Course 1: Introduction

Fiat Lux Course: The Economics of Superstars

François Geerolf

UCLA

October 2, 2018

Organization of the course

- **Lectures**: Tuesdays 2-3:50 pm, Bunche Hall 3170. Sessions every two weeks, starting Week 1: Oct 2, Oct 16, Oct 30, Nov 13, Nov 27.
- **Website:**
  `https://moodle2.sscnet.ucla.edu/course/view/18F-ECON19-1`
- *Disclaimer:* I will need to teach you **some mathematics** (as simple as possible), because sometimes words are not enough.
- P/NP Basis. You can't miss one class, since each class is 1 hour 50 minutes. P/NP based on class participation, attendance, and a 30 mn presentation at the end of the quarter (Nov 13 and Nov 27), by groups of 2 or 3.
- If you click on the links on the Syllabus, they should direct you to the corresponding economic articles.
- I will also use the whiteboard for technical derivations though, so do not hesitate to take notes.

Tentative course time table

Week	Date	Topics
1	October 2, 2018	Measurement of Inequality
2	October 16, 2018	Optimality, Equity / Efficiency
3	October 30, 2018	Globalization
8	November 13, 2018	Presentations 1
10	November 27, 2018	Presentations 2

Presentations - List of Articles - November 13, 2018

Four 30-minute presentations on the following articles:

1. Alvaredo, Facundo, Anthony B. Atkinson, Thomas Piketty, and Emmanuel Saez. "The Top 1 Percent in International and Historical Perspective." Journal of Economic Perspectives 27, no. 3 (September 2013): 3–20. Link
2. Kaplan, Steven N., and Joshua Rauh. "It's the Market: The Broad-Based Rise in the Return to Top Talent." Journal of Economic Perspectives 27, no. 3 (September 2013): 35–56. Link
3. Bivens, Josh, and Lawrence Mishel. "The Pay of Corporate Executives and Financial Professionals as Evidence of Rents in Top 1 Percent Incomes." Journal of Economic Perspectives 27, no. 3 (September 2013): 57–78. Link
4. Mankiw, N. Gregory. "Defending the One Percent." Journal of Economic Perspectives 27, no. 3 (September 2013): 21–34. Link

Paper 1 - Alvaredo, Facundo, Anthony B. Atkinson, Thomas Piketty, and Emmanuel Saez. "The Top 1 Percent in International and Historical Perspective." Link

- Mostly a "facts" and "data" paper. A "left-wing" view of the increase in top income inequality.

Paper 2 - Kaplan, Steven N., and Joshua Rauh. "It's the Market: The Broad-Based Rise in the Return to Top Talent." Link

- A "right-wing" view of the increase in top income inequality.

Paper 3 - Bivens, Josh, and Lawrence Mishel. "The Pay of Corporate Executives and Financial Professionals as Evidence of Rents in Top 1 Percent Incomes." Link

- A focus on the finance industry.

Paper 4 - Mankiw, N. Gregory. "Defending the One Percent." Link

- Former chairman of the CEA under President George W. Bush's take on the increase in the top 1%.

Presentations - List of Articles - November 27, 2018

Four 30-minute presentations on the following articles:

1. Corak, Miles. "Income Inequality, Equality of Opportunity, and Intergenerational Mobility." Journal of Economic Perspectives 27, no. 3 (September 2013): 79–102. Link
2. Bonica, Adam, Nolan McCarty, Keith T. Poole, and Howard Rosenthal. "Why Hasn't Democracy Slowed Rising Inequality?" Journal of Economic Perspectives 27, no. 3 (September 2013): 103–24. Link
3. Philippon, Thomas, and Ariell Reshef. "An International Look at the Growth of Modern Finance." Journal of Economic Perspectives 27, no. 2 (May 2013): 73–96. Link
4. Haskel, Jonathan, Robert Z. Lawrence, Edward E. Leamer, and Matthew J. Slaughter. "Globalization and U.S. Wages: Modifying Classic Theory to Explain Recent Facts." Journal of Economic Perspectives 26, no. 2 (May 2012): 119–40. Link

Paper 5 - Corak, Miles. "Income Inequality, Equality of Opportunity, and Intergenerational Mobility." Link

- The "Great Gatsby" curve. Link between inequality and equality of opportunity.

Paper 6 - Bonica, Adam, Nolan McCarty, Keith T. Poole, and Howard Rosenthal. "Why Hasn't Democracy Slowed Rising Inequality?" Link

- The majority should vote to expropriate the minority. Why don't they?

