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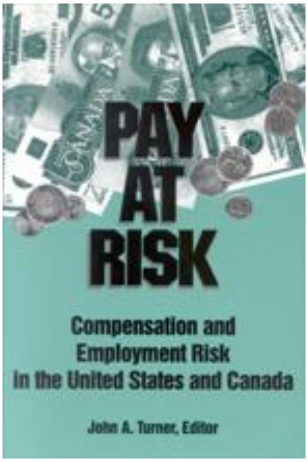

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Douglas E. Hyatt

INTRODUCTION

When workers' compensation was introduced into North America in the early years of the twentieth century, it represented a significant departure for the workplace parties. In the 1800s, workers who sought compensation for injuries suffered in the workplace had to sue their employers in common law courts. Employers received substantial protection in the courts from three lines of defence. The first, called the "doctrine of contributory risk," allowed that, even if a marginal lack of care by the worker in the performance of their duties somehow contributed to the occurrence of the accident, then the worker was ineligible for compensation. Second, the "fellow servant doctrine" protected the employer from liability if the accident was a result of negligence by a fellow worker. Finally, the "doctrine of the assumption of risk" held that workers should reasonably be aware of the risks of a particular job and are presumed to have voluntarily assumed the risk if they accept the offer of employment. Further, workers were presumed to be paid a wage premium for accepting the higher degree of risk of a workplace injury, and the risk premium represented compensation for a potential accident. What data that are available from the before workers' compensation suggest that workers who went to court over work-related injuries experienced very limited success (Fishback and Kantor 1995).

In response to the devastating financial impacts felt by injured workers and their families under this regime, and mounting social unrest associated with other negative outcomes of the industrial revolution, politicians of the day began to enact legislation intended to weaken the defences of employers. As employers started to lose more cases, and as workers began to recognize that tort reforms would be insufficient to resolve the problems of compensation through the courts (e.g., delays, high costs and uncertainty about the outcome), support began to grow for an "automatic" compensation system. Even labor unions, which had traditionally opposed automatic compensation as a challenge to the role of unions to negotiate benefits for workers rather than have them mandated by governments, warmed to more comprehensive reforms.

In 1911, after a number of false starts and a series of constitutional challenges, the modern era of workers' compensation in North America commenced with the passage of the first comprehensive legislation in Wisconsin. Workers' compensation was introduced to Canada in 1914 when the first workers' compensation statute was passed by the Ontario legislature. In order to deflect constitutional challenges, most of which were based upon the argument that workers' compensation deprived employers of their property without due process of law, U.S. legislation contained a number of design features that remain prevalent to this day. These include incomplete coverage of all workers, benefit levels subject to statutory maximums, benefits determined as a function of earnings, and waiting periods following the injury before benefits are payable. Since Canadian workers' compensation legislation was based heavily on U.S. statutes, particularly the Washington State law, many of these features exist across all North American jurisdictions.

In essence, workers' compensation is a mandatory, employer-financed, no-fault insurance scheme that pays the costs of medical treatment, vocational rehabilitation, and indemnity benefits associated with lost earnings due to work-related injuries and diseases. The existence of a workers' compensation system is often heralded as an historic *quid pro quo* between employers and workers. In return for benefits paid with certainty, regardless of fault, workers ceded the right to sue their employers for work-related injuries.

As the nature of the employment relationship, work, and the workplace have changed since the early 1900s, the workers' compensation system has struggled to adapt. Globalization has intensified pressures on product, capital, and labor markets. Together, these related forces have altered the demands on the workers' compensation system. This chapter considers the question of whether the "historic compromise" is eroding, with a particular focus on the extent to which the risks of workplace injuries and illness are being shifted more directly onto workers.

The chapter proceeds as follows. The next section provides a basic overview of workers' compensation in the United States and Canada. The third section reviews the economic theory on the incidence of workers' compensation costs and summarizes the empirical research which suggests that at least part of these costs are passed on to workers in the form of lower wages. The current climate of workers' compensation is then described. The fifth section suggests a number of consequences of workers' compensation reform efforts that have the impact of shifting the financial burden of workplace injuries and illnesses more directly onto individual workers. The chapter concludes with summary comments.

A BRIEF OVERVIEW OF WORKERS' COMPENSATION

Unlike most other industrialized nations which have national programs, legislative authority for workers' compensation is delegated to the state/province (and in some instances, sectoral) level in North America. There are 58 workers' compensation jurisdictions in the United States and 13 in Canada. The basic functions of workers' compensation are the provision of medical rehabilitation, payment of indemnity benefits based upon the severity of the injury, provision of vocational rehabilitation services when appropriate, and the creation of incentives to improve health and safety, usually through experience rating employer workers' compensation insurance premiums. The details of how these functions are accomplished vary considerably across jurisdictions. The description of workers' compensation that follows offers only some generalizations about the dimensions of the system. Readers who are interested in more detail should refer to the Association of Workers' Compensation Boards of Canada (1993), United States Chamber of Commerce (various years), and U.S. Department of Labor (1996, 1997), Spieler (1994), Spieler and Burton (1998), Larson and Larson (1998), and Mont, Burton, and Reno (1999).

Although workers' compensation is a mandated program, the proportion of workers covered by the legislation varies considerably by jurisdiction. In the United States, about 98.6 percent of private sector workers and 99.8 percent of state and local government employees are covered by workers' compensation (Mont, Burton, and Reno 1999). In Canada, approximately 81 percent of workers are covered, ranging from about 70 percent of workers in Ontario to in excess of 95 percent of workers in British Columbia, Quebec, and Yukon. Most jurisdictions specify some exemptions from coverage based on industry and/or occupation. Examples of common exclusions in Canada include the self-employed (or independent contractors), domestics, outworkers (persons who perform their employment tasks in their homes), professional athletes, small firms, casual or seasonal employees, farm laborers, volunteers and nonprofit organizations, independent truckers, teachers, clergy, and, in some jurisdictions, banks and other financial institutions.

