MIT Economics

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DOCTORAL STUDIES	Massachusetts Institute of Technology (MIT) PhD, Economics, Expected completion June 2024 DISSERTATION: "Essays in International Economics and Macroeconomics"

DISSERTATION COMMITTEE AND REFERENCES

Professor Arnaud Costinot
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Professor Iván Werning
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Professor Stephen Morris
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PRIOR EDUCATION	Princeton University A.B., Mathematics, certificate in Applications of Computing *Summa Cum Laude*	2016

CITIZENSHIP	South Korea	**GENDER**	Male (he/him)

LANGUAGES   English, Korean

FIELDS   Primary Fields: International Trade, Macroeconomics

Secondary Fields: Finance, Economic Theory

TEACHING EXPERIENCE	14.581 International Economics I (Graduate) Teaching Assistant to Profs. Arnaud Costinot & David Atkin	2022
	14.54 International Trade (Undergraduate) Teaching Assistant to Prof. Arnaud Costinot	2022
	14.19 Market Design (Undergraduate) Teaching Assistant to Prof. Parag Pathak	2021
	14.454 Economics Crises (Graduate) Teaching Assistant to Prof. Ricardo Caballero	2021
	14.42 Environmental Policy and Economics (Undergraduate) Teaching Assistant to Prof. Clare Balboni	2021
	14.13 Psychology and Economics (Undergraduate) Teaching Assistant to Profs. Frank Schilbach & Dmitry Taubinsky	2020
	MAT335 Complex Analysis (Undergraduate, Princeton) Teaching Assistant to Prof. Elias Stein	2015
	MAT378 Game Theory (Undergraduate, Princeton) Teaching Assistant to Prof. Chun-Hung Liu	2015
	MAT377 Combinatorial Mathematics (Undergraduate, Princeton) Teaching Assistant to Profs. Richard Ehrenborg & Margaret Readdy	2014

RELEVANT POSITIONS	Research Assistant to Prof. Alp Simsek	2020
	Research Assistant to Prof. Arnaud Costinot	2019
	Military Service, Republic of Korea Army	2016-18

FELLOWSHIPS, HONORS, AND AWARDS	Stanley Fischer (1969) Fellowship, MIT	2018-20
	Fellow, William Lowell Putnam Mathematical Competition	2015
	Peter A. Greenberg '77 Prize, Princeton	2015
	Samsung Scholarship ($50,000 * 4 years)	2012-16
	Gold Medal, International Mathematical Olympiad	2010

PROFESSIONAL ACTIVITIES

Referee: *American Economic Review*
Presentation: CEP-Warwick Junior Trade Workshop (2023)

PUBLICATIONS

"The Cross Number of Minimal Zero-sum Sequences in Finite Abelian Groups," *Journal of Number Theory* 157:99-122, 2015.

RESEARCH PAPERS

"Currency Pegs, Trade Deficits and Unemployment: A Reevaluation of the China Shock" (Job Market Paper) (with Marc de la Barrera and Masao Fukui)

We study how the interaction between China's productivity growth and currency peg to the US dollar affected manufacturing decline, trade deficit and overall welfare in the United States. Empirically, we document that in response

to similar surges in Chinese exports, countries pegging to the US dollar experienced larger unemployment and trade deficits compared to floating countries. Theoretically, we develop a dynamic model of trade featuring endogenous imbalances and nominal rigidity that is consistent with the previous evidence. We show that Foreign growth may hurt Home welfare and characterize optimal trade and monetary policy in this environment. Quantitatively, we find that China's currency peg is responsible for 447 thousand manufacturing jobs lost in the US over 2000-2012, 1.3% (% GDP) of the US trade deficit in the same period, and reduces US lifetime welfare gains from Chinese growth by 32% compared to an economy where an otherwise identically growing China had its currency floating, though the welfare impact of the China shock remains positive overall. We find that a short-run safeguard tariff may have been effective in accommodating China's currency peg and ameliorating the labor market distortions.

"Model (non-)disclosure in supervisory stress tests" (with Marc de la Barrera and Ying Gao)

We study the Federal Reserve's problem of disclosing the models it uses in supervisory stress tests of large banks. Banks argue that nondisclosure leads to inefficiencies stemming from uncertainty, but regulators are concerned that full disclosure can lead to banks gaming the system. We formalize the intuition behind this trade-off in a stylized model where both the regulator and banks have imperfect, private ``models" about a risky asset, and the regulator uses its own model to `stress test' the investment. We show that if the regulator uses its model to test the banks' investment, full disclosure is suboptimal, and the regulator may benefit from hiding the model when the bank's model is more precise than the regulator's own model. The key idea is that hiding the regulator's model forces the bank to guess it using the bank's own models, effectively eliciting the bank's private information. We also show that if the regulator can fine-tune disclosure policies, the regulator can approximately enforce the first-best action of banks, as if the regulator fully knew all the private information held by banks. The intuition is closely related to the Cremer and McLean (1988) information rent extraction result.

RESEARCH IN PROGRESS

"Phillips Curve and Optimal Monetary Policy Targets under Imperfect Labor Reallocation" (with Marc de la Barrera and Masao Fukui)

This paper studies optimal monetary policy in a multisector economy with endogenous, costly reallocation of workers across sectors. We first provide a sufficient condition for which labor relocation does not affect aggregate inflation – depending on the Domar weights and labor share of each sector. When this condition fails to hold, sector reallocation may create additional inflationary pressure, or deflationary pressure in response to shocks. Turning to optimal policy, the central bank no longer has one "output gap" to target when there are multiple labor

types, and it faces a trade-off across aggregate inflation, relative price distortion, and relative output gaps across sectors. We use this framework to investigate the effectiveness of alternative monetary policy targets, both analytically and numerically.

"Quality-Variety Tradeoff and Endogenous Specialization of Cities"

This paper studies the relationship between city size and the specialization of firms, and how it drives spatial agglomeration. I develop a theory of firm investment in quality differentiation and diversification where firms in large cities invest more in quality, while firms in small towns diversify and sell across multiple subsectors. I study how the firm's entry investment decision is affected by the markup it can charge, and the implications of this "specialist versus generalist" dichotomy for the efficient level of entry or productivity investment. I explore the dynamics of this relationship in the long-run, including how the most productive firms in cities may "franchise" to different regions, and the potential tradability of services. This framework allows us to quantify the extent to which endogenous quality investment can explain the agglomeration effects in large cities beyond the selection of productive firms into cities, and the effects this has on aggregate markup and overall economic welfare.

"Exchange Rate Pegs, Foreign Exchange Reserves and Monetary Policy"

I study an open economy with nominal rigidity and financial friction in bond markets. Under financial friction, the central bank can affect the nominal exchange rate through both monetary policy and intervening in the bond market. I lay out the trade-offs of these different policies, and solve the problem of maintaining a peg for a growing country, both for a small open economy and for a large economy that can affect global dynamics. Turning to welfare analysis for the rest of world, I show that to a first order, the pegging country's use of the two instruments are equivalent to the rest of world, and study monetary policy response of the rest of world to the peg. I plan to use this framework to revisit questions of currency pegs, the reserve level required to maintain a currency peg against currency attacks, and evaluate the policy problem of moving from a peg to a float.