Paper 7 - Philippon, Thomas, and Ariell Reshef. "An International Look at the Growth of Modern Finance." Link

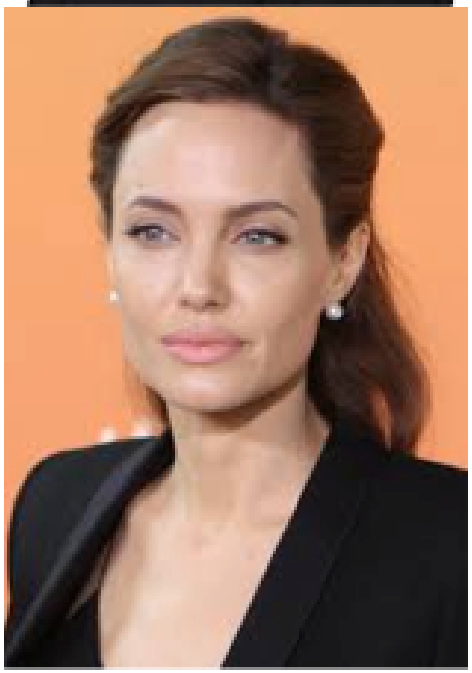
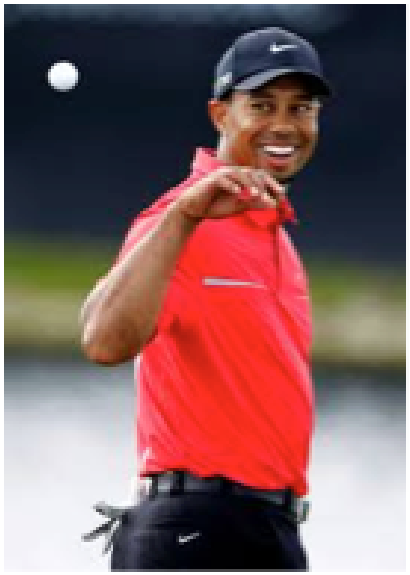
- Has the finance industry become less efficient?

Paper 8 - Haskel, Jonathan, Robert Z. Lawrence, Edward E. Leamer, and Matthew J. Slaughter. "Globalization and U.S. Wages: Modifying Classic Theory to Explain Recent Facts." Link

- Link between globalization and the rise in inequality.

What do they have in common?




Questions

- These superstars earned more than \$10,000,000 last year according to Forbes. That is more than **300 times** the median wage in the US. This raises several questions:
  - Can economics make sense of these orders of magnitudes?
  - Who among a famous singer, a CEO running an international organization on several continents, an entrepreneur creating Microsoft, Apple or Facebook, or a successful Wall Street trader, creates more "economic value"?
  - Should inventors, top managers and CEOs be rewarded more than rock stars or professional athletes?
  - What are the arguments for and against counteracting the corresponding increases in inequalities through taxation or other government interventions?
  - Should we expect the rising "winner-takes-all" trend to continue?

Two objectives

1. Touch upon most basic economic concepts:
   - Pareto Distributions.
   - Optimality. Pareto Optimum.
   - Incentives.
   - Public Goods.
2. Test the power of economic reasoning as well as its limits on a highly political question:
   - Room for interpretation but also some "scientific" truths.
   - **Mathematics** will be needed to set the debate in a clear, transparent and scientific manner.

Rosen (1983)

- If you have not so already, read it carefully for next week. Link
- It is extremely well written, and full of powerful and deep economics.
- My goal during this course will be to give you the tools to try and understand that article better.
- For example, today we will concentrate on only one of his statements, that about Pareto distributions, that you may not have quite well understood.

Rosen (1983)

