Research Statement

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Introduction

Inspired by the adage, *"the road to hell is paved with good intentions,"* my research lies at the intersection of Public Finance, Labor Economics, Macroeconomics, and Computational Economics. I employ micro-founded macroeconomic models to examine the aggregate and distributional impacts of tax and welfare policies, with a particular focus on their unintended effects that may counter or reinforce policy goals.

I firmly believe in the complementarity of quantitative and empirical approaches; theoretical and quantitative frameworks require empirical validation, and the insights they produce, in turn, guide empirical research. This belief shaped my initial project, which established an empirical foundation to both motivate and guide my quantitative work. With the rise of big data, my new collaborative project leverages administrative datasets to deepen insights into income and inequality dynamics and identify critical areas for quantitative investigations.

Current Research

My current work centers on child-related transfers, a critical component of welfare programs across OECD countries and an area of growing importance in developing nations. My dissertation, titled *"Topics in Optimal Design of Taxes and Child Benefits"*, explores child benefit design with a case study on Australia. The Australian system offers unique insights due to its progressive tax structure and its generous, means-tested benefits. This combined system significantly raises effective marginal tax rate (EMTR) schedules for low-income parents, often impacting female labor supply. Studying this setting reveals important implications for efficiency and welfare that can inform broader policy design.

My empirical paper examines income dynamics and the role of family earnings and public transfers in buffering shocks to individual earnings. This study demonstrates that spousal earnings show minimal response to primary earners' income shocks, whereas public transfers respond strongly. Together with the M-shaped life cycle labor supply of mothers, these findings emphasize the need to understand how policies, particularly child-related transfers, influence behavior and welfare, providing motivation for my subsequent quantitative projects.

My second paper assesses fiscal sustainability and long-term welfare impacts of child-related transfers using a micro-founded dynamic general equilibrium model that incorporates rich household heterogeneity—including family structure (marital status and children), human capital, wealth, and idiosyncratic shocks. The results indicate that universalizing child benefits increases labor participation among married mothers and improves overall welfare and output. However, the associated tax burden produces an adverse unintended effect that harms single mothers, the intended beneficiaries.

In my third project, I examine the interaction between progressive taxes and means-tested child benefits. I find that the optimal tax system reduces progressivity to encourage labor supply among high-education households, but this increases tax burdens on low-income parents. A standalone tax change thus undermines child benefit objectives. A proposed jointly optimized system combines reduced tax progressivity with a moderate universal lump-sum benefit to compensate parents for the losses incurred by the tax reform. The findings also highlight the need for careful balance to mitigate impacts on non-beneficiaries.

Collectively, these studies reveal how, despite well-intentioned aims, broad-based child benefits can inadvertently disadvantage the very groups they are meant to support. Furthermore, they underscore the importance of coordinating between tax and transfer policies to deliver effective and equitable outcomes.

Future Research Directions

To extend the empirical foundation, my collaborative project with Dr. Chung Tran and Dr. Nabeeh Zakariyya will utilize administrative datasets to deepen our understanding of income dynamics and the evolving roles of government and family insurance over time. This empirical work can help identify important policy areas for further quantitative examination.

Building on my existing quantitative work, I am interested in expanding my research to consider developing countries, which presents unique challenges due to their large informal sectors and different behavioral patterns. In this context, optimal policies may require alternative approaches, such as in-kind transfers, tagging based on observable demographic traits (Akerlof, 1978), and ordeals on transfer recipients (Nichols et al., 1971). I also plan to enhance the model by incorporating a more realistic wage process to improve accuracy in policy recommendations (De Nardi et al., 2024). Additionally, I intend to integrate endogenous factors such as child quality, which may yield insights into the long-term implications of public policies on economic growth and intergenerational equity (Heckman, 2006).

Impact and Relevance

By examining behavioral responses and policy interactions, my work contributes to the understanding of the unintended effects of welfare policies, supporting the development of tax and transfer systems that deliver sustainable benefits to vulnerable groups while promoting broader economic stability. The models I develop also address a gap in the micro-founded macro modeling of taxes and child benefits in Australia, providing a framework that integrates factors such as family structure, earnings shocks, labor participation, and human capital. Lastly, my research offers a versatile foundation, making it adaptable for addressing emerging questions in tax and transfer policy as well as broader economic phenomena.

Conclusion

My Ph.D. has been a profound learning journey, teaching me to be independent and embrace opportunities to rediscover and refine established ideas, make mistakes, and value criticism. I have come to deeply appreciate the incremental process of knowledge creation. This humbling and enriching experience has shaped me into the researcher I am today. I am committed to upholding these values and fostering them in the next generation of students and researchers.

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