Use It Or Lose It:
Efficiency Gains from Wealth Taxation

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Taxing Capital

- **Question:** How does taxing capital income flow differ from taxing capital stock?
  - **Capital income tax:** $a_{\text{after-tax}} = a + (1 - \tau_k) \cdot r \cdot a$
  - **Wealth tax:** $a_{\text{after-tax}} = (1 - \tau_a) \cdot a + (1 - \tau_a) \cdot r \cdot a$

- **Standard Answer:** The two taxes are equivalent with $\tau_a = \frac{r}{1+r}\tau_k \ldots$
  - Holds assuming r is the same for all individuals.

This Paper: Take heterogeneity in r seriously and compare forms of capital taxation.

- **Short Answer:** The two taxes have very different—even opposite—implications.

Simple Example

Return Heterogeneity

- One-period model.
- Government taxes to finance $G = \$50$. Tax collected end of period.
- Two brothers, Fredo and Mike, each with $1000 of wealth.
- **Key heterogeneity**: investment/entrepreneurial ability.
  - (Fredo) Low ability: earns $r_f = 0\%$ net return.
  - (Mike) High ability: earns $r_m = 20\%$ net return.

Capital Income vs. Wealth Tax

	Capital income tax		**Wealth tax**	
	$a_{\text{after-tax}} = a + (1-\tau_k)ra$		$a_{\text{after-tax}} = (1-\tau_a)a + (1-\tau_a)ra$	
	Fredo ($r_f = 0\%$)	**Mike** ($r_m = 20\%$)	**Fredo** ($r_f = 0\%$)	**Mike** ($r_m = 20\%$)
Wealth	1000	1000	1000	1000
Before-tax Income	0	200	0	200
	$\tau_k = 25\%$ $(= \frac{50}{200})$		$\tau_a = 2.27\%$ $(= \frac{50}{2200})$	
Tax liability	0	50	22.7 $(= 1000\tau_a)$	27.3 $(= 1200\tau_a)$
After-tax return	0%	15% $(= \frac{200-50}{1000})$	-2.3% $(\approx \frac{0-22.7}{1000})$	17.3% $(\approx \frac{200-27}{1000})$
After-tax $\frac{W_m}{W_f}$	1.15 $(= {}^{1150}/_{1000})$		1.20 $(\approx {}^{1173}/_{977})$	

Effects of Tax Reform

Replace capital income tax with wealth tax $\rightarrow$ Increases dispersion in after-tax returns.

Potential consequences:

- **Positive (+)**: Efficiency gain
  1. Use it or lose it (static): Capital is reallocated to more productive agents.
  2. Behavioral savings response (dynamic): further reallocation to more productive agents.
- **Negative (-)**: Higher wealth inequality...
  but ambiguous effect on consumption inequality when wage income present.

Conjecture: Positive effects will be first order and negative effects will be second order.

This Paper

We study optimal taxation of wealth in a quantitative framework:

- OLG heterogeneous agents model
- Financial frictions: collateral constraints
- Generates:
  1. Pareto tail & extreme concentration of wealth,
  2. Very fast wealth growth for super rich (1/2 of US billionaires are self made)

  building on power law models of inequality (Benhabib-Bisin-et al, 201X; Gabaix et al, 2016)

Key ingredient: persistent heterogeneity in rates of return

- Recent work finds evidence of such heterogeneity:
  Norway: Fagereng, Guiso, Malacrino, Pistaferri (2019); US: Smith, Yagan, Zidar, Zwick (2019).

Preview of Key Results

When investors differ in their rates of return:

1. Capital income taxes are much more distorting than what we believed to be.
2. Switching to a wealth tax raises productivity, output, wages, and welfare.
3. In our quantitative simulations, it also reduces consumption inequality.
   - Hence, it's a policy with no equity-efficiency trade-off.
4. Gains come from reallocation, not accumulation.
   - Hence, transition path isn't painful as with capital income taxes.

