Piketty's Capital

ECON 499: Economics of Inequality

Winter 2018

Capital in the Twenty-First Century

- Thomas Piketty (2013)
- 700 pages
- Past, present, and future of inequality
- #1 on the New York Times Best Seller list

Income vs Wealth

Income is a *flow* variable, measured in units per unit of time

- Dollars per hour, thousands of dollars per year, etc

Wealth is a *stock* variable, measured as a total amount

- Amount of money in your bank account
- Value of assets you own

Capital income

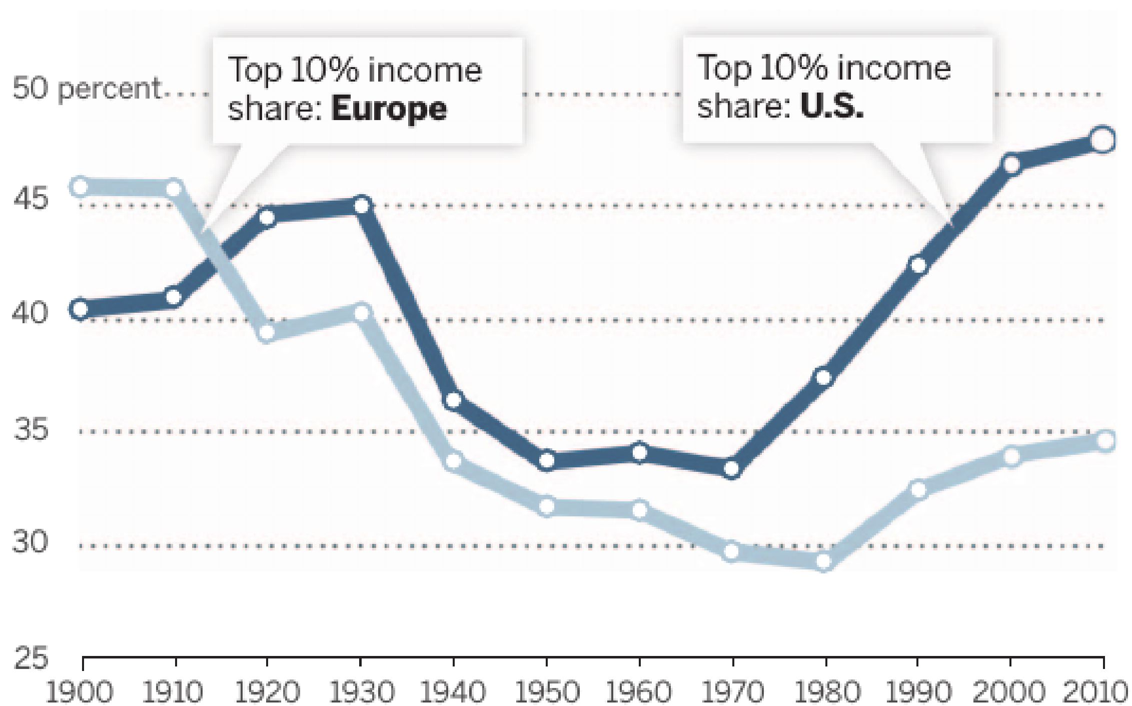
- Wealth is a source of income
- S=I
- Capital income increases as wealth increases

3 facts

1. Labor income inequality is higher in the US than in Europe, opposite of 1900
2. Wealth inequality more concentrated than income inequality
3. Wealth to income ratios are U-shaped in Europe, flat in US

