Trends in Workers’ Compensation Insurance Costs in the Logging Industry

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Abstract

Workers’ Compensation Insurance (WCI) is one of the most complex components of logging cut and haul rates. Logging is recognized as one of the most hazardous occupations, as reflected in the workers’ compensation premiums paid by employers in the industry. Significant effort has been made in the last decade to reduce the cost of workers’ compensation insurance. These efforts include discontinuing certain types of policies, intensifying payroll auditing, and increasing safety and loss control efforts. Self-insurance funds have become more common, and many markets now insist that wood must be produced by crews with workers’ compensation coverage.

This research examines whether the reduction in rates for logging has led or lagged the rate for all employers and whether structural changes in the industry are confounding comparisons. The data set was developed from logging firm financial records covering 401 logger business years between 1988 and 2002. Findings include that while logging WCI rates decreased between 1990 and 2000, those for all employers decreased earlier and by a larger amount. Logging WCI rates started to increase in 2001, while those for all employers remained flat. Changes within the logging industry, especially contracting out trucking operations, have had an effect.

Key Words: Timber Harvesting, Outsourcing, Slippage

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Introduction

Workers’ Compensation Insurance (WCI) is one of the most complex components of logging cut and haul rates. It is mandated both morally and legally. Workers in the industry should be compensated for injuries suffered in the process of transforming a tree from a biological specimen to raw material delivered at the gate of a converting facility. The cost of those injuries should be factored into the price paid for that conversion and delivery. “Repairs to a machine that gets broke are considered business expenses, why shouldn’t repairs to a person that gets hurt be the same” (Lindemuth, 1960).

Prior to the passage of workers’ compensation legislation, employers had a variety of common law defenses – contributory negligence, fellow servant rule, and assumption of risk – available to avoid responsibility for workplace accidents. The Triangle Shirtwaist Company fire of 1911, killing 150 women one day after the New York Court of Appeals ruled the state’s first attempt at workers’ compensation laws unconstitutional changed the political mood (Wilson, 1989). By 1920, 42 of the 48 states had some form of workers’ compensation laws (Hobbs, 1939), with the other six following close behind. These laws were either mandatory, where employers were required to carry insurance on qualifying employees, or voluntary, where the employer was not required to carry insurance but gave up all common law protections for avoiding legal responsibility (Godwin, 1980). By the fall of 2001, Texas remained the only state with a truly voluntary workers’ compensation system (Anonymous, 2003).

Workers’ compensation is a true “no-fault” insurance. An injured worker accepting workers’ compensation coverage forgoes the right to sue the employer for anything but the most extreme negligence. The employer may feel burdened by the workers’ compensation premium, but is protected from the risk and potential catastrophic cost of tort actions by employees.

Ratemaking

Insurance is a regulated industry; regulated by the state to assure that the insurance company earns a reasonable, but not excessive profit (generally held to around 2.5% of premiums collected). State insurance commissioners consider the two sources of income for insurance firms when evaluating premium levels, those from the collection of premiums and those from investing financial reserves. When investment markets are doing well, the surplus can be used to buffer premiums, when such markets are not doing well, premium receipts have to cover all expenses.

The fundamental concepts of workers’ compensation insurance and pricing is that the risk exposure of each employer is in part a function of the business engaged in, in part a function of past experience, and further influenced by the laws and courts of the state in which that business is based. The National Council on Compensation Insurance (NCCI), the manager of the nation’s largest data base on workers’ compensation insurance, recognizes over 920 different employment categories or codes used in an attempt to make risk assessment as targeted as possible.

Logging is covered by one nationwide code, 2702, Logging or Lumbering and Drivers, or one of seven state-specific codes, such as 2705, Logging or Lumbering-Pulpwood Only, available in Georgia, Louisiana, Mississippi, North Carolina, and Tennessee, or 2719, Logging or Lumbering-Mechanized Harvesting Exclusively-and Drivers, available only in Mississippi. Some insurance carriers allow trucking to be split from logging and covered under 7228,
Trucking: Local Hauling Only, if certain conditions are met. Rates for most classification codes are set as dollars of premium per $100 of payroll, with the exception of 2705 (Pulpwood Only) which is an “upset rate” based on production.

