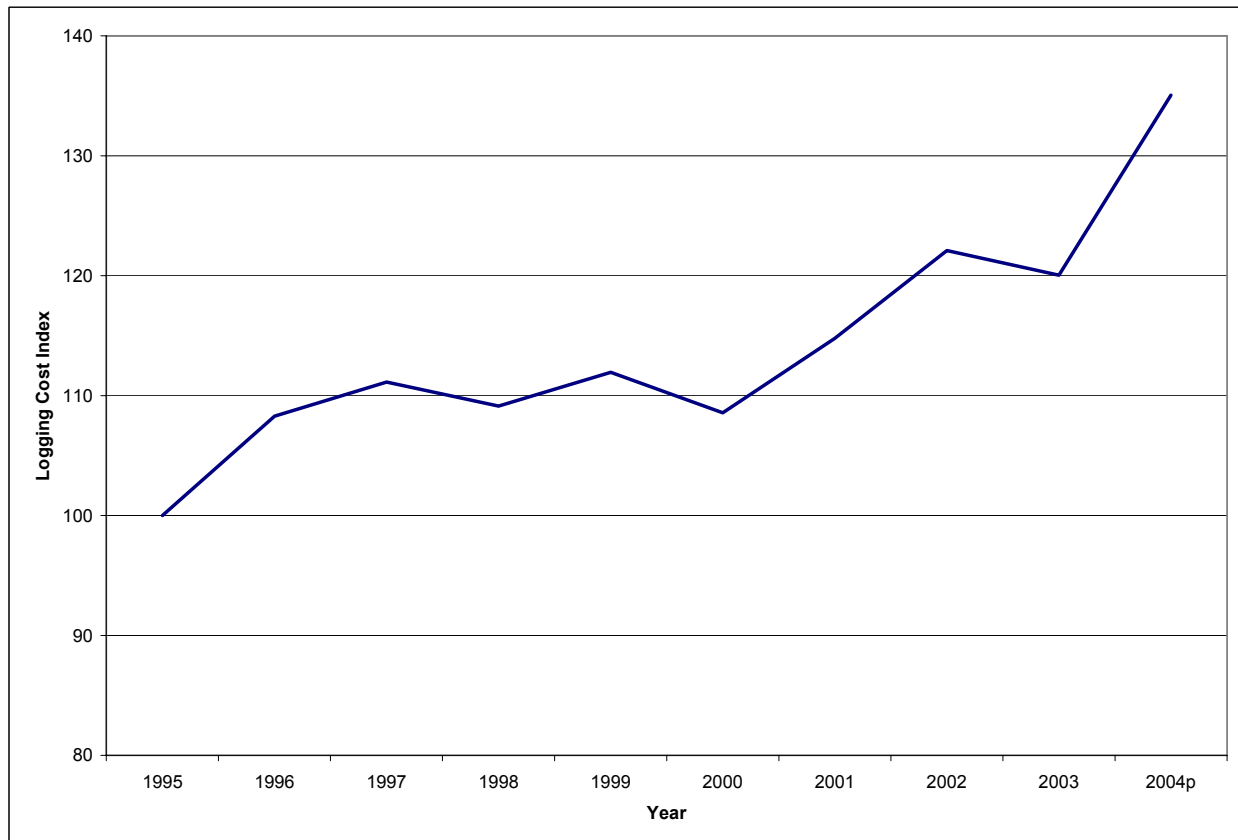


Preliminary 2004 Logging Cost Indices



1995-2004 Logging Cost Index

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Preface

The fundamental objective of the Wood Supply Research Institute (WSRI) is to enhance pro-competitive awareness of factors that affect the efficiency, stability, and economic viability of the industrial wood supply system. Thus, the members of WSRI believe that the industry needs some continuous, long-term, credible, index of trends related to the cost of producing wood and the financial health of the system.

The long term cost and productivity study conducted by Mississippi State University originated within the Industrial Forestry Operations Research Coop at Virginia Tech in 1990. The study has been supported by the Forest and Wildlife Research Center at MSU since 1999. The objectives of this study have been to: monitor the effects of changes in the wood supply system on logging business performance, to monitor the effects of externalities such as weather, tax law, fuel prices, labor legislation on business structures, and to gather information and insights that could lead to the development of better understanding of, and management tools for, the wood supply system.

