Market Share for Softwood Structural Lumber, 1955 - 2003

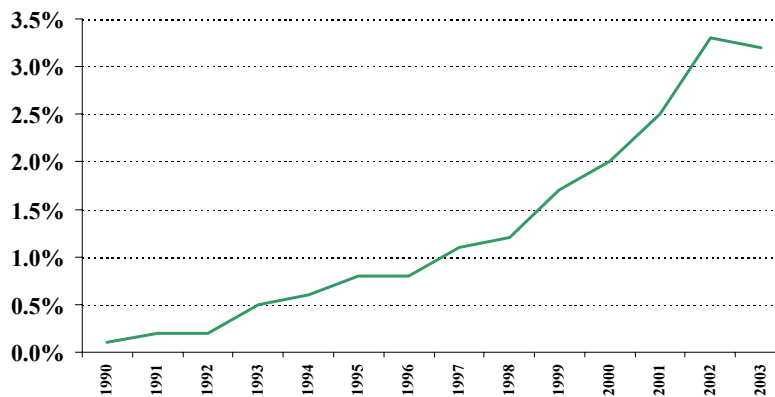


Data Source: USDA Forest Products Laboratory



Historically, North American producers have dominated the U.S. market for softwood structural lumber. However, since 1990 offshore softwood lumber imports have increased over 3,000%. Offshore imports accounted for only 0.1% of the U.S. structural lumber market in 1990; they now account for 3.5% of the market. This trend is expected to continue, as large amounts of softwood lumber move into the global market from New Zealand, Chile, Baltic and Siberian Russia, and plantations in Africa in coming years. Given that the United States is a leading consumer of wood, it is anticipated that much of this wood will come to U.S. markets in future years.

Figure 60. U.S. Market Share for Softwood Dimensional Lumber – Offshore Imports



Data Source: USDA Forest Products Laboratory

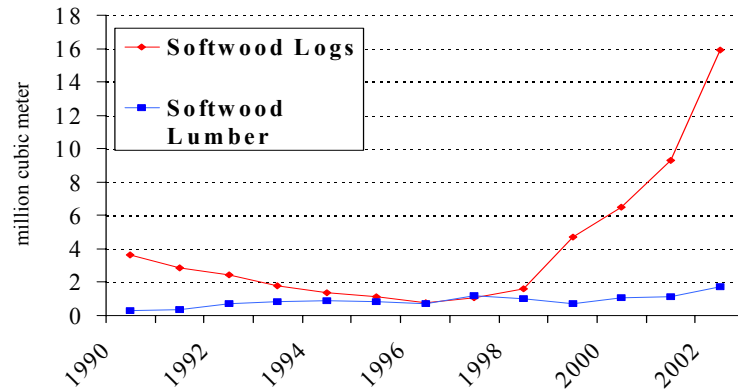
Note: *Offshore imports data does not include significant Canadian imports.*

While offshore imports have increased, changes in global trade may open up new markets for Maine lumber producers as well. For example, China – the world’s fastest growing economy, is quickly developing a middle class. This middle class has the beginnings of Western consumption habits, and many industry observers believe that demand for Western-style housing will provide a significant new market for wood in coming years.



China imports both logs and lumber for domestic use. Since 1999 log imports have taken off, while lumber imports to China have risen at a much more modest rate.

Figure 61. Chinese Log and Lumber Imports, 1990 - 2003



Data Source: USDA Forest Products Lab



Maine Opportunity – Maine International Trade Center

The Maine International Trade Center (MITC), formed in 1996, is a centralized source of information on international business and markets. MITC provides technical assistance and trade counseling, import and export leads, international credit reports, workshops, coordinated trade missions and trade shows, and other general services to Maine businesses seeking to participate in international markets.

MITC has a diverse membership of over 200 businesses, which includes members from all sectors of the forest products industry. These include several hardwood and softwood mills, secondary wood product manufacturers, one paper company, and a log broker. Some of these companies have taken advantage of MITC's representation and demonstration of their products abroad, providing them access to international markets at reduced rates and with minimal staff commitment.

MITC has a professional staff with international trade and industry-specific expertise, including composite technologies, wood products and lumber. One MITC staff member interviewed for this project noted that within the past year he has worked with four or five of the nine forest product firms in their membership.⁵⁸ According to MITC staff, it sees its role as assisting the smaller and medium-sized companies in the forest products industry. Many of the larger sawmills and paper companies maintain staff knowledgeable with international trade issues and do not seek out MITC's services. This is reflected in the MITC members from the industry, who generally represent smaller locally owned companies.

Although attitudes of forest products companies toward international markets vary, MITC points out that many of the forest products companies in their membership focus more on domestic markets. This sometimes depends on the strength of the US dollar and resource supply issues but also on trade issues such as the battle over softwood lumber with Canada or with specific trade requirements in foreign markets such as European softwood import regulations.