Ratemaking data is collected by NCCI from two major sources, the Unit Statistical Plan Reports containing information on individual policy holders, and from insurance carriers’ financial reports. This information is used to calculate rates by classification codes, which are then submitted to individual state insurance commissioners for approval. This “manual rate” is then used as a beginning point for the insurance broker or agent to apply premium discounts, and experience modifiers to determine the premium assessed to an individual firm. Table 1 shows the manual rates for logging, hauling and selected other professions for four southern states.

Table 1. NCCI Manual rates for selected employment codes ($/100 payroll) (Source: NCCI, 2004).

<table>
<thead>
<tr>
<th>NCCI Employment Code</th>
<th>AL</th>
<th>GA</th>
<th>MS</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1164 (Mining NOC - Not Coal - Underground and Drivers)</td>
<td>16.90</td>
<td>11.94</td>
<td>15.43</td>
<td>7.85</td>
</tr>
<tr>
<td>2702 (Logging or Lumbering and Drivers)</td>
<td>34.81</td>
<td>57.54</td>
<td>44.88</td>
<td>25.27</td>
</tr>
<tr>
<td>2705 (Logging or Lumbering - Pulpwood Only - and Drivers)</td>
<td>N/A</td>
<td>178.14</td>
<td>136.12</td>
<td>N/A</td>
</tr>
<tr>
<td>2719 (Logging or Lumbering - Mechanized Harvesting Exclusively - and Drivers)</td>
<td>N/A</td>
<td>N/A</td>
<td>21.64</td>
<td>N/A</td>
</tr>
<tr>
<td>5551 (Roofing - All Kinds - Yard Employees and Drivers)</td>
<td>60.85</td>
<td>46.74</td>
<td>37.48</td>
<td>28.98</td>
</tr>
<tr>
<td>6003 (Pile Driving)</td>
<td>34.63</td>
<td>31.16</td>
<td>19.38</td>
<td>16.64</td>
</tr>
<tr>
<td>6236 (Oil or Gas Well: Installation or Recovery of Casing and Drivers)</td>
<td>63.37</td>
<td>74.12</td>
<td>32.04</td>
<td>34.00</td>
</tr>
<tr>
<td>7228 (Trucking - Local Hauling Only - and Drivers)</td>
<td>16.68</td>
<td>14.94</td>
<td>14.27</td>
<td>10.47</td>
</tr>
<tr>
<td>8601 (Engineer or Architect - Consulting) [used for Foresters]</td>
<td>1.44</td>
<td>1.50</td>
<td>2.03</td>
<td>1.02</td>
</tr>
<tr>
<td>8868 (College: Professional Employees and Clerical) [used for College Professors]</td>
<td>0.87</td>
<td>0.92</td>
<td>0.77</td>
<td>N/A</td>
</tr>
<tr>
<td>8871 (Clerical Telecommuter Employees)</td>
<td>0.91</td>
<td>0.61</td>
<td>0.64</td>
<td>0.31</td>
</tr>
</tbody>
</table>

(Italicized employment codes are those that directly represent logging occupations.)

The difference between the developed rate and the net earned rate can be significant. Since the financial data used to set rates includes both returns from underwriting and investment of funds, the relationship reflects both the loss history and the performance of the investment markets. Discounts can be higher in years of expected high investment returns and less during periods of economic retraction. The premium discounts for four southern states are depicted in Figure 1.
The differences in overall premium levels among states over time can be demonstrated by matching the total net earned premium for each state (as reported by NCCI) with the total non-farm personal income (as reported by the Bureau of Economic Analysis (BEA)), resulting in an estimate of the premium dollars per $100 of non-farm payroll (NCCI/BEA WCI Index) for each state. The values are approximations; the earned premium is reported, and the non-farm personal income is developed from information collected for other purposes, but does demonstrate that overall WCI rates increased in the late 1980’s, but decreased throughout the 1990’s (Figure 2).

There was a significant downward trend in overall WCI costs from 1988 to 2001. There were likely several reasons for this:
1. The rising workers’ compensation rates in the late 1980’s caused concern in all areas of employment, not just the forest industry, and several different approaches were used to bring them under control.

