

Tianyu Fan

Address: Department of Economics
Yale University
New Haven, CT 06520-8268

Telephone: +1 2035066308

E-mail: tianyu.fan@yale.edu

Web page: tianyu-fan.com

Citizenship: China

Fields of Concentration:

Primary Field: Macroeconomics

Secondary Field: Political Economy, International Trade

Qualifying Examinations Completed

2022 (Oral): Macroeconomics, International Trade

2021 (Written): Microeconomics; 2020 (Written): Macroeconomics (pre-entry)

Dissertation Title: *Essays in Macroeconomics*

Committee:

Professor Michael Peters (Co-Chair)

Professor Fabrizio Zilibotti (Co-Chair)

Professor Pascual Restrepo

Education:

Ph.D., Economics, Yale University, 2026 (expected)

M.Phil., Economics, Yale University, 2023

M.A., Economics, Yale University, 2022

M.A., International and Development Economics, Yale University, 2019

B.A., Economics, Peking University, 2018

B.A., Law, China University of Political Science and Law, 2018

Fellowships, Honors and Awards:

Ph.D. Dissertation Fellowship, Federal Reserve Bank of St. Louis, 2025

Stripe Economics of AI Fellowship, Stripe, 2025

The Sylff Fellowship, Yale University, 2023

Carl Arvid Anderson Prize Fellowship, Yale University, 2023

Doctoral Fellowship, Cowles Foundation Fellowship, Yale University, 2020 - 2026

Teaching Experience:

Fall 2024, Teaching Assistant to Pascual Restrepo and Fabrizio Zilibotti, Macroeconomics (PhD), Yale University

Fall 2023, Teaching Assistant to Zhen Huo and Fabrizio Zilibotti, Macroeconomics (PhD), Yale University

Spring 2023, Teaching Assistant to Michael Boozar, Advanced Development (Master), Yale University

Fall 2022, Teaching Assistant to Ana Cecilia Fieler, Growth and Macroeconomics (Master), Yale University

Fall 2017, Teaching Assistant to Ju Hu and Lixing Li, Intermediate Microeconomics (Undergraduate), Peking University

Research Experience:

Pre-doc Research Assistant to Prof. Fabrizio Zilibotti, Yale University, 2019-2020

Publications:

“Growing Like India: The Unequal Effects of Service-Led Growth” (2023) [with Michael Peters and Fabrizio Zilibotti], *Econometrica*, Vol 91, No 4.

Working Papers:

“The Geopolitical Determinants of Economic Growth, 1960-2019” (July 2025) *Job Market Paper*

“Geopolitical Barriers to Globalization” (September 2025), with Mai Wo and Wei Xiang

“The Labor Market Incidence of New Technologies” (April 2025)

Work In Progress:

“Partial Automation”, with Pascual Restrepo

“Anatomy of Geopolitical Dynamics”, with Jizhou Liu and Wei Xiang

“Measuring Inflation Inequality with Incomplete Prices”, with Olivia Ding and Kan Yao

Seminar and Conference Presentations (reverse chronological order):

2025: NEUDC 2025 (Tufts), The University of Hong Kong, Pan-Asian Macro/Finance Seminar, Growth and Development Conference (Minneapolis Fed), St. Louis Fed Dissertation Conference, CCER Summer Institute, Growth and Institution Conference (Tsinghua), CUF

2024: The TRAIN Conference (Beijing)

2023: Peking University

Referee Service:

American Economic Review: Insight, *Journal of Comparative Economics*, *Macroeconomic Dynamics*, *Quarterly Journal of Economics*

Languages:

Chinese (native), English

References:

Prof. Michael Peters
Yale University
Department of Economics
New Haven, CT 06520
Phone: 203-436-8475
m.peters@yale.edu

Prof. Fabrizio Zilibotti
Yale University
Department of Economics
New Haven, CT 06520
Phone: 203-432-9561
fabrizio.zilibotti@yale.edu

Prof. Pascual Restrepo
Yale University
Department of Economics
New Haven, CT 06520
Phone: 203-432-3576
pascual.restrepo@yale.edu

Dissertation Abstract

Through both theoretical modeling and empirical analysis, my work investigates how technological progress, geopolitical forces, and structural transformation shape economic outcomes across countries and within societies.

