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Since publishing *Adequacy of Earnings Replacement in Workers' Compensation Programs* in 2004 (Hunt 2004), staff at the Upjohn Institute have continued to analyze the important policy issues discussed in the report. The National Academy of Social Insurance (NASI) study panel that produced the report found that earnings replacement for permanent partial disabilities in five states ranged from 29 to 46 percent—a rate far short of the 67 percent replacement rate specified by statute in these state workers' compensation systems. Thus, the analysis raised concerns about the adequacy of workers' compensation earnings replacement benefits.

The NASI study panel's analysis raised concerns about the adequacy of workers' compensation earnings replacement benefits.

However, there were some problems with these findings. First, employer representatives on the study panel objected to using the two-thirds earnings replacement standard for permanent partial disability (PPD) cases. They asserted that because such cases are frequently disputed and their compensation may be the result of compromise settlements, it is inappropriate to expect such claims to achieve the two-thirds standard. Therefore, the study panel believed it would be beneficial to assess the adequacy of temporary total disability benefits.

In addition, there were analytical issues that affected the results, even though the same assumptions had been used for studying the five states. Because

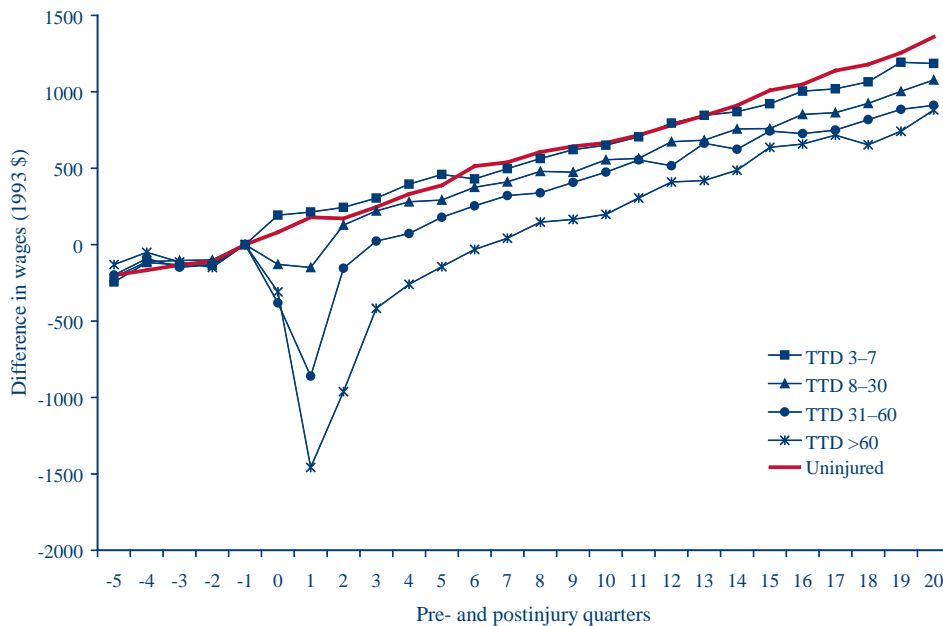
the analysis focused on aggregate wage losses and aggregate compensation payments, it implicitly weighted the more serious claims more heavily. The longer the wage loss continues, the more times the injured worker is counted in the aggregate wage losses. But is the policy question, what proportion of all the wages lost by injured workers is replaced? Or is it, what proportion of all injured workers received adequate wage replacement? The earlier studies answer the first question, but not the second.

Data Analysis

To find the answer to that question, the Upjohn Institute contracted with the State of Oregon for administrative data that enabled us to perform a sensitivity analysis of benefit adequacy in Oregon's workers' compensation system. Our empirical work uses a dataset composed of 46,033 Oregon workers injured in 1992 or 1993. They all received temporary disability payments of at least three days, or PPD compensation. We exclude workers with disabilities lasting less than three days, and those with missing values for certain key variables. We also exclude workers aged 51 and older at the time of injury in order to reduce the effect of voluntary early retirement on postinjury wage loss calculations.

We have unemployment insurance data, which consist of quarterly wage records for all Oregon workers from the first quarter of 1988 through the fourth quarter of 1998. We were able to match 98.8 percent of injured workers to their administrative wage records (based on a unique but anonymous identifier provided for each worker). The resulting dataset combines claims-related data such as date and type of injury, compensation benefits, length of absence from work, and demographic variables, with the pre- and

Figure 1 Changes in Quarterly Wages Relative to Own Preinjury Wage, Injured Workers (age ≤ 50), and a Sample of Uninjured Workers



postinjury wage record for each injured worker. We include 5 preinjury quarters, the quarter of injury, and 20 postinjury quarters.

