

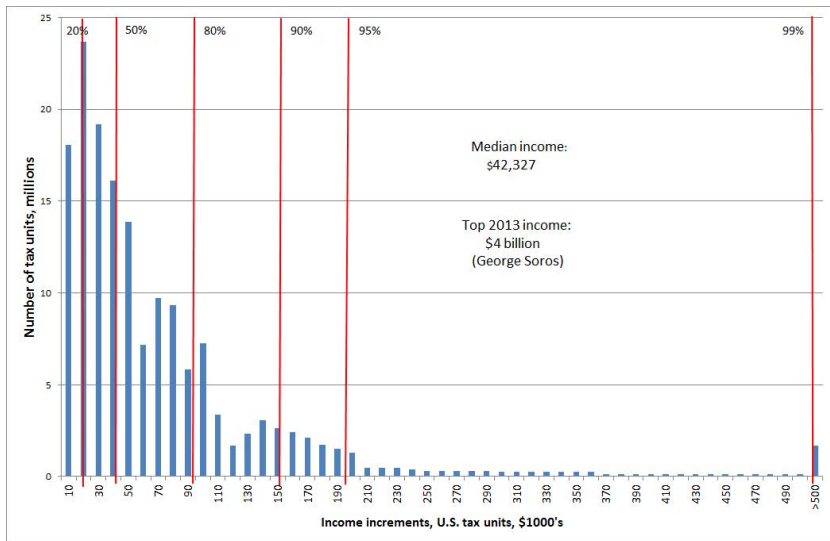
# Piketty's *Capital* and Inequality of Income and Wealth

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# U.S. income distribution, 2011

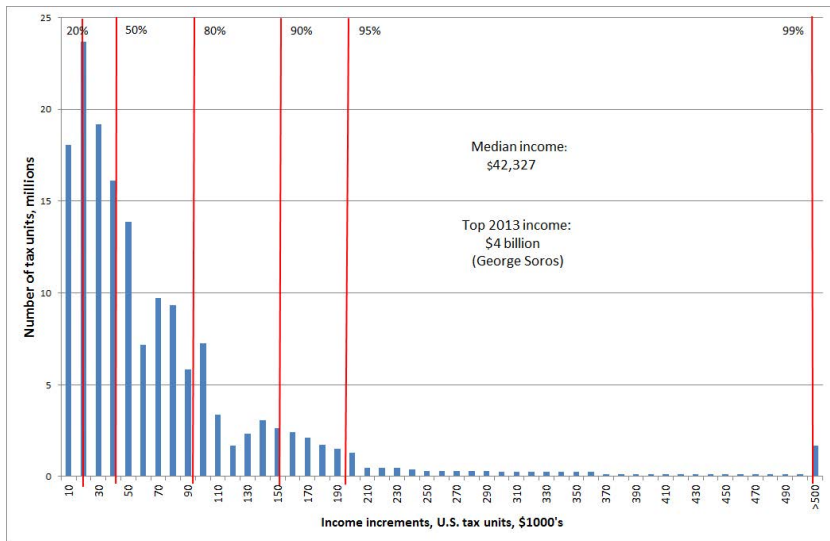


Source: Urban-Brookings Tax Policy Center Microsimulation Model

That's the length of five of these



# U.S. income distribution, 2011



Source: Urban-Brookings Tax Policy Center Microsimulation Model

# A few important points

- I like markets
- Some inequality is unavoidable and desirable
- The question is, how much is too much?
- Economists have no special expertise here. It's a moral question

# What do people mean by “inequality”?

“There is a relentless decades-long trend that I want to spend some time talking about today. That is a dangerous and growing inequality and lack of upward mobility that has jeopardized middle-class America’s basic bargain. That if you work hard, you have a chance to get ahead. I believe this is the defining challenge of our time.”

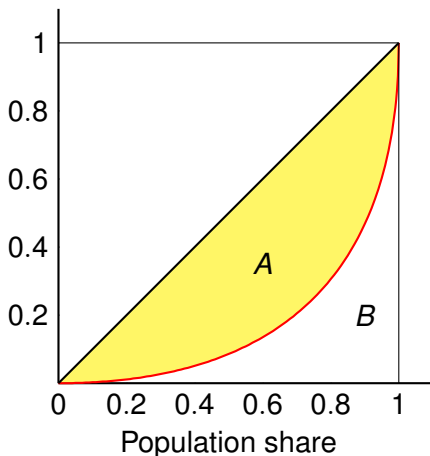
–Barack Obama, December 3, 2013

“I fall into the camp that income inequality is the biggest problem we face.”

