MIT Economics

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DOCTORAL STUDIES

Massachusetts Institute of Technology (MIT)
PhD, Economics, Expected completion June 2027
DISSERTATION: *Essays on Macroeconomics and Firm Behavior*

DISSERTATION COMMITTEE AND REFERENCES

Professor Iván Werning
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Professor Jonathan A. Parker
MIT Sloan School of Management
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PRIOR EDUCATION

Williams College 2019
B.A. *summa cum laude* in Economics (highest honors), Mathematics

CITIZENSHIP United States **GENDER:** Male

FIELDS Primary Fields: Macroeconomics, Finance

TEACHING EXPERIENCE

14.02 Principles of Macroeconomics 2024-26
Teaching Assistant to Ricardo Caballero

14.451 Dynamic Optimization Methods with Applications (part of PhD Econ Macro Core) 2023
Teaching Assistant to Fernando Alvarez

	15.454 Fundamentals of Financial Mathematics (Sloan MFin) Teaching Assistant to Paul F. Mende	2023
RELEVANT POSITIONS	Research Assistant to Professor Lawrence D.W. Schmidt	2024
	Research Assistant to Professor Simon Jäger	2022
	Research Analyst on DSGE Team at Federal Reserve Bank of NY	2019-21
FELLOWSHIPS, HONORS, AND AWARDS	George and Obie Shultz Fund	2024-26
	Castle Krob Fellowship in Economics	2022
	MIT Presidential Graduate Fellowship	2021
	David A. Wells Prize in Political Economy (Best Economics Undergraduate Thesis, Williams College)	2019
	Phi Beta Kappa, Williams College	2019
	Kaneda Prize for Young Outstanding Economist (Best Paper, Carroll Round Conference)	2019
	Carl Van Duyne Prize	2018

PROFESSIONAL ACTIVITIES

Referee: *American Economic Journal: Macroeconomics*; *Journal of Money, Credit and Banking*; *Quarterly Review of Economics and Finance*

US Census Bureau: Special Sworn Status

PUBLICATIONS

"Digital Currency and Banking-Sector Stability" with Gregory Phelan, *Journal of Financial Stability,* June 2024.

"Liquidity Provision and Financial Instability" with Gregory Phelan, *Journal of Money, Credit and Banking,* March-April 2024.

"Should Monetary Policy Target Financial Stability?" with Gregory Phelan, *Review of Economic Dynamics,* July 2023.

"International Coordination of Macroprudential Policies with Capital Flows & Financial Asymmetries" with Gregory Phelan, *Journal of Financial Stability,* October 2021.

"Damped Infinite Energy Solutions of the 3D Euler & Boussinesq Equations" with Alejandro Sarria, *Journal of Differential Equations,* September 2018.

WORKING PAPERS

"Real Price Rigidity and Investment Irreversibility in Customer Markets: Evidence from Credit Supply Shocks" (Job Market Paper)

This paper argues that investment irreversibility leads to greater real price rigidity by strengthening the customer-market incentive. In a simple model, predictable demand from a customer base insures firms against future losses after bad idiosyncratic demand shocks due to irreversible capital. Thus, firms with more irreversible capital forgo profits today by selling more output to invest in a larger customer base. But when financial constraints tighten and make current profits more valuable, these firms reduce customer investment

more sharply, which puts more upward pressure on prices and markups. This behavior makes markups more countercyclical and thus causes greater real price rigidity. I find evidence consistent with this mechanism using producer price microdata and the bankruptcy of Lehman Brothers as a natural experiment in the credit supplied to firms. After credit contractions, firms in low-irreversibility industries cut prices while firms in high-irreversibility industries do not. Markups also rise temporarily in high-irreversibility industries relative to low-irreversibility industries. A back-of-the-envelope exercise implies that credit contractions lower aggregate prices by almost 40% less than they would if prices in all industries responded like prices in the least irreversible industry.

"Belief Disagreement in Production Networks"
This paper studies the macroeconomic impact of belief disagreement between firms in different sectors of a production network when firms choose labor quantities before sectoral TFP disturbances are realized. Belief disagreement can reduce aggregate output by causing firms and their suppliers to both cut labor demand. This result works through supply-chain spillovers between firms and their suppliers. A hypothetical vignette experiment run on U.S. small businesses provides empirical evidence that disagreement between firms and their suppliers can affect firms' own price and input decisions.

RESEARCH IN PROGRESS

"Price and Quantity Frictions in Firm-to-Firm Contracts" with Shlok Goyal and Baiyun Jing
This paper documents price and quantity frictions in a novel dataset constructed from contracts between firms. We use large language models to classify the structure of how prices and quantities can change in these contracts.

"Solving Nonlinear Macro Models with Exogenous Dispersed Information" with Shlok Goyal
This paper applies neural networks to solve nonlinear macroeconomic models in which agents have exogenous dispersed information. We show that these models can be solved when we include the entire history of posterior beliefs as part of the state space, and we handle the resulting curse of dimensionality with neural networks to approximate equilibrium policy functions.