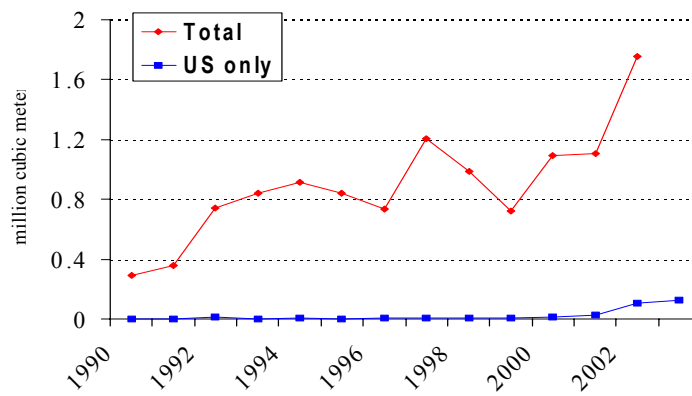
One of the most important aspects of MITC is its ability to make sense of the complexity of international trade, from markets to logistics to regulations. This is an important service for many Maine businesses, especially those intimidated by the prospects of the bureaucratic hurdles posed by international trade.

⁵⁸ Personal communication, Cory Crocker, Technical Assistance Manager, MITC, September 30, 2004.



To date, U.S. forest product manufacturers have not made meaningful inroads into the Chinese lumber market. Chinese imports of U.S. lumber have risen from a low of 0.3% in 1993 and 1997 to 6.2% in 2002. Given the large number of shipping containers that bring Chinese-manufactured consumer goods to East Coast ports and return to China with low transportation rates, there may be an opportunity for some Maine mills to establish ties to this growing market.

Figure 62. Chinese Softwood Lumber Imports, 1990 - 2003



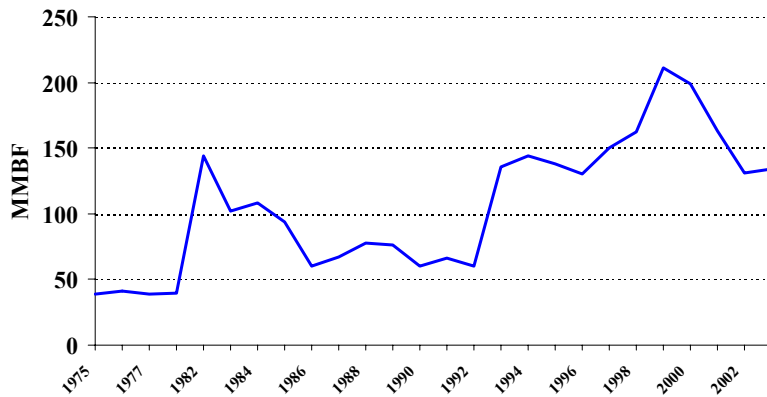
Sources: USDA Forest Products Lab



Hardwood Lumber

Maine hardwood lumber production has grown significantly from 1975 to the present, from 39 MMBF in 1975 to a peak of 211 MMBF in 1999. Maine hardwood production had declined modestly to 134 MMBF in 2003.

Figure 63. Maine Hardwood Lumber Production, 1975 - 2002

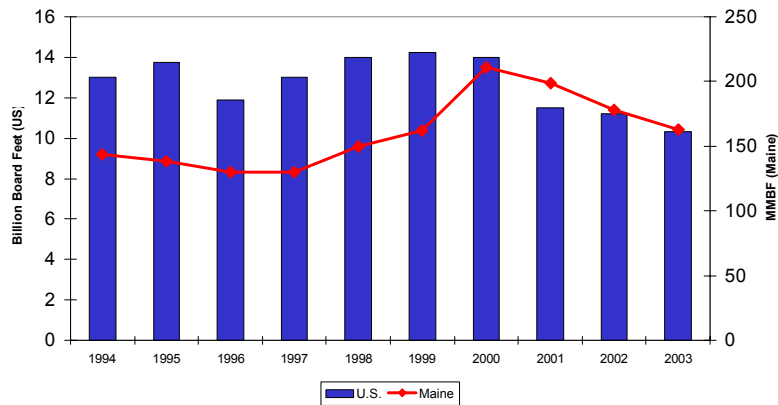


Data Source: U.S. Department of Commerce, Census Division



Maine hardwood production (red line, right axis below) has generally followed U.S. production (blue bars, left axis below) over the last decade. Maine production has dropped off in proportion to U.S. production since the production peak in 2000.

Figure 64. U.S. and Maine Hardwood Lumber Production, 1993 - 2003

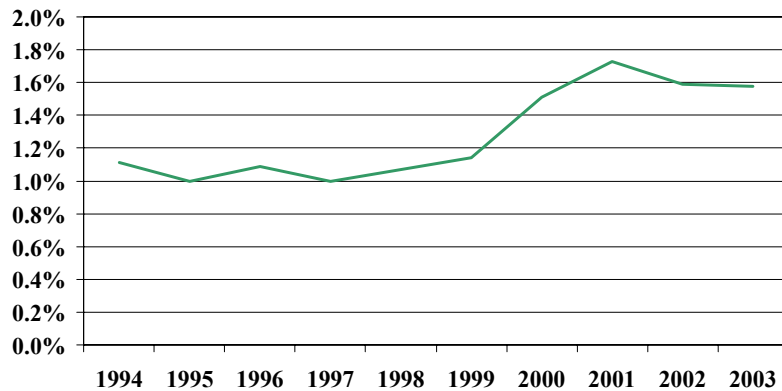


Data Source: Hardwood Review and U.S. Department of Commerce



Maine is home to one of the nation’s “Top 50” hardwood sawmills (as measured by production volume).⁵⁹ Nationally, Maine is a very small portion of overall hardwood production, with less than two percent of U.S. hardwood coming from Maine. However, Maine has been building market share, and has increased its percentage of U.S. production over 60% since 1997.

