ECON 133 Global Inequality and Growth

Section 11: Inherited versus self-made wealth

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1 How much of the current wealth comes from the past?

Inherent to the discussion surrounding wealth inequality is the issue of intergenerational mobility. Because wealth is often passed on over generations within the same family, we think about inherited wealth and wealth inequality as inherently linked, and we want to study the prevalence of inherited wealth within aggregate wealth. However, this is not so easy to do.

The aggregate wealth stock at time t is:

$$W_t = \underbrace{W_{Bt}}_{\text{aggregate inherited wealth stock}} + \underbrace{W_{St}}_{\text{aggregate self-made wealth}}$$

Let's define the share of current wealth that is inherited as

$$\varphi_t = \frac{W_{Bt}}{W_t}.$$

Let's also assume that we observe the annual inheritance flow B_s in any year $s \leq t$. Empirically, we find that $B_t = 10 - 15\%$ of Y_t and that aggregate household wealth is around \$100 T (2019).

We could define W_{Bt} as sum of past B_s However, there some problems with this procedure:

1. Need to include gifts inter vivos
2. We should consider bequests only once (e.g., bequests from grandparents to children to grandchildren should only be accounted one time)
3. **Inherited wealth produce flow returns**

*These notes borrow from past notes by José Díaz, Margie Lauter, Cristóbal Otero, All mistakes are my own.

2 Modigliani vs. Kotlikoff-Summers

Some of the earliest academic dispute in this discussion deals with the proper way to capitalize inheritances in measuring $\varphi_t = W_{Bt}/W_t$, due to differences in how to capitalize inheritance. Let's start by assuming discrete generations that are separated by 30-year intervals

Modigliani (1986): "No capitalization"

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

for observed (past) annual inheritance flows B_s over the last 30 periods.

$\implies$ 80% of US wealth is *self-made*

Kotlikoff-Summers (1981, 1988): "Full capitalization"

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

$\implies \sim$ 80% of US wealth is *inherited*

However, the exact values depend on the calibration (assumptions on g, r, generation length, inheritance flow

What is the substantive difference between these two approaches?

One way we can think about this difference is that the Modigliani method assumes that all of the income generated from inherited wealth is consumed (i.e. understating the role of inherited wealth), whereas the Kotlikoff-Summers approach assumes that none of the income generated from inherited wealth is consumed (i.e. overstating the role of inherited wealth).

Other mechanical problems: the Modigliani method can label people consuming entirely out of inherited wealth returns (and earning zero labor income) as net savers. The Kotlikoff-Summers method can produce inherited wealth shares that are greater than one, because it assumes a full savings rate on inherited wealth.

When do these definitions coincide?

3 A third way: inheritors vs. savers

Problem: A zero percent capitalization rate isn't realistic, but full capitalization of inheritance flows also isn't realist and may result in inheritance shares $\varphi_t > 100\%$. The results are extremely sensitive to these decisions and the environmental parameters.

Proposed solution: Piketty, Postel-Vinay, and Rosenthal (2013) propose splitting the population into two groups:

Savers: people w/ assets > capitalized value of inherited wealth (consume less than labor income)

Inheritors: people w/ assets < capitalized value of inherited wealth (consume more than labor income)

NB: Individuals can in principle change between these categories (which may be problematic). Also, these labels are sensitive to r (illustrated by Donald Trump example). Also, distinctions are crude: e.g. an inheritor who has self-made assets but whose total assets are exceeded by capitalized inheritances are deemed *inheritors*.

Define aggregate inherited wealth (W_B) := inheritors' wealth + the inherited fraction of savers' wealth.

Aggregate self-made wealth (W_S) := non-inherited fraction of savers' wealth.