–Gina Raimondo, RI governor-elect, December 29, 2014

# How do economists measure inequality?

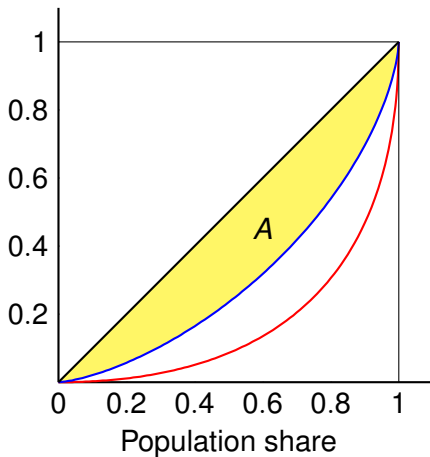
Inc share



- Lorenz curve (red) shows cumulative income shares
- *Gini coefficient* is area *A* divided by  $A + B$
- Range is from 0 (perfect equality) to 1 (perfect inequality)

# As inequality falls, Lorenz curve shifts

Inc share



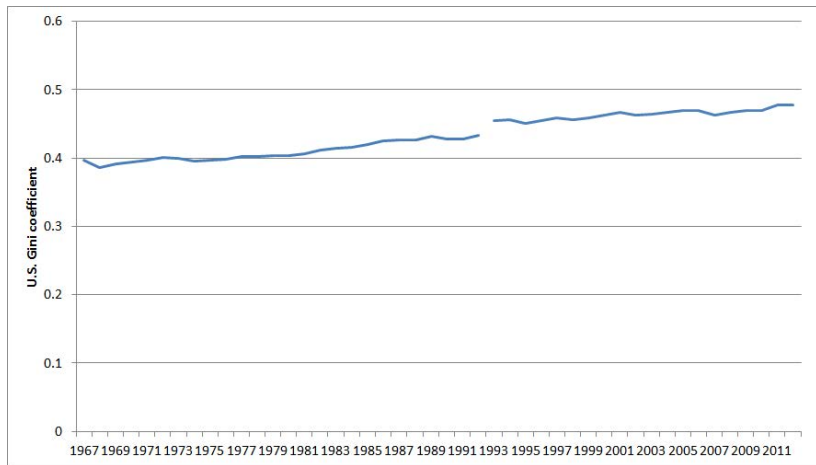
- If income is more equal, Lorenz curve shifts leftward
- And Gini coefficient falls as area A shrinks
- U.S. Gini is 0.48 as of 2013



# There are many measures of inequality

- Gini coefficient
- Atkinson index:  $1 - \left( \sum_i y_i^{1-\epsilon} / N \right)^{1/(1-\epsilon)} / \mu$
- Theil index:  $\sum_i \left( \frac{y_i}{\mu} \cdot \ln \frac{y_i}{\mu} \right)$
- 95/50 ratio of thresholds
- 90/10 ratio of thresholds
- Ratio of the mean to median income
  
- Which does Obama have in mind?

