The Distributional Effects of Tax Evasion

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Introduction

- Macroeconomic papers about wealth inequality and capital taxation assume perfect tax compliance
- Empirical evidence suggests that tax evasion is prevalent, especially among the very rich (e.g. Alstadsaeter et al. 2019)
- The aim of this paper is to quantify the aggregate and distributional effects of tax evasion and to analyze different taxation schemes in the presence of imperfect tax compliance

Motivation and literature

Capital Taxation

- Complete markets
  - Judd (1985) and Chamley (1986): No capital tax in the long run
- Incomplete markets
  - Optimal tax can be significantly positive (e.g. Aiyagari 1995, Conesa et al. 2009, Kitao 2010)

Tax Evasion

- Missing in quantitative analyses so far
- Empirical evidence: Alstadsaeter et al. (2019) find considerable tax evasion behaviour, especially among the very rich

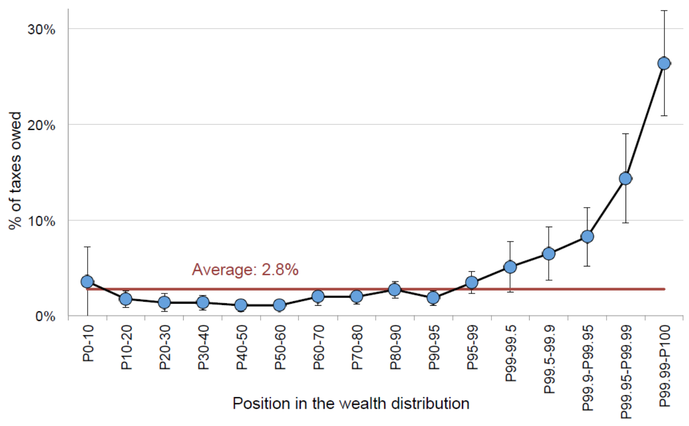

Figure 1: Tax evasion and wealth position (Alstadsaeter et al. 2019)

Quantitative Macroeconomics

- Heterogeneous returns from different entrepreneurial skills (Quadrini 2000, Cagetti and DeNardi 2006)
- Wealth taxes more efficient than capital income taxes (Guvenen et al. 2019)

References

Aiyagari, S. R. (1995): Optimal Capital Income Taxation with Incomplete Markets, Borrowing Constraints and Constant Discounting

Alstadsaeter, A. et al. (2019): Tax Evasion and Inequality

Cagetti, M. and De Nardi, M. (2006): Entrepreneurship, frictions, and wealth

Chamley, C. (1986): Optimal taxation of capital income in general equilibrium with infinite lives

Conesa, J. C. et al. (2009): Taxing Capital? Not a Bad Idea after All!

Guvenen, F. et al. (2019): Use It or Lose It: Efficiency Gains from Wealth Taxation

Judd, K. L. (1985): Redistributive Taxation in a Simple Perfect Foresight Model

Kitao, S. (2010): Labor-Dependent Capital Income Taxation

Quadrini,V. (2000): Entrepreneurship, saving, and social mobility

The basic model setup

- Economy is populated by **infinitely lived household**s with measure 1, no population growth
- Households value consumption, c, and leisure, ℓ, and maximize expected lifetime utility
- **Labour income** depends on supplied work and idisosyncratic **productivity y_t**
- **Capital income** can be obtained from investing capital in intermediate goods production and depnds on idiosyncratic **entrepreneurial skill θ_t**
- Households pay **capital taxes** but can decide to engage in **tax evasion**.

Most important mechanisms and equations

- Final good X is produced competitively according to the production technology

$$X = Q^{\alpha} L^{(1-\alpha)} \quad \text{with} \quad Q = \left(\int_i x_i^{\nu} di \right)^{1/\nu} \quad \text{and} \quad \underbrace{x_i = \theta_i \cdot k_i}_{\text{Produced by household i}}$$

- **Prices** $p(x_i)$ and **wage rate** w are determined in the **competitive final good sector**
- Income sources of the households:
  - y_t follows a simple AR process and labour **income** is subject to **progressive tax** schedule
  - θ_t depends on **generational persistency** and **stochastic shocks**
  - With prices p, interest rate r and depreciation rate δ, **profits** are given by

$$\pi(k_i, \theta_i) = p(x_i) \cdot x_i - (r + \delta) \cdot k_i$$

- Tax Evasion:
  - Households choose the **amount e_t** of their **capital tax** payments they want to **evade**
  - **Detection probability ϕ** depends on investment s:

$$\phi(s) = (a \cdot s + n)^{\mu}$$

Preliminary results

- Model can produce skewed wealth distribution and heterogeneous evasion behaviour
- Higher wealth inequality in the presence of evasion - implications for policy analysis could be severe
- The model is not yet calibrated properly
  - Thus, relevant distributions only match the data partially
  - High evasion at the the top of the wealth distribution is not caputred
- Goal: Policy analysis with optimal taxation

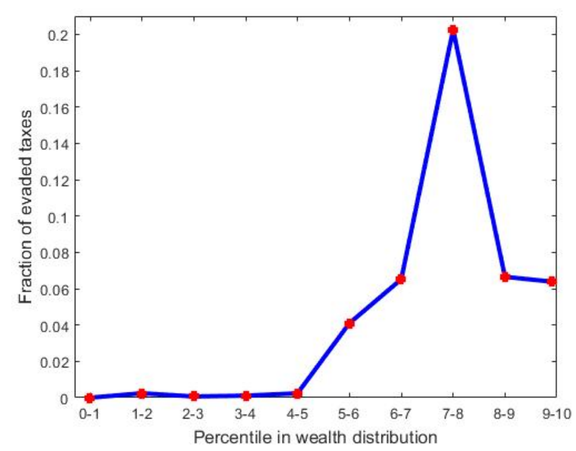

Figure 2: Modeled evasion behavior

		Model	
	US Data	Evas = 4%	Evas = 0
Top 0.5%	0.27	0.24	0.19
Top 1%	0.36	0.36	0.32
Top 10%	0.78	0.76	0.75
Top 50%	0.99	0.95	0.95
Wealth Gini	0.82	0.81	0.78

Table 1: Wealth concentration with and without evasion

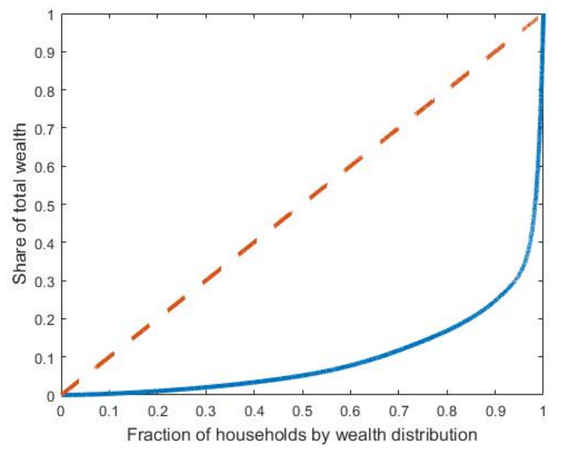

Figure 3: Reproduced wealth inequality