Dear Committee,

I am a 4th year PhD student in Business and Public Policy at UC Berkeley Haas School of Business. My references are Professors Francesco Trebbi (ftrebbi@berkeley.edu) and Matilde Bombardini (mbombardini@berkeley.edu) of UC Berkeley Haas. My principal project studies the impact of decentralized industrial policy in the Chinese semiconductor sector(s) on both production and innovation outcomes. Compared to other semiconductor industrial policies globally including the US CHIPS Act, I document that the Chinese policy has two salient distinguishing features: (1) local governments provide and allocate most of the subsidies measured by both equity investment and grants, and design and implement most of the policies supporting both output and innovation. (2) Semiconductor industrial policies target the whole supply chain, subsidizing not just the capital-intensive manufacturing sector but also the capital-light integrated circuit (IC) design firms that nevertheless face significant design and R&D costs in the product development process.

I ask whether decentralized subsidy allocation exacerbate misallocation of resources, measured by entry and non-exit of unproductive firms and dispersion of productivity across regions, or if local governments' access to local information on the quality of entrepreneurs enables them to identify and exploit local comparative advantages in the complex semiconductor supply chain featuring many products and subsectors. Both facts coexist from my initial productivity estimates with administrative and proprietary industry data and interviews with professionals working in Chinese government venture capital. On the supply chain side, I also explore manufacturing incentives' spillovers to own-region and neighboring downstream IC design sectors' R&D outcomes (patent citations and IC design layout counts) in a staggered policy implementation setting across regions, as well as whether downstream R&D and product innovation subsidies also boost output, investment in capacity, and innovation in manufacturing process (patents & nanometer node) in the upstream locally and across other regions.

A proper analysis of the tradeoffs between a decentralized Chinese status quo and a centralized counterfactual and equilibrium impacts of cross sector industrial policies in a complex supply chain is relevant to current US industrial policy efforts, which similarly feature both central distribution of grants and local tax and infrastructure incentives. My other work explores related themes, including quantifying the presence of double marginalization and countervailing power across monopolies on the advanced computing chip supply chain and the decoupling of U.S.-China cross-border venture capital investments. The Innovation Research Boot Camp will provide me generous support and a community to learn from and engage with scholars with similar interests, which would greatly enhance the quality and rigor of my projects. I believe my work will be of great relevance to current industrial and innovation policies in the US, which are set often explicitly with an objective to manage the increasingly intense and critical US-China technology competition. Thank you for considering my application, and I look forward to hearing your feedback.

Sincerely,
Ming-yen Ho

Ming-yen Ho

Last update: December 5, 2024

CONTACT INFORMATION

Haas School of Business
2220 Piedmont Avenue, Berkeley, CA

✉ E-mail: mho@berkeley.edu

FIELDS

- Political Economy, Industrial Organization

EDUCATION

- **PhD Business Administration (Business & Public Policy), UC Berkeley** 2021-
  - Designated Emphasis in Political Economy
- MA Analytical Political Economy, Duke University 2019–21
- Bachelor of Social Sciences & Bachelor of Laws, the University of Hong Kong 2014-19
  - *First Class Honours*

LANGUAGES & SKILLS

- *Software/Programming*: Python, Julia, Stata, QGIS, R
- *Human*: Mandarin, Cantonese, Burmese (Intermediate)

EMPLOYMENT

- Intern, OECD Productivity, Innovation & Entrepreneurship Division Nov 2024 -
- Non-Resident Fellow, Research Institute for Democracy, Society, and Emerging Technology, National Science & Technology Council, Taiwan Sept 2023-
- Intern, Strategic Planning Intelligence Division, TSMC Summer 2022, 24

RESEARCH EXPERIENCE

- Research Assistant to Francesco Trebbi, UC Berkeley Feb 2023-
- Research Assistant to Matthew Backus, UC Berkeley July 2022-23
- Research Assistant to Patrick Bayer, Duke University 2020–21
- Research Assistant to Marjorie McElroy, Duke University 2020–21
- Research Assistant to Shitong Qiao, HKU 2020–21

