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# Workers Compensation Ratemaking— An Overview

## Rating Bureau Perspective Jay Rosen, NCCI, Inc.

CAS 2014

Ratemaking and Product Management Seminar  
Washington, DC – April 1, 2014

Washington, DC

Ratemaking and Product Management Seminar - Workers Compensation Ratemaking—An Overview - CAS 2014 Ratemaking and Product Management Seminar - Workers Compensa

## Rating Bureau Perspective Outline

- Overview of Workers Compensation Insurance
- NCCI Filing
- Overall Rate / Loss Cost Level Change
- Classification Rate / Loss Cost Changes

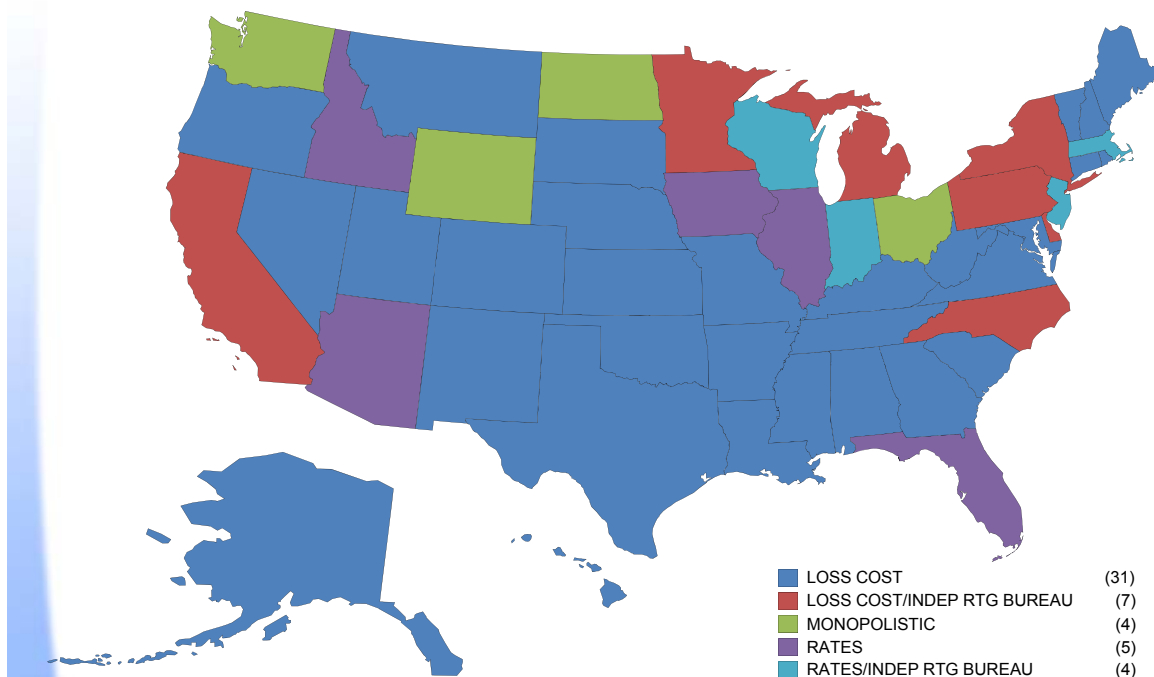
## Loss Costs—What Are They?

In general, a loss cost represents a provision for losses and LAE per \$100 of payroll for each classification

Loss costs are not final rates because they do not include provisions for the remaining expenses (including production expenses, profit and contingencies, etc.) of an insurer

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## Workers Compensation Rating Laws



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# NCCI Workers Compensation Databases

- **Financial Aggregate Calls**
  - Used for aggregate ratemaking
- **WC Statistical Plan (WCSP)**
  - Used for class ratemaking

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## Financial Aggregate Calls

- **Collected annually**
  - Policy and calendar-accident year basis
  - Statewide and assigned risk data
- **Premiums, losses and claim counts**
  - Evaluated as of December 31
- **Purpose**
  - Basis for overall aggregate rate indication
  - Research

