

## I. WORKERS' COMPENSATION AND ACCIDENT COSTS

Workers' compensation laws in each state require employers to provide cash benefits, medical care and rehabilitation services to their workers for injury or illness arising out of or in the course of employment. Provision of coverage is mandatory in 48 states. In the other 2 states, New Jersey and Texas, employers opting out of the workers' compensation system forgo their right to common defenses against negligence, and their potential liability is not limited as it is for employers choosing coverage. As a consequence, relatively few employers opt out of the workers' compensation system.

To meet their obligation to provide insurance coverage for their workers, firms can either self-insure (if they are large enough to qualify for self-insurance in their states), in which case they retain the risk, or they can buy insurance to cover their claims, in which case they transfer the risk to an insurance company. In six states (Nevada, North Dakota, Ohio, Washington, West Virginia, and Wyoming), those who do not self-insure must buy their insurance from a state "monopoly" fund, as private carriers are not allowed to sell insurance. In 18 other states, state insurance funds compete with private carriers for workers' compensation business.

Most workplace injuries are relatively minor, and workers receive medical care only. Indeed, about four-fifths of all claims are for medical care only with no lost time payments. Medical care only claims account for only about 6 percent of total payments made in workers' compensation. However, medical care benefits associated with lost time claims are very significant, accounting for slightly less than half of the benefits paid out to injured workers. The other half is for disability benefit income. These disability (or lost time) payments are known as indemnity payments in the insurance field since workers' compensation "indemnifies," or "compensates for loss" (lost wages). Each state establishes its own waiting period, usually 3 to 7 days, during which the worker receives no indemnity payments. If lost work time extends beyond the state's waiting period, the initial indemnity payment is known as a temporary total disability payment. About three quarters of those receiving any indemnity payment receive temporary total disability payments only as the injuries leave effectively no residual impairment. Temporary total disability claims would typically include such injuries as a simple fracture or laceration.

Even though most lost time claims are temporary total disability claims, such claims account for only about one fifth of total workers' compensation costs. The most significant cost category are the permanent partial claims, which leave some residual impairment. These are claims for which the worker is judged to be able to return to work, but with reduced functional capacity. Amputations, loss of sight, loss of hearing, and chronic back pain fall into this category. Among the permanent partial injury, the single most significant claim category is low back pain. This accounts for about a third of workers' compensation costs.

The "no-fault" tradeoff in workers' compensation is: employers provide insurance coverage in exchange for which employees agree to forego their rights to sue when such injuries occur. The cash payment for lost wages (known as the indemnity payment in workers' compensation) is not "full" in the sense of replacing all lost wages. Typically,

two-thirds of weekly wages are replaced for those whose wages are between a specific minimum and maximum amount. These minimums and maximums, as well as the waiting periods, are determined separately in each state. Most workers are not fully compensated for the wage loss they experience when they are injured, both because of the limited reimbursement for wage loss, and because benefits don't even start until a waiting period has expired. The waiting period in Texas, for example, is 7 days long. So for the first week after the injury, the worker receives no lost time workers' compensation benefits. Even after this period is over, the typical worker receives even less than two-thirds of their loss wages.

The waiting period, as well as the nominal two-thirds replacement rate, are both partial insurance mechanisms instituted to control moral hazard in workers' compensation. While there is value to the risk averse worker in having the insurance coverage (and this increases societal well-being), moral hazard problems associated with the insurance coverage may partially offset the advantage of the insurance (as it lowers societal well-being by misallocating resources). Balancing out the costs and benefits of the provisions of workers' compensation law so as to minimize overall system costs (including, of course, injured workers' lost wages and disutility from being injured) is a primary objective of workers' compensation laws. Accident costs include the following:

1. losses suffered by the victims of accidents, both monetary losses (in particular, loss of income, medical expenses, rehabilitation expenses) and non-monetary losses (i.e., pain and suffering, loss of enjoyment of life, etc);
2. the effect of the accident on workplace productivity (the production process may slow down or stop because of the injury, skilled labor that is difficult to replace may be unavailable because of the injury, etc.);
3. costs incurred to prevent accidents, including money spent on accident prevention and output forgone in order to reduce the risk of accidents; and
4. the cost of administering workers' compensation laws, including the costs incurred by all participants in that system.

