SUMMARY

In 1996, the California Commission on Health and Safety and Workers' Compensation began a five-year comprehensive review of workers' compensation permanent partial disability. As part of that review, this report investigates the long-term economic consequences of a disabling injury, the success of return to work, and the adequacy of compensation at *private, self-insured employers* in California. The analysis responds to comments about a 1998 report (Peterson *et al*, 1998) showing that workers injured on the job in 1991 at insured firms in California experienced significant and sustained wage losses as well as low replacement rates over the first five years after injury. An advisory committee to the Commission objected that the results might not apply to self-insured employers, which are larger and more able to accommodate workers with disabilities. Data on self-insured firms were unavailable for the earlier report, but a unique data collection effort and new analysis now confirms earlier findings and extends them to private, self-insured firms.

The main findings of this research are that:

- Permanent partial disability (PPD) claimants at private, self-insured employers in 1991-1995 experienced significant earnings losses over the first five years after injury.
- After injury, PPD claimants at self-insured firms were more likely to continue to work, less likely to drop out or retire, and, if employed, more likely to work at the at-injury employer than their counterparts at insured firms.
- Improved return to work lowered the proportion of earnings lost for injured workers at self-insured firms below levels experienced by workers at insured firms.
- On average, workers at self-insured firms have higher wages. If they are injured, they are more likely to have weekly wage losses that exceed the maximum temporary disability indemnity payment. Consequently, workers' compensation benefits replaced a smaller fraction of losses at self-insured firms (48 percent) than at insured firms (53 percent).
- At both insured and self-insured firms, replacement rates were very low for workers with the lowest indemnity claims (those with the least serious injuries). At the self-insured, claimants with total indemnity below the twentieth percentile had 14 percent of their lost earnings replaced by benefits; at insured firms the replacement rate was 11 percent.
- At both self-insured and insured firms, California workers' compensation benefits for many PPD claimants did not meet the commonly applied standard for adequacy, which is to replace two-thirds of pre-tax earnings losses.

- PPD claimants with high pre-injury earnings and high-indemnity claims experienced large dollar losses that were not compensated by benefits.

UNIQUE DATABASE FOR ESTIMATING LOST WAGES FACILITATES NEW FINDINGS

The data for this report were collected with the assistance of the California Self-Insured Plans (a regulatory organization), the California Self-Insurers Association (a lobbying group), and the Commission on Health and Safety and Workers' Compensation. These organizations helped researchers assemble claims data from 68 private, self-insured employers. The resulting unique database formed a representative sample of data on 1991-96 claims, including benefits incurred, benefits paid, and injury dates. The claims records from this database were then linked to quarterly wage data for the claimants at every employer in California from a database supplied by the California Employment Development Department (EDD).

For our analysis of PPD claimants at *insured* employers, we used 1989-95 claims data from the database maintained by the Workers' Compensation Insurance Ratings Bureau, a private entity responsible for publishing and proposing workers' compensation insurance premium rates.[1] These data were also linked to wage data from EDD.

In order to estimate the wage losses of injured workers, we estimated what they would have earned if they had not been injured. To do this, we examined the earnings of an uninjured control group for each injured worker in our database. The control groups comprised uninjured workers employed by the same employers as the injured workers, earning the same salaries, and having the same tenure with the firm. In this work, earnings losses represent the difference between what an injured worker actually made in the five years after the injury compared to average of what the members of the control group made.

FIRMS THAT SELF-INSURE ARE LARGER AND PAY HIGHER SALARIES THAN INSURED FIRMS

Instead of purchasing insurance for workers' compensation, firms may insure themselves for the costs of indemnity, medical compensation, and vocational rehabilitation following workplace injuries. This option is available to firms that receive consent from the state. To qualify, firms must meet significant financial requirements that demonstrate their ability to bear the full cost of workers' compensation claims.

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[1] These are the same data use in Peterson et al (1998). The later accident years (1993-95) have been updated to reflect up to four years after injury.

Consequently, it is difficult for small, private firms to qualify to self-insure. Of the more than 100,000 employers in California, only about 900 are self-insured. About half of these are private firms, and the other half are public agencies. Most of the largest employers in California and almost all of the public employers are self-insured. In California, private, self-insured firms account for 18 percent of workers' compensation claims and 21 percent of claims at private employers.

