Shoki Kusaka

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31/01/2024

National Bureau of Economic Research,
1050 Massachusetts Avenue, Cambridge, MA, 02138

Dear Program Committee Members,

I am writing to express my strong interest in attending NBER Innovation Research Bootcamp 2024 this upcoming summer. As a dedicated and motivated student, I am eager to participate in the enriching educational experiences offered by your program.

I am currently a third-year Ph.D. student in the Economics department at Yale University. My primary fields of interest are Industrial Organization and International Trade. I am working on research in these fields under the supervision of Prof. Costas Arkolakis, Prof. Steven Berry, Prof. Mitsuru Igami, and Prof. Amit Khandelwal. I have no official dissertation committee yet.

I have attached my curriculum vitae, a list of all current and completed Ph.D. courses and a one-page essay that describes my current and future research as well as the reason for applying to this program in this PDF file. Additionally, a letter of recommendation will be sent to you separately by Prof. Igami Mitsuru.

I am confident that the NBER Innovation Research Bootcamp will provide me with valuable insights and experiences that will contribute to my academic growth. I am particularly drawn to the opportunity to take intensive classes and attend the Summer Institute, and I believe that participating in this program will enhance my knowledge and skills in innovation research.

Thank you for considering my application. I am excited about the possibility of being a part of the NBER Innovation Research Bootcamp and look forward to the opportunity to learn from the program.

Sincerely,

Shoki Kusaka

Shoki Kusaka
Yale University
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EDUCATION

Present Ph.D. Economics, Yale University
2021 M.A. Economics, The University of Tokyo,
Advisors: Prof. Taiji Furusawa, Konstantin Kucheryavyy
2019 B.A. International Relations, The University of Tokyo

Research Interests

Primary: International Trade and Industrial Organization
Secondary: Development Economics, Spatial Economics

RESEARCH PAPERS

Publications:

The Impacts of AI, Robots, and Globalization on Labor Markets: Analysis of a Quantitative General Equilibrium Trade Model (with Taiji Furusawa and Sugita Yoichi) in *Robots and AI: a New Economic Era* (eds. Lili Yan Ing and Gene M. Grossman), Oxon and New York: Routledge, 2022.

Working Papers:

"New Technology Diffusion: Implications for Monopsony Power, Markups, and Labor Share" (with Tetsuji Okazaki, Ken Onishi, and Naoki Wakamori)

"Markdowns and Trade Liberalization in Developing Countries: Evidence from Colombia, 1977-2020"

"Welfare Gains from LCD Innovations, 2001-2011" (with Mitsuru Igami, Jeff Qiu, and Tuyetanh L. Tran)

TEACHING EXPERIENCE

Teaching Assistant, International Trade (graduate), University of Tokyo, Spring 2021
Teaching Assistant, Development Economics (graduate), University of Tokyo, Fall 2020
Teaching Assistant, International Trade (graduate), University of Tokyo, Spring 2020
Lecturer, Math Camp: optimization theory (graduate), University of Tokyo, Spring and Fall 2020
Teaching Assistant, Introduction to Python (undergraduate), University of Tokyo, Fall 2019

RESEARCH AND RELEVANT WORK EXPERIENCE

Research Assistant, Prof. Taiji Furusawa, University of Tokyo, Summer 2019 – Summer 2021
Research Assistant, Prof. Hideki Hashimoto, University of Tokyo, Summer 2019 – Summer 2021
Research Assistant, Prof. Yukiko Saito, Waseda University, Spring 2020 – Summer 2021
Research Assistant, Prof. Hidehiko Ichimura, University of Tokyo, Summer 2018 - Fall 2018

GRANTS AND AWARDS

Research Fellow of Japan Society for the Promotion of Science (DC1), 2021
The Nakajima Foundation Scholarship, September 2021 - August 2025

CONFERENCE AND SEMINAR PRESENTATIONS

2024: North American Winter Meeting of the Econometric Society (ASSA 2024)
2023: North American Winter Meeting of the Econometric Society (ASSA 2023)
NBER conference Megafirms and the Economy, Spring 2023
North American Summer Meeting of the Econometric Society
European Summer Meeting of the Econometric Society
2022: European Summer Meeting of the Econometric Society
2021: IEFS Japan Annual Meeting 2020

LANGUAGES

Japanese (native), English (fluent), French (intermediate)

COMPUTATIONAL SKILLS

STATA, Matlab, Python, R

A list of all current and completed PhD courses

First Year

Fall 2021
Econ500 General Economic Theory: Microeconomics
Econ510 General Economic Theory: Macroeconomics
Econ550 Econometrics I
Econ580 General Economic History: Western Europe

Spring 2022
Econ501 General Economic Theory: Microeconomics
Econ511 General Economic Theory: Macroeconomics
Econ552 Econometrics III
Econ794 International Trade Policy

Second Year

Fall 2022
Econ525 Advanced Macroeconomics I
Econ556 Topics in Empirical Economics & Public Policy
Econ600 Industrial Organization I
Econ720 International Trade I

Spring 2023
Econ526 Advanced Macroeconomics II
Econ601 Industrial Organization II
Econ721 International Trade II

Third Year

Fall 2023
Econ606 Prospectus Workshop Industrial Organization
Econ706 Prospectus Workshop International Economics

Spring 2024
Econ606 Prospectus Workshop Industrial Organization
Econ706 Prospectus Workshop International Economics

I would like to attend this Innovation Research Bootcamp to deepen my understanding of the literature further and fill the gap across the fields I am currently working in and what I have learned during my Ph.D. studies. My primary research interest is in productivity, technology adoption, and innovation in the fields of Industrial Organization and International Trade. I have two ongoing projects on technological adaption and innovation, as well as preliminary projects on market power and innovation, and trade and innovation.

