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Fields of Concentration:

Macroeconomics
Monetary Economics

Desired Teaching:

Macroeconomics
Monetary Economics
Financial Economics

Comprehensive Examinations Completed:

2016 (Oral): Macroeconomics, Financial Economics
2015 (Written): Microeconomics, Macroeconomics

Dissertation Title: *Essays on Heterogeneity in Monetary Economics*

Committee:

Professor Giuseppe Moscarini (Chair)
Professor Zhen Huo
Professor Tony Smith

Expected Completion Date: May 2020

Degrees:

Ph.D., Economics, Yale University, 2020 (expected)
M.Phil., Economics, Yale University, 2017
M.A., Economics, Peking University, 2014
B.S., Physics, University of Science and Technology of China, 2010

Fellowships, Honors and Awards:

Dissertation Fellowship, Yale University, 2019
Yale Graduate Fellowship, Yale University, 2014-2019
Outstanding Graduate of Anhui Province, 2010

Teaching Experience:

Spring 2017, Teaching Assistant to Prof. Aleh Tsyvinski, Introductory Macroeconomics, Yale College

Fall 2017, Teaching Assistant to Prof. Zhen Huo and Tony Smith, Macroeconomics PhD first year, Yale University

Spring 2019, Teaching Assistant to Prof. Aleh Tsyvinski, Introductory Macroeconomics, Yale College

Research and Work Experience:

Fund Internship Program, IMF, June – August, 2018

Working Papers:

“Counter-cyclical Dispersion of Price Changes: Causes and Implications”, (November 2019), *Job Market Paper*

“Optimal Monetary Policy with Asymmetric Shocks and Rational Inattention” with Ho-Mou Wu, (February 2016),

Work In Progress:

“Heterogeneous Price Stickiness, the Keynesian Cross and the Effects of Monetary Policy”

“Using Tax Rebate data to Estimate MPC: Fixed-Effects vs. Matching Methods”

Languages:

Chinese (native), English (fluent)

References:

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Dissertation Abstract

Combining data with theory, my dissertation investigates how heterogeneity, both among households and across products, determines the effectiveness of monetary policy.

Counter-cyclical Dispersion of Price Changes: Causes and Implications, [Job Market Paper]

How effective is monetary policy in stimulating the economy during recessions? The answer

crucially depends on how aggregate price flexibility changes over the business cycle. One key observation is that the dispersion of price changes is countercyclical. How this phenomenon informs us about aggregate price flexibility relies on a solid understanding of the underlying mechanism. Using Nielsen Retail Scanner data, my paper provides new evidence on the nature of the observed countercyclical dispersion of price changes. Based on these empirical findings, I revisit the effectiveness of monetary policy during recessions.

This paper offers three sets of empirical results. First, 80% of the overall rise in price change dispersion during the Great Recession occurs across goods (UPCs) within store and product category. Conversely, the contribution of increasing volatility of individual price changes is negligible. Second, I rank goods by unit price, which I interpret as quality among these goods that belong to the same product category and the same store. The dispersion of price changes between goods of different qualities accounts for over 50% of the rise in the within-store-product-category dispersion. The prices of low-quality goods drop dramatically during the recession, while those of high-quality goods remain stable. Third, the diverging price adjustment across quality groups is most likely due to countercyclical demand elasticity: linking the Nielsen Consumer Panel with the Retail Scanner data, I find that households who buy a larger fraction of low-quality goods during the recession spend less, use more coupons, and purchase more goods on sale.

Motivated by the empirical findings, I develop a quantitative multi-sector menu cost model with shocks to aggregate productivity and nominal spending. I incorporate countercyclical demand elasticity into the sector of low-quality goods and calibrate it using moments in the data. The model successfully replicates the countercyclical dispersion of price changes and the price change distribution of goods in different quality groups. Sector-specific countercyclical demand elasticity is necessary to explain my empirical findings.

In terms of the effectiveness of monetary policy, time-varying demand elasticity affects monetary non-neutrality mainly through the selection effect. Quantitatively, the strength of a monetary stimulus is acyclical: the cumulative real output response to a monetary policy shock is only 4% smaller in recessions. This is largely driven by the fact that a small variation in demand elasticity is sufficient to account for the rising dispersion of price changes. Contrary to models driven by second-moment shocks, monetary policy is still very effective during recessions.

Heterogeneous Price Stickiness, the Keynesian Cross and the Effects of Monetary Policy

I document using Nielsen Retail Scanner data that the prices of retail goods typically purchased by low-income households adjust more often. I also show that households' Marginal Propensities to Consume (MPCs), estimated from the 2008 Economic Stimulus Supplement Survey, are negatively correlated with the price stickiness of the goods they buy. To investigate the implications for the monetary transmission mechanism, I develop a Two-sector Two Agent New Keynesian model (T-TANK). In the model, Ricardian (saver) and Keynesian (spender) households have different MPCs and consumption bundles and thus face different frequencies of price changes. Keynesian households face higher inflation after a nominal stimulus. As a result, compared with a Two Agent New Keynesian model with homogeneous price stickiness, the Keynesian multiplier in my model is smaller, making monetary policy less effective.

Using Tax Rebate data to Estimate MPC: Fixed-Effects vs. Matching Methods

Fixed-effects estimators are widely used with tax rebate data to estimate households' marginal propensity to consume (MPCs). These estimators are supposed to estimate the treatment effects of tax rebate on consumption, by eliminating unobserved heterogeneity and common time factors. This paper shows that the fixed-effects estimator is biased: when subtracting the average spending across households within each period, it not only eliminates the time fixed effects but also subtracts some effects on spending from the tax rebate, which confounds the estimation. I develop a new matching method, by explicitly constructing treatment and control groups, to estimate households' MPCs. Using the 2008 Economic Stimulus Supplement Survey, I show that the matching method consistently recovers the time profile of MPC.