The most marked differences between self-insured and insured firms are size and wages. Self-insured firms are about 17 times larger than insured firms, and the pre-injury earnings of claimants are 50 percent higher. Figure S-1 shows the 1993 pre-injury wage distribution of California claimants at self-insured and insured firms by quarterly earnings. The most common quarterly earnings for employees at self-insured firms is about $7,000; at insured firms, the most typical quarterly earnings are around $2,500.

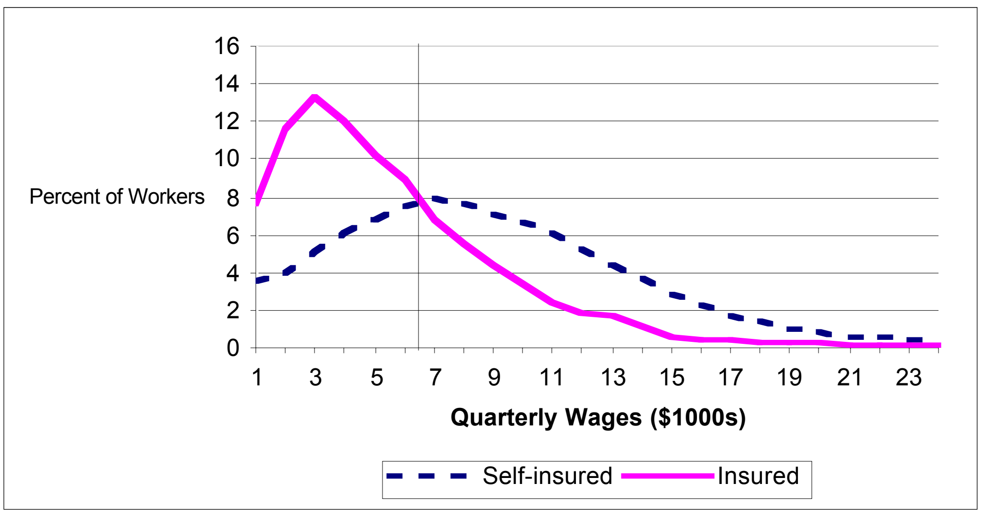

Figure S-1—Wage Distribution, Insured vs. Self-Insured, 1993

Differences in pre-injury earnings mean that more workers injured at self-insured firms face significantly lower income while receiving temporary disability benefits than those at insured firms. The vertical line in Figure S-1 indicates a quarterly income of $6552; above this level, temporary disability payments no longer provide two-thirds replacement of lost wages. While only 30 percent of the insured workers have earnings above this amount, 61 percent of the self-insured do. Since 1993, the indemnity cap has increased to $9552 per quarter. Even so, 39 percent of 1993 self-insured claimants exceeded this higher cap.

SIGNIFICANT PROPORTIONAL EARNINGS LOSSES AT SELF-INSURED FIRMS

We estimated workers' total lost earnings after injury, including wages lost while out of work. The estimates revealed significant and sustained earnings losses for PPD claimants at self-insured firms. For example, in the first quarter after injury, average earnings of workers injured in 1993 dropped 21 percent in comparison to the control group of uninjured workers. Five years after injury, average earnings of injured workers were still significantly lower than the earnings of comparison workers. Over the five years after injury, claimants lost a total of 23 percent of both pre- and post-tax earnings with pre-tax dollar losses averaging $39,500. (See the top panel of Table S-1.)

Table S-1

Earnings Loss and Replacement Rates, Self-Insured and Insured Firms, 1993 Injuries

	5-year before tax	5-year after-tax
Self-Insured Firms		
Earnings Losses	$ 39,500	$ 29,800
Potential Uninjured Earnings	$168,900	$129,100
Total Indemnity	$ 19,100	$ 19,100
Proportional Loss	23%	23%
Replacement Rate	48%	64%
Insured Firms		
Earnings Losses	$ 33,200	$25,600
Potential Uninjured Earnings	$103,500	$80,700
Total Indemnity	$ 17,600	$17,600
Proportional Loss	32%	32%
Replacement Rate	53%	69%

Five years after injury, the proportion of these lost wages replaced by benefits was 48 percent before and 64 percent after tax.[2] After tax replacement rates are larger because workers' compensation indemnity benefits are not taxed. As the years pass, total earnings losses, potential earnings, and total benefits increase. As a result, ten years after their injuries, workers injured at self-insured employers had average total dollar losses of $53,300 after tax and collected benefits that replaced 46 percent of these lost wages.

