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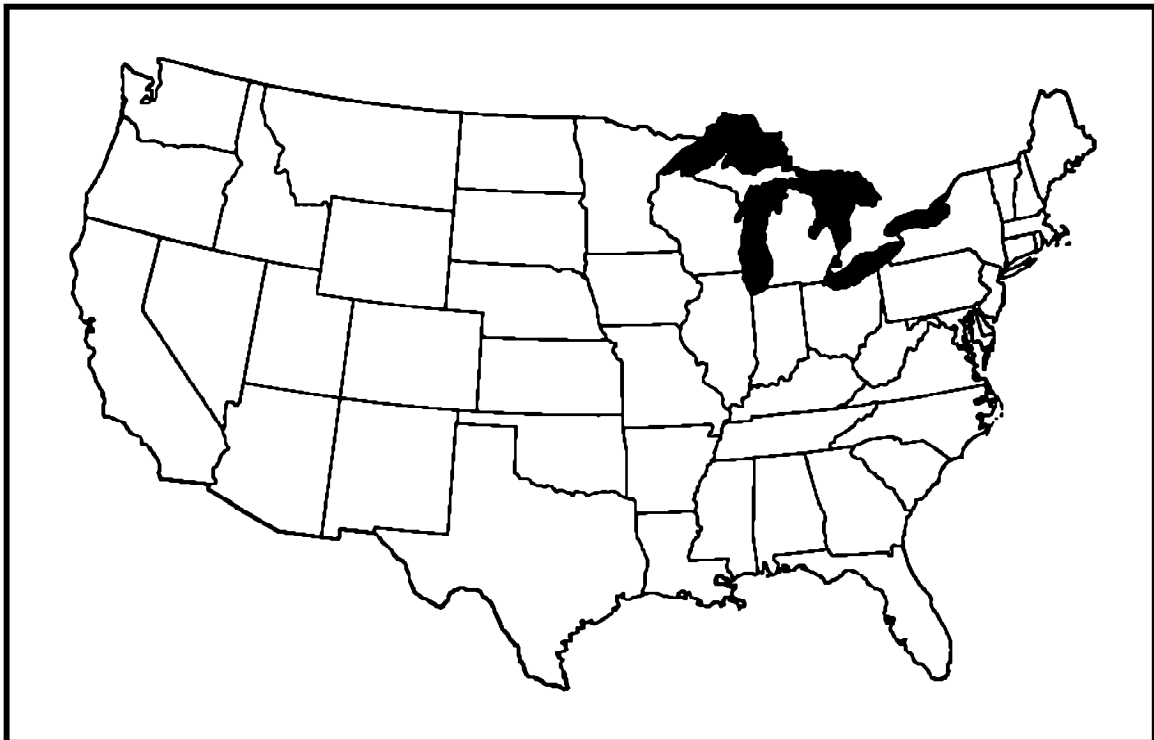
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# U.S. Forest Products Annual Market Review and Prospects, 1999–2002

James L. Howard



## Abstract

This report provides general and statistical information on forests products markets in terms of production, trade, consumption, and prices. The current state of the United States economy is described. Market developments are described for sawn softwood, sawn hardwood, softwood log trade, wood-based panels, paper and paperboard, fuelwood, and forest product prices. Detailed information and projections for the year 2002 are presented.

Keywords: production, trade, prices

## Executive Summary

This document serves two purposes: (1) it provides specific information on economic trends in the U.S. economy, and (2) it indicates how these trends are linked to trends in the wood-using sector of the economy. The economy performed well in 2000 as measured by the gross domestic product, and the long economic expansion that started in 1991 continued into its 11th consecutive year. Although economic growth slowed somewhat during the first half of 2001 and forecasts have consequently been lowered for 2001 and 2002, the economy is expected to continue growing, albeit at a slower pace. The production in the wood-using sector of the economy has been consistent with general economic trends. During 2000, buoyed by the housing industry, the production of solid wood products approached near-record levels while the pattern of trade varied across the industry; pulpwood production for paper and paperboard production remained relatively unchanged. Paper and paperboard production declined in 2001 by about 6% relative to production in the year 2000.

