

## **WORKSHOPS SERIES ON MACROECONOMICS AND POLICY**

April 2017 - March 2018

**Activities Report** 

## LONG-TERM WORKSHOP OF MACROECONOMICS AND POLICY

Part A: Summary of Long-term Workshop Series

Part B: Evaluation and Achievement

## Part A. Overview of Workshops

## 1. The Impact of Taxes and Transfers on Skill Premium

- Speaker: Shuhei Takahashi (Kyoto University)

- Date: May 17, 2017 (Wed) - Time: 16:40 – 18:10

- Venue: GRIPS 5th Floor, Room 5J

- Total number of attendants: 20 (Students: 11, GRIPS faculty: 6, Guests: 3)

### Summary

His research documents a salient difference between skill premium between the US and Japan and argues that this difference can be attributed to the difference in capital income taxes between the two countries. To quantify the effect of this channel, he proposed a two sector model with heterogeneous households. Interestingly, one key mechanism driving the difference in skill premium is due to the composition of productive workers among high skilled and low skilled groups. During the seminar, participants actively participated by asking questions and giving useful comments.



# 2. Local Market Equilibrium and Designs of the Public Health Insurance System

- Speaker: Naoki Aizawa (University of Minnesota)

- Date: May 24, 2017 (Wed)

- Time: 16:40 - 18:10

- Venue: GRIPS 5th Floor, Room 5J

- Total number of attendants: 18 (Students: 10, GRIPS faculty: 7, Guests: 1)

### Summary

His research topic is timely given the ongoing debate about the health insurance reform in the US. In terms of research approach, he uses a structural model to identify the heterogeneity in demand for insurance by states. He shows that the effect of health insurance reform on employment rate in 2014 depends on the composition difference by states. During the seminar, participants actively participated by asking questions and giving useful comments.



## 3. Model based Estimation of Sovereign Default Risk

- Speaker: Junko Koeda (Waseda University)

- Date: June 28, 2017 (Wed)

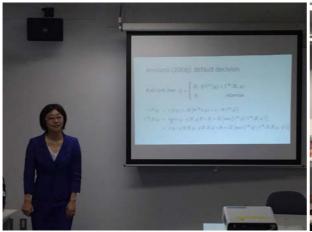
- Time: 16:40 – 18:10

- Venue: GRIPS 5th Floor, Room 5J

- Total number of attendants: 18 (Students: 10, GRIPS faculty: 5, Guest: 3)

## Summary

Her research tries to bring a novelty to a model to predict sovereign default risk. Unlike conventional default risk models which rely on a reduced form of a probability model, she proposes a structural model that is estimated based on the default history in Agentina. During the seminar, participants actively participated by asking questions and giving useful comments.





## 4. Flight to Housing Policy Intervention, and Consumption Misallocation

- Speaker: Zhiwei Xu (Shanghai Jiao Tong University)

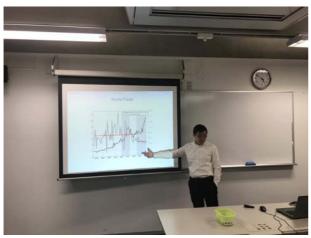
- Date: Nov 9, 2017 (Thu) - Time: 16:40 – 18:10

- Venue: GRIPS 5th Floor, Room 5J

- Total number of attendants: 11 (Students: 8, GRIPS faculty: 2, Guest: 1)

## Summary

His research paper is very interesting and provide a mechanism to explain the high housing price in China after 2013 under an assumption of a scarcity of saving vehicle. During the seminar, participants asked questions and had useful discussion.