# Gini doesn't show dangerous, growing inequality



Source: U.S. Census Bureau

# Poverty doesn't show dangerous, growing inequality

Figure 4.  
**Number in Poverty and Poverty Rate: 1959 to 2013**

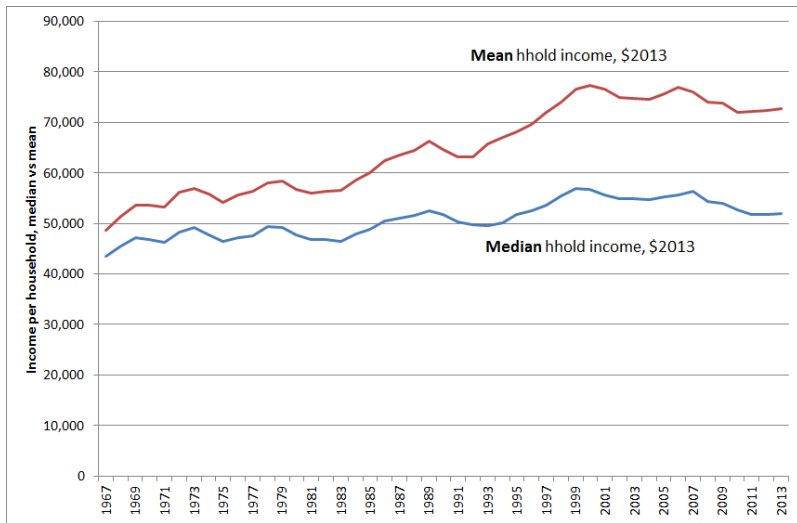


Note: The data points are placed at the midpoints of the respective years. For information on recessions, see Appendix A. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see <http://ftp2.census.gov/programs-surveys/cps/techdocs/cpsmar14.pdf>.

Source: U.S. Census Bureau, Current Population Survey, 1960 to 2014 Annual Social and Economic Supplements.

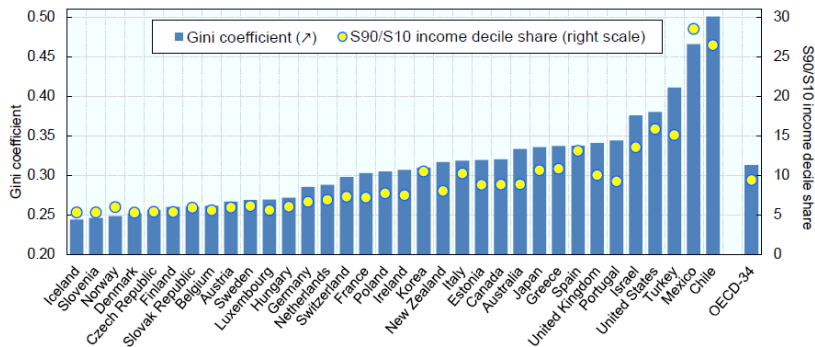
2013 poverty threshold, family of four: \$23,707

# Mean income is pulling away from median, slowly



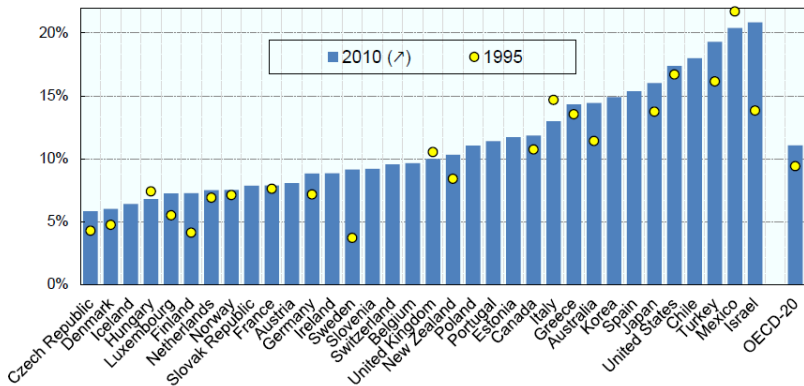
Source: U.S. Census Bureau

# Gini here and in other rich countries



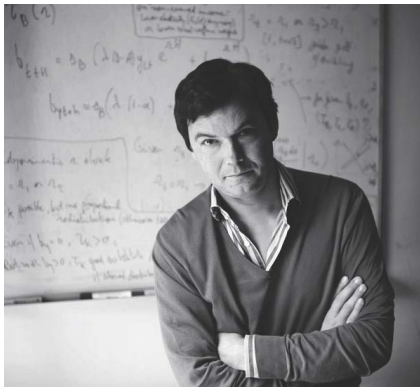
Source: OECD, 2013, [www.oecd.org/social/inequality.htm](http://www.oecd.org/social/inequality.htm)

# Poverty here and in other rich countries



Source: OECD, 2013, [www.oecd.org/social/inequality.htm](http://www.oecd.org/social/inequality.htm)