Figure 65. Maine Hardwood Lumber as a Percentage of U.S. Production

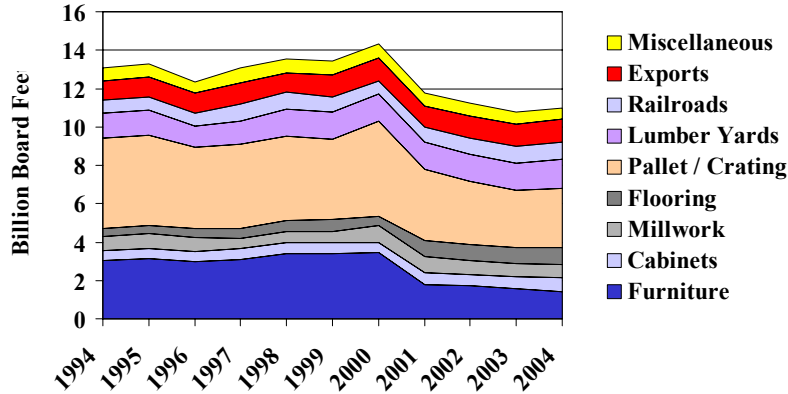


⁵⁹ Donnell, Rich. “Top 50 U.S. Hardwood Sawmills”. *Timber Processing Magazine*. July / August 2004.



U.S. hardwood lumber production has declined since a peak of 14.25 BBF in 1994, and now stands at 11.35 BBF. The furniture industry and pallets dominate hardwood use in the U.S.; other markets include retail lumberyards, flooring, millwork, and cabinets.

Figure 66. U.S. Hardwood Lumber Use⁶⁰



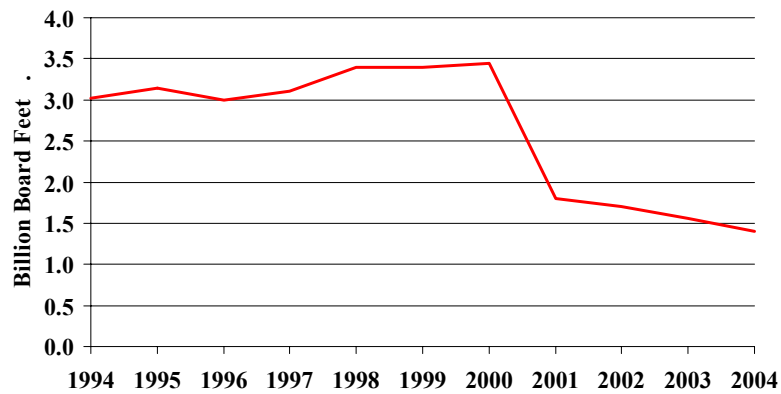
Data Source: Hardwood Review

⁶⁰ Barrett, George. Editor, Hardwood Review. *U.S. Hardwood Industry in a Global Economy*. Presented at the N.H. Forest Industry Summit. June 11, 2004.



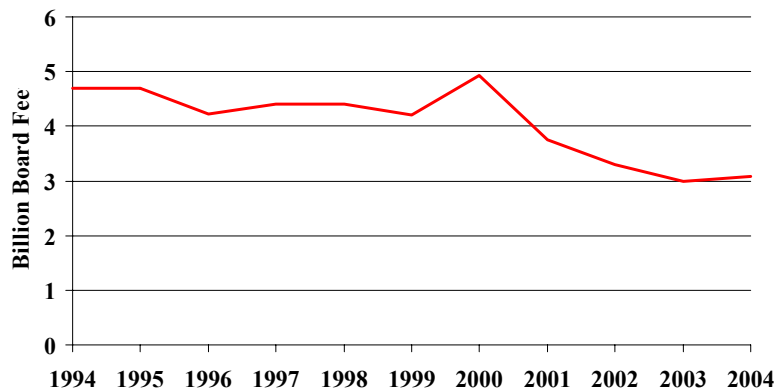
Furniture represents an important market for higher grades of hardwood lumber. U.S. lumber production used in U.S. furniture markets has declined dramatically in the past four years, and is now only half of what it was in 2000. Much of this decline has been due to furniture manufacturing moving offshore, particularly to China.

Figure 67. Hardwood Use in Furniture, U.S.



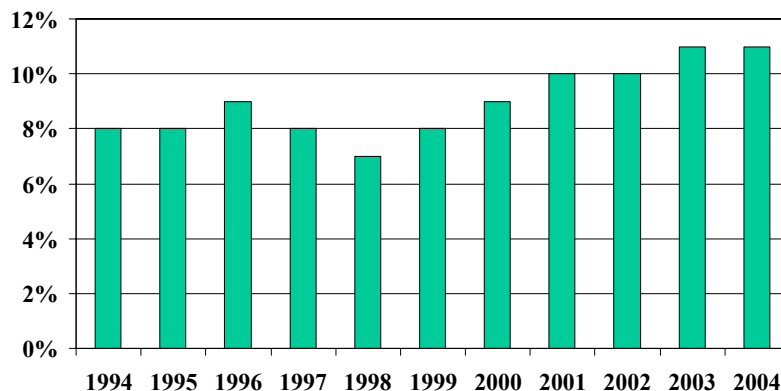
Pallets are an important market for low-grade hardwood lumber. Hardwood production used in pallets has also declined from a peak in 2000, with a volume decrease roughly mirroring furniture. Much of this is due to overall declines in U.S. manufacturing, which uses pallets to transport finished product to market. As some manufacturing losses are not expected to return to the U.S., this presents serious concerns regarding long-term markets for low-grade hardwood.

