

Claim Counts Modeling and Stable Distributions.

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Abstract: In this communication we show how the generalized Poisson Pascal (G.P.P.) distribution may be a very good choice when trying to model claim counts. This is a very critical step in the modeling process of an experience rating scheme such as Bonus-Malus Systems (BMS), for any conclusion will depend on this early choice. Neither parametric models like the negative binomial or Poisson mixed by Inverse Gaussian, nor nonparametric ones like the good risk-bad risk model are enough to model real world. The application of the G.P.P. may be of a great help when trying to model claim counts with a high skewness, as was indicated in Panjer, Willmot (1992) and Klugman, Panjer, Willmot (1998). The difficulty to overcome when using it is the numerical handling of stable distributions.

Keywords: Claim counts, counting distributions, stable distributions, compound Poisson distributions, mixed Poisson distributions, portfolio structure, Bonus-malus systems, generalized Poisson Pascal distribution.

This research was granted by Ministerio de Educación y Ciencia under project SEJ2005-06744.

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