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Undergraduate Studies:

Bachelor of Arts in Liberal Arts, Soka University of America, *summa cum laude*, 2011

Graduate Studies:

Wharton School, University of Pennsylvania, 2014 to 2020

Thesis Title: “Essays in Public Finance and Microeconomic Theory”

Completion Date: May 2020

Thesis Committee and References:

Professor Kent Smetters (Primary Advisor)
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Teaching and Research Fields:

Primary fields: Public Economics

Secondary fields: Political Economics, Microeconomic Theory

Teaching Experience:

Spring, 2017	Managerial Economics, Wharton, teaching fellow for Professor Ulrich Doraszelski
Fall, 2018	Honors Thesis Seminar, Wharton, teaching fellow for Dr. Utsav Schurmans
Spring, 2019	Honors Thesis Seminar, Wharton, teaching fellow for Dr. Utsav Schurmans
Spring 2020-	Student Seminar Series for Innovation and Management Policy Program

Research Experience and Other Employment:

2012-2014	Innovations for Poverty Action, Research Associate
2013-2014	World Bank, Short-term Consultant

Honors, Scholarships, and Fellowships:

2021-	Kakenhi Grant-in-Aid for Early-Career Scientists (\$40,000 in total), JSPS
2020-	Kakenhi Grant-in-Aid for Research Activity Start-up (\$22,000 in total), JSPS
2014-2019	Wharton Graduate Fellowship

2014-2019	Japan Student Services Organization Educational Scholarship
2018-2019	Mack Institute Research Grants (\$20,000 in total)
2020	Best-paper Award for Young Scholars at the 77 th Japan Institute of Public Finance Conference

Working Papers

1. Cascades of Tax Policy through Production Networks: Evidence from Japan

Abstract: In response to economic disruptions caused by COVID-19, various corporate tax policies have been recently implemented to stimulate economic activities worldwide. The effectiveness of such tax policies has been evaluated conventionally by the effects on firms directly affected by the tax policies. However, indirect effects through the supply chains of the affected firms can be of first-order importance. This paper estimates the indirect effects of tax incentives for investment on firm performance through production networks, exploiting a quasi-experimental event of an investment stimulus and unique proprietary data of supply chains in Japan. After reconfirming the direct effects, I find comparable indirect effects.

2. Springing Forward and Falling Back on Health: The Effects of Daylight Saving Time on Acute Myocardial Infarction (with Shinsuke Tanaka)

Abstract: We examine the effects of Daylight Saving Time (DST) on the incidence of acute myocardial infarction (AMI) over three distinct time frames: short, medium, and long run. By exploiting the unique circumstances in Indiana, our findings highlight substantial short-term costs of increased AMI admissions *at* the spring transition by 27.2%, which last for approximately two weeks, are not displaced by counteractive reductions *during* the DST period, and are incurred at each transition *over* the years studied without adaptation. Together, in the context of current policy debates, these findings support terminating time adjustments yet provide little evidence to support permanent DST.

3. When Does A Minimum Wage Achieve Redistribution (with Kent Smetters)

Abstract: Rising inflation and wage levels spark discussions on an increase in a minimum wage level across the world for redistributive motives. We consider the optimal tax policy in the presence of a minimum wage as a policy tool. We provide two theoretical findings. We first demonstrate that a minimum wage cannot improve welfare when the planner jointly chooses a minimum wage and optimal income tax levels. We then show that when the planner sequentially implements optimal taxation alone first and then jointly sets a minimum wage and reoptimized tax levels next, the welfare could potentially improve. We provide sufficient conditions for this sequential policy to improve welfare.

4. The Enemy of My Enemy Is My Friend: New Conditions for Network Games (2nd round revision submitted at *Economic Theory* (bulletin))

Abstract: Group formation tends to involve peer effects. In the presence of such

complementarities, however, coalitional games need not have a nonempty core. With a restricted preference structure, I provide new sufficient conditions for the nonemptiness of the core of network games that involve pairwise complementarities between peers. The conditions are twofold: (a) sign-consistency—all players agree on the sign of the value of any link—and (b) sign-balance—the enemy of my enemy is my friend. My conditions provide a game-theoretic explanation for the longevity of the dichotomy of political alliances in the contemporary world.

5. Optimal Taxation of Intermediate Goods in A Partially Automated Society

Abstract: The recent automating technologies have sparked discussions on "robot taxes," aimed to dissuade the displacement of labor and to generate revenue to redistribute to the displaced laborers. Implementing such taxes is challenging, however, in part because of the difficulty in clearly separating which technologies substitute for labor from those which complement it. Modelling automating technologies as intermediate goods, I consider the optimal tax policy in this environment. As in standard models, non-linear labor taxes are assigned without knowledge of a laborer's type. Additionally, due to tax avoidance concerns and arbitrage opportunities, intermediate goods are uniformly and linearly taxed without knowledge of their complementarity or substitutability with labor. Despite the potential for automating technologies to be complementary to workers, I find that the optimal tax regime includes a strictly positive tax on these intermediate goods. I discuss the implications of these findings for the robustness of robot-tax policy proposals.

Work in Progress

(a) Political Scandals and Reference-dependent Risk Attitudes of Politicians (with Jun Goto)

Abstract: The world is awash in political scandals, but surprisingly little is known about how politicians of the parties uninvolved in scandals react. By constructing a novel data set on political scandals of the ruling party members with politicians' speeches, we demonstrate that immediately after the revelation, politicians of opposition parties close to losing the next election start discussing irrelevant topics and criticizing the past policies of the ruling party, while those not close to losing do not digress but start providing future proposals. These findings are consistent with reference-dependent risk attitudes of individual politicians. We further provide evidence that both ruling and opposition party members considerably increase the number of times of mentioning their own voting districts for which they run.

(b) The Real Effects of Credit Supply on Single-bank-dependent Firms and the Spillover Effects in the Supply Chain

Plan: COVID-19 induced the central banks to conduct a large credit injection into the market all over the world. The existing literature studying the direct and indirect effects of credit shocks on firms relies upon data focusing on public firms that have easier access to equity than private firms and that possess borrowing relationships with multiple banks.

However, the effects are expected to be larger for those private firms which rely upon only one bank and which comprise 50-70% of the whole firm population depending on country. Using proprietary data on bank-firm lending relationships and supply chains in Japan, this paper fills in this gap. In particular, I exploit quasi-experimental variation from multiple bank bailouts in Japan between 1998 and 1999 to deal with supply-side endogeneity and from loan payment amounts that are due in the next 12 months to address demand-side endogeneity.