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Faculty Search Committee
Center for Forecasting Science, Academy of Mathematics and Systems Science
Chinese Academy of Sciences
Beijing, China

Dear Members of the Search Committee,

I am writing to apply for an Assistant Professor position in the Center for Forecasting Science. I am a Ph.D. candidate in Economics at the Hong Kong University of Science and Technology. I expect to graduate in June 2027 and can join afterward. My fields are Empirical Industrial Organization and Digital Economics. I estimate structural models of purchase, return, and inventory on transaction and retail data, which is the forecasting problem in these markets.

My job market paper, "Designing Return Policy in E-Commerce: A Trade-off between Purchase and Return Efficiency," studies whether a return policy encourages efficient returns and purchases. A stricter policy curbs inefficient returns after delivery, but the lower return rate makes a higher product price more attractive for the seller and can exclude efficient purchases. Using transaction data from a Taobao apparel retailer, I estimate a structural model of purchase, return, and whether to buy return-shipping insurance under monopoly pricing across six categories. Automatic coverage of return shipping performs better when the margin, net scrap value, and uncertainty are high, because it expands efficient purchases. Optional coverage performs better when those attributes are low, because it curbs excessive returns. A menu that pairs a discounted price with a medium restocking fee balances the two margins and performs better than both insurance policies for most categories.

A second working paper, "Product Design with Heterogeneous Search Costs" (with Pak Hung Au), studies how firms choose product design when consumers differ in search costs. Search costs shape which products consumers search. Consumers with low search costs seek niche products, and consumers with high search costs seek standardized products. A fall in search costs can raise prices when this shift in which product consumers search outweighs the effect that encourages more search. I also have two ongoing projects. With Kohei Kawaguchi and Kei Kawai, I use Japanese bookstore data to study how resale price maintenance encourages retailers to hold inventory in low-demand states. However, unsold copies cannot be cleared by cutting the price, so they are returned and discarded at an environmental cost. With Ce Bian and Liang Zhao, I study pass-through when products can be returned, and show that a tax can lower the equilibrium price and raise welfare by reducing the return rate.

At HKUST I was a teaching assistant from 2020 to 2025 for undergraduate macroeconomics, the economics of uncertainty and information, and Ph.D. microeconomic theory, with an average evaluation of 4.72/5. In 2026 I designed and lectured the mathematics camp for the MSc in Economics, receiving 4.53/5. I am prepared to teach microeconomic theory, industrial organization, applied microeconometrics, and information economics from the undergraduate to the Ph.D. level, mathematics for economists through the master's level, and macroeconomics at the undergraduate level.

I submit this letter, my CV, my job market paper, a second research paper, my research statement, and my transcript through JOE. Pak Hung Au, Kohei Kawaguchi, and Kei Kawai will email their letters to cefs@amss.ac.cn. You can reach me at khsu@connect.ust.hk or +852 6840 9753.

Sincerely,

Ke Cheng HSU
Ph.D. Candidate, Department of Economics, HKUST