

Will the recession affect workers' compensation costs?

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Recent declines in employment are projected to cause modest increases in Minnesota workers' compensation costs for each hour worked, according to an analysis by the Minnesota Department of Labor and Industry's Research and Statistics unit.

Minnesota's economy probably entered a recession last year. In other states, past recessions have caused workers' compensation costs to rise. During the past decade, declines in employment seem to have caused increases in workers' compensation costs in Minnesota. These increases have been relatively modest – a 5-percent decline in hours worked leads to an approximately 0.5-percent increase in annual costs per hour worked. Between 50 and 80 percent of the increase in costs appears to be explained by increased claim filing. There is some evidence the increases in claim filing are mainly due to increases in claiming propensity and not to higher injury rates.

Introduction

According to the National Bureau of Economic Research, the U.S. economy entered a recession in March 2001. Employment data shows Minnesota's economy, while not necessarily entering a recession, also slowed in 2001. The statewide unemployment rate was 1 percent higher in the first two months of 2002 than it was in the first two months of 2000 and hours worked declined by more than 3 percent during the same period. How will the current downturn affect the costs of workers' compensation in Minnesota?

Previous studies suggest the costs of workers' compensation *per hour worked* rise during a recession.¹ A recession could affect the costs of workers' compensation in a number of ways. Injury rates might change as changes are made in production processes. The duration of claims could increase if injured people find it harder to return to work. Claim filing behavior or the claim denial rate could change.

It is still too early to know how the current downturn is affecting workers' compensation costs in Minnesota, but during the past decade, declines in employment appear to have caused modest, temporary increases in workers' compensation payments. The data suggests a 1-percent decline in hours worked in an industry leads to an increase in the next month's workers' compensation costs in that industry of 1 or 2 percent. However, this is only a temporary, one-month increase, so the resulting annual cost increase would be only one-twelfth as large. This result suggests, for example, that because hours worked in durable goods manufacturing declined by almost 10 percent during the past year, workers' compensation costs in that industry might increase by 1 or 2 percent.

Between 50 and 80 percent of the increase in costs appears to be explained by increased claim filing. Claims were examined by injury type to try to determine if injury rates increased when employment declined or if claiming propensity increased. There was not much evidence the increases in the number of claims filed were due to higher injury rates, so a preliminary conclusion is the increases were due to increased claiming propensity. This increase in claim filing does not mean there is necessarily a problem with the workers' compensation system. Claims might increase if, when employment declines following a layoff, workers file for existing, work-related conditions that had not yet prompted a claim for workers compensation.

It will be a few more months before there is enough data from 2001 to have a good idea of how costs have changed. Early indications are the number of paid indemnity claims filed in 2001 will fall. Some of this

¹See the citations in the section, *Alternative views about the effects of recessions*, and the reviews in Appendix B.

drop can be explained by the decline in employment, and some by the general downward trend in the number of claims filed, but the drop still appears larger than expected. Why? It is still too early to know – it could be due to the preliminary nature of the estimate, it could be an effect of the recession or it could be due to other factors.

Where Is Minnesota's economy headed?

Recent evidence indicates the U.S. economy is improving. At the very least, the economy is declining less rapidly than it has been. Hopefully, the recession will soon be over. There is reason for caution though; not long ago, the economist Robert Samuelson said:

Most economists don't understand this peculiar recession especially well, which isn't surprising, because most didn't understand the preceding boom, either. They continually underestimated its strength and only belatedly recognized that some of its powerful driving forces – extravagant investment in new technologies, widespread stock-market speculation – were not altogether good.²

Predictions concerning business cycles are always uncertain. Predicting the direction of the economy now appears even more difficult than usual, given the problems understanding the recent performance of the economy.

Alternative views on the effects of recessions

While it may be impossible to predict where the economy is going, it might still be possible to get an idea of how current trends will affect workers compensation costs.

There is a consensus that the cost of workers' compensation per hour worked increases during recessions, but this consensus is not based on a large number of studies.³ No studies examined stated that recessions reduced costs. There was also a consensus that cost per claim increases during recessions. One study summed up the main reasons. Workers spend more time on disability, medical costs rise, workers get higher permanent partial disability ratings and workers file more claims for occupational disease or cumulative injury.⁴

An important qualification to the statement that recessions increase the costs of workers' compensation is that rapid economic growth also has been found to increase costs. One study found that industries that grew or declined the fastest had the fastest growth in workers' compensation costs.⁵ Costs per hour of work grew the most slowly in industries where there was the least change in employment.