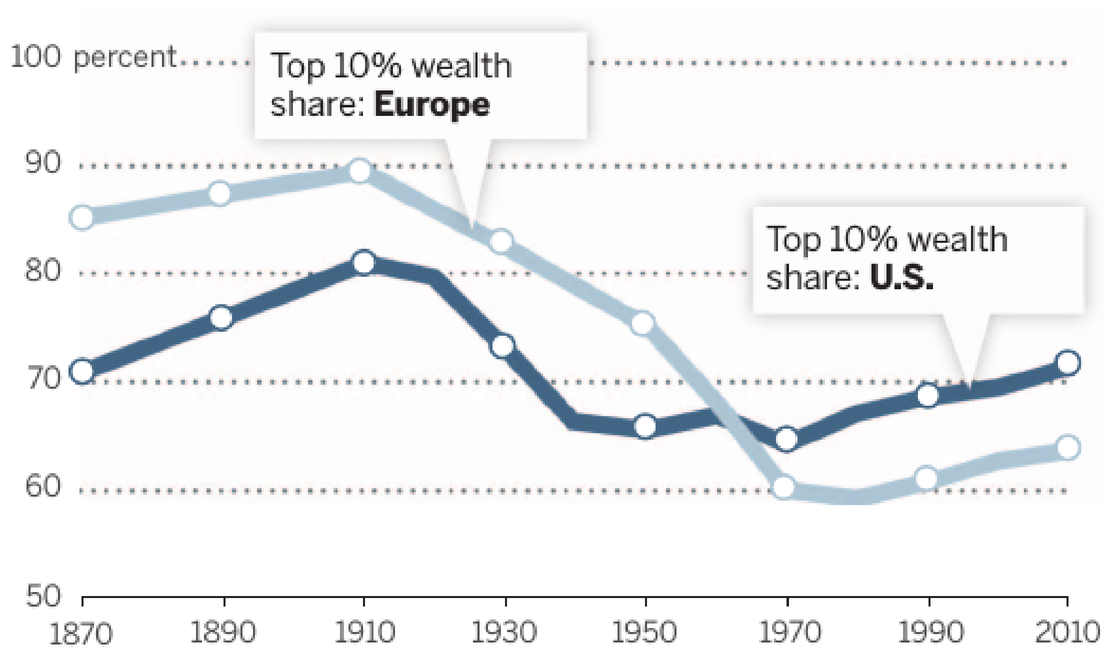
Income inequality in Europe and the United States, 1900–2010

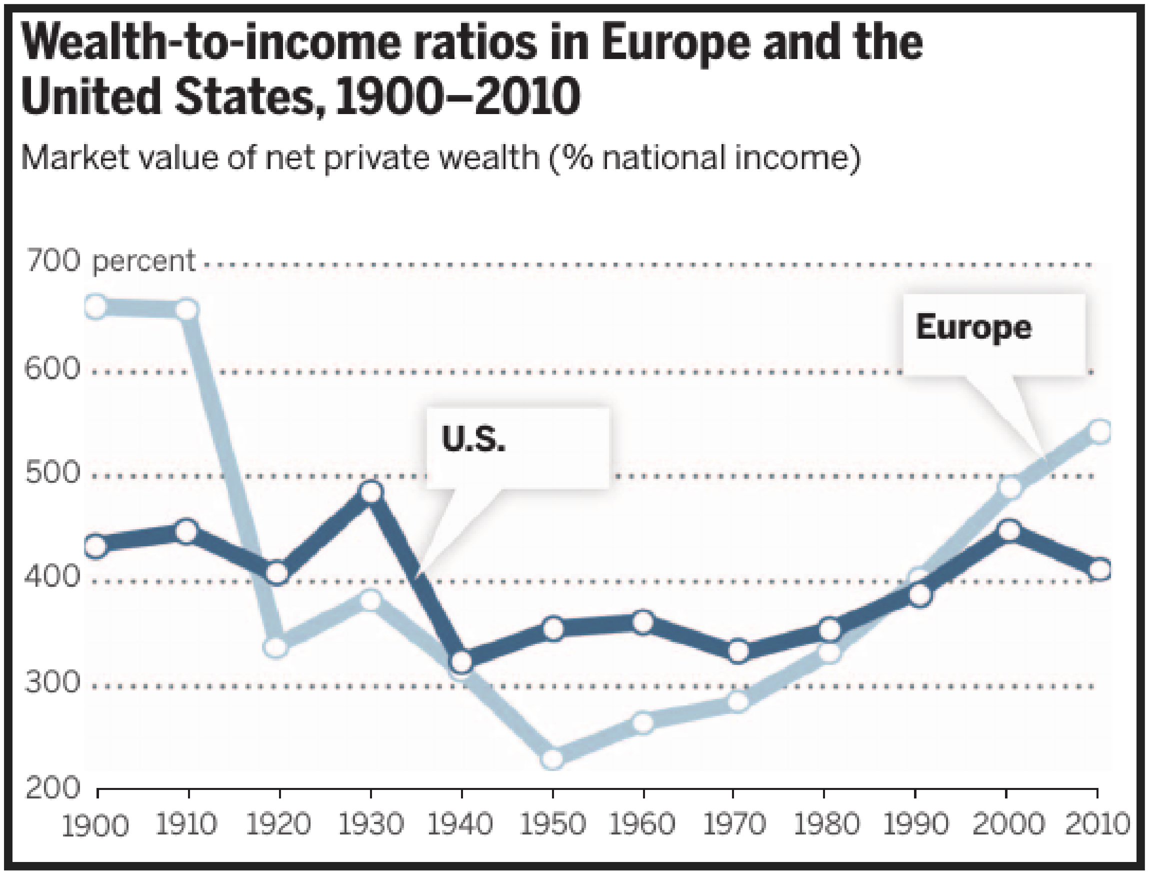
Share of top income decile in total pretax income



