HSU, Ke-Cheng (Clio)

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Professional Summary

PhD candidate in Economics at HKUST with strong training in microeconomics, industrial organisation, and econometrics. Applies economic frameworks and empirical techniques to real-world questions using large proprietary datasets; builds models and runs analysis in Python, R, and C++ (and Excel when needed); and turns results into clear written analysis and figures under fixed deadlines. PhD-level IO coursework covered merger simulations, entry/exit counterfactuals, and firm-conduct identification. Clear communicator who clarifies incomplete problems, tests assumptions, and collaborates well in teams. Seeking Frontier's 2027 Graduate Economic Analyst PhD / Experienced Track (London).

Education

The Hong Kong University of Science and Technology, Hong Kong

Doctor of Philosophy in Economics — Expected Graduation: June 2027

Research interests: Empirical industrial organisation 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

- Modelled crisis intervention as regulator–creditor negotiation; derived and simulated equilibrium predictions to support policy design.

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).

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++.
- Revealed that the classical static model overestimates marginal cost by ∼20% when ignoring dynamic demand uncertainty and inventory decisions; uncovered stockout-driven intertitle and intertemporal substitution (not inter-regional) through weekly descriptive statistics, regressions, and figures.

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

- Built and estimated a structural model of purchase, return-shipping-insurance take-up, and return decisions 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 a reproducible, version-controlled estimation pipeline on AWS and HPC/SLURM (Python, R, C++); cleaned and linked orders, prices, insurance, and returns; recovered category-specific demand, consumer fit uncertainty, and return responses via GMM; accelerated Monte Carlo and optimization in C++; validated policy rankings (seller profit, consumer surplus, social welfare) with bootstrap inference.
- Uncovered a purchase–return efficiency trade-off: a stricter return policy curbs inefficient ex-post returns but raises prices and can exclude ex-ante efficient purchases; demonstrated that 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, and that a partial return-penalty discount (discounted price + ∼10–15% restocking fee) attains ∼75–78% of first-best welfare outside dresses.

Skills

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

Technical: Python, R, Stata, C++, Excel, LaTeX, AWS, HPC/SLURM; MLE, generalized method of moments (GMM), minimum distance, EM algorithm, bootstrap.

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