

Robust and Parametric Loss Models for Truncated and Censored Data

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ABSTRACT

By nature insurance loss severity are continuous, right-skewed, and frequently heavy-tailed. Further, due to different loss control mechanism, such data are truncated on the left (due to deductibles), fixed right censored (due to policy limits), and scaling (due to coinsurance). The primary objective of this presentation is to redesign the methods of *trimmed (T -) moments* and *winsorized (W -) moments* for insurance loss data. In this presentation, we demonstrate that, when properly redesigned, T - and W -estimators can be a robust and computationally efficient alternative to the likelihood-based (MLE) inference for claim severity models that are affected by data truncation, censoring and scaling. The asymptotic properties of T - and W -estimators are derived. The practical performance of the estimators is illustrated by fitting a single-parameter Pareto model to the well-known Norwegian fire claims data using MLE, T - and W -estimators, and applying the fitted models to price an insurance contract.

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