

# Redistribution of Return Inequality

## Karl Schulz · ASSA 2022

### Overview

- **Motivation:** Persistent heterogeneity in households' investment return rates (Bach et al. (2020) and Fagereng et al. (2020))
  - ▶ The rich become richer because of their investment skill ("type dependence") and their wealth ("scale dependence"), e.g., access to high-yield investments
- **Research question:** Should high fortunes with high return rates pay high capital taxes?
- **Conventional wisdom:** Return inequality  $\uparrow \Rightarrow$  capital taxation  $\uparrow$
- **This paper:** Investigate how scale and type dependence shape equity-efficiency trade-off of optimal capital taxation
- **Surprising result:** Rising return inequality has non-trivial policy implications
  - ▶ Type dependence raises optimal capital taxation (in line with conventional wisdom)
  - ▶ Scale dependence either neutral or lowers optimal capital taxation (at odds with conventional wisdom)
- **Main insight:** Endogeneity of pre-tax return rates under scale dependence generates novel efficiency cost  $\Rightarrow$  Capital elasticity  $\uparrow$

### A Simple Two-Period Life-Cycle Framework

- Capital income taxation with type and scale dependence
- Period 1: Households  $i \in [0, 1]$  earn labor income, consume, and save  $a_i$  at pre-tax return rate  $r(a_i, i)$ , note:  $\frac{\partial r(a_i, i)}{\partial a_i} > 0$  vs.  $\frac{\partial r(a_i, i)}{\partial a_i} = 0$
- Period 2: Households consume final after-tax wealth, linear tax  $\tau_K$  on capital income and lump-sum transfer
- Utilitarian social planner: Maximize aggregate welfare subject to aggregate budget constraint

### Result 1: Neutrality

- Irrespective of magnitude of scale and type dependence, same Ramsey formula for the optimal linear capital income tax
$$\frac{\tau_K}{1 - \tau_K} = \frac{1}{\text{capital income elasticity}} \times \text{capital income inequality}$$
- Standard equity-efficiency trade-off: inequality vs. elasticity
- Correct knowledge of these suff. stats. enough information
- But: Suff. stats. structurally depend on scale & type dependence

### Result 2: Scale Dependence Raises Capital Income Elasticity

- Novel efficiency cost of taxation under scale dependence: Capital taxation affects pre-tax return rate (not only after-tax return rate)  $\Rightarrow$  Capital income elasticity  $\uparrow$
- Economic intuition: Capital income tax  $\downarrow \xrightarrow{SE > IE}$  savings  $\uparrow \Rightarrow$  pre-tax return rate  $\uparrow \Rightarrow$  savings  $\uparrow \Rightarrow$  pre-tax return rate  $\uparrow \Rightarrow \dots$
- Measurement error under scale dependence
- Estimates of capital income elasticity biased downward if responses of pre-tax returns to tax reforms omitted
- Bias depends on own-return elasticity  $\varepsilon_i^{r,a} \equiv \frac{\partial \log[r_i(a_i)]}{\partial \log(a_i)}$

### Empirical Evidence

- Macro estimate from Survey of Consumer Finances  $\varepsilon^{r,a} = 0.8$
- Micro estimate from panel of U.S. foundations  $\varepsilon^{r,a} = 0.1$
- Benchmark calculated from Fagereng et al. (2020)  $\varepsilon^{r,a} = 0.9$
- Back to theory: What does this amount imply for opt. capital taxation?
- Medium amount of scale dependence ( $\varepsilon^{r,a} = 0.5$ )  $\Rightarrow$  capital income elasticity  $\uparrow$  by 200% and revenue-maximizing  $\tau_K \downarrow$  by 25%

### Result 3: Comparative Statics

- Rise in inequality driven by scale dependence  
$$\frac{\tau_K}{1 - \tau_K} \downarrow / \rightsquigarrow = \frac{1}{\text{capital income elasticity}} \times \text{capital income inequality} \uparrow$$
- Rise in inequality driven by type dependence  
$$\frac{\tau_K}{1 - \tau_K} \uparrow = \frac{1}{\text{capital income elasticity}} \times \text{capital income inequality} \uparrow$$
- Implications of rising return inequality for tax policy non-trivial

### Quantitative Illustration

- Novel approximation of optimal linear capital income tax in terms of structural primitives  $\varepsilon^{r,a} \equiv \frac{\partial \log[r_i(a_i)]}{\partial \log(a_i)} \geq 0$  &  $\zeta^{r,(1-i)} \equiv \frac{\partial \log[r_i(a_i)]}{\partial \log(1-i)} \leq 0$
- Idea: decompose return inequality into endogenous part (scale dependence) and exogenous, residual part (type dependence)
- Isoquants of Optimal Capital Income Tax