## 5. College Loans and Post-schooling Skill Accumulation

- Speaker: Hsuan-Chih Luke Lin (Academia Sinica)

- Date: Nov 29, 2017 (Wed)

- Time: 16:40 - 18:10

- Venue: GRIPS 5th Floor, Room 5J

- Total number of attendants: 11 (Students: 7, GRIPS faculty: 3 Guest: 1)

### Summary

His research paper is very interesting and use a rich structural economic model to capture the effect f student loan on human capital accumulation during the early years of working life. His research also shed light on some policies related to student loan repayment scheme. During the seminar, participants asked questions and had useful discussions



# 6. Optimal Progressive Income Taxation in Bewley-Grossman Framework

- Speaker: Chung Tran (Australian National University)

- Date: December 6, 2017 (Wed)

-Time: 16:40-18:10

- Venue: GRIPS 5th Floor, Room 5J

- Total number of attendants: 15 (Students: 12, GRIPS faculty: 2, Guest: 2)

### Summary

His research paper is very interesting and bring an additional perspective about the optimla progressivity of income taxes. Basically when taking into account the higher medical expense risk people in the middle income range face the income taxes should be much more progressive than recommended in the literature. During the seminar, participants asked questions and had useful discussions.





## 7 (a). Tobin's Q and Inequality

- Speaker: Ignacio Gonzalez (American University)

- Date: December 20, 2017 (Wed)

-Time: 16:10-17:00

- Venue: GRIPS 5th Floor, Room 5J

- Total number of attendants: 13 (Students: 9, GRIPS faculty: 2, Guest: 2)

### Summary

His research paper is very interesting and bring an additional mechanism to explain the change in relative financial wealth and physical capital and explore its implication on welfare effect. His model is novel by incorporating financial market with monopolistic competition market structure into a standard macroeconomic model. During the seminar, participants asked questions and had useful discussions.



# 7 (b). Long-term Unemployment Dynamics and Unemployment Insurance Extensions

- Speaker: Similan Rujiwattanapong (Aarhus University)

- Date: December 20, 2017 (Wed)

-Time: 17:10-18:10

- Venue: GRIPS 5th Floor, Room 5J

- Total number of attendants: 13 (Students: 9, GRIPS faculty: 2, Guest: 2)

### Summary

His research paper is very interesting and provide a quantitative evidence to support the empirical findings that the large increase in long term unemployment in the US during the recent Great Recession is due to the increase in Unemployment Insurance benefits. During the seminar, participants asked questions and had useful discussions.



# 8. Aggregate Consequences of Credit Subsidy Policies: Firm Dynamics and Misallocation

- Speaker: In-Hwan Jo (National University of Singapore)

- Date: January 24, 2018 (Wed)

-Time: 17:10-18:10

- Venue: GRIPS 5th Floor, Room 5J

- Total number of attendants: 10 (Students: 6, GRIPS faculty: 3, Guest: 1)

### Summary

His research paper is very interesting and use a rich structural economic model. The main goal of his research is to quantify the effect of financial constraints among heterogeneous firms on aggregate productivity and welfare. His finding shows that the general equilibrium effect, specifically price changes and equilibrium entry/exit of firms, is very important for the quantitative results. During the seminar, participants asked questions and had useful discussions.



## 9. Inflationary Redistribution vs. Trading Opportunities

- Speaker: Junsang Lee (Sungkyunkwan University)

- Date: February 26, 2018 (Mon)

-Time: 12:10-13:10

- Venue: GRIPS 5th Floor, Room 5E

- Total number of attendants: 7 (Students: 4, GRIPS faculty: 2, Guest: 1)

### **Summary**

The paper proposes a monetary model that combines the tractable features of competitive search with matching frictions of Menzio et al. (2013) with a costly participation model in a centralized market with complete insurance. The paper identifies two types of opposing (i.e., intensive-versus-extensive) margins of trade-offs in the face of anticipated inflation tax. Numerical analysis finds that the extensive margins tend to dominate, resulting in a fall in average welfare and a rise in wealth inequality. During the seminar, participants actively participated by asking questions and giving useful comments. The discussion was very active and fruitful.