[2] The replacement rate of lost earnings—the fraction of losses replaced by workers' compensation benefits—includes temporary disability, permanent partial disability, and vocational rehabilitation indemnity benefits (but not the cost of training) as well as the full amounts of compromise and release settlements.

DOLLAR LOSSES LARGER AND REPLACEMENT RATES SMALLER FOR SELF-INSURED CLAIMANTS

A comparison of injured workers at self-insured firms with those at insured firms shows that the two groups experienced a similar pattern of wage loss after injury though workers at insured firms had a larger proportional drop in earnings. Figure S-2 compares the earnings impact of a disabling injury at both types of firms in 1993. It reports earnings as a fraction of comparison workers' earnings. Before their injury, injured workers earned the same as their comparison workers, or 100 percent. After injury, injured workers' earnings from both types of firms fell sharply. Workers at self-insured firms experienced a smaller initial earnings decline than workers at insured firms. However, over time, the differences in proportional earnings loss faded each quarter, and five years after the injury, the two groups both earned about 80 percent of what their comparison workers earned.

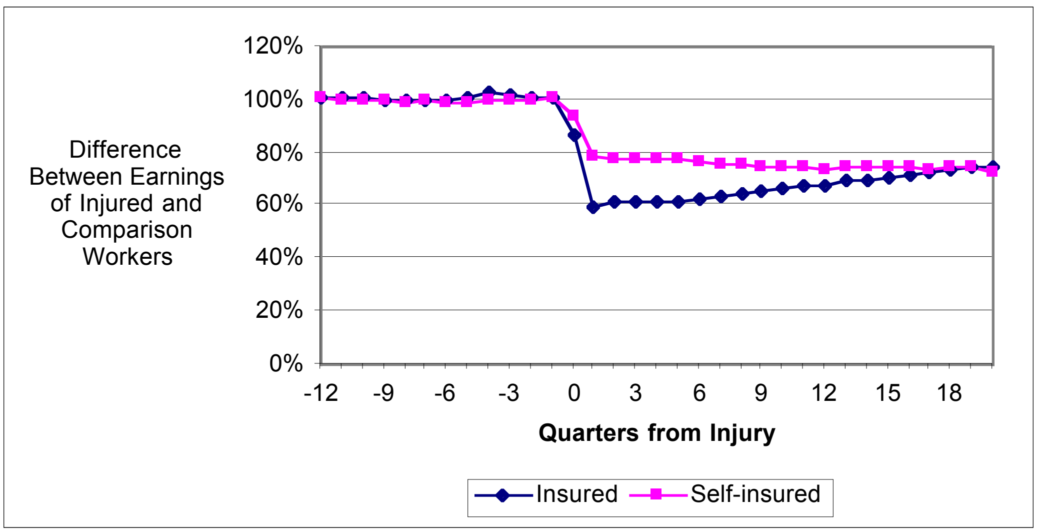

Figure S-2—Ratio of Injured Workers' Earnings to Comparison Workers' Earnings, 1993 Injuries, Self-insured and Insured

Total earnings losses and replacement rates, however, tell a different story. Five years after injury, total losses for injured workers at self-insured firms ($39,500) are *higher* than those at insured firms ($33,200). See Table S-1 (above) for a summary of earnings losses and replacement rates for injured workers at both self-insured and insured firms.

Although lower proportional losses for those at self-insured firms should imply that replacement rates would also be higher, because workers at self-insured employers have higher earnings, they are not. The benefits at self-insured firms are comparable to those at insured firms, and workers at both types of firms are subject to the same maximum indemnity caps. Since total losses are higher at self-insured firms, their replacement rates are lower. In comparison to the five-year replacement rate of 48 percent at self-insured firms, at insured firms the rate is 53 percent. Lower replacement rates for workers at self-insured firms persist when the estimates are extended to 10 years beyond injury.

