Accounting for wealth concentration in the US

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What determines wealth concentration?

- US wealth distribution is highly concentrated: top 1% share ∼35%
- Theories:
  - earnings based:
    - superearners *(Castañeda, Díaz-Gimenez and Ríos-Rull 2003)*
  - asset based:
    - returns *(e.g. Quadrini 2000, Benhabib, Bisin and Zhu 2011)*
    - bequests *(de Nardi 2004)*
    - preferences *(e.g. Krusell and Smith, 1998)*
- Implications:
  - Tax Policy
  - Distributional Consequences
  - Self-Insurance

Our contribution

Use the **joint distribution of income, earnings and net worth** to measure the empirical relevance of each theory.

Intuition:

- If the earnings channel dominates, top income earners should have significant labor income.
- If the asset channel dominates, top income earners should have mostly capital income.

Our contribution

Use the **joint distribution of income, earnings and net worth** to measure the empirical relevance of each theory.

Steps:

1. Document
   - the labor income share of top income and wealth groups
   - average returns of top income and wealth groups
2. Structurally measure the importance of each channel
   - heterogeneous-agent, life-cycle model with incomplete markets and all three potential determinants of wealth concentration.

Our contribution

Use the **joint distribution of income, earnings and net worth** to measure the empirical relevance of each theory.

Key Result:

- Earnings concentration main driver of top 1% wealth share.
- Asset returns matter almost as much as earnings for top 0.1% wealth share.
- Modest contributions from bequests.
- Scenarios with larger role for return heterogeneity generate strongly counterfactual joint distributions and earnings distributions.

DATA

Data: Survey of Consumer Finances: 2001 - 2019

Net worth: financial + non-financial assets - debt: *liquid assets, bonds, stocks, mutual funds, retirement accounts, vehicles, real estate, businesses*

Market Income:

$+$ wage and salary income (L)

$+$ active business and farm income (K+L)

$+$ interest and dividend income, private pension withdrawals (K)

$\pm$ capital gains (K)

$-$ e.g. social security income, transfer income etc.

Data: Survey of Consumer Finances: 2001 - 2019

Net worth: financial + non-financial assets - debt: *liquid assets, bonds, stocks, mutual funds, retirement accounts, vehicles, real estate, businesses*

Market Income:

- \+ wage and salary income (L)

- \+ active business and farm income (K+L)
  - (impute earnings only if none is reported)
- \+ interest and dividend income, private pension withdrawals (K)

- ± capital gains (K)
  - (report w and w/o)
- − e.g. social security income, transfer income etc.

– Key empirical patterns similar

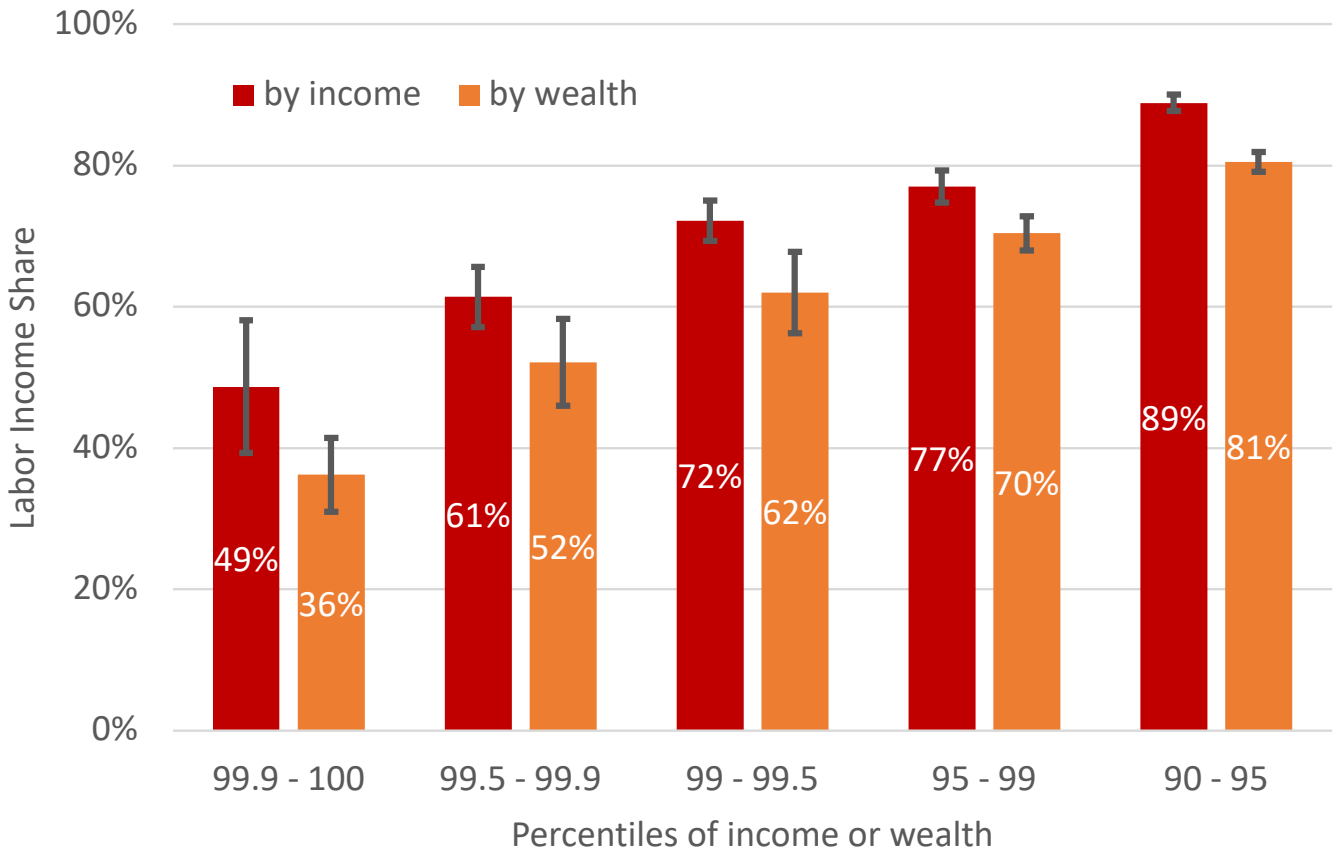
Top earners are wealthy

Top earners are wealthy

Sources of Top Incomes

capital

labor



Top 1% shares: by inc.: 59% by wealth: 53%

IRS data: wage: 53%

details

Rates of return on assets

Group p labor income share:

$$LIS_p = \frac{E_p}{E_p + r_p W_p}$$

LIS ratio of groups p and 0:

$$\frac{LIS_p}{LIS_0} = \frac{E_p}{E_0} \frac{E_0 + r_0 W_0}{E_p + r_p W_p}$$

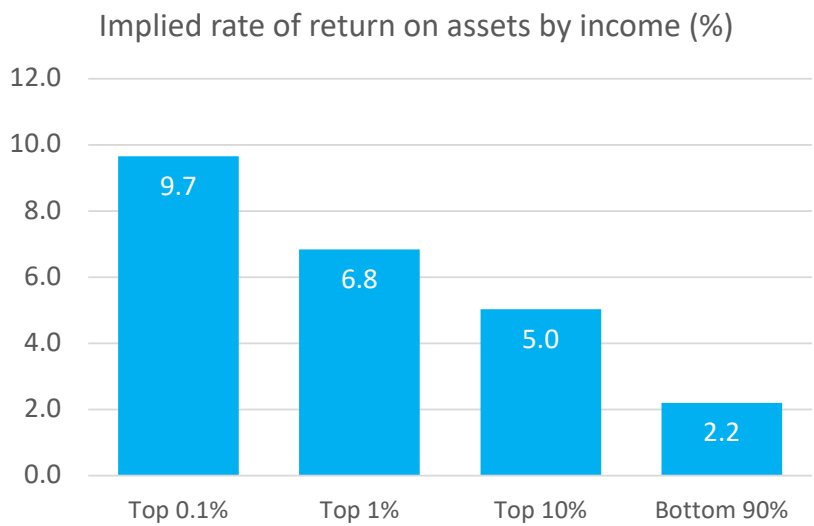
Relative rates of return for groups p and 0:

$$\frac{r_p}{r_0} = \frac{E_p/E_0}{W_p/W_0} \cdot \frac{1/LIS_p - 1}{1/LIS_0 - 1}.$$

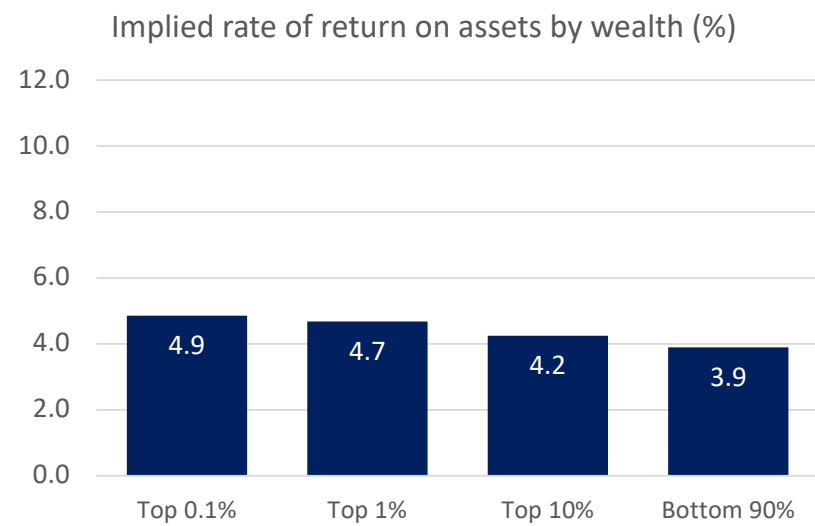
Rates of return on assets

Relative rates of return for groups p and 0:

$$\frac{r_p}{r_0} = \frac{E_p/E_0}{W_p/W_0} \cdot \frac{1/LIS_p - 1}{1/LIS_0 - 1}.$$



(a) by income



(b) by wealth

Note.– Synthetic rate of return on assets implied by the labor share in income assuming an annual average rate of return of 3.9%. Source: SCF.

derivation

Data: key patterns

1. Top earners are wealthy.
2. Labor income main source of income except for top 0.1%.
   - 59% for top 1% of income
   - 53% for top 1% of wealth
3. High income groups earn higher asset returns.
   Modest variation in returns by wealth.