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# U.S. Forest Products Annual Market Review and Prospects, 1999–2002

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## General Economic and Major Market Trends

Since the second quarter of 1991, the average rate of growth of the U.S. economy has been 3.6%. As measured by the gross domestic product (GDP), economic activity rose at an annual rate of 4.1% from 1999 to 2000—from \$8,856.5 billion to \$9,224 billion (1996 dollars). The economy continued to grow rapidly until the middle of 2000; growth of gross domestic purchases rose 3% and 1.5% in the third and fourth quarters of 2000, respectively. Then, in the first quarter of 2001, growth of gross domestic purchases fell to 0.2%.

The current economic expansion, now in its 11th consecutive year, has slowed, as reflected by the first 6 months of 2001. Overall rates of inflation were higher during the first half of 2001 than they were during the last half of 2000. Some economic forecasts are predicting slow growth for the last half of 2001 as well as higher prices and a less than favorable employment outlook. Economic expansion has continued despite this outlook, albeit at a declining rate of growth. Advanced estimates of GDP show a slowdown in economic growth to an annual rate of 1.0% for 2001 as a whole.

Leading economic indicators are mixed. After increasing 3.2% in the first quarter of 2001, real personal consumption expenditures (PCE) increased only 1.7% in the second quarter. Gross domestic purchases increased about as much as did GDP. The largest contributors to the increase in real GDP in the second quarter of 2001 were consumer and government spending.

The increase in real GDP in the second quarter of 2001 was offset by a decrease in private nonresidential fixed investment, a slowdown in consumer spending, and a larger decrease in exports, compared with that in the first quarter. Nonresidential fixed investment dropped sharply, subtracting almost 1.9 percentage points from GDP growth. Nonresidential fixed investment fell 0.04% in the first quarter of 2001 and 3.7% in the second quarter; the rate of growth was only 9.5% the average rate of growth that has occurred since 1991.

Consumer spending on computers and peripheral equipment has fallen by 9.8% since the fourth quarter of 2000; software spending declined by 2.9% over the first two quarters of 2001. In addition, PCE prices, which increased 3.2% in the first quarter of 2001, increased only 1.7% in the second quarter. Energy and food prices slowed in the second quarter as well; other PCE prices increased less than half as much as in the first quarter. The GDP price index increased 3.3% in the first quarter and 2.3% in the second quarter. Import and export prices, which are both components of this index, declined in the second quarter.

The U.S. economic forecast for 2002 calls for a slowdown in GDP growth—from 4.1% in 2000 to 2.0% in 2002. Advanced estimates for 2001 indicate about 1.0% growth in GDP. Although forecasts for U.S. growth have been lowered for 2001 and 2002, the economy is not expected to slide into a recession. The lower forecast is driven by the struggling business sector, in which investment is forecast to contract 2% in 2001, lower than earlier forecasts of 2.4% growth. In 2002, business investment is now forecast to grow a modest 1.0%, which is well below previous estimates. The current economic forecasts do not take into consideration consumer and market reaction in the wake of the terrorist attacks that destroyed the World Trade Center in New York and damaged the Pentagon in Washington, D.C.

With a large forest resource and high production and consumption of wood products, the United States continues to play an important role in world forest product markets. The United States has the world's highest consumption of paper and paperboard (about 93 million metric tons in 2000), which is mostly supplied by domestic production and imports from Canada (American Forest & Paper Association, AF&PA). Paper and paperboard consumption dropped to approximately 88 million metric tons in 2001. The U.S. forest products industry harvests more than 490 million cubic meters of softwood and hardwood timber annually; about 120 million cubic meters of lumber and 27 million cubic meters of structural panel products were manufactured in 2000.