Outline

Households

- OLG demographic structure.
- Uncertain lifetimes: individuals face mortality risk every period.
- Accidental bequests are inherited by (newborn) offspring.

Individuals:

- Have preferences over consumption and leisure

- Make three decisions:

  consumption-savings || labor supply || entrepreneurial activity

- Two exogenous characteristics:

  y_{ih} (labor market productivity) || z_{ih} (entrepreneurial productivity)

1. Labor Market Productivity y_{ih}

- Labor market efficiency of household i at age h is

$$\log y_{ih} = \underbrace{\kappa_h}_{\text{life cycle}} + \underbrace{\theta_i}_{\text{permanent}} + \underbrace{\eta_{ih}}_{\text{AR(1)}}$$

- Permanent component θ_i is imperfectly inherited from parents:

$$\theta_i^{child} = \rho_\theta \theta_i^{parent} + \varepsilon_\theta$$

- Individual i produces x_{ih} units of intermediate good i using capital k_{ih}:

$$x_{ih} = \mathbf{z_{ih}} k_{ih},$$

  - Each individual is a monopolist in her variety of intermediate good.

- $\mathbf{z_{ih}}$ has a permanent and a stochastic component:

$$\mathbf{z_{ih}} = f(\underbrace{z_i^p}_{\text{perm. comp.}}, \underbrace{\mathbb{I}_{ih}}_{\text{stoch. comp.}})$$

- Permanent component z_i^p is imperfectly inherited from parents:

$$\log(z^p_{child}) = \rho_z \log(z^p_{parent}) + \varepsilon_z.$$

Entrepreneurial Productivity z_{ih}: Dynamics

$\mathbb{I}_{ih}$ can take on three values: $\mathbb{I}_{ih} \in \{H, L, \mathbf{0}\}$:

$$z_{ih} = f(z_i^p, \mathbb{I}_{ih}) = \begin{cases} \left(z_i^p\right)^{\lambda} & \text{if } \mathbb{I}_{ih} = H \\ z_i^p & \text{if } \mathbb{I}_{ih} = L \\ z_{min} & \text{if } \mathbb{I}_{ih} = \mathbf{0} \end{cases} \quad \text{where } \lambda > 1$$

where λ is degree of superstar productivity.

Transition matrix:

$$\Pi_{z^s} = \begin{bmatrix} 1 - p_1 - p_2 & p_1 & p_2 \\ 0 & 1 - p_2 & p_2 \\ 0 & 0 & 1 \end{bmatrix}$$

- $p_1 = \Pr\{\text{losing superstar productivity}\}$.
- $p_2 = \Pr\{\text{losing all productivity}\} \rightarrow$ become a passive saver.

Competitive Final Good Producer

Final good production combines efficiency adjusted capital and labor: $Y = Q^{\alpha} L^{1-\alpha}$

- Efficiency-adjusted aggregate capital:

$$Q = \left(\int (x_{ih})^{\mu} \, didh \right)^{1/\mu}, \quad \mu < 1$$

  - Defines demand curve for individual entrepreneurs

- Aggregate labor supply (labor used by aggregate firm, not to produce x_{ih}):

$$L = \int (y_{ih} \ell_{ih}) didh$$

Bond Market & Entrepreneur's Problem

Bond Market:

- Individuals can lend and borrow (subject to collateral constraints).
- Bonds in zero net supply $\rightarrow$ Interest rate r determined in equilibrium.