Many workers' compensation laws and institutions can be viewed as attempts to achieve economic efficiency by minimizing the sum of these costs, as the workers' compensation system has evolved over time. Examples of some of these cost minimizing insurance arrangements include waiting periods, partial reimbursement for wage loss, experience rating of the firm so as to link injury costs with insurance costs.

Cost minimization in the workers' compensation system is complicated since a reduction in one type of cost is often possible only by increasing other types of cost. Cash benefits that replaced all of an injured worker's lost wages would achieve the objective of providing insurance coverage to the risk averse worker, and minimize his wage loss. However, full cash benefits may induce moral hazard behavior for some workers, and affect their incentives to return to work as soon as they were able. Hence, the increase in indemnity payment may also increase the duration of claims, and hence the cost of

insurance and productivity losses. Thus, it is necessary to trade one type of cost off against others.

What all workers' compensation laws do is establish liabilities for workplace accidents affecting employees. The allocation of these liabilities is most efficient when it: a) creates appropriate incentives for those involved in the workers' compensation program, b) allocates the risk to those who are most willing and able to bear the risk, and c) results in lower transactions costs. "Transactions costs" are the resources forgone in order to administer the "liability rules" in workers' compensation. Transactions costs include, therefore, the value of all time and goods devoted to establishing, interpreting, administering and enforcing the (legal, administrative and "common practice") laws. For example, most legal expenses represent transactions costs of administering the system of liability rules. One indication that laws are not only based on efficiency criterion is the substantial variation in statutory benefits between states, even bordering states that are otherwise very similar.

## **II. LIABILITY RULES (WHO BEARS THE RISKS) AFFECT BEHAVIOR**

Whether they are efficient or not, all liability laws allocate specified accident costs. For example, employers are required to provide workers' compensation claimants with two-thirds of their wages lost due to a workplace injury (subject to waiting periods, and state-wide maximum and minimum payments) regardless of fault. But in workers' compensation, the liability is conditional: the injury must be employment related. Specifically, to be compensable the injury must rise out of and in the course of work. This work-related requirement generates most of the legal controversies in workers' compensation: is the back pain or sprained ankle really the result of working at the current worksite? Is a given "cumulative trauma" or mental stress claim really work related?

Not only is there considerable variation in the work-relatedness of certain medical conditions, people also vary in their potential to take action affecting accidents. Workers and firms make decisions, and take action, which affect accident risk. For example, workers may choose not to use safety devices and procedures provided by the employer, and the employer may not choose to purchase safety devices if they do not perceive them to be cost effective.

Sometimes only one party can influence the risk of an accident occurring - a self employed professional working out of their own home controls the accident risk that he faces. In workers' compensation, however, usually both the worker and the firm can take steps to reduce the risk of accident. This situation, known as "bilateral precaution", is the most difficult to address through liability rules. Because both parties can affect risk, and because changes that improve the allocation of risk for one party usually make it worse for the other party, empirical research is necessary in order to help define an optimal workers' compensation policy.

Hence, in some workplaces the employees may be more able to take precautions against accidents than firms. Whether or not they take appropriate precaution will, however, depend on the incentives they have to do so, including costs they bear when they fail to take care. This is one reason that workers' compensation benefits do not fully

replace lost wages. Since a claimant bears some of the lost wage costs, they have greater incentive to take care before an accident occurs, and a greater incentive to return to work once an accident has taken place. Incentives are important because for many workers' compensation claimants return-to-work capability is difficult to observe directly--there is information asymmetry between what the injured worker knows and what the firm knows.

