Liyuan LIN

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Education Experiences

- PhD Candidate, University of Waterloo
  Jun. 2024 expected
  - Major: Actuarial Science
  - Supervisor: Ruodu Wang and Alexander Schied
- Master degree in Economics, Central University of Finance and Economics (CUFE)
  Sep. 2017 - Jun. 2020
  - Major: Actuarial Science
  - Supervisor: Jingzhen Liu
  - Overall GPA: 3.946/4.5 (2/21)
- Bachelor in Economics, Central University of Finance and Economics (CUFE)
  Sep. 2013 - Jun. 2017
  - Major: Actuarial Science
  - Supervisor: Jingzhen Liu
  - Overall GPA: 3.94/4.5 (5/44)

Research Interests

- *Actuarial Science*
- *Dependence and Risk Aggregation*
- *Quantitative Risk Management*
- *Stochastic Control*

Manuscripts

[1] Koike, T., **Lin, L.** and Wang, R. (2023). Invariant correlation under marginal transforms. *arXiv*:2306.11188.

[2] Lauzier, J., **Lin, L.** and Wang, R. (2023). Risk sharing, measuring variability, and distortion riskmetrics. *arXiv*:2302.04034.

[3] Han, X., **Lin, L.** and Wang, R. (2022). Diversification quotients: quantifying diversification via risk measures. *arXiv*: 2206.13679. (Major revision with *Management Science*)

[4] Koike, T., **Lin, L.** and Wang, R. (2022). Joint mixability and negative orthant dependence. *arXiv*: 2204.11438. (Major revision with *Mathematics of Operations Research*)

[5] **Lin, L.**, Liu, F., Liu, J. and Yu, L. (2020). The optimal reinsurance strategy with price-competition between two reinsurers. Submitted.

[6] Liu, J., Yan, S. and **Lin L.** (2020). Optimal asset allocation for households with habit formation. Submitted. (In Chinese).

Publications

[1] Han, X., **Lin, L.** and Wang, R. (2022). Diversification quotients based on VaR and ES. *arXiv*: 2301.03517. (Accepted by *Insurance: Mathematics and Economics*)

[2] Lauzier, J., **Lin, L.** and Wang, R. (2023). Pairwise counter-monotonicity. *Insurance: Mathematics and Economics*, **111**, 279–287.

[3] Assa, H., **Lin, L.** and Wang, R. (2022). Calibrating distribution models from PELVE. *North American Actuarial Journal*, doi:10.1080/10920277.2023.2211648.

[4] Yu, L., **Lin, L**, Guan, G. and Liu, J. (2023). Time-consistent lifetime portfolio selection under smooth ambiguity. *Mathematical Control and Related Fields*, **13**(3), 967–987.

[5] Chen, Y., **Lin, L.** and Wang, R. (2021). Risk aggregation under dependence uncertainty and an order constraint. *Insurance: Mathematics and Economics*, **102**, 169–187.

[6] Liu, J., **Lin, L.**, Yiu, K.F.C. and Wei, J. (2020). Non-exponential discounting portfolio management with habit formation. *Mathematical Control and Related Fields*, **10**(4), 761–783.

[7] Liu, J., **Lin, L.** and Meng, H. (2020). Optimal consumption, life insurance and investment decision with habit formation. *Acta Mathematicae Applicatae Sinica (Chinese Series)*, **43**(3), 517–534. (In Chinese).

[8] Liu, J. and **Lin, L.** (2018). Impact of weather on the pricing of flight delay insurance. *Insurance Theory and Practice*, **2018**(11), 100–110. (In Chinese).

Conferences Ogranized

- 3rd Waterloo Student Conference in Statistics, Actuarial Science and Finance (Volunteer), 2022 (Waterloo, Canada)
- 2nd Waterloo Student Conference in Statistics, Actuarial Science and Finance (Volunteer), 2021 (Online)

Conferences

[1] Joint mixability and notions of negative dependence, 26th International Congress on Insurance: Mathematics and Economics, Edinburgh, United Kingdom, July 4-7, 2023.

[2] Diversification Quotients: Quantifying Diversification via Risk Measures, SIAM Conference on Financial Mathematics and Engineering (FM23), Philadelphia, Pennsylvania, United States, June 6-9, 2023.

[3] Diversification Quotients: Quantifying Diversification via Risk Measures, 2022 INFORMS Annual Meeting, Indianapolis, United States, October 16-9, 2022.

[4] Diversification Quotients: Quantifying Diversification via Risk Measures, 3rd Waterloo Student Conference in Statistics, Actuarial Science and Finance, Waterloo, Canada, October 14-15, 2022.