New housing construction, which accounts for more than a third of U.S. annual consumption of softwood sawn wood and structural panels and for substantial volumes of other softwood and hardwood products, remained high through

2000 and into the first half of 2001. Compared to overall (not seasonally adjusted) housing starts in the first half of 2000, overall housing starts grew 0.6% (to 811,000) in the first half of 2001. All gain between these two periods occurred in the single-family sector. Multi-family housing starts fell 5% from levels in the year 2000. Comparing the first half of 2001 to that of 2000, the greatest strength lay in the West where single-family housing starts rose 7%, followed by a 4% gain in the South. Production in the Midwest declined by 2% and that in the Northeast by 9%. In June 2001, the real value of new residential construction showed an increase for the third consecutive month, to a seasonally adjusted annual rate of \$233.5 billion; all gain was attributed to the single-family sector. Value of new residential construction in the second quarter of 2001 averaged a seasonally adjusted \$232.2 billion, up 1% from the first quarter and 3.2% from the fourth quarter of 2000.

In contrast to residential construction, the value of new nonresidential construction appears to be descending fast. The value of all nonresidential buildings was \$170.4 billion in June 2001, down 0.6% from May and nearly 10% below the 2001 high of \$188.4 billion reached in January. The National Association of Home Builders (NAHB) forecasts that the housing sector would remain strong, with only a minor setback in the second half of 2001, with starts and sales for the year above those of 2000.

During 2000, investment in residential repair and remodeling kept pace with new residential construction as expenditures rose 7%, to \$153.9 billion (1996 dollars), from \$142.9 billion in 1999. Actual expenditures for improvements and repairs to all properties amounted to an estimated \$44 billion during the third quarter of 2000. Of this amount, owners of

all owner-occupied properties spent \$30 billion and owners of rental, vacant, and seasonal properties \$14.1 billion.

Three other indicators of demand for wood products declined in 2001 relative to 2000:

- Industrial production—an important demand determinant for pallet lumber, containerboard, and some grades of paper—fell 0.7% in June, to 142.5% of its 1992 average; second quarter production was down 5.6% at an annual rate. After 9 consecutive months of decline, industrial production in June 2001 was more than 3.5% below its level in June 2000.
- Furniture and fixtures output—a determinant of high-grade lumber production—rose 12.2% in 2000 and continued to increase to a high of 144.1 in January 2001, before falling to a low of 139.2 in May.
- Paper products output—a determinant of pulpwood and wood residue use, as well as recycled fiber availability and use—declined slightly (0.09%) in 2000 compared to 1999. An index (1992=100) of paper products output for the first half of 2001 remains below the 116.1 annual average for 2000.

In summary, after a strong showing in 2000, housing starts should remain strong in 2001, albeit slightly lower. Activity in the principal U.S. timber markets was slightly lower in 2000 than in 1999. Growth moderated in the first two quarters of 2001 and is expected to continue to moderate during the rest of the year. Even though the rate of growth is slowing, many analysts predict that conditions favorable to the growth of timber markets will continue. Selected U.S. economic indicators are shown in Table 1.

**Table 1—Selected U.S. economic indicators, 1998–2002**

Indicator	Actual			Estimated	
	1998	1999	2000	2001	2002
Gross domestic product (billion 1996 dollars)	8,515.7	8,856.5	9,224.0	9,340.6 <sup>a</sup>	9,535.2 <sup>a</sup>
New housing starts (million units)	1.622	1.675	1.575	1.612 <sup>b</sup>	1.611 <sup>b</sup>
Mobile home shipments (thousand units)	374	348	250	182 <sup>b</sup>	205 <sup>b</sup>
Nonresidential investment in structures (billion 1996 dollars)	177.6	173.4	179.7	170.6 <sup>c</sup>	172.0 <sup>c</sup>
Total industrial production (index: 1992 = 100)	134.0	139.6	147.5	138.3 <sup>a</sup>	139.1 <sup>a</sup>
Furniture and fixtures (billion 1992 dollars)	121.4	125.5	142.9	140.1 <sup>d</sup>	141.0 <sup>d</sup>
Paper products (index: 1992 = 100)	115.0	116.2	116.1	113.7 <sup>a</sup>	112.4 <sup>a</sup>

<sup>a</sup>Federal Reserve Bulletin, August 2001.

<sup>b</sup>National Association of Home Builders, *Housing Economics*, August 2001.

<sup>c</sup>National Association of Home Builders, *Housing Economics*, July 2001.

<sup>d</sup>*Economic Indicators*, July 2001.