Workers' compensation pays three broad types of indemnity benefits—temporary disability benefits, permanent disability benefits, and death benefits. *Temporary disability* benefits compensate workers for loss of employment income until the insured worker fully recovers, until the point in time beyond which the worker is unlikely to experience any significant further recovery, or (in some jurisdictions) until a specific time limit (e.g., 104 weeks) has expired. Most U.S. jurisdictions pay 60–66 percent of (gross) earnings, up to some maximum benefit level. Half a dozen states pay benefits based on net or take-home earnings. In Canada, temporary total disability benefits range from 70 percent of gross earnings to 90 percent of net earnings, also up to some maximum level.

Those workers who do not fully recover their time-of-injury health status but are instead left with a residual physical impairment may be eligible for *permanent disability* benefits. There is considerable variation in the formulas for permanent disability benefits across North American workers' compensation jurisdictions, but they are typically based on lost earnings, functional impairment, or some combination of the two. In some instances, benefits are also paid to indemnify lost retirement income.[1] In the case of Ontario, for example, an additional sum equal to 10 percent of a workers' permanent disability award is deposited into a money purchase pension fund administered by the Workers' Compensation Board. When the worker reaches age 65, the permanent disability benefit ceases, and an annuity is purchased with contributions and accrued returns on account of the worker. The annuity pays a retirement benefit until the worker's death.

Death benefits are paid to the spouses and, in some instances, the dependents of a worker who is fatally injured at work or who dies from a disease recognized by the workers' compensation system as being attributable to work. Benefits can include lump-sum payments, pensions, funeral expenses, and allowances for vocational training and/or counseling for the surviving spouse.

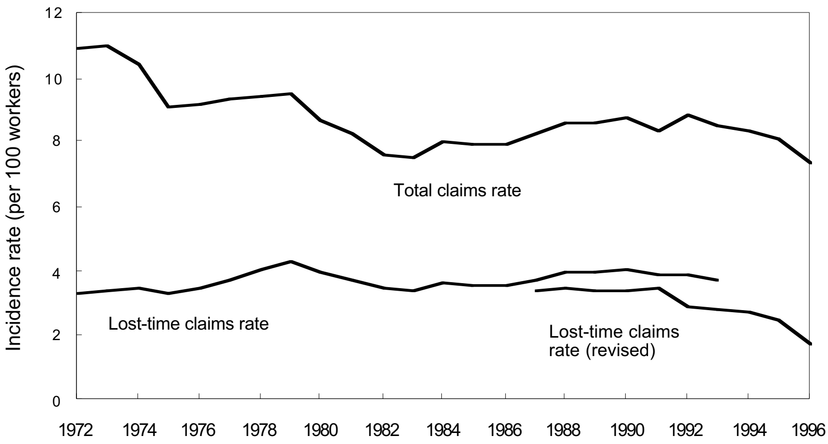
Figures 7.1 and 7.2 show the rates per 100 workers of total and lost-time injuries and illnesses (i.e., injuries and illnesses which require the worker to miss at least one day of work beyond the date of injury) over the period of 1972–1996 for the United States and Canada, respectively. While it is difficult to compare the numbers across countries due to myriad definitional differences, the figures do permit an examination of basic trends. In the United States, after reaching a high of 11 claims per 100 workers in 1973, the total claims rate fell slowly over the next decade. Since 1987, the incidence of claims has fallen in the range of 8.3–8.9 per 100 workers. There was a considerable reduction to 7.4 claims per 100 workers in 1996. The lost-time claims rate in the United States was fairly stable in the 3.5–4.0 range until the 1990s. During the 1990s, the lost-time claims rate trended down.[2]

In Canada, the total claims frequency rate has dropped markedly from the levels experienced in the 1970s and early 1980s, when the rate fell between 10 and 13 per 100 workers. Since 1985, the frequency of claims has fallen from 10.7 per 100 workers to 6.5 per 100 workers in 1996. During the 1985–1996 period, the frequency of lost-time injuries also fell, from 5.7 to 3.1 claims per 100 workers.

In Canada in 1996, 785,666 workers' compensation claims were reported. Of these, 379,554 resulted in the worker losing at least one day of work. In the United States, there were some 6.2 million injuries of which 1.9 million resulted in lost time from work.

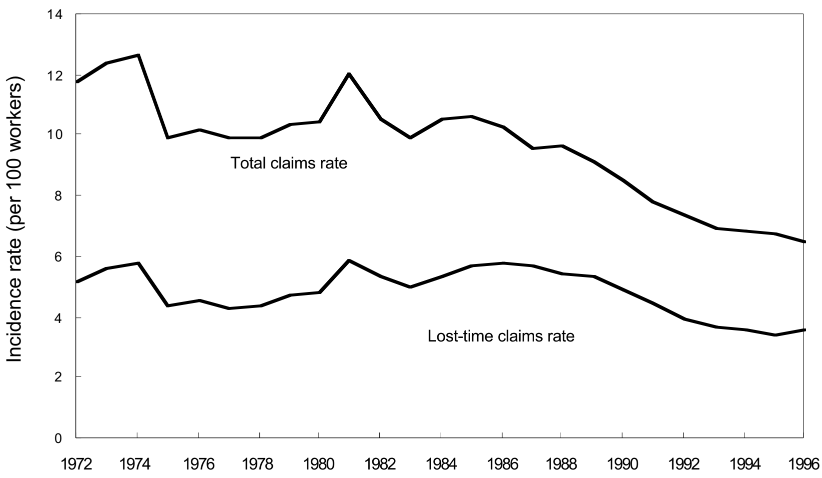
Workers' compensation insurance is provided in Canada through a monopoly provincial or territorial Workers' Compensation Board. In contrast, workers' compensation insurance in the United States is provided through various organizational structures: a monopoly board (six states); combinations of state and private carriers (19 states); and private carriers exclusively (25 states).

Figure 7.1 Workers' Compensation Claims Incidence Rates, United States, 1972–1996 (per 100 workers)



SOURCE: Burton and Schmidle (1996).

Figure 7.2 Workers' Compensation Claims Incidence Rates, Canada, 1972–1996 (per 100 workers),



SOURCE: Human Resources Development Canada (1997).