This research project, funded in part by WSRI, is designed to expand the current work being done at Mississippi State University and to enhance the dissemination of this index to a broader audience.

This report presents the preliminary 2004 index based on a sample of 34 contractors for whom complete data were available on 10/25/2005.

This is the seventh in a series of reports from this project.

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1 Preliminary 2004 Logging Cost Indices

1.1 Introduction

This report is based on 2004 final reports from 34 logging firms, 30 of which participated in the 2003 reporting, three who rejoined the project after a year's absence, and one that joined the project during 2004. Most of the 10 firms from last year who are not included in this compilation have provided much of their information, but key elements are missing or are being re-confirmed before inclusion. Like everything else in Mississippi, Hurricane Katrina has had an effect on logging as well. Several of the contractors with incomplete data are in the affected region, and recovery and salvage are their top priorities. One of last year's firms asked for a one year recess while the transition of ownership from father to son is completed.

1.2 Population

The 34 firms produced a total of 4,151,392 tons of wood with annual expenditures of \$70,782,490. This represents 95% of the volume from the 2003 final report and 107% of the expenditures. The year 2004 offered mixed opportunities for these contractors. Half of the 16 contractors producing less than 100,000 tons per year, who are in both the 2003 and 2004 data sets, increased production, but the total production of this group fell 11,400 tons. Similarly, half of the 14 contractors in both data sets and who produced over 100,000 tons per year in 2003, also increased production. The productivity of the larger contractors increased 125,600 tons.

These firms are spread throughout the Eastern U.S. Participating firms operate in the Lake States and the Appalachian region. The majority of firms are located in the Southern Piedmont and in the Coastal Plain (Table 1.1).

Table 1.1. Logging firm participation by state and year of initial involvement.

| Initial Year | State | | | | | | | | | | | | Total | |
|--------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----|----------|----------|----------|-----------|
| | AL | AR | FL | GA | LA | MD | MI | MS | NC | PA | SC | TX | | VA |
| 1988 | | | | | | | | | | | 1 | | 1 | 2 |
| 1990 | | | | 2 | | | | | | | | | 1 | 3 |
| 1991 | | | | 1 | | | | | | | 1 | | | 2 |
| 1992 | 1 | | | 1 | | | | | | | | | | 2 |
| 1993 | | | | | | | | 2 | 1 | | | | 2 | 5 |
| 1995 | 1 | | | | | 1 | 1 | | | | | | | 3 |
| 1996 | | | 1 | | | | | 1 | | | 1 | | | 3 |
| 1997 | | | | | | | | | | | | | 1 | 1 |
| 1998 | | | | | | | | | 1 | | | | | 1 |
| 1999 | 1 | | | | | | | | | | | | | 1 |
| 2000 | 1 | | | | | | | | | | | | | 1 |
| 2002 | 2 | | | 2 | 2 | | | | | | | | 2 | 8 |
| 2003 | | 1 | | | | | | | 1 | | | | | 2 |
| 2004 | | | | | | | | | | | | 1 | | 1 |
| Total | 6 | 1 | 1 | 6 | 2 | 1 | 1 | 3 | 3 | | 3 | 1 | 7 | 35 |

Differences in land forms and forest ownership patterns within physiographic regions, the mobility and versatility of the operations and changing markets make further stratification difficult. Many of the operations are located near the fall line, the border between the coastal plain and piedmont, and work in both regions. The Gulf South coastal plain includes land forms and land ownership patterns similar to the Eastern Piedmont.

The population includes firms that harvest pine and hardwood sawtimber as well as pine and hardwood pulpwood, conduct thinning operations and chipping operations, and Scandinavian style cut-to-length operations. Many of the participating firms move between thinning and clearcutting, tree-length and merchandizing, and operate as single or multiple crews as markets and opportunities dictate.