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## Ratemaking—The Big Picture

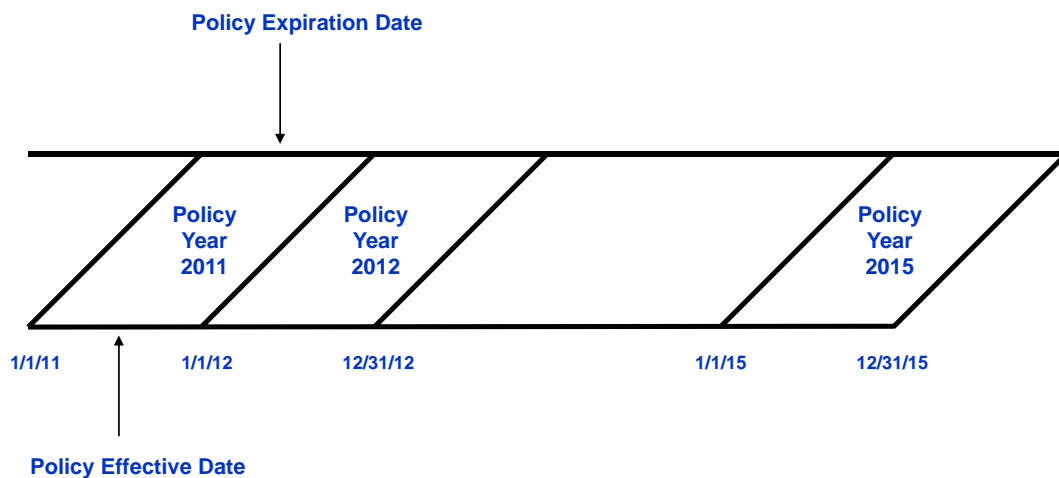
For the upcoming loss cost effective period:

$$\frac{\text{Projected losses \& Loss Adjustment Expense}^*}{\text{Premium at current loss cost level}}$$

= Indicated overall average loss cost level change

\* Not all states include loss adjustment expense in the calculation.

## NCCI Typically Uses the Two Most Recent Policy Years of Data



## Derivation of Projected Losses

Adjustments to reported losses:

- Benefit (loss) on-levels
- Loss development
- Trend

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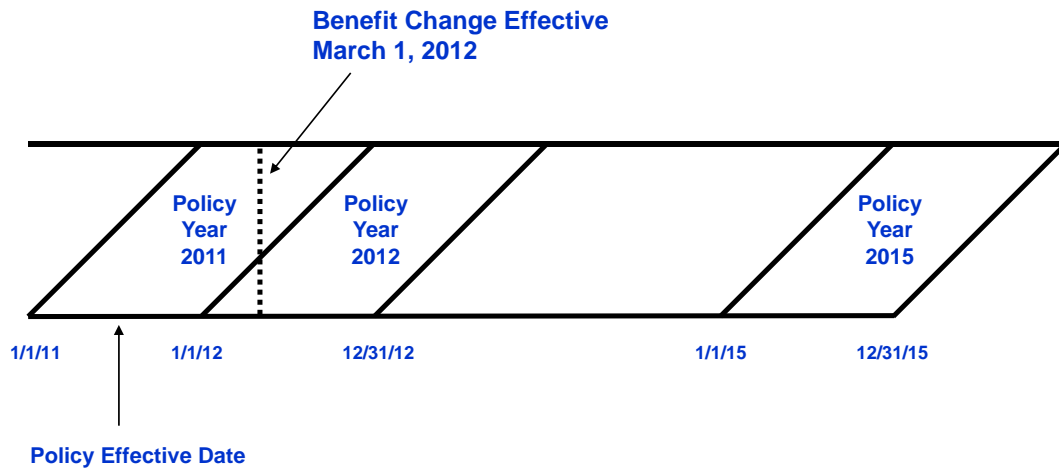
## Benefit Changes

Changes that occur subsequent to the filing data must be reflected:

- Legislated benefit changes
- Court decisions
- New regulations

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## Loss On-level Factors Adjust Data to the Current Benefit Level