# Piketty and Saez changed the conversation



Thomas Piketty  
Paris School of Econ



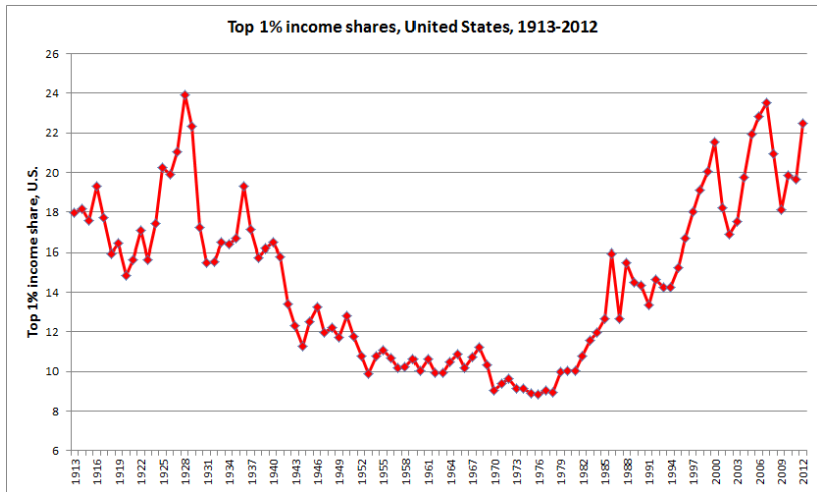
Emmanuel Saez  
UC-Berkeley

# Other inequality measures based on survey data

- Census Bureau's annual Current Population Survey, or
- Federal Reserve's tri-annual Survey of Consumer Finances
- There are serious drawbacks to survey data:
  - Very hard to get richest to respond
  - So inequality is understated using survey data
- The action really is at the top, for income and wealth alike
- P-S innovation: U.S. tax-return data back to 1913
- `topincomes.g-mond.parisschoolofeconomics.eu/`
- No sign of inequality problem without Piketty-Saez data

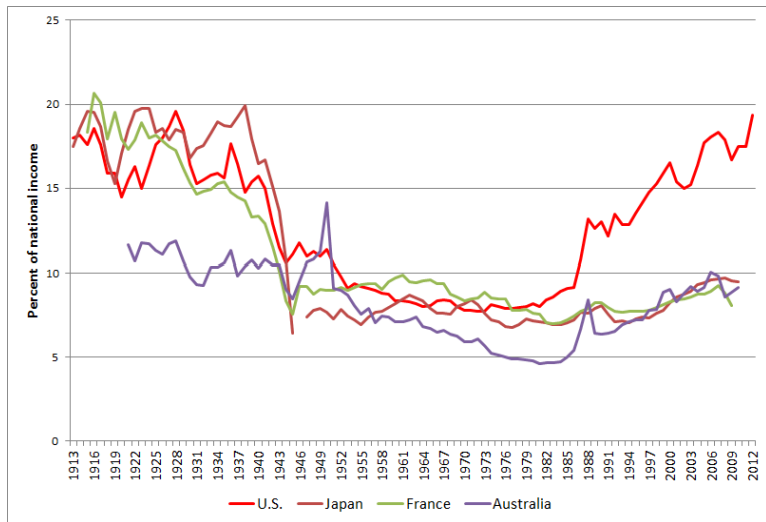


# High inequality means top 1% income share



Source: World Top Incomes Database, [topincomes.g-mond.parisschoolofeconomics.eu/](http://topincomes.g-mond.parisschoolofeconomics.eu/)

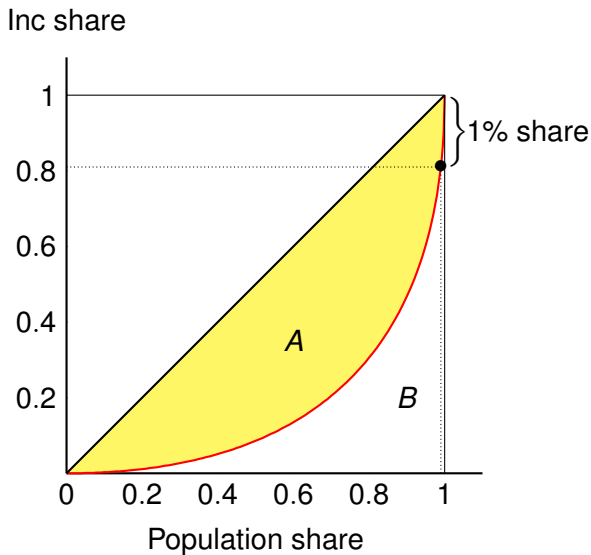
# Top income shares, U.S. and other countries



Source: World Top Incomes Database, [topincomes.g-mond.parisschoolofeconomics.eu/](http://topincomes.g-mond.parisschoolofeconomics.eu/)