TEACHING EXPERIENCE

- Graduate Student Instructor, PhD Economic Theory II, UCB Econ Spring 2024, 25
- Graduate Student Instructor, Intermediate Microeconomics, UCB Haas Fall 2023, 24
- Graduate Student Instructor, MBA/UG Macroeconomics, UCB Haas Spring 2023
- Teaching Assistant, MA Advanced Microeconomic Analysis, Duke Econ Spring 2021
- Instructor, Economics Masters' Math Camp, Duke Econ August 2020
- Teaching Assistant, Intermediate Microeconomics I, Duke Econ Summer 2020

HONORS AND AWARDS

- UC IGCC Dissertation Fellowship ($15,000) 2024-25
- Taiwan Ministry of Education Study Abroad Scholarship ($16,000 * 2) 2024, 25
- Fisher Center for Business Analytics research grant ($3,000) Dec 2023
- Network for a New Political Economy (N2PE) research grant ($5,000 * 2) July 2023, 24
- Williamson PhD Research Fellowship ($1,600) April 2023
- Duke Economics Masters' Scholar Award 2019-21
- Hong Kong Trustees' Association Prize in Equity & Trusts 2019
- 2x CALI Excellence for the Future Award, Cornell Law School 2018
  - Top of the class in Law & Finance and Comparative Law: East Asian Legal Systems
- HKU Foundation Scholarships for Outstanding International Students 2014-19

REFEREEING

Econometrica

CITIZENSHIP

Taiwan (US Permanent Resident since July 2022)

CALCENTRAL

My Academics (/academics) » Academic Summary

Academic Summary

Student Profile

Name	Ming-yen Ho	
Student ID	3037250872	
Major	Graduate Academic Programs Business Administration PhD Business & Public Policy	
Designated Emphasis	Graduate Academic Programs Political Economy DE	
Academic Career	Graduate	
Level	Graduate	
Expected Graduation	Political Economy DE Business Administration PhD Spring 2026	
Cumulative Units	**Total Units** **P/NP Total** **P/NP Passed**	102.5 26 26
Cumulative GPA	3.972	
Degree Conferred	🎓 **Master of Science** in **Business Administration** Awarded: December 15, 2023	

Enrollment

Fall 2021

Class	Title	Un.	Gr.	Pts.
ECON 201A	Economic Theory	4	A	16
ECON 240A	Econometrics	5	A	20

Class	Title	Un.	Gr.	Pts.
PHDBA 279S	Research Seminar in Business and Public Policy	2	S	0.0
PHDBA 297B	Research and Theory in Business: Behavioral Science	3	A+	12

Spring 2022

Class	Title	Un.	Gr.	Pts.
ECON 201B	Economic Theory	4	A	16
ECON 240B	Econometrics	4	A	16
PHDBA 297T LEC 002	Doctoral Topics in Business Administration	1.5	A	6
PHDBA 297T LEC 004	Doctoral Topics in Business Administration	2.5	A+	10
PHDBA 297T LEC 005	Doctoral Topics in Business Administration	1.5	A	6
PHDBA 375	Teaching Business	3	S	0.0

Fall 2022

Class	Title	Un.	Gr.	Pts.
ECON C215A	Political Economics	3	A	12
ECON 220A	Industrial Organization	3	A	12
EECS 227AT	Optimization Models in Engineering	4	A	16
MATH C218A	Probability Theory	4	S	0.0
PHDBA 269D	Special Research Topics in Marketing	3	A	12
PHDBA 279S	Research Seminar in Business and Public Policy	2	S	0.0

Spring 2023

Class	Title	Un.	Gr.	Pts.
ECON 215B	Political Economics	3	A	12
ECON 220B	Industrial Organization	3	A	12
ECON 241A	Econometrics	2	A	8
PHDBA C270	Workshop in Institutional Analysis	2	S	0.0
PHDBA 279PD	The Economic Institutions of Capitalism in Historical Perspective	3	A+	12

Fall 2023

Class	Title	Un.	Gr.	Pts.
BURMESE 1A	Introductory Burmese	5	B+	0.0
ECON 202A	Macroeconomics	4	A-	14.8
ECON 207A	Mathematical Economics	3	A+	12
MATH 272	Interdisciplinary Topics in Mathematics	4	A	16
PHDBA C270	Workshop in Institutional Analysis	2	S	0.0