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## Loss Development

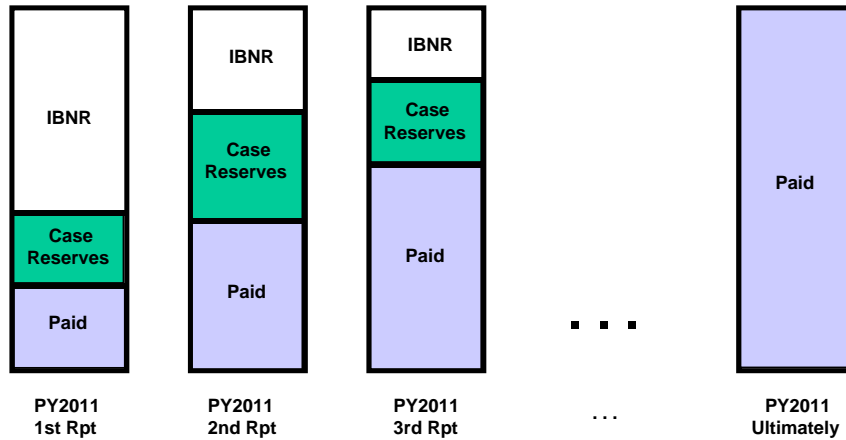
The ultimate cost of a reported claim may not be known for many years. Therefore, an initial estimate of the ultimate settlement value is made at the time the claim is reported.

This estimate may change over time as the prognosis of the injury changes, the expected life-span shortens/lengthens, the cost of medical services increases/decreases, etc.

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## Loss Development Factors Are Used to Estimate Ultimate Liabilities

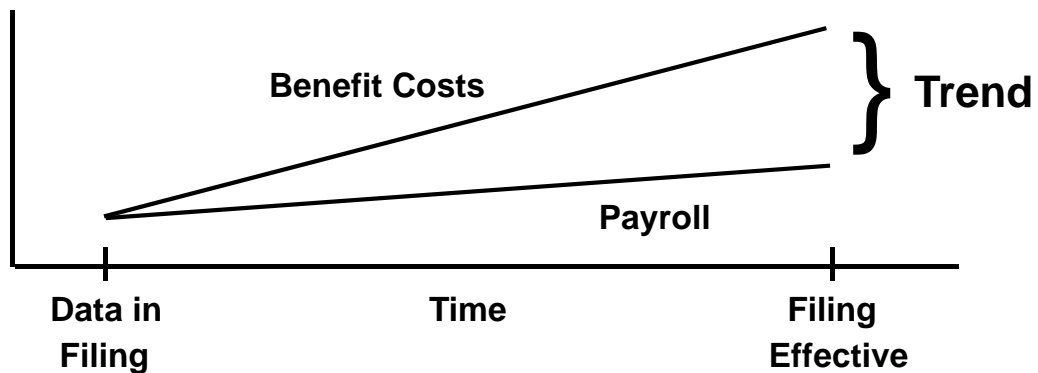
Over time, the % of ultimate losses that are paid increases



IBNR: Reserves set aside for claims that have been Incurred But Not yet Reported.

## Trend

Trend compares movements in indemnity and medical costs to movements in payroll





## Techniques to Measure Trend

- Fitting curves to Historical Loss Ratios
- Use of Frequency and Severity Data
- Econometric Analysis
- Outside Sources (AHA, DOL)

A positive trend assumes that losses are growing faster than wages. A negative trend assumes the opposite.

