**Lecture 2**

**09/13/2020**

Case outstanding :

establishing a claim with a reserve.

Reported Value of Claim to Date :

Reserve amount. Basically the best guess of how much the claim will cost.

Claim Payment :

Amount they have paid. The OS or case outstanding is reduced by the amount paid.

That said, the value of the claim does not change.

Expense payment IA :

Additional payment not contemplated, so the claim to date value increases.

**Video 2 :**

Terminology :

Basically just saying that different books use different terminology.

Closed claims have been finalized and paid claims are those that are open and

A payment has been made.

ALAE :

Allocated loss adjustment expenses. These are expenses that can be attributed to a single case.

ULAE :

Cannot be associated with a specific case. They are associated with the entire claims process.

ULAE Factor :

Percentage or Ratio of Paid ULAE / Paid Loss + ALAE.

The ULAE Factor – add up all the years paid ULAE and divide by all years Paid and ALAE.

\*\* ULAE Factor is used for projecting. So you would project off of Paid Loss and ALAE and inflate

this amount by the calculated factor.

**Video 3 :**

Extraordinary & Catastrophe Losses

“Losses need to be projected to the cost level expected when the rates will be in effect.

The first step is to remove extraordinary events, i.e. individual shock losses or catastrophe

losses.

Approaches :

One approach is to exclude them completely when you do your forecast and then you reintroduce them once you have your prediction.

More often we cap the losses.

Or, you can examine the distribution of the data and chose a cut off, ex 99 percentile.

Number of Excess Claims :

In this displayed table, any loss above $1m. The table gives us the count of claims > 1m.

For every accident year we check all losses exceeded $1m.

Losses Excess of $1m

Keep track of claim amount above the threshold.

Then we compute the Non-Excess Losses, which is the total loss per accident year

Where the claims are capped at $1m.

\*Then we calculate the pct of excess loss as a pct of Non-excess losses.

\*This becomes an excess loss factor. The Non-excess losses will be more stable than

The reported losses, which still include the catastrophe losses.

You can actually see in the table how the variation drops in column 5 once the catastrophe losses have been removed.

Limit Change

A common occurrence is modification of the coverage/benefits associated to a book of poliices which affect the severity of the claims. Example, changing the maximum limit offered for a given product.

**Video 4**:

Deductibles & Policy Limits :

Fixed dollar deductibles

Fixed percentage deductibles

Disappearing deductibles

Franchise deductibles

Franchise Deductible

L = Loss

D = Deductible

If L < D then insurer pays 0

If L > D then insurer pays full amount of L and does not apply D.

What is the purpose of deductibles?

Reduced expenses. Insurers don’t have to bear the cost of dealing with very

Small claims. In fact, claims can be a lot less than expenses.

Risk : If there is not policy limit in theory you have unbounded risk.

Moral Hazard : If you don’t have a deductible then the owner has no incentive to stop the loss.

Flexibility in terms of the premium: Likely many coverages would be too expensive to afford. Risk sharing.

Example : Disappearing Deductible

Up to $250 of claim, the insurer pays nothing

The deductible decreases linearly as the claim amount increases.

**Video 5**:

A decision maker is faced with a random loss that has a uniform distribution

Over the interval 0 < X < 10. If she wishes to pay a premium of $2, then the

Optimal coverage requires a deductible of d. Assume no expenses, find d.

If there were no deductible, we would compute the expected losses, which

On the interval of 0 to 10, the loss would be $5.

Y = max(X -d, 0) # Amount the insurer will pay with a deductible “d”

In the case of a deductible, our uniform distribution goes from 0 to 10-d.

Every claim that was below d became zero.

**Video 6: Internal Data**

**Types** – exposures, premium, claim counts, losses, and explanatory characteristics about the policy or claim. Also, accounting information, ex: underwriting expenses.

**Video 7: Data Aggregation**

Objectives :

Accurately match losses and premium for the policy.

Use the most recent data available.

Minimize the cost of data collection and retrieval.

Calendar Year :

Aggregate all data for all transactions occur during the 12 months of the calendar year, regardless of when the policy was issued or the claim occurred.

Accident Year :

If this accident occurred, for example in 2009, then all of the transactions for that claim are recorded in 2009. This is irrespective of when the policy was issued.

Policy Year :

Aggregation based on when the policy was issued.