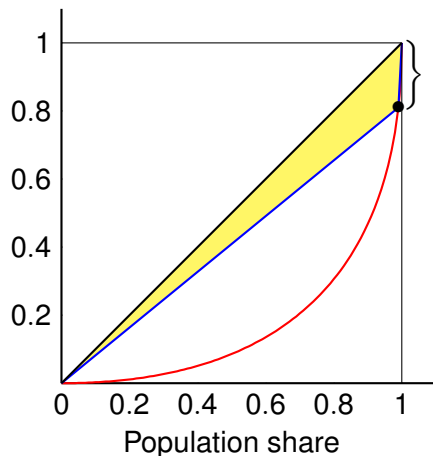


# Top 1% income share is one point on Lorenz curve

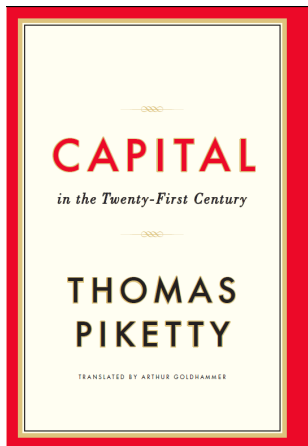


# Top share insensitive to redistribution

Inc share



- Blue line equalizes income among 99%
- Gini shrinks dramatically, but top 1% share unchanged
- Piketty-Saez measure is radically different
- But it has come to mean “inequality”

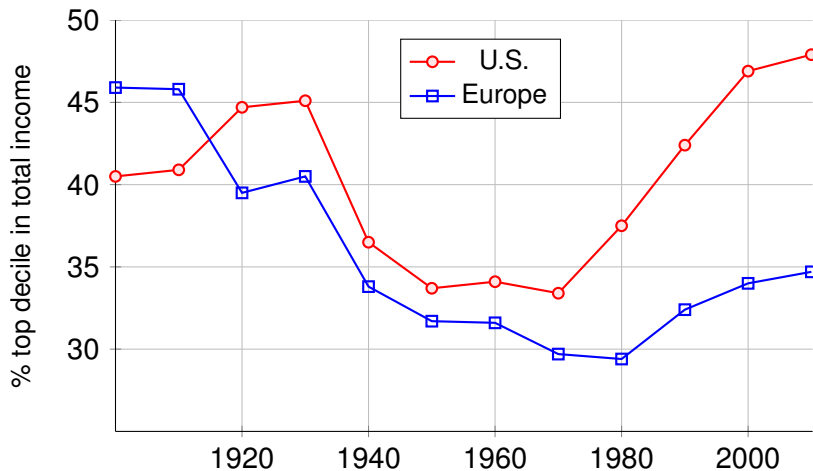


- Piketty's book is much about wealth
- And mostly about top shares
- “Three facts” from a recent Piketty lecture
- [www.aeaweb.org/webcasts/2015/Capital.php](http://www.aeaweb.org/webcasts/2015/Capital.php)

# Piketty's fact number 1

“In 1900–1910, **income inequality** was higher in Europe than in the United States. In 2000–2010, it is a lot higher in the United States.”

# Top 10% income share, U.S. and Europe



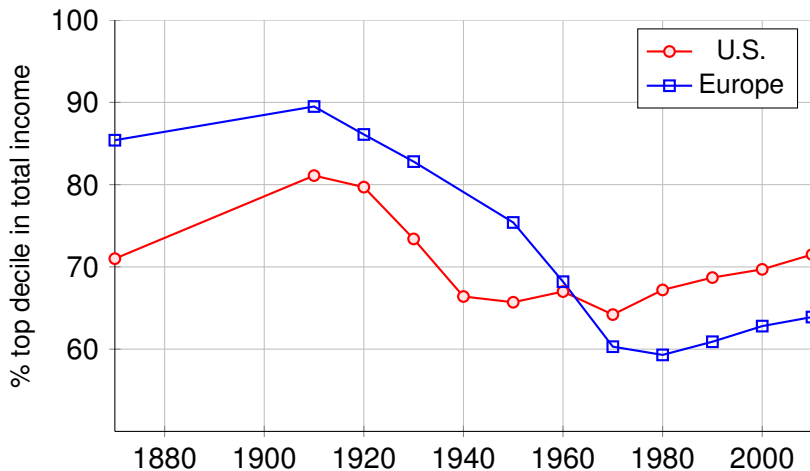
Source: Piketty *Capital*, 2014, Figure 9-8. (Europe includes Germany, France, U.K., Italy, Sweden)

# Piketty's fact number 2

“Wealth inequality is always a lot higher than income inequality.”

