David D. Shin

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Education

Duke University — May 2025 (Expected)
PhD in Economics — *Durham, NC*

Duke University — December 2022
Master of Arts in Economics — *Durham, NC*

University of Michigan — April 2017
Bachelor of Science in Economics, Minor in Mathematics (with High Distinction) — *Ann Arbor, MI*

Research and Teaching Interests

International Economics, Environmental Economics, Macroeconomics

Job Market Paper

Climate Policies under Dynamic Factor Adjustment

Working Paper

Understanding Trade Imbalances

Work in Progress

Commodities Trade Fragmentation and Market Power
with Chiara Maggi and Alexandre Balduino Sollaci

Research and Work Experience

PhD Graduate Assistant — August 2021 - Present
Duke University — *Durham, NC*

- Research Assistant to Professor Rafael Dix-Carneiro

Dissertation Fellow — August 2024
Federal Reserve Bank of St. Louis — *St. Louis, MO*

- Dissertation Research

Ph.D. Summer Intern — June 2024 - August 2024
Federal Reserve Bank of New York — *New York, NY*

- Dissertation Research

Fund Internship Program (FIP) — June 2023 - September 2023
International Monetary Fund (IMF) — *Washington, DC*

- PhD intern at the Research Department (World Economic Studies Division)

Short-Term Temporary (STT) — September 2021 - November 2021
World Bank — *Durham, NC*

- Analyzed the impact of trade facilitation policies on consumer prices in Brazil

Military Interpreter/Teaching Assistant — July 2017 - March 2019
Republic of Korea Army (ROKA) — *Republic of Korea*

- Compulsory Military Service

Undergraduate Research Assistant — October 2014 - April 2017
University of Michigan — *Ann Arbor, MI*

- Research Assistant to Professor James R. Hines Jr.

Teaching Experience

Certificate in College Teaching (CCT) Spring 2025 (Expected)
Duke University *Durham, NC*

- Multi-year, university-level program focused on systematic pedagogical training in college teaching

Macroeconomic Analysis II (PhD) Spring 2021
Duke University *Durham, NC*

- Teaching Assistant to Professor Andrea Lanteri and Professor Francesco Bianchi

Macroeconomic Analysis I (PhD) Fall 2020
Duke University *Durham, NC*

- Teaching Assistant to Professor Craig Burnside and Professor Cosmin Ilut

Seminar and Conference Presentations

2024
Duke University; Mid-Atlantic International Trade Workshop (Federal Reserve Board); Federal Reserve Bank of New York; Federal Reserve Bank of St. Louis; Economics Graduate Student Conference (WUSTL)
2023
Duke University; Federal Reserve Bank of Richmond; International Monetary Fund; Economics Graduate Student Conference (WUSTL); Midwest International Trade & Theory Conference (Georgia Tech)

Honors, Scholarships, and Fellowships

Graduate School Tuition Scholarship *2019 - Present*
Duke University

Summer Research Fellowship *2020, 2021, 2022*
Duke University

Phi Beta Kappa *April 2017*
University of Michigan

James B. Angell Scholar *April 2016*
University of Michigan

William J. Branstrom Freshman Prize *April 2015*
University of Michigan

Personal Information

Citizenships: Republic of Korea, USA
Programming Skills: Stata, MATLAB, Dynare
Languages: Korean (Native), English (Fluent)

References

Rafael Dix-Carneiro (Chair)
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Daniel (Yi) Xu
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Andrea Lanteri
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Laura Castillo-Martinez
Department of Economics
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Climate Policies under Dynamic Factor Adjustment

Abstract: This paper develops and estimates a dynamic general equilibrium model of the global economy to investigate how imperfect and gradual adjustments of capital and labor across sectors affect the effectiveness of climate policies in reducing global emissions. The model's estimates indicate that (i) both capital assets and workers exhibit low responsiveness to changes in climate policies, limiting the policies' ability to permanently and swiftly shift capital and labor out of the fossil fuel sector; (ii) capital allocation across sectors exhibits strong persistence over time; and (iii) labor reallocation in response to changes in climate policies is slow, taking 8 years to reach 99 percent completion. I demonstrate that China's subsidy on non-fossil fuel energy sources boosts domestic consumption and investment but may inadvertently increase global emissions due to rising aggregate investment and output. Imperfect factor mobility amplifies this effect by limiting the reallocation of capital and labor away from the fossil fuel sector. My findings underscore the need to (i) combine a subsidy on non-fossil fuel energy sources with a carbon tax and (ii) improve capital and labor mobility to both reduce global emissions and enhance aggregate consumption.

Understanding Trade Imbalances

Abstract: Are persistent trade imbalances signs of distortions? This paper investigates the drivers of persistent trade imbalances in eight advanced and emerging economies from 2000 to 2014. Using a dynamic general equilibrium framework, I rationalize the observed imbalances as outcomes of six key forces commonly discussed in the literature: (i) productivity growth, (ii) trade costs, (iii) financial frictions, (iv) life expectancy, (v) population growth, and (vi) economy-specific intertemporal distortions. The findings highlight that economy-specific intertemporal distortions, particularly in the United States, are the most significant driver of global imbalances. Additionally, changes in trade costs between China and its trading partners—the China shock—had a substantial impact on the trade imbalances of both China and the U.S. The results suggest that, without the China shock, the U.S. would have sustained persistent trade surpluses, while China would have experienced persistent deficits, emphasizing the importance of bilateral trade frictions in understanding global imbalances.

Commodities Trade Fragmentation and Market Power
with Chiara Maggi and Alexandre Balduino Sollaci

Abstract: Amid escalating tensions between the US and China, coupled with the conflict in Ukraine, concerns over the trade fragmentation of commodities intensified. This paper presents a novel framework to evaluate the potential welfare losses resulting from such fragmentation, with a focus on the unique characteristics of commodities, including their high geographical concentration, upstream nature, and limited substitutability. Using a quantitative general equilibrium model incorporating international trade, firm heterogeneity, variable markups, inter-sectoral linkages, and unique commodity characteristics, we assess the welfare implications of hypothetical persistent disruptions in commodity trade between hypothetical US and China blocs. The model delivers five distinct welfare costs arising from commodity trade fragmentation: (i) declining foreign demand, (ii) increased imported input costs, (iii) competition-driven productivity reduction, (iv) a decline in the number of upstream suppliers, and (v) the increased market power of regional suppliers. We find that the reduction in upstream suppliers and the concurrent rise in regional market power significantly amplify the welfare costs associated with commodity trade fragmentation.