While the workers' compensation system in North America follows the spirit of the German system that arose under Bismarck in the 1880s, it diverges dramatically in how the costs of the system are divided between workers and employers. The parties shared the costs under the German system, but the employer exclusively finances the system in North America. This allocation is based on the theory that work injuries are a cost of production, so it was argued that the employer should finance the system. In this respect, the North American workers' compensation system reflects the influence of British "friendly societies," which were operated by collectives of workers to help workers who had become injured at work or otherwise. Typically, in exchange for a promise that the workers would not sue over workplace injuries, employers contributed to the friendly societies.

Within a particular jurisdiction, employers pay workers' compensation premiums based on their industry group. There can be variation in the rate paid by a particular employer within an industry group based on claims cost experience, premium discounts, or myriad other factors (see Thomason, Schmidle, and Burton, 2001). In jurisdictions in the United States, competitive pressures among workers' compensation insurance firms may also influence the assessment rate paid by an employer. In most jurisdictions, very large employers can self-insure, and small employers may be allowed to self-insure as a group.

Workers' compensation costs in both Canada and the United States increased rapidly from the 1970s to the 1990s, and it is largely this apparent "crisis" that provided the impetus for recent reforms. In the United States, workers' compensation costs increased from $4.9 billion in 1970 to $60.1 billion in 1993. Since 1993, costs have declined to $55.2 billion in 1996.[3] In Canada, between 1970 and 1992, workers' compensation costs increased from Can.$308 million to Can.$5.3 billion. Costs have since declined to Can.$4.9 billion in 1996.

WHO PAYS FOR WORKPLACE INJURIES?

With access to the courts largely preempted, there exist three mechanisms through which workers can receive compensation for the risk of injuries and illnesses that arise out of, or in the course of, employment: the market mechanism, collective bargaining, and legislation in the form of mandated workers' compensation.

Workers may be compensated for the risk of injury through the wage-setting process in the labor market. Holding all other factors constant, workers in relatively risky jobs will earn greater total wages and fringe benefits than otherwise similar workers who face a lower degree of risk. Fully efficient compensating wage differentials (i.e., differentials that fully compensate the worker for risk and result in socially optimal investments in safety) will arise if workers and firms are aware of workplace risks; product, labor, and other factor markets are perfectly competitive; there are no transactions costs associated with negotiating and enforcing contracts; there exists full experience rating of workers' compensation (or other related) insurance; individual workers value risk at the same rate as society as a whole; and workers are risk neutral and fully mobile.

Even if all of these assumptions do not hold in a particular setting, or hold only approximately, compensating differentials for risk may still arise from labor markets. Viscusi (1993) reviewed the vast empirical literature on compensating differentials for the risk of fatal and nonfatal injuries. In general, labor markets appear generally to give rise to compensating differentials for fatal and nonfatal risk (with some exceptions), but the magnitudes of the risk premiums reported vary substantially from study to study. Since theory gives no guidance on what the magnitude of the efficient compensating differential should be, there is no clear way of determining which of these studies is producing "correct" results. In addition, the literature is replete with criticisms of these studies, most of which consist of highlighting the likelihood that the real world varies in important ways from the theory that generates efficient differentials, as well as a plethora of data and statistical problems. Together, these factors led Ehrenberg (1988) to conclude that "the potential usefulness for public policy in occupational health and safety of estimates of compensating wage differentials for injury risk is limited."

Even where an efficient wage premium is paid that fully compensates workers for the <u>expected</u> costs of a workplace injury, the <u>actual</u> cost of a workplace injury that falls on the worker who is unfortunate enough to suffer one can be substantially greater than the accumulated compensating wages. This injured worker may then be faced with relying on social assistance or some other income support program if one is available. The distaste of society for thrusting workers who suffer injuries, and their families, into poverty was one of the early rationales for an *ex ante* work injury compensation scheme (Larson and Larson 1998: p. 1–5).

Collective bargaining provides another mechanism through which workers may be compensated for risk of workplace injuries (as well as having a potential role in injury prevention). Some empirical evidence (e.g., Viscusi 1980; Olson 1981; Dorsey 1983; Dorsey and Walzer 1983; and Fishback and Kantor 1995) suggests that unionized workers receive higher risk premiums than otherwise similar nonunion workers. In some instances, compensating differentials are formalized in the form of "danger pay" provisions for particular workers who face exposures to risk in excess of those faced by other members of the bargaining unit. Unions may also negotiate insurance benefits that supplement those paid through workers' compensation. In addition, unions can ensure that workers' rights to injury compensation are protected through the grievance process.

However, collective bargaining has its own set of limitations as a mechanism for allocating the costs of work injuries. First, fewer and fewer workers are covered by collective bargaining in the United States and, to a lesser extent, Canada, and far less than a plurality of workers are so covered in both countries. In addition, the existence of a union as a bargaining agent for workers does not ensure that the union will have sufficient bargaining power to secure benefits for work injuries, nor even that a bargained result will be superior to the market outcome.

The weaknesses of the market mechanism and collective bargaining are often cited as rationales for legislation that mandates workers' compensation coverage. As described earlier, workers' compensation is financed, in the first instance, by employers. While the initial incidence of the workers' compensation tax clearly falls on the employer, it is less clear where the ultimate incidence of the cost of the tax lies. The tax could be paid for by the consumers, in the form of higher prices for goods and services. The tax could be shifted to owners or shareholders of the firm in the form of lower profits, or it could be shifted to workers in the form of lower wages and benefits. The expectation that the shift to workers might occur was anticipated by one of the pioneers of workers' compensation in North America, Sir William

Meredith. In his 1913 report that laid the groundwork for the Ontario (Canada) workers' compensation legislation, he noted that

> The burden that the workman is required to bear (as a result of a workplace injury) he cannot shift upon the shoulders of anyone else, but the employer may and no doubt will shift this burden upon the shoulders of the community, or if he has any difficulty in doing that will by reducing the wages of his workmen compel them to bear part of it. (P. 15)

As Chelius and Burton (1994a) carefully described, the ultimate incidence of the workers' compensation tax depends critically on conditions in both labor and product markets. An increase in the cost of production associated with an increase in the workers' compensation tax will induce firms to produce less output. This will have the impact of increasing the price of the good, thereby reducing demand. The extent of the reduction in demand for the good will depend on just how sensitive the demand for the product is to changes in its price. If the demand for the product is price elastic, then small increases in the price will produce disproportionately large reductions in the demand. Similarly, if demand for the good is price inelastic, an increase in the price of the product will result in disproportionately small reductions in demand.

