



# **Financial incentives in works' compensation: an analysis of the experience-rating program in Ontario, Canada**

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## Introduction

- Experience rating of workers' compensation insurance premiums is a common practice in North America and elsewhere
- One objective is to achieve an equitable distribution of the cost of work-related injury and illness costs across employers
- A second objective is to provide incentives for employers to reduce the incidence of work-related injury and illness (primary prevention) and to reduce the duration of disability (secondary prevention)



## Study objective

- To investigate the incentive for health & safety and cost management at the firm level associated with the degree of experience rating in a retrospective workers' compensation program
- Program underlying the study is the Ontario NEER (New Experimental Experience Rating) program
- Program began in 1984 with forestry, but now includes all sectors other than construction
- NEER is the principal experience rating program in Ontario



## Background on the NEER program

- In the NEER program, firms with claims costs lower than their rate group average receive a rebate on the current year premium
- Conversely, firms with claims costs higher than their rate group average are assigned a surcharge
- A firm's exposure to premium adjustments is weighted by the size of the firm's annual premiums
- The adjustment factor is termed the 'rating factor'

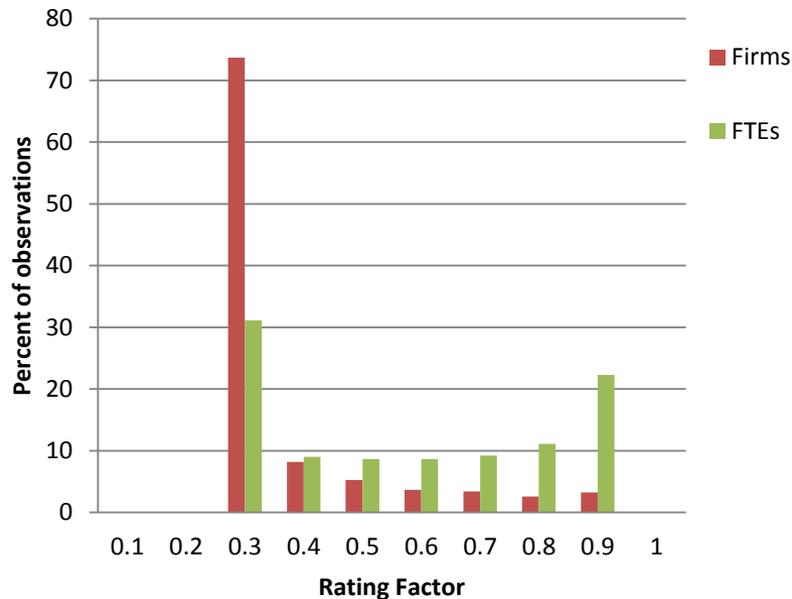


## Rating factor is the key explanatory variable in the study

- **NEER rating factor:**
  - The percentage of financial responsibility a firm has for variations in its actual claims cost from expected
  - Expected costs based on average for the rate group, adjusted for a firm's covered payroll
- **Formula for rebates/surcharges:**
  - $\text{rebate or surcharge} = \text{rating factor} \times (\text{actual costs} - \text{expected costs})$
  - a negative value means a rebate (i.e., actual costs are less than expected costs)
  - a positive value means a surcharge
- **Rating factor values ranged from:**
  - 25% to 90% during the time period 1998-2003
  - 40% to 100% during the time period 2004-2007

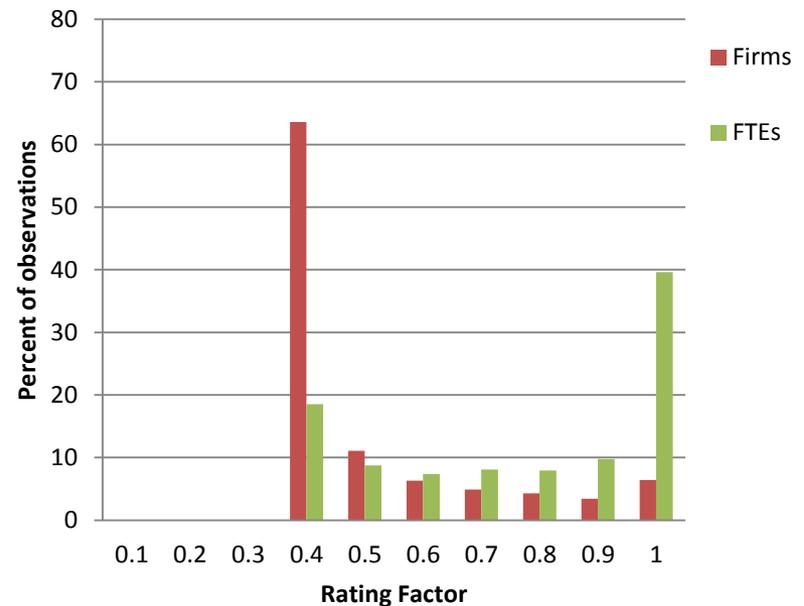
## Distribution of rating factors across firms and FTEs: Calendar year 2000 and 2005