There is debate about how recessions affect claim rates and injury rates. Burton says prior to the 1990s, injury rates usually declined during recessions, but during the recession of the early 1990s, injury rates increased.⁶

²“Economic dreamland,” by Robert J. Samuelson, Wed., Jan. 9, 2002, page A19, *The Washington Post*.

³See, in addition to other papers cited in this article, *Cost drivers in six states* by Gardner, Victor, Telles, and Moss, Workers Compensation Research Institute, December 1992 and *Revisiting workers' compensation in California: Administrative inventory* by Telles and Fox, Workers Compensation Research Institute, June 1997. A number of these studies are discussed in Appendix B.

⁴*Workers' compensation in New Jersey: Administrative inventory* by Ballantyne and Dunleavy, Workers Compensation Research Institute, April 1994.

⁵*The 1991 reforms in Massachusetts* by Gardner, Telles, and Moss, Workers Compensation Research Institute, May 1996.

⁶Burton, John, F., “Workers' compensation: Developments since 1960 and prognostications for benefits and costs,” in *Workers' Compensation Policy Review*, September/October 2001.

In *On Workers' Compensation* Welch says:

*There is a widespread assumption that workers file more claims during times of layoff. ... The fact is that this may simply be a myth. There is really no evidence that more claims are filed during times of high unemployment.*⁷

There is anecdotal evidence that “flurries” of claims are associated with layoffs, but some studies find the number of claims filed during recessions declines.⁸ Overall, the evidence is mixed, but it is possible that the overall claim rate could decline during recessions even if there are flurries of claims associated with layoffs. To understand why this can be, one needs to distinguish between the claim rates for two groups of people – workers who are laid off during the recession and workers who are not laid off. Claim rates may be quite high for the laid-off workers, but lower than average for the workers in the other group. Three factors are frequently cited that might push down the number of claims for workers who are not laid off. During recessions there are fewer younger, less-experienced workers (who on average have higher injury rates). The pace of production may slow, which may make workplaces safer. In addition, workers may fear they will be more likely to be laid off if they file a claim during a recession. Overall, claim rates could go up or down, depending on whether effects on laid-off workers are larger than the effects on workers who remain employed.

Employment and system costs

Recessions are defined in terms of declines in output. However, this article focuses on the effects of changes in employment. The main reason is that changes in employment probably affect workers' compensation costs more than changes in output.⁹ There also is industry-level employment data.

There is little recent data about the effects of recessions on workers' compensation in Minnesota. The most recent time Minnesota experienced a recession may have been 1984 – the slowdowns in 1991 and 2001 may not quite qualify as recessions. Another problem is there is not yet mature cost data from the current slowdown.

A simple model was developed to relate changes in workers' compensation costs to changes in employment for eight industries. Changes in workers' compensation costs per hour worked were compared to changes in hours worked within each industry and to changes in the overall statewide unemployment rate. In addition, time variables were incorporated into the model to account for overall changes in cost trends. The industries examined were: construction; durable goods manufacturing; nondurable goods manufacturing; transportation and public utilities; wholesale and retail trade; finance, insurance and real estate; services; and state and local government.

Data was examined for each month from January 1992 to December 2000. January 1992 is when seasonally adjusted employment data is first available. After December 2000, the claim cost data is not mature enough.¹⁰

The relative cost of all claims filed in each month was calculated. The relative cost in an industry is the cost per hour of work in one month divided by the average cost per hour of work from January 1992 to December 2000 for that industry.¹¹ See Appendix A for details about the data.

⁷Editor's introduction to “Workers' comp and the business cycle” in *On Workers' Compensation*, November 1994.

⁸Brooker and Sullivan, “Workers' comp and the business cycle” in *On Workers' Compensation*, November 1994 and Howard, “Workers' compensation – Myths and reality” in *On Workers' Compensation*, June 1995.

⁹The pace of production may affect injury rates, but we only examine this by accounting for the average number of hours worked.

