

NEW ESTIMATES OF HARDWOOD LUMBER EXPORTS FROM
THE CENTRAL HARDWOOD REGION

William Luppold and Edward Thomas¹

Abstract: Exports have become an increasingly important part of the overall hardwood lumber market. However, recent findings indicate that much of the reported growth of hardwood lumber exports in the 1980's was based on inflated volume data. This paper presents new estimates of hardwood lumber exports to Asia and Europe with emphasis on the central hardwood region of the United States. The major finding is that, although the central region has become a major source of hardwood lumber, exporters in the eastern and western regions have a much larger share of the European and Asian markets.

INTRODUCTION

Exports have been one of the most visible components of the hardwood lumber market over the last decade. Statistics released by the U.S. Department of Commerce, Bureau of the Census (1989) indicate that lumber exports increased by 809 million board feet (or 327 percent) between 1980 and 1988 (Nolley 1990). These statistics report that exports to Asia and Europe increased by 388 million board feet and 249 million board feet, respectively. However, recent findings indicate that volume statistics reported by the Bureau of the Census for hardwood products have been greatly overstated (Luppold and Hansen 1989). This paper presents revised estimates of hardwood lumber exports to Asia and Europe with special emphasis on exports from the north and south-central hardwood regions.

The errors in statistics on hardwood lumber export volumes resulted from errors in the computer program that screens individual export declarations for accuracy, combined with an increasing number of incorrect export declarations. When the volume indicated on an export declaration was incorrect, the program developed a new volume estimate by dividing the declared value by a default price. Different default prices were used for each lumber product; however, most of the default prices had not been changed since the late 1970's. Since May 1989, new screening and default prices have been installed in the computer program, resulting in considerably better estimates of export volumes.

In addition to being historically inaccurate, official estimates of hardwood lumber export volumes are reported only by custom district from which lumber exits the United States and

¹Supervisory Economist and Computer Programmer, respectively, USDA Forest Service, Northeastern Forest Experiment Station, Route 2, Box 562-B, Princeton, WV 24740.

not the actual point of origin. This type of reporting does not allow for regional analyses of hardwood lumber exports. However, alternative information on hardwood lumber exports from seaports is available from the Port Import Export Reporting Service (PIERS) (Journal of Commerce 1989-90). This service provides information from individual shipping manifests, including product, weight, selling agent or company, and foreign destination.

Although the data provided by PIERS are extremely detailed, there are certain limitations in developing regional exports volumes. One difficulty with PIERS data is that they do not include material transshipped through Canada. Nearly 20 percent of the lumber exports to Europe travels through Canada via inland custom districts primarily in the northeast. Since dollar-volume figures by custom district are known to be fairly accurate, estimates of total export volumes can be obtained by combining both information obtained from PIERS and the Department of Commerce. However, there is no method for determining the origin of shipments leaving from inland exit points. Another problem in determining the regional impact of lumber exports is that lumber can be sold across regions and then exported. Still, with these limitations, PIERS data can provide the information needed for a rough analysis of hardwood lumber exports on a regional basis.

All non-Census data reported in this paper are derived from PIERS. The validity of these procedures is discussed in Luppold and Thomas (1990). The basic steps used in developing the data were: (1) Classify all observations into the specific 10-digit codes used by the Bureau of the Census; (2) Place all observations not designated by species in a NES (not elsewhere classified) category; (3) Develop export volumes on a shipment-by-shipment basis by using volume information listed on the manifest, or by estimating volume from weight or other information provided on the manifest;² and (4) Summarize volumes on a year-by-year, country-by-country basis for all known species and NES categories.

NATIONAL EXPORT TRENDS

In Figure 1, Census estimates of hardwood lumber exports to Asia are compared to estimates developed from PIERS data. Since value information also developed by the Bureau of the Census indicates that nearly all hardwood lumber exports to Asia go through U.S. seaports, the PIERS estimates represent the actual volume exported. The sharp decline in Census estimates between 1988 and 1989 resulted from changes made in the computer program used to compile official export statistics. Since these changes were not used in developing export data for January through April, 1989 Census estimates remain slightly inflated.

Even after discounting the volume inflation in the official hardwood export statistics, exports to Asia increased by nearly 1,000 percent (240 million board feet) between 1981 and 1989

²A detailed description of the procedures used to estimate volume from ship manifests, and the validity of these procedures, is discussed by the authors in "A Revised Examination of Hardwood Products Exports to the Pacific Rim (in preparation).