# Timber Products Production, Trade, and Consumption

## Sawn Softwood

Housing and other construction markets have been strong in 2001 and are likely to finish the year only slightly below the levels recorded for softwood lumber consumption in 2000. According to the Western Wood Products Association (WWPA), during the first 6 months of 2001 softwood lumber consumption fell 9.2% from last year's pace; shipment of softwood lumber from western mills fell 6.6% during the first half of 2001 as compared with 2000 shipment. Production has declined in all regions; the southern pine region has shown the largest decline, falling 9.1% for the first 6 months in 2001. Apparent consumption for the first 6 months of 2001 was 64.4 million cubic meters, 3.0% below apparent consumption for the same period in 2000 (66.4 million cubic meters). If housing construction slumps, timber prices are likely to drift downward as well.

Sawn softwood imports rose 2.8% during the first 6 months of 2001 relative to the same time period in 2000. The volume of Canadian imports increased by 2.4% over this period; Canadian imports constituted 94% of all sawn softwood imports. Other suppliers such as Europe also continued to increase their share of the U.S. market. Total sawn softwood imports were 45.9 million cubic meters in 2000, a 1.4% increase over 1999.

During the first 6 months of 2001, U.S. exports fell 23.7% compared with exports for the same period in 2000. Exports to Canada increased 2.7% over the first half of 2001. Exports to the European Union and the Pacific Rim fell 15.9% and 3.9%, respectively, for the first 5 months of 2001 compared to this period in 2000.

Production of sawn softwood declined 9.2% in the first 6 months of 2001 compared with the same period in 2000. In 2000, 84.9 million cubic meters of sawn softwood was produced. Sawn softwood production for 2001 is forecast to remain close to production levels of a year ago.

## Sawn Hardwood

In 2000, production of sawn hardwood increased by 4.7% to 35.4 million cubic meters. Imports increased by 12.5% compared with imports in 1999. During the first 5 months of 2001, the decline in imports (20.6%) exceeded the decline in exports (10.3%). Exports to European Union countries declined 15.9% and exports to Pacific Rim nations 3.9%. Given the estimated growth rates for production, declining trade figures, and a strong housing market, apparent consumption for 2001 is forecast to decline slightly from the 2000 volume.

## Softwood Log Trade

Softwood log exports to the Pacific Rim fell 6.7% in the first 5 months of 2001 compared with exports in the same period in 2000, while softwood log exports to the European Union rose 122.5%. Total softwood log exports from the western United States declined 2.1% in 2000 compared with 1999 exports; this level was well below export levels throughout the 1990s. During 2000, timber harvest from the National Forests continued to decline but at lower rate than that in previous years. The largest volume of decline has been occurring in the Pacific Northwest. The U.S. South has undergone a steady increase in softwood log production, in part because of the harvest decline in the West.

## Hardwood Log Trade

Hardwood log exports and imports increased during the first 5 months of 2001. Exports rose 20.0% and imports rose 38.4%, compared with this period a year ago. During the first 5 months of 2001, exports to the Pacific Rim and the European Union rose 14.3% and 11.7%, respectively. Exports to Canada rose 12.3% in 2000. Hardwood log imports from Canada increased by 35.6% in 2000 compared to 1999. For the first 4 months of 2001, imports from Canada increased 70.8%. Canada traditionally provides about 95% of U.S. imports.

## Pulpwood

Combined roundwood and forest chip production for pulp and wood-based panel mills was 201 million cubic meters in 2000, relatively unchanged from 1999. This includes mill residue used for pulp. The rate of increase for roundwood pulpwood is expected to decline during 2001. Pulpwood supplied from residues is decreasing relative to roundwood. The roundwood portion of pulpwood was 175 million cubic meters in 2000, a slight decrease from 1999 (based on pulpwood receipts data from the Forest Resources Association and woodpulp production data from the AF&PA). Trade patterns have continued to have a significant impact on paper and paperboard production and have affected pulpwood use. Exports of paper, paperboard, and converted products increased by 5.2% in 2000. Imports of paper and paperboard exceeded their 1999 volumes by 3.6%.