¹⁰This means we do not see the effects of the downturn that occurred in 2001. However, employment in some industries, such as manufacturing, started to decline in 2000.

Findings

Overall, a 1-percent decline in employment *within one industry* appears to lead to a *temporary increase* in costs per hour worked of between 1 and 2 percent in that industry. A number of different statistical analyses resulted in similar findings. It did not appear this finding depended on the industry examined or on seasonal variations in employment.

The analysis indicates changes in industry employment are very important in explaining how costs change. However, the relationship holds only in the short run. Drops in employment in one month only appeared to have significant effects on costs in the next month – if employment did not change in the following month, then the cost per hour worked went back to its previous level. The statewide unemployment rate did not appear to have a significant effect on costs.

The results of statistical analyses of the relationship between changes in hours worked and changes in workers' compensation costs are shown in Figure 1 and Figure 2.¹² Figure 1 shows the main effect of a decline in employment is a rise of nearly 1 percent (0.9 percent) when the number of hours worked declines. The results also show that the time affects costs as does the square of the change in hours worked. A number of regressions were also run with other variables, including the statewide unemployment rate, average hourly wages for each industry, and dummy variables for month and industry. In most cases, none of these variables were found to significantly affect costs. In a few cases some of the month and industry variables were significant.¹³

Figure 2 shows the results of a statistical analysis of workers' compensation costs in periods when hours worked declined by 1 percent or more. This was done because (i) in most periods, examined workers' compensation costs decreased slightly and employment increased slightly and (ii) the relationship between costs and employment changes was not clearly linear or quadratic. Because of this, it was felt that the large number of cases in which costs declined and hours increased have a limited ability to be used to predict the effects of *declines* in employment. The data about employment declines shows declines in employment may have somewhat larger effects on costs. A 1-percent decline in employment now appears to lead to an approximately 2-percent increase in costs.

The results of other statistical models generally fell between the results of the two models described above. It appears a decline in employment of 1 percent leads to a temporary, one-month increase in the cost per hour worked of between 1 and 2 percent.

The effects of recessions and booms

There was evidence that larger declines in employment led to larger relative increases in costs. This means the effect of an annual decline in employment may depend on how the decline occurs. If much of the decline occurs all at once, then the impact on workers' compensation costs may be larger. If the decline is spread out over time, then the change in costs may not be as large.

Little evidence was found that boom times also led to higher workers' compensation costs. An increase in employment was found to usually lower costs, but by only about half as much as a decline in employment would raise costs. The estimated relationship between change in employment and costs did not look “U-

¹¹Costs were not adjusted for inflation or payroll, because the wage rate, which should partially account for these factors, was not found to be statistically significant in the regressions we ran. This is probably because the relatively gradual changes that occurred during this period in inflation and wages were accounted for by the time variables.

¹²The time variables are expressed in terms of the number of years from Jan. 1, 1992. The time variable would be 1.5 in June 1993, for example.

¹³Costs and claims were generally high in January. The industry variables usually did not matter because changes in costs were normalized for each industry. Including these additional variables had little quantitative effect on the regression coefficients shown in the figures.

shaped” as some researchers had found.¹⁴ Overall, the relationship between declining in employment and increasing in costs seems stronger.

The effects of statewide unemployment

Little evidence was found of an effect of high statewide unemployment on relative workers’ compensation costs. This is not surprising because of limitations in the data, and should *not* be taken as strong evidence that statewide shifts in employment do not affect costs. The unemployment rate did not fluctuate much during the period examined. The rate declined somewhat at the beginning of the period and then rose somewhat at the end. However, there is not much information about the effect of the increase at the end of the period, because the most recent cost data was not mature enough to use. In addition, statutory changes in Minnesota’s workers’ compensation system in 1992 and 1995 may have affected system costs so much that it is not possible to determine any of the effects of the early 1990s downturn.

Interpreting the results

The results are somewhat difficult to interpret. They say that, other things equal, declines in employment will lead to increases in the per hour costs of workers’ compensation. However, this increase is only temporary. Therefore, overall, a recession will raise costs only slightly. For example, a six-month recession, in which hours worked declined by 1 percent each month, would increase the annual costs per hour worked by between 0.5 and 1 percent. The reason for the smaller increase is that each drop in employment only affects costs for six months (one half of the year) and not for the whole year.