MODEL

Model Economy

Extend a standard general equilibrium, life-cycle model with incomplete markets (Imrohoroglu et al. 1995, Huggett 1996) to incorporate

- ... idiosyncratic labor income risk with superearners
- ... idiosyncratic capital income risk
- ... non-homothetic bequests
- ... fiscal policy

Assumptions

- Demographics
  - life: ages 20 to 100 in 5-year periods
  - survival: age-dependent
  - retirement age: 65
- Household Preferences
  - (+) consumption (+) bequests (-) work
- Production
  - Representative Firm (Cobb-Douglas)
- Government
  - Tax and Transfer System
  - Social Security System
  - Expenses
- Stationary Equilibrium
  - Rational Agents, Competitive Markets, Fiscal Balance

Risks, saving motives, and wealth inequality

Households face **risks:**

- survival risk
- productivity shocks
- rate of return shocks

Multiple **saving motives:**

- intertemporal
- retirement
- bequest
- precautionary

All these vary with the state variables age, wealth, productivity, saving return.

Risks, saving motives, and wealth inequality

Multiple **saving motives:**

- intertemporal
- retirement
- bequest
- precautionary

All these vary with the state variables age, wealth, productivity, saving return.

Multiple factors promoting **wealth concentration:**

- heterogeneous saving motives by productivity
- heterogeneous rates of return
- bequest motive

Consumption-Savings Problem

Workers ($j < J_R - 1$)

$$V_j^W(k,z,\kappa) = \max_{c,k' \geq 0, h \in [0,1]} \left\{ \frac{c^{1-\sigma_c}}{1-\sigma_c} - \theta \frac{h^{1+\sigma_l}}{1+\sigma_l} + \beta s_j \mathbb{E}[V_{j+1}^W(k',z',\kappa')|z,\kappa] + (1-s_j)\phi(k') \right\}$$

subject to

$$(1+\tau_s)c + k' = y^d(z\varepsilon_j hw, r\kappa k) + k + Tr,$$

Retirees ($j \geq J_R$)

receive social security benefits b instead of labor earnings $zw\varepsilon_j h$

Closing the model

Representative firm:

- $Y = K^{\alpha} N^{1-\alpha}$
- Y can be consumed or invested
- rents capital and labor, taking prices w and r as given

Government:

- expenditure: exogenous expenditure G, social security, medicare, and universal transfer
- revenue: taxes on household income, corporate income, and consumption.

Focus on a stationary equilibrium.

details

CALIBRATION

Calibration strategy

Target moments on ...

- earnings distribution and dynamics
- factor composition
- wealth concentration
- returns by income
- bequest distribution
- intergenerational wealth transitions

... to identify:

- earnings process
- rate of return process
- bequest motives

Fiscal Policy

Social security:

- piecewise linear as in the law
- caps on contributions and on benefits
- total social security and medicare spending as in national accounts

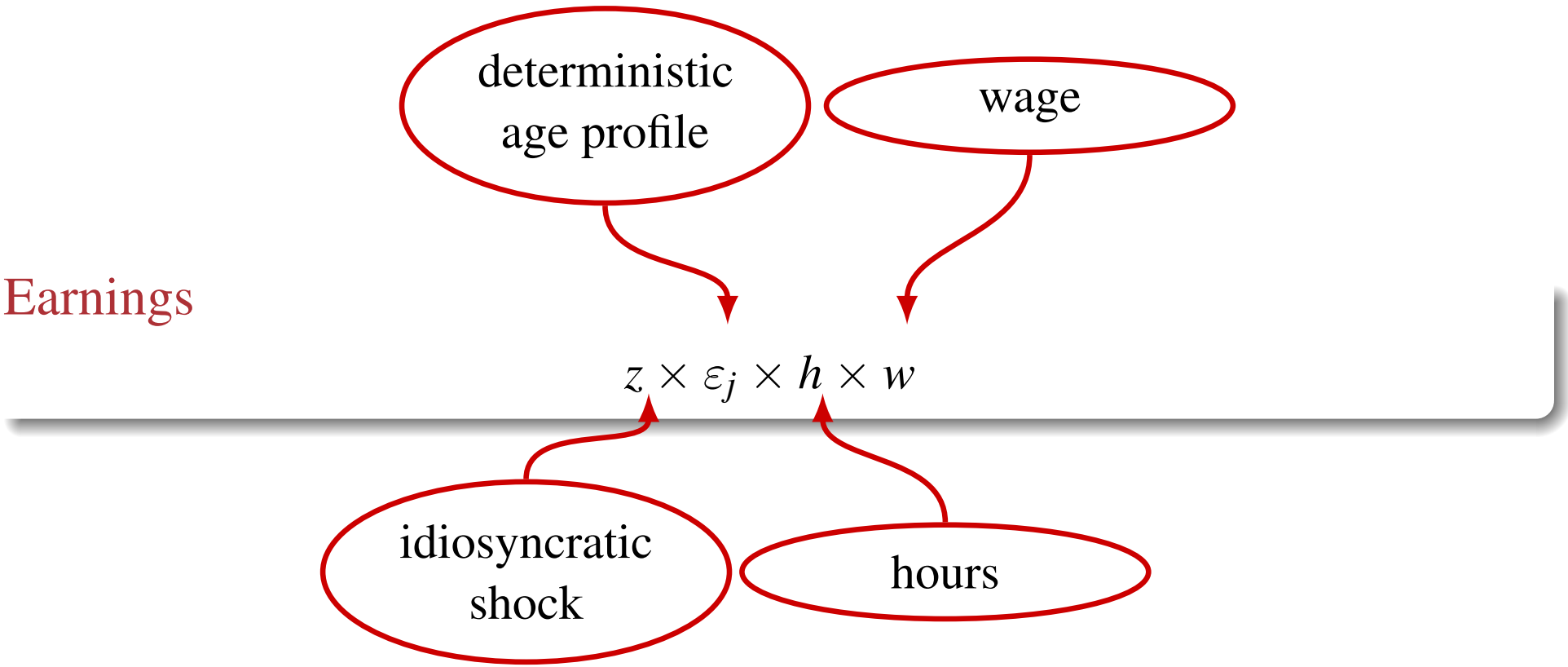
Government spending as in national accounts.

Taxes:

- linear taxes on corporate income (τ_c)
- progressive taxes on household income ($\tau_l, \tau_{\max}$)
- average taxes endogenous, so that the government budget is balanced.

details

Labor Productivity Process



Labor Productivity Process

Shock (z) Dynamics

$$\Pi_Z = \left(\begin{array}{c|cccc} & f_L + a & f_H + a & z_{awel} & z_{aweh} \\ \hline f_L + a & A & 0 & \lambda_{in} & 0 \\ f_H + a & 0 & A & \lambda_{in} & 0 \\ z_{awe_l} & \lambda_{out} & \lambda_{out} & \lambda_{ll} & \lambda_{lh} \\ z_{awe_h} & 0 & 0 & \lambda_{hl} & \lambda_{hh} \end{array}\right)$$

Labor Productivity Process

Estimate:

- PSID

Shock (z) Dynamics

$$\Pi_Z = \left(\begin{array}{c|cccc} & f_L + a & f_H + a & z_{awel} & z_{aweh} \\ \hline f_L + a & A & 0 & \lambda_{in} & 0 \\ f_H + a & 0 & A & \lambda_{in} & 0 \\ z_{awe_l} & \lambda_{out} & \lambda_{out} & \lambda_{ll} & \lambda_{lh} \\ z_{awe_h} & 0 & 0 & \lambda_{hl} & \lambda_{hh} \end{array}\right)$$

Labor Productivity Process

Calibrate:

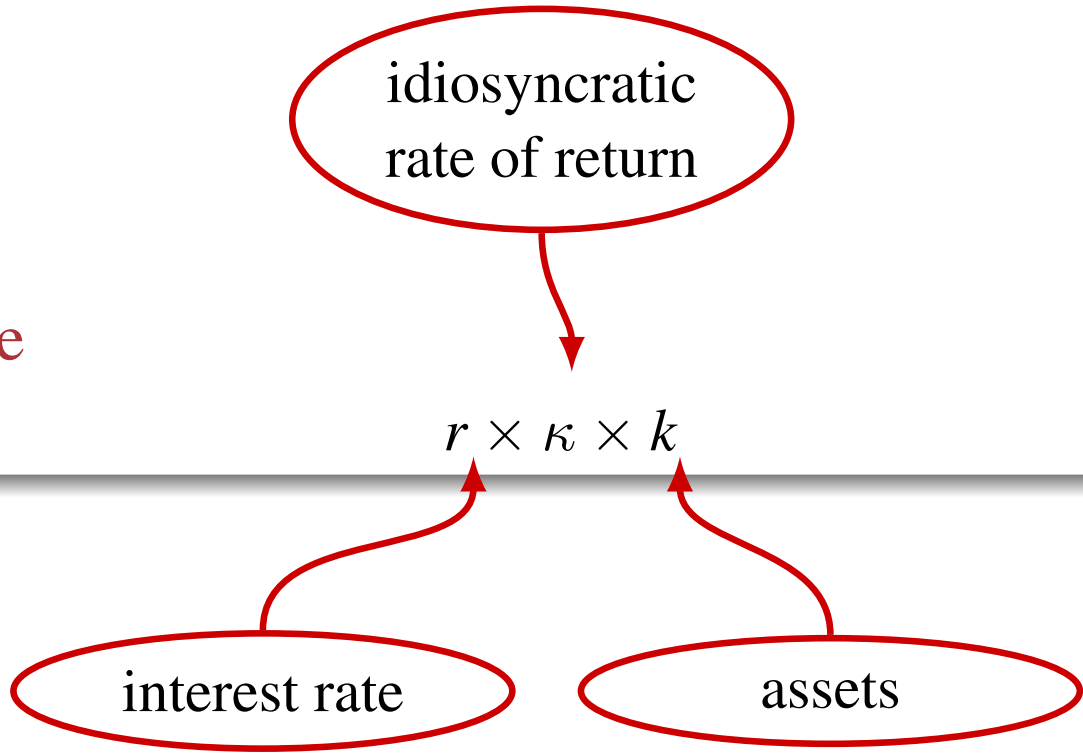
- earnings concentration
- top persistence
- top LIS