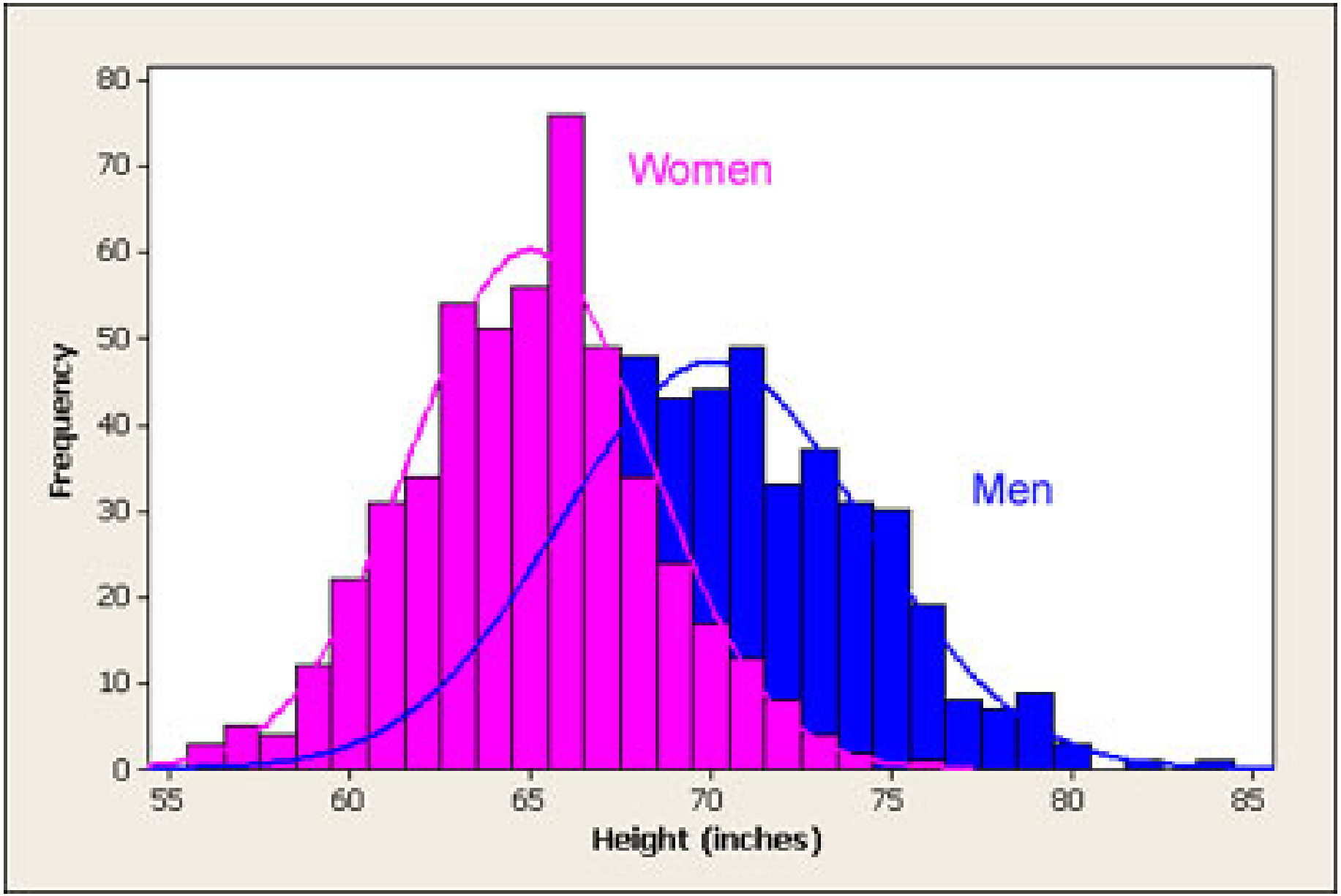
- Rosen (1983), in *The American Scholar*, writes (bottom of page 4):

Of particular interest here is an observation, first studied systematically by the great Italian economist Vilfredo Pareto in the late nineteenth century, that the distribution of income contains an unusually large proportion of top earners: that is, among the rich rather than the poor. A visual image will perhaps clarify what is meant by "unusual" in this connection. Imagine a graph plotting IQ scores on the horizontal and the frequency of scores on the vertical. The result is a familiar bellshaped curve. The peak of the bell occurs at a score arbitrarily scaled at 100 and the curve falls symmetrically on either side of 100. Now picture a similar graph, except with earnings on the horizontal. The resulting curve is unbalanced and non symmetrical - a bell that is definitely out of whack. To the left of the modal (peak) value it appears much like the IQ frequency curve. However, to the right of the mode it does not fall as fast as it does to the left. It looks as if someone had stood at the right end of the curve, placed it over his back like a rope, and dragged and stretched it out a very long distance. The upper or right-hand tail of the distribution of income is much thicker than the lower, left-hand tail. The extra weight on the right lends a certain skewness to the distribution of income. **What this comes down to is that the distribution of earnings is far from proportionate to the distribution of ability.** Amazingly, Pareto's observations have been qualitatively duplicated in virtually every era of every society for which data on income distributions can be found.

