# Capital in the 21st Century

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Based on collaborative effort led by Jeff Leek
https://github.com/jtleek/capitalIn21stCenturyinR


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- This presentation is based upon Capital in the 21st century (Harvard University Press, March 2014)
- This book studies the global dynamics of income and wealth distribution since 18c in 20+ countries; I use historical data collected over the past 15 years with Atkinson, Saez, Postel-Vinay, Rosenthal, Alvaredo, Zucman, and 30+ others; I try to shift attention from rising income inequality to rising wealth inequality
- The book includes four parts:

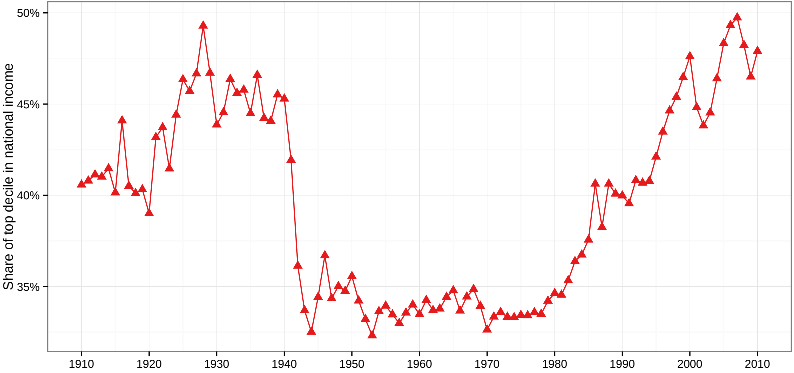
  Part 1. Income and capital
  Part 2. The dynamics of the capital/income ratio
  Part 3. The structure of inequalities
  Part 4. Regulating capital in the 21st century

- In this presentation I will present some results from Parts 2 & 3, focusing upon the long-run evolution of capital/income ratios and wealth concentration (all graphs and series are available on line: see http://piketty.pse.ens.fr/capital21c)

# The World Top Incomes Database

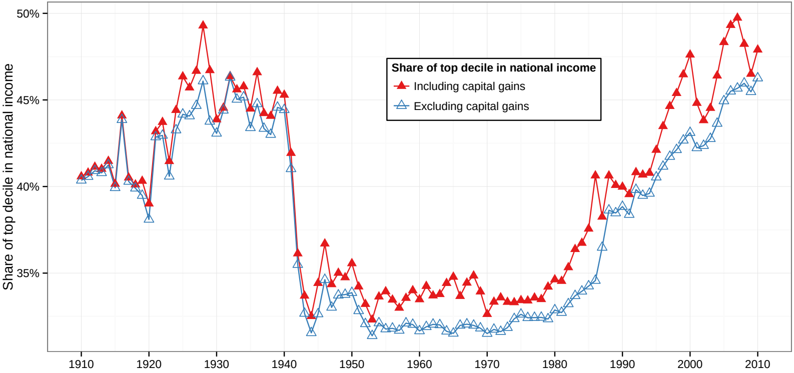

http://topincomes.parisschoolofeconomics.eu

# Figure 1.1. Income inequality in the United States, 1910-2012




The top decile share in U.S. national income dropped from 45–50% in the 1910s–1920s to less than 35% in the 1950s (this is the 1950 1960 fall documented by Kuznets); it then rose from less than 35% in the 1970s to 45–50% in the 2000s–2010s.

## Figure 1.1/8.5. Income inequality in the United States, 1910-2012

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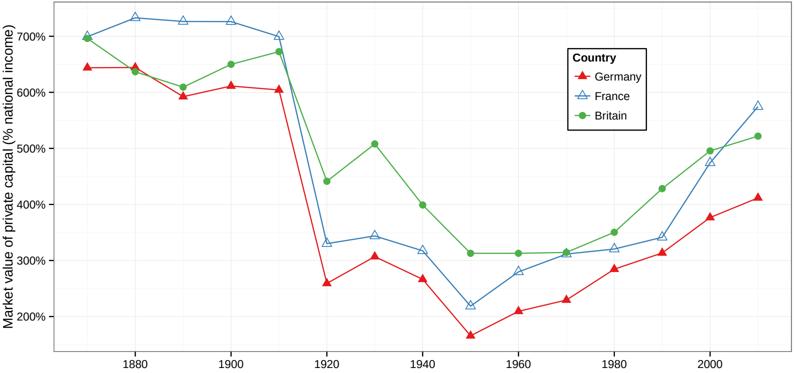
# Figure 1.2. The capital-income ratio in Europe, 1870-2012




Aggregate private wealth was worth about 6–7 years of national income in Europe in 1910, between 2 and 3 years in 1950, and between 4 and 6 years in 2010.