Entrepreneur's Problem

- Without taxes, entrepreneur's (static!) capital choice:

$$\pi^{\star}(a,z) = \max_{k \leq \vartheta(z) \cdot a} \{\mathcal{R} \cdot (z \cdot k)^{\mu} - (r+\delta)\, k\}$$

- Collateral constraints: Borrowing capacity is nondecreasing in ability $d\vartheta(z)/dz \geq 0$

After-tax wealth:

$$\Pi(a,z;\tau) = \begin{cases} a + [ra + \pi^{\star}(a,z)] \times (1-\tau_k) \\ [(1+r)\, a + \pi^{\star}(a,z)] \times (1-\tau_a) \end{cases}$$

Budget Constraints

Individuals:

- During working life:

$$(1+\tau_c)\cdot c_{ih} + a'_{ih} = \Pi\left(a_{ih}, z_{ih}; \tau\right) + (1-\tau_\ell)\cdot\left(w y_{ih}\ell_{ih}\right) \qquad \text{and} \quad a'_{ih} \geq 0$$

- During retirement labor income replaced with SS pension

Government budget balances:

- **Outlays:** Expenditure (G) + Social Security pensions
- **Revenues:** tax on consumption (τ_c), labor income (τ_ℓ), plus:
  1. tax on capital income (τ_k), or
  2. tax on wealth (τ_a).

Outline

Parameterization

- Preferences:

$$u(c, \ell) = \frac{\left(c^{\gamma} \ell^{1-\gamma}\right)^{1-\sigma}}{1-\sigma}$$

- Dynamics of z_{ih}: Match fast wealth growth of super wealthy
  - Percentage of self-made in Forbes 400 (54%, we get 50%)

examples

- We set: $\lambda = 5$, $p_1 = 0.05$, and $p_2 = 0.03$.

$$\Pi_{z^s} = \begin{bmatrix} 0.92 & 0.05 & 0.03 \\ 0 & 0.97 & 0.03 \\ 0 & 0 & 1 \end{bmatrix}$$

  - Robustness analysis with constant productivity: $\lambda = 1$, $p_1 = 0$, and $p_2 = 0$.

Parameters Set Outside the Model

Parameter		Value
Curvature of utility	σ	4.0
Curvature of CES aggregator of varieties	μ	**0.90**
Capital share in production	α	0.40
Depreciation rate of capital	δ	0.05
Interg. persistence of invest. ability	ρ_{z^p}	0.10
Interg. persistence of labor efficiency	ρ_θ	0.50
Persistence of labor efficiency shock	ρ_η	0.90
Std. dev. of labor efficiency shock	$\sigma_{\varepsilon_\eta}$	0.20

$\tau_k = 25\%$, $\tau_\ell = 22.4\%$, and $\tau_c = 7.5\%$ (McDaniel, 2007)

Calibration Targets and Outcomes

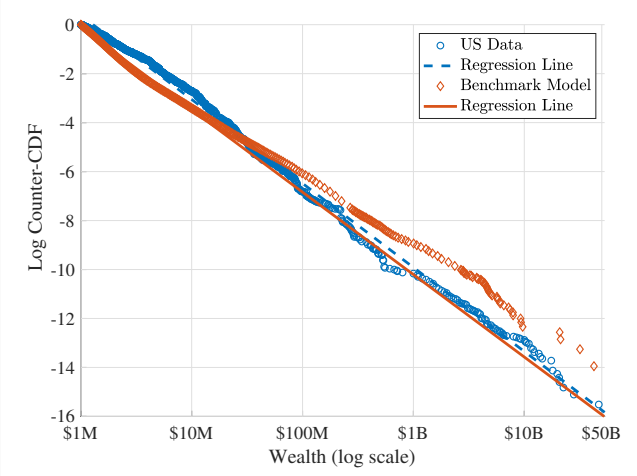
We calibrate 4 remaining parameters $(\beta, \gamma, \sigma_{\varepsilon_{z^p}}, \sigma_{\varepsilon_\theta})$ to match 4 data moments:

Parameter		Value	Moment	Data	Model
Discount factor	β	0.948	Capital/GDP	3.00	3.00
Cons. share in U	γ	0.46	Avg. Hours	0.40	0.40
σ of entrep. ability	$\sigma_{\varepsilon_{z^p}}$	0.072	Top 1% share	0.36	0.36
σ of labor fix. eff.	$\sigma_{\varepsilon_\theta}$	0.305	σ(log(Labor Earnings))	0.80	0.80