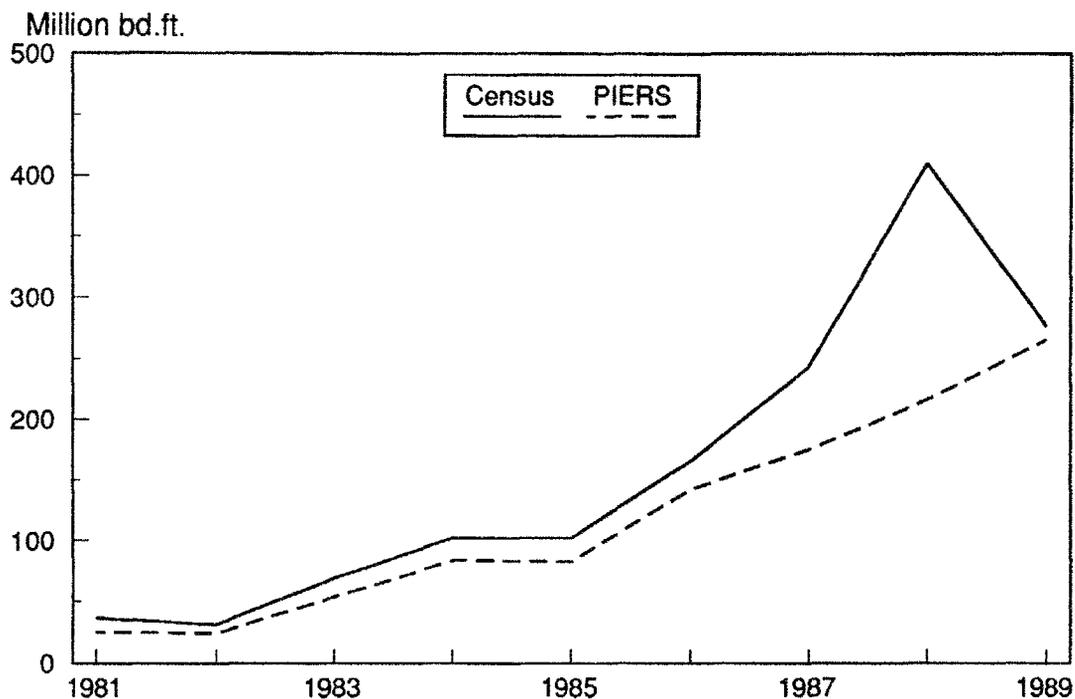


Figure 1. Estimates of hardwood lumber exports to Asia as reported by USDC Bureau of Census and developed from PIERs data.

(Fig. 1). The rapid growth in Asian exports emanated primarily from increased demand by Japan and Taiwan. These two countries accounted for nearly 90 percent of all hardwood lumber exports to Asia in 1989. Although the growth in these two markets occurred almost simultaneously, the demands by Japan and Taiwan are considerably different.

The Japanese use U.S. hardwood lumber for production of furniture, millwork, and fixtures that are consumed in the Japanese market. Red alder was the primary hardwood lumber species exported to Japan in 1989. Also shipped were large amounts of ash, yellow-poplar, white oak, and red oak. Exports to Taiwan were manufactured into furniture and other products that were exported primarily back to the U.S. market. Red oak was the primary species exported to Taiwan in 1989, with significant amounts of white oak also shipped.

Estimates of hardwood lumber exported to Europe as developed by the Bureau of the Census and from PIERs data are shown in Figure 2. Since a significant portion of European exports from the United States go through Canada, a third line representing adjusted PIERs estimates is shown. The adjusted PIERs estimates were developed by multiplying the PIERs estimate by the ratio of total value of exports to Europe over the value of European exports leaving primarily seaport custom districts. Again, the sharp decline in Census estimates between 1988 and 1989 resulted from changes made in the computer programs used to compile official export statistics.