Figure 68. Hardwood Use in Pallets & Crating, U.S.



During this period of declines in the furniture and pallet industry, exports have roughly held steady, at 1.1 to 1.2 BBF per year. Due to a declining overall market for hardwood, exports have become a more important part of the nation's hardwood sector.

Figure 69. Percent of U.S. Hardwood Production Exported



Outlook

Maine lumber manufacturers, both hardwood and softwood, have been making significant investments in new capacity in order to position themselves for the future. Maine sawmills have added capacity at the same time that they have cut expenses, providing them with higher productivity. It should be noted that increased capacity does not necessarily translate to increased profitability for the industry, and many industry members we have spoken to indicated that they are now coming out of a long period of limited profitability. In order for Maine sawmills to remain competitive, the trend of investments in productivity must continue; failure to do so will result in mills in other areas gaining increased advantage over Maine mills.

The forest industry and policy makers must recognize that it is likely that some sawmills (as well as other manufacturers) will grow larger and more productive while others will be unable to compete and close. Further, those mills that are most competitive will do so by controlling input cost – including labor. Productivity gains can be achieved through increased production with the same number of employees; gains can also be realized through stable production with fewer employees. For this reason, using employment as an indicator of overall industry health could lead an observer to an incorrect conclusion.



Maine sawmill production, while important to the state, is a small portion of the nation's production. However, Maine mills enjoy some natural advantages, including proximity to the largest concentration of consumers in the world. Maine sawmills also face some challenges, discussed elsewhere in this report – including high electricity costs, transportation hurdles and comparatively high labor overhead (e.g., benefits, workers compensation). Some of these costs are particularly difficult for Maine mills that operate in the shadow of Canadian competitors, which operate under a very different economic system.

Maine softwood sawmills, particularly those producing structural lumber, must continue to invest in cost control and increased productivity to remain competitive. Wood can now travel the globe, and imports are beginning a penetration of U.S. softwood markets that is only expected to increase. As both U.S. housing starts and size are likely to remain stable or growing for the near-term, and Canadian and offshore lumber is currently more expensive than historical averages due to the exchange rate, Maine mills may continue the trend of increased capacity. However, this window of opportunity must be used to position successful mills for the future; failure on the part of industry to invest in productivity increases will mean that Maine mills will lose market share once the exchange rate returns to traditional levels.

For Maine hardwood mills, the loss of significant U.S. furniture manufacturing, coupled with declining overall manufacturing (and associated reduced pallet use) are troubling signs. As the U.S. and world economies recover, Maine hardwood mills will likely enjoy a period of increased profitability, and this provides a window for mills to establish new markets – including exports – and invest in increased productivity. Maine hardwood production is a small percentage of U.S. hardwood production, and opportunities may exist for Maine to differentiate itself in the marketplace. Particularly for hardwood lumber that is used in consumer goods, Maine mills may be able to establish consumer recognition that secures market share or price premium.



Secondary Wood Products

Secondary wood processing⁶¹ is generally considered to be the continued manufacturing of solid wood beyond the production of boards. Maine has a well-developed and diverse secondary wood products sector, and Maine-manufactured secondary wood products include:

“Apple Boxes, Arbors, Architectural woodwork, Art, Bark/Landscape material, Barrels, Baskets, Bins, Bird feeders, Blanks, Boats, Boxes, Buckets, Cabinets, Canoe parts & accessories, Carvings, Casework, Child swing/play sets, Christmas trees, Clothes pins, Containers, Crafts, Custom woodwork, Decking, Dimension stock, Doors & Windows, and Dowels.

Fencing, Fixtures, Flooring, Furniture (home, office, outdoor), Furniture parts, Games & Toys, Gazebos, Handles, Homes (log, modular, post & beam), Ladders, Lattice & Trellis, Lawn & garden accessories, Lobster traps, Lumber, Medical Implements, Millwork & Moldings, Musical instruments, Novelties & Souvenirs, Oars and Paddles.

Pallets, Panels, Patterns, Poles & posts, Railroad ties, Rulers & Yardsticks, Screen Doors, Shavings, Shelving, Shingles & Shakes, Siding, Signs, Sporting goods, Squares, Stairs, Stakes, Tools, Trusses, Turnings, Wreaths, and lots of other items.”⁶²

Secondary wood manufacturing is facing unprecedented challenges, both in Maine and across the U.S. These challenges are very real and growing, and current Maine secondary manufacturers that are thriving are becoming innovators in developing new approaches to business.

Due to the wide range of products made by secondary wood product manufacturers, this is an incredibly difficult group to get reliable statistics on. In Maine, secondary product manufacturers run from firms producing millions of golf tees to firms that make a handful of pieces of custom furniture each year.