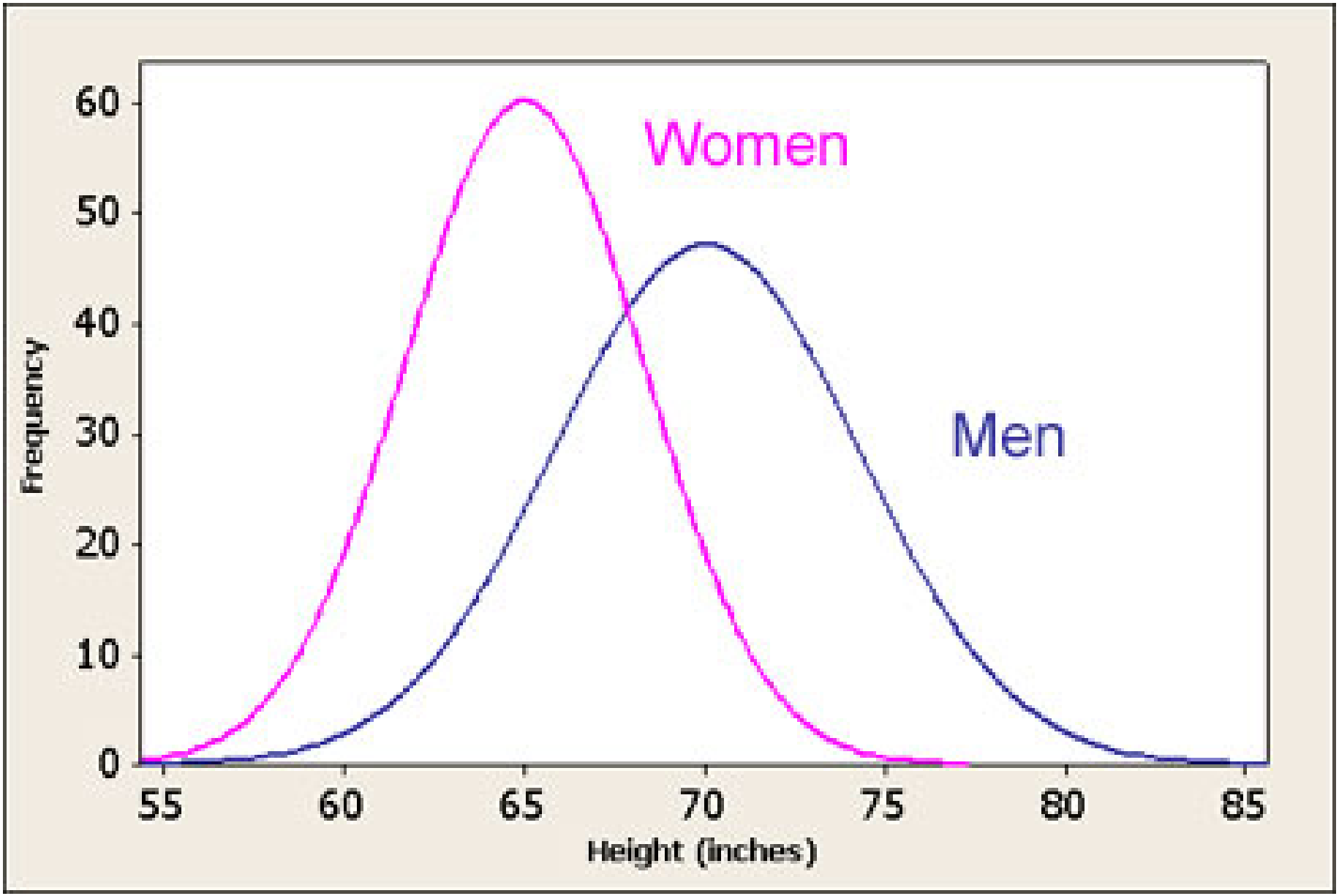
Distributions

- Don't worry: this class on Pareto distributions is the most technical of all classes. If you are not into mathematics, that's ok. Don't hesitate to ask questions.
- What is a statistical distribution?
- What is the law of large numbers?
- What is a Gaussian (or normal) distribution?
- Examples of Gaussian (or normal) distributions?