The Geopolitical Determinants of Economic Growth, 1960-2019 [Job Market Paper]

This paper establishes geopolitical relations as a first-order determinant of economic growth. We construct a novel event-based measure of bilateral geopolitical alignment by employing large language models with web search capabilities to analyze over 440,000 political events across 196 countries from 1960 to 2019. This comprehensive measure enables us to identify the precise timing and magnitude of geopolitical shifts. Exploiting within-country temporal variation, we find that a one-standard-deviation improvement in geopolitical relations increases GDP per capita by 10 percent over 15 years. These persistent effects operate through multiple reinforcing channels: enhanced political stability, increased investment, expanded trade, and productivity gains. Geopolitical factors account for GDP variations ranging from -\$35\$ to +\$30\$ percent across countries over our sample period, with developing nations exhibiting particularly severe penalties from international isolation.

Geopolitical Barriers to Globalization, with Mai Wo and Wei Xiang

This paper estimates and quantifies how geopolitical alignment shapes global trade across three distinct eras: the Cold War, hyper-globalization, and contemporary fragmentation. We construct a novel measure of bilateral alignment using large language models to compile and analyze 833,485 political events spanning 193 countries from 1950 to 2024. Our analysis reveals that trade flows systematically track geopolitical alignment in both bilateral relationships and aggregate patterns. Using local projections within a gravity framework, we estimate that a one-standard-deviation improvement in geopolitical alignment increases bilateral trade by 20 percent over ten years. Integrating these elasticities into a quantitative general equilibrium model, we find that deteriorating geopolitical relations have reduced global trade by 7 percentage

points between 1995 and 2020. Our findings provide empirical benchmarks for evaluating the costs of geopolitical fragmentation in an era of renewed great power competition.

The Labor Market Incidence of New Technologies

This paper develops a new framework to analyze the incidence of labor market shocks, focusing particularly on automation and artificial intelligence. Central to our theory is the distance-dependent elasticity of substitution (DIDES), where worker mobility between occupations declines with their distance in skill space. Mapping 306 occupations into cognitive, manual, and interpersonal skill dimensions, we estimate a low-dimensional latent skill model that preserves granular substitution patterns. We show that both automation and artificial intelligence cluster within skill-adjacent occupations, constraining employment adjustment and amplifying wage effects. The clustering nature of technologies generates unequal outcomes: 25-45% of labor demand shocks translate to wages (versus 30% under standard models), while mobility recovers only 20% of losses (versus 30% from standard estimates).

Growing Like India: The Unequal Effects of Service-Led Growth, with Michael Peters and Fabrizio Zilibotti, *Econometrica* 2023

Structural transformation in most currently developing countries takes the form of a rapid rise in services but limited industrialization. In this paper, we propose a new methodology to structurally estimate productivity growth in service industries that circumvents the notorious difficulties in measuring quality improvements. In our theory, the expansion of the service sector is both a consequence---due to income effects---and a cause--- due to productivity growth--- of the development process. We estimate the model using Indian household data. We find that productivity growth in non-tradable consumer services such as retail, restaurants, or residential real estate, was an important driver of structural transformation and rising living standards between 1987 and 2011. However, the welfare gains were heavily skewed toward high-income urban dwellers.

Measuring Inflation Inequality with Incomplete Prices, with Olivia Ding and Kan Yao

Poor U.S. households have faced higher inflation rates than rich households over the last four decades, but do unmeasured quality improvements offset this inequality? This paper develops a novel Engel curve approach to measure inflation inequality when official prices incompletely capture quality changes. Given price and income elasticities, variation in expenditure shares is sufficient to estimate inequality from unobserved quality improvements. Income elasticities are recovered from covariation between expenditure shares and household income, while price elasticities are estimated from covariation between expenditure shares and prices, using a latent separability structure with cost shifters as instruments. Applying this method to U.S. data (1984-2019), we find that unmeasured quality improvements exacerbate observed inflation inequality, implying official statistics understate inflation's regressivity.