**2000**



Rating Factor, 1998-2003 period

**2005**



Rating Factor, 2004-2007 period



## Methods

- We used regression modeling techniques to identify the effects of the degree of experience rating (as measured by the rating factor) on claim rate outcomes
  - Separate models were run for each claim rate outcome
  - Included consideration of a number of contextual factors
- We used a range of claim rate outcomes at the firm level developed from the claims data that proxy for safety and cost management activities
- Sample included all firms in NEER operating between 1998 to 2007



## Other contextual variables included in the analysis

- **FTE growth:** if growth in full-time equivalent workers (FTE) from last year
- **FTE downsizing:** if downsizing in FTE from last year
- **Unemployment rate:** prime-age sector-specific rate for males 25-50
- **New open:** firm opened in last two years
- **Calendar year:** year of the observation
- **Industry:** forestry, mining, other primary, manufacturing, transportation, retail, government, other services



## Claim rate outcome measures used in models

### Standard measures

- **Total claim rate:** number of claims per 100 FTEs
- **Lost-time claim rate:** number of lost-time claims per 100 FTEs
- **No-lost-time claim rate:** number of no-lost-time claims per 100 FTEs
- **Benefit days rate:** number of days on benefits per 100 FTEs

### Less commonly considered measures

- **Permanent impairment claim rate:** number of permanent impairment claims per 100 FTEs
- **No-lost-time permanent impairment claim rate:** number of no-lost-time permanent impairment claims per 100 FTEs
- **Denied claim rate:** number of denied claims per 100 FTEs
- **Cost relief claim rate:** number of claims with some cost relief per 100 FTEs



## Measuring the association between rating factor and claim rate

- 'Elasticity' measure used to identify the association between the rating factor and claim rate outcome
- Identifies the change in a compensation claim rate associated with a unit change in the level of the rating factor

elasticity sign	interpretation
negative	higher rating factor results in lower claim rate
positive value	higher rating factor results in higher claim rate



## Statistical relationship between rating factor and claim rate outcomes, all NEER employers, 1998-2007

Dependant Variable	Coefficient	Significance level	Elasticity
Total claim rate	-0.023	not significant	-0.009
Lost-time claim rate	-0.361	***	-0.144
No-lost-time claim rate	0.103	***	0.041
Benefit days rate	-0.938	***	-0.374
Permanent impairment claim rate	0.023	not significant	0.009
No-lost-time permanent impairment claim rate	0.861	***	0.343
Denied claim rate	1.099	***	0.438
Cost relief claim rate	0.618	***	0.246

Significant at 1% level \*\*\*



## Summary of Findings

- On average, a higher degree of experience rating (as measured by the rating factor) is not related to total claim rates, negatively related to lost-time claim rates and positively related to no-lost-time claim rates
  - decrease in lost-time claims appears to be offset by increase in no-lost-time claims
- A higher rating factor is associated with fewer days on benefits per FTE
- No association of rating factor with permanent impairment claim rate
- Associating of rating factor with some types of claim rates (no-lost-time permanent impairment rate, denied claim rate, and cost-relief claim rate) might be indicative of cost management practices



## Study Reference

Tompa E, Hogg-Johnson S, Amick B, Wang Y, Shen E, Mustard C, Robson L. (2012). Financial Incentives in Workers' Compensation: An Analysis of the Experience Rating in Ontario Canada. *Policy and Practice in Health and Safety*, Special Issue, 10 (1): 117-137.

## Related Study

Tompa E, Cullen K, McLeod C. (in press). Update on a Systematic Literature Review on the Behavioural Incentives of Experience Rating. *Policy and Practice in Health and Safety*.





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