



Actuarial Studies Seminar  
Macquarie University  
17 March 2010

Frank A. Schmid  
Director and Senior Economist, National Council on Compensation Insurance  
(NCCI), Inc. Florida USA

### **Robust Loss Development Using MCMC**

A Bayesian model of developing aggregate loss triangles in property casualty insurance is introduced. This model distinguishes itself from other time series loss development models by its heavy-tailed, skewed and heteroskedastic Student- $t$  likelihood, its use of Reversible Jump MCMC for estimating the trajectory of the consumption path, and its ability to accommodate a structural break in this consumption path. Further, the model is capable of incorporating expert information in the calendar year effect. The model, which has been compiled into the R package *lossDev*, is applied to two widely studied General Liability and Auto Bodily Injury Liability loss triangles.