

Econ 133 – Global Inequality and Growth

Inherited vs. self-made wealth (1)

Gabriel Zucman
zucman@berkeley.edu

What we've learned so far:

- There have been dramatic changes in wealth concentration:
 - Wealth used to be very concentrated in Europe; less so today
 - US used to be more equal than Europe; is now more unequal
- $r - g$ model useful to think about these developments

What we're going to learn in this lecture:

- How to divide wealth into inherited vs. self-made wealth
- How the importance of inherited wealth has changed over time
- What factors can account for these changes

1 Wealth = inherited wealth + self-made wealth

- What is the fraction of aggregate wealth W that comes from the past (= inherited) vs. the present (= self-made)?
- Modern societies like to view themselves as meritocratic
- Widespread view that inheritance was important in the past (Balzac, Austen...) but less important today

Kotlikoff-Summers vs. Modigliani controversy:

- Kotlikoff & Summers (1981, 1988): 80% of US wealth inherited
- Modigliani (1986, 1988): 80% of US wealth is self-made
- Who's right?

1.1 How to measure share of inherited wealth in total W

- Assume that we observe the aggregate wealth stock W_t at time t
- We'd like to estimate aggregate inherited wealth stock $W_{Bt} \leq W_t$
- And the share of inherited wealth in total wealth $\varphi_t = W_{Bt}/W_t$.
- Assume we observe annual inheritance flow B_s in any year $s \leq t$.

- We could define stock of inherited wealth W_{Bt} as sum of past B_s
- Problem 1: critical to include inter vivos gift flows
- Problem 2: Should only take into account fraction of inheritance flow $B_{st} \leq B_s$ received at time s by people still alive in t
- Standard simplification: cumulate the full inheritance flows observed the previous $H = 30$ years (H : average generation length)
- Problem 3: inheritances produce flow returns!

1.2 The Modigliani vs. Kotlikoff-Summers measures

- Modigliani (1986, 1988) chooses zero capitalization:

$$W_{Bt}^M = \sum_{t-30 \leq s \leq t} B_s$$

- Kotlikoff and Summers (1981, 1988) capitalize past inheritance flows using economy's average rate of return to wealth r

$$W_{Bt}^{KS} = \sum_{t-30 \leq s \leq t} B_s \cdot (1 + r)^{t-s}$$

- If $g = r = 0\%$ and $B_s = B$, both definitions coincide and

$$W_{Bt}^M = W_{Bt}^{KS} = H \times B_s$$

- Ex: if $B = 10\%$ of national income and $H = 30$ years, then stock of inherited wealth $W_{Bt}^M = W_{Bt}^{KS} = 300\%$ of national income
- If aggregate wealth amounts to 400% of national income, then share of inherited wealth $\varphi_t^M = \varphi_t^{KS} = 75\%$ of total wealth

- But in general case where g and $r - g$ are different from zero, the two definitions lead to widely different conclusions
- Ex: with $g = 2\%$, $r = 4\%$ and $H = 30$, for a given inheritance flow $B = 10\%$ of national income and aggregate wealth $W = 400\%$ of national income, $\varphi_t^M = 56\%$ and $\varphi_t^{KS} = 103\%$.
- About half of wealth comes from inheritance according to the Modigliani definition, and all of it according to the KS definition

What is the main difference between Modigliani's and Kotlikoff and Summers' definition of inherited wealth?

A — Modigliani assumes that inheritance does not produce flow returns

B — Modigliani assumes that inherited wealth is invested in bonds

C — Kotlikoff and Summers assume that inherited wealth grows as fast as GDP

D — They are the same

1.3 The problems with the Modigliani and KS measures

- Both Modigliani's and KS's definitions are problematic
- 0 capitalization makes no sense: inheritors with 0 labor income can appear as life-cycle savers
- Full capitalization also inadequate: φ_t can be higher than 100%

- In reality, wealth accumulation always involves 2 kinds of people:
- Inheritors: people whose assets are $<$ capitalized value of wealth they inherited (they consume more than their labor income)
- Savers: people whose assets are $>$ capitalized value of wealth they inherited (they consume less than their labor income)

1.4 Example: Is Donald Trump a self-made man?

- Born in 1946, son of real estate tycoon Fred Trump
- Trump's wealth today \approx \$2.9 billion (= Bloomberg 2015 detailed investigation)
- Inherited his father's real estate company. Value of inheritance \approx 40 million in 1974 (= \$200 million divided among 5 children)

- Average post-tax real rate of return on wealth in the US $\approx 5\%$:

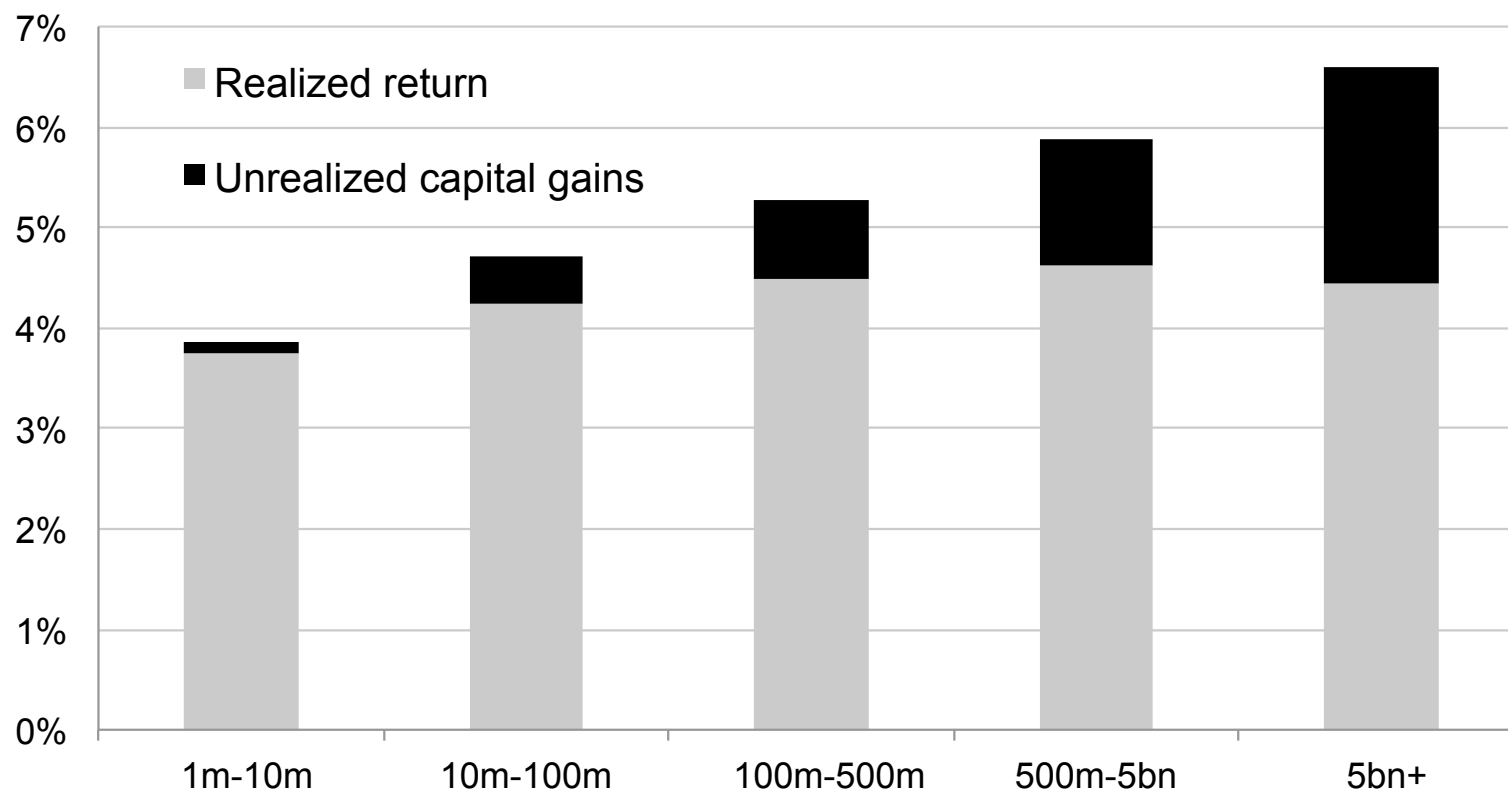
$$r = (1 - \tau_K) \cdot \frac{\alpha}{\beta} \approx 5\%$$

(With $\alpha \approx 30\%$, $\beta \approx 400\%$ and tax rate on capital $\approx 30\%$)

- Inflation rate of 3.5% so nominal return $r \approx 8.5\%$
- Capitalized value of 1974 bequest = 40 million $\times e^{42 \cdot r} = \1.42 billion = \$40m bequest received + \$1,380m cumulated return
- 1.42 billion < 2.9 billion: by that metric, Trump is a “saver”

- But what if real return equals 7.0% rather than 5%?
- Then capitalized value of 1974 bequest = 40 million $\times e^{42 \cdot r} =$
\$3.29 billion = \$40m bequest received + \$3,250m cum. return
- In that case Trump is a rentier: has consumed more than his labor income
- Nobody knows what r he got, but evidence that rates of return rise a lot with initial wealth

Figure C4: Return on foundation wealth, 1990-2010 average
Returns including realized & unrealized gains



Source: Saez and Zucman (2016)

1.5 The correct measure of φ_t

- Correct measure = Piketty, Postel-Vinay, and Rosenthal (2013)
- Aggregate inherited wealth = sum of inheritors' wealth plus the inherited fraction of savers' wealth
- Self-made wealth = non-inherited fraction of savers' wealth
- By construction, inherited and self-made wealth are less than 100% and sum to aggregate wealth

2 Summary

- Aggregate wealth is the sum of inherited wealth and self-made wealth
- To properly measure aggregate inherited wealth, one has to distinguish two types of agents: savers and inheritors
- The aggregate stock of inherited wealth = sum of inheritors' wealth + inherited fraction of savers' wealth

References

Kotlikoff, Laurence J. and Lawrence H. Summers, “The Role of Intergenerational Transfers in Aggregate Capital Accumulation”, *Journal of Political Economy* 1981 (web)

Kotlikoff, Laurence, “Intergenerational Transfers and Savings”, *Journal of Economic Perspectives* 1988 (web)

Modigliani, Franco, “Life Cycle, Individual Thrift, and the Wealth of Nations”, *American Economic Review* 1986 (web)

Modigliani, Franco, “The Role of Intergenerational Transfers and Life Cycle Saving in the Accumulation of Wealth”, *Journal of Economic Perspectives* 1988 (web)

Piketty, Thomas, Gilles Postel-Vinay and Jean-Laurent Rosenthal, “Inherited vs Self-Made Wealth: Theory and Evidence from a Rentier Society (Paris 1872-1927)” *Explorations in Economic History* 2013 (web)