A socially efficient liability law satisfies the marginal-expenditure equals marginal-cost rule. If an additional dollar of safety effort results in more benefits than costs, then the dollar spent increases social welfare. In other words, keep on spending as long as the additional benefits exceed the additional costs. Expenditures on safety precautions should proceed until the additional benefits no longer exceed the additional costs, that is, until the point where additional benefits (or marginal benefits) just equals additional costs (or marginal costs).

The marginal cost equal marginal benefit rule has a corollary: if you can save \$100 in accident costs either by providing safety training at \$75, or better equipment at \$110, then you should provide the safety training since the marginal benefit, namely the \$100 reduction in costs, is greater than the marginal cost (\$75) (while the marginal cost of the equipment is greater than the marginal benefit, and hence should not be employed). The efficient outcome is to use the least cost means available in order to avoid the liability costs. An important economics result, known as the *Coase Theorem* says that if bargaining between the firm and workers was costless and everyone had full information concerning accident risk, then the efficient level of safety would be achieved regardless of liability rules. We illustrate the Coase Theorem with reference to the safety example in Table 1.

**Table 1: Efficient Safety Precautions and the Coase Theorem**

Liability Rule A: worker is liable for accident costs (\$25)

Liability Rule B: firm is liable for accident costs (\$25)

	liability rule A: worker is liable for costs		liability rule B: firm is liable for costs	
<b>CASE:</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>outcomes when:</b>	worker has least cost	firm has least cost	worker has least cost	firm has least cost
worker takes care	\$20	\$30	\$20	\$30
firm provides device	\$30	\$20	\$30	\$20
outcome when no bargaining allowed	worker will take care	no care--accident	no device--accident	firm provides device
outcome when bargaining allowed	bargaining not necessary	worker pays firm between \$20 and \$25 to provide device	firm pays worker between \$20 and \$25 to take care	bargaining not necessary

In Table 1, the effect of different liability arrangements on the optimal provision of safety is examined: in cases 1 and 3 with the worker is the least cost safety provider, and in cases 2 and 4 the firm is the least cost safety provider. Note that for all of the examples in Table 1 it is assumed that taking care on the part of the worker, or providing the safety device on the part of the firm, reduces accident costs equally (by \$25 in either case). Hence, the optimal outcome in case 1 and 3 is to have the worker take care (so the marginal cost of safety prevention is less than the marginal gain); while in cases 2 and 4 the optimal safety outcome is to have the firm provide the safety device.

With or without bargaining, the optimal safety outcome is achieved in cases 1 and 4 because the least cost safety provider happens to also be liable for the accident costs. Without bargaining, the accident would occur in cases 2 and 3, even though it would be possible to (cost) effectively prevent the accident. The problem in cases 2 and 3 is that the party that is liable is not the least cost safety provider: in case 2, for example, the worker is liable for the injury and can only prevent it if he takes care. But in case 2, taking care is more expensive (\$30) to the liable worker than the cost of allowing the accident to occur (\$25). Hence, care is not taken, and the accident occurs. For an analogous reason, the firm does not provide the safety device in Case 3 and the accident occurs, since bargaining between the firm and worker is not allowed.

In the absence of bargaining in case 2 of Table 1, the firm will not install the device and benefit the worker, even though that is the optimal outcome. Actions of one party, that affects the risk environment (and more generally, affects the technological constraints facing the other party) are said to be externalities. A common example of an externality is pollution: those who pollute the Mississippi River in Minnesota affect those downstream who would also like to use the river. In the absence of bargaining, polluters in Minneapolis don't bear the costs of their actions (generate an externality) and hence they pollute too much. In Table 1, the firm generates an "externality" in the sense that it affects the injury costs that the worker faces by not providing the safety device, although the provision of the device is less expensive than having the worker take care.