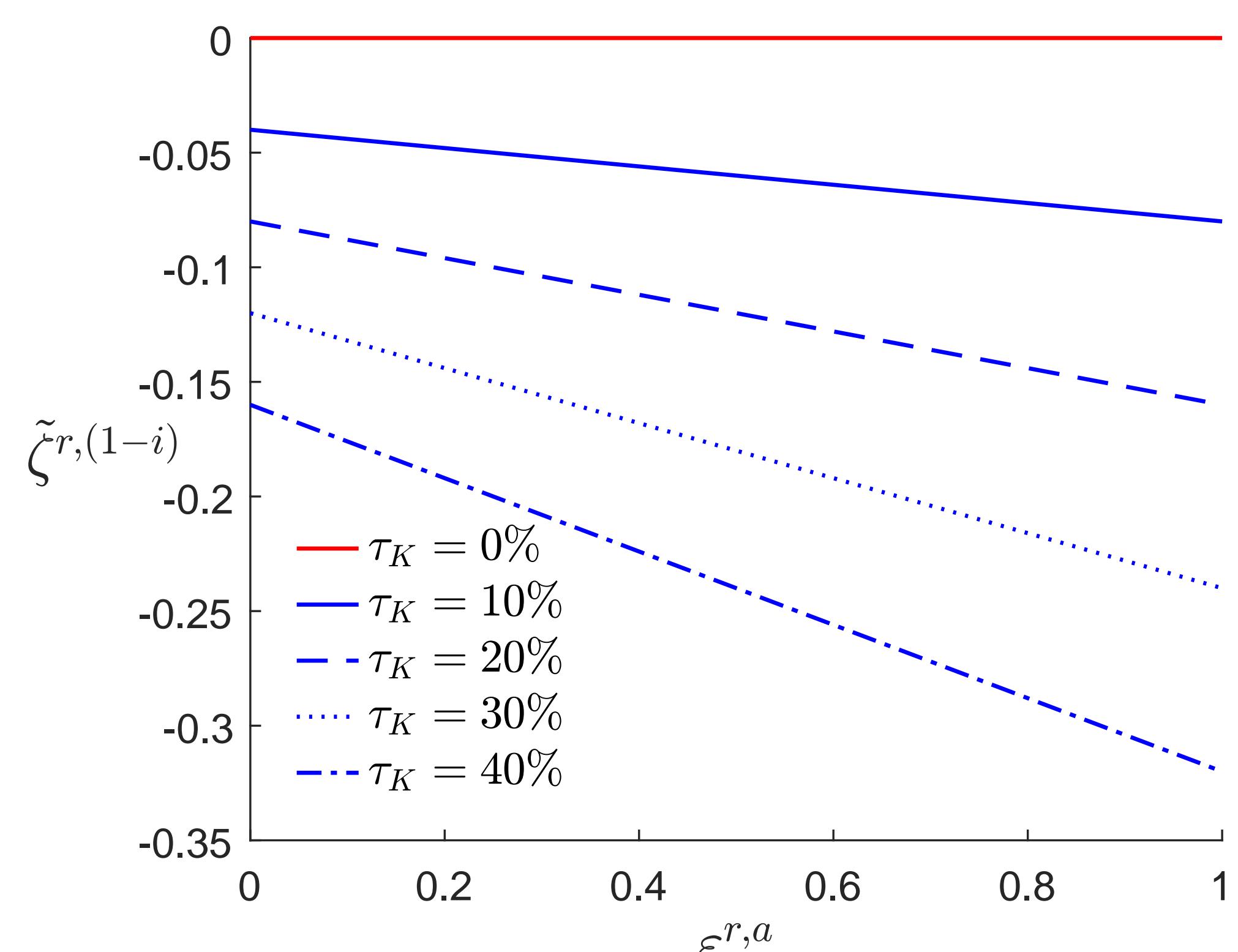


Figure: Type vs Scale Dependence (W/o Labor Income Inequality)

### Extensions and Microfoundation

- Nonlinear taxes ✓ Wealth taxes ✓ Dynamics ✓ Uncertainty ✓
- Microfoundation of scale & type dependence on Grossman & Stiglitz (1980) financial market ✓

### Contribution and Related Literature

- Atkinson & Stiglitz (1976) and others:  
No return inequality  $\Rightarrow$  Zero capital tax
- Saez (2002), Gerritsen et al. (2020) and others:  
Return inequality  $\Rightarrow$  Positive capital tax
- This paper: Source of return inequality important for tax policy

### Contact

Karl Schulz

University of Mannheim

karl.schulz@gess.uni-mannheim.de

<https://sites.google.com/view/karlschulz>