## This presentation: three points

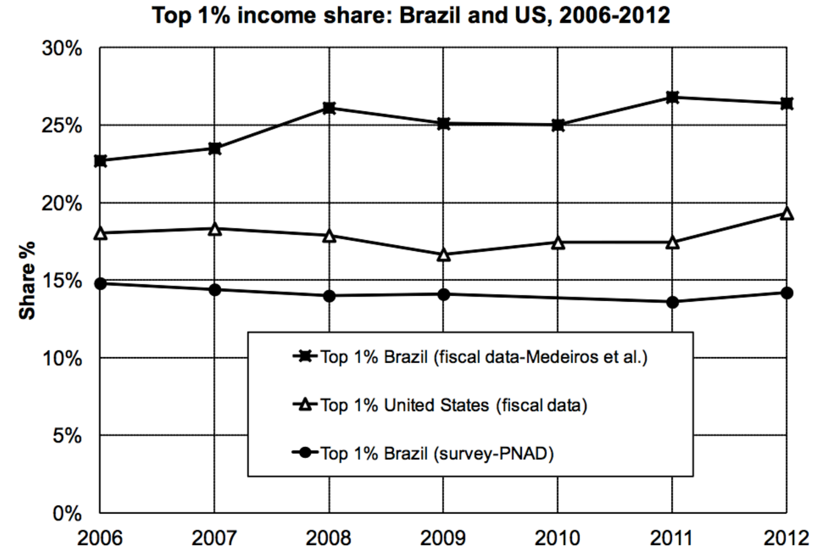
1. The return of a patrimonial (or wealth-based) society in the Old World (Europe, Japan). Wealth-income ratios seem to be returning to very high levels in low growth countries.

   Intuition: in a slow-growth society, wealth accumulated in the past can naturally become very important. In the very long run, this can be relevant for the entire world.
2. The future of wealth concentration: with high r-g during 21c (r = 'net-of-tax rate of return', g = 'growth rate'), then wealth inequality might reach or surpass 19c oligarchic levels; conversely, suitable institutions can allow to democratize wealth.
3. Inequality in America ("meritocratic extremism"): is the New World developing a new inequality model that is based upon extreme labor income inequality more than upon wealth inequality? Is it more merit-based, or can it become the worst of all worlds?

## Brasil vs Europe–US–Japan

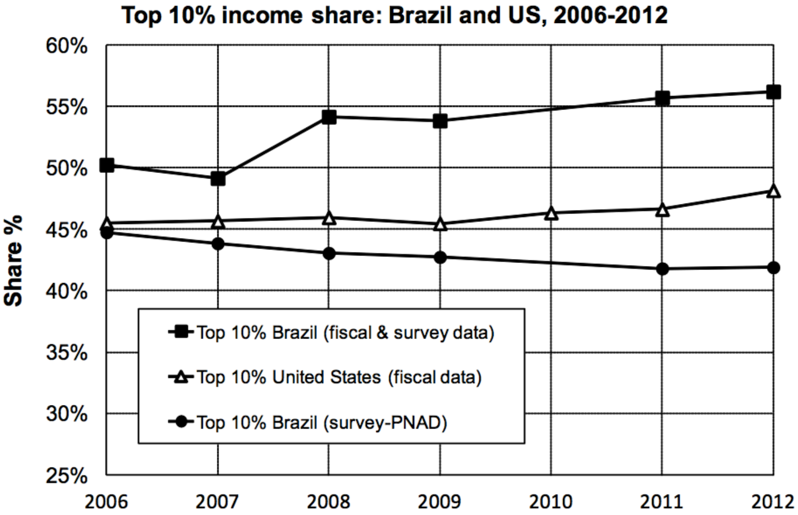
- Top income shares: income inequality is known to be high in Brasil; but it is probably underestimated (problem with household surveys); little access to fiscal data in Brasil
- Wealth-income ratios: probably a strong rise in Brasil (real estate prices), but we do not really know
- Wealth inequality: probably very high, but we do not really know; no access to property tax and inheritance tax statistics
- Like other countries, Brasil needs more transparency about income and wealth; progressive tax on income, inheritance and wealth would be a powerful way to produce information about how the different income and wealth groups are benefiting from growth

