Yuxuan He
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September 7, 2020

Professor Owen Zidar
Department of Economics and School of Public and International Affairs
Princeton University
237 Julis Romo Rabinowitz Building
Princeton, NJ 08544

Dear Professor Zidar,

I am a current 4th-year Ph.D. student in Economics at Duke University, majoring in Public Economics. For my Ph.D. research I have been focusing on understanding how firms respond to policy incentives, especially the impact of taxation on firm production and employment. Therefore, I would like to apply for the 2020 NBER Graduate Student Workshop on Business Income Taxation to enrich myself with essential knowledge regarding business tax research.

I am interested in studying how firms and markets react to government tax policies. One project I have been working on is understanding the structure of business taxation in China, with a particular focus on the heterogeneity of business tax payment structures across industries and ownership types. Another project is studying the role of tax credits on firms' effective corporate income tax rate. My dissertation interests lie in quantifying the impacts of integrating gross-receipt tax with value-added tax. The research regarding this topic is still quite limited, and I would like to explore the aggregate effect of such a reform from the perspective of production networks. However, the deeper I work on my projects, the more I have realized that I need to learn about public theory and frontier progresses in this field.

Thus, I really look forward to the opportunity at the Graduate Student Workshop on Business Income to learn more about theory, tools, and both classic and advanced findings in business tax research.

Professor Juan Carlos Suárez Serrato is my recommendation letter writer, and you can reach him via jc@jcsuarez.com. My CV and personal statement about reasons for attending this workshop are attached in the following. If you need any other information from me, please feel free to let me know. Thanks!

Sincerely,
Yuxuan He

Rationale for Attending the Graduate Student Workshop

Yuxuan He

I am Yuxuan He, a current 4th-year Ph.D. student in the Department of Economics at Duke University, majoring in Public Economics. My research interests focus on understanding how firms respond to government policy incentives, especially the impact of taxation on firms' production and employment decisions. Therefore, I would like to apply for the 2020 NBER Graduate Student Workshop on Business Income Taxation to learn more about fundamental theories and advanced topics regarding business tax research.

In my current project with Professor Zhao Chen, Professor Zhikuo Liu, Professor Juan Carlos Suárez Serrato and Professor Daniel Yi Xu, we have explored the structure of business taxation in China from 2007 to 2011. Specifically, we have found that there is large heterogeneity in the types of business taxes firms would pay across different industries and ownership types. Further, we have found that there is wider dispersion in terms of effective corporate income tax rate across firms, compared to those of effective value-added tax rate (VAT) and effective gross-receipt tax. Based on these findings, I would next like to explore whether effective tax rate could be explanatory of the misallocation of production factors and to study the relationship between the underrepresentation of labor share and a nonnegligible share of social security contributions within Chinese firms.

In my dissertation project, I am curious to quantify the impact of integrating gross-receipt tax with VAT in those previously non-VAT-paying industries, which is a reform starting from January 2012 in China. Gross-receipt tax can create severe tax cascading problems along production networks, but VAT is considered as being able to maintain production efficiency in optimal tax theory because of the deductibility of input purchase VAT. However, VAT and gross-receipt tax coexisted in China's tax system for over 2 decades until 2012, when the reform of replacing gross-receipt tax with VAT started. In 2011, VAT and gross-receipt tax took up over 27% and 15% respectively of total tax revenue in China[1]. The importance of both VAT and gross-receipt tax within China's tax system and the reform gives rise to a research opportunity to quantify the social welfare gain of replacing gross-receipt tax with VAT. Based on this reform, my research questions are two-fold. First, how does the indirect consumption tax burden across industries change after the reform? Next, whether there is any spillover effect from previously non-VAT-paying industries to previously VAT-paying industries in a production network.

At this initial stage of my research, I feel the need to revisit and get myself familiarized with the fundamental theories, essential techniques, and important topics of business tax research. Thus, I would like to apply for the 2020 NBER Graduate Student Workshop on Business Income Taxation.