Untargeted moments:

Moment	Data	Model
total tax revenue/GDP	24.8%	25%
capital tax revenue/total tax revenue	28%	25%
corporate debt/GDP	126%	129%
Bequest/Wealth	1-2%	1.0%

$\mu = 0.9$ and Pareto Tail



Other models

Outline

Two Types of Experiments

1. **Tax Reform:** Replace τ_k with τ_a so as to
   (a) keep government revenue constant (RN), or
   (b) keep government budget balanced (BB).

2. **Optimal Taxation:** Government maximizes utilitarian social welfare choosing:
   (a) linear labor income (τ_ℓ) and capital income taxes (τ_k), or
   (b) linear labor income (τ_ℓ) and wealth taxes (τ_a),

   keeping government revenue constant.

Revenue Neutral Tax Reform

Tax Reform: Aggregate Variables

	Benchmark	Wealth Tax
τ_k	25.0%	0.00
τ_a	0.00	**1.13%**

Variable	% Change
K	19.4
Q	24.8
L	1.3
Y	10.1
w	8.7
C	10.0

Reallocation of Wealth Across Agents

Change in the share of individuals in Top x% of wealth holders by productivity type

	Entrepreneurial Productivity Groups (z_i^p Percentiles)					
Top x%	0-40	40-80	80-90	90-99	99-99.9	99.9+
1	−12.0	−13.0	−10.8	10.5	11.2	9.4
5	−8.2	−3.3	1.6	8.3	8.9	7.9
10	−6.4	−1.3	2.9	6.4	6.9	6.2
50	−2.5	0.9	1.8	1.6	1.2	1.1

Return Heterogeneity

Decomposing change in wealth: Three channels

- **Use-it-or-lose-it**: Change in taxes, prices and policy rules fixed
- **GE (price) effects**: Change in taxes and prices, policy rules fixed
- **Behavioral response**: Change in policy rules in response to taxes and prices

	Δ *logK*	*Contrib. by* z_i^p *pctiles*			*% Change in wealth share*		
Due to:		0–90	90–99	99+	0–90	90–99	99+
A. Use-it-or-lose-it	14.5	3.8	4.4	**6.3**	–5.7	1.6	**4.0**
B. GE (price) effects	–13.1	–8.2	–3.2	–1.7	0.0	–0.7	0.6
C. Behavioral response	16.3	**8.7**	2.9	4.8	–1.4	–0.2	**1.7**
Total Effect (A+B+C)	17.7	4.3	4.0	**9.4**	-7.1	0.7	**6.4**

Welfare Analysis: Two Measures

Micro measure $(\mathbf{CE_1}(\mathbf{s}))$**:**

- *Individual-specific* consumption-equivalent in the US benchmark that gives the same lifetime utility as in tax reform economy
- $\overline{\mathbf{CE_1}}$: average of $\mathbf{CE_1}(\mathbf{s})$ over the population.

Macro measure $\left(\overline{\mathbf{CE_2}}\right)$**:**

- Economy-wide consumption-equivalent that gives same expected lifetime utility as in tax reform economy

details

Tax Reform: Average Welfare Change

	RN	BB
Average welfare difference:		
$\overline{CE}_1$	**7.40%**	5.58%
$\overline{CE}_2$	7.86%	4.71%
% with welfare gain	**67.8%**	94.8%

Note: The welfare figures report the percentage gain in consumption-equivalent terms from each tax reform relative to the current US benchmark economy.

	RN	BB
Average welfare difference:		
$\overline{CE}_1$	7.40%	**5.58%**

Tax Reform: Who Gains? Who Loses?