Bargaining changes the outcomes. In case 2, the worker is liable for \$25 in accident costs, but finds that he cannot cost effectively take care: taking care costs his more than the costs of the accident. However, he could offer the firm \$22 if they installed the safety device. This saves the worker money, because instead of the \$25 in accident costs, the worker now only has to pay the firm \$22 and the accident is prevented. The firm is glad to take the \$22, because that is two dollars more than it costs to provide the safety device. In fact, the worker could offer any amount between \$20 and \$25, and both the worker and the firm would be better off having the worker pay the firm to install the safety device. Moreover, the optimal safety outcome given the costs--namely, the installation of the safety device--would occur, even though the high cost safety provider is liable. The optimal outcome is achieved because the potential benefits of the externality have been internalized to the firm through the workers offer of a \$22 side payment.

Similarly, in case 3, even the high cost provider (the firm) is liable for the accident costs, the firm will pay the worker between \$20 and \$25 in order for the worker to take care. Again, this makes both the firm and the worker better off. Thus, bargaining between the firm and the worker ensures that the optimal result is achieved: the low cost provider prevents the accident. This is the Coase Theorem. Costless bargaining assures

that costs of externalities will be internalized to the appropriate parties, and the optimal outcomes achieved.

The Coase theorem has implications for optimal safety outcomes even where bargaining is so difficult that side deals like those described immediately above cannot be made. Efficient safety outcomes can be achieved by assigning the liability to the party that can prevent accidents at least costs. Pre-workers' compensation liability laws, the common law, has been interpreted to have operated in roughly this way. Under common law, the duty of the employer was to provide their employees the safety that a prudent man would provide. This meant providing appropriate tools for the work, safety rules, and qualified co-workers.

However, even when the employer did not meet these standards, he would not be considered negligent if he could make one of three defenses. These were:

1. *fellow servant defense*--the employer was not liable if the injury was caused by a fellow worker,
2. *assumption of risk defense*--the employer was not liable if the workplace was known to be especially risky, and the worker took a job despite this knowledge, and
3. *contributory negligent defense*--the employer was not liable if the worker could have avoided the consequences of the accident by taking ordinary precautions.

These common law defenses can be viewed as an attempt to assign liability on the basis of the Coasian least cost safety provider rule discussed above. Such an interpretation is offered by Richard Posner (1974):

The fellow-servant rule...provides, in principle at least, a powerful instrument for industrial safety when combined with the rule making the employer liable for injuries inflicted on an employee through the negligence of a fellow employee if the employer was on notice of the fellow employee's habitual neglect or incompetence. The effect of the two rules {the fellow servant rule plus the duty to provide qualified co-workers} is to give employees a strong incentive to report careless fellow workers to their supervisors {since presumably they can do so at less cost}.

Posner argues that the contributory negligence rule more directly encourages those who can most cheaply provide safety with an incentive to do so. He suggests that the assumption of risk rule is to allow those workers with greater tastes for risk the chance to market those tastes.

A substantial downside to the common law environment, however, was that the application of these principles in real life meant that juries were often left with the task of interpreting the law in specific situations. The transactions costs from this system--namely, the resources devoted to resolving legal disputes--were relatively high. To reduce those costs, the "no-fault" tradeoff discussed earlier was established when workers' compensation laws were passed at the beginning of the twentieth century: all medical care and limited, lost-work time disability payments were provided by the firm to

the worker, in exchange for which these payments became the worker's exclusive remedy. That is, a worker could no longer sue the firm for additional payments. The determination of fault was no longer relevant; the accident need only have occurred on the job and be work related. For example, workers would receive roughly two-thirds of their lost wages (subject to a maximum benefit) whether or not they "caused" the accident, but could no longer sue their employer for additional compensation for pain and suffering even if the employer was wholly at fault.

### **III. PASSING THE COSTS ALONG: BENEFIT COSTS AND THE COST OF RISK**

So workers' compensation laws make employers strictly liable (i.e., liable without proof of fault) for all medical costs and some of the lost wage costs associated with workplace accidents. That is, the law assigns the risk and costs of workplace accidents initially to employers. An employer has three ways to satisfy their obligation to provide for workers' compensation coverage: they may self-insure if they are large enough, they may buy insure from private insurance carriers, or they may buy the insurance from a state fund. The cost of the liability is passed on from the firm to the "insurance company" by the insurance contract: the premium on average must be equal to the actuarial cost of the liability, plus administrative expenses.

