C Workers' compensation premiums

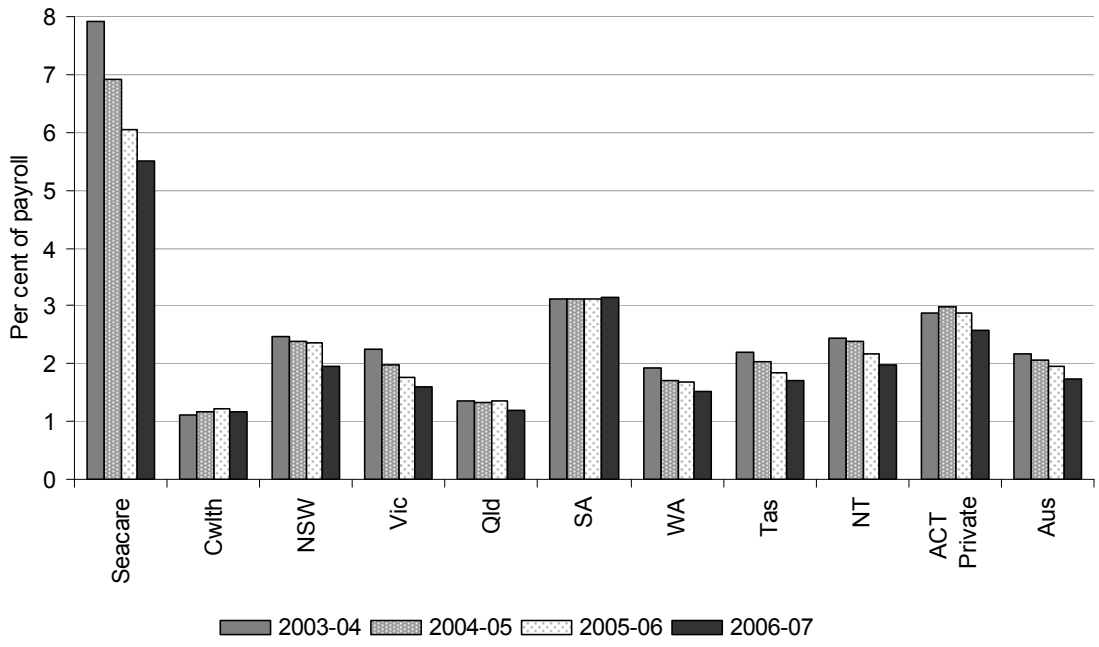
Workers' compensation premiums are paid by businesses to insure themselves against claims that arise from work-related injury or disease. If correct, premiums provide a proxy for the risk of a claimable work-related injury or disease occurring (along with a component which represents a return for the insurer taking on this risk).

However, comparisons of premiums at an individual firm level is difficult and potentially misleading given a range of factors can influence individual premiums. For individual firms, the PC (2004) noted that premiums were dependent on a range of factors such as the size of the firm, past claims experience, and the financial position of the insurer. (During consultations, however, the Commission was informed that for many small businesses, past claims experience does not affect premiums, and instead they are offered set rates depending on the industry in which they operate.)

Despite difficulties in making comparisons at an individual firm level, comparisons have been made by examining average premiums expressed as a percentage of payroll for each jurisdiction (WRMC 2008b). The premiums have been adjusted to reflect some differences in scheme design.[1] Adjusted premiums reveal that there are differences between jurisdictions in the cost of workers' compensation premiums, with those for businesses covered by Seacare and the South Australian system paying the highest rates (figure C.1).

[1] The WRMC (2008b) adjust raw average workers' compensation premiums at the individual jurisdiction level to correct for firms which self insure, differences in employer excesses payable and coverage differences brought about by the treatment of journey claims. See WRMC (2008b), pp. 38-41 for details.

Figure C.1 **Standardised average premium rates**
2003-04 to 2006-07



Data source: WRMC (2008b).