# Top 1% income share: Brazil and US, 2006–2012




To Do: Get Data to Recreate Figure

# Top 10% income share: Brazil and US, 2006–2012

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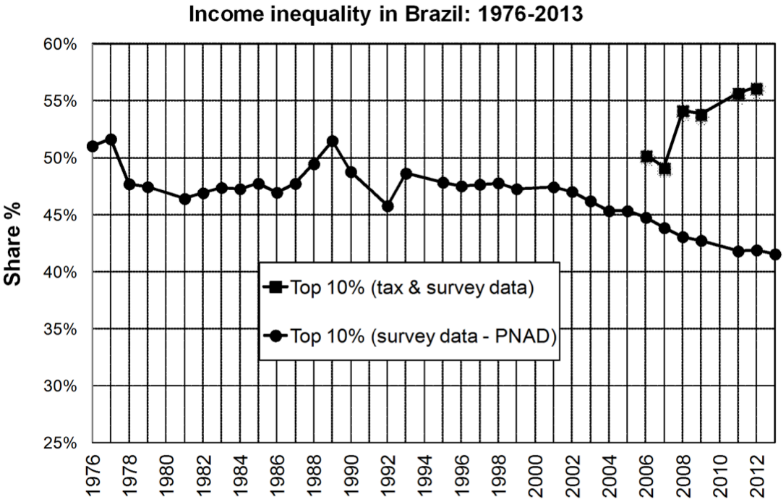
# Income Inequality in Brazil: 1976–2013

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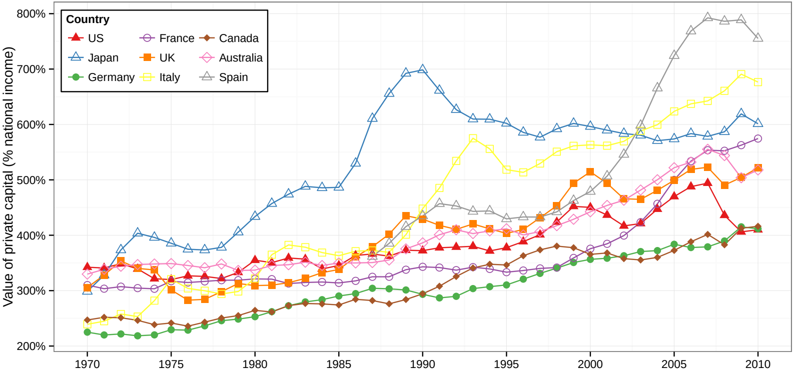
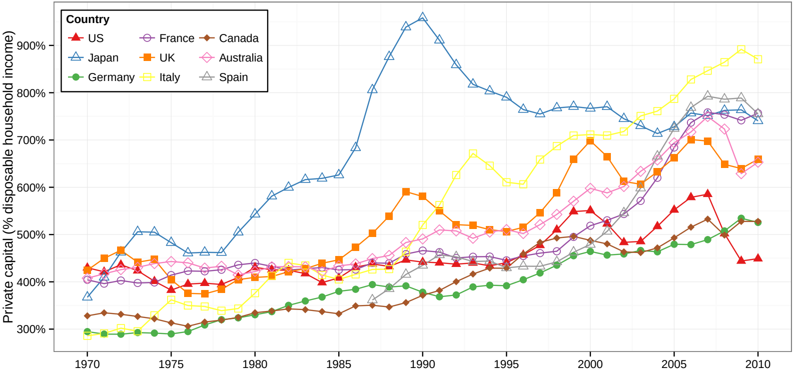
# Figure 5.3: Private capital in rich countries, 1970–2010



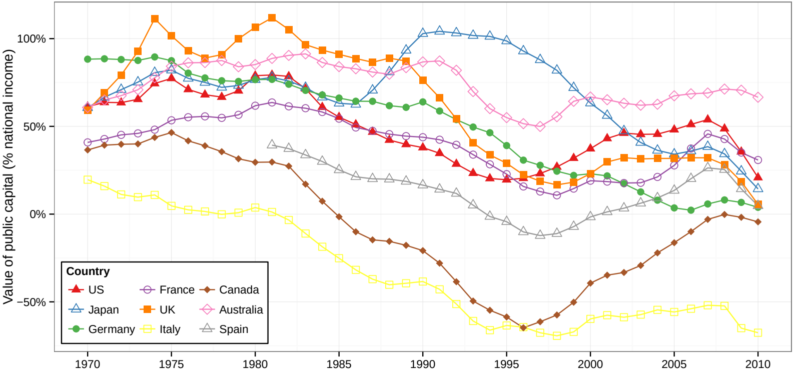

Private capital is worth between 2 and 3.5 years of national income in rich countries in 1970, and between 4 and 7 years of national income in 2010.