Shock (z) Dynamics

$$\Pi_Z = \left(\begin{array}{c|cccc} & f_L + a & f_H + a & z_{awel} & z_{aweh} \\ \hline f_L + a & A & 0 & \lambda_{in} & 0 \\ f_H + a & 0 & A & \lambda_{in} & 0 \\ z_{awe_l} & \lambda_{out} & \lambda_{out} & \lambda_{ll} & \lambda_{lh} \\ z_{awe_h} & 0 & 0 & \lambda_{hl} & \lambda_{hh} \end{array}\right)$$

Rate of Return Process

Capital Income



Rate of Return Process

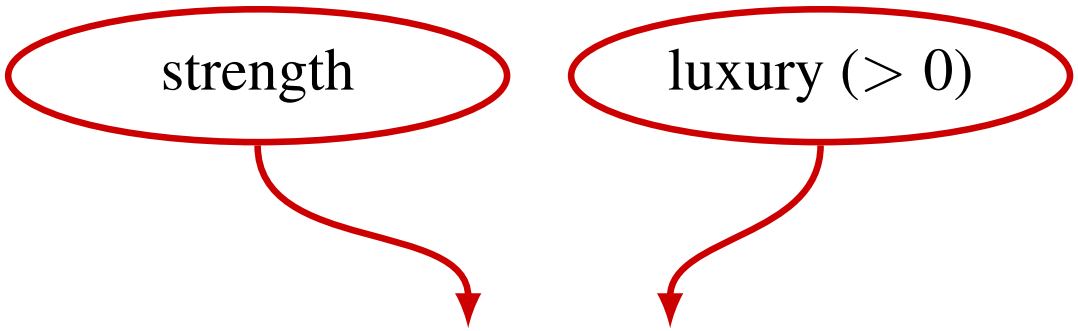
Idiosyncratic Dynamics

$$\Pi_{\kappa}(z) = \left(\begin{array}{c|ccc} & \kappa_L & \kappa_H & \kappa_{\text{top}} \\ \hline \kappa_L & \pi_{ll} & 1-\pi_{ll}-\pi_{in}(z) & \pi_{in}(z) \\ \kappa_H & 1-\pi_{hh}-\pi_{in}(z) & \pi_{hh} & \pi_{in}(z) \\ \kappa_{\text{top}} & 0 & 1-\pi_{top,top} & \pi_{top,top} \end{array}\right)$$

Calibrate:

- top wealth shares
- intergenerational persistence of top wealth status
- relative returns by income group

Bequests



Utility value

$$\phi(k) = \phi_1[(k + \phi_2)^{1-\sigma_c} - 1]$$

Households receive a bequest at age 50 (mean age receiving bequest)...

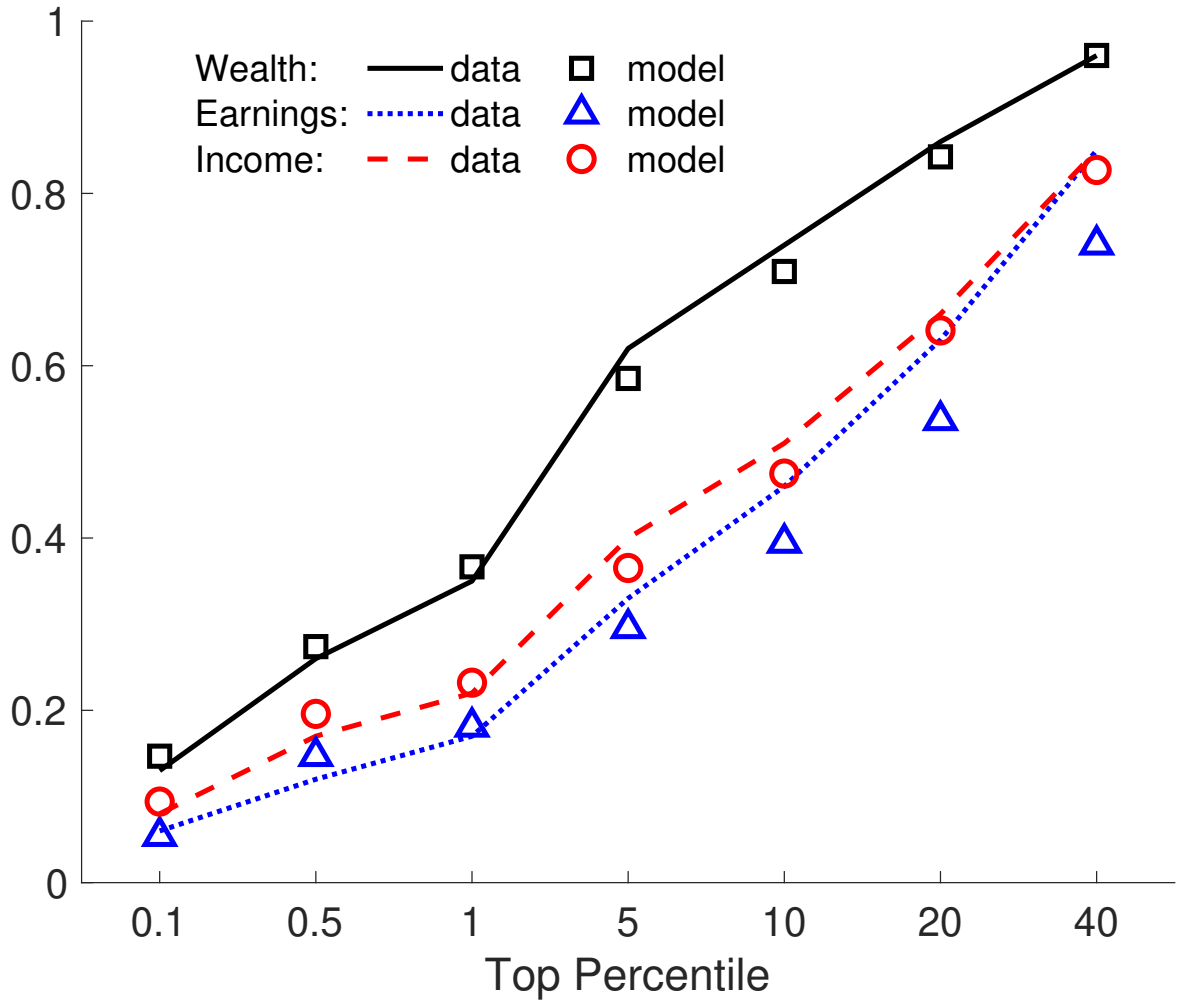
- ... drawn randomly from the assets of the deceased with (high / low) (productivity / return).
- ... weights are disciplined by intergenerational correlations of earnings and wealth.

Non-targeted moments

- joint distribution of income, earnings and wealth (except top labor income shares)
- life cycle patterns (averages and dispersion)
- age composition of top wealth groups

preset parameters

Fit: Marginal distributions of wealth, earnings and income



figure

Fit: Share of income from labor

	All	Top(%)		
	0-100	99.9-100	99-100	95-99
Data	0.82	0.49	0.59	0.77
Model	0.80	0.47	0.61	0.85

Parameters: Rates of return

Transition matrix (probabilities in %):

	$r\kappa_L$	$r\kappa_H$	$r\kappa_{\text{top}}$
	0.1%	5.5%	25.3%
0.1%	96	4-$\pi_{in}(z)$	$\pi_{in}(z)$
5.5%	6-$\pi_{in}(z)$	94	$\pi_{in}(z)$
25.3%	0	10	90
pop. share	60	39.9	0.1

$\pi_{in}(z_{1-6})$: 0.025%

$\pi_{in}(z_7)$: $2 \cdot \pi_{in}(z_{1-6})$

$\pi_{in}(z_8)$: $15 \cdot \pi_{in}(z_{1-6})$

Rates of return for top income groups (%)

	top 0.1%	top 1%	bottom 90%
data (imputed)	9.7	6.8	2.2
model	10.5	6.3	2.5

For an average return of 3.9%.

Top incomes

Top relative to mean earnings:

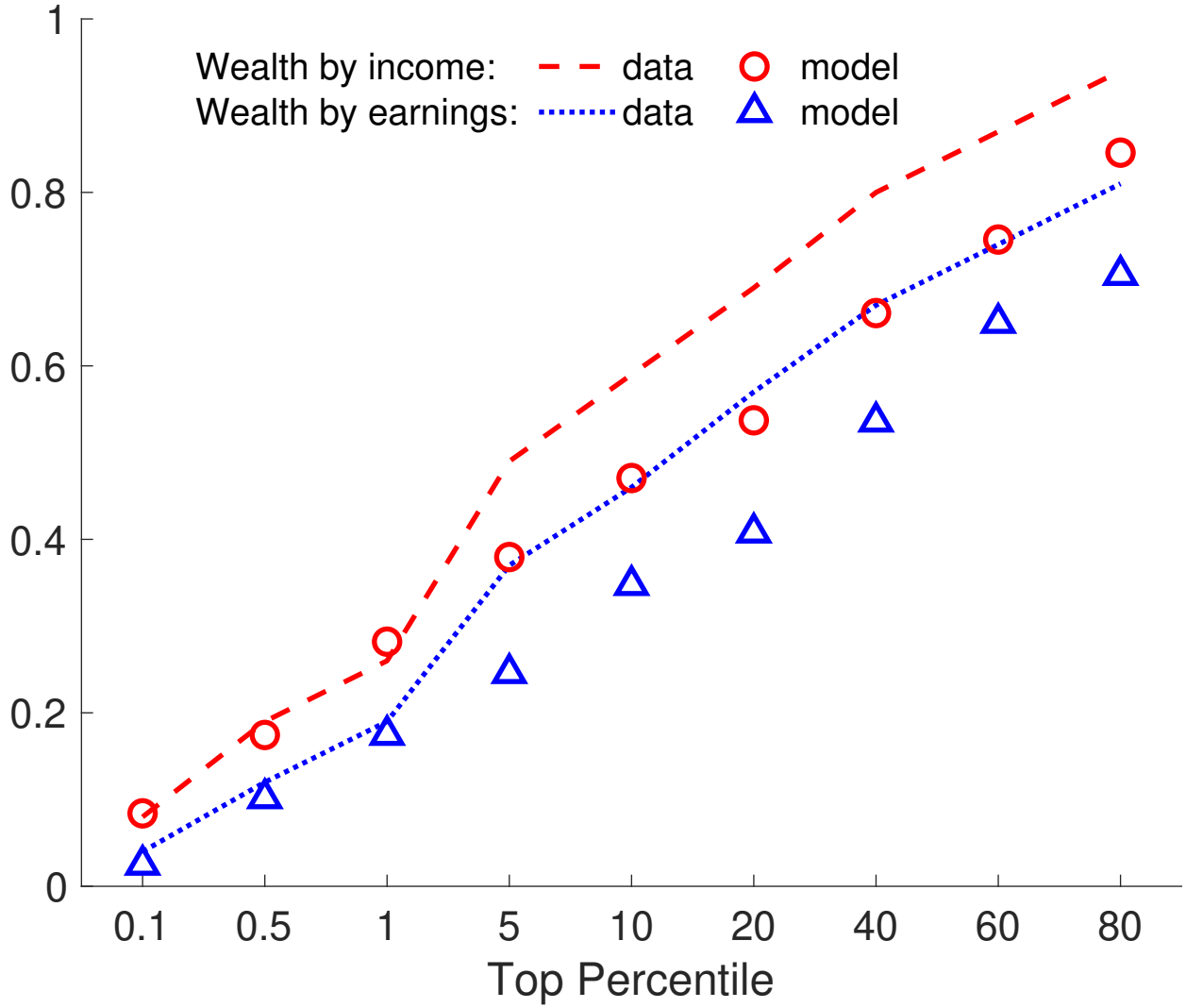
	0.01%	0.1%	0.5%	1%
data	>170	60	24	17
model	163	54	29	18

Top earning dynamics:

	Prob. stay in top 1%
data	0.62
model	0.62

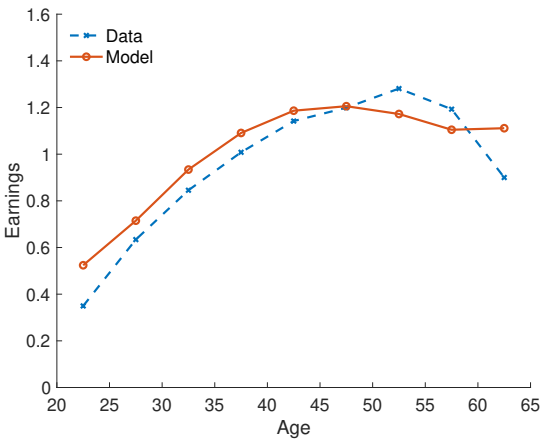
detail

Distribution of Wealth by Income and Earnings

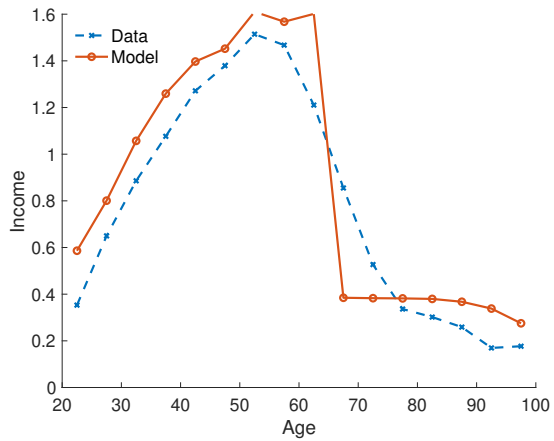


Life-Cycle Patterns: Averages

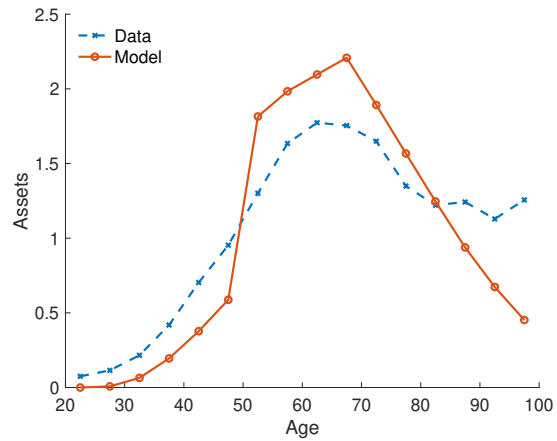
DATA vs MODEL



(a) earnings

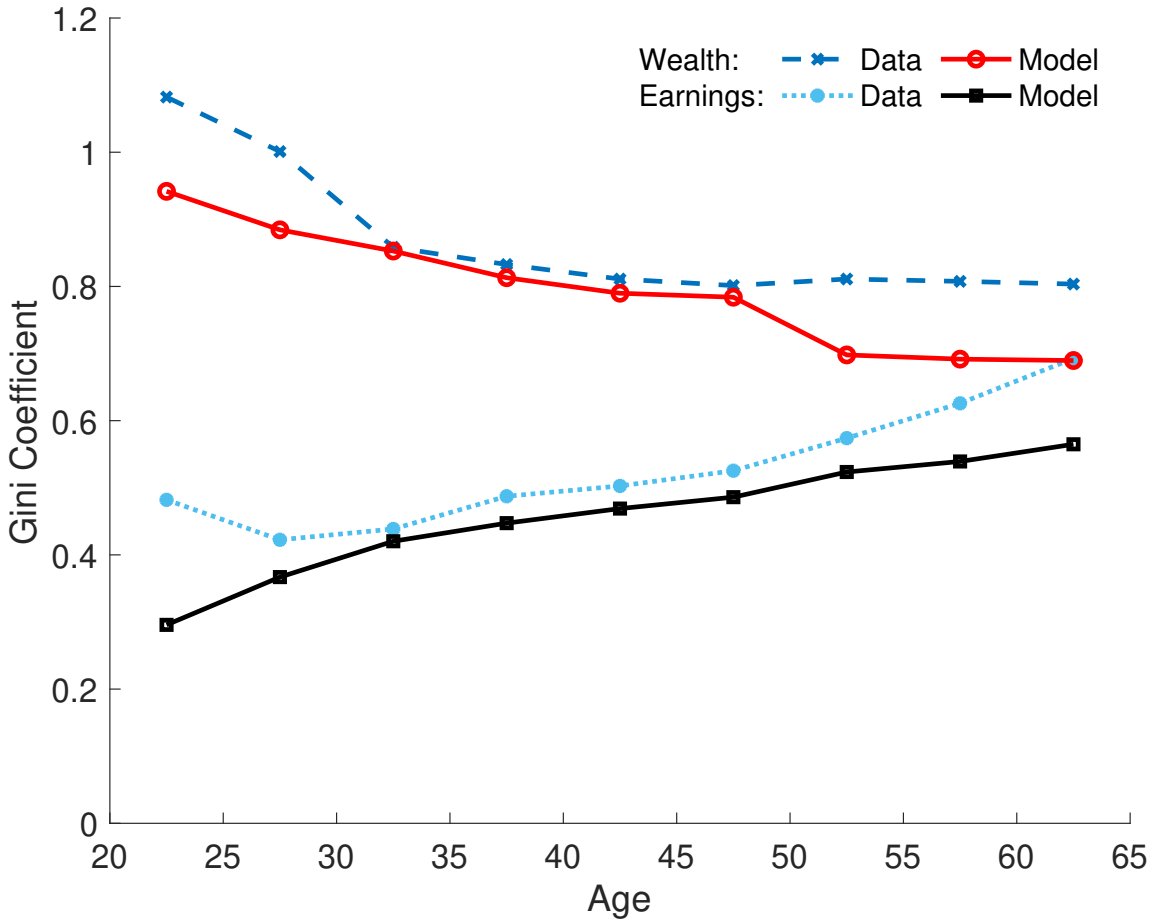


(b) income



(c) wealth

Life-Cycle Patterns: Dispersion



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Additional moments: Mean age in top 1% groups

	wealth	income
data	60	55
model	62	56

DECOMPOSITION

Sources of Wealth Concentration

Accounting for Wealth Concentration

(d) Top 1% Wealth Share

(e) Top 0.1% Wealth Share

Note.– Percent contribution to top wealth shares.

- Top earners account for half of top wealth shares.
- Asset returns matter for the top 0.1% share.

Alternative calibrations 1: single channels

Recalibrate the model to maintain top 0.1% wealth share.

1. No top earners (higher κ_{top})

	top earnings shares		top 1% LIS	
	0.1%	1%	by income	by wealth
data	6%	17%	59%	53%
model (here)	0.5%	4%	31%	7%

Completely misses importance of earnings among the wealthy.

Typical statistics for papers with this channel only.