[1] Source: www.gov.cn

Yuxuan (Elaine) He

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EDUCATION

Duke University, Durham, NC — Aug 2017 – present

- Ph.D. candidate in Economics | GPA 3.79/4.0
- Interests: Public Economics, Applied Microeconomics
- Skills: Stata, Matlab, R
- Relevant Coursework

Graduate Public Finance I & II	Economics of Discrimination and Inequality	Causal Inference and Treatment Effects
Non-market Evaluation	R&D, Productivity and Technology Change	Dynamic Discrete Choice
Computational Economics	Numerical Method in Quantitative Dynamics	Macro Labor I & II
Intra-household Distribution	Application in Labor and Family Economics	Expectation and Macroeconomics
Probabilistic Machine Learning	Machine Learning	Econometrics I & II
Microeconomic Analysis I & II	Macroeconomic Analysis I & II	

Duke University, Durham, NC — Aug 2015 – May 2017

- Master of Arts in Economics | GPA 3.9/4.0
- Relevant Coursework: Microeconometrics, Health Economics, Macroeconomics

Central University of Finance and Economics, Beijing — Sep 2011 – Jul 2015

- Bachelor in Public Finance, *Cum Laude* | Cumulative GPA 3.8/4.0

PROJECTS IN PROGRESS

The Effects of Integrating Value Added and Gross-Receipt Taxes: Empirical Evidence from China

Prospectus, Department of Economics, Duke University

- Study the tax burden change of enterprises across various industries after China's tax reform of replacing gross-receipt tax with Value-Added Tax
- Model production distortion within production networks as a result of tax cascading of gross-receipt tax
- Generate aggregate welfare implications of China's tax reform of replacing gross-receipt tax with Value-Added Tax

The Structure of Business Taxation in China

With Zhao Chen, Zhikuo Liu, Juan Carlos Suárez Serrato and Daniel Yi Xu

- Documented heterogeneity in business taxation structure across industries, regions and ownership structure of enterprises from 2008 to 2011, based on China's Tax Survey data
- Conducted cross-country comparison and found that the tax structure of China aligns well with its development stage, but China's tax revenue relied much more on taxes on goods and services as well as corporate income tax
- Carried out variance decomposition and showed that tax credits and loss carryforwards are main factors in explaining variations in effective corporate income tax rates
- Tested misallocation theory and concluded that tax policies are not main drivers in the dispersion of effective corporate income tax rates

RESEARCH EXPERIENCE

Research Assistant, Durham, NC — Forthcoming Aug 2020

Sanford School of Public Policy & Department of Economics, Duke University

- Worked for Professor Matthew Johnson to study the effects of government regulations on firms' productivity

Research Assistant, Durham, NC — Aug 2019 – May 2020

Department of Economics, Duke University

- Worked for Professor Marjorie McElroy to study the intrahousehold allocation based on asymmetric Nash bargaining model
- Produced handouts on theoretical model derivations
- Programmed in Matlab to illustrate the shifts of indifference curves and base points under incremental changes

Research Assistant, Durham, NC — Jul 2016 – Sep 2017

Department of Economics, Duke University

- Worked for Professor Daniel Xu to study the impact of tax on imports in the Peruvian automobile industry
- Cleaned data on China's patent database, Peruvian custom and automobile database using Stata
- Investigated the U.S domestic apparel market structure
- Compared fast fashion brands with traditional apparel brands, culminating in a report on the industry

TEACHING EXPERIENCE

Teaching Assistant, Durham, NC — Forthcoming Jan 2021

Econ 101, Department of Economics, Duke University

- Funded by Bass Instructional Fellowship to work as head TA for Econ 101, as part of college teaching training