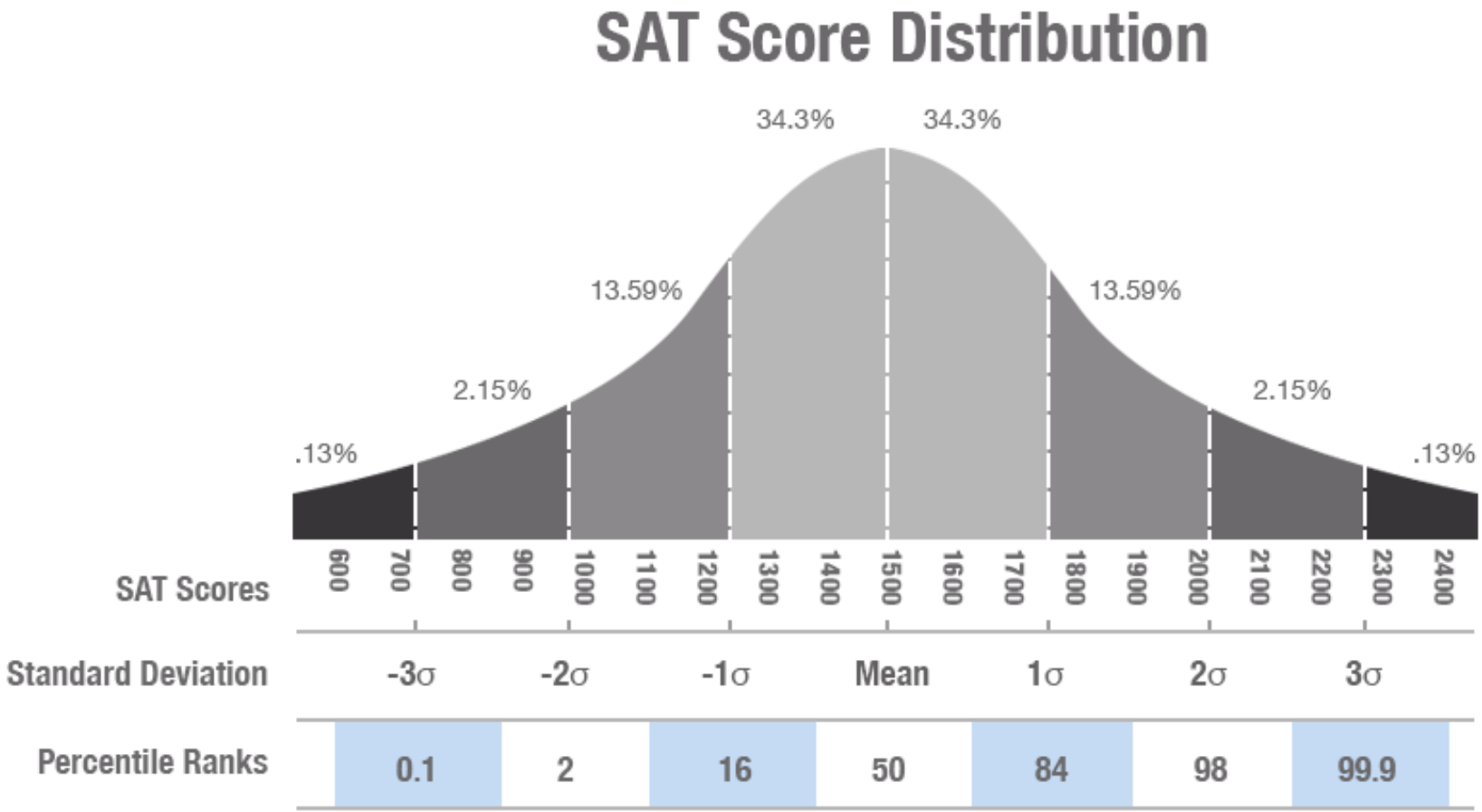
Distribution of Height is Normal



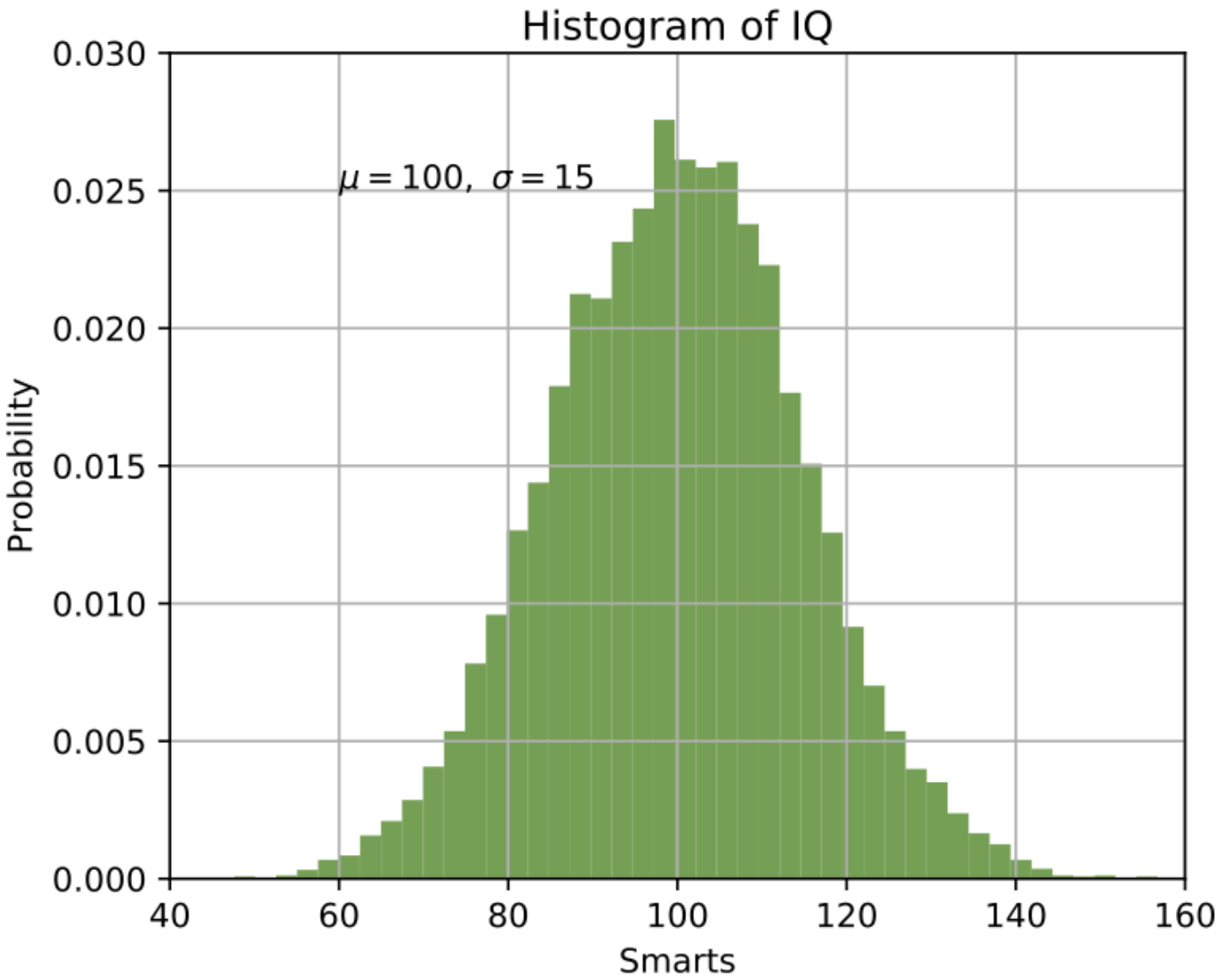
Distribution of Height is Normal



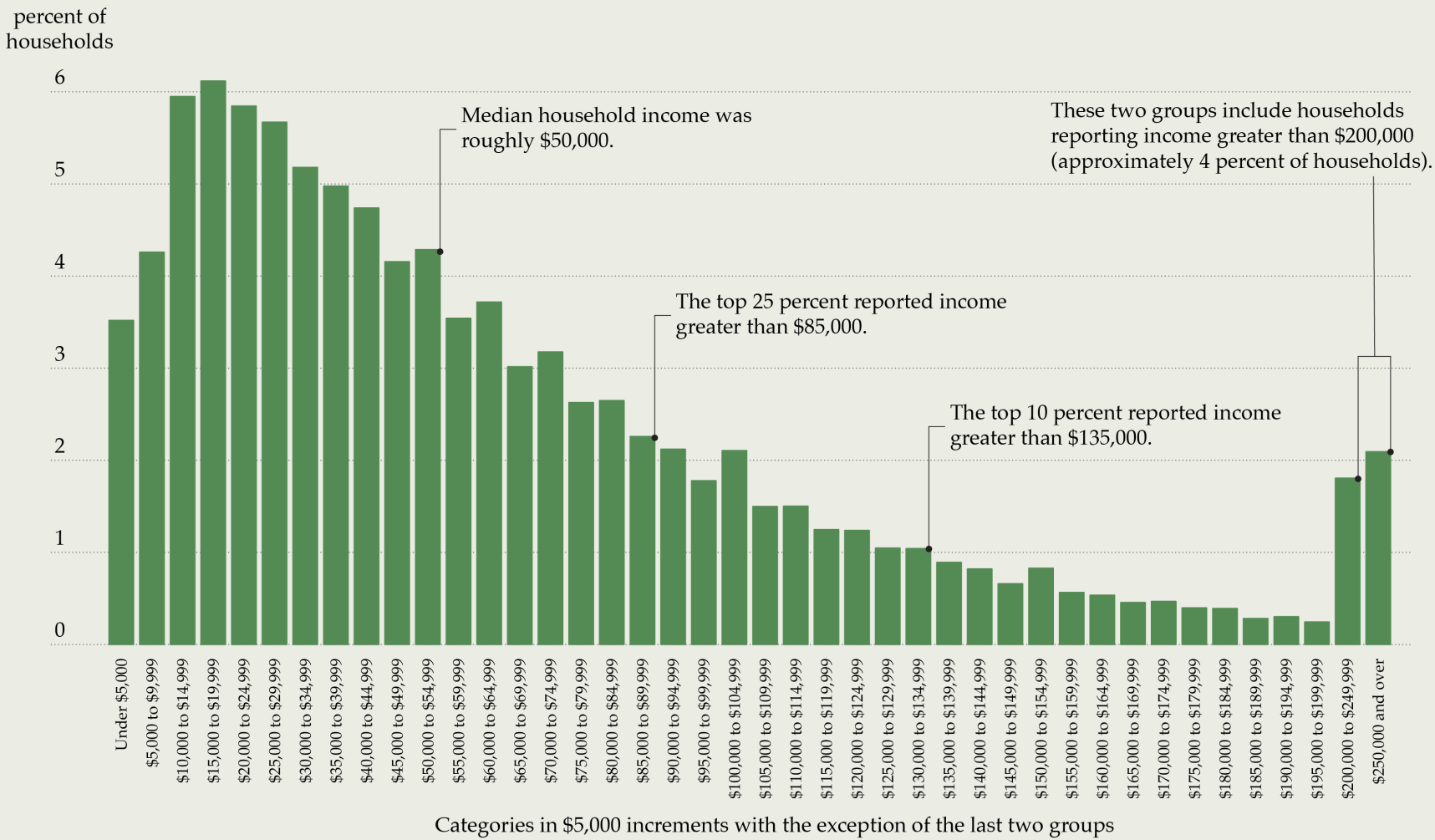
Distribution of SAT Scores is Normal



Distribution of IQ is Normal



Distribution of Household Income is **NOT** Normal



Source: U.S. Census Bureau, Current Population Survey, 2011 Annual Social and Economic Supplement

