

NUMBER OF ACCIDENTS OR NUMBER OF CLAIMS? AN APPROACH WITH ZERO-INFLATED POISSON MODELS FOR PANEL DATA

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Abstract

The *hunger for bonus* is a well-known phenomenon in insurance, meaning that the insured does not report all of his accidents to save bonus on his next year's premium. In this paper, we assume that the number of accidents is based on a Poisson distribution but that the number of claims is generated by censorship of this Poisson distribution. Then, we present new models for panel count data based on the zero-inflated Poisson distribution. From the claims distributions, we propose an approximation of the accident distribution, which can provide insight into the behavior of insureds. A numerical illustration based on the reported claims of a Spanish insurance company is included to support this discussion.

Claim Count, Accident Count, Panel Data, Random Effects, Zero-Inflated Model, Predictive Distribution, Model Comparison, Vuong Test.

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