The labor and product markets are inextricably linked. Reductions in demand for the product implies that fewer workers will be required to produce goods, so firms will demand fewer workers and wages will fall. Over time, firms will also adjust their production processes to use fewer workers (who have become more expensive as a result of the workers' compensation tax) and more of other inputs, such as machines, in order to reduce costs. This will also result in a reduction in the demand for workers. Holding the labor supply choices of workers' constant, the more elastic the labor demand curve, the greater will be the reduction in the money wage.

Similarly, holding the elasticity of the labor demand curve constant, the more inelastic the supply of labor, the greater will be the reduction in the money wage paid to workers given a decrease in labor demand. For example, if the labor supply curve were perfectly inelastic (i.e., the supply of workers is invariant to the wage), a reduction in demand would cause the money wage would to fall to a level that fully offsets the cost of the tax. That is, the cost of the tax would be entirely shifted to workers in the form of reduced wages.

Establishing that the elasticities of demand and supply are important for determining the extent to which the costs of workers' compensation are shifted to workers is important because a number of factors can influence these elasticities and these factors can change over time. If one conjectures that costs are increasingly being shifted to workers, it must be established that labor demand has become more elastic over time and/or that labor supply has become more inelastic over time.

Economic theory suggests the conditions under which the labor demand curve can be expected to be relatively elastic. These conditions are commonly termed the Hicks-Marshall laws of derived demand. In particular, labor demand is likely to be relatively elastic when the demand for the product produced by the workers is relatively elastic, when it is technically and/or institutionally easy to substitute other inputs in the production process for labor, when the supply of substitute inputs in inelastic, and, generally, when labor costs are a relatively large component of the total costs of production.

It should also be noted that if workers actually value the workers' compensation component of their pay package—that is, they value workers' compensation insurance more than the cost equivalent paid in money wages—workers will increase their supply of labor at all wage rates and accept more of the cost of providing the benefit.

There has been considerable interest in determining the ultimate incidence of workers' compensation payroll taxes because understanding the true cost incidence of the tax permits policymakers to determine the extent to which changes in the costs of workers' compensation programs will influence the competitiveness of firms and the financial well-being of both injured and uninjured workers. Of particular interest to researchers are the issues of the existence and extent of the workers' compensation tax pass-back to workers and the mechanism through which workers' compensation, and more generally the risk of injury, affects wages. With respect to the latter issue, where *ex post* compensation for workplace injuries exists (as is the case with workers' compensation), *ex ante* compensation in the form of compensating wage differentials should be lower than would exist in the absence of employer-sponsored accident insurance.

There have been a number of studies examining the impact of workers' compensation benefits on wages and other fringe benefits. Of these studies, the more recent works by Viscusi and Moore (1987), Moore and Viscusi (1990), Gruber and Krueger (1991), and Fishback and Kantor (1995) are of particular significance because they address many of the important measurement and methodological problems arising in the earlier pioneering studies.[4] Some Canadian evidence on this issue comes from Vaillancourt and Marceau (1990).

Viscusi and Moore (1987) estimated a model that included a workers' compensation benefit measure which varied across jurisdictions and across individuals within a given workers' compensation jurisdiction, according to whether the individual's benefit would be subject to statutorily defined minimum or maximum benefit levels. Viscusi and Moore also explicitly accounted for the favorable tax treatment of workers' compensation benefits. The generosity of workers' compensation benefits was measured by the proportion of earnings replaced by workers' compensation, after applying appropriate statistical procedures to address the endogeneity of the replacement rate and the wage rate.

They estimated a hedonic wage equation on the annual rate of lost workday injuries and illnesses as well as the annual rate of all injuries and illness (including those for which no workdays were lost), a binary measure indicating whether the worker reported the belief that their job exposed them to physical dangers or unhealthy conditions, and a number of other socioeconomic variables. The model was estimated on 485 nonfarm, non-self-employed, household heads that worked at least 20 hours per week. The sample was drawn from the 1977 Quality of Employment Survey, which contained information on 1976 work experience. In order to ensure that "wage differentials were not contaminated by hours effects" (p. 253), they estimated the model on hourly wages.

A number of equations were estimated on both the log and level of hourly wages. Viscusi and Moore argued that, since workers' compensation will affect wages only when the level of risk is greater than zero, the replacement rate should be interacted with the accident rate variables. In general, they found that the inclusion of the replacement rate on its own resulted in more precise parameter estimates on the risk variables, but it did not alter their magnitudes. However, when the replacement rate was entered interactively with the risk variables, the risk coefficients generally increased in magnitude. In this framework, the replacement rate/risk interaction variables were generally negative and significant, suggesting that the costs of workers' compensation are at least partially paid in the form of lower wages.

Gruber and Krueger (1991) motivated their investigation of the incidence of workers' compensation costs by citing the inconsistent results of the studies that have attempted to measure wage-fringe benefit trade-offs in general. They suggested that a potential cause of these confounding results may lie in the fact that many studies of mandated insurance rely on small degrees of interjurisdictional or intertemporal variation to identify a trade-off. They argued that any effect may be lost by omitted cross-state factors, offering union power as an example of such an omitted variable.

The authors estimated a panel model of wages, controlling for fixed jurisdictional (state) and time effects. To ensure high degrees of cross-sectional and intertemporal variation, they used data from five high-risk industries (truck driving, carpentry, plumbing, gas station attending, and nonprofessional hospital employment). The data were taken from the Current Population Surveys of 1979, 1980, 1981, 1987, and 1989. Their workers' compensation cost variable was the employer's assessment rate per $100 of payroll. They found a statistically significant negative trade-off only in the case of the truck driver subsample. A negative trade-off in the pooled subsample was found only when state dummy variables and state dummies interacted with occupation dummies were included in the regression. They estimated that 86.5 percent of workers' compensation cost increases were passed on to workers in the form of lower wages. Using data from an employer survey, the authors also found a small but statistically insignificant negative employment effect associated with increased workers' compensation benefits.