2. There was an increased emphasis on workplace safety. The opportunity cost of an accident had risen to the point where it was in the interest of the employer to reduce risks.

3. Insurance carriers mounted greater loss control efforts.

4. Systems for reducing slippage were put in place. Slippage occurs when an employer reports fewer employees (or less payroll) than actual to reduce premiums but then turns in all losses. (Unofficial estimates from insurance carriers in the late 1980’s were that slippage in the logging industry in some states could have been as high as 40 percent!)

5. “Vendor to” policies, where purchasers of logging services deducted an agreed amount from payment for services that was used to buy coverage for the supplier, were discontinued.

6. There was less reliance on “upset rates” and increased auditing of payroll records.

7. Self insurance funds became more common and more carriers entered the market, increasing competition.

These loss control efforts had an associated cost, part of which is reflected in the expense ratios for the portion of collected premium going to the costs of doing business over the period reported by NCCI (Figure 3). Not all of these costs can be attributed to more loss control specialists and increased auditing expenses, but they do reflect a change in the way of doing business during the 1990’s.

Figure 3. NCCI Expense ratios for 1998-2001 for four southern states (Source: NCCI, 2003).
Timber Harvesting

We have been constructing a data base of detailed cost and productivity information for a sample of logging contractors since 1988. As with any data base of individuals or firms, some data elements may be difficult to separate because of the format in which the data is provided, participation changes over time, new firms are added, and previous participants choose not to continue or leave the industry. The population includes small firms and large, cutting pine and hardwood, performing clearcuts and specialized silvicultural operations (For a more complete description see Stuart, Grace, and Altizer, 2003). Each observation represents a year’s work by a firm, a considerable investment of money and time, and therefore too important to dismiss.

Participants reported annual production and costs in six categories: equipment, labor, consumable supplies, contract services, insurance, and administrative overheads. Workers’ compensation insurance is included in the labor expense rather than insurance because it is normally a direct function of total payroll. We were able to extract 401 business years of data for 55 firms for which we could separate workers’ compensation premium from labor payroll, from this data. The data spans 15 years from 1988 to 2002 (Figure 4).

In the early stages of the project, many firms did not separate workers’ compensation insurance from total labor costs. Consequently, sample sizes for 1988 and 1989 are rather small and not indicative of the actual level of participation in the overall project for those years. Observations for ‘88 and ‘89 have been provided as markers or indicators. The number of participating firms for each year of the study period is listed above each year’s respective bar series. The numbers listed along the y-axis are categorized by each firm’s respective identification number which was the sole identifier for the entire 15 year study period. As a result these numbers do not necessarily directly correspond to the actual number of participants for any given year. One firm has participated for the full fifteen years, 60% of the firms have provided data for five years or more, and 80%, three years or more.
Box and whiskers plots are used to demonstrate changes in the entire population. The data is divided into quartiles; the box spans the middle 50% of the observations. The median is indicated by a crossbar through the box. That span of the box is termed the inter-quartile range or IQR (roughly equivalent to +/- one standard deviation in parametric statistics). The “whiskers” extending from the ends of the box reach to the last observation lying within 1.5 times the IQR from either end of the box (roughly equivalent to +/- two standard deviations). Values beyond the end of the whisker, but within +/- 3 times the IQR from the ends of the box are moderate outliers and indicated by “0”, those beyond 3 times the IQR are extreme outliers and indicated by “x”.

Total production cost per ton, unadjusted for inflation, has crept up slowly for these firms over time (Figure 5). Adjusted for inflation, the median cost has decreased by $2.05 or 12% between 1990 and 2002. The distribution of costs flattened and moderate high-side outliers increased in later years as firms struggled to adjust to the altered wood supply system of the late 1990’s. It is interesting to note that there were no low-side outliers.

![Figure 5. Total cost per ton (unadjusted for inflation).](image)

Workers’ compensation costs per ton for these logging firms, in unadjusted dollars, have declined over the period (Figure 6). The total spread between the lowest and the highest rate has been volatile as businesses changed missions and restructuring to accommodate changes in the wood supply system. The inter-quartile range has narrowed. The median rate trended downward through the 1990’s and then began to creep back up in 2001.
The median WCI rate for 2001 was 50% of that for 1991, indicating that the industry’s safety and loss control programs are working. However, as can be seen in Figure 7, WCI rates for all employers decreased earlier and by a larger amount.

