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Disclaimer

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#### Severity Trend Aggregate Method

Numbeh RE

With the Aggregate Method, experience rating is performed using only the aggregated excess/umbrella claim values.

What needs to be considered when trending historical umbrella losses?

- 1) The leveraged impact of trend, due to:
  - a) the lack of underlying attachment point for each umbrella claim
- b) claims below the umbrella attachment point that would trend into the layer
- 2) Capping trended losses at umbrella policy limits

Given the lack of granularity in aggregate data, we cannot trend "from ground up" and precisely calculate penetration in the umbrella layer.

#### Severity Trend Aggregate Method

Munich Rd 📻

#### Issue

How do we get around these weaknesses of the aggregate method/data?

#### Solution

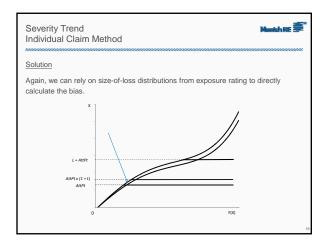
Adjust the "ground up" trend factors for the impact of leveraged trend by applying a "leverage factor"

- Leverage factors can be based on a comparison of expected layer losses from size-of-loss distributions in exposure rating on a current and detrended basis.
- ISO's Mixed Exponential distributions can easily be adjusted for trend by rescaling the exponential means.

# Severity Trend Aggregate Method The leveraged trend is calculated as the ratio of the expected excess layers: $\textit{Leveraged Trend} \quad = \quad \frac{\textit{LEV(L+AttPt | praspective)} - \textit{LEV (AttPt | praspective)}}{\textit{LEV (L+AttPt | historical)} - \textit{LEV (AttPt | historical)}}$ Because the formula includes the upper limit (L) as well as the umbrella attachment point (AttPt), this produces an <u>unbiased</u> estimate of the prospective loss costs when applied to aggregate umbrella losses. **EXCESS SEVERITY TREND** INDIVIDUAL CLAIM METHOD ISSUES 三山川市に Severity Trend Individual Claim Method Issue #1 How do we approximate the bias in leaving out the portion of the experience that is below the umbrella attachment point? $\bullet$ With the Individual Claim Method, we generally have the underlying attachment point and policy limit for each umbrella claim. • Unfortunately, we usually can get only those losses that penetrated into the umbrella layer historically. • The "missing piece" is the impact of those claims below the umbrella attachment

6/9/2011 3

point that would trend into the layer.



#### Severity Trend Individual Claim Method

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#### Issue #2

In some instances, we do not have all individual umbrella losses that have penetrated the umbrella layer – will be missing some losses

Example: submission includes individual umbrella losses greater than \$1 million only

#### How to address this problem?

Use an alternative method to properly account for small umbrella losses

#### Severity Trend Individual Claim Method

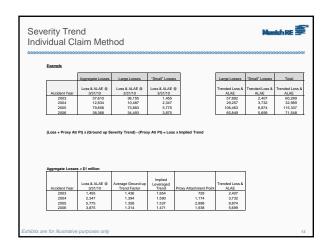


#### Alternative Method

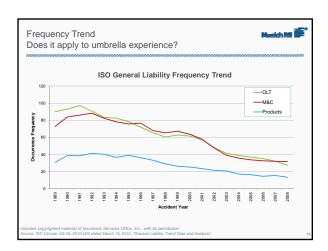
- Individual Claim Method applies ground-up trend to losses
- We want small losses to get hit with leveraged trend
- Force this to happen by grouping small losses for each year and calculating a corresponding attachment point to achieve implied, leveraged trend

#### How to do this

- Determine difference in aggregate loss amount and sum of individual large losses for each historical period (= "small loss bundle")
- 2) Treat small loss bundles as individual umbrella claims
- 3) Calculate proxy attachment point for the small loss bundle









#### Treatment of Signal Reserves

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- It is common practice for unsupported umbrella writers to set up precautionary/signal reserves (i.e. \$1, \$50, etc.)
- Caution must be given when trending signal reserves when using the Individual Claim Method

#### Two possible solutions

- 1) Can treat signal reserve claims as bundle of "small losses" and include in rating.
- 2) Exclude claims from experience rating and add as a load at end of pricing process.

#### Bankh Rd 🛒

### PEER COMPANY BENCHMARK LOSS RATIOS



| Peer Company Benchmark Loss Ratios   | ·]       |
|--|----------|
| Given complexity of umbrella pricing and common data limitations, it is important to consider peer company or benchmark loss ratios as a complement to traditional experience rating.                              |          |
| *Consideration of the market view when evaluating the pricing of individual umbrella accounts provides additional reasonability check of projected ELR.  |          |
| • Leverage your experience when rating a new or small umbrella that lacks credibility.   |          |
|  |          |
| •  | <u> </u> |
|  |          |
| Peer Company Benchmark Loss Ratios   | ·]       |
| Given the lack of industry data sources for umbrella experience, umbrella pricing data can be accumulated throughout the year to develop a database of peer company ELRs, rate indices, development patterns, etc. |          |
| When collecting the data it is important to capture the characteristics of each account so that proper comparisons can be made.  |          |
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| Peer Company Benchmark Loss Ratios   | -]       |
| Peer Company ELRs/data should be segmented into more homogenous categories.  |          |
| What do you think are important characteristics to consider?   |          |
| Portfolio characteristics Pricing and premium determination characteristics  |          |
|  |          |
|  |          |