	Productivity group (Percentile)					
Age	0-40	40-80	80-90	90-99	99-99.9	99.9+
20	**7.0**	**7.3**	**7.9**	**8.9**	**10.6**	**11.7**
21–34	6.5	6.3	6.3	6.6	7.0	6.9
35–49	5.1	4.4	3.9	3.3	1.7	0.4
50–64	2.3	1.8	1.4	0.8	–0.6	–1.7
65+	-0.2	-0.3	-0.4	–0.6	–1.2	–1.7

Note: *Each cell reports the average of* $CE_1(\theta, z, a, h) \times 100$ *within each age and productivity group*

Two Optimal Taxation Problems

The government maximizes ex ante (expected) lifetime utility of newborns by choosing

1. Linear labor income (τ_ℓ) and capital income taxes (τ_k), or
2. Linear labor income (τ_ℓ) and wealth taxes (τ_a)

keeping government revenue constant.

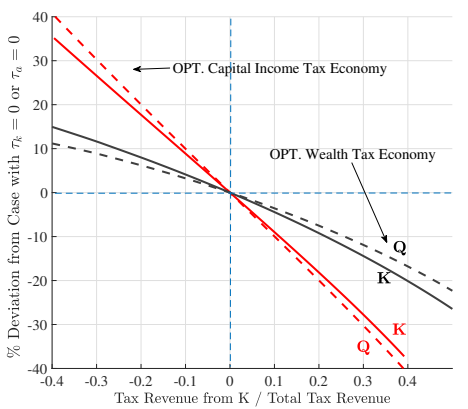
- Exercise equivalent to maximizing $\overline{CE}_2$

Optimal Tax Structure and Outcomes

	τ_k	τ_ℓ	τ_a	$\overline{k}/Y$	Top 1%
Benchmark	25%	22.4%	–	3.0	0.36
Tax reform	–	22.4%	1.13%	3.25	0.46
Opt. τ_k	**−34.4%**	**36.0%**	**–**	4.04	0.56
Opt. τ_a	–	**14.1%**	**3.06%**	2.90	0.47
Opt. τ_a w/ threshold	–	14.2%	3.30%	2.86	0.47

Note: All experiments are revenue neutral. Threshold is 25% of av. earnings and exempts 37% of population.

Wealth Taxes – Distortions and Misallocation



1. Wealth tax reduces *Q* and *K* **less** than capital income tax.
2. *Q* declines **less** than *K* under wealth taxes. Opposite under capital income taxes.

Optimal Taxes: Aggregate Variables

% change	ΔK	ΔQ	ΔL	ΔY	Δw	Δw (net)	Δr	Δr (net)
Tax reform	19.4	24.8	1.3	10.1	8.7	8.7	–0.25	–0.90
Optimal τ_k	**69.0**	79.8	–1.2	25.5	27.0	**4.7**	–1.51	–0.87
Optimal τ_a	**2.8**	10.3	3.9	6.4	2.4	**13.4**	0.68	–1.92
Opt. τ_a + Threshold	0.41	8.1	3.7	5.4	1.70	12.5	0.78	–2.07

Optimal Taxes: Welfare

	τ_k	τ_ℓ	τ_a	$\overline{CE}_2$ (%)
Benchmark	25%	22.4%	–	–
Tax reform	–	22.4%	1.13%	**7.86**
Optimal τ_k	−34.4%	36.0%	–	**6.28**
Optimal τ_a	–	14.1%	3.06%	**9.61**
Opt. τ_a + Threshold	–	14.2%	3.30%	9.83

Welfare: Levels vs Redistribution

	Tax Reform	Opt.τ_k	Opt.τ_a
CE_2 (NB)	**7.86**	**6.28**	**9.61**
	Consumption		
Total	8.27	5.90	11.02
Level	10.01	21.04	8.28
Dist.	−1.58	**−12.51**	**2.53**
	Leisure		
Total	−0.38	0.36	−1.27
Level	−0.66	0.73	−2.21
Dist.	0.27	**−0.38**	**0.76**

