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Advisor: Sarah Zubairy
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Feb 28, 2022

Graduate Student Workshop Committee

Dear Graduate Student Workshop Selection Committee:
Ref: Application for NBER Graduate Student Workshop on Heterogeneous-Agent Macroeconomics

My name is Hyunji (Melissa) Song who is a fifth year PhD student in economics department at Texas A&M University. I am writing this letter to apply for the graduate student workshop on heterogeneous-agent macroeconomics at NBER.

My major field of interests includes macroeconomics, monetary economics, fiscal policy and household finance. With my primary major field – macroeconomics – associated particularly with the heterogeneity across households, I have worked on papers that investigate the implications of heterogeneity under different shocks in the economy.

In my first paper, I examine how the effects of government spending shocks depend on the balance-sheet position of households. Using the U.S. household survey data (i.e. CEX, SCF) with a Vector-Autoregression analysis (VAR), I find that the consumption responses are heterogeneous across households with different financial positions. Notably, households with debt face a large rise in their consumption while households without debt tend to have an insignificant response to a public spending shock. These stylized facts are successfully accounted with the constructed model where the borrowing constraints plays an important role in the transmission mechanism of fiscal policy.

In my second paper, I study how consumers respond to anticipated income changes over time and how the consumption response varies with the size of income changes. Using a newly constructed individual-level data based on Bank of Korea (BOK) household debt database, I provide a statistical evidence on spending heterogeneity following an individual's final car loan payment: the natural experiment of an increase in discretionary income. First, I find that the marginal propensity to consume (MPC) is approximately 20 percent and it monotonically decreases with the size of payment. Second, the size relative to income matters the most. Third, the size effects dominate the liquidity constraint effects. When the relative size of income changes is small, households tend to deviate from consumption smoothing, and this fact is consistent with the welfare-loss analysis.

Currently, I am working on the paper where I examine the distributional effects of government spending shocks on consumption over the real business cycle. I have work-in-progress project using high-frequency data that investigates the term structure of stock market volatility and its role in identifying monetary policy shock. I am also scheduled to present my researches at several conferences and I am trying to build a strong foundation to pursue better research-oriented backgrounds.

Please find enclosed curriculum vitae and statement of interest.
Thank you for your consideration of my application and I look forward to hearing from you soon.

Sincerely,

Hyunji Song

Last updated: February 2022

HYUNJI ("MELISSA") SONG

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EDUCATION

Ph.D. in Economics, Texas A&M University — 2023 (Expected)
Committee: Sarah Zubairy (Chair), Dennis Jansen, Yoon Jo, Hagen Kim

M.A. in Economics, Seoul National University, South Korea — 2016

B.B.A. joint major in Finance and Economics, Simon Fraser University, Canada — 2013

FIELDS OF SPECIALIZATION

Macroeconomics, Monetary Economics, Fiscal policy, Household Finance

WORKING PAPERS

"Household Debt and the Effects of Fiscal Policy" with Sami Alpanda (University of Central Florida) and Sarah Zubairy (Texas A&M University)

"The Consumption Response to Anticipated Income Changes: Evidence from the Magnitude Effect" with Sang-yoon Song (Bank of Korea)

WORK IN PROGRESS

"The Distributional Effects of Fiscal Policy over the Business Cycle"

"Monetary Policy and Term Structure of Stock Market Volatility" with Seongjin Kim (Texas A&M University)

HONORS AND FELLOWSHIPS

Gail Frey Monson Memorial Scholarship, Texas A&M University — 2021 – 2022
S. Charles Maurice Graduate Fellowship in Economics, Texas A&M University — 2021
Outstanding Graduate Teaching Assistant, Texas A&M University — 2020
Department Research Fellowship, Texas A&M University — 2020
Private Enterprise Research Center Summer Scholarship, Texas A&M University — 2019
Departmental Assistantships, Texas A&M University — 2017 – Present
Tae Sung Kim Brain Korea 21 Plus Scholarship, Seoul National University — 2013 – 2016
Dean's Honor roll, Simon Fraser University — 2012

Last updated: February 2022

RESEARCH EXPERIENCE AND OTHER EMPLOYMENT

Research Assistant, Sarah Zubairy, Texas A&M University	2018
Research Assistant, Bank of Korea (BOK)	2016 – 2017
Project Intern, Korea Institute of Public Finance (KIPF)	2014

TEACHING EXPERIENCES

Texas A&M University

Main Instructor, *Macroeconomic Theory* (400 level UG)	Spring 2022, Summer 2020
Recitation Instructor, *Macroeconomics Qualifier Camp** (Ph.D)	Summer 2020, Summer 2019
Teaching Assistant, *Financial Economics* (UG, G)	Fall 2021, Spring 2021, Fall 2020
Teaching Assistant, *Macroeconomic Theory II** (Ph.D core)	Spring 2020, Spring 2019
Teaching Assistant, *Macroeconomic Theory* (400 level UG)	Fall 2019
Teaching Assistant, *Public Finance* (400 level UG)	Spring 2018, Fall 2017

** denotes classes for which I prepared and led recitation sessions*

SEMINAR AND CONFERENCE PRESENTATIONS (* Denotes Scheduled)

2022	SNDE 29th Symposium (Virtual)*; WEAI 97th Annual Conference (Virtual)*;
2021	SEA 91st Annual Meeting (Houston, TX); CEF International Conference (Virtual); WEAI-KAEA (Virtual); KER International Conference (Virtual);
2017	KEA joint conference (Seoul, South Korea);

PERSONAL

Citizenship: Republic of Korea (South Korea)
Preferred Name: Melissa Song
Languages: English (Fluent), Korean (Native)