# Figure 5.4: Private capital in rich countries (ratio), 1970–2010



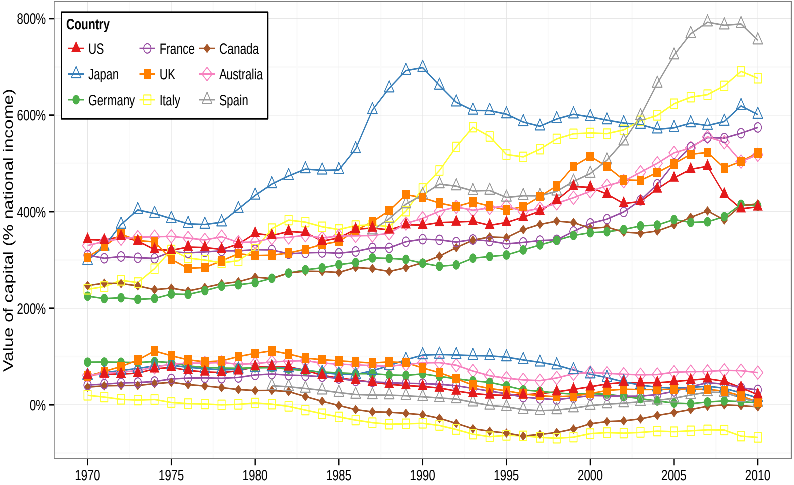

Expressed in years of household disposable income (about 70–80% of national income), the capital/income ratio appears to be larger than when it is expressed in years of national income.

# Figure 5.3b: Public capital in rich countries, 1970–2010




In France, Britain, Germany, and the United States, government deficits exceeded public investment by 2–3% of national income on average over the period 1970–2010, compared with more than 6% in Italy.

# Figure 5.5: Private and public capital in rich countries, 1970–2010




In Italy, private capital rose from 240% to 680% in national income between 1970 and 2010, while public capital dropped from 20% to -70%.

# Table 12.1: The growth rate of top global wealth, 1987–2013

| | Average real growth rate per year (after deduction of inflation) (%) |
|---|---|
| The top 1/(100 million) highest wealth holders [a] | 6.8 |
| The top 1/(20 million) highest wealth holders [b] | 6.4 |
| Average world wealth per adult | 2.1 |
| Average world income per adult | 1.4 |
| World adult population | 1.9 |
| World GDP | 3.3 |

Between 1987 and 2013, the highest global wealth fractiles have grown at 6–7% per year versus 2.1% for average world wealth, and 1.4% for average world income. All growth rates are net of inflation (2.3% per year between 1987 and 2013).

[a] About 30 adults out of 3 billion in the 1980s, and 45 adults out of 4.5 billion in 2010.

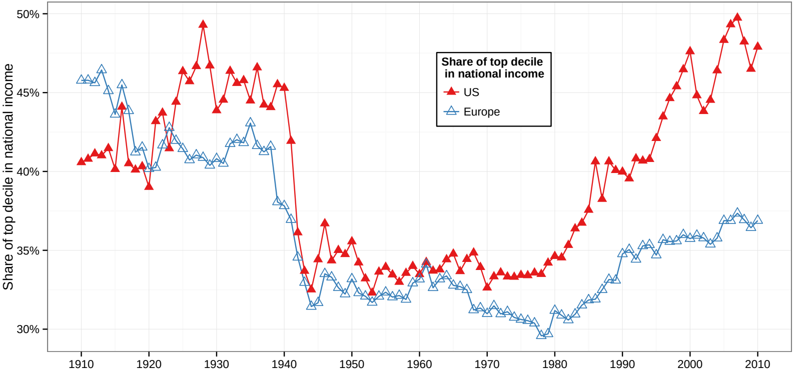
[b] About 150 adults out of 3 billion in the 1980s, and 225 adults out of 4.5 billion in the 2010s.