Figure 4 shows the predicted effects of changes in employment for eight Minnesota industries. During the past year, hours worked dropped by approximately 10 percent in the durable goods manufacturing sector and the transportation and public utilities sector. This is expected to lead to increases in the cost per hour worked in these industries of between 1 and 2 percent. Four other industries – construction; services; government; and finance, insurance and real estate – are expected to experience very small changes in cost per hour worked.

Why do costs increase?

Costs per hour worked can rise either because the number of claims rises or because the average cost per claim rises. It appears the main reason costs rise is that claim rates increase. A statistical analysis of claim rates and changes in employment suggests changes in claim rates explain between 50 and 80 percent of the short run increase in costs.

The results of one of these statistical analyses is shown in Figure 3. The main effect of a 1-percent decline in hours worked is the claim rate rises by 0.7 percent. This explains approximately 80 percent of the increase in costs predicted by the results shown in Figure 1. When an analysis of the claim rate is done that parallels the analysis from Figure 2 (in which only declines in employment were analyzed), it appears the rise in the claims rate explains approximately 50 percent of the increase in cost per hour worked.

Claiming propensity may increase when employment declines

Why would the number of claims increase during a recession? There are a number of possible reasons. Injury rates might increase. Workers may be more likely to file claims or claims may be less likely to be denied. As discussed earlier, there are also a number of factors that could push claiming propensity down. To try to separate changes in injury rates from other factors, different types of injuries were examined.

¹⁴I.e., costs did not increase when there were large increases in employment, they just declined more slowly. See the discussion in Appendix B of Gardner, Telles, and Moss, *The 1991 reforms in Massachusetts: An assessment of impact*, Workers Compensation Research Institute, May 1996.

An examination of injuries by type provides mixed evidence about the question of whether injury rates (as opposed to the propensity to file claims) increases. There was no strong evidence the claim rates for injuries that were more “objective” – burns, cuts, contusions, and limb fractures and dislocations – increased when employment declined. This is probably partially because there was less data about objective injuries – they made up only one-sixth of all injuries. However, in addition, it appears the models used to predict changes in total costs just did not fit as well as when they were used to predict the costs of objective injuries. Overall, one cannot be very confident there is or is not a link between employment changes and claims for objective injuries. There was limited evidence that costs increased for objective claims.

One potential explanation is that injury rates are not much affected by declines in employment, but that cost per claim rises because poor economic conditions in an industry make it harder to return to work. In addition, claiming propensity rises for subjective injuries, but not for objective injuries. This would explain both the increase in subjective claim rates as well as the fact that the increases in subjective claim costs per worker were higher than the increases in objective claim costs per worker.

The increase in total claims appears to be due mainly to increases in claims for more subjective injuries. A portion of these increases could occur because workers do not always file claims for work-related injuries.¹⁵ Increases in costs due to this factor would represent cost shifting from employees or employers’ health insurance to workers’ compensation. Reasons workers might not file claims include (i) treatment had previously been covered by employer-provided health insurance and (ii) the injuries did not affect the ability to perform at their previous job, but would put the worker at a competitive disadvantage in getting a new job. These types of increases also seem to be more likely for subjective injuries, because immediate care is usually needed for objective injuries.

Increasing duration accounts for part of the cost increase

A statistical analysis of the duration of temporary total disability claims suggests increased duration explains part of the predicted cost increases that occur when employment declines. A 1-percent decline in employment leads to a 0.3-percent increase in the duration of temporary total disability benefits. Other things equal, this would account for an increase of approximately 10 percent of the predicted increase in total system costs. This is because temporary total disability claims account for approximately 40 percent of system costs.

Preliminary information about 2001 claims

The finding that the claim rate rises when employment declines is somewhat at odds with preliminary projections that the claim rate fell in 2001. Early indications are the number of claims in 2001 will fall by more than would be expected based on the change in hours worked (adjusted for the expected rise in the claim rate) and the long-term downward trend in number of claims filed per hour of work.¹⁶

It is difficult to know what to make of the predicted decline at this point. It may be due to effects of the recession that go beyond the effects that result from declines in employment in one industry.¹⁷ It could also be due to other factors that have not been accounted for or it could simply be that the decline will not be as large as the preliminary estimates are indicating. However, if the drop in expected claims does hold

¹⁵There is evidence a significant number of workers do not file claims when they are entitled to. See, for example, Rosenman, et al., “Why most workers with occupational repetitive trauma do not file for workers’ compensation,” *Journal of Occupational and Environmental Medicine*, January 2000.