REFERENCES

Sarah Zubairy (Chair)
Associate Professor
Department of Economics
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Dennis Jansen
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Hwagyun (Hagen) Kim
Associate Professor
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COMPLETED PH.D. COURSES IN MACROECONOMICS (at Texas A&M University)

Macroeconomic Theory I (ECON636)
Macroeconomic Theory II (ECON646)
Empirical Methods in macroeconomics (ECON689)
Advanced Macroeconomics II. (ECON637)

TA experiences (Ph.D courses):
Macroeconomic Theory II (Spring 2020, Spring 2019)
Macroeconomics Qualifier Camp (Summer 2020, Summer 2019)

STATEMENT OF INTEREST

I am a macroeconomist working on monetary and fiscal policy and the household finance to capture the household's heterogeneity in consumption, saving, and borrowing decisions. My research focuses on the aggregate implications of heterogeneity across households. Employing the household-level micro data including CEX (Consumer Expenditure Surveys) and SCF (Survey of Consumer Finances) for the U.S., and the transaction-level data from BOK (Bank of Korea) for South Korea, I examine the dynamics of household's behavior following various economic shocks and exploit the MPC (marginal propensity to consume) variations. In the theoretical part, I extend the dynamic stochastic general equilibrium (DSGE) model with additional features to account empirical findings as well as to shed light on key transmission mechanisms and policy implications.

With an empirical analysis based on micro-level data, applying the heterogeneous-agent model at many dimensions is a must for me. So far, I have developed and extended the model based on households' characteristics, however, developing a theoretical background on my own has been a bit challenging so I started to seek additional help by studying others' work including *Dr. Auclert*. I strongly believe that attending this workshop in-person would be an amazing experience for my last year of Ph.D. program and it would be my honor to interact with other people of similar interest. This is why I am applying for this workshop and I am eager to enhance my ability to build up some extensions to my theoretical and computational background. Below elaborates more on my current work.

Aggregate implications of household heterogeneity and government spending. The effects of fiscal policy (i.e. government spending shocks) varies with different characteristics of households and the state of the economy. Understanding the aggregate implications built upon the household heterogeneity, therefore, enables us to evaluate economic policy propagation properly, and to improve the effectiveness of the policy.

In "Household Debt and the Effects of Fiscal Policy" [1] (Reject & Resubmit, *International Economic Review*), I examine the effects of government spending shocks across households with different balance sheet positions. First, I empirically show that households with debt (i.e. mortgage debt) have large and positive consumption dynamics whereas households without mortgage debt (i.e. outright homeowners) have insignificant expenditure responses. Mortgages constitute the vast majority of household debt in the U.S., thus, housing tenure status (i.e. mortgagors, outright homeowners, and renters) is used as a proxy to capture households' current debt position. Second, the three agent New Keynesian (TANK) model suggests that liquidity constraints and wealth effects, tied to the persistence of public spending, play a crucial role in the propagation of government spending shocks.

In "The Distributional effects of Fiscal Policy over the Real Business Cycle" [3] (work in progress), I estimate the distributional effects following a positive government spending shock over the real business cycle (i.e. recession vs. boom). A positive government spending shock not only affects different income groups differently, but also over the real business cycle. Typically, low-income households behave as the rule-of-thumb consumers (i.e. increase consumption following a positive government spending shock) while high-income households follow representative agents' behavior. In this paper, I examine how these distributional effects vary under recession versus boom using both empirical and the model findings.

Consumption dynamics in response to anticipated income changes. Analyzing how households react to income changes has been a long-lasting question in the propagation of macroeconomic policies. In "The Consumption Response to Anticipated Income Changes: Evidence from the Magnitude Effect" [2], I examine the dynamics of consumption responses following an expected disposable income shock. Employing the quasi-natural experiment approach of an increase in discretionary income: an individual's final car loan payment, I find that the MPC (marginal propensity to consume) is approximately 20 percent in the quarter following the final payment. Notably, the sensitivity of spending largely depends on the size of the shock: i) absolute size, ii) relative size to income, and iii) relative size to previous consumption expenditure). Among three factors, the relative size to income matters the most in explaining MPC variations. When the size of anticipated income change relative to income is small, households tend to deviate from consumption smoothing significantly, implying a higher MPC. Our theoretical explanations provide a consistent result and suggest that the welfare loss from not fully smoothing consumption is relatively small when the relative size of anticipation income increase is small.

High frequency market-based data and fiscal and monetary economics. The path of the economy**,** economic growth, and policy implications often have strong linkages to economic uncertainty and agents' expectations. In assessing how the economy perceives uncertainty, we construct a new measure to estimate monetary policy uncertainty shocks based on market-based high-frequency responses in "Monetary Policy Uncertainty and Term Structure of Stock Market Volatility" [4] (work in progress). Using the changes of volatility index (VIX) futures term structure on scheduled Federal Reserve announcements dates, we identify economic shocks and address the effects of monetary policy on key macroeconomic variables. Comparably, we use another high-frequency market-based data to address how the government spending news shock affect the dynamics of inflation expectations in "Government Spending Shocks and Inflation Expectation" [5] (work in progress).

Working papers

1. "Household Debt and the Effects of Fiscal Policy" with Sami Alpanda (University of Central Florida) and Sarah Zubairy (Texas A&M University), Reject & Resubmit, *International Economic Review*
2. "The Consumption Response to Anticipated Income Changes: Evidence from the Magnitude Effect" with Sang-yoon Song (Bank of Korea)

Work in Progress

3. "The Distributional effects of Fiscal Policy over the Real Business Cycle"
4. "Monetary Policy Uncertainty and Term Structure of Stock Market Volatility" with Seongjin Kim (Texas A&M University)
5. "Government Spending Shocks and Inflation Expectation" with Sarah Zubairy (Texas A&M University) and Tatevik Sekhposyan (Texas A&M University)