The decline in the combined statewide rates for the four states shown above for the same period was 65%. Logging made significant gains but trailed the overall trend. This lag might be explained by the additional time needed for the serious loss control measures implemented.
during the study period to take effect. In addition, logging contractors have turned to other strategies to reduce costs in various aspects of their businesses.

An increasingly common cost reduction strategy that study participants have pursued is outsourcing, particularly for trucking services (Figure 8). The cost of this outsourcing is included in the total cost per ton shown in Figure 5. There may be a significant workers’ compensation component within that cost, in the range of 10% of the total, but the exact amount is impossible to extract and report separately at this time.

![Figure 8. Contract services cost per ton (unadjusted for inflation).](image)

Typically, outsourcing reduces WCI premiums by reducing the number of employees on payroll (reducing total payroll) and by shifting employees into another, lower premium, classification code. The “savings” vary with operation type and policy negotiations (In Mississippi, for example, the premium cost for a truck driver working for a firm classified as 7228, Trucking-Local Hauling Only-and Drivers would be roughly half that of a driver for a firm classified as 2719, Logging or Lumbering-Mechanized Harvesting Exclusively-and Drivers, and roughly one third of that for a firm classified as 2702, Logging or Lumbering and Drivers). The key point is that direct workers’ compensation costs to a logging firm decrease with increased outsourcing, as workers’ compensation coverage is still paid for but under a different accounting entry.

Avoidance of coverage may also be taking place. A contract trucking “owner/operator” doing the driving and employing no one else is not required to carry workers’ compensation insurance. Many states have small business exemptions; Virginia does not require coverage for firms employing three or fewer people, Mississippi has a “four man” exemption. Intended as an aid to small businesses, these exemptions open the door to manipulation. Logging firms are often a family affair, or closely held with the owners working as part of the crew. It is therefore possible for a crew to consist of three “owners”, four employees, and three contract truckers, a total of nine and still qualify for the four man exemption.

The concern for all parties in the wood supply system, landowners, loggers, and consuming mills is the effect these changes have had on the cost per delivered ton. The trend in
“contract services” cost per ton (Figure 8) follows that of total cost (Figure 5), but is modified by the effect of labor efficiency; tons produced per dollar of labor expenditure and therefore would include the effects of technical and operational gains. Improved loss control and outsourcing have reduced the WCI premiums, although recent evidence shows that insurance rates are beginning to rise.

Conclusions

Workers’ Compensation Insurance rates for the logging industry have tended downward over the 15 year study period. While total, unadjusted, harvesting operational expenses have increased over the study period, the combination of tightened enforcement, outsourcing, the popularity of self-insurance funds, and increased competition in the insurance industry have been crucial to achieving a much needed workers’ compensation cost reduction. Recent indications are that premiums are beginning to increase as insurance carriers reassess individual policies. Additionally, these carriers are choosing not to provide coverage for operations perceived to be unusually hazardous, such as night logging (Anonymous, 2004).

Overall, the loss control measures and changes in business strategy employed in the logging industry have proven to be successful. Unfortunately, those who made the efforts to control the direct cost of workers’ compensation through better working environments for their work force, by heightened safety awareness, by operational changes, and more selective insurance purchases have been able to realize few of the benefits. Lower workers’ compensation insurance rates have been used as argument for reduced contract logging rates. The price paid for logging services (as measured by the producer price index for logging) has decreased by 15% since 1995 (Stuart et al., 2003). The savings have been used to offset the increased stumpage prices and to hold delivered wood costs down. The benefits were captured by landowners and the consuming mills. It may be argued that holding the cost of producing wood down helped advance the US industry’s ability to remain competitive in ever-challenging global wood markets which will have long-term benefits for those who worked to bring about the improvements. It can also be argued that the market for logging services is very inefficient in its ability to reward those who innovate and work to remain competitive.
Literature Cited