Since the insurer often has no direct control over the risk, there are a number of mechanisms that have been put in place to give firms incentive to monitor workers' compensation costs. These also were intended to allocate workplace injury costs to the firms that "generated" them. These pricing mechanisms include: 1) partial coverage such as deductible insurance policies, in which the employer pays the first \$250,000 of claims, 2) risk categorization where the employers are partitioned according to their risks, and insurance rates are set within each risk-group based on the groups' historical costs, and 3) experience rating in which an individual firm's insurance premium is adjusted up or down depending on whether their costs are lower or higher than their risk groups' costs. These were discussed briefly in the previous chapter.

Experience rating--required for larger firms--was specifically designed to allocate insurance premium costs to their appropriate risks, but also serve to provide firms with incentives to increase workplace safety as a means of lowering their insurance costs. Experience rating remains controversial with the labor movement. Those in labor believe it provides firms with an incentive not so much to improve safety as it does to fight (legitimate) claims.

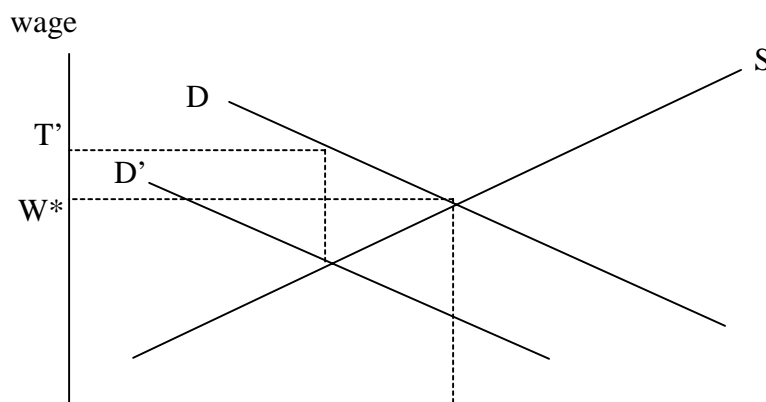
Though the evidence is somewhat mixed, on net it appears that experience rating (and insurance pricing mechanisms in workers' compensation generally) have effectively contributed to greater workplace safety over time (see Durbin and Butler, 1998). Small firms that are not experience rated have insurance premiums that depend only on their group's average costs, and not directly on their own individual safety efforts. Hence, firms that are not experience rated (or who do not self-insure) do not have any safety efforts reflected in their insurance costs.

Besides these three traditional methods for providing incentives to the firms, the insurer may also require additional precautions to be taken by the employer, and condition the firm's insurance premiums on meeting such requirements. For example, it is not uncommon for the insurer to provide some loss prevention services with the workers' compensation insurance policy. They may also have informal medical guidelines or policies that the firm is expected to follow. The insurer may provide safety advice, and may monitor the employer's compliance with these and other practices specified in their insurance policy.

The firm is able to pass some of their workers' compensation liability cost on to employees through lower wages. The argument can be best pictured by considering the determination of wages in the labor market as given in Figure 1. Given the supply and demand conditions in Figure 1, the equilibrium wage for labor is determined to be  $W^*$ , and the equilibrium level of employment level at  $L^*$ . These represent the initial market values for wages and employment without mandated workers' compensation coverage, as determined by the demand ( $D$ ) and supply ( $S$ ) curves. At the "equilibrium," no new workers have an incentive to enter the market, and no old workers have an incentive to leave the market. Likewise, the firm has no incentive to increase or decrease its demand for labor: at the market wage, the value of the last hired worker is just equal to the wage that he is paid.