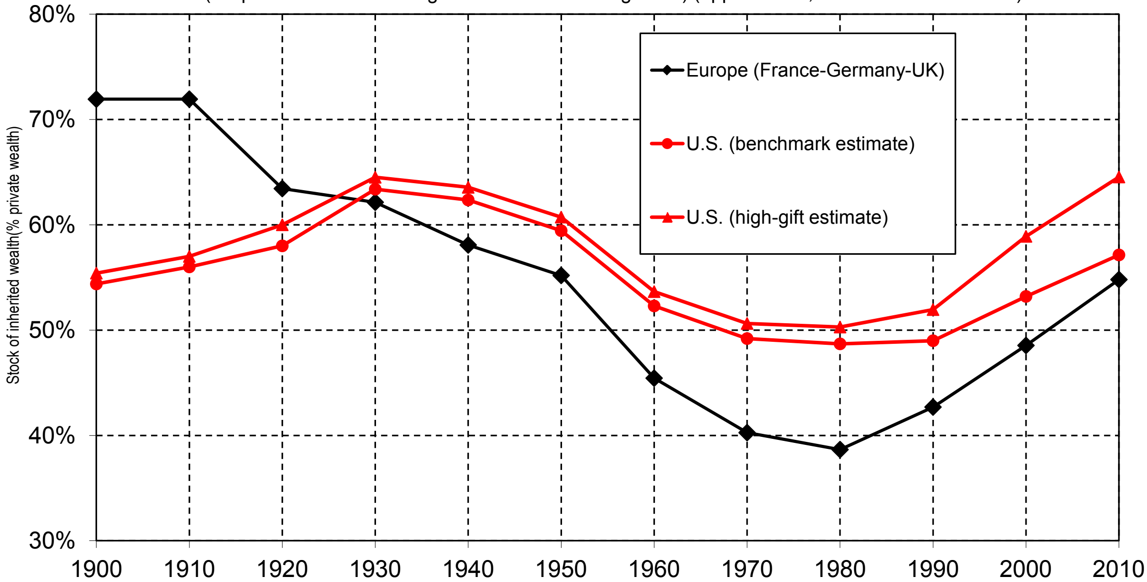
$\implies$ Guarantees $\varphi_t \leq 100\%$ and $W_{Bt} + W_{St} = W_t$. Note that $\varphi_t = 100\%$ if all people are inheritors, and that this measure is well-behaved (inherited and self-made wealth cannot exceed 100% and they sum to aggregate wealth by definition).

One problem with this approach as is that it requires intensive microdata in order to properly categorize individuals.

4 Data: What is the evidence for φ_t?

Figure 1. The share of inherited wealth. Europe and the U.S. 1900-2010

(simplified definitions using inheritance vs. saving flows) (approximate, lower-bound estimates)



The inheritance share in aggregate wealth accumulation was over 70% in Europe in 1900-1910. It fell abruptly following 1914-1945 shocks, down to 40% in 1970-1980 period. It is back to about 50-60% in 2000-2010 and rising. The U.S. pattern also appears to be U-shaped, but less marked, and with significant uncertainty regarding recent trends, due to data limitations.

5 How do we account for these changes in φ_t?

Broadly speaking, changes in wealth deal with three kinds of phenomena: 1) savings behaviors, 2) capital gains, 3) inheritance/gift flows.

More sharply, changes in φ_t will be affected by the bequest-plus-gift flow B_t^*:

$$B_t^* = (1 + v_t) \cdot \mu_t \cdot m_t \cdot W_t$$

$v_t = V_t/B_t$ is the gift-to-bequest flow ratio, $B_t = W^d/N^d$

μ_t is the ratio between the average adult wealth at death and the average wealth for the entire population:
$\mu = W^d/W \cdot N/N^d$

m_t is the mortality rate (adults decedents/total adult population), N^d/N.