## 10. The Macroeconomic Effects of Trade Policy

- Speaker: Andrea Raffo (Board of Governors of Federal Reserve System)

- Date: March 22, 2018 (Thu)

-Time: 12:10-13:10

- Venue: GRIPS 5th Floor, Room 51

- Total number of attendants: 10 (Students: 4, GRIPS faculty: 4, Guest: 2)

### Summary

His research paper is very interesting and provides several insightful policy implications. The main goal of his research is to study the short-run macroeconomic effects of trade policies that are equivalent in a frictionless economy, namely a uniform increase in import tariffs and export subsidies (IX), a value-added tax increase accompanied by a payroll tax reduction (VP), and a border adjustment of corporate profit taxes (BAT). His results show that IX and BAT policies are equivalent and tend to boost output and inflation even under flexible exchange rates. During the seminar, participants asked questions and had useful discussions.



### Part B. Evaluation and Achievement

Series of workshops on Macroeconomic Policies were organized by the University. The macroeconomic policy workshops began from April 2017 and ended in March 2018. In total, 10 workshops were organized and 11 speakers presented their papers. The acceptance level and the level of participation of invited presenters for the macroeconomic workshops were encouraging. Aside presenters, contribution of conference participants were very encouraging. The average attendance for the workshops was approximately 13 persons. Many of these participants were active researchers in the related areas. Participation of the workshops also included Researchers and Practitioners outside GRIPS. Examples of individuals from outside GRIPS that participated in the Macroeconomic Workshops were:

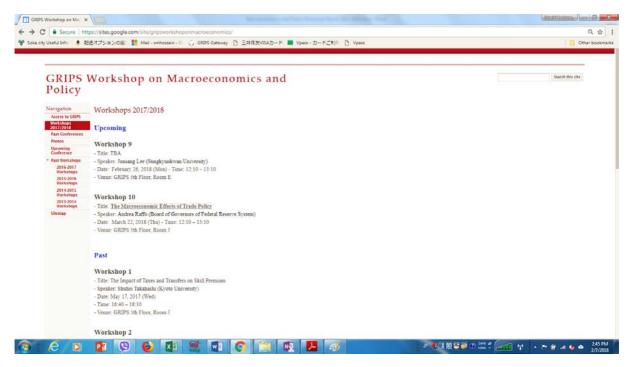
- Shuhei Takahashi (Kyoto University)
- Naoki Aizawa (University of Minnesota)
- Junko Koeda (Waseda University)
- Munechika Katayama (Waseda University)
- Toshiki Ago (The Japan Foundation)
- Zhiwei Xu (Shanghai Jiao Tong University)
- Hsuan-Chih Luke Lin (Academia Sinica)
- Chung Tran (Australian National University)
- Lee Jong Woo (Information and International Affairs Bureau, Korea Customs Service)
- Ignacio Gonzalez (American University)
- Similan Rujiwattanapong (Aarhus University)
- In-Hwan Jo (National University of Singapore)
- Junsang Lee (Sungkyunkwan University)
- Andrea Raffo (Board of Governors of Federal Reserve System)
- Keisuke Otsu (Keio University)

The discussions and exchanges of ideas during the workshop were deep and insightful. Both speakers and participants benefited from the discussion. The workshop series also helped invited speakers, our faculty, and seminar participants to build research network among themselves.

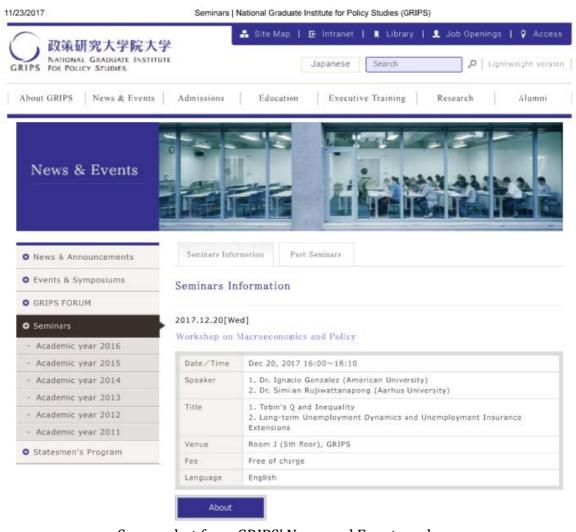
We believe that the workshops would significantly raise both domestic and international recognition of GRIPS's research activities in both the academic and non-academic circles. We have used various channel to outreach participants from both inside and outside GRIPS. In addition to the weekly advanced email announcement about the coming workshop to GRIPS' faculty and students, we have been maintained the information about the coming workshop through two publically accessible websites:

- https://sites.google.com/site/gripsworkshoponmacroeconomics/
- <a href="http://www.grips.ac.jp/en/seminars/">http://www.grips.ac.jp/en/seminars/</a>.

The first website is also used to archive the papers or slides from the past workshops.



Screen shot from the website for Macroeconomics and Public Policy Workshop



Screen shot from GRIPS' News and Events webpage

## Appendix

Material for each seminar

## The Impact of Taxes and Transfers on Skill Premium

Shuhei Takahashi\*

Ken Yamada†

November 2016

### Abstract

The level of wage inequality has varied across advanced industrial countries. One of the main reasons has been a significant difference in the skill wage premium. This paper analyzes the impact of taxes and transfers on the skill wage premium and social welfare in the context of a heterogeneous-agents incomplete-markets model. The analysis indicates that a significant fraction of the difference in the skill wage premium between the United States and Japan is attributable to differences in the tax system and that the optimal tax rate for capital income lies between the tax rates in the United States and Japan.

KEYWORDS: Skill premium; capital-skill complementarity; incomplete markets; capital income taxation.

JEL CLASSIFICATION: E13, E24, E62, H21, H24, J31.

<sup>\*</sup>Institute of Economic Research, Kyoto University. Phone: +81 (0)75 753 7153, Fax: +81 (0)75 753 7193,

Email: takahashi@kier.kyoto-u.ac.jp

†Faculty of Economics, Kyoto University. Phone: +81 (0)75 753 3542, Fax: +81 (0)75 753 3492, Email: yamada@econ.kyoto-u.ac.jp

## Local Market Equilibrium and the Design of Public Health Insurance System\*<sup>†</sup>

Naoki Aizawa

Chao Fu

University of Minnesota

University of Wisconsin

February 15, 2017

### Abstract

We study the design of public health insurance system and its equilibrium impacts on the labor market and the health insurance market. We develop an equilibrium model with rich heterogeneities across local markets, workers and firms; and estimate it exploiting variations across states and policy environments before and after the Affordable Care Act. The estimated model closely matches the distribution of insurance and employment status before and after the ACA. With the estimated model, we study the impacts of programs in the form of the newly proposed Medicaid block granting, which allows for state-specific Medicaid eligibility and coverage rules.

<sup>&</sup>quot;We thank Shoya Ishimaru for excellent research assistant. We thank Mariacristina DeNardi, Eric French, Tom Holmes, Jeremy Lise, Lee Lockwood, Matthew Notowidigdo, Amil Petrin, and Chris Taber for helpful comments.

<sup>†</sup>Preliminary and Incomplete. All comments are welcome. Please do not cite without authors' permission.

## Model-Based Estimation of Sovereign Default Risk

Inci Gumus,† Munechika Katayama,‡ and Junko Koeda5\*

January 2017

First version: October 2017

### Abstract

We estimate a canonical sovereign debt crisis model from Arellano (2008) for Argentina via maximum simulated likelihood estimation. Despite its focus on idiosyncratic risk, the estimated model accounts for the overall default patterns of Argentina. The model-implied business cycle properties are consistent with Arellano's findings, with some caveats. Our novel real-time default probability measure, which exploits model nonlinearity, performs better than a logit model in predicting the timing of default events.

JEL Classification: C13, E43, F34, O11, O19

Keywords: sovereign debt, default risk, maximum simulated likelihood estimation

<sup>†</sup> Assistant Professor, Faculty of Arts and Social Sciences, Sabanci University, Orhanli, Tuzla, Istanbul, 34956, Turkey. E-mail: incigunus@sabanciuniv.edu. Tel: +90-216-4839328. Fax: +90-216-4839250.