The cumulative wage change is calculated by summing the differences between observed postinjury quarterly wages and the wage in the preinjury quarter for each injured worker. We include 20 postinjury quarters, although we do not observe earnings in all of them for many of the workers, due to the incidence of missing (unreported) wages. Finally, we compute the wage growth for uninjured workers using the same method and use it as a baseline against which to assess the earnings losses of injured workers.

Earnings Losses

Using a 10 percent random sample of all unemployment insurance wage records in Oregon, and ignoring the observations with zero for wages (a mixture of those who really had no earnings and those whose earnings were not reported), we find that the typical Oregon worker’s cumulative earnings increased by \$9,943 in 1993 dollars in the five years from 1993 to 1998. Average annual real earnings for uninjured Oregon workers increased from \$18,306

to \$23,892, or 31 percent, during these years. So the average increase in real annual earnings for uninjured workers in Oregon during our observation period was \$5,586, and the total increase over the period was almost \$10,000.

On average, the 7,480 Oregon workers who suffered a short-term total temporary disability injury (3–7 lost workdays) in 1992 and 1993 had an earnings loss over five years of \$1,123 when compared to the random sample of uninjured Oregon workers from the same period.

Wage losses associated with workers’ compensation claims may be permanent.

Interestingly, only \$212 of this earnings loss occurs in the actual quarter of injury. So there appears to be a persistent wage loss for even these relatively mild injuries in Oregon.

For moderate injuries involving between 8 and 30 days of work lost, the average five-year wage loss compared to uninjured workers is \$3,545. Serious injuries involving 31–60 days lost work (6–12 weeks) carry commensurately more serious wage losses of \$6,422. Severe injuries involving more than 60 lost workdays mean an average earnings

loss of \$10,359 compared to uninjured workers.

Figure 1 shows these results. Starting from the preinjury quarterly earnings at time $t = -1$, the earnings of injured workers (except the 3–7 day group) decline in the quarter of injury ($t = 0$) and in the following quarter ($t = 1$). Then earnings begin to recover but never overtake the earnings of the uninjured workers, at least not within five years. It takes two quarters for earnings to recover to the preinjury level for those with 8–30 days lost. It takes three quarters for those with paid disability durations of 31–60 days, and 7 quarters for those losing more than 60 days (12 weeks) of work to a workers’ compensation claim. In fact, at the end of five years, those who were originally off work for more than 60 days were still suffering earnings losses of nearly \$500 per quarter compared to the earnings gains of uninjured workers. Permanent partial disability claimants recover their preinjury earnings by 6 quarters following injury, but after 5 years (20 quarters) they have similar continuing losses of just over \$500 per quarter.

Earnings Replacement

Wage losses continue long after one might have assumed the effects of the injury would have ended. In fact, Figure 1 shows that wage losses associated with workers’ compensation claims may be permanent. Evidently the injury has produced an interruption in the income stream that is never fully recovered, even for injuries involving as little as 8 days off work. While wage growth returns to something like the same rate as for uninjured workers, the initial loss is never made up. So the question is, how is the workers’ compensation system dealing with these losses?

Table 1 shows the mean wage loss, mean compensation paid, and real earnings replacement rates for the paid disability duration classes used earlier. Again, we used the preinjury earnings for each individual and accumulated losses for five years following the injury, as compared to the earnings growth of uninjured Oregon workers. Under these assumptions, it appears that the actual

Table 1 Estimated Losses, Compensation, and Replacement Rates, by Paid Disability Duration

Groups by paid duration of disability	N	Aggregate real replacement rate (%)	Mean earnings loss (1993 \$)	Mean compensation (1993 \$)
TTD 3–7 days	7,480	23.9	1,123	268
TTD 8–30 days	9,303	23.1	3,545	820
TTD 31–60 days	3,162	31.6	6,422	2,028
TTD > 60 days	2,468	68.7	10,359	7,117
PPD	12,655	152.6	8,764	13,373

wage-loss replacement rate increases with the duration of disability, with PPD claimants doing the best. Of course, it should be pointed out that, under the assumption that the PPD claimants have lifelong (or permanent) impairments, their earnings losses will continue far beyond the five-year mark.

This in turn will serve to lower the replacement rate since nearly all workers' compensation payments have been completed within five years while the losses continue, presumably far beyond. But the real surprise is the continuing

nature of earnings losses after five years.

Conclusion

Although it is clear that compensable workers' compensation injuries involve significant permanent wage loss for many workers, it is not clear why. Is this more like a displaced worker phenomenon? Research from the Workers Compensation Research Institute (2006) highlights the fact that a significant minority of injured workers do not achieve a "substantial" return to work,

ranging from 10 percent in Wisconsin and Pennsylvania to 25 percent in Texas. We need a better understanding of this research before reaching a definitive judgment of the adequacy of workers' compensation earnings replacement benefits.

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