Consequences of this "Pareto Distribution"

- Vilfredo Pareto (1848-1923) was an Italian engineer, sociologist, economist, political scientist, and philosopher.
- He is credited for having first observed that incomes systematically followed a certain statistical regularity that now bears his name. We now routinely say "incomes follow a Pareto distribution".
- Unlike in physics, there are very few empirical regularities in economics. The Pareto distribution for incomes (and wealth, but also firm sizes, and cities) is one.
- Median and mean are very different. **"no scale".**
- Hence, the focus on the top 10%, the top 1%, the top 0.1%, etc.

So, what is a Pareto distribution?

- Denote by $f(x)$ the density function for the population x of cities, and $F(x)$ the cumulative distribution.
- Then the survivor function for a standard Pareto distribution with:
  - A **scale parameter** x_m (minimum value that x can take)
  - A **shape parameter** a, governing the **fattailedness**. Also named **Pareto parameter**, or tail coefficient.
- The countercumulative distribution function is given by (probability that population is greater than x):

$$\mathbb{P}[x' > x] = \boxed{1 - F(x) = \left(\frac{x_m}{x}\right)^a}.$$

- The density is then given by:

$$f(x) = a\frac{x_m^a}{x^{a+1}}.$$

- Pareto form: log(1-F(x)) is linear of log(x):

$$\boxed{\log\left(1 - F(x)\right) = -\mathbf{a}\log(x) + a\log(x_m).}$$

Source: Alvaredo et al. (2013)

