DEMAND FOR HARDWOOD LUMBER IN THE UNITED STATES: TRENDS AND PROSPECTS

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Abstract. Since 1950 about 1 million cubic feet of timber have been cut annually in the United States for the purposes of hardwood lumber production. In 1980, this amounted to about one quarter of all hardwood removals, with pulpwood and fuelwood accounting for the balance.

This assessment of demand for hardwood lumber is part of a larger project, the hardwood assessment market model (HAMM), at Yale under USDA Forest Service sponsorship. HAMM is an integrated econometric model which considers lumber demand, lumber supply, timber demand, timber supply and timber inventory development. A distinctive feature of HAMM is the attention paid to modeling different grades of hardwood lumber and timber. Working papers which detail each of these parts of HAMM are available from the author.

To estimate the total demand for hardwood lumber, each of the major markets for hardwood lumber is modeled individually. This disaggregate approach permits the use of a much richer set of data and improves the statistical performance of the demand model. Ten major markets are identified, and four of these—pallets, furniture, ties and miscellaneous—accounted for four fifths of the total hardwood lumber use in 1980. Since 1960 the pallet market has grown dramatically, while that for hardwood flooring has fallen substantially. Both furniture and tie markets have grown over this period, albeit slowly.

Our estimates of demand in individual markets can be used to estimate total domestic production of hardwood lumber. The Bureau of Census also estimates hardwood lumber production, and in recent years those estimates have been substantially lower than those derived in HAMM. Partly the differences are due to differences in what constitutes "lumber", but even adjusting for definitional differences leaves a discrepancy of about 1 billion board feet annually between the Census and HAMM estimates of U.S. hardwood lumber production.

Lumber supply can be characterized by production cost information. The costs of lumber production include stumpage, harvest and delivery, and manufacturing. Data describing the first two factors were developed from a variety of sources. Because so little of the total hardwood timber market is controlled by the USDA Forest Service, we choose to work with a series of state-level stumpage price reports rather than the stumpage price series which can be

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estimated from the USDA Forest Service cut and sold reports. The state level
data provide a rather different picture of price trends, rising more rapidly in
recent years than the prices for Forest Service sales. Both the Southeast and
the South Central regions have lower stumpage prices than the two northern
regions, but the rate of stumpage price inflation has been higher in the South
than in the North.

Between 1956 and 1982, real harvest and delivery costs have actually fallen
in the South. Together the trends of rising stumpage prices and falling harvest
and delivery costs imply an increase of delivered wood costs of 0.8% yr. in the
Southeast and 1.0%/yr in the South Central region. Both regions have enjoyed a
lower rates of wood cost inflation than the Northeast or North Central regions.

Timber prices have risen despite a decline in the ratio of harvest to
standing timber inventory. Lower wood costs combined with a lower rate of wood
cost inflation in the South suggests an opportunity for an increase in southern
hardwood lumber production.