In an important study, Fishback and Kantor (1995) used historical data from relatively dangerous industries (coal, lumber and building trades) from the early 1900s, during which time workers' compensation statutes were being enacted in the United States, to examine the extent to which the costs of workers' compensation was ultimately passed back to workers wages. Their careful study revealed that, in general, workers paid for at least the costs of expected benefits from the workers' compensation system and, in some instances, even appear to have paid for the entire costs of providing the workers compensation insurance (i.e., the expected benefits plus all of the costs of providing coverage, such as administration, insurance industry profits, and so forth). They also found that workers in the heavily unionized building trades sector paid a lower share of the costs of workers' compensation than did workers who were not unionized.

Vaillancourt and Marceau (1990) showed evidence for Canada that the incidence of workers' compensation payroll taxes may be different than that of other types of payroll taxes. They argued that, when workers' compensation payroll taxes increase because an underlying condition at work has deteriorated (such as increased risk of injury or disease), then the tax increase may be coincident with a reduction in labor supply as relatively risk averse workers leave that particular labor market. As a result, the ultimate shifting of the tax is not as straightforward as would be the case when an increase in the payroll tax merely initiates a reduction in labor demand by firms. Their estimation results suggest that about 85 percent of workers' compensation payroll taxes are shifted back to wages.

Taken together, these studies demonstrate a negative relationship between wages and workers' compensation benefits. The reduction in wages per dollar of workers' compensation costs is somewhere between 50 cents and a dollar, with some consensus that about 80–85 percent of costs are passed back to workers.[5] Also, as Moore and Viscusi (1990, p.23) asserted, the studies to date have established that, "wage-risk differentials would be much higher in the absence of workers' compensation, as workers would demand more *ex ante* compensation for exposure to risk in the absence of *ex post* guarantees."

Thus, increases in the costs of workers' compensation associated with either increased risk of injury or disease, improved benefit generosity, or broader application of compensation to previously uncovered injuries or diseases are borne, to a large extent, by workers. It is conceivable that, to the extent that product markets have become more competitive (i.e., product demand curves and therefore labor demand curves have become more price elastic), the pressure to shift a greater amount of the costs of workplace injuries to workers is intensifying.

Wages, workers' compensation benefits, and risk of injury are all interrelated. Understanding the interrelations is essential for formulating policy designed at reducing the costs of workplace injuries. If reductions in the costs of injuries are due to reductions in one of the dimensions of generosity of workers' compensation, without any true reduction in the costs of injuries, then the likely outcome will be an increase in compensating wage differentials to cover the uninsured risk. Also, the costs of injuries to workers who are unable to obtain compensating wages will fall on to either other social safety nets (e.g., Social Security Disability Insurance [SSDI] or Canada Pension Plan [CPP] Disability Insurance in Canada) or workers and/or their families. In other words, there will be no "real resource savings"; rather, the costs will simply be transferred, and there will be costs associated with effecting the transfer (e.g., litigation).

On the other hand, if the reduction in costs of workers' compensation come as a result of true resource savings, as would be the case if there were improvements in health and safety practices which reduced the risk of injury, then compensating wage differentials would be reduced and the savings from workers' compensation costs would be split between workers and firms. Under this scenario, costs are genuinely reduced and not simply transferred.

THE CURRENT CLIMATE IN WORKERS' COMPENSATION

Workers' compensation legislation in the United States was founded on 11 basic principles (Association of Workers' Compensation Boards of Canada 1993): 1) workers' compensation is the exclusive remedy for workplace injuries; 2) employers fund the system so that the costs of workplace injuries are built into the costs of products and shared by all consumers of those products; 3) fault or negligence is excluded from consideration in determining benefit eligibility; 4) the philosophy of the system is social rather than legalistic, with efforts focused on assisting injured workers; 5) benefits are paid for disability only and not pain and suffering; 6) compensation is to be adequate to ensure the worker will not become a burden to others; 7) benefits cease upon the death of the worker, unless the worker's death was attributable to the work injury; 8) benefits are to be paid through a system guided by insurance principles; 9) some workers are exempt from coverage, where such coverage was impractical; 10) premiums are experience rated; and 11) state agencies, government departments, and courts monitor the system and resolve disputes.

Driven by pressures to control the escalating costs of workers' compensation, there has been a significant withdrawal from the traditional notions of the collective protection of workers from the costs associated with workplace injuries. Thomason, Schmidle, and Burton (2001) have calculated comprehensive indices of the generosity of workers' compensation indemnity benefits for the United States. They found that the generosity of most types of benefits had been increasing until about 1991. However, since that time, a downward trend appears to be emerging in the generosity of temporary total disability benefits and permanent partial disability benefits for relatively minor disabilities. Since these together account for a significant portion of benefit costs, the relative generosity of the workers' compensation system as a whole appears to be declining.

However, reduced benefit generosity is only one mechanism through which the costs of workplace risk can be shifted more directly to workers. Benefit generosity is a function of both the actual dollar value of the benefits and the probability that the injury or illness suffered by the worker will ultimately be compensated. A doubling of the dollar value of benefits may appear to be a considerable increase in generosity but, if the probability of the benefit is reduced, then the expected value of the benefit is also reduced. What might reduce the probability of a claim being accepted?

Many of these factors relate to the definition of a compensable injury. Once there is evidence that the accident actually occurred and that the condition(s) from which the worker is suffering can reasonably be attributed to the injury or illness, workers' compensation authorities must determine the answer to the following three questions in order to deem a particular injury or accident compensable: 1) is there an "employer" as defined by the statute, 2) is the worker making the claim a "worker" as defined by the legislation, and 3) did the personal injury arise out of and in the course of employment? The answer to the first question addresses whether the employer is covered by workers' compensation legislation, perhaps for any of the reasons outlined earlier, or if the worker is self-employed and had elected not to purchase workers' compensation insurance. The second question establishes whether the worker had an employment relationship with the employer that entailed workers' compensation coverage. The third question represents a three-part test: the personal injury suffered by the worker has to be an injury or illness covered by the legislation, the injury arises out of employment if the worker was properly performing assigned tasks when the injury occurred, and the injury occurs in the course of employment when it happens on the employers premises during working hours.

Recent workers' compensation reform efforts across North America have contained elements which effectively "redefine" a compensable injury or illness in the following forms:

1) The exclusion of certain types of claims from compensation, such as chronic stress or repetitive strain injuries.