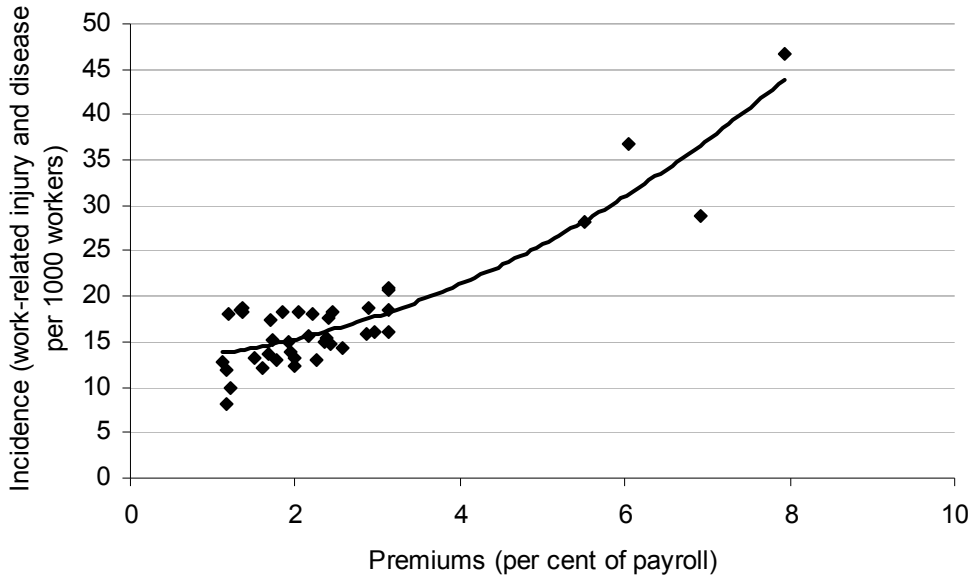
A simple comparison of these adjusted premiums against the incidence of work-related injuries and disease that have resulted in a workers' compensation claim for each jurisdiction shows a high correlation (figure C.2).

Given the focus of occupational health and safety (OHS) regulation is on the prevention of work-related injury and disease in the first instance, workers' compensation premiums can in theory provide an indirect proxy to measure the performance of OHS regulatory regimes. However, it is not possible to differentiate the incentive effects of workers' compensation premiums to reduce work-related injury and disease, and those which are driven by OHS regulation.

Premiums also pick up various other characteristics of individual firms and the workers' compensation regime in place. Further, premiums will also vary by industry as, despite OHS regulations, some industries will have inherently riskier workplaces than others. For example, firms that operate in industries that expose workers to greater risks of injuries, such as construction, are likely to face commensurably higher premiums.

Figure C.2 **Workers' compensation premiums and work-related injury and disease incidence rates for each state and territory**[a]

2003-04 to 2006-07



[a] Only includes injuries and diseases that have resulted in a workers' compensation claim. Also includes premiums and injury and disease rates for Seacare.

Data source: WRMC (2008b).

At a jurisdictional level, average premiums will vary due to characteristics of the compensation scheme, the industry mix, and the distribution of small, medium and large firms. In terms of the workers' compensation scheme, aspects such as the nature of work-related injuries and disease which can result in workers' compensation claims and the maximum time/amount that can be claimed all affect premiums.

Given that premiums are affected by a number of factors, examining changes over time within individual jurisdictions brought about by changes in the OHS regulatory regime would best provide insights into the link between premiums and OHS regulatory performance. However, a consistent time series of suitable length is not available.

Despite this, some of the noted difficulties above can be overcome. Comparing *average* premiums for all firms within a given jurisdiction should remove some of the issues associated with premiums paid by individual firms. For example, it would be expected that:

- differences in premiums due to differences in firm size would be 'averaged' out (this should also remove variations across jurisdictions given all have similar distributions of small, medium and large businesses[2])
- differences in premiums due to past work-related injury and disease performance for individual firms would also be 'averaged' out.