## Softwood Plywood

The volume of softwood plywood production fell throughout the 1990s. According to the APA-The Engineered Wood Association, softwood plywood production was 15.5 million cubic meters in 2000, a decline of 1.9% from 1999. Softwood plywood production for the first two quarters of 2001 declined by 18.9% compared to production in 2000. The APA-The Engineered Wood Association predicts that plywood production will fall to 14.6 million cubic meters in 2001, a decline of 5.8% from 2000.

Both softwood plywood imports and exports declined in 2000 compared with 1999: imports declined 7.5% and exports 3%. During the first two quarters of 2001, softwood plywood imports increased and exports decreased. Plywood exports to Canada fell 5% during this period, and plywood imports from Canada increased 27.1%. Based on information not reflected in these trends and reported by APA—The Engineered Wood Association, 2001 exports are estimated to be 8.0% above 2000 levels, and 2001 imports are estimated to be 26% below 2000 levels. Given these estimates, apparent consumption of plywood is estimated to decrease in 2001, as more market share for structural panels is taken by oriented strandboard (OSB).

## Oriented Strandboard

According to the APA—The Engineered Wood Association, OSB production for the first two quarters of 2001 exceeded production in this period in 2000 by only 0.6%. In 2000, 10.5 million cubic meters of OSB were produced compared with 10.3 million cubic meters in 1999. The growth rate was 6.2% from 1998 to 1999, and only 2.5% from 1999 to 2000. Between 1996 and 2000, OSB capacity grew rapidly in the United States and Canada—by 25% in 1996, 5% in 1997, 5% in 1998, and 3% in 1999; it remained level in 2000. Despite the growth in capacity and high demand, prices have continued to moderate, and this trend is projected to persist through 2001. In 2000, OSB exports increased by 6.7% (115,000 cubic meters); imports increased by 242,000 cubic meters, a 3.4% increase from 1999.

Given these estimates, apparent consumption of OSB for 2001 is forecast to be 17.2 million cubic meters, a 1.0% increase from 2000. Because OSB now accounts for 53% of structural panel consumption (a 1% increase since 1999), OSB consumption is expected to continue to exceed plywood consumption.

## Hardwood Plywood

Hardwood plywood production was 1.9 million cubic meters in 2000, an increase of 0.3 million cubic meters over 1999 production. This includes core material such as softwood plywood and OSB. An increase of about 2% in hardwood plywood is estimated for 2001, with total production remaining at about 2 million cubic meters. Hardwood plywood imports declined 0.9% in 2000 compared with 1999. During the first 5 months of 2001, imports declined 8.1% compared to the same period in 2000. If this trend continues, hardwood plywood imports will likely total 2.2 million cubic meters in 2001. The amount of hardwood plywood exported in 2000 was 160,000 cubic meters.

## Particleboard and Medium Density Fiberboard

Information from the Composite Panel Association indicates that particleboard and medium density fiberboard (MDF) production varied during 2000. Particleboard production was 8.4 million cubic meters (1.8% decrease), and MDF production was 2.6 million cubic meters (3.7% increase). During the first 5 months of 2001, particleboard imports decreased by 1.2% on a value basis and MDF imports increased by 22% on a volume basis. Particleboard exports increased by 1.9% and MDF exports decreased by 12.5% during this period.

## Hardboard

Based on data from the American Hardboard Association, 11.2 million cubic meters of hardboard was produced in 2000, a 16% fall from 1999. Hardboard imports declined along with production, by 1.0% in 2000, but this trend was reversed during the first 5 months of 2001 as imports increased by 29%. Hardboard exports increased 2.8% in 2000; they declined 15.8% during the first 5 months of 2001.