¹⁶That is, the expected increase in claim rate predicted because of the regression results discussed previously. The downward trend was also predicted by the regression results.

¹⁷A significant economy-wide decline in employment might have different effects than a decline in employment in one industry. Because such a decline did not occur in Minnesota from 1992 to 2000, it is hard to predict what these effects would be.

up, it would be more than large enough to offset the relatively modest cost increases that are predicted in Figure 4 (unless, as seems likely, the recession also leads to significant increases in the cost per claim).

Conclusions

Declines in industry employment appear to lead to increases in system cost per hour worked and in the claims rate. However, the effects are modest and short-run. Cost per hour worked appears to rise slightly when employment declines, mainly because the claim rate rises. Duration also increases somewhat when employment drops. Not much evidence was found that an increase in injury rates explains the increase in the number of claims filed.

More work will need to be done before the effects of the current downturn on workers' compensation costs can be determined. More mature data from 2001 is needed. Also, the findings described in this article relate changes in hours worked in individual industries to costs in those industries. There may be other effects of recessions that were not captured by this analysis. For example, recessions might affect pricing for insurance companies because recessions lower the stock market earnings of insurance companies' investments. Also, large increases in statewide unemployment may increase system costs by increasing the time it takes for injured workers to return to work. Finally, the finding that the claim rate has risen after declines in employment is somewhat at odds with preliminary estimates that predict a fairly large decline in the number of paid indemnity claims filed in 2001.

Figure 1: The effect of a change in hours worked on the percent change in total costs

Variable	Coefficient	Standard error	t statistic
Intercept	204.5	4.72	43.4
Time	-63.1	7.17	-8.8
Time squared	14.6	3.12	4.6
Time cubed	-1.6	0.53	-3.0
Time to the fourth power	0.1	0.03	1.9
Percent change in hours	-0.9	0.16	-5.6
Percent change in hours squared	0.03	0.02	1.9

Adjusted R squared: 0.65

Figure 2: The effect of a change in hours worked on the percent change in total costs when employment declines by 1 percent or more

Variable	Coefficient	Standard error	t statistic
Intercept	183.6	8.88	20.7
Time	-51.7	13.39	-3.9
Time squared	13.5	5.99	2.3
Time cubed	-1.8	0.99	-1.8
Time to the fourth power	0.1	0.05	1.5
Percent change in hours	-2.0	0.53	-3.7

Adjusted R squared: 0.57

Figure 3: The effect of a change in hours worked on the percent change in total claims

Variable	Coefficient	Standard error	t statistic
Intercept	137.9	1.50	91.7
Time	-11.6	0.75	-15.5
Time squared	0.6	0.08	7.3
Percent change in hours	-0.7	0.09	-8.2
Percent change in hours squared	0.02	0.01	1.8

Adjusted R squared: 0.59

Figure 4: Changes in hours worked and predicted changes in annual workers' compensation costs from January 2000 to January 2001

Industry	Change in hours	Predicted change
	(percent)	in cost per hour (percent)
Construction	0.3	0.0
Durable goods manufacturing	-9.5	1.0 to 2.0
Nondurable goods manufacturing	-6.6	0.5 to 1.0
Transportation and public utilities	-10.7	1.2 to 2.5
Wholesale and retail trade	-3.2	0.2 to 0.4
Finance, insurance and real estate	0.0	0.0
Services	-1.1	0.1 to 0.2
Government	2.1	-0.1 to 0.0

Appendix A: Details about data

Claim and cost data

Data about claims and costs was obtained from the Minnesota Department of Labor and Industry claims database. Except in the case where the duration of claims is discussed, claims described in this report are all paid indemnity claims. Costs include payments for all types of workers' compensation benefits. The claims are divided into months by the date of injury. When the duration of claims is discussed, only claims for temporary total disability benefits are being referred to. All data about claims and costs was divided by hours worked for the statistical analyses discussed in this report.