General State of the Secondary Wood Products Industry in the United States

The national secondary forest products industry is incredibly diverse, and it is certainly the case that some firms or sub-sectors do well while others do not. That said, it cannot be ignored that secondary forest product manufacturers have been particularly hard-hit by an escalation of imports. During the past decade, one-third of the furniture market

⁶¹ Also often referred to as “value-added wood manufacturing”

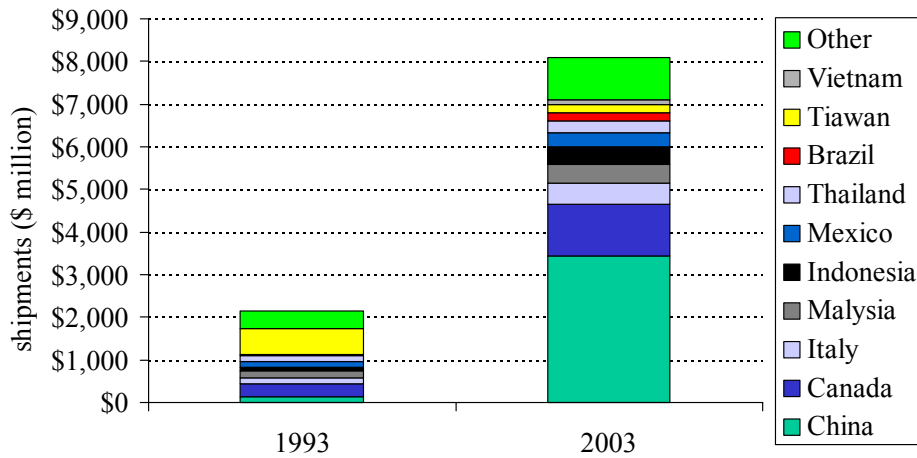
⁶² Maine Wood Products Association, www.mainewood.org



formerly enjoyed by U.S. manufacturers has been lost to imports – and this is continuing to spread to other secondary wood markets.⁶³

In the furniture industry, imports have risen dramatically, with the value of furniture imports rising from \$2.15 billion in 1993 to \$8.09 billion in 2003⁶⁴. By far, the greatest increase in imports came from China, which has increased exports from \$139.2 million in 1993 to \$3.43 billion in 2003.

Figure 70. U.S. Furniture Imports, 1993 and 2003



Data Source: Hardwood Review

In furniture and other secondary wood industries, the increase in global trade and transportation has created a number of low-cost competitors – a phenomenon that is likely to only increase in future years⁶⁵. For example, Russia is not currently a major player in U.S. furniture markets, but some industry analysts predict that they may become so as they “reorganize their forestry sector to focus on value-added opportunities for the country, which also holds the world’s largest standing softwood inventory.”⁶⁶

⁶³ Schuler , Albert and Urs Buelmann. *Identifying Future Competitive Business Strategies for the U.S. Residential Wood Furniture Industry: Benchmarking and Paradigm Shifts*. USDA Forest Service, Northeastern Research Station, General Technical Report NE-304. March 2003.

⁶⁴ Barrett, George. Editor, Hardwood Review. *U.S. Hardwood Industry in a Global Economy*. Presented at the N.H. Forest Industry Summit. June 11, 2004.

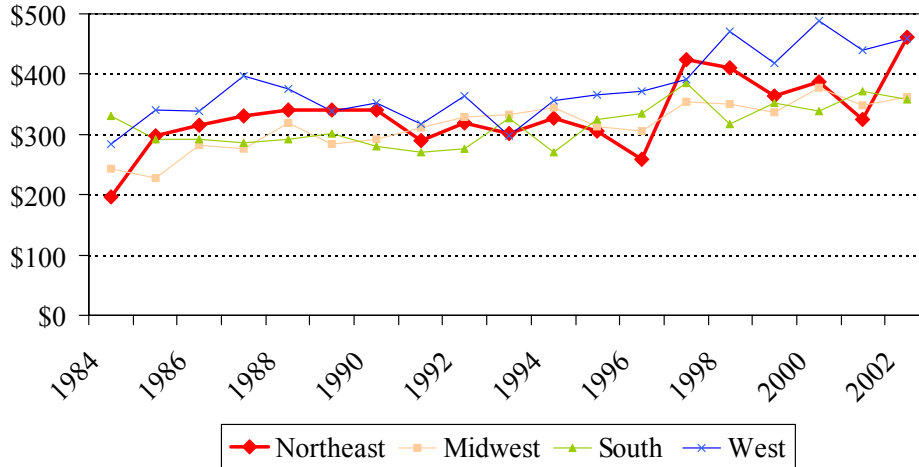
⁶⁵ Dossenbach Associates LLC / AKTRIN. *Secondary Wood Products in Vermont*. 2002.

⁶⁶ Schuler , Albert and Urs Buelmann. *Identifying Future Competitive Business Strategies for the U.S. Residential Wood Furniture Industry: Benchmarking and Paradigm Shifts*. USDA Forest Service, Northeastern Research Station, General Technical Report NE-304. March 2003.



This surge in imports has come at a time when U.S. consumers are slowly and steadily increasing their per-capita furniture expenditures. In 1984, the average Northeastern consumer spent \$196 annually on furniture (wood and non-wood); this more than doubled to \$461 in 2002⁶⁷.

Figure 71. Per Capita Expenditure on Furniture, U.S. Regions



Data Source: U.S. Bureau of Labor Statistics

During this same time period, the size of the average new house has increased, and is expected to continue to do so, with an increase of 10% over existing average size (2,300 square feet) by 2010.⁶⁸ Coupled with anticipated increases in home remodeling, this will likely lead to significant overall increases in demand for furniture in the U.S. for the next decade. The great challenge (and opportunity) for U.S. manufacturers, and Maine manufacturers in particular, is how to capture some of this demand increase.