1.3 Average Total Cost per Ton Index

The Preliminary 2004 Average Total Cost per Ton Index, shown in Figure 1.1, rose by 15 points, while the Consumer Price Index rose four points and the Producer Price Index (Logging) rose three. Logging costs, as measured by the index have increased 35% over the period 1995-2004. Prices paid for logging services, as measured by the PPI(Logging), have decreased 10%. The divergence between the logging cost index and the Producer Price Index for the period 1995-2004 increased to 45%.



Figure 1.1. Average total logging cost per ton index, Consumer Price Index, and Producer Price Index (Logging), 1995-2004.

1.4 Annual Production

The range in annual production per firm changed in 2004. The largest firm in 2003 held the same position in 2004, but annual production decreased by roughly 10 percent. The production range of smallest third of the population shrunk, the data for the smallest contractor of 2003 are not complete. The range of mid-sized firms expanded upward and the gap between mid-size and small firms widened. These ranges and categorization may change as the data collection is completed.

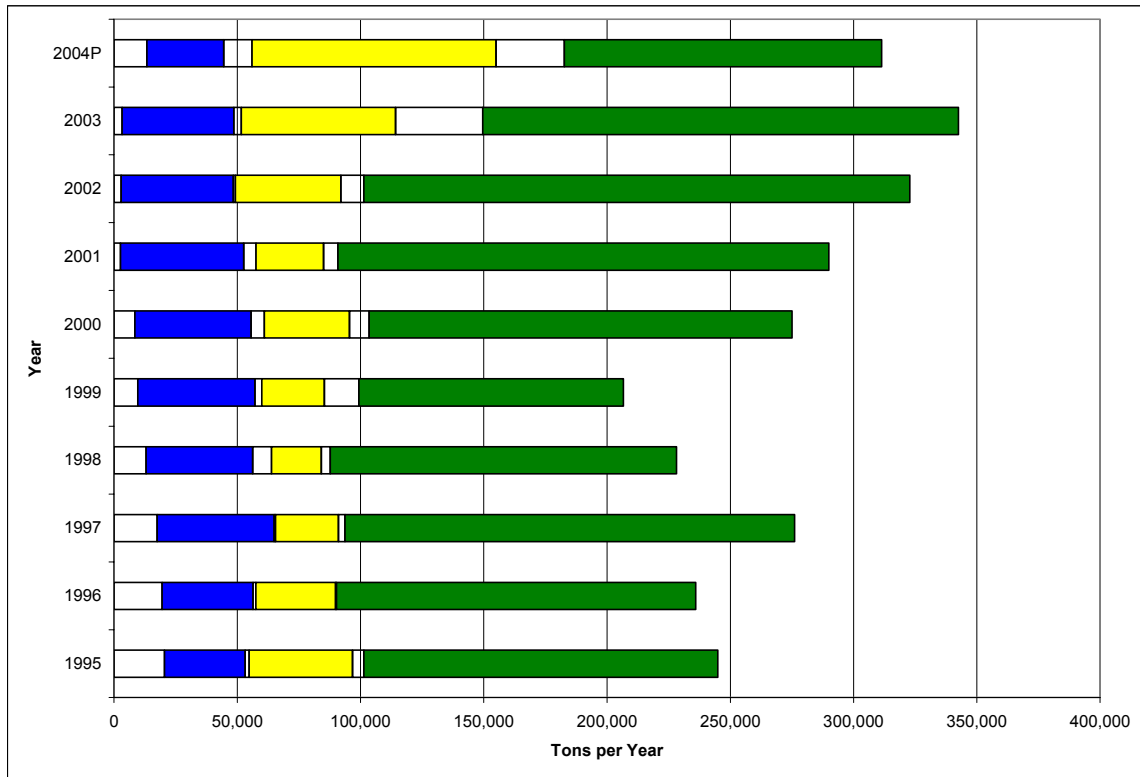


Figure 1.2. Annual production by firm size, 1995-2004. Small firms are indicated by blue, medium firms by yellow, and large firms by green.

1.5 Cost Indices by Firm Size

Average total cost per ton continued to increase for the smaller firms, which tend to be hardwood loggers, those performing thinnings and other specialty harvests (Figure 1.3). The small firm index rose ten points on top of a 24 point rise in 2002 and 2003. The index for the mid-sized firms increased 26 points, wiping out the 2003 decrease. The larger firms experienced a 13 point increase.

