Summer Paper: Optimal Taxation with Idiosyncratic Return Shocks

Nick Hoffman[1] Ali Shourideh [1]

[1]Carnegie Mellon University

April 29, 2020

Main Research Questions

Literature Review

Research Plan

Main Question(s)

1. What is the optimal tax schedule in an economy in which agents face idiosyncratic income and return shocks?
   1.1 Is there a role for a tax on wealth?
2. Does this schedule change with the introduction of non-pecuniary motives for wealth accumulation? (time permitting)

Return Shocks

- Heterogeneous-agent models in the vein of Aiyagari (1994), Huggett (1996) are unable to capture empirical distribution of wealth
- One augmentation: idiosyncratic shocks to rates of return
  - Benhabib *et al.* (2011), Benhabib *et al.* (2015): Stationary distribution of wealth in these models has a Pareto tail, as in the data
  - Benhabib *et al.* (2019): evidence that these shocks can help match social mobility, another appealing feature

Optimal Income Taxation

Mirrlees (1971)

- Formal characterization of the tradeoff between efficiency and redistributive motives
- Problem: government sets optimal tax schedule to maximize social welfare function
- Solution must satisfy budget and individual rationality constraints
- Government can only observe income, not type, and thus this becomes a signalling problem
- Incentivize agents to reveal their types
- Diamond (1998), Saez (2001): shape of optimal taxes depends on functional assumptions; case for progressive taxes exists

Capital Taxation

- Great deal of attention paid to labor income taxation, and the progressivity thereof
- Classic result: optimal tax on capital is 0
- Saez and Zucman (2019): cannot achieve desired progressivity with labor income tax alone
  - Trivial example: think of famous CEOs
- Motivation for considering capital income and wealth tax: how to tax wealthy individuals?
- Mirrleesian model gives us a framework to consider the tradeoffs.
  - Some examples: Golosov *et al.* (2003), Albanesi and Sleet (2006), Golosov *et al.* (2006)

Capital Taxation

- In the classical Mirrlees (1971) model, individuals choose their effort level, given the tax schedule of the government
- Here, individuals will choose their savings rates and risk-taking behavior.
- The government's problem: would like to reward risk-taking and discipline, but cannot observe history of earnings shocks
  - Constraint is now to ensure that individuals are incentivized to put wealth towards productive purposes

Model Features

- Agents with preferences over consumption and liesure
  - Allocate wealth and income between consumption and savings
- Idiosyncratic, persistent schocks to income and rates of return, calibrated to data
  - Floden and Lindé (2001) use PSID for income process
  - PSID wealth supplements can be used to study rates of return on various components of household wealth (albeit with limited scope)
  - Benhabib *et al.* (2011) demonstrates that there must be persistence to wealth accumulation process to get stationary distribution

Model Features

- Distribution of ability, unobserved by the policymaker
  - Diamond (1998) and Saez (2001) suggest that this distribution should be Pareto
- Government
  - Levies taxes based on observable characteristics (income, wealth)
  - Maximizes a social welfare function
  - Coordinates the tax schedule to satisfy individual rationality constraints and meet its budgetary requirements

Potential Extension

Non-pecuniary Motives

- Key question: why are savings rates high among wealthy individuals?
- Various studies have suggested motives for saving outside of precautionary motive
  - Bequest motive
  - Conspicuous consumption
  - Genicot and Ray (2017): individuals form *aspirations*, threshold values of wealth. Crossing these gives additional utility.
  - These motives are relevant for optimal taxation insofar as they affect elasiticites

References I

S Rao Aiyagari. Uninsured idiosyncratic risk and aggregate saving. *The Quarterly Journal of Economics*, 109(3):659–684, 1994.

Stefania Albanesi and Christopher Sleet. Dynamic optimal taxation with private information. *The Review of Economic Studies*, 73(1):1–30, 2006.

Jess Benhabib, Alberto Bisin, and Shenghao Zhu. The distribution of wealth and fiscal policy in economies with finitely lived agents. *Econometrica*, 79(1):123–157, 2011.

Jess Benhabib, Alberto Bisin, and Shenghao Zhu. The wealth distribution in bewley economies with capital income risk. *Journal of Economic Theory*, 159:489–515, 2015.

Jess Benhabib, Alberto Bisin, and Mi Luo. Wealth distribution and social mobility in the us: A quantitative approach. *American Economic Review*, 109(5):1623–47, 2019.

References II

Peter A Diamond. Optimal income taxation: an example with a u-shaped pattern of optimal marginal tax rates. *American Economic Review*, pages 83–95, 1998.

Martin Floden and Jesper Lindé. Idiosyncratic risk in the united states and sweden: Is there a role for government insurance? *Review of Economic dynamics*, 4(2):406–437, 2001.

Garance Genicot and Debraj Ray. Aspirations and inequality. *Econometrica*, 85(2):489–519, 2017.

Mikhail Golosov, Narayana Kocherlakota, and Aleh Tsyvinski. Optimal indirect and capital taxation. *The Review of Economic Studies*, 70(3):569–587, 2003.

Mikhail Golosov, Aleh Tsyvinski, Ivan Werning, Peter Diamond, and Kenneth L Judd. New dynamic public finance: A user's guide [with comments and discussion]. *NBER macroeconomics annual*, 21:317–387, 2006.

References III

Mark Huggett. Wealth distribution in life-cycle economies. *Journal of Monetary Economics*, 38(3):469–494, 1996.

James A Mirrlees. An exploration in the theory of optimum income taxation. *The review of economic studies*, 38(2):175–208, 1971.

Emmanuel Saez and Gabriel Zucman. *The triumph of injustice: How the rich dodge taxes and how to make them pay*. WW Norton & Company, 2019.

Emmanuel Saez. Using elasticities to derive optimal income tax rates. *The review of economic studies*, 68(1):205–229, 2001.