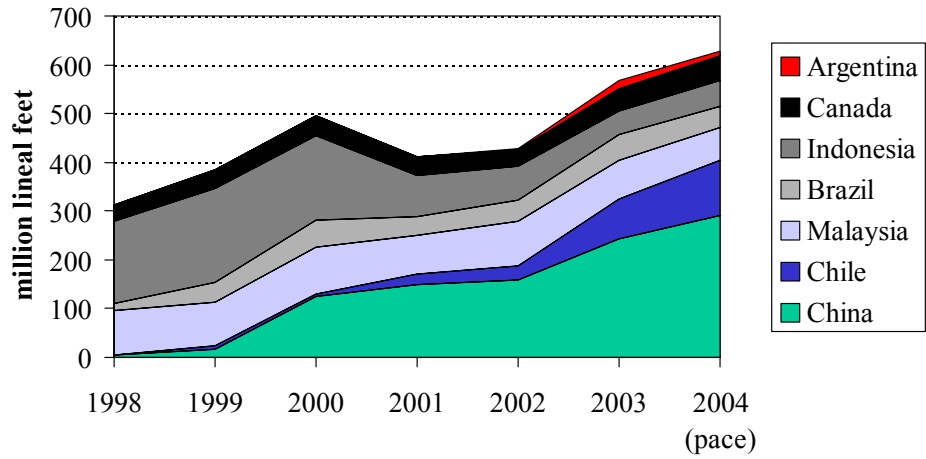
⁶⁷ These are not inflation adjusted dollars, but even after adjusting for inflation the increase is significant. Assuming 3% annual inflation, \$196 in 1984 would be equivalent to \$344 in 2002.

⁶⁸ National Association of Homebuilders. *The Next Decade for Housing*. 2002.



As with furniture, imports of hardwood molding have increased dramatically, and it is anticipated that 2004 imports (in linear feet) will be double the 1998 import level.

Figure 72. U.S. Imports of Hardwood Molding

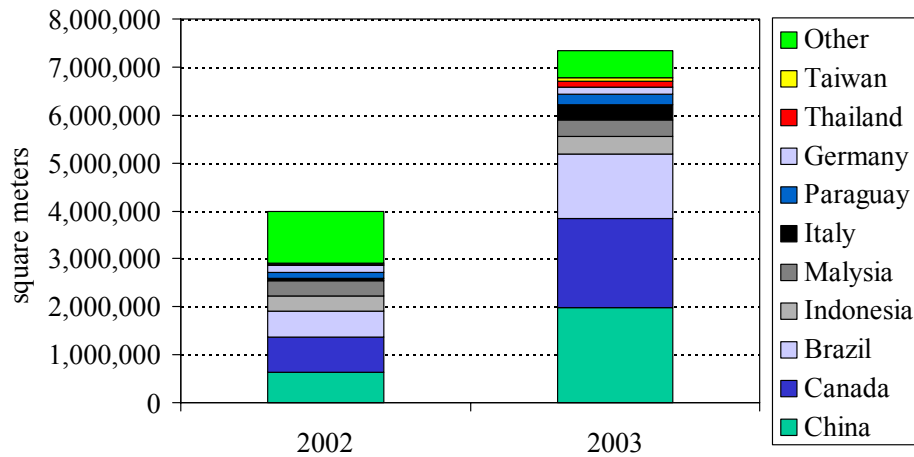


Data Source: Hardwood Review



Imports of flooring are growing even faster than imports of furniture or molding. Imports of flooring grew almost 85% in one year, with single year increases of over 100% from China, Canada, Brazil, Italy, Thailand and Taiwan.

Figure 73. Solid Hardwood Flooring Imports



Data Source: Hardwood Review

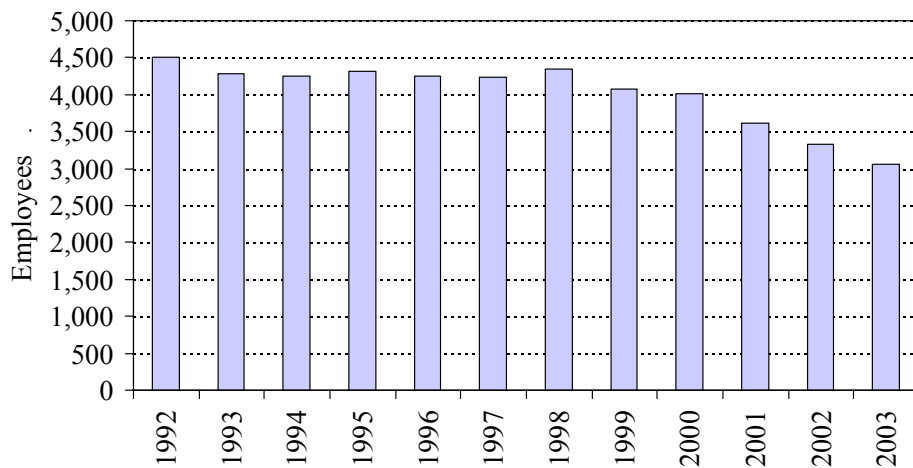


General State of the Secondary Wood Products Industry in Maine

Because of its great diversity, it is difficult to generalize about the state of secondary wood products manufacturing in Maine. A large number of facilities have closed in recent years (for example, Bickford Woodworking, C.B Cummings & Sons, Cornwall Wood Products, Forster Inc., H.G. Winter & Sons, Houlton International, Kendall Dowel Mill, and some operations of Saunders Brothers), while other facilities have added additional secondary processing capacity (for example, Robbins Lumber, Pride Manufacturing and Bethel Furniture Stock). As markets change and develop, some companies have been well positioned to take advantage of these changes; others have not.