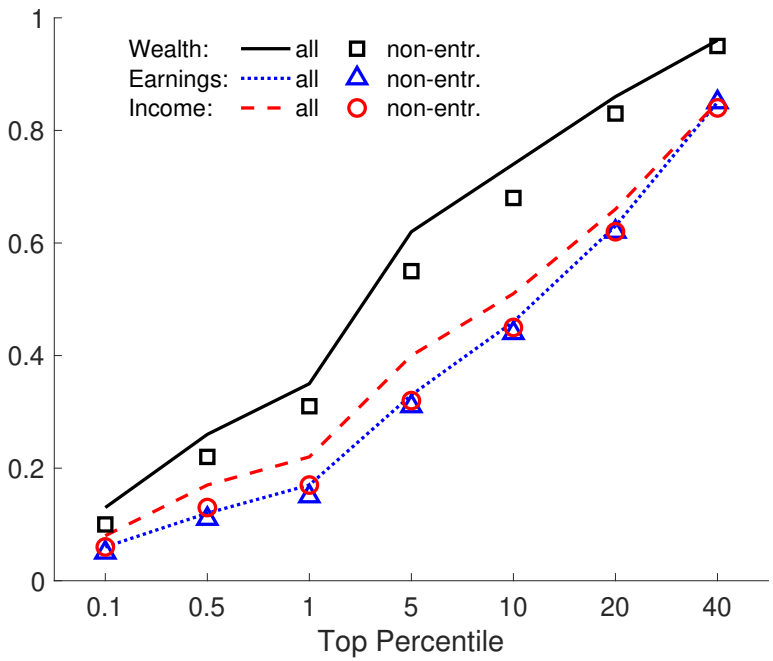
2. Common return (much higher z_8)
   - top 0.1% earnings share rises to 8% (data: 6%)
   - LIS for top 1% incomes rises to 79% (data: 59%)

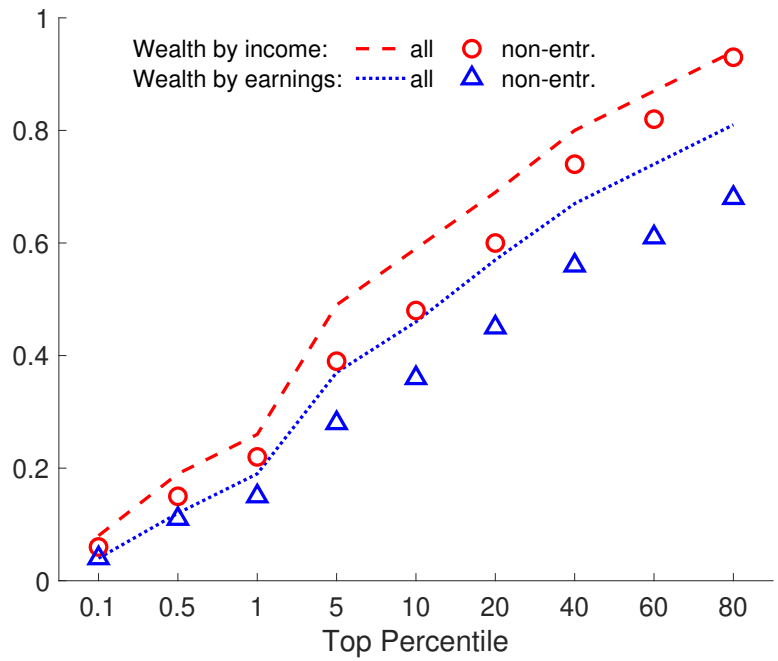
Overstates importance of earnings.

more

Alternative calibrations 2: no entrepreneurs

Are entrepreneurs different? To find out, repeat for non-entrepreneurs.



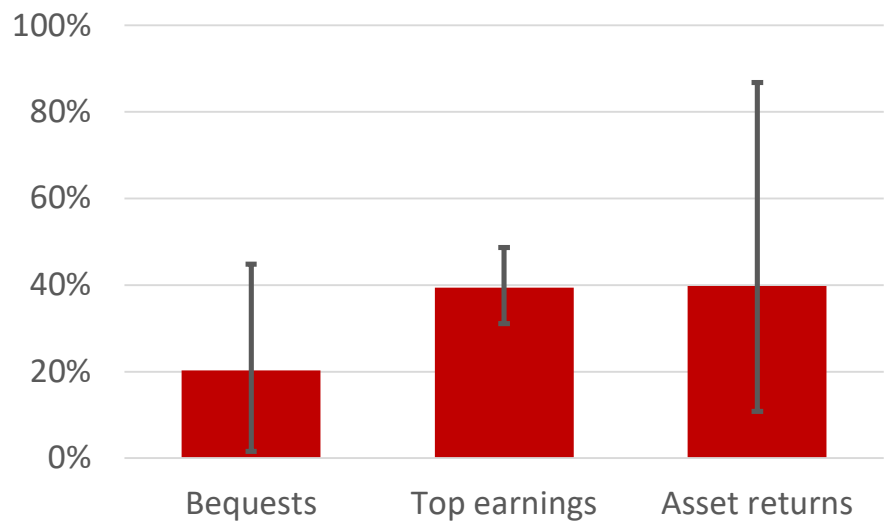


Data:

- Top entrepreneurs are wealthier,
- but strong concentration among non-entrepreneurs, too.

Alternative calibrations 2: no entrepreneurs

Are entrepreneurs different? To find out, repeat for non-entrepreneurs.



Results:

- Results for top 1% hardly change.
- Slightly larger role for returns for top 0.1%.

How is this possible?

Stachurski and Toda (2019):

```
if (i) agents are infinitely-lived,
(ii) saving is risk-free, and
(iii) agents have constant discount factors,
then the wealth distribution inherits the tail
behavior of income shocks (e.g., light-tailedness
or the Pareto exponent).
```

Reason: $\beta R < 1$.

Is the large role of earnings for wealth concentration impossible?

How is this possible?