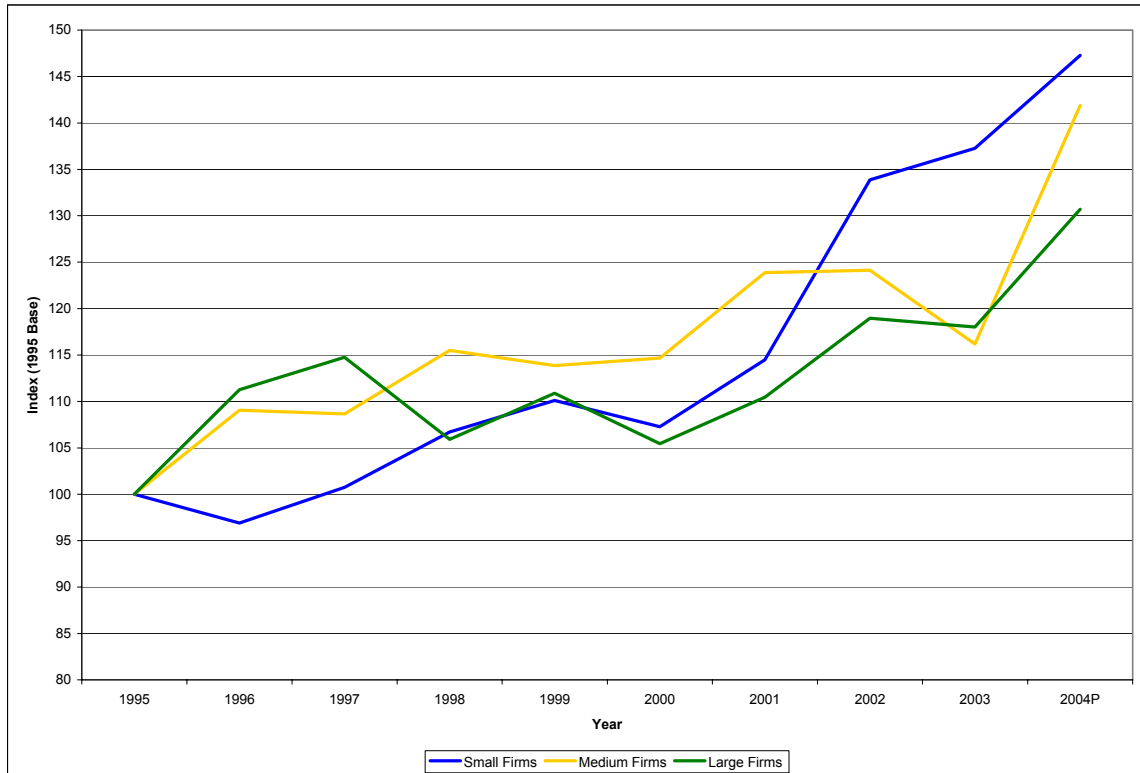


Figure 1.3. Average total logging cost indices by firm size, 1995-2004.

1.6 Distribution of Total Costs

The distribution of expenditures across the six summary categories continued to change (Figure 1.4). The percent of total costs going toward equipment continued to decline, dropping from 15.8% in 2003 to 15.1% in 2004, the lowest level for the period of 1995-2004. Consumable supplies increased from 19.9 in 2003 to 20.7% 2004 of total costs. Labor costs decreased from 32.2% in 2003 to 29.7% 2004. Contracted services costs rose 2.3% from 25.8% in 2003 to 28.1% in 2004. The administrative overheads increased by 0.1% in 2004. The percentage going for insurance (other than workers' compensation, which is included in labor) decreased by 0.2% in 2004.