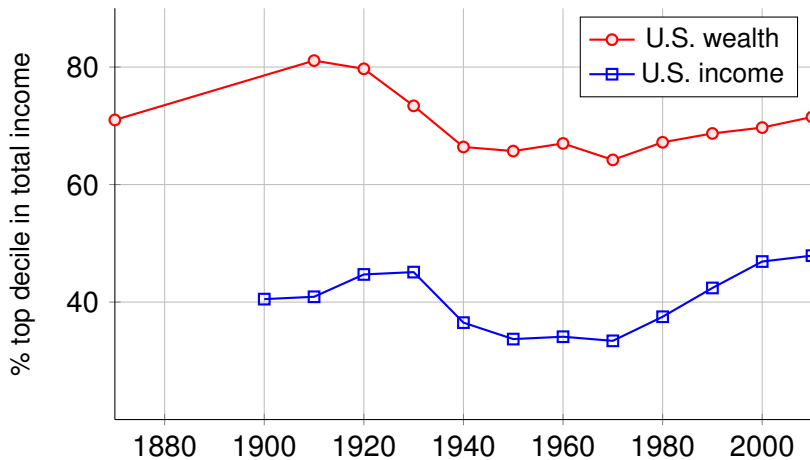


# Top 10% **wealth** share, U.S. and Europe



Source: Piketty *Capital*, 2014, Figure 10-6

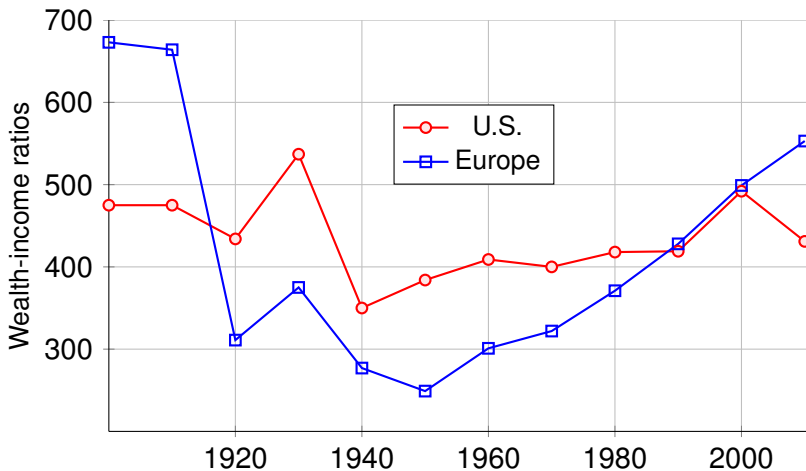
# Top 10% income and wealth shares, U.S.



Source: Piketty *Capital*, 2014

“**Wealth inequality** is less extreme today than a century ago, although the total capitalization of private wealth relative to national income has now recovered from the 1914–1945 shocks.”

# Wealth-income ratios, U.S. and Europe



Source: Piketty *Capital*, 2014, Figure 5-2

# Basics of *Capital*

- $\alpha$ : share of income from capital
- $\beta$ : capital/income ratio
- $r$ : rate of return on capital
- $s$ : savings rate
- $g$ : rate of growth in national income, *sum of productivity growth and population growth*

# Piketty's "fundamental laws of capitalism"

1.  $\alpha = r \times \beta$

If rate of return is 5% and capital/income ratio is 6, then capital's share of income is 30%

2. In the long run,  $\beta = s/g$

If the savings rate is 12% and growth rate is 2%, then  $\beta = 6$

3.  $r > g$ : the "central contradiction of capitalism"