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or the Pareto exponent).
```

Reason: $\beta R < 1$.

Is the large role of earnings for wealth concentration impossible?

No. This does not apply to life cycle models.

How is this possible?

Sargent, Wang and Yang (2021) show:

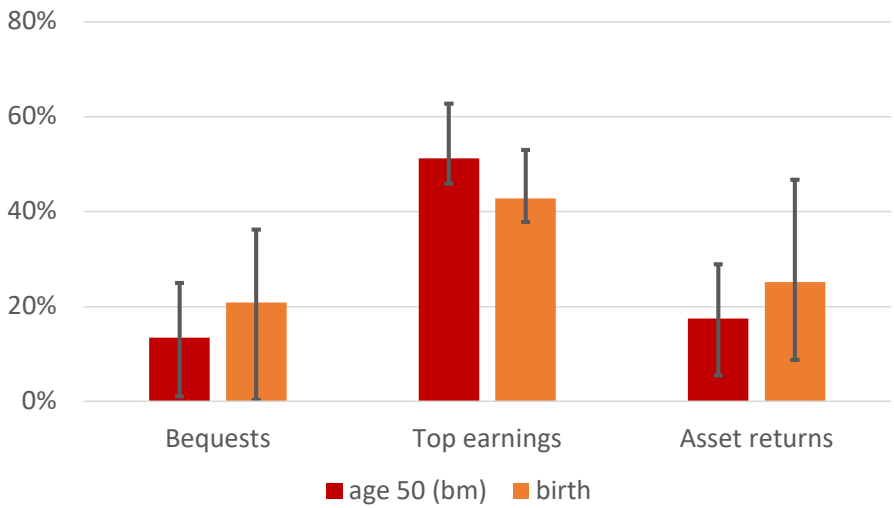
> The tail of the wealth distribution can be thicker than that of earnings in a life cycle model if agents start their life with a low level of wealth, even with a common return on capital and a common discount factor.

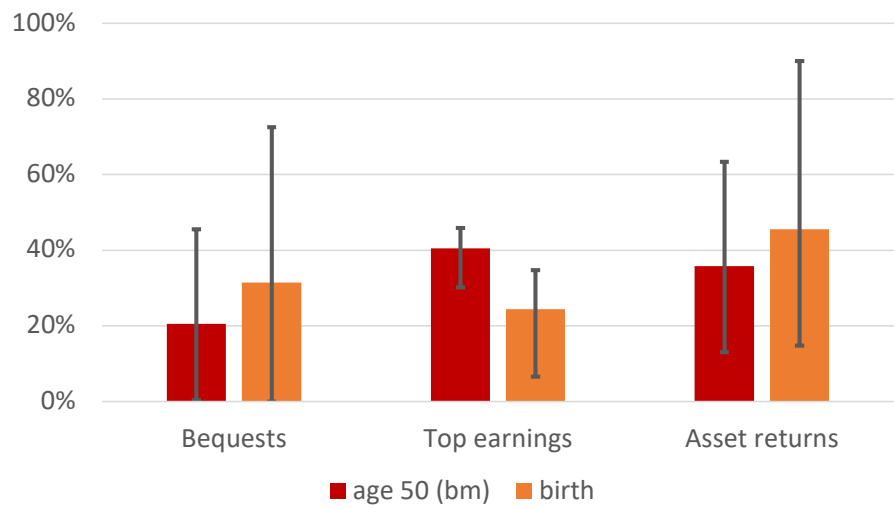
How is this possible?

Sargent, Wang and Yang (2021) show:

> The tail of the wealth distribution can be thicker than that of earnings in a life cycle model if agents start their life with a low level of wealth, even with a common return on capital and a common discount factor.

Illustration: bequest timing





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Why do returns matter so little?

Answer: because life is too short.

Reaching the top 0.1% takes 35 years at the top return of 25%.

Bequests and intergeneral return correlation help, but only up to a point.

Complementarity between unequal bequests and return heterogeneity in generating wealth concentration.

▸ figure

Conclusion

- Model replicates
  - joint distribution of income and wealth
  - top income composition
  - relative returns

  and life cycle dynamics of earnings, income and wealth
  - levels
  - inequality.
- Realistic earnings concentration main reason for high wealth concentration in the US.
- Top 0.1% share also due to return heterogeneity.
- Models that only rely on rate of return heterogeneity cannot match the high levels of earnings at the top of the income and wealth distributions.

Thank you !

Appendix

Data and Definitions

- Survey of Consumer Finances 2010 - 2016
- Market Income
  - + wage and salary income (L)
  - + business and farm income (K+L)
  - + interest and dividend income (K)
  - + private pension withdrawals (K)
  - ± capital gains (K)
  - − e.g. social security income, transfer income etc.
- Business Income: K or L?
  - solution: If no wage is reported for active business, we impute it.
- Capital gains
  - solution: Report both with and without capital gains and calibrate the average.

go back

Cross-Sectional Distributions of Income, Earnings and Wealth

	Top Percentile							
	0.1%	0.5%	1%	5%	10%	20%	40%	Gini
Wealth share	0.13	0.26	0.35	0.62	0.74	0.86	0.96	0.84
Income share	0.08	0.17	0.22	0.40	0.51	0.66	0.85	0.66
Earnings share	0.06	0.12	0.17	0.33	0.46	0.63	0.85	0.64†

Source.– Survey of Consumer Finances, 2001 to 2019. All households. Cumulative shares. Income includes capital gains. Patterns are similar when excluding capital gains.
†The earnings gini for working age households is 0.56.

back to correlation
capital gains

The Joint Distribution of Wealth, Income and Earnings

Shares of Net Worth by Income and Earnings:

	Top Percentile					
sorted by...	0.5%	1%	5%	10%	20%	40%
... net worth	0.26	0.35	0.62	0.74	0.86	0.96
... income	0.19	0.27	0.50	0.60	0.70	0.81
... earnings	0.12	0.19	0.37	0.46	0.57	0.67

Source.– Survey of Consumer Finances, 2001 to 2019. All households. Income includes capital gains. Figures excluding capital gains are similar.

Cross-Sectional Distributions of Income, Earnings and Wealth

	Top Percentile							
	0.1%	0.5%	1%	5%	10%	20%	40%	Gini
Wealth share	0.13	0.26	0.35	0.62	0.74	0.86	0.96	0.84
Income share	0.08	0.17	0.22	0.40	0.51	0.66	0.85	0.66
Income share (w/o KG)	0.07	0.14	0.20	0.37	0.49	0.65	0.85	0.64
Earnings share	0.06	0.12	0.17	0.33	0.46	0.63	0.85	0.64†

Source.– Survey of Consumer Finances, 2001 to 2019. All households. Cumulative shares.
† The earnings gini for working age households is 0.58.

back

The share of income from labor

$$\text{Income} = \underbrace{\text{Wage income} + \text{Business}}_{\text{Labor income}} \underbrace{\text{income} + \text{Interest, dividends}(+\text{capital gains})}_{\text{Capital income}}$$

Percentile	All 0-100	Top Income Groups 90-95	95-99	99-100
Wage income				