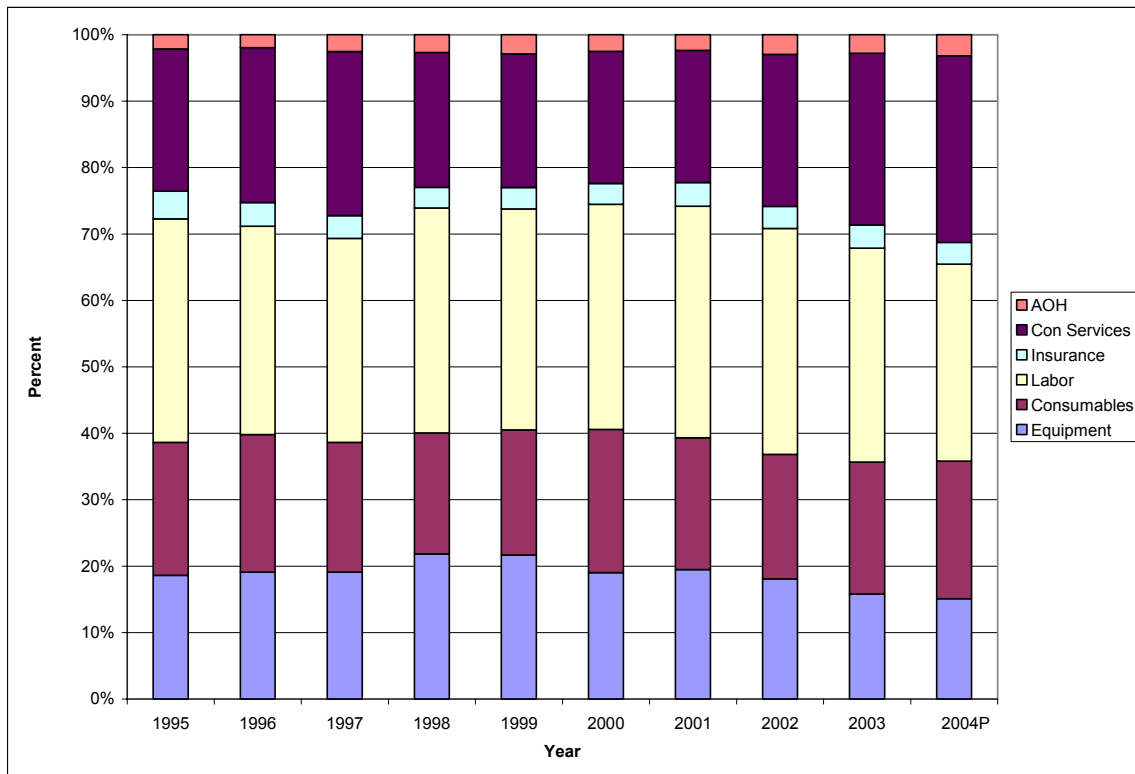


Figure 1.4. Cost components as a percentage of total logging cost per ton, 1995-2004.

1.7 Component Cost Indices

Cost per ton indices moved upward for all six cost components. Consumable supplies and contracted services together account for over 48% of the average cost per ton and the increases for these two - 25 and 33 points respectively - had the greatest effect on the total cost per ton. Labor, the largest expense category rose only four points. Administrative overheads had the largest increase, 50 points, but the overall effect on average cost per ton was moderated by the relative small contribution to average cost.

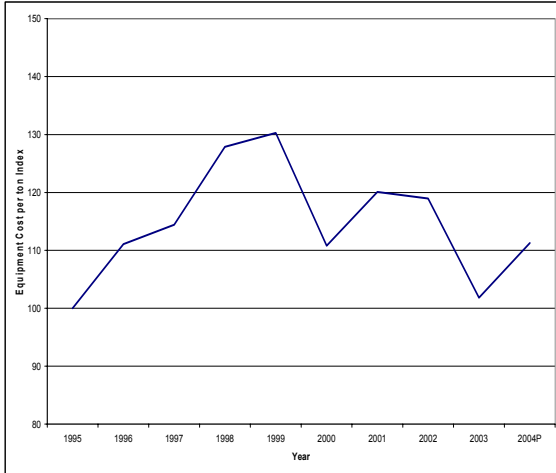


Figure 1.5a. Equipment cost/ton index.