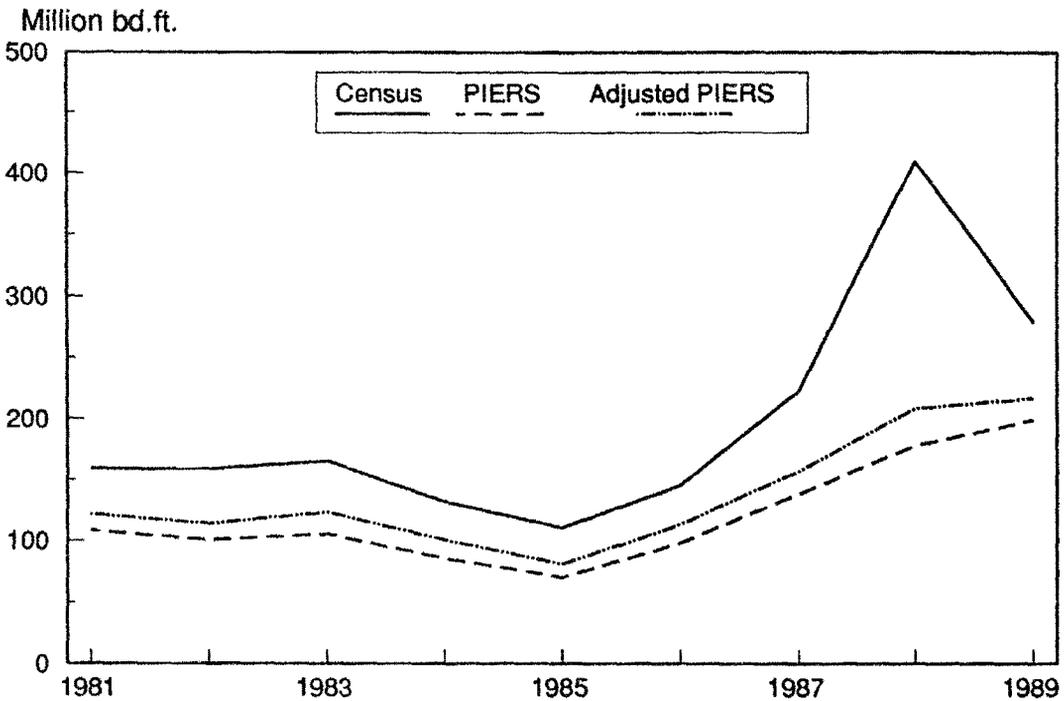


Figure 2. Estimates of hardwood lumber exports to Europe as reported by USDC Bureau of Census and developed from PIERS data.

Hardwood lumber exports to Europe nearly doubled in the 1980's from an already high base in the late 1970's. By the end of the decade, exports to Asia were higher than exports to Europe. The European market differed sharply when compared to the Asian market in that no single country or set of countries continued to be a dominant user of U.S. hardwood lumber. In the early 1980's, West Germany, the Netherlands, and Belgium were the primary markets for U.S. lumber. In the mid-1980's, Italian demand for U.S. lumber increased sharply while the traditional northern European market either remained static or declined. In the late 1980's, nearly all European markets increased; however, exports to the United Kingdom, Spain, and Italy increased at faster rates.

White oak was the major species exported to Europe in the 1980's. Significant quantities of red oak also were exported to Europe, with Belgium and France the major users. Ash and yellow-poplar also were exported to Europe in increasing volumes in the late 1980's. Yellow-poplar currently is the major species exported to Italy.

REGIONAL EXPORT TRENDS

The north and south-central regions produce well over 50 percent of the 11 billion board feet of hardwood lumber manufactured in the United States (Luppold and Dempsey 1989). At first analysis, this level of regional production indicates that these regions are the major suppliers of exported lumber. Surprisingly, the central region is a minor force in the Asian market when examining regional export information developed from PIERS data (Fig. 3). In 1989, only 17 percent of Asian exports originated directly from firms located in the central hardwood region.

