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Education Background

• 2019 ~ Fall 2023 (expected): Kemmy Business School, University of Limerick, Ph.D. Candidate in Applied Economics (jointly supervised by Fudan University)

Thesis Title: "*Microeconomic Impacts of Digital Distribution on Insurance Market: Performance and Information Asymmetry*"

• 2017 ~ 2019: Fudan University, Master in Risk Management and Insurance

• 2013 ~ 2017: Ocean University of China, Bachelor in Finance

Work and Teaching Experience

• Spring, 2023: TA of module *Fintech, Innovation and Risk Transfer* (M.A. course) for Dr. John Garvey, University of Limerick

• Spring, 2023: TA of module *Economics of Insurance and Uncertainty* (M.A. course) for Dr. Martin Cunneen, University of Limerick

• Spring, 2021: TA of module *Financial Analysis of Insurance* (B.A. course) for Prof. Dr. Xian Xu, Fudan University

• 2019 ~ 2020: RA of Science Foundation Ireland Research Centre (LERO), University of Limerick

Research Interests

Digital Economy, Fintech & Insurtech, Insurance Economics, Risk Decision Theory, Uncertainty Economics, Big Data Analytis of Economic Behaviors, Cyber Security Risk and Governance, etc.

Academic Achievements

Published Papers (in English)

• How does the insurer's mobile application sales strategy perform? (with Finbarr M., Xian X., An C., Yusha C.), accepted by *Journal of Risk and Insurance* (field top of insurance), forthcoming issue, 2023.

> *Abstract*: Mobile insurance is gaining increasing popularity in the global insurance industry. Using a unique data of a best-selling mobile cancer insurance product from a Chinese life insurer, this paper studies the relationship between mobile technology and insurance inclusion. We find that the introduction of the mobile application channel generates higher growth for low-insured-amount policies which are closely associated with low-income population. However, this inclusion of mobile insurance is unequal – it is stronger in high-income areas than in low-income areas. Examining mechanisms, we show that reduced transaction costs help explain the inclusion of mobile insurance, while regional digital divide leads to inclusion inequality. We also provide evidence on the inclusive impacts of mobile insurance on claim compensation and insurance consumer welfare.

• Dynamic communication and perception of cyber risk: Evidence from big data in media (with Finbarr M., Xian X., Wenpeng X.), *Computers in Human Behavior* (field top of cyber-human interaction, IF 8.96), Vol(122), 2021.
https://doi.org/10.1016/j.chb.2021.106851

> *Abstract*: Cyber risk is consistently viewed as a threat to the proper function of commercial and societal activity. Regardless of whether this risk is real or perceived, understanding how societal communication and perception of it change over time has important implications for both regulatory authorities and insurers. This contribution analyzes Chinese media news over the years 2009 – 2018 to identify the dynamics of cyber risk sources and associated societal assessment. Taking the psychometric paradigm as its point of departure and applying combination of computational and statistical methods, we identify 34 sources of cyber risk. The actions of government turn out to have a significant impact on public attention to the different sources of cyber risk, an influence that has been neglected in past research. The dynamics of societal aversion against most cyber risk sources are found to present inverted-U shapes. Adaptation and learning effects are found to explain this dynamic. Another finding is that news sentiment has a strong correlation with cyber risk perception, an insight of importance for regulators and insurers.

Papers Under Review

• Risk screening in digital insurance distribution: Evidence and explanations (with Finbarr M., Xian X.), **Job Market Paper**, *Journal of Risk and Insurance*, **Revise & Resubmit**.

Abstract: The embedding of digital technologies in the global economy has attracted increasing attention from economists. With a large and detailed dataset, this study examines the specific case where consumers have a choice between offline and digital channels in the context of insurance purchases. We find that digital channels screen in consumers with lower unobserved risk. For the term life, endowment, and disease insurance products, the average risk of the policies purchased through digital channels was 75%, 21%, and 31%, respectively, lower than those purchased offline. As a consequence, digital channels have weaker information asymmetry and higher profitability. We highlight three mechanisms of the risk screening effect: heterogeneous marginal influence of channel features on insurance demand, the channel features directly related to risk control and the link between the digital divide and risk. We also find that the risk screening effect mainly comes from the extensive margin, i.e., from new consumers. This paper contributes to three connected areas: heterogeneous economic impacts of digital technology adoption, insurer-side risk selection and insurance marketing.

• The effect of ambiguity: When insurance meets precaution (with Finbarr M., Xian X.), *Journal of Risk and Uncertainty*.

Abstract: Snow (2011) proposed the first model to separately prove the impact of ambiguity preferences on self-insurance and self-protection decisions at the optimal level. This paper extends that model to analyze the effect of ambiguity preferences on the insurance-precaution relation by incorporating both insurance demand and precaution efforts. We find that the effect of ambiguity aversion on the insurance-precaution relation depends on the efficiency of precaution efforts. At the optimal level, when the efficiency of precaution efforts is high, ambiguity aversion makes insurance and precaution substitute; while when the efficiency of prevention efforts is low, ambiguity aversion makes insurance and precaution complementary. This finding has significant implications for using sophisticated techniques such as machine learning to achieve accurate risk assessment to assist marketing.

Papers in Progress

• Does the mobile application sales channel strengthen insurance inclusivity? (with Finbarr M., Xian X.)

• Discrimination in machine learning: Evidence from insurance claim prediction (with Xian X.)

Published Papers (in Chinese)

• Connotation and development of cyber security insurance, *Shanghai Insurance*, Vol(1):23-25, 2022.

Newspaper Articles (in Chinese)

• The impact and restructuring of artificial intelligence in the insurance industry, *Financial Times (China)*, 2018-05-30.

• The difference in insurance industrial layout between Alibaba and Tencent Groups, *China Insurance*, 2018-01-09.

• Cyber security insurance: The next blue sea of Insurtech, *China Insurance*, 2017-11-14.

• How does Insurtech play an important role into the cost control of social insurance?, *China Insurance*, 2017-09-26.

Seminar and Conference Presentations

• Screening in digital insurance distribution: Evidence and explanations, Annual Conference of Irish Academy of Finance, Ireland, May, 2023.

• Digital technology and insurance market: performance and information asymmetry. TH Köln Workshop, German, May, 2023.

• Does the mobile application sales channel strengthen insurance inclusivity? 2023 Spring Seminar Series, Limerick, March, 2023.

• Is cyber risk perceived as dangerous? Evidence from Chinese media, CONVENTION A 2022 (European Actuarial Academy), China, September, 2022.

• Screening in digital insurance distribution: Theory and evidence, 2022 Spring Seminar Series, Limerick, April, 2022.

• Dynamic communication and perceptions of cyber security risks: Evidence from big data in media, Conference on Endogenous Security Development in Cyberspace, sponsored by Zi Jinshan Laboratory, China, April, 2022.

• Mobile Internet, search cost and sales performance, Emerging Risk Seminar (Irish Academy of Finance), Dublin, June, 2021.

References

Prof. Finbarr Murphy (Supervisor)
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Prof. Xian Xu (Co-supervisor)
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