Dividing the above equation by Y_t, we obtain the inheritance flow:

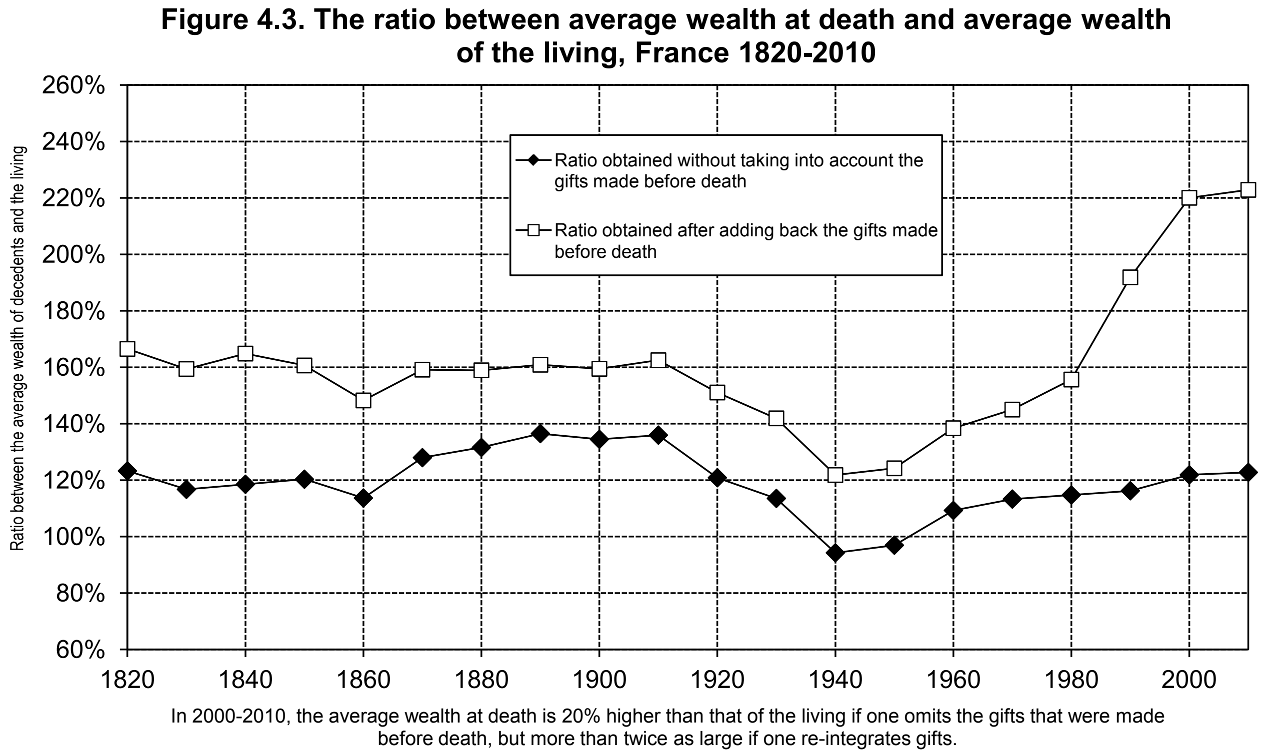
$$b_{yt} = \frac{B_t^*}{Y_t} = (1 + v_t) \cdot \mu_t \cdot m_t \cdot \beta_t$$

Some special cases:

Case 1: If $\mu_t = 1$ (i.e. average adult wealth at death equals average population wealth) and $v_t = 0$ (i.e. no gifts), then $b_{yt} = m_t \cdot \beta_t$

Case 2: If $\mu_t = 0$ (i.e. zero wealth at death) and $v_t = 0$ (i.e. no gifts), then $b_{yt} = 0$ (i.e. no inheritance).

$\Longrightarrow$ This is the case of Modigliani's pure life-cycle model; inequalities of wealth are nothing more than a translation in time of inequalities with respect to work.



- μ_t is slightly higher than 1
- Half of intergenerational transmission of wealth takes place in terms of inter vivos gifts
- μ tends to be high when $r > g$, because makes it easier for old people to accumulate a lot of wealth

Conclusion: What happens to $\mu_t \cdot (1 + v_t)$ plays a key role in explaining evolution of inheritance flow b_{yt}. In fact, rising μ_t and v_t explain why inheritance has made a comeback in Europe. Moreover, rising m_t (due to aging baby-boomers) will further contribute to rising b_{yt}.

Overall, the role of savings in the economy has to do with mortality/aging, earnings, capital gains, savings behaviors, and bequesting preferences.