with capital gains	74	84	67	44
without capital gains	78	86	71	54
Labor Income				
with capital gains	80	88	75	53
without capital gains	84	90	79	66

- Labor income is the major income source for the top 1% in the SCF.
- It accounts for 53% of income even in the top 1% of wealth.

back

The share of income from labor – top fractiles from IRS data

	Income Percentile Category				
	99-100	99-99.5	99.5-99.9	99.9-99.99	99.99-100
w/o capital gains:					
Wage	56	73	61	47	34
Business	30	20	29	37	37
Int. + Div.	14	7	10	15	29
w/ capital gains:					
Wage	49	68	54	40	27
Business	27	19	26	32	30
Int., Div., KG	24	13	19	28	42

Source.– 2015 update to Piketty and Saez (2007), averages for 2010-2015.

- Labor income is the major income source for the top 1% in the SCF.
- IRS agrees: wage income is the main source except for the top 0.1%.

Rates of return on assets

Group p labor income share:

$$LIS_p = \frac{E_p}{E_p + RoR_p W_p}$$

LIS ratio of groups p and 0:

$$\frac{LIS_p}{LIS_0} = \frac{E_p}{E_0} \frac{E_0 + RoR_0 W_0}{E_p + RoR_p W_p}$$

Relative rates of return for groups p and 0:

$$\frac{RoR_p}{RoR_0} = \frac{E_p/E_0}{W_p/W_0} \cdot \frac{1/LS_p - 1}{1/LS_0 - 1}.$$

back

Stationary Equilibrium

Let $s = \{j, k, z, \kappa\} \in S$ be the state vector.

1. Functions $V(s)$, $c(s)$, $k'(s)$ and $h(s)$ solve the households' problem.
2. Firms maximize profits.
3. Factor markets clear:

$$K = \int k'(s)\mathrm{d}\Gamma(s) \quad \text{and} \quad N = \int_{j<J_r} z\varepsilon_j h(s)\mathrm{d}\Gamma(s)$$

4. The government's budget is balanced:

$$G + Tr + \int b(s)\mathrm{d}\Gamma(s) = \tau_s \int c(s)\mathrm{d}\Gamma(s) + \int [y(s) - y^d(s)]\mathrm{d}\Gamma(s)$$

5. $\Gamma(s)$ is consistent with the policy functions, and is stationary.

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Tax System and Disposable Income y^d

$$\begin{aligned} y^d &= \lambda \min\{y_f, y_b\}^{1-\tau_l} + (1-\tau_{max}) \max\{0, y_f - y_b\} \\ &\quad + (1-\tau_c) \max(r\kappa k - d_c, 0) \end{aligned}$$

- Taxable household income: $y_f = wz\varepsilon_j h + \min(r\kappa k, d_c) + b(j,z)$
- Taxation of household income: progressive up to y_b, constant MTR above

$$\lambda \min\{y_f, y_b\}^{1-\tau_l} + (1-\tau_{max}) \max\{0, y_f - y_b\}$$

  - $0 \leq \tau_l \leq 1$ measures the degree of progressivity of the tax system.
  - Permits net transfers (e.g. Welfare-to-work (Workfare) and EITC)
- Taxation of Corporate Income:

$$(1-\tau_c) \max(r\kappa k - d_c, 0)$$

- Social Security: piecewise linear as in the law

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Calibration of the Model: Preset Parameters

Parameter	Description	Value
	Demographics	
J	Maximum life span	16
j_R	Mandatory retirement age	10
s_0, s_1, s_2	Survival probability by age	Halliday (2015)
	Production	
α	Share of capital	0.27
δ	Depreciation	4.5%
	Preferences	
σ_c	Risk aversion	1.5
σ_l	Inverse frisch elasticity	1.22 (Blundell et al. 2016)

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Calibration of the Model: Preset Parameters

Parameter	Description	Value	Source
	Labor Productivity		
$\{\varepsilon_j\}_{j=1}^{j_R-1}$	Age-efficiency profile		own estimate
$\{z_1, \ldots, z_6\}$	Ordinary productivity states		own estimate
A_{ij}	Transition rates of ordinary productivity		own estimate
	Taxes and Transfers		
τ_c	Marginal corporate tax rate	0.236	Gravelle (2014)
τ_s	Consumption tax rate	0.05	Kindermann and Krueger (2016)
Tr	Government transfers / GDP	0.027	NIPA
G/Y	Expenditures / GDP	0.155	NIPA

Calibration of the Model: Jointly Calibrated Parameters

Parameter	Description	Value
β	Discount rate	0.979
θ	Labor disutility	5.5
$\lambda_{in}, \lambda_{ll}, \lambda_{lh}, \lambda_{hh}$	Transition rates	...
z_7, z_8	Top productivity states	...
$R_{LL}, R_{HH}, R_{\text{top,top}}$	Return transition rates	...
$\kappa_L, \kappa_H, \kappa_{\text{top}}$	Rate of return multipliers	...
ϕ_1, ϕ_2	Bequest utility	-0.42, 0.19
τ_l	Tax progressivity	18%
d_c	Corporate asset threshold/mean assets	0.79

Calibration of the Model: Preset Parameters

Parameter	Description	Value	Source
	Demographics		