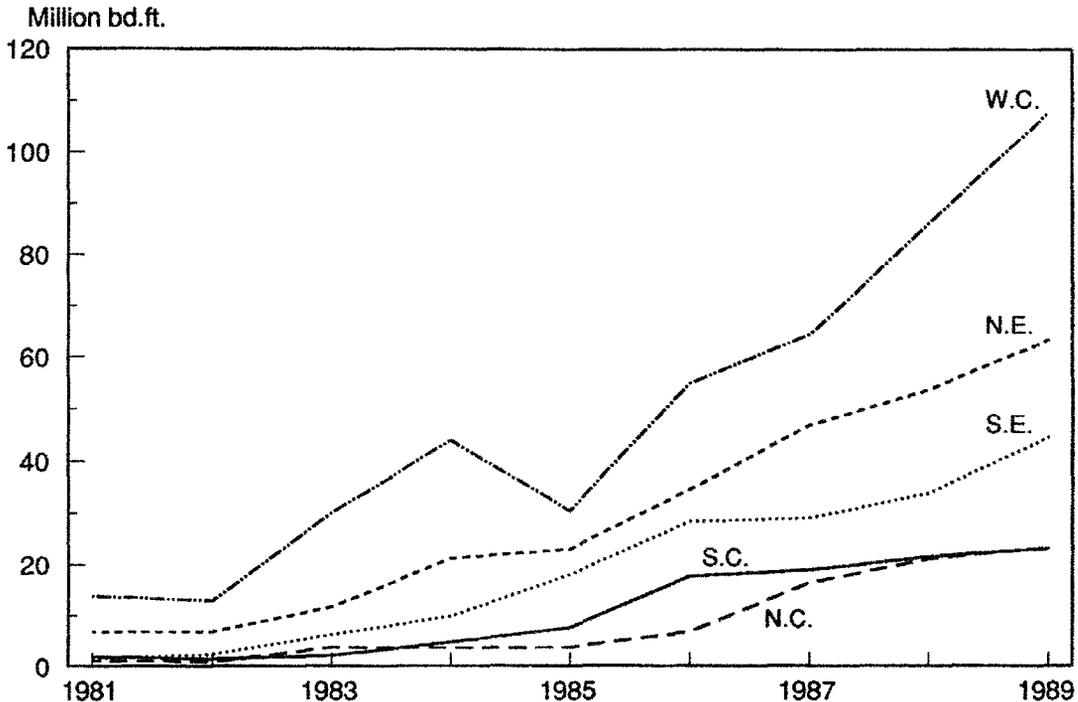


Figure 3. Regional estimates of hardwood lumber exports to Asia as developed from PIERS data.

Part of the reason why the central region appears less important in the Asian market is that nearly 40 percent of the nearly 250 million board feet of hardwood lumber going to Asia in 1989 was shipped by West Coast firms. A significant but unmeasurable amount of lumber shipped by West Coast exporters is eastern species such as red oak, white oak, ash, maple, and poplar. The closer proximity of the central region to the West Coast would suggest that a high proportion of this lumber is from the central region. Although this situation highlights the weakness of using PIERS data for U.S. regional analyses, some interesting trends can be drawn from the limited information at hand.

The first notable trend is that growth in exports to Asia from all regions has grown over time in a similar pattern. Until recently, exports to Asia from the south-central region have slightly exceeded exports from the north-central region. The recent slight increase in strength of the north-central market can be explained by examining the major Asian markets served by these regions.

Throughout the 1980's, Taiwan was the major market for south-central lumber exports, with red oak the major species. Ash, the only other significant export from the south-central region, was shipped in increasing amounts to Japan through the mid-1980's. Exports to Asia from the north-central region tended to vacillate between white oak shipments to Japan in the early 1980's, to red oak shipments to Taiwan in mid-1980, back to white oak shipments to Japan in the late 1980's. Today, Japan is the primary market for the north-central region. In the late 1980's, the Japanese market grew faster than the Taiwanese market; the result was that north-central exports to the Asian market increased at a faster rate than south-central exports.

Exports to Europe, by region, for 1981 to 1989 are shown in Figure 4. Exporters from the central hardwood region account for a much greater share of the European market than the Asian market. The northeast region, however, appears to be the largest source of exports to Europe. Some of the material shipped by northeastern and southeastern firms could have emanated from the central region, but there is no accurate information on these interregional transfers.

One interesting aspect of Figure 4 is that exports from the north-central region increased at a much faster rate in the 1980's than exports from the northeastern region. In 1981, 49 percent (52.6 million board feet) of the exports to Europe originated from the northeast while only 8 percent (8.5 million board feet) originated from the north-central region. By 1989, exports shipped from the northeast increased to 69.5 million board feet while exports from the north-central region increased to 30.6 million board feet. Alder exports from the West Coast to Europe also increased sharply in the 1980's. Exports from the southeast and south-central regions increased at about the same rate as total exports during the 1980's.

The primary European markets served from the north-central region changed as the overall European market changed. Germany and Belgium were the primary European markets for north-central lumber through the mid-1980's. In the late 1980's, Italy, the United Kingdom, and Spain became increasingly important markets for north-central hardwood lumber. White oak has been and remains the primary species shipped to Europe from this region regardless of country of destination.