Wealth inequality in Europe and the United States, 1870–2010

Share of top wealth decile in total net wealth




Wealth-to-income ratios in Europe and the United States, 1900–2010
Market value of net private wealth (% national income)
700 percent
600
500
400
300
200
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
Europe
U.S.

The United States is the land of booming top labor incomes; Europe is the land of booming wealth (albeit with a lower wealth concentration than in the United States). These are distinct phenomena, involving different economic mechanisms and different parts of the developed world.

Piketty's "first fundamental law of capitalism"

$$\text{Capital share of income} = \alpha = r\frac{K}{Y}$$

- Just a definition
- r is the return on capital
- rK is capital income per year
- rK/Y is share of capital income to total income (Y)

Piketty's "second fundamental law of capitalism"

$$\frac{\bar{K}}{\bar{Y}} = \frac{s}{g}$$

- s is the *net* savings rate
- g long-run growth rate
- Y is *net* income

Example

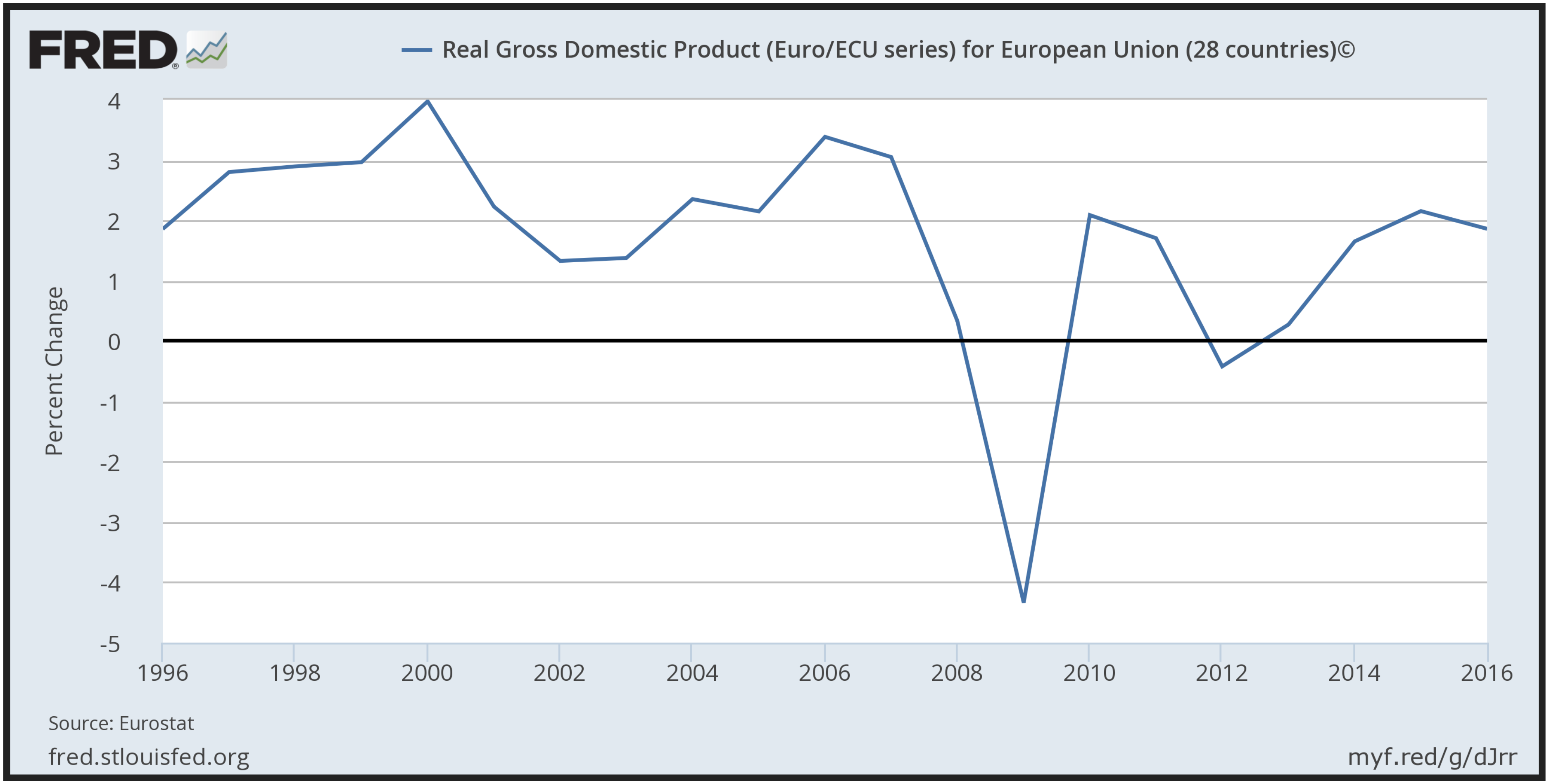
$s = 0.10$

- $g = 0.03$:

$$\frac{\bar{K}}{\bar{Y}} = \frac{0.1}{0.03} = 3.33$$

- $g = 0.015$:

$$\frac{\bar{K}}{\bar{Y}} = \frac{0.1}{0.015} = 6.66$$


FRED
Real Gross Domestic Product (Euro/ECU series) for European Union (28 countries)©
Percent Change
4
3
2
1
0
-1
-2
-3
-4
-5
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
Source: Eurostat
fred.stlouisfed.org
myf.red/g/dJrr

