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Fields of Concentration:
International Trade
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Desired Teaching:
International Trade
Macroeconomics
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Comprehensive Examinations Completed:
2018 (Oral): International Trade, Macroeconomics
2017 (Written): Microeconomics, Macroeconomics

Dissertation Title: *Essays on International Technology Diffusion*

Committee:
Professor Samuel Kortum (Chair)
Professor Lorenzo Caliendo
Professor Diana Van Patten

Degrees:
Ph.D., Economics, Yale University, 2023 (expected)
M.Phil., Economics, Yale University, 2019
M.A., Economics, Yale University, 2018
M.A., Economics, CEMFI, 2016
B.A., Economics (*First Class Honours*), University of Hong Kong, 2014

Fellowships, Honors, and Awards:
University Dissertation Fellowship, 2021
Nathan Hale Associates Fellow, 2020
Merrill G. Hastings Fellow, 2017, 2018, 2019

Yale University Doctoral Fellowship, 2016-2021
Cowles Foundation Fellowship, 2016-2021
Fundación ICO Scholarship, 2014, 2015
C.V. Starr Scholarship, 2013

Teaching Experience:
Summer 2022 & 2021, Teaching Assistant to Prof. Zvika Neeman, Introduction to Game Theory, Yale College Summer Session
Spring 2022, Teaching Assistant to Dr. Guillermo Noguera, Introduction to Data Analysis and Econometrics, Yale College
Fall 2020, Teaching Assistant to Prof. John Geanakoplos, General Equilibrium Theory, Yale College
Spring 2020, Teaching Assistant to Prof. Aleh Tsyvinski and Dr. William Hawkins, Introductory Macroeconomics, Yale College
Fall 2019, Teaching Assistant to Prof. Samuel Kortum and Dr. Marnix Amand, Introductory Macroeconomics, Yale College
Spring 2019, Teaching Assistant to Prof. Peter Schott, International Economics, Yale College
Fall 2018, Teaching Assistant to Prof. William English, Monetary Policy, Yale College and School of Management

Research and Work Experience:
Research Assistant to Prof. Lorenzo Caliendo, 2019, Yale University
Project Consultant, 2019, Inter-American Development Bank

Working Papers:
"Multinational Production, Technology Diffusion and Economic Growth" with Wei Xiang, (November 2022), *Job Market Paper.*
"Mechanics of Spatial Growth" with Lorenzo Caliendo, Fernando Parro, Wei Xiang, (November 2022), NBER Working Paper 30579, submitted.

Languages:
Mandarin (native), English (proficient), Cantonese (intermediate), Spanish (intermediate)

References:

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Dissertation Abstract

Multinational Production, Technology Diffusion, and Economic Growth, with Wei Xiang [Job Market Paper]

The economic activities and influence of multinational production (MP) are central to many policy discussions. In this paper, we provide a framework to understand the role of knowledge spillover from MP in the process of international development and economic growth.

We build a tractable multi-country growth model featuring multinational production and knowledge spillover. Firms choose where to produce their products, potentially in a foreign country, because of lower labor costs and better market access. The host country is exposed to technology and management styles used by foreign firms, which is beneficial for local economic growth. Technology and the relative costs of MP and trade determine international production and trade. In turn, technology in a country is affected by both local and foreign producers in its territory. At the aggregate level, the model predicts the dynamic evolution of technology levels from MP and trade shares.

We calibrate the model using panel data on bilateral trade flows from the CEPII Gravity database, MP flows from the OECD Analytical AMNE database, and economic indicators across countries from the Penn World Table. The sample includes 54 economies from 2005 to 2016. Leveraging the variation in MP flows across countries and time, we use nonlinear least square regression to estimate the strength of technology diffusion.

The calibrated model yields the following results. First, changes in MP costs had a significant role in economic growth across countries. Between 2005 and 2016, changes in MP costs explained an average of 26.2% of economic growth. There was much heterogeneity across countries. Changes in MP costs explained the most growth in Romania, India, Indonesia, and China; they explained the least in Finland, the United States, Netherlands, and Austria. Second, motivated by the recent events during the Russia-Ukraine war, we use Russia as an example to study the impact of economic sanctions on a country. A ten-year block of MP to Russia would cause a 0.6% immediate reduction in real wage and a 3.7% loss in welfare for Russia. Countries like Latvia, Vietnam, and China would also be affected, with an average loss of 0.10%. Third, a US reshoring initiative to bring production back (by increasing the US outward MP costs by 20%) would immediately increase the US real consumption by 0.14%, but it would decrease the annual growth rate of consumption level everywhere by about 0.05 percentage points. As a result, the overall US welfare would drop by 0.11%. While the reshoring policy is short-sighted for US growth, it does achieve an objective of US technological advantage relative to other countries. Compared to the benchmark, the US-China TFP ratio would be higher because of the reshoring policy.

Mechanics of Spatial Growth, with Lorenzo Caliendo, Fernando Parro, and Wei Xiang

We study the role that trade and internal migration play in the process of spatial and aggregate growth. We consider an economy in which growth is shaped by the best global and local ideas that contribute to the local stock of knowledge. Global ideas diffuse to locations that are more exposed

to international trade. Local ideas diffuse across space when workers move to another location. We embed the diffusion of ideas through trade and migration into a dynamic spatial framework with trade, forward-looking migration decisions, and capital accumulation. We characterize the equilibrium properties of the model and apply the framework to study China's spatial and aggregate growth during the 1990s and 2000s. International trade and internal migration are important mechanisms for idea diffusion that contributed to China's spatial and aggregate growth, with heterogeneous effects across space. Using patent data, we provide further evidence of idea diffusion through trade and migration.