<sup>\*</sup> Associate Professor, School of Political Science and Economics, Waseda University, 1-6-1 Nishiwaseda, Shinjuku-ku, Tokyo 169-8050, Japan. E-mail: mkatayama@aoni.waseda.jp. Tel: +81-3-5286-1224.

<sup>§</sup> Corresponding author. Associate Professor, School of Political Science and Economics, Waseda University, 1-6-1 Nishiwaseda, Shinjuku-ku, Tokyo 169-8050, Japan. E-mail: jkoeda@waseda.jp. Tel: +81-3-3208-0752. Fax: +81-3-3203-9816.

<sup>\*</sup> Acknowledgment. We thank Takashi Kano for his valuable and constructive inputs. We thank Junichi Fujimoto and seminar participants in the annual meeting of 2017 Japan Economic Association, the National Graduate Institute for Policy Studies, and the Center for Positive Political Economy's macroeconomics-finance workshop at Waseda University for helpful comments. The research reported here uses the CPPE server at Waseda University and is supported by grants-in-aid from the Ministry of Education, Culture, Sports, Science, and Technology of the Japanese government (grant number 26870124).

### Flight to Housing, Policy Intervention and Consumption Misallocation

Feng Dong, Jianfeng Liu, Zhiwei Xu, and Tao Zha

### Abstract:

From 2000-2013, Chinese house price has been experiencing enormous appreciation along with the strong economic performance. The housing market dynamics during these periods has been well documented both empirically and quantitatively in the literature. Yet the house prices especially those in the Tier 1 cities starts a new wave of high growth, despite the economic slowdown in recent five years. This paper aims to understand the recent striking divergence between the house prices and the economic fundamental. In particular, we introduce the housing asset into a two-sector dynamic general equilibrium model with heterogeneous households. The individuals are facing idiosyncratic uncertainties regarding their disposable wealth. Due to the underdeveloped financial market, the housing becomes a liquid asset that can be used to insure the idiosyncratic uncertainties. A rise in economic uncertainty may lead to a great housing boom due to the stronger demand for liquid assets. The expansion of housing sector crowds out resources from the real sector, leading to an economic slowdown.

We then extend the benchmark model by introducing the house purchase limit policy that restricts the individual's access to housing market. We investigate the aggregate and distributional effects of such a policy regulation. On the one hand, the home purchase limit policy dampens the housing demand, and thus effectively reduces house price. In turn, it mitigates the crowding out effect of the housing sector on the real sector, and hence raises aggregate output and consumption as well. On the other hand, the house purchase limit policy largely raises the idiosyncratic volatility (cross-sectional dispersion) of consumption because of the shortage of liquid assets (housing). As a result, the policy exacerbates the consumption misallocation. The quantitative results suggest that the latter adverse impact dominates the former positive one, so the welfare is reduced.

## Optimal Progressive Income Taxation in a Bewley-Grossman Framework\*

Juergen Jung<sup>†</sup> Towson University

Chung Tran<sup>‡</sup> Australian National University

November 21, 2017

#### Abstract

We study the optimal degree of progressivity of income taxation in an environment where individuals are exposed to both income and health risks over the lifecycle. We argue that the optimal degree of tax progressivity is affected by health factors and insurance arrangements. We formulate a Bewley-Grossman model that matches U.S. data, including the U.S. tax and transfer system and the pre-2010 health insurance system. Our quantitative analysis indicates that the progressive income tax system is an important channel to provide social insurance for low income Americans who have limited access to private health insurance. The optimal progressive income tax system includes a tax break for income below \$38,000 and high marginal tax rates of over 50 percent for income earners above \$200,000. The tax progressivity (Suits) index—a Gini coefficient for the income tax contribution by income-of the optimized income tax system is around 0.53, compared to 0.17 in the benchmark tax system. Welfare gains from switching to the optimal tax system amount to over 5 percent of compensating consumption. Indeed, the optimal income tax system is more progressive than the current U.S. tax code and also more progressive than the optimized systems reported in previous studies, including Conesa and Krueger (2006) and Heathcote, Storesletten and Violante (2017). This finding challenges the view that the US personal income tax code should be less progressive. Finally, we demonstrate that the optimal degree of tax progressivity is influenced by the design of public transfer programs and the parametric specifications of the income tax function.