Employment data

Monthly data about employment, average hours worked per week, average weekly wages and the statewide unemployment rate was obtained from the U.S. Bureau of Labor Statistics.

The hours worked in each month was calculated in two steps. First, employment was multiplied by average weekly hours. Second, this result was multiplied by the number of weeks in each month. The number of weeks in each month was calculated as the number of weekdays that were not national holidays divided by five.

The percentage change in hours worked was calculated as two-thirds of the percent difference between current hours worked and the previous month's hours worked plus one-third of the percent difference between the next month's hours worked and the current month's hours worked. This computation helps compensate for the fact that it is not known when during the month labor cutbacks occur. It allows for the possibility that some cutbacks early in one month may have an effect on workers' compensation costs in that same month.

Appendix B: Studies of recessions and workers' compensation costs

Workers' compensation costs in New Jersey¹⁸

This study examined factors affecting the costs of workers' compensation in New Jersey between 1980 and 1991. It focused on the 1989 to 1991 recession. The average unemployment rate from 1980 to 1991 was 6.0 percent, but unemployment reached 8.5 percent in 1992. Note that the paper did not examine costs in 1992. The number of people employed in New Jersey dropped by 1.5 percent from 1989 to 1990, by 3.7 percent from 1990 to 1991, and by 1.2 percent from 1991 to 1992. In the manufacturing sector, total hours worked declined by 5.8, 6.4 and 4.8 percent, respectively.

Total system costs increased by 8.8 percent a year from 1989 to 1991. The cost per claim went up 13.9 percent and the number of claims went down by 4.5 percent. The recession was estimated to have reduced costs by 3.8 percent per year through its effect on employment and to have increased costs by 5.6 percent through other effects. The cost reduction came about because the recession reduced employment and changed the mix of employment. However, the researchers note that some changes in the mix of employment were not due to the recession. These reductions in "natural" cost drivers caused by the recession were almost exactly balanced out by increases in other natural cost drivers. Increased wages drove up costs by 1.7 percent and the increased costs of medical services drove up costs by 1.9 percent. The researchers note that assuming the recession did not affect wages or medical costs is "only a reasonable first approximation" and that there is likely some affect of recessions on both.

Besides the effects on employment, the researchers divided the effects of the recession into five types. All of these factors led to cost increases.

1. Increased duration of temporary total disability, 1.8 percent – Most of this growth came from the construction industry, but some came from a few manufacturing industries. Average duration in identified industries rose from 8.8 to 23.0 weeks.
2. Growing medical costs, 1.6 percent – This includes payments for increased medical services, but does not include changes in the price of medical services.
3. Higher permanent partial disability ratings, 0.9 percent – The recession may have led to a doubling of the average disability rating. The researchers found some evidence that the higher ratings in the industries hardest hit by the recession were not related to increased severity of injuries. This could be because of more sympathetic adjudicators. It could also be due to shifting incentives for workers, employers and insurers.
4. Increased claims for occupational disease or cumulative injury, 0.7 percent – The data supports the theory that the "onset of the recession substantially increases occupational disease and cumulative injury cases." The researchers feel the cases are ones that would not have been filed otherwise. Unlike most other such cases, many of these cases did not name a specific problem.
5. Other indemnity benefits, 0.6 percent.

The recession led to a 5.6 percent increase in cost per dollar of payroll. Because of reductions in employment, the recession only caused inflation-adjusted cost per worker to rise by 1.8 percent.

The researchers felt three things might be done to reduce the impacts of recessions on workers' compensation costs. First, "the compensation of claims for 'general deterioration of the body' is an invitation to make claims during tough economic times." Second, the researchers are "tempted to conclude that workers have a strong incentive to use workers' compensation as income support when jobs

¹⁸Gardner, Victor, Telles, and Moss, *Cost drivers in New Jersey*, Workers Compensation Research Institute, 1994.

are not available.” Further, the researchers feel adequate action may not have been taken to counter that incentive. Third, adjudicators may have increased permanent partial disability (PPD) ratings in industries affected by the recession.

