

1997

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Munn, Ian A. and Bullard, Steven H., "Economic impact of the forest products industries in Mississippi" (1997). *Faculty Publications*. 162.

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# Economic Impact of the Forest Products Industries in Mississippi

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## Introduction.

The forest products industry in Mississippi has four main sectors:

- Timber harvesting,
- Pulp and paper industries,
- Solid wood products industries, and
- Wood furniture manufacturing.

Each of these sectors is important to the state's economy, but *how* important are they?

To address this question, in this article we present estimates of the number of employees, wages and salaries, total output value, and value added for each industry sector and for the total of all four sectors in Mississippi in 1993 – the last year for which all the data are available.

The forest products industries aren't separate "islands" of economic activity. They interact with many other industries in purchasing raw materials, for example, and their employees spend their wages and salaries on food, clothing, shelter, entertainment, taxes, and many other goods and services. When we describe the importance of these industries, therefore, we must be careful to include the "multiplier" effects of the jobs and income they provide.

In this article, we present indicators of economic impact in two formats. First are the *direct* effects of the industries' own employment and income created. Second, because the industries have strong multiplier effects throughout the state's economy, we present the *total* effects of economic activity in the industries. The *total* economic impact is the *direct* impact of their own employment and income, plus the *indirect* effect of the industries' purchases of goods and services from supporting industries in the state, plus the *induced* effects from purchases of consumer goods and services by forest products and supporting industries' employees.

## Timber harvesting

The timber harvesting sector includes all establishments engaged in cutting timber and producing rough, round, hewn or riven primary forestry or wood raw materials, or in producing wood chips in the field. Timber harvesting is extremely important to Mississippi's economy for two reasons. First, the sector is essential in providing wood-based raw materials for all other sectors of the forest products industry. Second, the industry is important because of the economic contributions it makes through its own employment and income created.

## Background

This is the fourth in a series of articles on the economic contributions of important sectors of the forest products industries to Mississippi's economy. Previous articles emphasized the logging industry,<sup>1</sup> the pulp and paper industries,<sup>2</sup> and the solid wood products industries<sup>3</sup>. These articles report findings of an analysis of the state's economy conducted by members of the Department of Forestry at Mississippi State University. The present article summarizes the timber harvesting, pulp and paper, and solid wood products industry sectors, adds the wood furniture sector, and provides aggregate information on their total economic impact.

## How the analysis was done

IMPLAN—an input-output computer model for IMPact PLANning developed by the USDA Forest Service—was used to assess the economic contributions of various industries in Mississippi. The most recent data available was for 1993, and more recent changes in the forest products industries in the state are therefore not reflected by the results. For each industry segment examined, "direct," "indirect," and "induced" effects were estimated. Their combined impacts on the state's economy are reported here.

The *direct* effect of timber harvesting is substantial. Timber has become one of Mississippi's most valuable crops. In 1995, the value of Mississippi's timber harvest was \$1.1 billion at the first point of processing. Landowners received \$770 million for their standing timber.<sup>4</sup> In 1993, timber harvesting firms employed 5,060 people and paid \$83 million in wages. Value added exceeded \$192 million (Table 1, p. 28).

The *total* impact of timber harvesting on Mississippi's economy exceeded \$1 billion in 1993. Over 11,000 jobs were related to timber harvesting activities, with wages totaling \$200 million. Total output value was \$1.45 billion, with \$410 million in value added to the state's economy. The total effect of Mississippi's timber harvesting industry on the state's economy is quite significant, but the industry's overall importance is actually much greater than these values indicate. Timber harvesting and transportation activities provide essential raw materials for lumber, pulp and paper, furniture, and all of the industries that depend on wood-based raw

materials. Log trucks have been described as "*the first link in a manufacturing chain*" that reaches throughout Mississippi's economy.<sup>5</sup>

### Pulp and paper industries

Included in this sector are pulp mills, paper mills, paperboard mills, and manufacturers of paperboard containers and boxes, converted paper and paperboard products and other related paper products. In 1993 these firms employed 9,062 workers and paid \$398 million dollars in wages (Table 1). The average annual wage was nearly \$44,000, more than double the state's average annual wage. Total output for the sector was \$1.7 billion, and the value added by manufacture exceeded \$650 million.

The *total* impact of pulp and paper industries far exceeds their direct impact on Mississippi's economy each year. The 9,000 jobs in pulp and paper industries in the state resulted in a total of over 21,000 full and part-time positions – the highest employment multiplier effect among the state's forest

industry sectors. The actual impact of the industry's capital intensity, purchases of raw materials, utilities, and of the "multiplier" impacts of worker spending results in a \$645 million impact on wages and salaries and a \$2.6 billion total output value.

### Solid wood products

Included in the solid wood products sector are sawmills, plywood mills, veneer mills, reconstituted wood product mills, and firms manufacturing articles made primarily from wood. In 1993 these firms directly employed 22,549 workers and paid \$529.9 million in wages. The average annual wage was \$23,500, \$3,500 higher than the state's average wage. Industry output for the sector was \$2.6 billion and the value added by manufacturing exceeded \$904 million.