In my ongoing research with Okazaki (University of Tokyo), Onishi (Hitotsubashi), and Wakamori (Hitotsubashi), I am exploring the implications of adopting new technology on market power. When new technology is invented, not all firms immediately gain access to it, leading to heterogeneity in production technologies across different establishments. We show that ignoring such heterogeneity is problematic when estimating productivity and market powers such as markups and monopsony power of establishments, using the detailed plant-level technology information at each plant in the Japanese cement industry over time.

Another working paper, which I am collaborating on with Igami (Yale), Qiu (Department of Justice), and Tran (Yale), examines the welfare consequences of innovation in global liquid crystal display (LCD) panels during the 2000s. The industry experienced rapid technological progress. At the same time, the availability of detailed product characteristics, production costs, and the investment costs of production lines are observed. This allows us to decompose the welfare gains, both consumer and producer surplus, into various types of innovation, i.e., process innovation and product innovation. Furthermore, we quantify the social and private return on investment in fab technology and find that the social return on investment is unambiguously very high.

For future studies, I am particularly interested in the strategic interaction of innovation and technology adoption. I want to investigate how various policies, such as environmental or antitrust policies, affect the dynamic incentive to innovate and invest in technology and whether it results in unintended consequences in the long run. In addition, in the international trade field, the relationship between international trade and innovation and dynamic gains from trade is one of the important but under-investigated topics. Empirically, we observe that trade affects innovation, but the underlying mechanism is little known. International trade potentially affects innovation through two channels: larger market effect and knowledge diffusion. I am trying to identify and quantify these two mechanisms separately.

The reason for attending the boot camp aligns perfectly with my interest in further deepening my understanding of the literature on innovation research. I completed 2nd-year IO, Trade, and Macro courses, and all of the three fields covered some topics about innovation from different perspectives. However, I have felt that my research interests related to innovation, productivity, and technological adoption do not neatly fit into any single field, which sometimes has been a source of frustration. Recognizing the interdisciplinary nature of innovation research, I value the opportunity to engage with experts and peers from diverse fields and systematically learn the frontier literature. This will aid me in pursuing research on the economics of innovation and innovation policy related to International Trade and Industrial Organization.

Yale University

MITSURU IGAMI
Associate Professor of Economics
Economics Department
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Dear Kevin, Ina, and Kyle:

January 31, 2024

RE: Letter of Recommendation for **Shoki Kusaka**

I am enthusiastically writing this letter for Shoki, our top 3rd-year PhD student at Yale Department of Economics, with my strongest recommendation relative to all other students that I have recommended to the bootcamp since its inauguration.

I would like to make his case based on three considerations: (i) Shoki's exceptional research capability, (ii) the unusually high match quality between Shoki and your bootcamp, and (iii) the strategic desirability of increasing the footprint of our NBER-Innovation research community in the field of international trade by inviting a student of top trade economists like Costas Arkolakis and Amit Khandelwal (Shoki's advisors at Yale).

First, Shoki is the best student in his cohort in all counts. In my joint project with Shoki, ("Welfare Gains from LCD Innovations, 2001–2011"), I gave him my data and a one-page sketch of what I wanted to do. Within six months, he produced a perfect suite of model, estimation, and simulation results. Our working paper is ready for conference presentations. You can find evidence for his technical competence in his CV and transcripts, but what I like most about Shoki is his careful handling of raw data, a battery of sanity checks he proactively runs, and his ability to connect estimation results with subtle features of data, which we can usually expect only from seasoned empirical researchers. Furthermore, in almost every biweekly meeting, he not only points out new problems in the analysis but also proposes creative solutions.

Second, the match quality between Shoki and your program is unusually high because he has consistently been producing research papers on innovation and productivity at the level of firms and plants. His coauthors include serious scholars of technical change, such as Tetsuji Okazaki—a longtime coauthor of Chad Syverson, who invariably appreciated Shoki's contributions and promoted him from RA to coauthor. So, Shoki is genuinely interested in the topics we care about. However, as he correctly points out in his essay (see his application package), none of the 2nd-year coursework in macroeconomics, international trade, and IO addresses the economic problems surrounding new technologies as a main theme of the respective field. This frustration and the sense of "gap" led him to seek participation in your bootcamp. (I believe this perception deeply resonates with the spirit of your program.)

Third, I strongly believe that our innovation-research community can (and probably should) increase our footprint in the areas of empirical trade and development. Yes, I am aware of a "parallel" NBER meeting at the Summer Institute by Jan de Loecker and Syverson, but their program is less focused on the empirical microeconomics and strategies of innovation, unlike your/our Innovation meeting and the bootcamp. By training and investing in a top student of good trade economists like Arkolakis and Khandelwal, we can expect a potentially huge return in advancing the research frontier and cultivating a good research culture in these adjacent fields. Shoki can be our version of Syverson, de Loecker, Daniel Yi Xu, and the like in the near future.

In short, I really just wanted to send you a clear message that it makes sense to invite Shoki to our research group, and that the bootcamp would be an ideal introduction.

Thanks for reading this long letter!

Sincerely,



Mitsuru Igami

Associate Professor of Economics, Department of Economics, Yale University
Visiting Associate Professor, Sauder School of Business, University of British Columbia