BLENDING LOSS DEVELOPMENT PATTERNS WITH HIERARCHICAL MODELS - INTRODUCTION

CAS Annual Meeting; November 2010

Dave Clark

Munich RE

Blending Loss Development Patterns

Munich RE

The goal of any reserving method or model it to make a best estimate of ultimate losses for historical periods.

A best estimate should incorporate all of the relevant information associated with the subject losses, giving each piece of information the credibility it deserves.

"All" relevant information includes more than just a single development triangle:

- Incorporates premium
- Makes use of both paid loss and case reserves
  - Halliwell (1997); Quarg & Mack (2004)
- Blends company-specific triangle with external benchmarks or peer companies

MORE DATA => BETTER ESTIMATES

Blending Loss Development Patterns

Munich RE

Are there real differences in loss development patterns between companies?

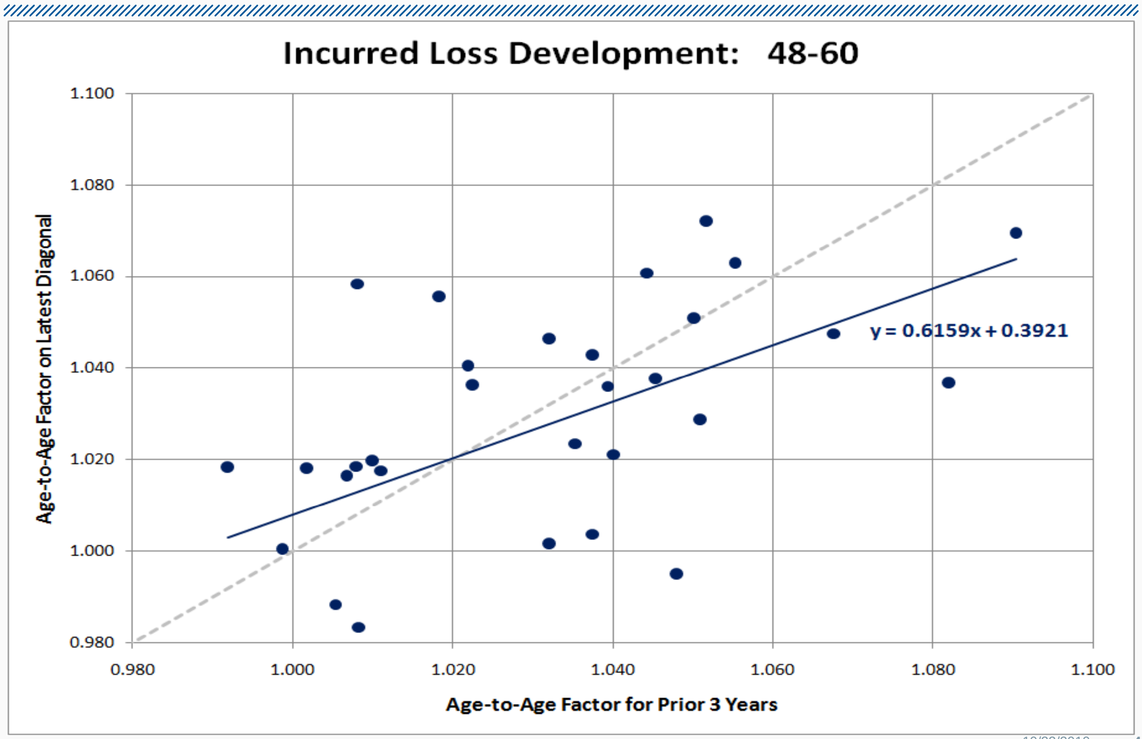
Let's look first at a single development age:

	Workers Compensation Loss Development				
	Age-to-Age Factor from 48-60 Months				
	Three Prior Diagonals				Latest Diagonal
Company Name	CY 2006	CY 2007	CY 2008	Wtd Avg	CY 2009
ABC Company	1.012	1.002	1.010	1.008	1.019
DEF Company	1.015	1.033	1.055	1.032	1.002
GHI Company	1.042	1.042	1.050	1.045	1.038
Industry Average	1.031	1.035	1.035	1.034	1.032

Source: Highline; actual companies from Schedule P.

Blending Loss Development Patterns

Munich RE



Blending Loss Development Patterns

Munich RE

What do we want from a credibility model?

- Give the company triangle the “right” credibility based on its volume of loss and stability.
- Make use of the full triangle and not have each development age stand on its own. Can we credibility weight the <u>patterns</u>, not just the individual factors?
- Adjust the “tail” factor from external sources to help extrapolate beyond the account data.

Credibility-theory and hierarchical models can help squeeze all of the useful information out of our data.