JEL: E62, H24, I13, D52

Keywords: Health and income risks; Inequality; Social insurance; Tax progressivity; Suits index; Optimal taxation; General equilibrium.

\*Research School of Economics, The Australian National University, ACT 2601, AUS. Tel.: +61 2 6125 5638,

E-mail: chung.tran@anu.edu.au

<sup>\*</sup>We appreciate comments from Dirk Krueger, Mariacristina De Nardi, Greg Kaplan and participants of the UNSW/Treasury Joint Worlshop on Fiscal Policy Modeling, the 2017 Midwest Macroeconomics Meetings, and the economic seminars at the University of Auckland, the Australian National University and Towson University. <sup>†</sup>Department of Economics, Towson University, U.S.A. Tel.: 1 (812) 345-9182, E-mail: jjung@towson.edu

## Tobin's Q and Inequality\*

### Lídia Brun

### Ignacio González

Université Libre de Bruxelles<sup>†</sup>

American University<sup>‡</sup>

November 12, 2017

You can find the latest version here

#### Abstract

Since the early 1980s, equity Tobin's Q has experienced a secular increase in the US, as equity wealth and corporate physical capital have followed divergent trajectories. During the same period, labor productivity and wages have significantly decoupled, leading to a decline in the U.S. corporate labor share. We build an incomplete markets model (in the Bewley-Hugget-Aiyagari tradition) with financial assets and monopoly power to explain the connection between these phenomena. Our model is consistent with several stylized facts of the U.S. economy since 1980. The evolution of capital taxation and the rise of monopoly markups explain the decrease in investment flows and the rise in the market value of existing capital. Wageproductivity decoupling is the natural response not only to the rise of markups, but also to investment sluggishness when capital and labor are complements. We therefore reconcile a simultaneous decrease in the labor share and an increase in the market value of capital with an elasticity of substitution below one. Our model also explains the historical upsurge of equity returns. By explicitly modelling the interaction between monopoly profits and different capital taxes, our framework sheds light on the current debate on capital taxation in the U.S. and elsewhere. We conclude that the secular increase in the relative value of financial wealth is not only a nominal phenomenon, but has had real effects in general equilibrium, rendering a more unequal pre-distributive allocation of income. These secular trends in taxes and market structure have reduced welfare, since the increase of financial wealth, which is mostly experienced by the richest households, occurs at the expense of corporate investment and labor earnings, which are the main source of income for a large portion of the population.

JEL Codes: E25, E44, E22.

Keywords: Tobin's Q, Equity returns, Asset Prices, Capital-Income ratios, Investment, Dividends and Capital Gains Taxes, Corporate Tax, Monopoly markups, Labor Share, Inequality, Welfare.

<sup>\*</sup>We are grateful to Joseph Stiglitz. This manuscript has benefited greatly from discussions with him. We are also grateful to Árpád Ábrahám, Alexis Anagnostopoulos, Leila Davis, Antonia Díaz, Tomohiro Hirano, Ramón Marimón, Ellen McGrattan, Evi Pappa, Ezgi Ozsogut, Ettiene Wasmer and Philippe Weil, for discussions and/or feedback on the current and earlier versions of the paper. We also thank participants in seminars and conferences for useful comments and helpful discussions.