The mandate to provide workers' compensation insurance initially increases the cost of employing workers. Since the demand curve graphs the highest wage that employers are willing to offer given the number of workers in the market, the mandate will effectively lower the wage offered as the total compensation per worker switches from only wages, to mostly wages and some insurance coverage. Hence, workers' compensation shifts the wage offer "demand" curve from  $D$  to  $D'$ , and the wage and employment levels to  $W'$  and  $L'$  respectively. The vertical distance of the shift (from  $D$  to  $D'$ ) represents the per worker cost of providing the workers' compensation insurance.

The insurance has caused employers to lower the wages they offer to workers since the cost of employing an additional worker has increased by the per worker insurance cost. As the wage offered to workers falls, some workers leave the labor market as indicated by a movement downward along the supply curve. The new wage offered to workers is  $W'$ . At this wage, only  $L'$  workers are looking for work. Since there are fewer workers in the market now, the value of the marginal worker increases and the firm is willing to pay more than formerly. The firm increases its total compensation to workers from  $W^*$  to  $T'$ , but some of that compensation is in the form of insurance premiums for the workers' compensation coverage ( $T' - W'$ ) and some of the compensation is in the form of wages ( $W'$ ). While the wage has fallen from  $W^*$  to  $W'$ , the total compensation paid to each worker--including the insurance premium--has increased from  $W^*$  to  $T'$ .



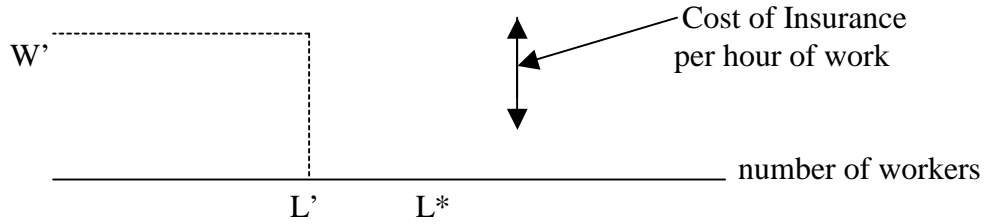
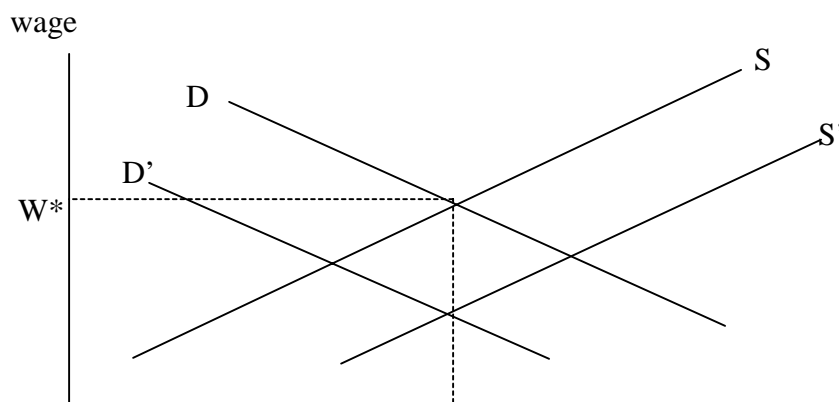


Figure 1

Relative to the initial wage,  $W^*$ , the insurance costs are effectively split between the workers and the firm. The insurance premium per worker is  $T' - W'$ . It is initially paid by the firm as part of the mandate to provide coverage. But the effects of the mandate are to ultimately have this premium paid partially by firms and partially by workers. The workers' compensation premium ( $T' - W'$ ) can be broken into two parts:  $T' - W^*$  is the extra cost of hiring a worker once the mandate is in place, and it is the part of the insurance premium ultimately borne by the firm.  $W^* - W'$  is the reduction in wages due to the mandate, and it is the part of the insurance premium ultimately borne by workers. In Figure 1, these costs are roughly equally split between the firm and the worker.