# Table 12.2: The return on the capital endowments of U.S. universities, 1980–2010

| | Average real annual rate of return (after deduction of inflation and all administrative costs and financial fees) (%) |
|---|---|
| All universities (850) | 8.2 |
| Harvard, Yale, and Princeton | 10.2 |
| Endowments higher than $1 billion (60) | 8.8 |
| Endowments between $500 million and 1 billion (66) | 7.8 |
| Endowments between $100 and $500 million (226) | 7.1 |
| Endowments less than $100 million (498) | 6.2 |

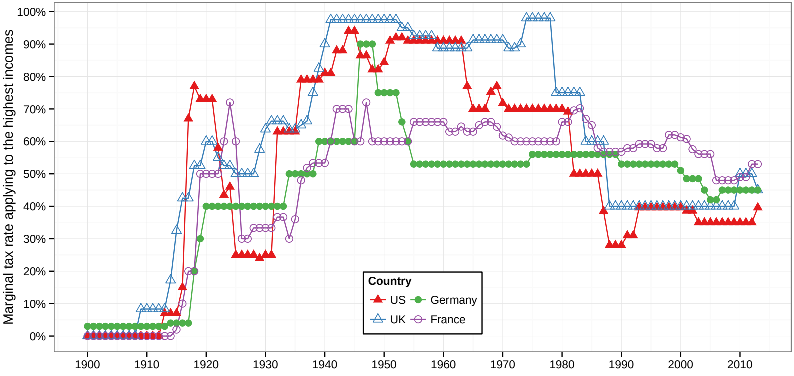
Between 1980 and 2010, U.S. universities earned an average real rate of return of 8.2% on their capital endowments, and more for the greater endowments. All returns are reported net of inflation (2.4% per year between 1980 and 2010) and net of administrative costs and financial fees.

# Figure 9.8: Income inequality: Europe vs. United States, 1900–2010



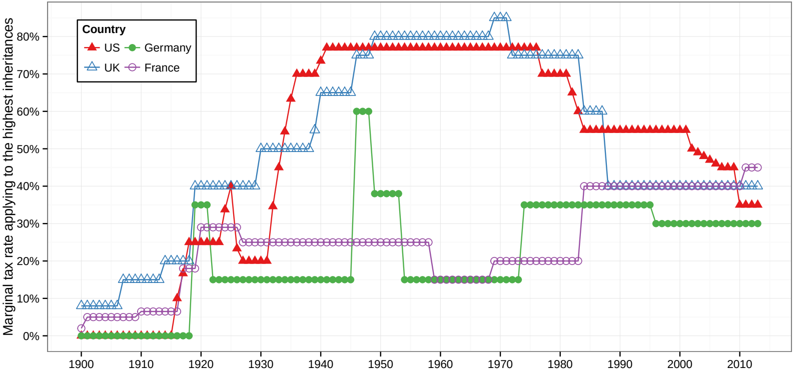

The top decile income share was higher in Europe than in the U.S. in 1900-2010. It is much higher in the U.S. in 2000-2010.

# Figure 14.1: Top income tax rates, 1900–2013




The top marginal tax rate of the income tax (applying to the highest incomes) in the U.S. dropped from 70% in 1980 to 28% in 1988.

# Figure 14.2: Top inheritance tax rates, 1900–2013




The top marginal tax rate of the inheritance tax (applying to the highest inheritances) in the U.S. dropped from 70% in 1980 to 35% in 2013.

## Conclusions

- The history of income and wealth inequality is always political, chaotic and unpredictable; it involves national identities and sharp reversals; nobody can predict the reversals of the future
- Marx: with $g = 0$, $\beta \to \infty$, $r \to 0$ : revolution, war
- My conclusions are less apocalyptic: with $g > 0$, at least we have a steady state $\beta = s/g$
- But with $g > 0$ & small, this steady-state can be rather gloomy: it can involve a very large capital-income ratio $\beta$ and capital share $\alpha$, as well as extreme wealth concentration due to high $r - g$
- This has nothing to do with a market imperfection: the more perfect the capital market, the higher $r - g$
- The ideal solution: progressive wealth tax at the global scale, based upon automatic exchange of bank information
- Other solutions involve authoritarian political & capital controls (China, Russia..), or perpetual population growth (US), or inflation, or some mixture of all