## Insulating Board

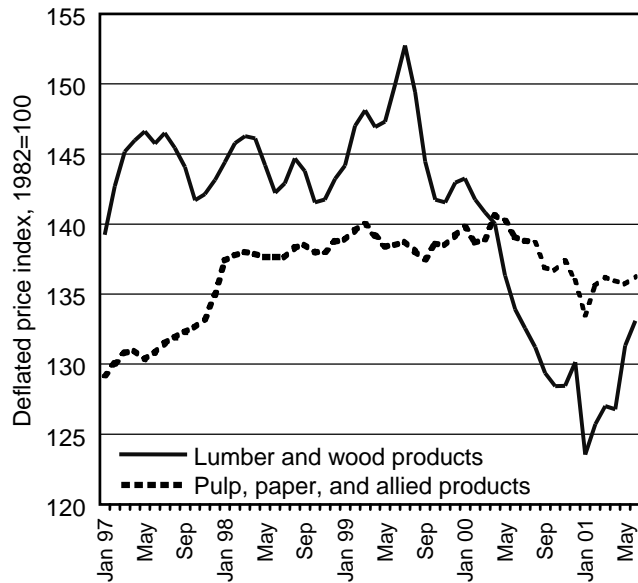
Available information from the AF&PA indicated that 3.1 million cubic meters of insulation board was produced in 2000, the same volume as in 1999. Production of insulation board has been flat for several years, as have trade patterns, which has resulted in a stable level of apparent consumption of 3.3 million cubic meters.

## Fuelwood

Using data from the most recent Department of Energy survey (adjusting for winter weather and declining trend in fuelwood use per household), fuelwood consumption was estimated to be 74 million cubic meters in 2000, an increase of 2 million cubic meters compared with 1999 consumption. In households, fuelwood is primarily used for heating and esthetics. Industry uses mill residues rather than roundwood for fuel. A small portion of roundwood fuelwood is used for electric power production; this usage is limited by the low cost of coal and natural gas alternatives. In 2001, fuelwood consumption is estimated to be below consumption levels of 2000.

## Forest Products Prices

Recent trends in the wholesale price of forest products differ across two broad categories: lumber and wood products (such as wood-based panels) and pulp and paper products (Fig. 1). Throughout the late 1990s, the composite price of lumber and wood products continued to fluctuate around a level reached by the mid-1990s, before leveling off during the last half of 2000. The composite price for lumber continued to fluctuate during the first half of 2001. Changes in



**Figure 1—Recent trends in wholesale prices of forest products.**

softwood lumber price accounted for much of this change and most index volatility. In 1999, the deflated composite price index reached an all-time high (more than 50% higher than that in the base year, 1982), followed immediately by a sustained decline that continued throughout 2000 and into 2001. The composite index reached its lowest level in 5 years during this period. In spite of these sustained low prices, U.S. demand for lumber and wood products remained near record levels in 2000. In contrast, the composite measure of prices in the pulp and paper sector has exhibited considerably less short-term volatility. The period of declining prices from the previous peak (1994–1995) ended in 1997, and by early 1998 the composite index reached the level it had been in the mid-1990s. In deflated terms, the composite index has had little volatility and no change in trend for nearly 24 months.

## Sources of Information

American Forest & Paper Association. Paper, paperboard, and wood pulp. Monthly statistical summary. Washington, DC.

American Forest & Paper Association. Wood statistical roundup. [Monthly and Quarterly]. Washington, DC.

American Plywood Association–The Engineered Wood Association. APA economics report. Tacoma, WA.

Forest Resources Association. Pulpwood statistics. Washington, DC.

Council of Economic Advisors. Economic indicators. United States Government Printing Office. Washington, DC. 2001.

Economic Report of the President. Council of Economic Advisors. United States Government Printing Office. Washington, DC. 2001.

Housing Economics. National Association of Home Builders. [Monthly]. Washington, DC. 2001.

Monthly Energy Review. Energy Information Administration, U.S. Department of Energy, Washington, DC.

Composite Panel Association. Particleboard and medium density fiberboard annual production and shipments. [Annual]. Silver Spring, MD.

Random Lengths. Random Lengths Publications. [Weekly]. Eugene, OR.

U.S. Department of Commerce, Bureau of Economic Analysis. Survey of current business. [Monthly] Superintendent of Documents, U.S. Government Printing Office, Washington, DC. 2001.

U.S. Department of Labor, Bureau of Labor Statistics. Producer prices and price indexes. [Monthly and Annual]. Washington, DC. 2001.

U.S. Federal Reserve System, Board of Governors. Federal reserve bulletin. [Monthly]. Washington, DC. 2001.