

EXAM 5, FALL 2013

1. (1.5 points)

An insurance company is considering changing its exposure base for workers compensation from payroll to hours worked. Evaluate the merits of this change based on three different criteria of a good exposure base.

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Exam 5 – Question #1 (example 1)

1. Proportional to expected loss. Hours worked is proportional to expected loss but only in terms of frequency input. Payroll is better at being proportional to loss because it is better related to both frequency and severity because the benefits are based on wages.
2. Practical: well-defined objective and easy to verify. Both payroll and hours worked are objective and well defined, but hours worked is harder to verify than payroll (W-2 tax forms).
3. Historical Precedence. Payroll is already used in the industry while hours worked is not. Changing to hours worked could cause costly changes to IT systems, rating algorithms, and lead to large premium swings.

I would not switch to hours worked because the cost of verification and implementation outweigh any benefits. Payroll is better at meeting all three objectives above.

Exam 5 – Question # 1 (example 2)

A good exposure should fulfill these criteria.

1. Proportional to expected losses. Payroll does a better job for indemnity because the benefit paid is not dependent on how many hours a worker worked. However, hours worked is more related to medical payment because longer work hours gives more time/chance an accident may happen.
2. Practical, easy to obtain, objectively measurable. Payroll is more practical because it is easily verifiable in many financial reports but hours worked is subject to employer manipulation in self reporting.
3. Has historical precedence. Payroll has historically been used so there may be premium swing, changes to rating algorithm and data requirement in systems when we change to hours worked.

Overall, do not recommend the change because partial gain in (1) is not worth the costs in (2) and (3).

**Exam 5 Examiner's Report
Fall 2013**

The pass score for this exam was set at 41 points, or 70.1% of the total available points.

1.

Nearly all candidates were able to name three criteria for an exposure base. When candidates lost points, it was typically due to only evaluating hours worked as an exposure base, without comparison to payroll. Others lost credit for not supporting the reason, or for simply restating the criteria as the reason. For example, with the proportionality criteria, simply stating that 'hours worked is proportional to expected loss' without further explanation was not given full credit. Given justification, candidates could argue for either exposure base for any particular criteria.

2.

Most candidates correctly used the current rates and calculated the on-level premium accurately. For candidates that incorrectly calculated the on-level premium, there were various errors related to using older rates.

About half the candidates calculated the earnings percentage correctly. Some common errors were assuming the latest 2 years exposures were fully earned or assuming the expense fee is fully earned immediately.

Some candidates forced the calculation into a parallelogram method. The question explicitly said to use the extension of exposures method. This would cause significant amount of additional work and would result in lost points since it was not the appropriate method.

3.

Candidates generally answered this question correctly. Some candidates did not provide any explanation of why or how the data aggregation method achieved the objective and in those cases were not afforded full credit.

- a. The majority of candidates provided comprehensive answers for this part.
- b. Some candidates struggled to articulate how the calendar/accident year aggregation method met the objective of matching premium to loss.
- c. The majority of candidates provided comprehensive answers for this part