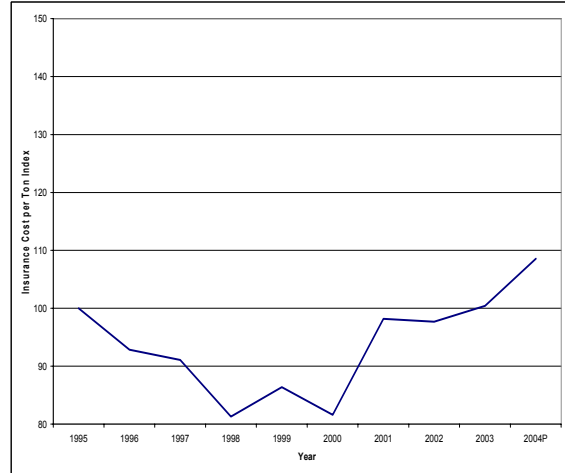


Figure 1.5d. Insurance cost/ton index.

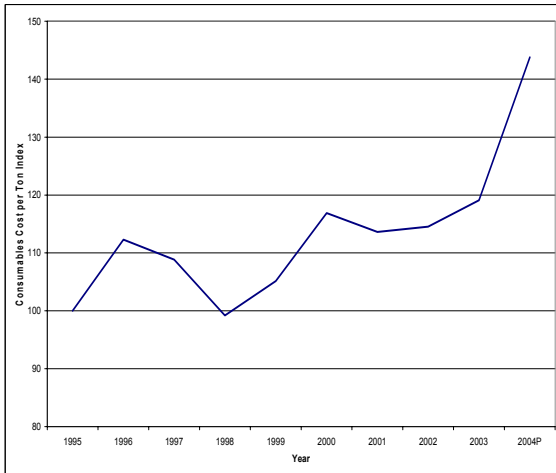


Figure 1.5b. Consumable supplies cost/ton index.

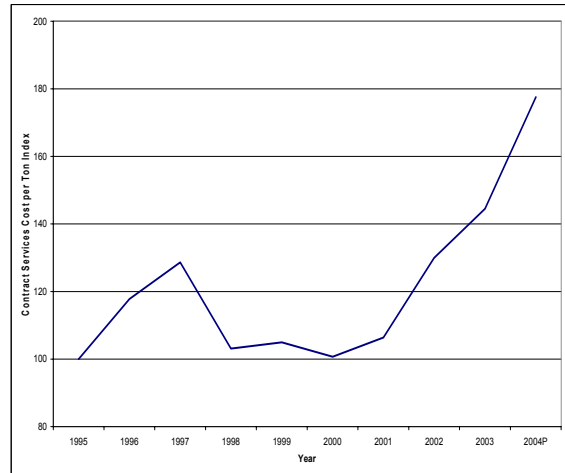


Figure 1.5e. Contracted services cost/ton index.

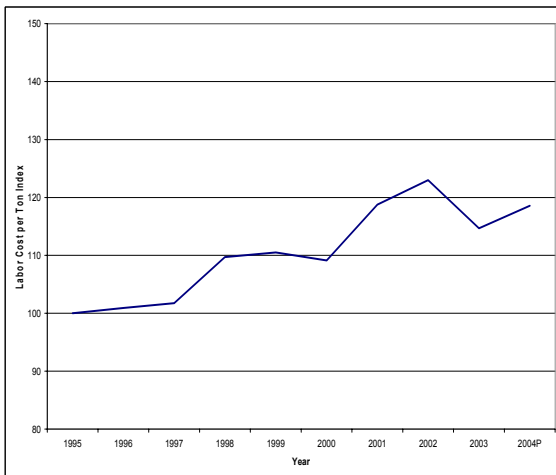


Figure 1.5c. Labor cost/ton index.

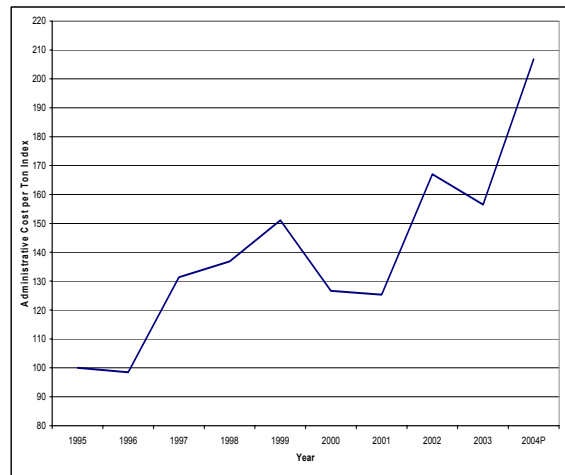


Figure 1.5f. Administrative overheads cost/ton index.