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## Derivation of Premium at Current Loss Cost Level

Adjustments to reported financial data premium:

- Premium on-levels
- Policy year premium development

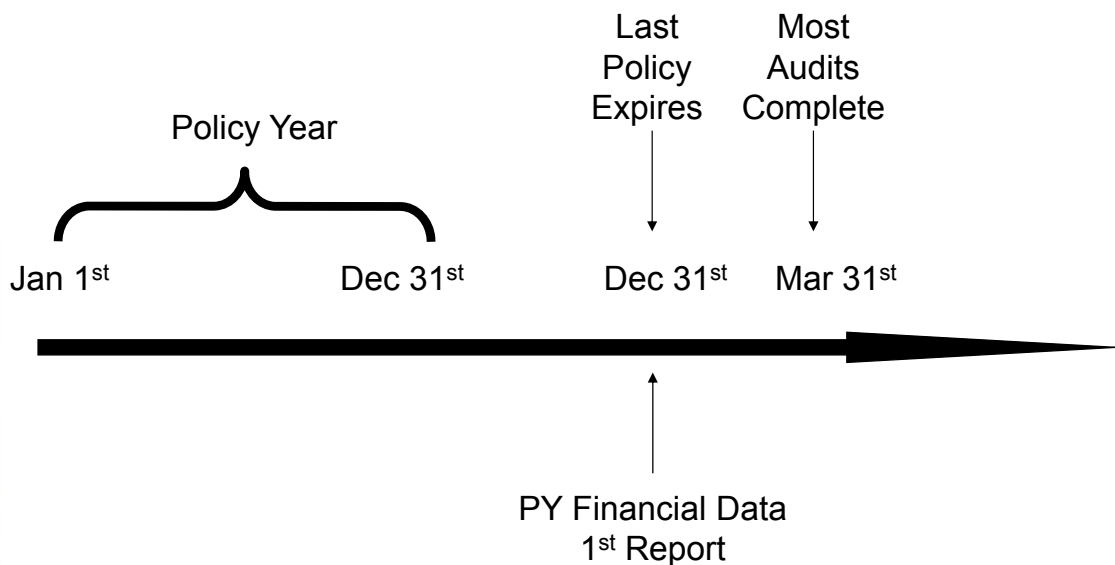
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## Premium On-level Factors Adjust Historical Premium to the Current Approved Level



## Policy Year Premium Development

(Due to payroll audits)

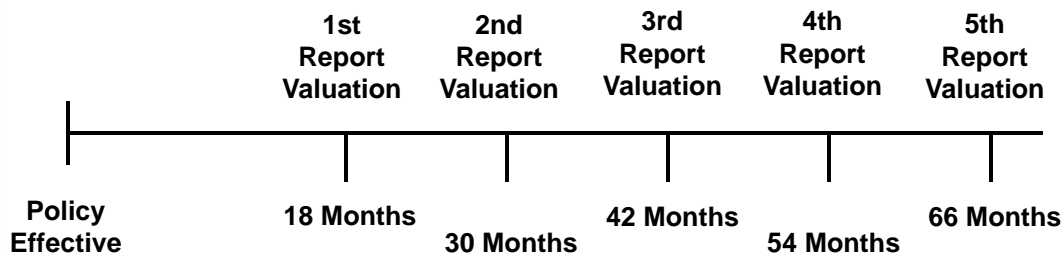


## WC Statistical Plan (WCSP) Data

- **Experience by policy detail**
  - Exposure, premium, experience rating modifications
  - Individual claims by injury type
- **Purposes**
  - Classification relativities
  - Experience Rating Plan
  - Research

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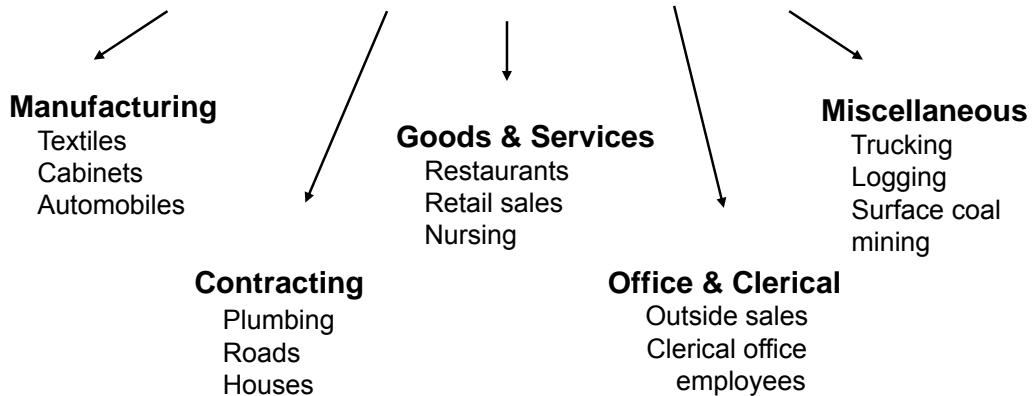
## Valuation of WCSP Data