J	Maximum life span	16	
j_R	Mandatory retirement age	10	
s_0, s_1, s_2	Survival probability by age	-5.49, 0.15, 0.016	Halliday (2015)
	Production		
α	Share of capital	0.27	NIPA
δ	Depreciation	4.5%	NIPA
	Preferences		
σ_c	Risk aversion	1.5	
σ_l	Inverse frisch elasticity	1.22	Blundell et al. (2016)

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Calibration of the Model: Preset Parameters

Parameter	Description	Value	Source
	Labor Productivity		
$\{\varepsilon_j\}_{j=1}^{j_R-1}$	Age-efficiency profile		own estimate
$\{z_1, \ldots, z_6\}$	Ordinary productivity states		own estimate
A_{ij}	Transition rates of ordinary productivity		own estimate
	Taxes and Transfers		
τ_c	Marginal corporate tax rate	0.236	Gravelle (2014)
τ_s	Consumption tax rate	0.05	Kindermann and Krueger (2016)
Tr	Government transfers / GDP	0.027	NIPA
G/Y	Expenditures / GDP	15.5%	NIPA

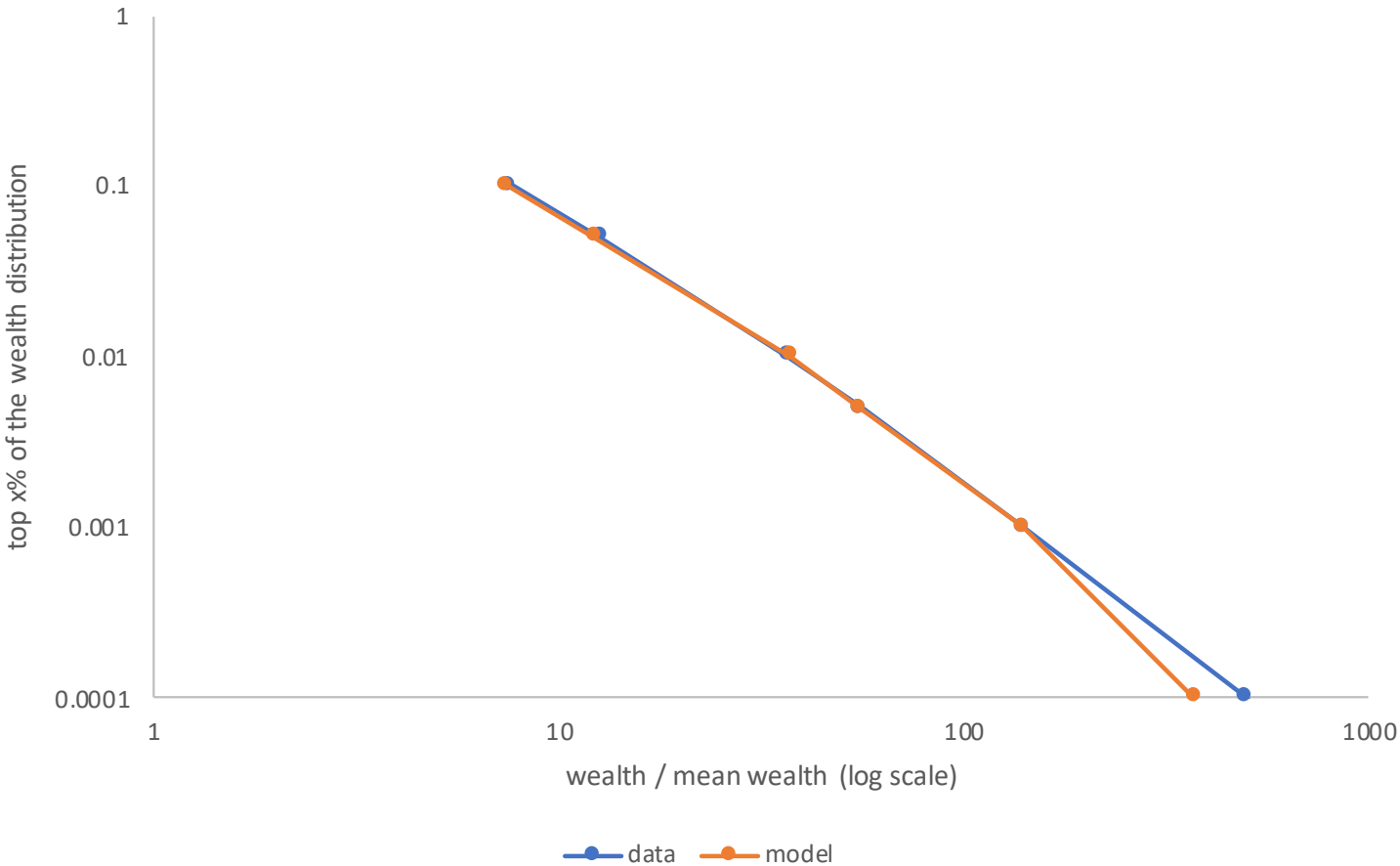
Calibration of the Model: Jointly Calibrated Parameters

Parameter	Description	Value
β	Discount rate	0.979
θ	Labor disutility	5.5
$\lambda_{in}, \lambda_{ll}, \lambda_{lh}, \lambda_{hh}$	Transition rates	...
z_7, z_8	Top productivity states	...
$R_{LL}, R_{HH}, R_{\text{top,top}}$	Return transition rates	...
$\kappa_L, \kappa_H, \kappa_{\text{top}}$	Rate of return multipliers	...
ϕ_1, ϕ_2	Bequest utility	-0.42, 0.19
τ_l	Tax progressivity	18%
d_c	Corporate asset threshold	0.8

Taxes and bequests

moment	source	data	model
Corporate income tax revenue/GDP	NIPA	2.5%	2.6%
Top 1% ATY - Bottom 99% ATY	Piketty and Saez (2007)	6.8%	6.5%
Bequest/Wealth	Guvenen et al.(2017)	1-2%	1.7%
90th pct bequest dist.	De Nardi et al. (2014)	4.53	7.5
Top 2% bequest share	Sabelhaus (2017)	40%	47%

Pareto plot of the wealth distribution



- Precise fit up to top 0.1%
- Top 0.001% share falls slightly short: 3.7% in model vs 5% in data

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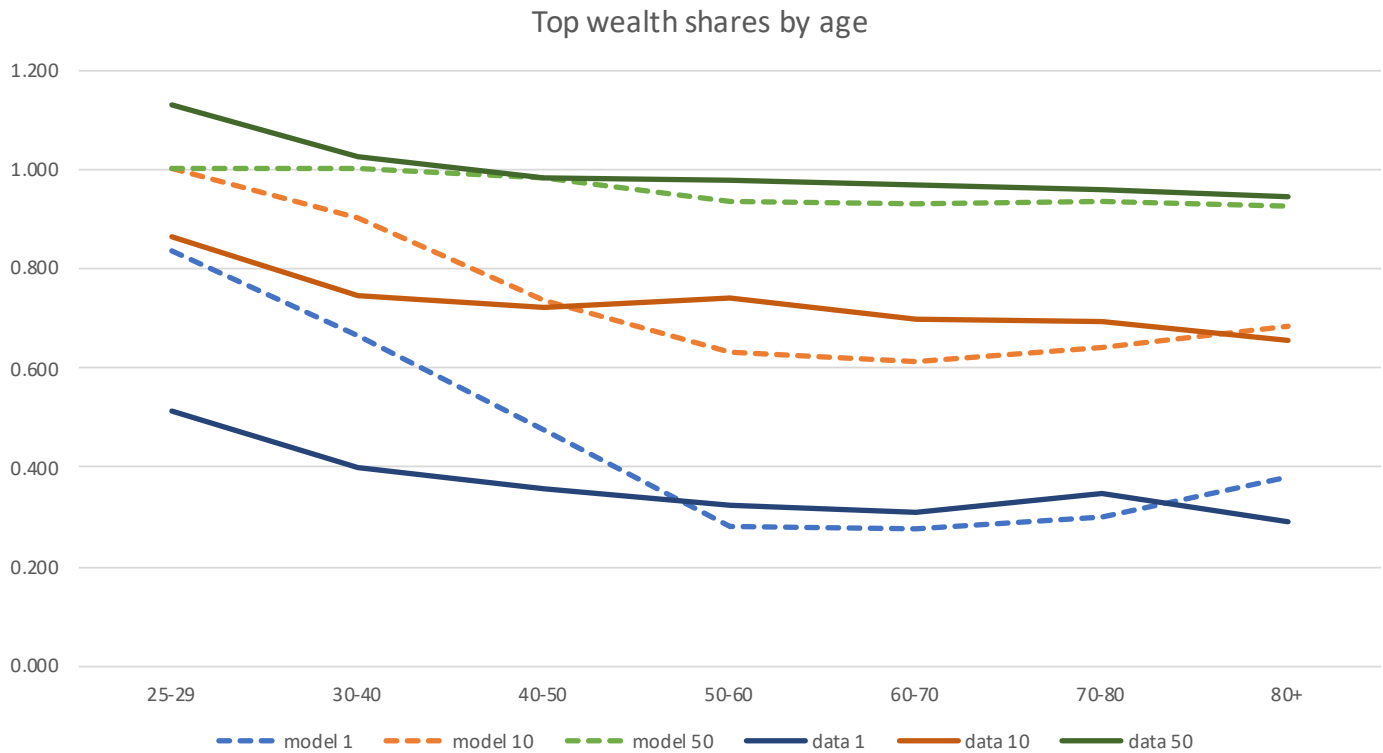
Additional moments: Top wealth shares by age group



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Counterfactuals: Eliminating individual channels

Reduction in top 0.1% wealth share

Reduction in top 1% wealth share

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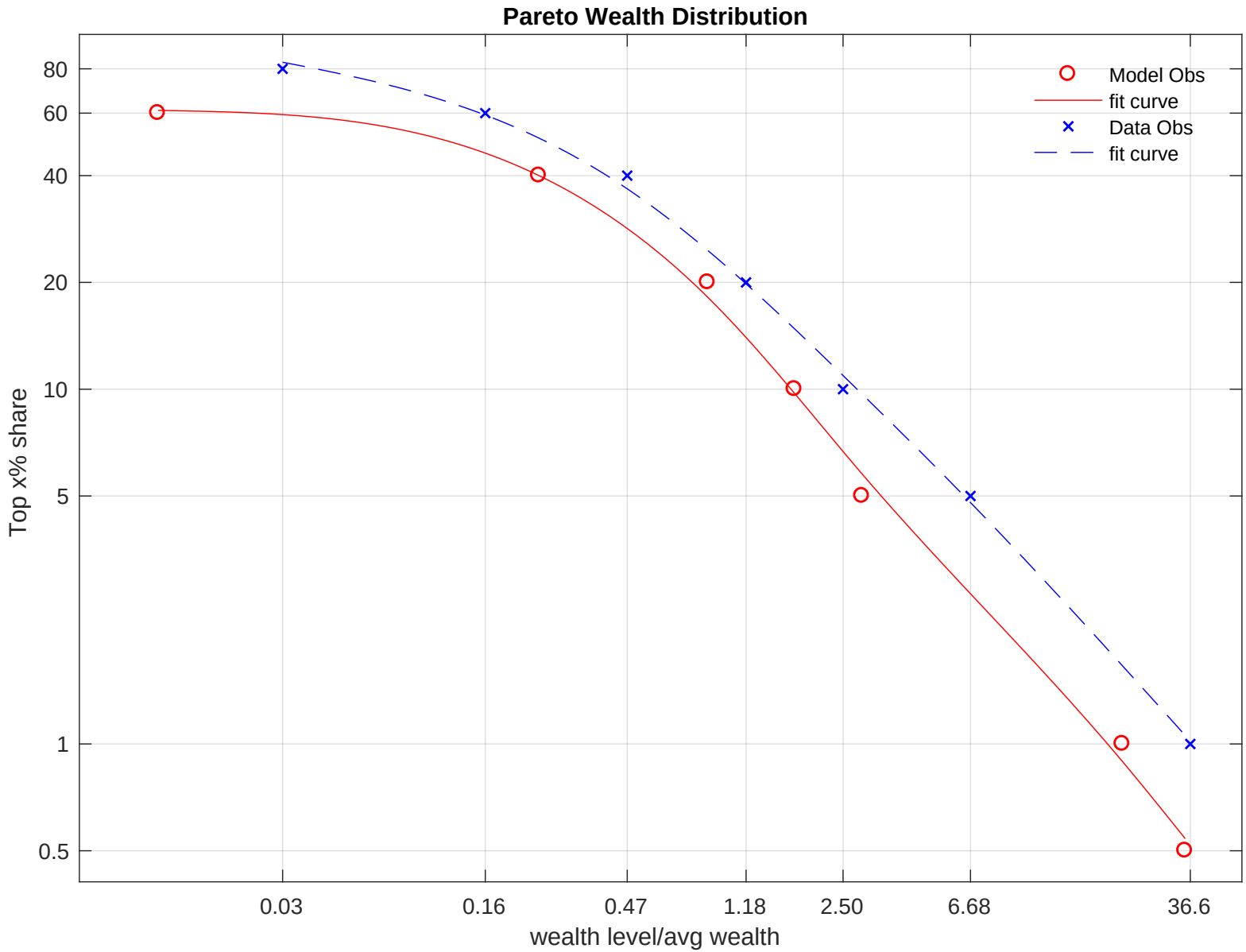
Pareto plot for wealth



Top earnings levels and transitions – detail

	low F			high F			top states	
	z_1	z_2	z_3	z_4	z_5	z_6	z_7	z_8
z level	1	1.97	3.89	3.24	6.39	12.6	170	1207
fraction	0.09	0.32	0.09	0.09	0.32	0.09	0.006	0.0002

Transition probabilites:

enter z_7	0.002	$z_7 \to z_8$	0.026	Prob. stay in top 1%	
stay in z_7	0.85	stay in z_8	0.76	data	0.62
leave z_7	0.13	$z_8 \to z_7$	0.24	model	0.60

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Distribution of Earnings Growth for the Top 1% of Earners

Moment	std. dev.	skewness	kurtosis
SSA Data	1.1	-1.5	10
Model	1.6	-3	12

Note.– Data moments come from Guvenen, Karahan, Ozkan & Song (2021) and are based on Social Security Administration data.

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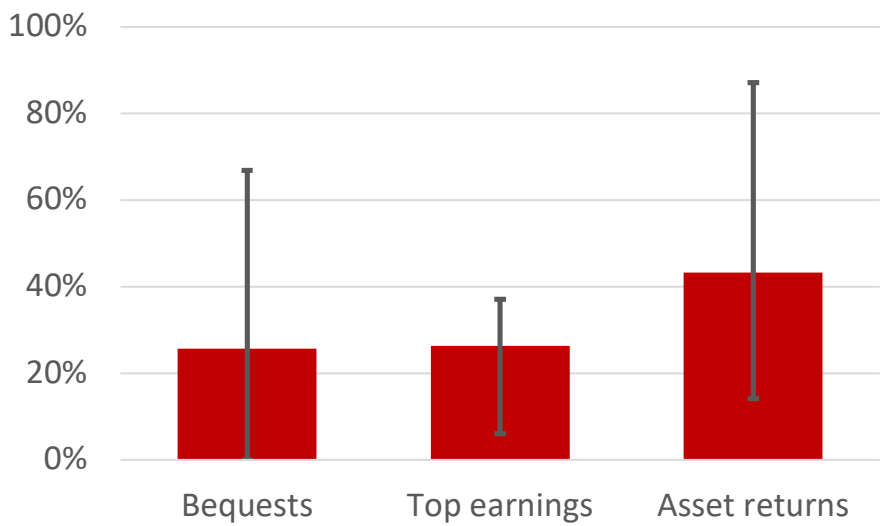
Alternative calibration: low LIS

Recalibrate to target top 1% wage income share of 49%.



Slightly lower contribution of top earners and larger contribution of returns.

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Alternative calibrations 3: low earnings inequality

Recalibrate to a setting with low earnings concentration (Gini 0.41), like Huggett (1996) and de Nardi et al (2020).

$\Rightarrow$ top 1% wealth share drops to 19% (data: 35%), plus:

top 1% earnings share drops to 6% (data: 17%)

In this setting, naturally, top earners matter little for wealth, and other channels are required.

▸ more

Why do returns matter so little?

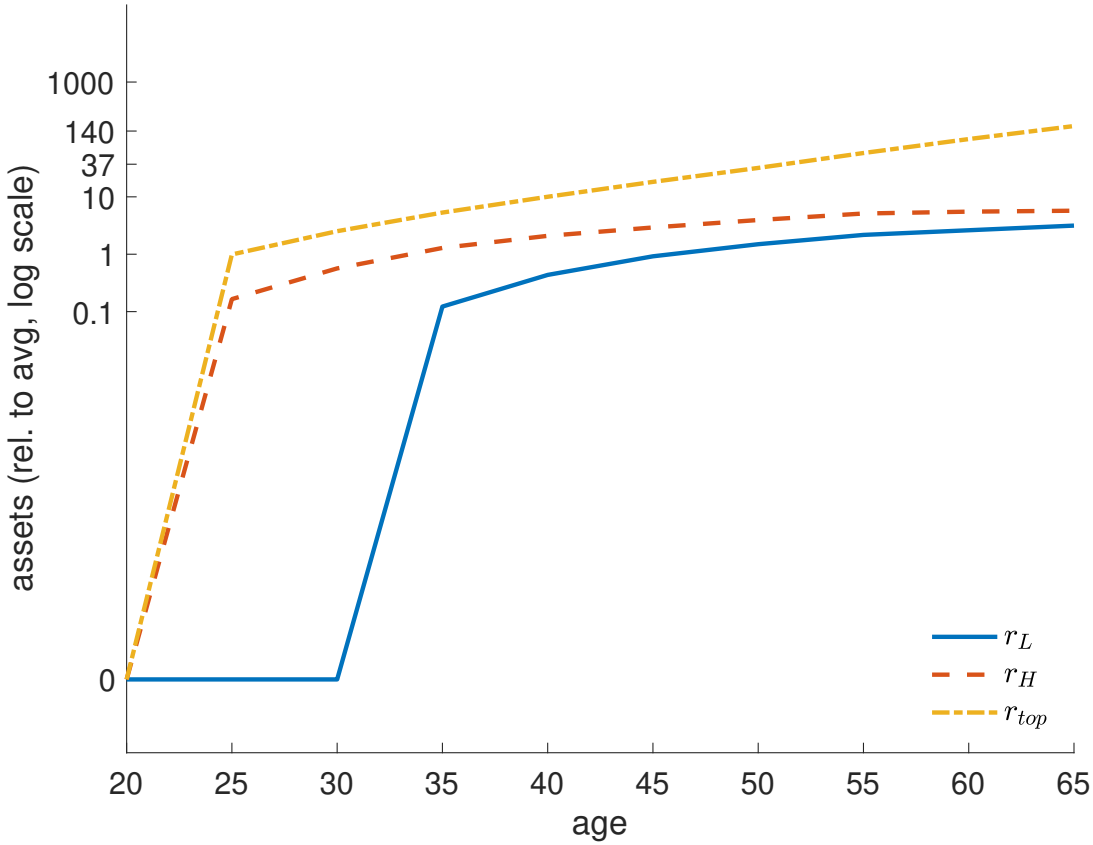

Figure: Path of assets if z always z_6, return fixed

back

Why do returns matter so little?

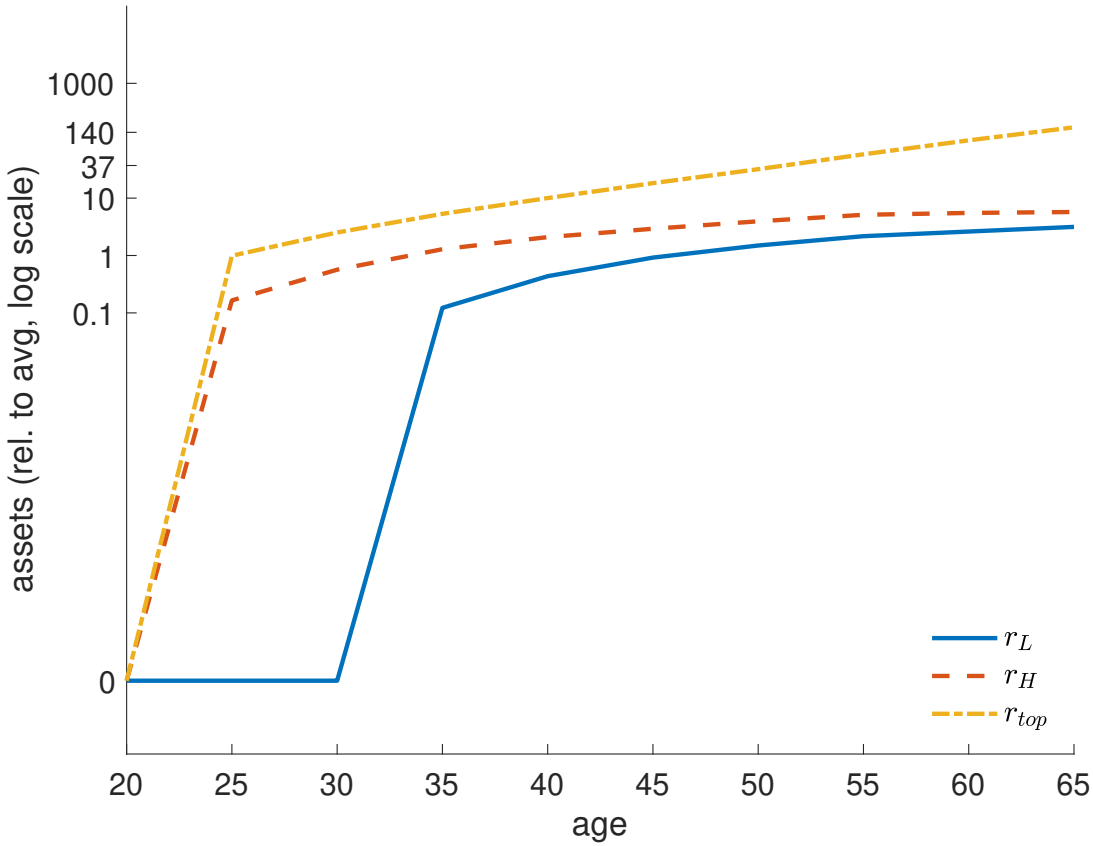

Figure: Path of assets if z always z_6, return fixed

Answer: because life is too short.

Reaching the top 0.1% takes 35 years at the top return of 25%.

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