Formula

Extension: Transition

Optimal Tax Equilibrium with Transition

- Fix optimal capital tax level (τ_k or τ_a) and solve transition to new steady state
- Adjust labor income tax (τ_ℓ) to finance Gov. debt from deficits during transitions

	OCIT	OWT
τ_k	–34.38*	0.00
τ_a	0.00	3.06*
τ_ℓ	37.41	15.40
$\overline{CE}_2$ (newborn)	**–5.30** (6.28)	**7.71** (9.61)
$\overline{CE}_2$ (all)	–3.86 (3.90)	4.65 (4.79)

Outline

Conclusions

- Many countries currently have or have had wealth taxes:
  - France, Spain, Norway, Switzerland, Italy, Denmark, Germany, Finland, Sweden, Colombia, among others.
- However, the rationale for wealth taxes are often vague:
  - fairness, reducing inequality, etc...
  - and not studied formally
- Here, we are proposing a case for wealth taxes based on efficiency (and distributional benefits) and quantitatively evaluating its impact.

Wealth tax has opposite implications of capital income tax

Tax reform from τ_k to τ_a: Substantial welfare gains

- Reallocates capital: less productive wealthy $\rightarrow$ more productive agents
- Gives the right incentives to the right people to save
- Increases output, consumption, and wages

Optimal taxes: Welfare gain substantially larger under wealth taxes

- Capital income taxes (τ_k): negative or small, gains go away with transition
- Wealth taxes (τ_a): positive and large, act through reallocation not accumulation

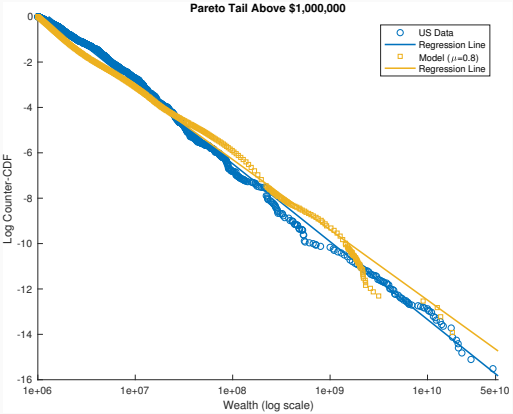
Current and Future Work

1. Add optimal consumption taxes.
2. Are global wealth taxes necessary?
   - More productive agents prefer wealth tax over capital income tax
3. Alternative modeling of entrepreneur's labor input
   - How much of the return to entrepreneurship comes from human capital?

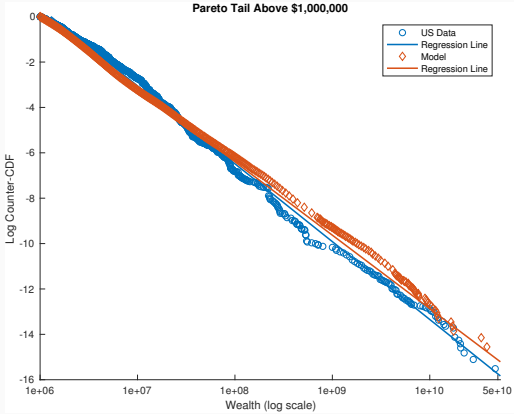
Thanks!

Appendix

Pareto Tail with Modified Models



(a) $\mu = 0.8$



(b) Measuring Wealth in Present Values

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Reallocation of Wealth Across Agents

	Percentiles of Return Distribution (%)				
	P10	P50	P90	P95	P99
Before Tax					
Benchmark	2.00	2.00	17.28	22.35	42.36
Wealth tax	1.74	1.74	14.62	19.04	36.91
After Tax					
Benchmark	1.50	1.50	12.96	16.76	31.77
Wealth tax	0.59	0.59	13.32	17.69	35.35

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Wealth Concentration by Assets