Spring 2024

Class	Title	Un.	Gr.	Pts.
BURMESE 1B	Introductory Burmese	5	S	0.0
ECON 206	Mechanism Design and Agency Theory	3	A-	11.1
ECON 216	Seminar in Political Economy	3	A	12
PHDBA C270	Workshop in Institutional Analysis	2	S	0.0
PHDBA 279S	Research Seminar in Business and Public Policy	2	S	0.0

Fall 2024

Class	Title	Un.	Gr.	Pts.
BURMESE 100A	Intermediate Burmese	5	S	0.0
ECON 208	Microeconomic Theory Seminar	3	A	12
ECON 216	Seminar in Political Economy	3	A	12
PHDBA C270	Workshop in Institutional Analysis	2	S	0.0
POLSCI 232B	Formal Models of Political Science	4	A	16

Spring 2025

Class	Title	Un.	Gr.	Pts.
BURMESE 100B	Intermediate Burmese	5	—	0.0
PHDBA C270	Workshop in Institutional Analysis	2	—	0.0
PHDBA 279S	Research Seminar in Business and Public Policy	2	—	0.0
POLSCI 226A	International Political Economy	4	—	—

Berkeley UNIVERSITY OF CALIFORNIA

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Current Research

My main project studies decentralized industrial policy in China on the semiconductor supply chain. I investigate the tradeoffs of delegating subsidy giving decisions to competing local authorities. Decentralized industrial policy exploits local governments' local knowledge and nimble administrative prowess to target appropriate subsectors and talented entrepreneurs at the possible cost of misallocating resources to uncompetitive firms that are nevertheless provincial champions for local governments of less productive provinces.

Reduced-form identification of policy treatment effects exploit the staggered implementation of policies and funding decisions across localities and time on different segments of the supply chain. I investigate the direct effect of policy support and government equity investment on local firms' manufacturing outcomes such as capacity investment, output, and employment as well as innovation outcomes including nanometer process node progression, patents, and IC design layout protections, utilizing modern event study techniques. To document manufacturing subsidies' spillovers on neighboring downstream firms and IC design incentives' spillovers to neighboring upstream manufacturing, identification relies on the assumption that local governments implement sector-specific R&D and IC design incentives and firm-targeted equity subsidies in response to local firms' expected productivity but not productivities of firms in neighbor provinces/ municipalities of the province/municipality, conditioning on lagged output of the treated neighbor firms. The presence of such spillovers in general suggest that localities may underprovide subsidies, but China's well-documented political tournament that rewards local politicians for economic performance may have mitigated such coordination failures.

To study whether widespread local subsidizing of semiconductors results in misallocation, I estimate productivity of manufacturing firms using standard productivity estimation techniques in industrial organization. Utilizing proprietary data on plant-level investment, utilization rates, and capacity, I study the evolution of local and national champions' (defined by whether the firm is invested by a local or the national government equity fund) productivities pre and post government investment, benchmarking that against their national and international peers. Initial estimates suggest that local governments select high productivity firms within their province, and the local champions' productivity ranking nationally improved relative to firms producing the same product (semiconductor type by process node), but national champions do not exhibit the same pattern. This indicates decentralized industrial policy exploits local government's private knowledge of local firms' potential. Therefore even though productivities of local champions vary significantly across regions through time, suggesting misallocation relative to a first-best scenario in which the central planner has full information, decentralization may be a second-best solution.

To quantify the tradeoffs, I build a dynamic model of local and central government subsidy decisions that reduce capacity expansion costs of firms. Marginal benefit of investment depends on the firm's productivity, which local government has better information. Higher local manufacturing capacity reduces the input costs of downstream IC design firms on the margin, inducing them to innovate and introduce products. The misallocation costs, measured by the

dispersion in productivities of subsidized firms across regions, could then be compared against gains from local identification of productive firms to evaluate a centralized subsidy allocation counterfactual, similar to that practiced by the US CHIPS Act where the Department of Commerce is the principal subsidy allocator. My work is of relevance to ongoing debates in public finance, industrial policy, and trade on the design of industrial and innovation policies, with a particular focus on federal institutions, which should also inform US policymakers. Thus engaging with a broader community of innovation economists from different subfields in economics would greatly enhance the technical quality and substantive focus of my research.