RETURN TO WORK BETTER AT SELF-INSURED FIRMS

In the first three months after injury, injured workers at self-insured firms spend 3.8 percent more time out of work than their uninjured co-workers. This percentage increases steadily over time until it is 14.4 percent five years after injury. In comparison, injured workers at insured firms spend 18.8 percent more time out of work than their uninjured co-workers during the first three months after injury.

Figure S-3 summarizes the post-injury employment of both self-insured and insured PPD claimants. The figure reports the percentage of workers injured in 1993 employed relative to their comparison workers for the three years before and five years after injury. During the three years before injury, injured workers were as likely to be working as their comparison workers. After injury, injured workers were less likely to be employed for both groups, but workers injured at insured firms experienced more time out of work over the first three to four years. Workers at self-insured firms returned to work sooner and were less likely to experience subsequent time out of work, at least initially. As more time passed, however, differences between the two groups disappeared. After five years, the proportion of injured workers who were working was about the same at both self-insured and insured firms.

Time out of work in the immediate aftermath of an injury explains much of the difference in proportional wage losses between self-insured and insured firms. That is, because workers at insured firms spent more time out of work, their proportional wage losses were higher. Since self-insured employers bear the full cost of a workplace injury, they have incentives to return an injured worker to work as soon as possible. Faster return to work reduces the amount of temporary disability benefits an employer pays. Consequently, self-insured firms are more likely to have return-to-work programs, and because they are bigger, they are more able to offer modified work or hold a position open during a worker's recovery period. Workers at self-insured firms may also be more motivated to return to work because their higher wages make them more likely to exceed the indemnity maximum; they may return to work sooner to curtail wage losses. Thus, while employers seek to reduce time out of work after injury in order to reduce their workers' compensation costs, these results show that both employers and injured workers ultimately benefit from improved return to work.

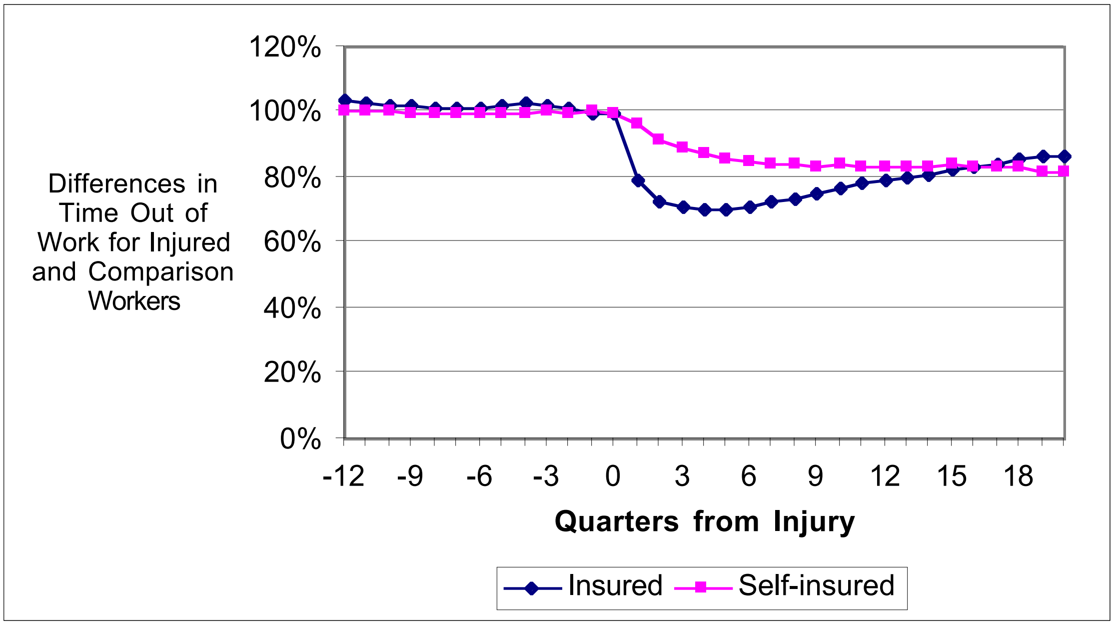

Figure S-3—Ratio of Fraction Injured Workers Working to Fraction of Comparison Workers Working, 1993 Injuries, Self-insured and Insured