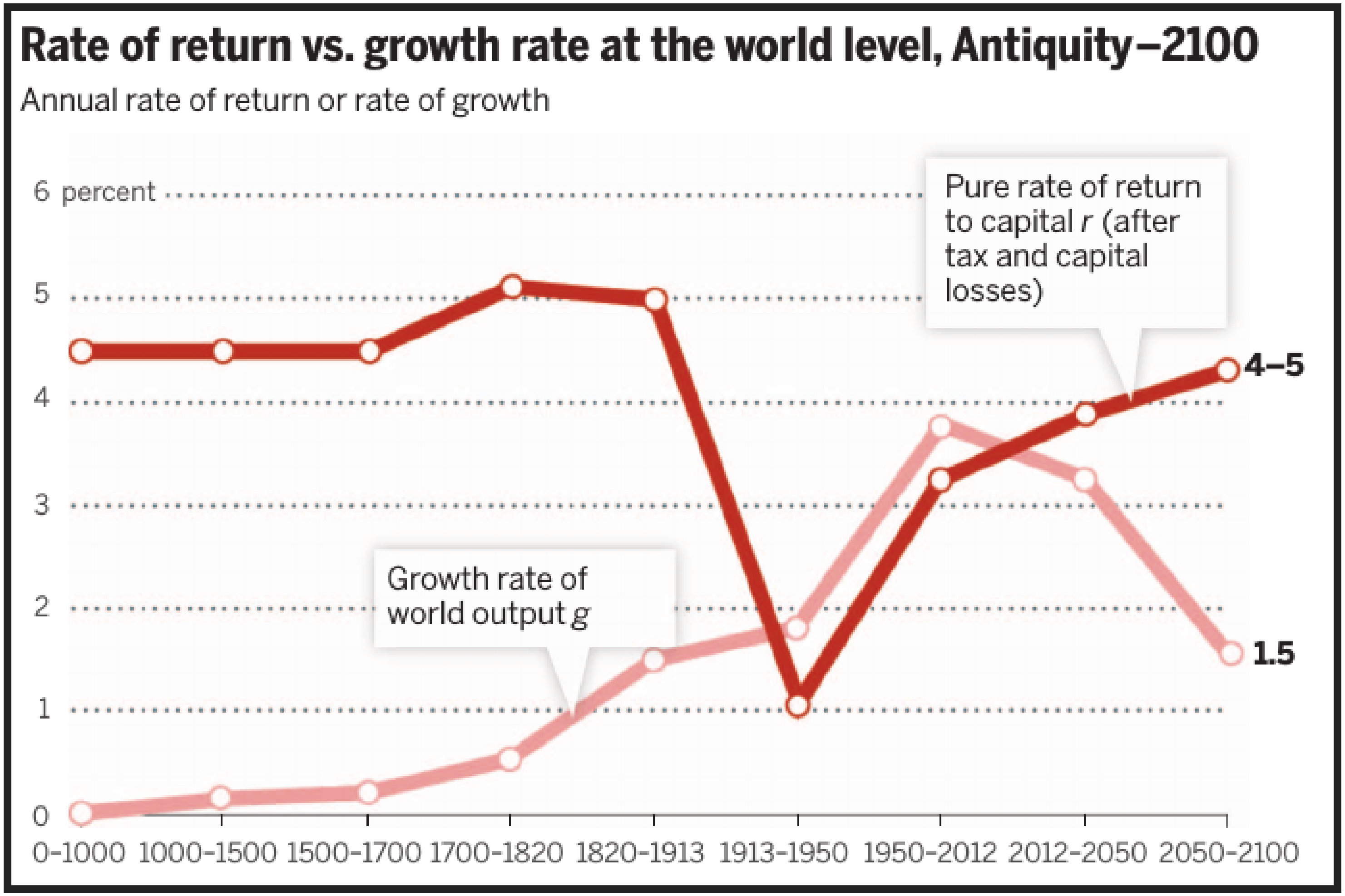
US wealth/income ratio

Why is US not seeing accumulating wealth?

- Population growing faster in US (causes growth)
- Savings rate lower in US

$\boldsymbol{r - g}$

- Suppose two people in society: one with capital income, one with labor income
- Labor income grows at rate g
- Capital income grows at rate r
- If $r > g$, capital income accumulates faster than labor income
- Capital begets capital (part of capital income is saved), so wealth inequality increases


Rate of return vs. growth rate at the world level, Antiquity–2100
Annual rate of return or rate of growth
6 percent
5
4
3
2
1
0
Pure rate of return to capital r (after tax and capital losses)
Growth rate of world output g
4–5
1.5
0-1000
1000-1500
1500-1700
1700-1820
1820-1913
1913-1950
1950-2012
2012-2050
2050-2100

Putting it all together

- Lower growth rates cause K/Y to increase
- Capital share increases (rK/Y)
- $r > g$: capital incomes diverge from labor incomes
- Wealth more concentrated than labor income

Labor and capital

- Most of current inequality is caused by labor, not capital
- High wage-earners are able to save more of their incomes, accumulate capital
- We might expect top wage earners to transition to capital earners

First law

$$\alpha = r\frac{K}{Y}$$

If K/Y increasing to steady state, will α increase?

- If r goes down, then capital share of income may not decrease
- If r stays the same or goes up, then capital share will increase

What determines r?

- r is the return on capital
- With competitive markets, equal to the marginal productivity of capital (MPK)
- MPK is a function of level of capital (-) and technology (+)
- "Capital augmenting" technology can keep r high in the long run
- Solow, 2014:

> *There is no logical necessity for the rate of return to exceed the growth rate…but there is no invisible hand to steer a market economy away from this perversity.*

Capitalism and inequality

- Piketty shows that there is no "law" of capitalism that ensures inequality will fall
- Capital income can be derived from skilled investing, but unskilled investing can earn high income if wealth is high
- Increasing wealth might imply increasing inherited wealth

Patrimonial capital

- Wealth is inherited from parents
- You can earn capital income simply because your parents earn capital income (no skills required!)
- This was the case for most of history, until 20th century
- Piketty argues that the 20th century is an anomoly, driven by negative capital shocks (world wars) and high growth (convergence)
- $r > g$ implies a return to patrimonial capitalism, widening gulf between capital and labor

> *The reason why wealth today is not as unequally distributed as in the past is simply that not enough time has passed since 1945.*