If workers don't value the insurance coverage that they receive under workers' compensation (suppose that all workers doubt that they will ever be injured, or believe that the firm will deny coverage even if they make a claim), then Figure 1 is the end of the story. The costs are partially passed on to the workers, and the degree that they are passed on depends on the slope of the supply and demand curves and not on who initially pays the insurance premium (which is always the firm in the case of workers' compensation).

But if workers value the coverage, then situation changes. If workers fully value the coverage (so their evaluation just equals the cost of the premium), then we get the result in Figure 2. Here, insurance coverage is valued as highly as wages, so that the supply curve shifts down by exactly the same amount that the demand curve shifted down. The total compensation is  $W^*$ , which consists of the insurance premium  $W^* - W$  that workers like as much as an equal amount of wages, and the net, after insurance premium wage,  $W$ . Employment is unaffected because the workers are essentially agreeing to pay for all of the insurance costs through an equal reduction in their wages: the only thing that has happened is that some of the compensation is now in the form of insurance protection and some is the form of wages. The worker is indifferent between a dollar's worth of insurance coverage and a dollar's worth of wages; both are equally valued.



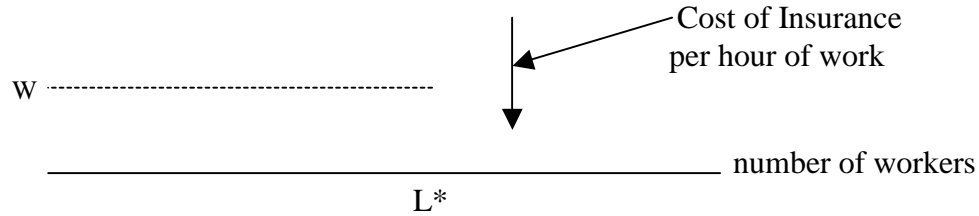


Figure 2

If workers partially value the insurance coverage, but do not value a dollar's worth of insurance coverage as much as a dollar's worth of wages, then we have the case in Figure 3. There is a downward shift in supply, but not as large as the shift in the demand curve because workers don't value the benefits as much as they cost. In this case, there is some loss in employment, but not as great as the case in Figure 1 were workers didn't value the coverage at all. However, in this case, the workers are ultimately paying for most of the cost of the insurance coverage: of the  $T' - W''$  insurance premium, the workers are ultimately paying  $W^* - W''$  whereas the firm is only ultimately paying  $T' - W^*$ . So which of these cases seem to apply to the actual market for wages? The evidence reviewed in Chelius and Burton (1995), though not unambiguous in terms of the magnitude of the effect, suggests that a substantial proportion of the cost of the program is shifted onto the workers.

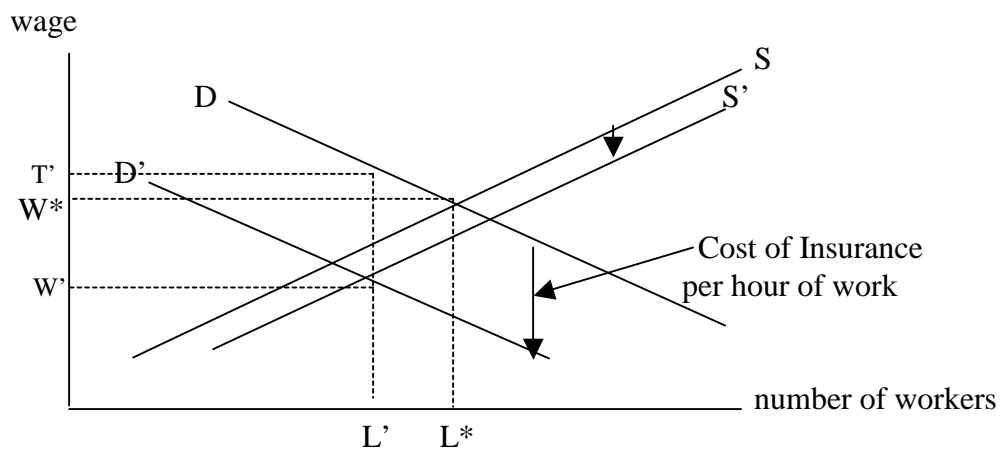


Figure 3

So the costs of the insurance coverage may be at least partially passed on to workers, even if it is always initially paid by the firm. But what about safety? In a competitive market for labor with full information about risks and costs, this ability to pass on some of the workers' compensation costs does not affect the firm's incentives to provide safety, following the same line of argument developed for the Coase Theorem above.