The lumber and wood products sector used over 1.3 billion board feet of pine stumpage and 400 million board

(continued on page 29)

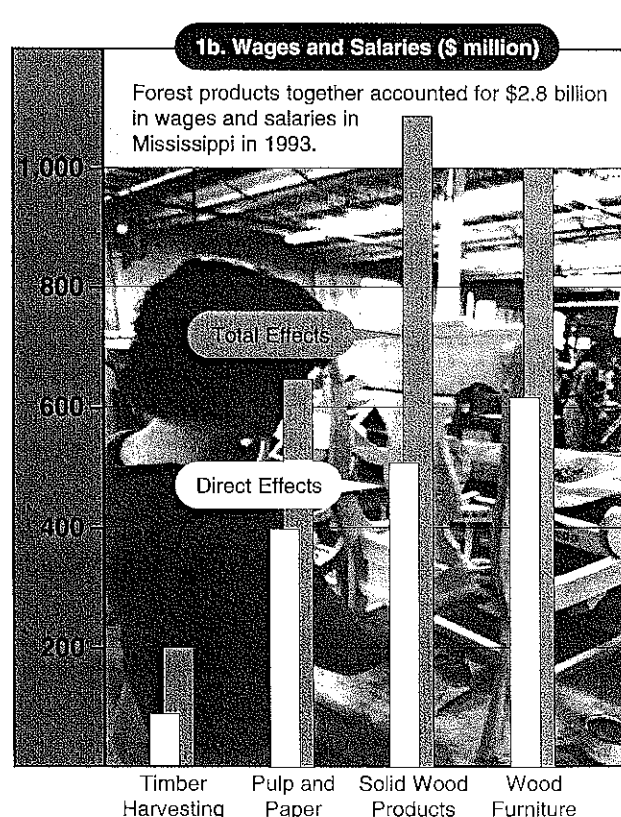


Figure 1. Number of full-time and part-time employees, and the wages and salaries attributed to forest products industries in Mississippi in 1993. (Data are from Table 1.)

feet of hardwood stumpage in 1995. These harvests resulted in payments to Mississippi forest landowners of over \$590 million.

The total impact of the solid wood products sector on Mississippi's economy is more than twice as high as the direct effects alone. The total effect on employment in 1993 was 52,841 jobs, and the total effect on employee wages and salaries was \$1.1 billion. The industry's total value added was over \$2 billion in 1993, far higher than the other three forest products sectors.

### Wood furniture manufacturing

This sector includes firms that manufacture wood household furniture, upholstered furniture, wood office furniture, and wood partitions and fixtures. In 1993 these firms employed 26,548 workers and paid \$612 million in wages. This was higher than any of the other forest products sectors in 1993 (note the industry's white bar – direct effects – in Figures 1a and 1b). The average annual wage in 1993 was more than \$3,000 higher than the statewide average of \$20,000.

As with the other forest products sectors, the total impact of wood furniture manufacturing was much greater than the sector's direct effects alone. The direct, indirect and induced employment total was nearly 50,000, and total wages and salaries exceeded \$1 billion. Industry output related to the activities of the wood furniture and related products sector amounted to \$3.2 billion, with an associated value added of \$1.6 billion.

### Total industry impact

The combined impact of all sectors of the forest products industry on Mississippi's economy is dramatic. Forestry-related employment (direct, indirect, and induced) accounts for 10% of all jobs in Mississippi. The forest products industry is responsible for approximately half of the total effects due to agriculture-related

production and processing. The average annual wage in forestry-related occupations is \$25,686 – \$5,600 greater than the average annual wage in Mississippi.

Total industry output related to the forest products industry in Mississippi exceeded \$11.4 billion in 1993 (Figure 2). Total value added exceeded \$4.9 billion. Related employment totaled 129,443 full and part-time jobs with an annual payroll of \$2.8 billion.

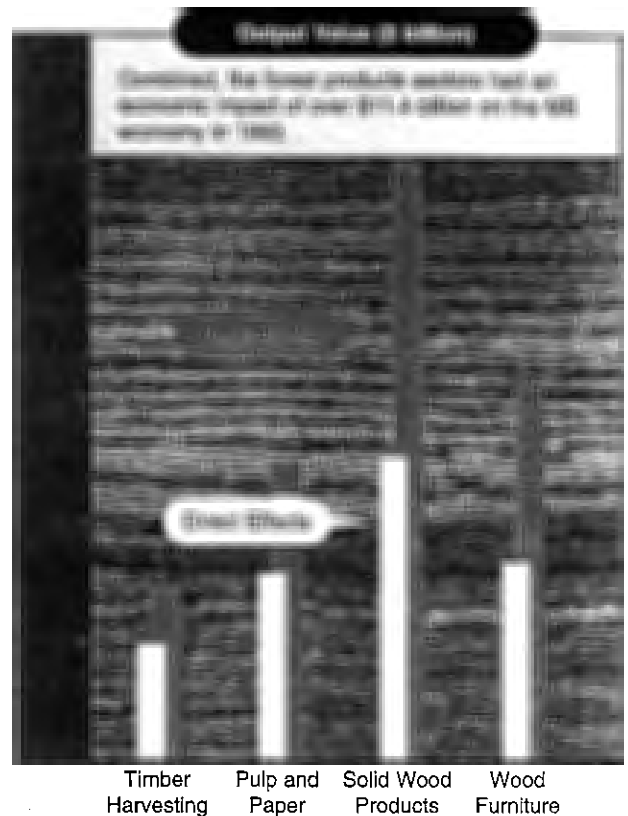


Figure 2. Total economic impact of the forest products sectors in Mississippi in 1993. (Data are output values from Table 1.)

- 1 Munn, I. and S. Bullard. 1997. Logging—One of Mississippi's Most Important Industries. *Tree Talk* 19(1):13-14.
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- 3 Munn, I. and S. Bullard. 1997. Solid Wood Products Industries: How Important Are They in Mississippi? *Tree Talk* 19(3).
- 4 Daniels, B. 1996. 1995 Harvest of Forest Products. *Miss. Coop. Ext. Serv.*, 10p.
- 5 Daniels, B. 1995. Should We Cuss the Log Truck? (And Those That Drive Them?) *Tree Talk* 17(3):31,33.