The recent employment trend for Maine wood product manufacturers is downward. In 1992, Maine had roughly 4,500 people employed in the non-sawmill wood products manufacturing (NAICS code 3219⁶⁹); by 2003 that had dropped to around 3,000.

Figure 74. Employment Trends, Wood Product Manufacturing, 1992 - 2003



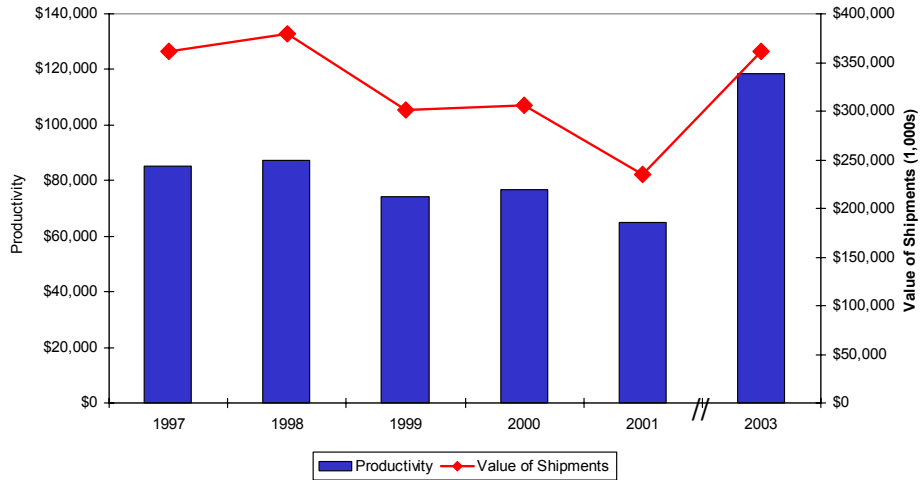
Data Source: Maine Department of Labor

⁶⁹ NAICS is a government system for tracking employment and other trends by industry. NAICS code 3219, *Other wood product manufacturing*, is defined as “establishments primarily engaged in manufacturing wood products (except establishments operating sawmills and wood preservation facilities; and establishments manufacturing veneer, plywood, or engineered wood products).”



Interestingly, this means that employees in the secondary wood products sector became significantly more productive during this time period, with per-employee output increasing from \$85,325 per employee in 1997 to \$118,334 per employee in 2003.

Figure 75. Value of Shipments and Employee Productivity, Wood Products Manufacturing



Data Sources: U.S. Census Bureau and Maine Department of Labor

Maine manufacturers have lost some markets to non-wood competition, and it is not likely that these markets will return to wood products or to Maine in the near future. Examples include toy pieces or tool handles that were historically made from wood at Maine turning facilities, and are now made with plastic. For high-end or specialty markets some of these products are still made with wood, but this has gone from a commodity to a niche market in recent years.



Case Study - Bethel Furniture Stock

Founded in 1958 by Roger A. Favreau, Bethel Furniture Stock, Inc. has been producing wooden parts for the furniture industry from locally grown hardwoods ever since. In 1979, the company was taken over by Roger's son Leon, who has assumed the CEO role during the ensuing 25 years. In 1985 the company entered the solid wood bending field utilizing Radio Frequency equipment designed and built by the company. Leon Favreau, an engineer by training, has always seen innovation as the ticket to success with this company.

In the mid-1990s, sales began to fall as Bethel Furniture Stock felt serious competition by overseas producers. China was and is still a strong competitor but so is our northern neighbor, Canada.

Amidst struggling sales, a 2001 fire in one portion of the mill, and an in-house self-insurance plan for employee healthcare that took several big hit claims over a several month period, in June of 2002 Favreau closed the operation to re-organize. Bethel Furniture Stock opened its doors just a few days later with a much reduced workforce (from about 75 before the shut-down to less than 40 after), a new approach to healthcare coverage instituted a short while later – they started health reimbursement accounts instead of insurance for employees – and a new reinvigorated attitude to succeed.

While the product mix for the firm continues to be wide-ranging, including -- solid wood bendings, edge glued panels, fully machined chair seats, machined bent components, laminated panels, compressed wood, and compressed wood bendings -- a new product line developed before the shut-down started to take off. This product line, a series of chair kits in 5 hardwood species, may be the promising new product that will lead Bethel Furniture Stock into the growth they desire. The company sells them as kits or fully assembled and, as Favreau says, they are of “unique design” such that they are differentiated in the marketplace.

Favreau said, “Despite the challenges we have had with healthcare and fire insurance costs, we can work toward growth and strength again with this expanding kit product line. All we need is some large new orders, which are starting to come.”

The company believes it could double production of the kit products (they even have a new table kit in the marketplace now) as soon as the demand hits. The equipment they have in place can handle that kind of increase in production though they might need to increase the current workforce of 43 full-time and 8 part-time employees. The company believes the workers are out there if the pay is sufficient.



When the shutdown occurred, state government was quick to offer assistance but, ultimately, it took the management minds in the company to pull off the re-start and continued operations. Chain-of-Custody certification under the Forest Stewardship Council has only yielded orders for 3 chair kits in the last year. This may result in more demand over time but, according to Favreau, it has not been very helpful yet.