For example, suppose that the firm was able to pass along all the costs of the workers' compensation premium as in Figure 2, but was still the least cost avoider of the injuries. (Suppose that the firm could provide a safety rail that reduced more workers'

compensation costs than an equivalent expenditure by workers on safety equipment and efforts.) Would the firm provide the safety rail? Yes, if the firm were experience rated or self-insured, because it would lower the firms' insurance costs as safety increased. As safety increased, workers' wages, and hence firm's costs, would be lowered.

If the firm is not experience rated, so that its insurance premium is unaffected by the installation of the safety rail, then the "Coase conditions" of costless bargaining are no longer met. The safety rail will not be installed, and the optimal allocation of safety resources would not be achieved. With mandated insurance coverage, either self-insurance, full experience rating, or costless bargaining with all the relevant parties to the insurance contract (including regulators and insurers) are necessary to always achieve the Coase conditions. And under Coase conditions, the firm's incentives to provide safety are reduced only to the extent that risk (rather than cost) is passed on to some other party.

Shifting of costs is not just a one-way street, however. Some of the workers' costs associated with their *residual risk* (not covered by the workers' compensation benefit structure) are shifted back onto the firm. The workers' compensation system is designed so that the workers bear some of the risks of the accident. There is a waiting period during which no lost wage payments are received. Once disability payments begin, only a fraction of their lost wages are reimbursed. And there are no payments for pain or suffering. For the families of a fatally injured worker, the weekly survivor benefits are usually the same or less than benefits paid to a temporarily injured worker, often of limited duration, and frequently offset by social security benefits. For all of these reasons, the worker retains some of the risk of workplace injuries even with workers' compensation.

The lost-wage risk that injured workers retain, after they receive their workers' compensation benefits, varies by state because of the differences in waiting periods, maximum and minimum benefits, and claim duration caps. The risk also varies within a state, from employer to employer. Some workplaces are much safer than other workplaces. Given two otherwise equal employment opportunities, an informed worker would demand higher compensation from the employer at the riskier workplace. This extra pay for extra workplace risk is called the compensating wage premium for risk. There is good evidence that compensating wages for injury risk exists, especially for fatal injury risk, though they may or may not be fully adequate. Since providing a riskier workplace leads to higher wage demands (or a lower quality of worker, or both), the firm has an incentive to reduce accident risk in order to minimize the compensating wage premium. In this sense, some of the cost of the workers' residual risk under the workers' compensation system is passed back to the employer in the form of higher wages.

The workplace risk exposure of workers and the firm affects their behavior. In a fully competitive, fully informed, costless-bargaining Coase world, the initial assignment of liability will not matter in terms of the optimal levels of safety. In this case, the cost effective outcomes are reached because the least cost provider of safety will have incentive to take care, either because they are liable themselves for the risk or because those who are liable will bargain with them to take the appropriate behavior. In the workplace, bargaining costs between workers and firms (who already bargain over wages) may be low enough to achieve an efficient, Coase-outcome. But--especially for medium sized and larger firms--bargaining costs are not insignificant, and may be large enough to

preclude the Coase outcomes. So rather than assign the workplace risks solely to either the firm or the worker, the workers' compensation solution is make both employer and employee bear some of the risk of the accidents, while reducing the "legal, transactions costs" by explicitly indicating which costs are borne by which party, regardless of fault.

#### **IV. Go over Some Research Findings**