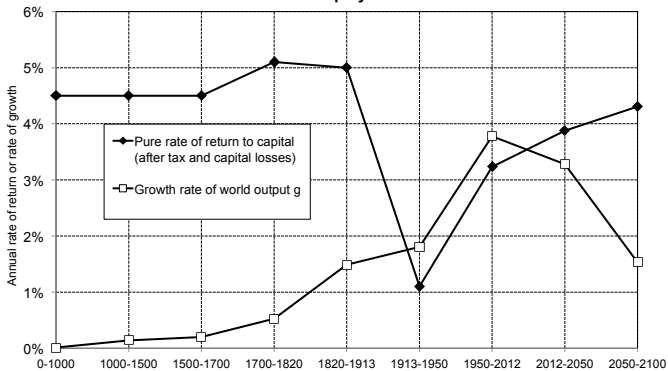
If  $s$  fixed and  $r > g$ , then  $\alpha$  and inequality tend to increase

# Piketty's historical account in a nutshell

- Except for 1910–1950,  $r > g$  has been true throughout history
- Extraordinary inequality has been the resulting norm
- $r < g$  during 1910-1950, the wealthy lost, inequality fell
- Now  $r > g$  again and is likely to remain so indefinitely
- Rising inequality will persist into the future unless we decide to restrain it
- Piketty's preferred solution: internationally harmonized progressive tax on capital

# Rate of return and growth rate, 0–2100

Figure 10.10. After tax rate of return vs. growth rate at the world level, from Antiquity until 2100



The rate of return to capital (after tax and capital losses) fell below the growth rate during the 20th century, and may again surpass it in the 21st century. Sources and series : see [piketty.pse.ens.fr/capital21c](http://piketty.pse.ens.fr/capital21c)

Source: T. Piketty, *Capital*



# Which parts are controversial, and why?

- $\alpha = r \times \beta$  is an accounting identity, not controversial
- $\beta = s/g$  is more than that
  - Holds in the long run, as a “steady state”
  - Piketty treats  $s$  as fixed, which is not quite right
- Most of the controversy concerns  $r > g$ 
  - Can  $r > g$  be true over long stretches?
  - If  $r > g$  is true, does it lead inevitably to higher inequality?

# Can $r > g$ be true over long stretches?

- Intuition suggests no:
  - If capital grows faster than the economy, capital becomes more plentiful
  - As a result, its price  $r$  should fall
- Standard growth models are not designed to answer this question
- Piketty's data show that  $r > g$  is the norm
- Many people are racing to answer the question

# Does $r > g$ lead inevitably to higher inequality?

- In a Solow growth model, increasing capital automatically drives wages up
- Tyler Cowen says this is a worker's paradise
- Solow himself in *TNR*: “This is Piketty’s main point, and his new and powerful contribution to an old topic: **as long as the rate of return exceeds the rate of growth, the income and wealth of the rich will grow faster than the typical income from work.**”

# Piketty's solution is also controversial

- Internationally harmonized progressive tax on capital
- Piketty argues that capital is easier to measure than is income
- Greg Mankiw is sure that a tax on capital will hurt workers too
- Mankiw and others prefer a tax on consumption
- Piketty: “A progressive consumption tax is a poor substitute for a progressive tax on inheritance and wealth”

# Piketty's argument against a consumption tax

- Piketty: “The biggest problem with a consumption tax is that the very notion of consumption is not well defined for top wealth holders. Billionaires consume power and influence, not only food and clothes. When the Koch brothers finance political campaigns, should this be included in their personal consumption?”
- “Billionaires can consume politicians. They can consume journalists. Sometimes they consume academics.”

# Piketty's solution is also controversial

- “I see rankings of wealth everywhere in magazines. I don't see rankings of consumption. If you want to implement a progressive consumption tax, this would be a totalitarian nightmare, because you have to decide what is consumption. When Bill Gates takes his private jet to a meeting, is this consumption? Is this investment?”
- “A progressive tax on net wealth is more desirable, first because net wealth is easier to define and monitor than consumption, and next because it is a better indicator of the ability of top wealth holders to pay taxes and contribute to the common good.”

“The theory that Piketty develops to interpret these data and make predictions about the future is best viewed as a first attempt to make sense of the evidence. Much like Marx, **Piketty plays the role of provocateur, forcing us to think about new ideas and new possibilities**. . . . [T]he extent to which  $r - g$  is the fundamental force driving top wealth inequality, both in the past and in the future, is unclear. But by encouraging us to entertain these questions and by providing a rich trove of data in which to study them, Piketty and his coauthors have made a tremendous contribution.”

- Charles Jones, “Pareto and Piketty: The Macroeconomics of Top Income and Wealth Inequality,” NBER Working Paper 20742, Dec 2014

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