HSU, Ke-Cheng (Clio)

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Professional Summary

PhD candidate in Economics at HKUST with strong statistical training in empirical industrial organization and market structure. Works with large proprietary datasets (e-commerce transactions and retail point-of-sale records), builds structural models, and estimates profit, welfare, and economic loss under counterfactual scenarios—the same quantification skill set used in risk monitoring, performance attribution, and investment reporting. Proficient in Python, R, and C++; delivers daily-style monitoring packs and clear analytical conclusions under guidance and deadlines; collaborates in Mandarin and English. Hong Kong permanent resident. Seeking Assistant Quantitative Analyst role; available as early as February 2027.

Education

The Hong Kong University of Science and Technology, Hong Kong

Doctor of Philosophy in Economics Expected Graduation: June 2027 (available as early as February 2027)

Research interests: Empirical industrial organization and digital economics.

Master of Philosophy in Economics 2020–2022

CGA: 4.1/4.3.

Bachelor of Science in Mathematics and Economics, Minor in Actuarial Mathematics 2015–2019

CGA: 3.9/4.3.

Awards: Dean's List (2016–2019); University Scholarship (730K HKD); Academic Achievement Medal (top 1%); Postgraduate studentship (1.5M HKD); Redbird scholarship (40K HKD).

Experience

Research Assistant, National Taiwan University 2020

- Modeled crisis intervention as regulator–creditor negotiation on an interbank lending network; derived and simulated equilibrium predictions on liquidity stress and cascade risk—useful frame for investment-risk thinking.

Teaching Assistant & Lecturer, Department of Economics, HKUST 2020–present

- Lecturer for MSc Math Camp (4.53/5); TA for PhD and undergraduate economics (avg 4.72/5); present technical material clearly to non-specialist audiences; Teaching Assistant Coordinator, Business School (2025–2026).

Projects

Inventory and Pricing under Resale Price Maintenance (RPM) *(w/ K. Kawaguchi, HKUST; K. Kawai, U. Tokyo)*

- Built a dynamic oligopoly model of pricing and inventory under demand uncertainty and RPM, with equilibrium stockouts and unsold returns (35–40% of Japanese books printed are discarded); constructed title-by-market-by-month panels from monthly bookstore POS data (deliveries, sales, returns; tens of billions of records across 1,000+ stores), linked via standardized ISBNs and merged with local demographics and detailed title-level information scraped from Amazon in Python.

- Estimated demand and supply with instrumental variables (2SLS) and Hausman-style price instruments; validated the estimator with Monte Carlo on simulated equilibria; selected controls with LASSO and panel fixed effects; implemented iterative equilibrium simulation in C++.

- Compared the dynamic model against the classical static model and showed the static version overstates marginal cost by ∼20% once demand uncertainty and inventory decisions are ignored; uncovered stockout-driven intertitle and intertemporal substitution (not interregional) through weekly descriptive statistics, regressions, and figures—monitoring and attribution-style reporting on a fixed deadline.

Return Policy Design in E-Commerce *(Sole-authored Job Market Paper)*

- Sole-authored Ph.D. structural industrial-organization study: built and estimated a model of purchase, return-shipping-insurance take-up, and return under monopoly pricing, using within-retailer switches between automatic provision and selective adoption of return-shipping insurance on Taobao (2017–2023; ∼62M RMB revenue; six apparel categories; ∼20–30% return rates); scraped and OCR-digitized product attributes in Python.

- Developed an original welfare framework that decomposes losses into ex-ante purchase inefficiency and ex-post return inefficiency; recovered category-specific demand, fit uncertainty, and return responses via GMM with bootstrap inference; built a reproducible estimation pipeline on AWS and HPC/SLURM (Python, R, C++) with Monte Carlo validation of policy rankings for seller profit, consumer surplus, and social welfare.

- Documented a purchase–return efficiency trade-off and showed that a menu pairing a discounted price with a moderate (∼10–15%) restocking fee raises social welfare by about 2 million RMB (∼5%) and seller profit by about 1.2 million RMB relative to status-quo insurance policies, attaining ∼75–78% of first-best welfare outside dresses; automatic provision expands valuable purchases in high-margin categories while selective adoption outperforms it by ∼15–30 pp of first-best welfare in thinner-margin categories.

Skills

Languages: Mandarin (Native), English (Fluent), Cantonese (Basic).

Technical: Python, R, Stata, C++, MATLAB, Microsoft Excel, Word, PowerPoint, LaTeX, AWS, HPC/SLURM; MLE, GMM, minimum distance, EM algorithm, bootstrap; risk-style monitoring, performance tables, reporting.

References: Kei Kawai (UTokyo; Compass Lexecon), Kohei Kawaguchi (HKUST; UTokyo Econ Consulting), Pak Hung Au (HKUST).