Differences in industry structure at the jurisdiction level, and some differences in workers' compensation schemes (such as coverage factors and the number of self insured firms), could also be partly overcome by:

- comparing *adjusted* premiums which have been adjusted for differences in scheme coverage — such as those reported by the WRMC (2008b), and
- removing industry-specific effects from these adjusted premiums and estimating the differences that are driven by jurisdiction-specific characteristics, including the performance of the OHS regulatory regime in place.

It should be noted, however, that any differences in scheme coverage not adjusted for by the WRMC (2008b) will be captured by the jurisdiction-specific estimates, and thus these estimates may not provide a reliable representation of the performance of the OHS regulatory regime in place. For example, the access to common law provisions, maximum amounts payable and the treatment of disease (such as whether payments are based from point of exposure or point of diagnoses) will all influence the size of premiums to some degree. Further, other aspects such as differences in firm culture and awareness of workers' compensation arrangements can have significant impacts on the observed premium, through affecting whether claims are made by injured parties, and will be picked up by the jurisdiction-specific estimate. If these are significant issues, differences in jurisdiction-specific estimates will not reflect differences in OHS regulatory performance.

Using adjusted premium data from 2003-04 to 2006-07, the jurisdiction-specific estimates were estimated using Tasmania as the base for comparison (see box C.1). The results are shown on figure C.3, with the lines representing the 95 per cent confidence intervals for the jurisdiction-specific estimates.

2 For example, in 2006-07, the Northern Territory was the jurisdiction with the lowest proportion of small businesses — 94 per cent of all businesses were small businesses (less than 20 employees) — compared with to New South Wales with the greatest proportion at 96 per cent of total businesses (ABS *Counts of Australian Businesses, including Entries and Exits, Jun 2003 to Jun 2007*, Cat. no. 8165.0 2007).

Box C.1 **Estimating jurisdiction-specific effects**

A simple regression model was used to estimate the jurisdiction-specific effects on workers' compensation premiums. Adjusted premiums estimated by WRMC (2008b) from 2003-04 to 2006-07 (32 observations) were regressed against a time trend variable, the labour market share of non-service industries (agriculture, mining, manufacturing, construction and electricity, gas, water and waste services) and a dummy variable for each state and territory (Tasmania was used as the base). The composite variable 'non-service' was used instead of individual industry labour market shares as these proved insignificant in earlier formulations of the model. For the ACT, industry composition excluded workers in the government sector as many would be covered by Comcare. Further, several other variables were initially included in the model — average wages, proportion of small and medium enterprises in the economy and whether the insurance scheme was privately underwritten — but were excluded due to insignificance.