Effects of system changes in Massachusetts¹⁹

This study examines the effects of changes to the workers’ compensation in Massachusetts in 1991. The system changes coincided with the recovery from the 1991 recession, so the researchers attempted to separate the effects of the recession from the effects of the system changes.

The researchers concluded the recovery from the recession led to an overall 4.0-percent reduction in costs per year. Cost reductions occurred mainly because of reductions in indemnity benefits. The largest cost savings came in industries where employment was steady or grew slowly. Cost reductions were smaller in industries where employment declined by more than 1.5 percent a year or increased by more than 1.5 percent a year. The researchers felt the thresholds of plus or minus 1.5-percent growth in employment were specific to Massachusetts and to the period studied, and that they might be different in other situations.

The researchers hypothesized that costs rise in recessions because of the pressures on businesses and workers. Businesses must cut workers and they find it more difficult to provide light-duty work. Employees worry about not being able to find work and may also resent employers because of layoffs.

The researchers state that because more experienced workers are retained, the average injury will be more severe. They do not discuss the possibility that this could be partially explained by a reluctance of workers to file minor claims during recessions. This might occur if workers fear they would be laid off if they filed a claim.

When businesses experience rapid growth in employment, a number of factors combine to increase costs. Workers are in greater demand and may feel they can better afford to file a claim and stay away from work until they fully recover. Businesses hire younger and less experienced workers. An increased pace of operations and longer hours may also increase injury rates.

Workers’ compensation costs in six states²⁰

This study focuses on factors driving costs in Florida, Georgia, Illinois, Massachusetts, Michigan and Pennsylvania from 1984 to 1988.

The researchers state that recessions increase back-end cost drivers (i.e., increase the cost per claim) to a greater extent than they increase front-end cost drivers (i.e., increase the number of claims). They state that recessions are “characterized by increased use of the system, longer duration claims, and more frequent and larger lump-sum settlements.” The researchers do not discuss the reason the costs of lump-sum settlements increase. However, it does not seem surprising that workers would have greater incentive to make a quick settlement during a recession, when they likely would have a greater need for money.²¹

The researchers found higher front-end cost growth in the three “rust-belt” states that were recovering from the recession. Higher claims frequency during boom times are explained because (i) the amount of overtime increased, (ii) the workforce becomes less experienced, (iii) workers who have been recently

¹⁹Gardner, Telles, and Moss, *The 1991 reforms in massachusetts: An assessment of impact*, Workers Compensation Research Institute, May 1996.

²⁰Gardner, Victor, Telles, and Moss, *Cost drivers in six states*, Workers Compensation Research Institute, December 1992.

²¹However, this pressure for a quick settlement also could drive down the cost per claim. Insurance companies might be able to exploit a worker’s need for a quick settlement by offering less favorable settlement terms.

recalled from layoffs may need time to relearn safe work routines and (iv) managers may find it hard to give worker adequate training during boom times.

The researchers note declines in manufacturing industries may lead to increases in back-end cost drivers. This would be at least partly due to the fact that when workers in the manufacturing industries are injured, they may have a tough time finding work in another industry at a similar pay rate.

Claim rates in Ontario²²

This study examined the relationship between claim rates and the business cycle in Ontario, Canada. The researchers examined workers' compensation claims for back pain and for sprains and strains in the upper extremities for the years from 1973 to 1993. There were two recessions in Ontario during this period; the unemployment rate peaked at 15 percent in 1982 and at more than 14 percent in 1990 and 1991.

The researchers' graphs show a fairly clear inverse relationship between unemployment and the claim rates. The researchers did not say if they adjusted the injury rates for hours worked. Making this adjustment would weaken the relationship a little, but the basic results would stay the same.²³

One strength of the study is that it includes data from two full business cycles. Another strength is that, because of the Canadian system, the observed relationships were probably not much affected by changes in government policy. A major shortcoming of the study, for someone interested in applying the results to the United States, is that Canada has national health insurance. Because of this, Canadian workers have reduced incentives to file workers' compensation claims for injuries that had allowed them to continue working. In the United States, workers often lose their health insurance when they get laid off and, thus, may file claims for this type of injury when they get laid off. Differences between other aspects of the social safety net in Canada and the United States may present additional problems.