The proportion of workers who drop out of the labor force after injury and do not return (over the observed period) is initially much lower at self-insured firms than at insured firms. At the self-insured firms, only 2.4 percent of injured workers have permanently dropped out by nine months after injury, a proportion less than half that of insured firms. As with other initial distinctions between self-insured and insured firms, the differences soften over time. At self-insured firms, the dropout rate increases as the years pass, and it stays unchanged at the insured. Two and a half years after injury, the fraction of workers who have dropped out is relatively equal at both types of firms. This finding suggests that if workers are going to drop out for injury-related reasons, they do so immediately at insured firms. At the self-insured, injured workers are more likely to give return to work a try.

One difference between self-insured and insured firms does result in lasting differences in outcomes for injured workers. If working after injury, self-insured PPD claimants are likely to continue to work at the at-injury employer. If they do so, these employees see their wages quickly recover to the level of comparison workers.

RESULTS SUGGEST PROBLEMS WITH ADEQUACY AND EQUITY OF BENEFITS

One of the key questions motivating workers' compensation research and policy debate in the state of California are whether the current system provides adequate and equitable benefits to injured workers. These questions—and their answers—are complex. First, the questions are complex because "adequacy" and "equity" do not have formal definitions. That is, no statutory language exists to clarify whether "adequacy" means that benefits should provide all injured workers with a designated percentage of their losses or with an income to maintain their pre-injury standard of living. Also, "equity" has a similarly ambiguous meaning. For example, it may be conceived as requiring that all losses should be treated equally by providing benefits in (two-thirds) proportion to losses. Alternatively, the most serious injuries could be compensated the most, with benefits provided in increasing proportions according to the severity of injury. A third possibility is that benefits may function as a safety net, so that a higher proportion of losses are replaced for individuals with lower pre-injury income.

We investigated these issues using multiple indicators so that their complexity could be illuminated. This work provides comparative estimates of proportional wage loss, replacement rates of workers' compensation benefits, and remaining uncompensated wage losses according to both pre-injury earnings and injury severity.

Table S-2 highlights differences in proportional wage loss and replacement rates of workers' compensation benefits among workers at both self-insured and insured firms according to pre-injury wages. The big difference in the earnings of workers at self-insured and insured firms can be observed in the different salary levels represented by earnings quartiles; these figures complement the earnings differences between workers at the two groups of firms previously shown in Figure S-1. The earnings differences are apparent in the five-year potential earnings of uninjured workers (column 4), which shows that higher-paid workers have more to lose. In comparison to potential earnings, indemnity payments through year 5 are similar, though lower-paid workers at insured firms receive lower indemnity payments on average than other injured workers (perhaps because so many are below indemnity caps). The four right-hand columns point out differences in the impact of a workplace injury by proportional wage loss and replacement rates. In general, as earnings increase, both proportional wage losses and replacement rates (before and after taxes) decrease. When analyzed according to pre-injury earnings and replacement rates, the injured workers who fare best in the California system are the lowest-paid workers at insured firms. Those with the lowest replacement rates are the highest-paid workers at both self-insured and insured firms.

Another approach to assessing the adequacy and equity of benefits is to view them according to the severity of injury. Figure S-4 summarizes the wage loss remaining after benefits are paid (uncompensated wage loss) for insured and self-insured claims above and below the median indemnity payment ($13,595), and by pre-injury earnings quartiles shown in Table S-1. The table shows that in three of the four panels, uncompensated losses increase with earnings.

These losses increase significantly for those with high-indemnity claims, and losses are greatest for those with high-indemnity claims and higher earnings.

