

Department Colloquium

Mathematics and Statistics
York University



Date, Time, and Room

Friday January 24, 2025
1:30PM-2:30PM
Stong College 224

Speaker

Dr. Dongchen Li
York University

Title

Strategic Loss Underreporting: Full Insurance and Deductible Insurance

Abstract

Consider an unforeseen event causing losses that are covered by your insurance. Reporting the losses grants an indemnity payment as per your policy but might increase your premiums due to a negative impact on your rating. Opting not to report means bearing the full cost but could earn a “bonus” for a clean claims history. This tradeoff motivates us to formulate an intrapersonal game for an insured to explore her decisions regarding reporting losses to an insurer who adopts a bonus-malus system. We obtain the equilibrium barrier reporting strategy for the insured in two scenarios: full insurance and deductible insurance. In the latter, by allowing the insured to choose the deductibles knowing she may underreport, we further study how strategic underreporting affects insurance demand. We find that the insured hides consistently a strict positive portion of her losses, providing a theoretic justification for the prevalent phenomenon of underreporting across non-life insurance sectors. Additionally, we observe that the equilibrium deductibles are strictly positive, suggesting that full insurance, often assumed in related literature, is not optimal.

Refreshments in Ross N620 at 2:30PM

science