Figure 1.5. Component cost/ton indices for all participating firms, 1995-2004.

2 Discussion

Thirty of the 34 firms used in this preliminary analysis were participants in the study during 2003. This allowed analysis of year to year, same firm change (Table 2.1). Production for these firms increased 114,000 tons, whereas costs increased by \$6,242,000 resulting in a marginal cost per additional ton of \$54.66.

Table 2.1. Shift in production and expenditures between 2002 and 2004 for 30 participating firms.

| Item | Shift | Percent change |
|--------------------------|--------------------|----------------|
| Production (tons) | 114,212 | 3.1% |
| Expenditures | | |
| Equipment | \$1,179,705 | 14.3% |
| Consumables | \$1,361,717 | 11.8% |
| <i>Wages</i> | <i>\$765,906</i> | <i>5.0%</i> |
| <i>Owner's Draw</i> | <i>\$34,263</i> | <i>2.0%</i> |
| <i>WCI</i> | <i>\$24,160</i> | <i>2.1%</i> |
| Total Labor | \$824,329 | 4.5% |
| Insurance | \$109,520 | 5.6% |
| Contract Services | \$2,514,872 | 16.5% |
| AOH | \$272,849 | 17.0% |
| Total Cost | \$6,242,322 | 11.0% |

Contract services, consumable supplies and equipment expenditures accounted for \$5,056,000 of the increase. While administrative overhead costs increased by the largest percentage, the base for that percentage is relatively small in comparison of that of the other cost components.

Contract services outlays increased at nearly the same percentage rate as overheads and nine times faster in dollar terms. Contracting may be to a sister firm under the same ownership as the logging firm or to external contractors, but the splitting of the harvest and delivery task into two separate undertakings affects the changes in other cost components, especially those for equipment, consumable supplies and labor. The increase may be due to an increased use of contract trucking, or the increased rates charged by contractors to offset their increased equipment, labor and supplies costs for firms in common ownership.

Diesel fuel prices increased by 35 to 40 percent over the year, depending on location and state taxes, and accounted for the greatest part of the \$1.36 million increase in consumable supplies costs. The full impact was apparently moderated by increased attention to fuel economy, haul distances and other operating measures.

Expenditures for equipment increased by \$1.18 million. Sixteen firms increased their equipment outlays during the year. Three firms, all producing more than 200,000 tons per year, accounted for 79% of the increase. Small and mid-sized firms tended to hold equipment expenditures constant, or simply replaced aging machines.

Total labor costs rose by \$824,329 or 4.4%. Base wages increased at 5%, year on year. The percentage increases in workers' compensation insurance and owners' draw were more modest. The change in owners' draw is formulaic based on production. By agreement with participants, we do not reveal owners' salaries, but instead use a formula of \$20,000 per firm to reflect the wages of the owner as a working member of the crew (as most are) and an allowance of \$0.30 per ton as payment for management services. The formula has been the same since 1994 and contains no allowance for profit or risk.

The increases in net outlays for insurance, general liability and vehicle, like those for workers' compensation insurance (included in the total labor grouping because of the tie to wages), were modest compared with other cost components.

These relationships may change when the 2004 data for the remainder of the firms are added, but many of the firms not included in this report are small to mid-size firms and may not cause major shifts in the indicators.

Appendix

The following tables provide the source data used to develop the figures in the body of the report. They are numbered and structured to mimic the figures as closely as possible.