Table S-2

Earnings Losses and Replacement by Pre-Injury Earnings Quartile, Self-Insured and InsuredEmployers, 1993 Injuries

Pre-Injury Earnings Percentile (within group)	Annual Salary ($)	5-Year Earnings Losses ($)	5-Year Potential Uninjured Earnings ($)	Indemnity Paid by Year 5 ($)	5-Year Prop. Loss (%)	Replacement Rates (%)		
						5-Year Pre-Tax	5-Year After-Tax	10-Year After-Tax
Self-Insured Firms								
0-25	Up to 23,000	31,170	81,136	18,121	38	58	74	49
25-50	23,000-34,000	36,715	130,828	20,348	28	55	73	53
50-75	34,000-48,000	39,751	188,722	19,312	21	49	65	47
75-100	48,000 +	50,481	274,841	18,522	18	37	50	39
Insured Firms								
0-25	Up to 13,000	16,278	49,473	14,703	33	90	112	84
25-50	13,000-21,000	24,818	71,098	16,801	35	68	80	61
50-75	21,000-32,000	38,382	109,466	19,019	35	50	60	48
75-100	32,000 +	53,146	183,745	19,889	29	37	46	41

The exception to this pattern is low-indemnity claims at the self-insured, which shows no particular relationship between uncompensated losses and pre-injury earnings quartile. The outcomes for this group of claimants exemplify the successes of the self-insured firms. Generally, workers in this group—and particularly those in the two highest earnings quartiles—are most likely to recover from their injuries and return to work successfully because they will be the easiest to accommodate.

Also, workers from insured firms with high-indemnity claims and in the lowest earnings quartile are compensated over 100 percent. For these workers, pre-injury earnings are likely to be below the benefit caps. As a result, despite losing about half of their earnings, the indemnity paid over five years after injury exceeds their losses. The uncompensated losses of those with high pre-injury earnings and high-indemnity claims at both self-insured and insured firms are striking. At the self-insured, the top quartile of pre-injury earnings has uncompensated losses of $58,500 over the five years after injury. The comparable number for the insured is $43,000. These two groups reveal the combined weaknesses of the workers' compensation system. As more disabled claimants, they are harder to accommodate, even given the return-to-work programs of the self-insured firms. In addition, as high-earnings claimants, they are subject to indemnity caps and receive benefits no greater than any other earnings category despite considerably higher dollar losses. Outcomes in these groups seem least adequate when measured either by replacement rate or uncompensated losses.

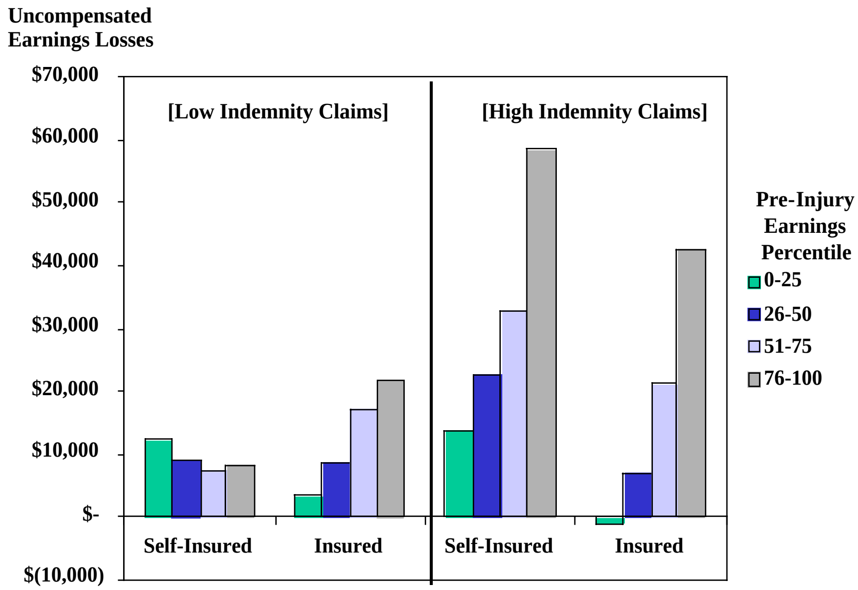

Figure S-4—Uncompensated Wage Losses by Quartile of Pre-Injury Earnings, High-Rated and Low-Rated Claims, 1993 Injuries at Five Years, Pre-tax

Many of the differences observed in proportional losses [between claimants at insured and self-insured firms] can be accounted for by differences in claimants' pre-injury earnings and in firm size at self-insured and insured firms. See Figure S-5. The left-hand bar shows that, on average, insured claimants have proportional wage losses that are 13 percentage points higher than insured claimants'. But when the estimates are adjusted for industry, the self-insured claims are only 8 percent higher (middle bar). When the estimates are adjusted simultaneously for all the distinctive features of self-insured firms—industry, pre-injury earnings, and number of employees—only a 5 percent difference remains between the proportional wage losses of workers at insured and self-insured firms (right-hand bar). Therefore strong conclusions about the advantages to workers of workers' compensation at self-insured firms are unwarranted.