<sup>†</sup>European Center for Advanced Research in Economics and Statistics (ECARES), Université Libre de Bruxelles. lidiabrun@gmail.com

<sup>&</sup>lt;sup>‡</sup>Department of Economics, American University. ignaciog@american.edu

## Long-term Unemployment Dynamics and Unemployment Insurance Extensions\*

W Similan Rujiwattanapong<sup>†</sup>
University College London and Centre for Macroeconomics
- JOB MARKET PAPER -

May 29, 2017
Please find the latest version here

### Abstract

This paper investigates the impact of unemployment insurance (UI) extensions on the incidence of long-term unemployment and on the unemployment duration distribution in the US. Using a search and matching model with endogenous separations, variable job search intensity, on-the-job search and worker heterogeneity, I allow for the maximum UI duration to depend on unemployment rate and for UI benefits to depend on match quality during employment. The model can account for a large fraction of the observed rise in the long-term unemployment and realistic dynamics of the unemployment duration distribution during the Great Recession. I show that eliminating all UI extensions during the Great Recession could potentially lower the unemployment rate by 0.9-3.4 percentage points primarily via the response of job separations. At the same time, it could drastically reduce the long-term unemployment rate by roughly 4 percentage points and the average unemployment duration by up to 27 weeks via the response of job search behaviour of insured unemployed workers. I find that once the worker heterogeneity in UI statuses and benefit levels has been accounted for, unobserved heterogeneity of workers does not account for much of the incidence of long-term unemployment.

JEL Classification. E24, E32, J24, J64, J65.

Keywords. Business cycles, long-term unemployment, unemployment insurance, unemployment duration

<sup>&</sup>quot;I am indebted to Morten Ravn for invaluable guidance and support, and also to Fabien Postel-Vinay and Vincent Sterk for very helpful discussions and insightful suggestions. I also want to thank Wei Cui, Gregor Jarosch, Fatih Karahan, Jeremy Lise, Kurt Mitman, Suphanit Piyapromdee, Shouyong Shi, Henry Siu, Ludo Visschers and Randall Wright as well as seminar participants at UCL and the 2016 European Winter Meeting of the Econometric Society in Edinburgh for helpful comments.

<sup>&</sup>lt;sup>†</sup>W Similan Rujiwattanapong: PhD candidate at Department of Economics, University College London, Gordon Street, WC1H 0AX, UK. Email: wongkot.rujiwattanapong.10@ucl.ac.uk.

## Aggregate Consequences of Credit Subsidy Policies: Firm Dynamics and Misallocation\*

In Hwan Jo<sup>†</sup> and Tatsuro Senga<sup>‡</sup>

November 2017

#### Abstract

Government policies that attempt to alleviate credit constraints faced by small and young firms are widely adopted across countries. We study the aggregate impact of such targeted credit subsidies in a heterogeneous firm model with collateral constraints and endogenous entry and exit. A defining feature of our model is a non-Gaussian process of firm-level productivity, which allows us to capture the skewed firm size distribution seen in the Business Dynamics Statistics (BDS). We compare the welfare and aggregate productivity implications of our non-Gaussian process to those of a standard AR(1) process. While credit subsidies resolve misallocation of resources and enhance aggregate productivity, increased factor prices, in equilibrium, reduce the number of firms in production, which in turn depresses aggregate productivity. We show that the latter indirect general equilibrium effects dominate the former direct productivity gains in a model with the standard AR(1) process, as compared to our non-Gaussian process, under which both welfare and aggregate productivity increase by subsidy policies.

Keywords: misallocation, collateral constraints, firm dynamics, firm size JEL Classifications: E22, G32, O16

<sup>&</sup>quot;We thank Aubhik Khan and Serene Tan for helpful comments. We also thank seminar participants at the DSGE Workshop at Senshu University, the Research Institute of Economy, Trade and Industry (RIETI), Korea University, SNU IRFE, and SJTU Macro-Finance workshop and conference participants at the International Conference on Growth, Trade, and Dynamics, and the Asian and European Meetings of the Econometric Society. This study is conducted as a part of the Project "Dynamics of Inter-organizational Network and Geography" undertaken at the RIETI. The views expressed in the papers are solely those of the authors, and neither represent those of the organization to which the authors belong nor the RIETI.