2) Removal of coverage under the legislation—some workers are not covered and others may be increasingly not covered because they are encouraged by employers to become independent contractors or piece workers in response to high workers' compensation costs.

3) Reduction in the amount of time after an injury occurs during which a worker can file a claim. For some injuries and many illnesses there can be a considerable latency period between the time of the accident and when the disorder is manifest.

Because of the multitude of workers' compensation jurisdictions in North America, and the fact that workers' compensation legislation is frequently amended, it is not practical to enumerate all of the reform efforts. However, it is possible to provide some specific examples from Canada and the United States to demonstrate a more general trend:[6]

- The Province of Ontario introduced legislation that will reduce benefits from 90 percent of net earnings to 85 percent; indexation of benefits will be reduced from the current factor of 100 percent to less than 75 percent of the inflation rate and capped at a maximum annual adjustment of 4 percent, except for the permanently disabled and survivors of deceased workers; entitlement to benefits for stress and repetitive strain injuries will be restricted; and workers will be required to apply for benefits within six months of the date of injury (previously, they could apply at any time).

- Amendments to the Nova Scotia Workers' Compensation Act in 1995 and 1996 included a deductible of two-fifths of the workers' net weekly compensation rate (in effect, a two-day waiting period) for injuries requiring absences from work of less than five weeks; a reduction in the benefit rate for temporary disabilities from 75 percent of gross earnings to 75 percent of net earnings for the first 26 weeks of absence from work, increasing to 85 percent thereafter; integration of employer supplementary benefits with workers' compensation benefits, such that the total of all benefits does not exceed 85 percent of preinjury net earnings (previously 100 percent); and the exclusion of stress as a compensable injury.
- In 1993, Connecticut reduced total and partial disability benefits, as well as fatality benefits, from 80 percent to 75 percent of the worker's average weekly wage after federal and state taxes, and reduced the maximum weekly compensation benefit from 150 percent to 100 percent of the state's average weekly wage.
- The Massachusetts reforms of 1991 reduced benefits to 60 percent of gross wages from 66.6 percent, and substantially reduced the maximum period over which injured workers could collect benefits.
- Effective January 1, 1993, Maine reduced maximum weekly benefits to the higher of $441 or 90 percent of the state average weekly wage, reduced the maximum duration of compensation for minor permanent disabilities from 500 weeks to 260 weeks (while reclassifying many permanent disabilities as minor), and removed inflation adjustment on permanent partial disability and death benefits, among other changes.
- Oregon introduced reforms in 1987 and 1990 that made stricter the definition of compensable injuries and diseases, limited the use of vocational rehabilitation services, limited access to appeals of claims decisions, and limited physician choice and use of particular types of medical rehabilitation services.

- Washington State, in 1985, repealed mandatory vocational rehabilitation and gave employers the option of deducting up to 20 percent of the cost of workers' compensation premiums from employee paychecks.

One possible metric of the effects of workers' compensation reforms is their impact on the proportion of claims that are ultimately determined to be compensable. Following the Oregon reforms, claim denial rates increased from 12.9 percent in 1988 to 28.5 percent in 1991. In Canada, the proportion of claims that ultimately were not compensated, either due to denials or workers abandoning their claims, stood at 4.7 percent in 1973. By 1993, this proportion had increased to 15.6 percent.

Of course, this trend represents real improvement to the extent that the increasing numbers of claims denials and abandonments is due to better administration or detection of fraud. However, to the extent that increased denials and abandonments reflect a move to simply redefining previously costly and difficult-to-adjudicate claims as noncompensable, they represent a tangible measure of shifting the costs of injuries more directly on to individual injured workers.

It is reasonable to suggest that reductions in benefit levels and "redefinitions" of what constitutes a compensable injury are likely to disproportionately affect the contingent workforce. There is evidence that contingent workers are more likely to suffer injuries than are workers in more traditional employment relationships. In noting that temporary workers, business service employment, and production subcontracting accounted for a large (10 percent in 1986) and growing proportion of employment relationships, Rebitzer (1995) examined the extent to which contract employees receive adequate safety training and supervision in the context of the U.S. petrochemical industry. He found that incentives created by the accident liability system encouraged petrochemical plant management to divest responsibility for training and supervision to managers of the subcontracting firm and that this training and supervision is likely to be inferior to that offered by the host company. His empirical investigation suggests that, other factors constant, workers of subcontractors are more likely to experience accidents than workers hired directly by the firm, heightened supervision by the host firm could reduce the accident rates of contract workers (but is unlikely because such supervision could have accident liability consequences for the host firm), and safety training received by contract workers is less effective in improving safety than that received by workers hired directly by the host firm.

Hebdon and Hyatt (1997) showed evidence that unionized part-time workers in Ontario are significantly less likely to pursue formal occupational health and safety complaints or to refuse unsafe work than are otherwise similar full-time workers. To the extent that this reveals some reluctance among part-time workers to exercise their legislated rights to protect themselves from unsafe work environments, these contingent workers may be exposed to greater risks than their full-time counterparts.

The growing use of contingent workers and the increased likelihood of injuries associated with contingent work are being met with a decrease in the likelihood that the injury will be compensated and reductions in benefits for those injuries that are compensated.

Some reforms could conceivably result in certain contingent workers being ineligible for benefits all together. For example, employers may require that workers essentially become self-employed and contract with the employer to provide services. Even though the nature of the employment relationship would have undergone only a cosmetic change, the employer could be absolved of liability for injuries. Workers who take work into their own homes, or who "telecommute," may find that they are ineligible for compensation since their injury did not occur on the employer's premises.

There is also evidence that downsizing may increase the number of accidents. Anderson and Buchholz (1988) found that accident frequency in both the durable goods and nondurable goods manufacturing sectors in the United States increased with the use of overtime and with turnover rates. A recent study by the American Management Association and Cigna (reported in the *Wall Street Journal* [Jeffrey 1996]) found a greater increase in disability claims rates among companies that downsized since 1990 than for firms that did not downsize. To the extent that access to and levels of workers' compensation benefits are being reduced, workers may experience the burden of increased disability costs in addition to the dislocation costs of economic restructuring.