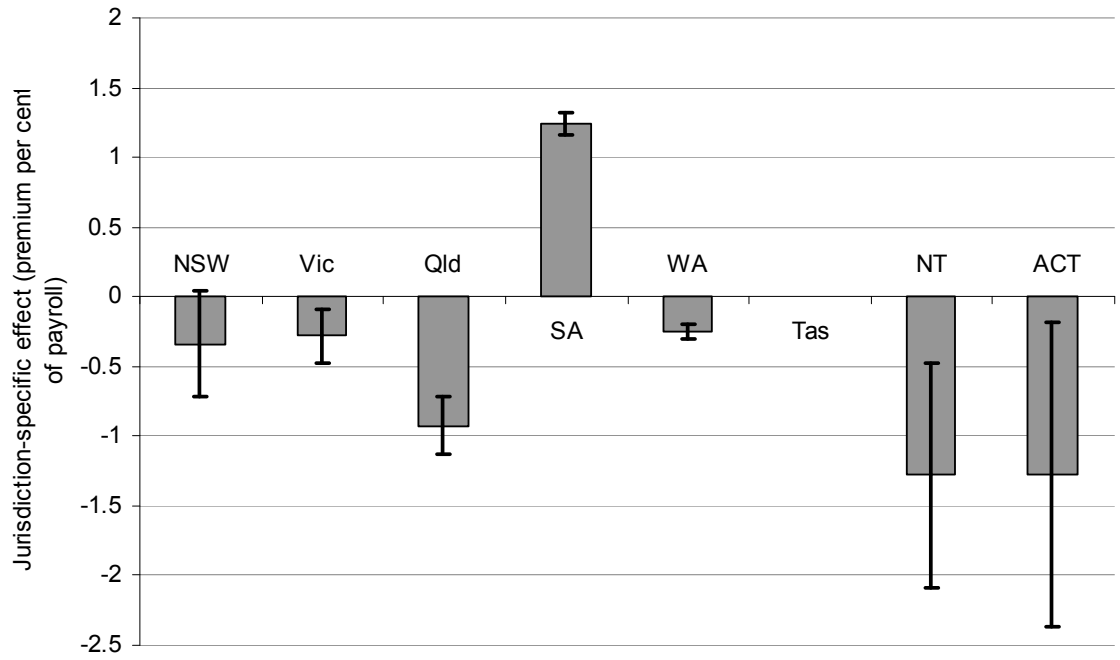
The results, corrected for heteroskedasticity, are in table C.1. All variables except the New South Wales dummy variables were found to be significant at a 5 per cent level of confidence. The R-squared value was 0.98.

Table C.1 **Estimated results**

Variable	*Coefficient*	*Standard error*	*t-statistic*	*P-value*
Time	-0.107	0.018	-5.850	0.000
Non-service	-15.039	3.722	-4.040	0.001
NSW	-0.338	0.183	-1.850	0.078
Vic	-0.278	0.093	-2.990	0.007
Qld	-0.924	0.100	-9.240	0.000
SA	1.241	0.041	30.080	0.000
WA	-0.248	0.023	-10.650	0.000
NT	-1.281	0.387	-3.310	0.003
ACT priv.	-1.273	0.529	-2.410	0.025
Constant	6.356	1.007	6.310	0.000

Bearing in mind the limitations of the comparisons, the results indicate that only South Australia has higher premiums to those paid on average in Tasmania and all other jurisdictions. That is, once industry composition is taken into account, the average workers' compensation premiums paid by South Australian businesses are greater than those paid on average by Tasmanian businesses and those in other states and territories. Average workers' compensation premiums in all other jurisdictions, except New South Wales, were all significantly lower than those in Tasmania once industry composition was taken into account. In New South Wales, average premiums were not significantly different to those in Tasmania.

Figure C.3 **Estimated jurisdiction-specific effects**[a,b]
Average 2003-04 to 2006-07



[a] Jurisdiction-specific effects were estimated using an ordinary least squares regression where adjusted premium were regressed against a time trend, the proportion of the workforce employed outside the service sectors and dummy variables for states and territories. [b] The black bars indicate the 95 per cent confidence intervals.

Data source: PC estimates.

Given the limitations of comparing jurisdiction-specific estimates alone, it is useful to compare these results with other proxies of overall regulatory performance to provide some qualification of the results obtained. For example, 'expected' work-related injury and disease incidence rates — those adjusted for differences in industry structure — can be used to support or discredit the hypothesis that observed differences are driven by differences in OHS regulatory performance. For example, if a particular jurisdiction has a higher than 'expected' rate of work-related injury and disease, and its jurisdiction-specific estimated premium is comparatively higher, it could be argued that these differences are driven by differences in regulatory performance. It should be noted, however, that the incentive effects of higher premiums may induce firms to reduce their OHS risks beyond those required by OHS regulation, and thus the two indicators are likely to be related independently of the performance of the OHS regulatory regime.

Expected work-related injury and disease incident rates were also estimated for the period 2003-04 to 2006-07 (see box C.2), with the difference between the expected and actual rates shown in table C.3.