Teaching Assistant, Durham, NC — Jan 2019 – May 2019

Econ 706, Department of Economics, Duke University

- TA for Professor Andrea Lanteri and Professor Francesco Bianchi to offer teaching assistance in first-year Ph.D. macroeconomics course II
- Held weekly office hours to help resolve students' questions about lecture notes and problem sets
- Prepared and taught course-related bi-weekly TA sessions to review key concepts, research techniques and homework problems

Teaching Assistant, Durham, NC — Aug 2018 – Dec 2018

Econ 702, Department of Economics, Duke University

- TA for Professor Craig Burnside and Professor Cosmin Ilut to offer teaching assistance in Ph.D. macroeconomics course I
- Held weekly office hours to help resolve students' questions about lecture notes and problem sets
- Prepared and taught course-related weekly TA sessions to review key concepts, research techniques and homework problems

Teaching Assistant, Durham, NC — Jan 2017 – May 2017

Econ 605 Advanced Microeconomic Analysis, Department of Economics, Duke University

- TA for Professor Charles Becker to offer teaching assistance in a graduate-level theory course
- Helped students master and present academic papers
- Reviewed students' presentations and provided feedback on presentations, exams and final paper

LANGUAGE SKILLS

Language Skills: Mandarin (native), English (advanced), Japanese (intermediate)

AWARD, SCHOLARSHIP AND FELLOWSHIP

Bass Instructional Fellowship Teaching Assistant	2020 – 2021
Summer Research Fellowship, Department of Economics, Duke University	2020
Summer Research Fellowship, Graduate School, Duke University	2019
Summer Research Fellowship, Graduate School, Duke University	2018
M.A. Merit Scholar Award – Spring 2017, Department of Economics, Duke University	2017
M.A. Merit Scholar Award – Fall 2016, Department of Economics, Duke University	2016
M.A. Merit Scholar Award – Spring 2016, Department of Economics, Duke University	2016
Econ Master Tuition Scholarship, Department of Economics, Duke University	2015 – 2017

Duke University Department of Economics

Juan Carlos Suárez Serrato
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Social Sciences 213
Durham, NC 27708

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jc.suarez@duke.edu
September 10, 2020

To whom it may concern,

I am writing this letter in support of **Yuxuan He's** application for the Graduate Student Workshop on Business Income Taxation. Yuxuan is a fourth-year PhD candidate in the economics department and is writing her thesis under my supervision. Yuxuan took my second year PhD course on Public Finance and she did very well on my course. Yuxuan is interested in evaluating how government tax policies impact the decision making of households and firms.

I am currently co-authoring a paper with Yuxuan, which will be published in the NBER's *Tax Policy and the Economy*. In our paper, we provide new facts regarding the structure of business taxation in China. First, we use tax data to document the large heterogeneity in the business tax payments across industry and firm ownership. Second, we conduct a cross-country comparison to contextualize the extent to which China relies heavily on corporate income tax revenue. Third, we investigate the role of tax credits in driving the dispersion of effective corporate income tax rates. By using detailed data on tax credits, we are able to show that the effective corporate income tax rate is not a major factor driving the misallocation of production factors. This project is closely related to the topic of the Graduate Student Workshop, and I believe that Yuxuan could gain a lot of insight from the workshop.

Yuxuan's prospectus studies additional aspects of business taxation in China. For a long time, China relied on both value-added taxes and gross-receipt taxes. Gross-receipt taxes have the potential of cascading across the value chain by raising the cost of business inputs. Yuxuan's project provides new reduced-form facts describing a reform that phased-out the gross-receipt tax. Additionally, her project quantifies the aggregate impact of replacing the gross-receipt tax with a VAT in a production network model. Participating in this workshop will deepen her understanding of key topics in this field and help her complete her dissertation.

Yuxuan is extremely hard working and is progressing a lot as a researcher. I look forward to seeing the results from her research and I am confident that she would greatly benefit from participating in the Graduate Student Workshop on Business Income Taxation.

Sincerely yours,



Juan Carlos Suárez Serrato
Associate Professor of Economics
Duke University