In the early 1980's, Germany and the Netherlands were the most important export markets for the south-central region. In the mid-1980's, Italy rivaled Germany as the most important market. By the late 1980's, Italy, Spain, Belgium, and the United Kingdom were more important markets for south-central hardwood lumber than Germany. As in the case of the north-central region, white oak was the most important species exported to Europe from the south-central region.

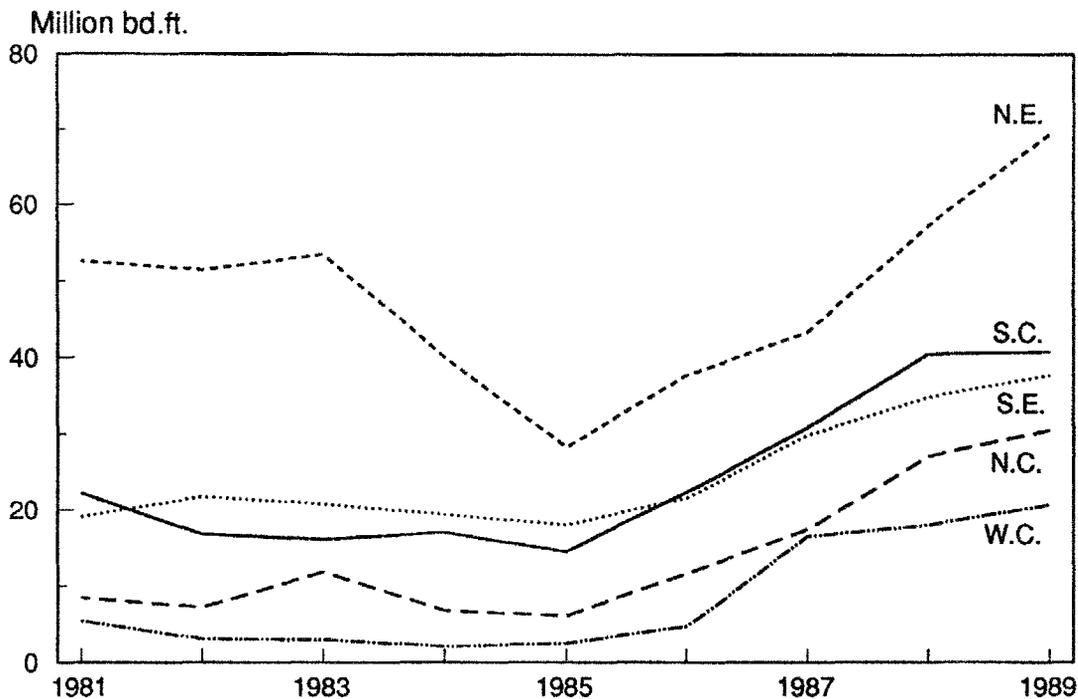


Figure 4. Regional estimates of hardwood lumber exports to Europe as developed from PIERS data.

SUMMARY AND CONCLUSION

Although the central hardwood region manufactures more than 50 percent of the hardwood lumber produced in the United States, the amount of lumber directly exported from this region is substantially less. Part of this apparent discrepancy can be attributed to shipments of exportable lumber from the central to coastal regions. However, the cost of transporting products to international markets is increased because many of the states in the central region are landlocked. Still, the north-central region has increased its share of exports to Europe relative to all other eastern regions. As the export markets in both Asia and Europe continue to expand, it is almost certain that the vast production and timber resources of the central hardwood region will be increasingly required to serve the growing international demand for U.S. hardwood lumber.

LITERATURE CITED

- Journal of Commerce. 1989-90. Port import export reporting service database. J. Commer.
- Luppold, William, and Bruce G. Hansen. 1989. U.S. export discrepancies explained. *Natl. Hardwood Mag.* 63(12):99-103.
- Luppold, William, and Gilbert P. Dempsey. 1989. New estimates of central and eastern U.S. hardwood lumber production. *North. J. App. For.* 6(3):120-123.
- Nolley, Jean W. 1990. Bulletin of hardwood market statistics: spring 1990. USDA For Serv. Gen. Tech. Rep. NE-142. 43 p.
- U.S. Department of Commerce, Bureau of the Census. 1989. Schedule B: statistical classification of domestic and foreign commodities exported and imported from the United States database. U.S. Dep. Commer., Bur. Census, Washington, DC.