The big challenges that still remain for Bethel Furniture Stock fit into three categories:

- insurance costs (both healthcare and fire are tops here, workers comp rates have not been a huge issue for this company);
- raw material cost – hardwood logs are more scarce and more costly than at any other time for the Bethel company;
- competition – Canada and China top the list.

Despite the challenges he’s faced in the years he has run the company, Favreau is optimistic. “I think we can make this company successful by continuing to make the quality products we are known for. We just need more markets, especially for our kit products. Our very skilled and proficient employees will see to it that we fill the extra demand when it arrives.”

Labor-Intensive Manufacturing

More so than other types of forest product manufacturing, secondary forest product manufacturing has a tendency to be labor intensive. Because the U.S., and Maine in particular, has a comparatively high wage and benefit average when compared with other manufacturing regions of the world, it is highly unlikely that products or processes that are mass-produced and require a high degree of labor will be profitable in Maine. As one secondary manufacturer noted in a newspaper interview, “It comes down to American labor-intensive manufacturing – it’s out of here, and it ain’t coming back.”⁷⁰

Experts familiar with the international furniture industry have estimated other countries have extensive cost advantages over U.S. manufacturers, to the extent that even if U.S. manufacturers cut their labor costs by 95%, they still could not produce furniture at a cost lower than Chinese manufacturers can deliver it to the United States.⁷¹ The U.S. government has recently imposed duties on some Chinese furniture of *up to* 198%, but industry observers believe that this will only shift production to other Asian nations, not return manufacturing to the United States⁷².

⁷⁰ Brad Cummings quoted in: Canfield, Clarke. “Running out of Wood Work.” *Portland Press Herald*. March 1, 2003.

⁷¹ Dossenbach Associates LLC / AKTRIN. *Secondary Wood Products in Vermont*. 2002.

⁷² Donnell, Rich. “China Slapped with Duty.” *Timber Processing Magazine*. Volume 29, Number 7. September 2004.



While all sectors of the forest industry face challenges from imports, secondary manufacturers are in the most difficult position because it is easy for secondary product manufacturing to occur at locations distant from the forest resource. This is because manufacturing inputs – lumber, boards, turning blanks – can be shipped to manufacturing facilities across the globe. In many cases, foreign (particularly Asian) producers may be well positioned to import manufacturing inputs using low-cost shipping opportunities made available when shipping companies seek to return otherwise empty shipping containers (shipping containers used to import finished products to the United States).

Outlook

As stated earlier, it is extremely difficult to make general statements about the highly diverse sector encompassed in secondary forest products manufacturing. It is certain that Maine’s secondary forest product manufacturing is undergoing significant changes, and it has likely entered a period of nearly constant change. Maine has seen some long-time secondary product manufacturing firms close, and it will likely see more. At the same time, other firms have found niches or opportunities to create new secondary manufacturing opportunities.

Speaking generally, Maine wood products tend to be expensive when compared to globally available products, and Maine manufacturers are not positioned as least-cost producers. There are limited (and diminishing) opportunities for standardized, commodity type secondary product manufacturing in a high wage and benefit state like Maine (or anywhere in the U.S.) This is not going to change in the next ten to twenty years, and successful secondary forest product manufacturers will not try to compete directly with least cost producers.

Instead, successful Maine firms will be competitive on value – offering a product that meets customer needs at a reasonable price. Depending upon the product, components of value may include quick turn-around time, the ability to customize small production runs, and superior customer support. The latter value idea may be keyed to perceived superior quality due to local production (the “buy local” factor – a form of branding). Non-quantitative factors, such as entrepreneurial attitude, managerial ability, and having a dynamic business model may prove to be some of the critical elements of future success.⁷³

Additionally, Maine firms will need to focus on and invest in productivity improvements – a focus that is likely to result in some job losses. However, failure to invest in new equipment that increases productivity will eventually lead to existing industries becoming wholly uncompetitive, thus losing all jobs associated with a facility.

⁷³ Schuler , Albert and Urs Buelmann. *Identifying Future Competitive Business Strategies for the U.S. Residential Wood Furniture Industry: Benchmarking and Paradigm Shifts*. USDA Forest Service, Northeastern Research Station, General Technical Report NE-304. March 2003.



Micro-businesses, a portion of secondary manufacturing in Maine, often are well positioned to take advantage of emerging opportunities. Micro-businesses often are, by nature of their size, able to quickly adjust operations to meet emerging opportunities. Further, micro-businesses -- or networks of micro-businesses -- generally do not produce undifferentiated mass quantities of products, and thus are less susceptible to foreign competition, if marketing capitalizes on this.

What we do know is that Maine secondary manufacturers that have survived are creative and nimble, both in production and marketing, and have been investing in productivity improvements. As noted in a recent Maine Wood Products Association newsletter, “[the] long-term solution is different for each company, but probably includes some combination of niche marketing, customization, quick turn-around, and great customer service.”⁷⁴ This will need to continue, as opportunities to succeed will likely come and go rapidly. Companies that are well positioned to take advantage of opportunities -- coupled with a regulatory and tax structure that encourages rapid deployment of new technologies -- will be positioned for future success.

⁷⁴ Wentworth, John. “A Message from the MWPA President.” *MWPA Splinters*. October 2004.