Changes in the nature and content of work expose workers to different risks than was the case when the workers' compensation system was conceived. Traumatic injuries (broken bones and contusions) where there is a direct causal link between the event that caused the injury and the consequences of the injury, common in manufacturing settings, are becoming proportionately less frequent. More common are repetitive strain injuries, such as those commonly associated with computer keyboards, which do not have an immediate onset and may also be influenced or aggravated by nonworkplace factors. The absence of a direct causal link between work and the injury reduces the likelihood that the worker will receive compensation for these types of injuries.

It should be noted that, in addition to changes in workers' compensation legislation, changes in the administration of workers' compensation statutes by insurance companies or workers' compensation authorities can also have the impact of shifting risk back to workers. For example, increases in appeals and delays in processing workers' compensation claims experienced in both the United States and Canada may be evidence of employers' tenacity to reduce costs. It has been suggested that employers have responded to increasing costs by trying to suppress claims by encouraging workers not to report but paying them their salaries or by intimidation and other such strategies. However, the evidence in this area is anecdotal at best. One way that nonreporting pressures on injured workers can show up is through workers' interactions with their (usually) family physicians treating the injuries. Based on a recent survey, the Ontario Medical Association reported that 65 percent of its member physicians had been asked by workers not to report an office visit as being work injury related (the cost of which would be billed to the workers' compensation board and would also have the effect of notifying the workers' compensation authority that an accident had occurred).

In general then, the foci of the reforms have been to tighten entitlement to workers' compensation benefits by precluding certain conditions from coverage or otherwise changing the definition of what constituted a compensable injury or illness, reducing benefit levels (particularly in Canadian jurisdictions), and creating (financial) incentives to reduce the duration on disability benefits and hasten the return to work. These sorts of changes to the workers' compensation system have not been consistent with the changing nature of work and the workplace, and they more directly shift the costs of injuries onto workers.

Burton (1996, p. 5) summarized the recent trends in workers' compensation as follows:

> ". . . as the 1990s have progressed, the statutory protection and actual benefits paid to workers have deteriorated, while the costs for employers have stabilized and the profits for workers' compensation insurers have soared."

It is critical to make two points. First, it does not necessarily follow that because the reforms effectively reduce benefits available to workers, such reforms are always inappropriate. In some instances, there is little evidence that services provided through the workers' compensation system have significant impact on worker well-being—vocational rehabilitation being a (controversial) example. It may also be the case that system utilization was higher than optimal, although the usual metric of this that underlies reform effort is escalating system costs. What has been absent is any convincing evidence of substantial fraud or evidence that workers were being "over-compensated." Second, many of the workers' compensation reform packages in North America have also included components that focus on improving injury prevention and enhanced return-to-work initiatives and incentives. To the extent that these efforts are successful, there is the potential for true resource savings and not simply transfer savings.

WORKERS' COMPENSATION REFORM BACKLASH

The workers' compensation system does not exist in a vacuum. Indeed, the system can be characterized as a balloon—pressure in one spot will cause a compensating "bulge" in another. Public policies to reduce costs to the workers' compensation that do not manifest in real reductions in the frequency and severity of injuries, but rather just reductions in benefit generosity, will have consequences, some of which are beginning to be revealed. Important among these is a breakdown of the historic compromise and a return to tort litigation.

A spate of recent court cases in the United States suggests that where an injury or illness is not covered by workers' compensation legislation, workers may be relieved from the exclusivity of the workers' compensation remedy and be given leave to sue their employers. The basic issue that the courts have been asked to decide is what the exclusivity provision of workers' compensation legislation covers. For example, it is clear that workers not covered by workers' compensation legislation can sue their employers in the event of a workplace injury or illness, but can workers who are covered by the legislation sue their employer if a particular injury or illness is not covered by the legislation? In two important U.S. cases, courts have found that workers can sue under these circumstances.

In *Errand v. Cascade Steel Rolling Mills* (888 P.2d 544 Oregon 1995), the Supreme Court of Oregon reversed a court of appeals decision denying Errand the right to sue his employer for an irritation of the upper respiratory tract as a result of exposure to chemicals in the workplace. The court held that, since Errand's injury was deemed not compensable under Oregon's Workers' Compensation Law, he could bring a civil action against the employer. Originally, the Court of Appeals had held that, "The exclusivity of the Act is not limited to claims that are ultimately determined to be compensable" (*Errand v. Cascade Steel Rolling Mills, Inc*, 126 Or.App. at 453-54, 869 P.2d 358). Before the Supreme Court of Oregon, counsel for Errand argued that since his claim for workers' compensation was denied on the grounds that he had a pre-existing condition and that exposure to chemicals in the workplace was not the "major cause" of his condition, his condition was not subject to the exclusivity of remedy provision.

The court's decision appeared to hinge on whether the exclusivity provisions of the law should be invoked for only those injuries and diseases that are compensable under the law, or whether it should be invoked more broadly as covering all work-related injuries or diseases, whether or not there is sufficient evidence to establish that the worker is entitled to compensation for the injury. The majority of the *Errand* court held that "the exclusivity provision of . . . (the Oregon workers' compensation law) . . . does not provide defendant with immunity to civil claims here, because plaintiff did not have a 'compensable' injury within the meaning of . . . (the Oregon workers' compensation law)."

In *Stratemeyer v. Lincoln County* (915 P.2d 175 Montana 1996), a Montana Sheriff's officer sought leave to sue his employer after his workers' compensation claim for mental injuries suffered upon witnessing the final stages of a suicide was denied on the basis that such injuries were not covered by the Montana Workers' Compensation Act. What was particularly important about this case was that the relevant legislation invoked the exclusivity of the workers' compensation remedy, "for all *employments* covered by the Act . . ." as opposed to injuries covered under the Act, as was the case in Errand. The majority of the Court stated that, "The *quid pro quo* between employers and employees is central to the Act; thus, it is axiomatic that there must be some possibility of recovery by the employee for the compromise to hold." (p. 179) The majority concluded that

> it is unequivocally clear that mental injuries, such as Stratemeyer's, are beyond the scope of coverage of the Workers' Compensation Act. Accordingly, under Lincoln County's theory, employees would have no possibility of recovery for mental injuries and yet the employer would be shielded from all potential liability. If that were the case, the quid pro quo, which is the foundation of the exclusive remedy rule would be eliminated. Such a result would be contrary to the spirit and intent of the Workers' Compensation Act.