[5] Diversification Quotients: Quantifying Diversification via Risk Measures, 57th Actuarial Research Conference, Urbana-Champaign, United States, August 3-6, 2022.

[6] Calibrating distribution models from PELVE, 25th International Congress on Insurance: Mathematics and Economics, Online, July 12-15, 2022.

[7] Measuring diversification via risk measures, 2022 CORS/INFORMS International Conference, Vancouver, Canada, June 5-8, 2022.

[8] Calibrating distribution models from PELVE, SSC 2022 Annual Meeting, Online, May 30-June 3, 2022.

[9] Risk aggregation under dependence uncertainty and an order constraint, 2nd Waterloo Student Conference in Statistics, Actuarial Science and Finance, Online, Nov 5-6, 2021.

[10] On VaR-ES distortion and its application in risk management, The 7th FINACT-IRAN National Conference on Financial and Actuarial Mathematics, Online, Aug 10-12, 2021.

[11] Non-exponential discounting portfolio management with habit formation, 23rd International Congress on Insurance: Mathematics and Economics, Munich, Germany, Jul 10-12, 2019.

[12] Time-consistent lifetime portfolio selection under smooth ambiguity, 2019 China Actuarial Theory and Application Conference, Shanghai, China, May 18-19, 2019.

[13] Optimal Consumption, Life insurance and Investment Decision with Habit formation, The 8th Annual Conference of Financial Engineering and Financial Risk Management Branch of OR Society of China, Xian, China, Aug 25-26, 2018.

Research Experience

- 2019.10.1-2020.6.17

  International visiting graduate student in Statistics and Actuarial Science in University of Waterloo.

- 2019.7.23-2019.9.15

  Researcher Assistant in the Department of Applied Mathematics in The Hong Kong Polytechnic University.

- 2018.7.23-2018.8.22

  Researcher Assistant in the Department of Applied Mathematics in The Hong Kong Polytechnic University.

Selected Scholarships & Awards

Senate Graduate Scholarship Sprott Award, UW	2023
James C. Hickman Scholar Doctoral Stipend, SOA	2022-2023
Statistics & Actuarial Science Chair's Award, UW	2021-2023
Actuarial Science Doctor Entrance Award, UW	2020
Excellent MA thesis, CUFE	2020
Outstanding Graduate, CUFE	2020
First-Class Scholarship, CUFE	2018-2019
Sir EJ prize, IFOA	2018

Teaching experience

- Instructor, University of Waterloo

STAT 230 - Probability	Fall 2023

- Teaching Assistant at UW

STAT 333 - Stochastic Process 1	Spring 2023
ACTSC 232 - Life Contingencies 1	Winter 2023
CTSC 363 - Casualty and Health Insurance Mathematics 1	Fall 2022
STAT 230 - Probability	Spring 2022
ACTSC 446/846 - Mathematics of Financial Markets	Winter 2022, Fall 2022
ACTSC 331 - Life Contingencies 2	Winter 2022
ACTSC 431 - Casualty and Health Insurance Mathematics 2	Fall 2021
ACTSC 445 - Quantitative Enterprise Risk Management	Spring 2021, Fall 2021
ACTSC 371 - Introduction to Investment	Spring 2021, Winter 2023

- Teaching Assistant at CUFE
  - Mathematics for Life Contingency (Bilingual) - IFOA certification course

Peer-review Service

- Actuarial science journal(s): European Actuarial Journal, Insurance: Mathematics and Economics, ASTIN Bulletin
- Probability journal(s): Statistics and Probability Letters

Other Skills

- Language skills
  - Mandarin (Native)
  - English (Fluent, IELTS 7)
- Professional skills
  - SOA
    * Exam passed: VEE Economics, VEE Mathematical Statistics, VEE Accounting and Finance, Exam P, Exam FM, Pre-Actuarial Foundations Module, Exam FAM, Exam ASTAM, Exam SRM, Exam PA, Exam ATPA, FAP End of Modular Assessment
    * Exam in progress: FAP (final assessment completed, grade expected to be released in late Nov 2023)
  - IFOA
    * Exam passed: CS1, CS2, CM1, CM2, CB1-CB3, CP1-CP3, Stage 1 Professionalism Course, Stage 2 Professionalism Course
    * Anticipating Associate within one year of Personal and Professional Development.
  - China Association of Actuaries: Associate
- Programming
  - Matlab, R, C++, Python, HTML, Excel VBA, MS Office