Table 1: Wealth Concentration by Asset Type

	Stocks w/o pensions	*All stocks*	*Non-equity financial*	*Housing equity*	*Net Worth*
Top 0.5%	41.4	37.0	24.2	10.2	25.6
Top 1%	53.2	47.7	32.0	14.8	34.0
Top 10%	91.1	86.1	72.1	51.7	68.7
Bottom 90%	8.9	13.9	27.9	49.3	31.3

Gini Coefficients

Financial Wealth	*Net Worth*
0.91	0.82

Source: Poterba (2000) and Wolff (2000)

Evolution of Net Worth Among Forbes 400

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Information on Billionaires

	Calendar Year			
Name	80s	90s	00s	10s
Warren Buffett	44.37	18.57	0.02	5.81
Michael Dell		87.94	-5.58	2.97
Larry Ellison	54.09	31.31	4.90	8.06
Bill Gates	51.94	48.06	-7.54	5.46
Elon Musk				107.57
Larry Page			69.67	11.96
Mark Zuckerberg			33.81	62.24

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Welfare Analysis: Two Measures

Notation: **s** state vector || V_0 and $\mathbb{V}_0$ be lifetime value functions in benchmark (US) and counterfactual economies || Γ be the distribution of **s**.

Micro measure $(CE_1(\mathbf{s}))$**:**

- Compute *individual-specific* consumption equivalent welfare and integrate:

$$V_0\left(\left(1+CE_1(s)\right)c^*_{US}(\mathbf{s}),\ell^*_{US}(\mathbf{s})\right)=\mathbb{V}_0\left(c(\mathbf{s}),\ell(\mathbf{s})\right)$$

$$\overline{CE}_1\equiv\sum_{\mathbf{s}}\Gamma_{US}(\mathbf{s})\times CE_1(s)$$

Macro measure $\left(\overline{CE}_2\right)$**:**

- Fixed proportional consumption transfer to *all Individual* all individuals:

$$\sum_{\mathbf{s}}\Gamma_{US}(\mathbf{s})\times V_0\left(\left(1+\overline{CE}_2\right)c^*_{US}(\mathbf{s}),\ell^*_{US}(\mathbf{s})\right)=\sum_{\mathbf{s}}\Gamma(\mathbf{s})\times\mathbb{V}_0\left(c(\mathbf{s}),\ell(\mathbf{s})\right).$$

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Welfare Gain Decomposition

Decompose welfare into consumption (CE_C) and leisure gain (CE_L):
$1 + CE = (1 + CE_C)(1 + CE_L)$

- CE_C is given by:

$$V_0((1 + CE_C(\mathbf{s}))c^*_{US}(\mathbf{s}), \ell^*_{US}(\mathbf{s})) = \widetilde{\mathbb{V}}_0(c(\mathbf{s}), \ell^*_{US}(\mathbf{s}))$$

  - CE_C can be decomposed into level ($CE_{\bar{c}}$) and distribution (CE_{σ_c})

$$V_0((1 + CE_{\bar{c}}(\mathbf{s}))c^*_{US}(\mathbf{s}), \ell^*_{US}(\mathbf{s})) = \widehat{\mathbb{V}}_0(\widehat{c}(\mathbf{s}), \ell^*_{US}(\mathbf{s}))$$

    where $\widehat{c}(\mathbf{s}) = c(\mathbf{s})\frac{\bar{c}}{\bar{c}^*_{US}}$ and

$$\widehat{\mathbb{V}}_0\left((1 + CE_{\sigma_c})\widehat{c}(\mathbf{s}), \ell^*_{US}(\mathbf{s})\right) = \widetilde{\mathbb{V}}_0(c(\mathbf{s}), \ell^*_{US}(\mathbf{s}))$$

- CE_L is given by

$$V_0((1 + CE_L(\mathbf{s}))c^*_{US}(\mathbf{s}), \ell^*_{US}(\mathbf{s})) = \widetilde{\mathbb{V}}_0(c^*_{US}(\mathbf{s}), \ell(\mathbf{s}))$$

  - Similar decomposition applies to leisure.