The court gave Stratemeyer leave to proceed with a tort claim against Lincoln County.

In Canada, some workers' compensation activists have considered the possibility to mounting a constitutional challenge to the exclusive remedy provisions of workers' compensation, in light of what they view as serious reductions in benefits. At issue is the interpretation of section 15 (1) of the Canadian Charter of Rights and Freedoms, which states, "Every individual is equal before and under the law and has the right to equal benefit of the law without discrimination . . ."

In an important and influential opinion, the Newfoundland Court of Appeal wrestled with the question of whether the exclusivity provision of the workers' compensation statute violated the s.15 protection against discrimination. Section 15, in other situations, had been applied to ensure that otherwise similar persons or groups be similarly treated. The question facing the court was whether exclusivity was discriminatory because some workers would receive lower benefits under workers' compensation than they would from a common law court. The court decided that the statute was not invalidated by this possibility. What is important is how the court came to this decision. Essentially, the court compared the "global advantages" of the statute to the tort actions which the statute precluded. The court noted that, among a number positive aspects, the workers' compensation legislation provided for good medical, lost wage, death, and other benefits, which were paid immediately and not subject to the solvency of the employer. The court also found that awards from common law courts may be superior in some ways, such as increased compensation for non-economic losses, but on balance, workers' compensation was found to be reasonable and fair, and the exclusivity principle was not unconstitutional. In 1989, the Supreme Court of Canada upheld this decision.

However, the court may have left open the possibility that any diminution of protection provided under the workers' compensation system relative to the common law tort system, could change the court's mind about the fairness of the exclusivity provisions of workers' compensation legislation. Continued diminution of workers' compensation benefits may invoke further constitutional challenges in Canada on these grounds.

Of course, the reintroduction of tort liability in the workers' compensation system carries with it great many disadvantages. The uncertainty and delay in the determination of liability and awards, which were features of the era before workers' compensation, are likely to resurface. To the extent that workers' compensation programs operate concurrently with tort liability for work-related injuries and illness, it is reasonable to expect that workers' compensation benefits, other fringe benefits, or wages will also be reduced in response to the increased costs of employment introduced by the return to tort. In addition, the parties may play the workers' compensation system and the tort system against each other as leverage to either securing an award or reducing the size of an award. For example, workers may file both a workers' compensation claim and a tort suit in the hope that the tort suit will preempt employer opposition to a workers' compensation claim (even though opposition to the claim may be warranted). On the other side of the coin, employers might introduce delay into the workers' compensation claims adjudication process, through a series of appeals, in order to induce workers into accepting a smaller tort award.

As described earlier, there has been an increase in the proportion of workers' compensation claims that have either been denied or abandoned. It would be useful to know whether workers whose claims were denied ultimately sought and received assistance from other social support programs, such as public disability pensions or social assistance. Unfortunately, few sources of data can address this question directly. Nonetheless, the reduction in the proportion of ultimately accepted workers' compensation claims roughly coincides with a doubling in the cost of Canada Pension Plan (CPP) disability pension expenditures (the Canadian equivalent to SSDI in the United States) over the period 1987–1994. Further, the Chief Actuary for Canada notes in the *Fifteenth Actuarial Report on the Canada Pension Plan* (1995, p. 58), ". . . musculoskeletal and mental cases have been subject to somewhat higher than average increases." While this information does not prove any causal relationship, it does suggest that a more careful examination of these trends is warranted.

Finally, the costs of accidents must be fully reflected in the price of the good to ensure that the social optimal price reflects the danger to workers of producing the good. An important efficiency problem arises when the "correct" cost of accidents is not assessed to the employer—experience-rating incentives to improve safety are diminished, product prices are suboptimally low, profits are inefficiently high, and workers are exposed to inefficiently high levels of risk.

CONCLUDING REMARKS

Escalating costs in the workers' compensation programs across North America has engendered significant policy responses. While the theory and evidence summarized in the third section of this chapter demonstrated that workers have traditionally borne the costs of workers' compensation through smaller pay packets, this indirect method of cost shifting may take time to effect. Many of the recent workers' compensation legislative reforms have been "redistributive" in nature, largely in the direction of individual workers assuming a greater direct burden of the costs of workplace injuries and illnesses.

Reforms to the workers' compensation system do not occur in a vacuum. Delisting coverage of particular injuries or illnesses may result in a return to tort remedies and undermine the historic compromise of workers' compensation. In addition, to the extent that the workers' compensation system successfully reduces costs by lowering benefits and removing coverage, these costs are likely to be transferred to other social programs, other forms of private insurance, and on to injured workers and their families.

Certainly efficiency problems are created when the costs of injuries and illness are misassigned. A coordinated effort among administrators of government programs, insurers, workers, and employers to effect the correct allocation of costs is an essential, but practically difficult, endeavour. Most importantly, the surest way to reduce the real resource costs of workplace injuries and illness is through initiatives that reduce their incidence.

Notes

1. For an excellent review of permanent disability compensation schemes under workers' compensation, see Berkowitz and Burton (1987).
2. The discontinuity in the lost-time series for the United States is the result of a methodological change by the Social Security Administration, which collects and reports these data.
3. For an informative discussion regarding trends in workers' compensation costs and benefits in the United States, see Spieler and Burton (1998).
4. Some of the earlier studies include Arnould and Nichols (1983), Dorsey (1983), Dorsey and Walzer (1983), Butler (1983), and Ruser (1985). For a more complete review of this literature, see Chelius and Burton (1994b).
5. There is some evidence that unionized workers appear to have not experienced the same degree of cost shifting as nonunion workers (see, in particular, Dorsey and Walzer 1983 and Fishback and Kantor 1995).
6. It should be noted that many of the legislative reforms cited below were also accompanied by some improvements, such as increases in earnings ceilings, limited reemployment rights, and other changes. However, since the general purpose of many reforms is to address a perceived financial crisis, it is assumed that changes bringing about reductions in pay-outs are of paramount importance in the total reform packages.

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