Credibility and Persistency

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Abstract

Policyholders often decide to buy, renew, or cancel insurance based on the premium charged by the insurer compared with what they expect their claims will be. When policyholders buy insurance at a premium lower than they anticipate their claims will be, actuaries and underwriters call this occurrence *selecting against the insurer*.

We assume that the persistency of policyholders depends on the difference between the premium charged and their anticipated claims. We extend the work of Taylor (1975) in which he obtains linear credibility formulas by minimizing loss functions that incorporate the persistency of policyholders. We consider Taylor's loss functions and other objective functions, namely, those that also account for the amount of business that the insurer writes of renews.

Taylor, G. C. (1975), Credibility under conditions of imperfect persistency, *Credibility: Theory and Applications*, edited by P. M. Kahn, Academic Press, New York, New   York: 391-400.