Box C.2 **Estimating 'expected' incidence rates**

'Expected' incidence rates were estimated using a simple regression model where incidence rates for serious work-related injury and disease that resulted in a workers' compensation claim from 2003-04 to 2006-07 (32 observations) from WRMC (2008b) were regressed against a time trend variable and the proportion of the workforce employed in each sector of the economy (Agriculture, forestry and fishing; Mining; Manufacturing; Electricity, gas, water and waste services; Construction; Wholesale and retail trade and accommodation and food services; Transport, postal and warehousing; a 'service industry' grouping (comprising Information, media and telecommunications; Financial and insurance services; Rental, hiring and real estate services; Professional, scientific and technical services; Administrative and support services; Education and training; Arts and recreational services); Public administration and safety; Health care and social assistance; and, Other services) (ABS *Counts of Australian Businesses, including Entries and Exits, Jun 2003 to Jun 2007*, Cat. no. 8165.0 2009).

The results, corrected for heteroskedasticity, are given in table C.2 (R-squared value of 0.69). The fitted results represent the 'expected' incidence rates.

Table C.2 **Estimated results from the expected incidence rates model**

Variable	Coefficient	Standard error	t-statistic	P-value
Time	-1.36	0.36	-3.47	0.00
Agriculture, forestry and fishing	-349.06	324.11	-1.08	0.29
Mining	-517.92	350.38	-1.48	0.16
Manufacturing, electricity, gas, water and waste services	-433.20	320.94	-1.35	0.19
Construction	-117.35	296.02	-0.40	0.70
Wholesale trade, retail trade, accommodation and food services	-357.67	342.49	-1.04	0.31
Transport, postal and warehousing	-531.22	453.64	-1.17	0.26
Service industries	-448.07	331.54	-1.35	0.19
Public administration and safety	-399.66	319.30	-1.25	0.23
Health care and social assistance	-159.54	310.63	-0.51	0.61
Other services	-325.58	343.30	-0.95	0.35
Constant	381.68	320.45	1.19	0.25

The results indicate that a significant proportion of the variation in incidence rates between jurisdictions are explained by differences in industry composition.

Actual and expected incidence rates differed to the greatest extent for Victoria, South Australia and New South Wales. Differences indicate that for South Australia and to a lesser extent New South Wales, incidence rates are above what it expected given their industry structure (table C.3). Conversely, for Victoria rates are lower than expected. While for South Australia and Victoria, these results are in line with

those obtained in workers' compensation premiums, for the remaining jurisdictions they are not. This suggests that the observed differences in average premiums are driven primarily by other factors apart from OHS regulatory performance (such as scheme design). The industry composition of each jurisdiction explains almost all the variation in observed workplace injury and disease, with very little difference between the expected and actual incidence rates. These results suggest that the OHS outcomes in each state and territory are very similar. Thus it is not likely that differences in OHS outcomes have driven the differences in workers' compensation premiums.

Table C.3 **Actual and estimated expected incidence rates**[a]

Average 2003-04 to 2006-07

	Actual	*Expected*	*Difference*
NSW	16.20	15.61	0.59
Vic	12.63	13.96	-1.34
Qld	18.40	18.01	0.39
SA	19.10	18.09	1.01
WA	14.23	14.40	-0.17
Tas	17.98	18.42	-0.44
NT	14.75	14.89	-0.14
ACT priv.	16.28	16.17	0.11

a Expected incidence rates were estimated by regressing incidence rates for serious work-related injury and disease which resulted in workers' compensation claims against a time trend and the proportion of the workforce employed in various sectors of the economy.

Sources: WRMC (2008b); PC estimates.

Given the results, adjusted workers' compensation premiums do not provide a good indicator of overall OHS regulatory performance. It is likely that the observed differences are driven to a greater extent by those differences in the workers' compensation schemes that are not controlled for, and other jurisdiction specific characteristics such as the reporting culture and access to common law provisions.