Our results on the adequacy of compensation do not lend themselves to simple solutions. For instance, one solution could be to raise benefits for low-rated claims. While low replacement rates are observed among low-indemnity claims, they do not necessarily imply that uncompensated losses are high in this group. By alternative measures of adequacy, high earnings, low-indemnity claims at the self-insured are well compensated. Another solution is to increase compensation for the high-rated claims. However, once again, by any reasonable measure, the lowest pre-injury earnings, high-indemnity claims at the insured are well compensated, with replacement rates in excess of 100 percent five years after injury. Raising caps to target high-earnings claimants, a third potential solution, would raise benefits for one of the workers' compensation successes—workers with low indemnity and high earnings at the self-insured.

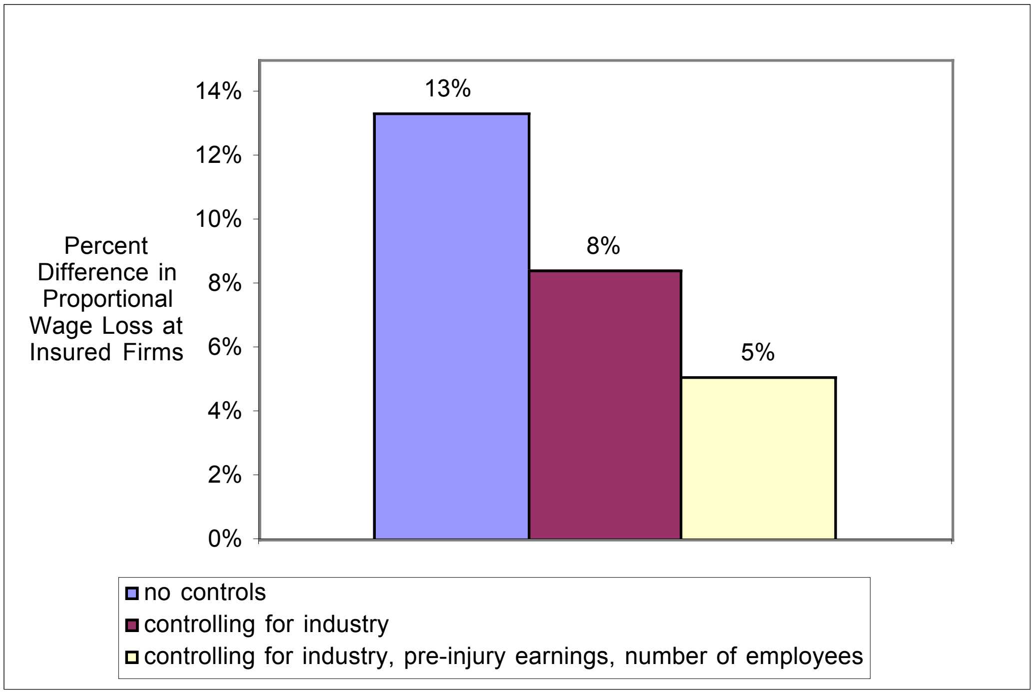

Figure S-5—Difference Between Self-Insured and Insured Proportional Wage Loss Before and After Controlling for Other Characteristics of Claim, 1993-95 Claims

The lack of a simple solution should not stand in the way of addressing clear issues of adequacy (such as high uncompensated losses among high-indemnity, high-wage workers), and equity (such as low replacement rates among the lowest-rated claims, particularly at the insured). But while fine-tuning the compensation may be appropriate in the short run, the lack of obvious policy levers to do so suggests that more fundamental solutions need to be considered. In particular, further effort is required to improve return to work, particularly among smaller firms. In addition, disability ratings, which determine most of the differences in compensation, need to be revised to more accurately target individuals with greater losses. Alternative approaches to setting benefits should be considered, such as increasing benefits for workers who do not receive an offer of return to work. If the resulting approach to setting compensation were more consistent, the amount of litigation might be reduced and confidence in the system might be restored.