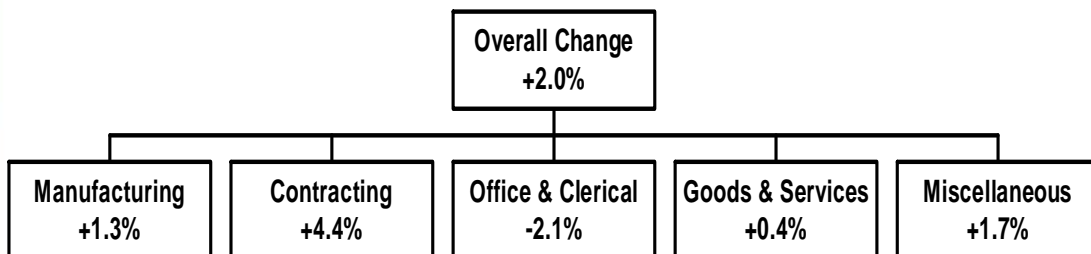
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## Distribution of Overall Change to Industry Groups

The overall average change is distributed to industry groups and then to individual classes



## State XYZ Changes by Industry Group



## Individual Classifications

- Five years of WCSP experience used
- Individual claims are limited
- Credibility is assigned
- National data is used in low volume/credibility classes

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## Formula Pure Premiums

$$\begin{array}{rcl}
 \text{State Z} & \times & \boxed{\text{Indicated Pure Premium (State data, five years)}} \\
 & & + \\
 \text{National Z} & \times & \boxed{\text{National Pure Premium (National data adjusted)}} \\
 & & + \\
 \text{Remaining Z} & \times & \boxed{\text{Present on Rate Level Pure Premium (approved)}}
 \end{array}$$

Z = Credibility %

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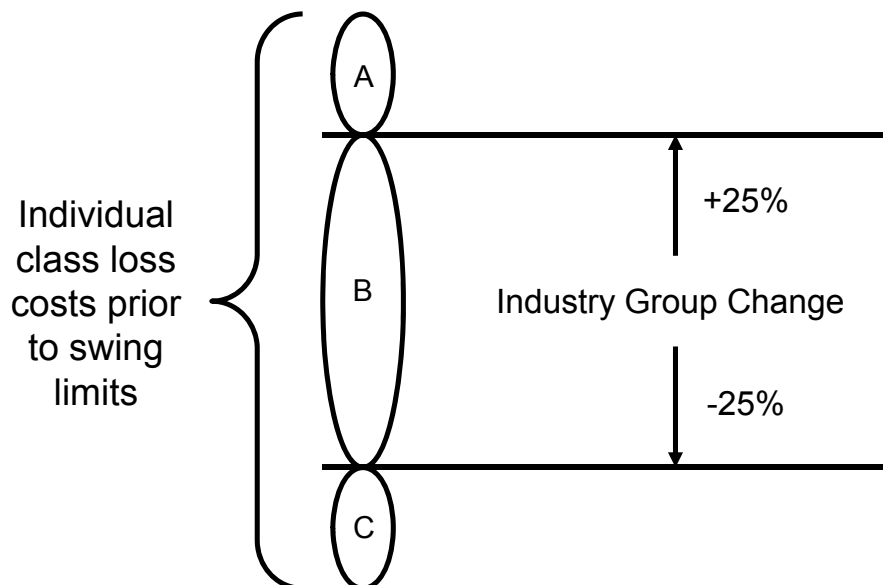
## Test Correction Procedure

Iterative process to ensure that:

- class swing limits are adhered to
- the Industry Group change is achieved

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## Classification Swing Limits



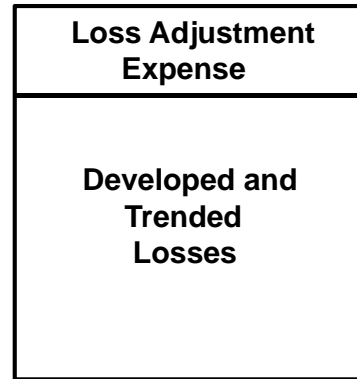
- (A) = Indicated changes exceeding the upper swing limit  
 (B) = Indicated changes within the swing limits  
 (C) = Indicated changes less than the lower swing limit

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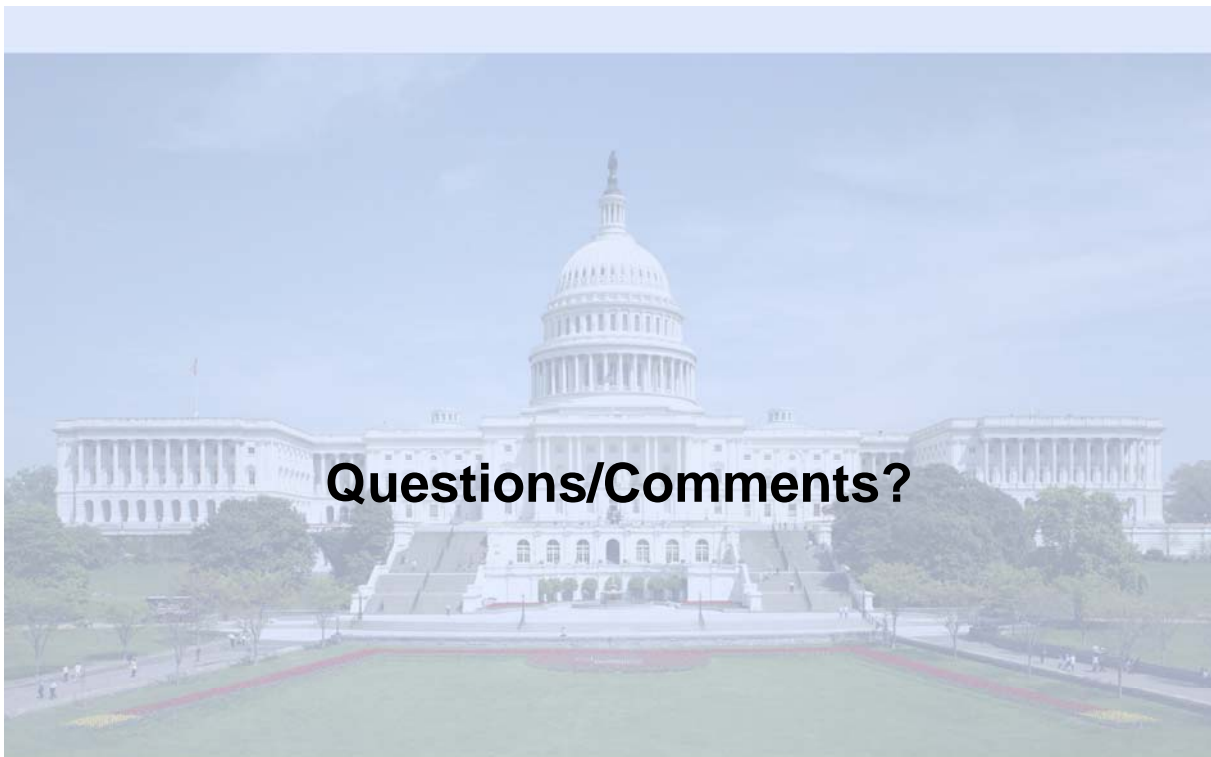
## Final Loss Cost

- Add in a provision for Loss Adjustment Expense (Expenses of an insurer which are directly chargeable to the settlement of claims—such as investigating cases and defending law suits)
- May also include loss-based assessments

### Loss Cost including LAE



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