<sup>&</sup>lt;sup>†</sup>National University of Singapore, email: ecsji@nus.edu.sg, address: 1 Arts Link, Singapore 117570

<sup>&</sup>lt;sup>‡</sup>Queen Mary University of London, RIETI and ESCoE, email: t.senga@qmul.ac.uk, address: Mile End Road, London, E1 4NS, UK

## Inflationary Redistribution vs. Trading Opportunities:

Cost of Inflation in a Monetary Model with Non-degenerate Distributions\*

Timothy Kam<sup>†</sup> Junsang Lee<sup>‡</sup>

Australian National University Sungkyunkwan University

#### Abstract

We propose a monetary model which features endogenous market incompleteness. Our framework combines the tractable features of competitive search with matching frictions of Menzio et al. (2013) with a costly participation model in a centralized market with complete insurance. Equilibrium market incompleteness arises because of: (i) an externality trading off matching opportunities with consumption in non-Walrasian markets where money becomes essential; and (ii) agents have to make costly participation decisions to enter complete consumption insurance markets. We identify two types of opposing (i.e., intensive-versus-extensive) margins of trade-offs in the face of anticipated inflation tax. Numerically, we find that the extensive margins tend to dominate, resulting in average welfare falling and wealth inequality rising with inflation. We also propose a novel computational solution method, taking insights from computational geometry, to efficiently solve for a monetary equilibrium.

JEL Codes: E0; E4; E5; E6; C6

Keywords: Competitive Search; Inflation Trade-offs; Redistribution; Computational Geometry.

<sup>\*</sup>We thank Shouyong Shi, Amy Sun, Guillaume Rocheteau, Ian King and Jonathan Chiu for discussions. We also thank Nejat Anbarci, Suren Basov, Pedro Gomis-Porqueras, John Stachurski, Satoshi Tanaka, Chung Tran and seminar participants at the ANU Macroeconomics Group and Deakin University. All the remaining errors are ours. This version: May 16, 2017.

<sup>†</sup>Room 2086, L.F. Crisp Building (26), Research School of Economics, The Australian National University, ACT 0200, Australia. E-mail: tcy.kam@gmail.com

<sup>&</sup>lt;sup>‡</sup>4F Room No.403 Dasan Hall of Economics, School of Economics, Sungkyunkwan University, Seoul, Republic of Korea. E-mail: junsang.skku@gmail.com

## The Macroeconomic Effects of Trade Policy\*

C. Erceg A. Prestipino A. Raffo
Federal Reserve Board Federal Reserve Board Federal Reserve Board

First version: March 20, 2017. This version: July 28, 2017

### Abstract

We study the short-run macroeconomic effects of trade policies that are equivalent in a frictionless economy, namely a uniform increase in import tariffs and export subsidies (IX), a value-added tax increase accompanied by a payroll tax reduction (VP), and a border adjustment of corporate profit taxes (BAT). Using a dynamic New Keynesian open-economy framework, we show that IX and BAT policies are equivalent and tend to boost output and inflation even under flexible exchange rates. Although these policies may have no allocative effects under specific assumptions — as the exchange rate appreciates enough to fully offset the effects on trade prices — we argue that the conditions required for such neutrality are very unlikely to hold in practice (even approximately). Finally, we show that VP policies have substantially different effects than IX or BAT policies under a wide range of assumptions — including about monetary policy and price-setting — and are likely to be contractionary rather than expansionary for output.

JEL classification: E32, F30, H22

Keywords: Trade Policy, Fiscal Policy, Exchange Rates, Aggregate Supply

<sup>&</sup>quot;We thank seminar participants at the Federal Reserve Board, Federal Reserve Bank of Philadelphia, Macroeconomic Meetings of the Federal Reserve System, and XXIX Villa Mondragone International Economic Seminar. The views in this paper are solely the responsibility of the authors and should not be interpreted as reflecting the views of the Board of Governors of the Federal Reserve System or of any other person associated with the Federal Reserve System.