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Political Support for Optimal Capital Taxes

	Productivity group (Percentile)						
Age	0-40	40-80	80-90	90-99	99-99.9	99.9-99.99	99.99+
20	95.4	98.6	99.3	99.6	99.8	99.8	100.0
21–34	96.3	97.7	97.7	97.3	96.0	94.9	92.3
35–49	91.7	92.8	91.1	87.8	80.3	74.5	63.7
50–64	74.2	76.2	73.8	69.4	60.3	53.8	43.8
65+	13.8	18.6	18.7	18.2	16.6	15.2	13.0

Note: *Each cell reports the share of agents in each category (age - productivity) with positive welfare gain* $(CE_1(\theta, z, a, h) > 0)$.

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Political Support for Optimal Wealth Taxes

	Productivity group (Percentile)						
Age	0-40	40-80	80-90	90-99	99-99.9	99.9-99.99	99.99+
20	94.5	93.1	93.3	94.6	95.8	96.1	95.8
21–34	95.7	92.6	90.5	88.8	84.2	79.4	67.0
35–49	91.3	82.8	76.5	68.2	53.6	44.6	34.0
50–64	72.6	62.9	56.1	**49.4**	39.8	34.5	27.2
65+	2.1	2.3	1.8	1.4	0.9	0.7	0.4

Note: *Each cell reports the share of agents in each category (age - productivity) with positive welfare gain* ($CE_1(\theta, z, a, h) > 0$).

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Political Support for Wealth Taxes with Threshold

	Productivity group (Percentile)						
Age	0-40	40-80	80-90	90-99	99-99.9	99.9-99.99	99.99+
20	94.5	93.1	93.3	94.6	95.8	95.9	96.0
21–34	95.6	92.4	90.4	88.5	83.8	77.6	78.9
35–49	91.1	82.4	76.0	67.8	53.2	43.3	44.3
50–64	76.4	66.7	59.6	52.5	42.3	35.8	36.6
65+	75.9	68.6	63.7	57.9	48.7	42.1	42.9

Note: *Each cell reports the share of agents in each category (age - productivity) with positive welfare gain* ($CE_1(\theta, z, a, h) > 0$).

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How Much Inequality in Aiyagari-Style Models?

Parametrization:	U.S. Data	Gaussian $\rho = 0.985, \sigma^2 = 0.0234$	GKOS benchmark Rich process
Gini	0.85	0.58	0.66
Top 0.1%	**14.8%**	**1.1%**	**2.2%**
Frac > $10M	**0.4–0.5%**	≈ 0	**0.02%**
Top 1%	35.5%	7.0%	9.2%
Top 10%	75.0%	37.9%	41.6%
Top 20%	87.0%	48.2%	52.8%

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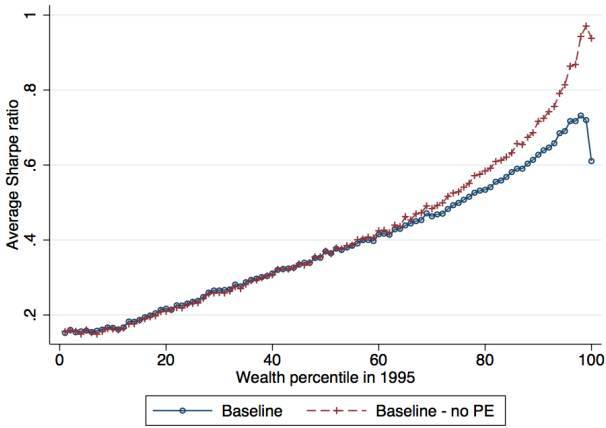
Return Heterogeneity in Norway

Figure 8. The Sharpe ratio and the level of wealth



Source: Fagereng, Guiso, Malacrino, and Pistaferri (2016)

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