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Appendix

Table A1. Average total logging cost per ton index, Consumer Price Index, and Producer Price Index (Logging), 1995-2004 (Figure 1.1).

| Year | Cost/Ton Index | CPI | PPI- Contract Logging |
|-------|-------------------|-----|-----------------------------|
| 1995 | 100 | 100 | 100 |
| 1996 | 108 | 103 | 96 |
| 1997 | 111 | 105 | 98 |
| 1998 | 109 | 107 | 97 |
| 1999 | 112 | 110 | 94 |
| 2000 | 109 | 113 | 91 |
| 2001 | 115 | 116 | 86 |
| 2002 | 122 | 118 | 85 |
| 2003 | 120 | 120 | 87 |
| 2004P | 135 | 124 | 90 |

Table A2. Annual production by firm size, 1995-2004 (Figure 1.2).

| Year | Operation Size--Tons per Year | | | | | |
|-------|-------------------------------|---------|-----------------|---------|-------------|---------|
| | Small Firms | | Mid-Sized Firms | | Large Firms | |
| | Minimum | Maximum | Minimum | Maximum | Minimum | Maximum |
| 1995 | 20,475 | 53,172 | 54,833 | 96,773 | 101,352 | 244,950 |
| 1996 | 19,450 | 56,403 | 57,514 | 89,906 | 90,239 | 235,970 |
| 1997 | 17,533 | 64,926 | 65,553 | 91,039 | 93,771 | 276,055 |
| 1998 | 12,975 | 56,278 | 63,871 | 84,119 | 87,722 | 228,168 |
| 1999 | 9,644 | 57,170 | 59,925 | 85,338 | 99,334 | 206,592 |
| 2000 | 8,496 | 55,596 | 61,019 | 95,569 | 103,507 | 275,000 |
| 2001 | 2,649 | 52,633 | 57,604 | 85,000 | 90,862 | 290,000 |
| 2002 | 2,855 | 48,447 | 49,250 | 92,025 | 101,337 | 322,829 |
| 2003 | 3,275 | 48,566 | 51,626 | 114,189 | 149,526 | 342,508 |
| 2004P | 13,295 | 41,655 | 44,456 | 154,945 | 180,725 | 311,388 |

Table A3. Average total logging cost indices by firm size, 1995-2004 (Figure 1.3).

| Year | Small Firms | Medium Firms | Large Firms |
|-------------|--------------------|---------------------|--------------------|
| 1995 | 100 | 100 | 100 |
| 1996 | 97 | 109 | 111 |
| 1997 | 101 | 109 | 115 |
| 1998 | 107 | 115 | 106 |
| 1999 | 110 | 114 | 111 |
| 2000 | 107 | 115 | 105 |
| 2001 | 114 | 124 | 110 |
| 2002 | 134 | 124 | 119 |
| 2003 | 137 | 116 | 118 |
| 2004P | 147 | 142 | 131 |

Table A4. Cost components as a percentage of total logging cost per ton, 1995-2004 (Figure 1.4).

| Component Cost | Year | | | | | | | | | |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004P |
| Equipment | 19% | 19% | 19% | 22% | 22% | 19% | 20% | 18% | 16% | 15.1% |
| Consumables | 20% | 21% | 20% | 18% | 19% | 22% | 20% | 19% | 20% | 20.7% |
| Labor | 34% | 31% | 31% | 34% | 33% | 34% | 35% | 34% | 32% | 29.7% |
| Insurance | 4% | 4% | 3% | 3% | 3% | 3% | 4% | 3% | 3% | 3.3% |
| Con Services | 21% | 23% | 25% | 20% | 20% | 20% | 20% | 23% | 26% | 28.1% |
| AOH | 2% | 2% | 3% | 3% | 3% | 3% | 2% | 3% | 3% | 3.2% |

Table A5. Component cost/ton indices for all participating firms. (Figure 1.5a-1.5f).

| Year | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004P |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Equipment | 100 | 111 | 114 | 128 | 130 | 111 | 120 | 119 | 102 | 111 |
| Consumables | 100 | 112 | 109 | 99 | 105 | 117 | 114 | 115 | 119 | 144 |
| Labor | 100 | 101 | 102 | 110 | 110 | 109 | 119 | 123 | 115 | 119 |
| Insurance | 100 | 93 | 91 | 81 | 86 | 82 | 98 | 98 | 100 | 109 |
| Con Services | 100 | 118 | 129 | 103 | 105 | 101 | 106 | 130 | 145 | 178 |
| AOH | 100 | 98 | 131 | 137 | 151 | 127 | 125 | 167 | 157 | 207 |