Claim rates in Michigan²⁴

This study discusses the possibility that layoffs lead to a large number of fraudulent workers' compensation claims. Howard says that while many people have the view that fraudulent claims are common, this view is likely distorted because fraud cases usually get much more publicity than other cases.

Howard examines Michigan data from 1984 to 1993. He examines the relationship between the number of unemployed people and (i) workers' compensation litigation petitions and (ii) new workers' compensation claims. He concludes there is no relationship. He also examines the relationship between employment and new workers' compensation claims. Here he finds there is a positive relationship. This provides some evidence that fraud is not a major problem within the workers' compensation system.

Howard's conclusions seem reasonable, but they are not the only reasonable conclusions that can be reached. A positive overall relationship between employment and new claims should be expected – on average, a doubling of employment should lead to a doubling of claims. The more interesting question is whether changing economic circumstances lead workers to file more claims or more expensive claims. About this question, little evidence is provided. There were only two years, 1989 to 1990 and 1990 to 1991, in which employment declined (and unemployment increased). From 1989 to 1990, litigation petitions and new claims both fell. However, from 1990 to 1991, both rose. This discrepancy provides at least some evidence that more claims are filed during a recession.

²²Brooker and Sullivan, "Workers' comp and the business cycle" in *On Workers' Compensation*, November 1994.

²³A 1- or 2-percent decline in hours worked would be consistent with the U.S experience.

²⁴Howard, "Workers' compensation – Myths and reality," in *On Workers' Compensation*, June 1995.

Howard feels that, while overall claims do not increase during recessions, in some cases changes in management or problems with labor relations lead to sharp increases in the number of claims filed for individual firms.

Recessions and medical costs²⁵

This study examines the effects of recessions on medical costs. The researchers state medical costs grow faster during recessions. A 2-percent increase in the unemployment rate leads to a 1-percent increase in medical costs. The researchers feel this increase is likely the result of a change in the rate of use of medical benefits and a change in the mix of claims. If recessions increase the use of workers' compensation in general, then recession should also be expected to increase the use of medical services. This increase could be to establish and maintain entitlement to workers' compensation benefits or could be due to a shift in costs from employer-provided insurance.²⁶ Another factor influencing utilization is that workers with minor injuries may be reluctant to file claims because of fears about losing their job.

Recessions may change the mix of claims and lead to higher costs. This is because younger and less experienced workers tend to be injured more often, but less severely, than older and more experienced workers.

Examining the effects of a 2-percent increase in the unemployment rate across states, the researchers find that in the United States as a whole, medical costs would increase by 1.2 percent. In seven individual states, a 2-percent increase in the unemployment rate led to increases in medical costs of between 0.2 and 3.1 percent. In the United States as a whole, and in three of the individual states, the relationship was significant at a 95-percent confidence level. However, in the four other states, the relationship was much less significant.

Effects of recessions on workers²⁷

This study examined the effects of changes in the workers' compensation system in California on injured workers between 1991 and 1993. The researchers found evidence that economic conditions did affect outcomes for injured workers. Injured workers are likely to have particularly high wage-losses during recessions. This is because during recessions employers may not want to find alternative work for an injured person. Also, employers may have more opportunities to hire workers who are not injured. Nondisabled workers were not affected much by economic conditions. The researchers also found that changes to the workers' compensation system were partially responsible for the better outcomes for injured workers. Severity of injury is controlled for because the researchers felt "claims for less-severe injuries may be more likely with poor economic conditions."

Recessions may lead to increases in workers' compensation benefits by increasing the time it takes for a worker to find a job. Workers may also simply have difficulty finding a job or a recession may reduce the wages of the jobs available to workers. This may increase the duration of use of workers' compensation because of moral hazard. Moral hazard problems also tend to become worse as workers' compensation payments rise.

²⁵Victor and Fleischman, "How choice of provider and recessions affect medical costs in workers' compensation," Workers Compensation Research Institute, June 1990.

²⁶Note that having workers rehabilitate during a recession may be beneficial both to society and to workers. If some people must be unemployed, it seems best they be people who are recovering from injuries.

²⁷Reville, Schoeni, and Martin, *Trends in earnings loss from disabling workplace injuries in California: The role of economic conditions*, prepared for the California Commission on Health and Safety and Workers' Compensation, Rand, 2002.