

Can financial behaviour predict driving risk? Evidence from Armenia's auto insurance market

2025-11-27

Central Bank of Armenia

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Working paper WP-2025-03

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Abstract

This paper examines whether financial behaviour, defined through credit history and current debt burden, can improve the modelling of automobile accident risk. Drawing on rich administrative data from Armenia's compulsory motor third party liability insurance system (CMTPL) combined with credit registry records, the study finds that weaker repayment histories are strongly associated with higher accident probabilities and larger claim amounts, potentially reflecting core behavioural traits that carry over into driving behaviour. Indicators of short-run financial strain add further explanatory power by capturing situational pressures not reflected in long-run patterns, with accident risk peaking when adverse credit histories coincide with elevated financial burden. These relationships hold across a range of empirical approaches – including negative binomial models and a monthly driver-level panel that accounts for congestion, weather, and other time-specific conditions – and they remain robust once driver income is included. In the panel estimates, both between-driver and within-driver components remain significant, indicating that even for the same individual, a deterioration in credit history or an increase in financial burden corresponds to a material rise in accident risk. In terms of distributional effects, Tweedie-based simulations show that gains in pricing accuracy come with disproportionate premium increases for financially vulnerable households, highlighting a central efficiency-equity trade-dilemma for regulators.