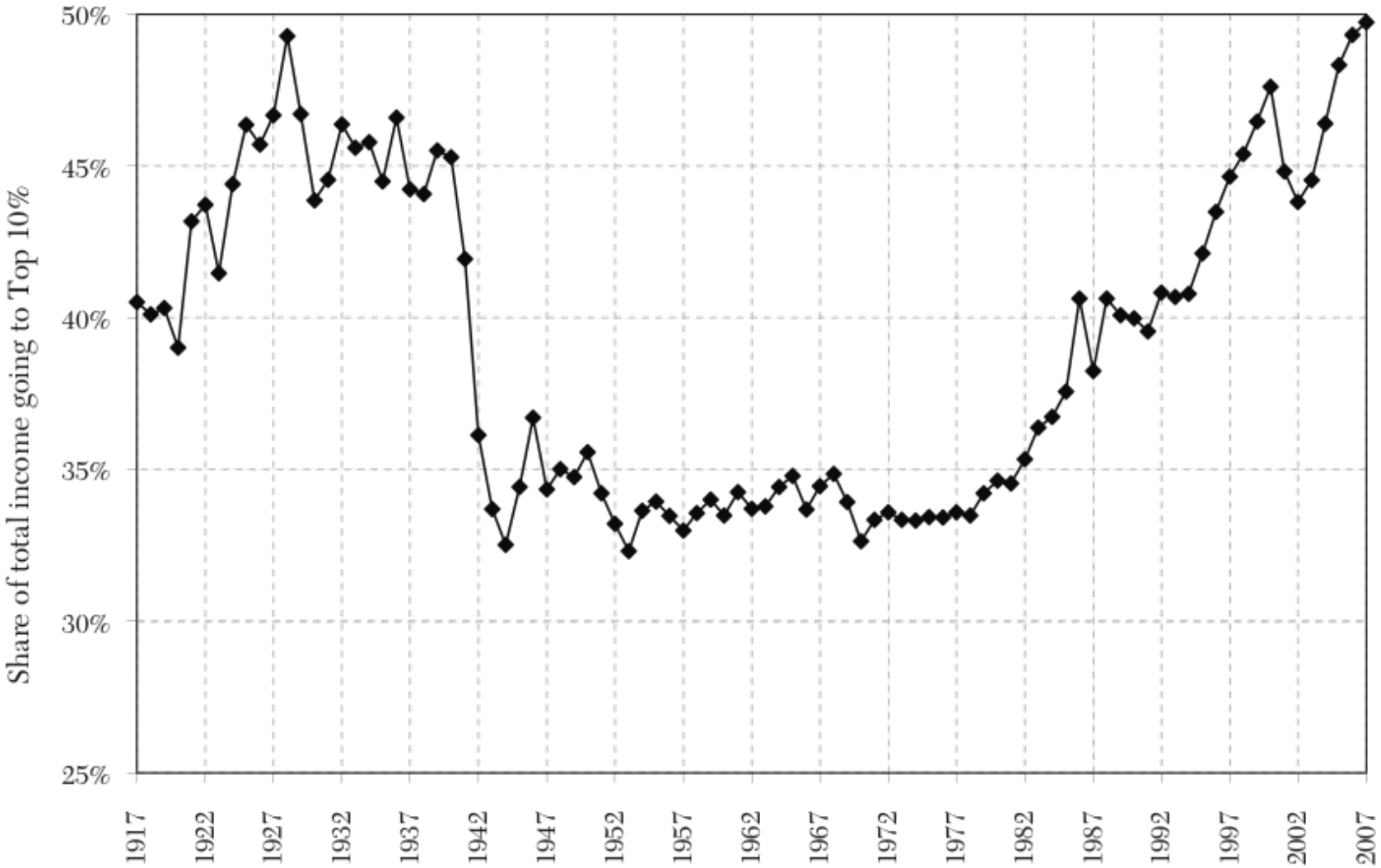


Figure 1. The Top Decile Income Share in the United States, 1917–2007.

Source: Alvaredo et al. (2013)

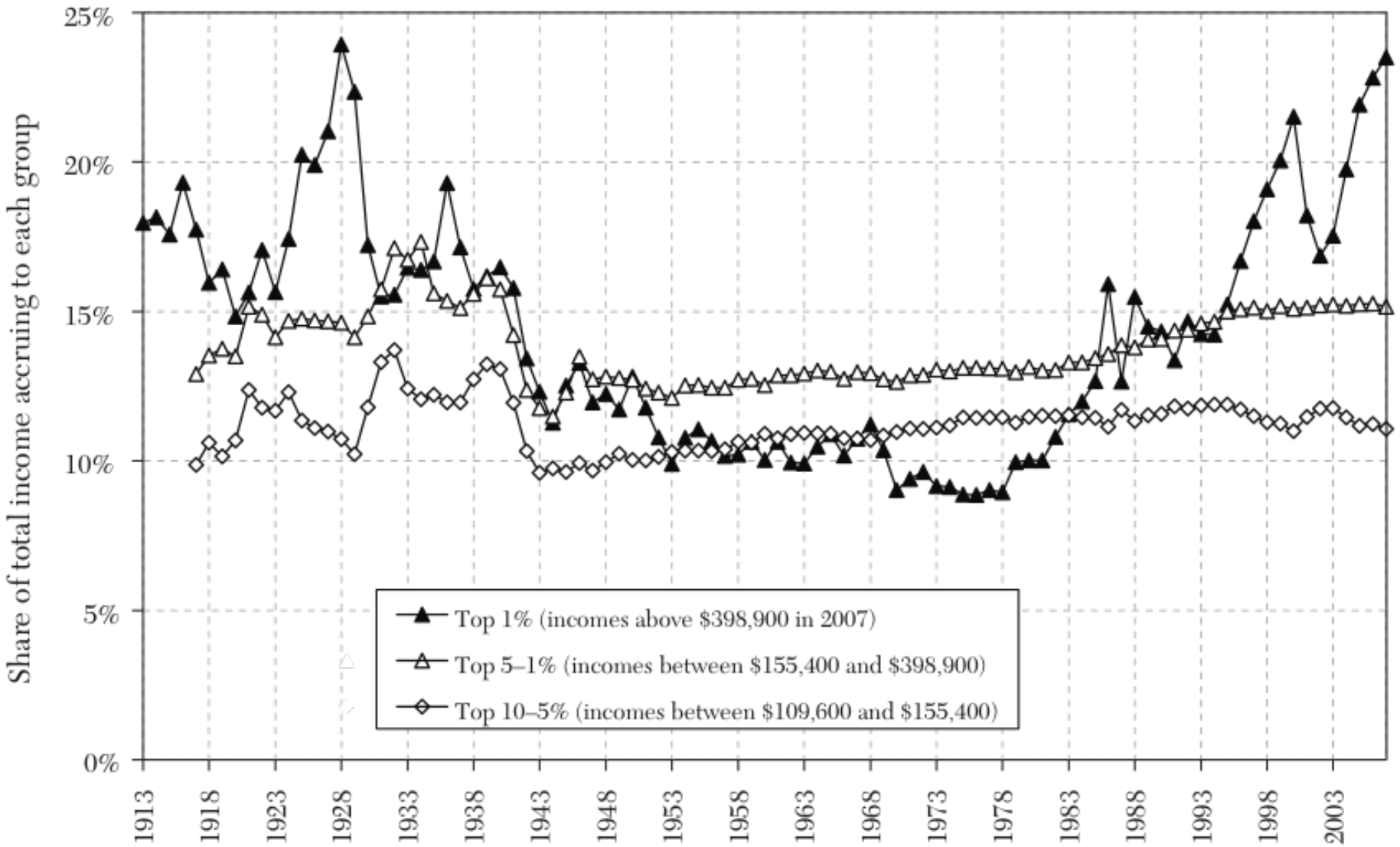
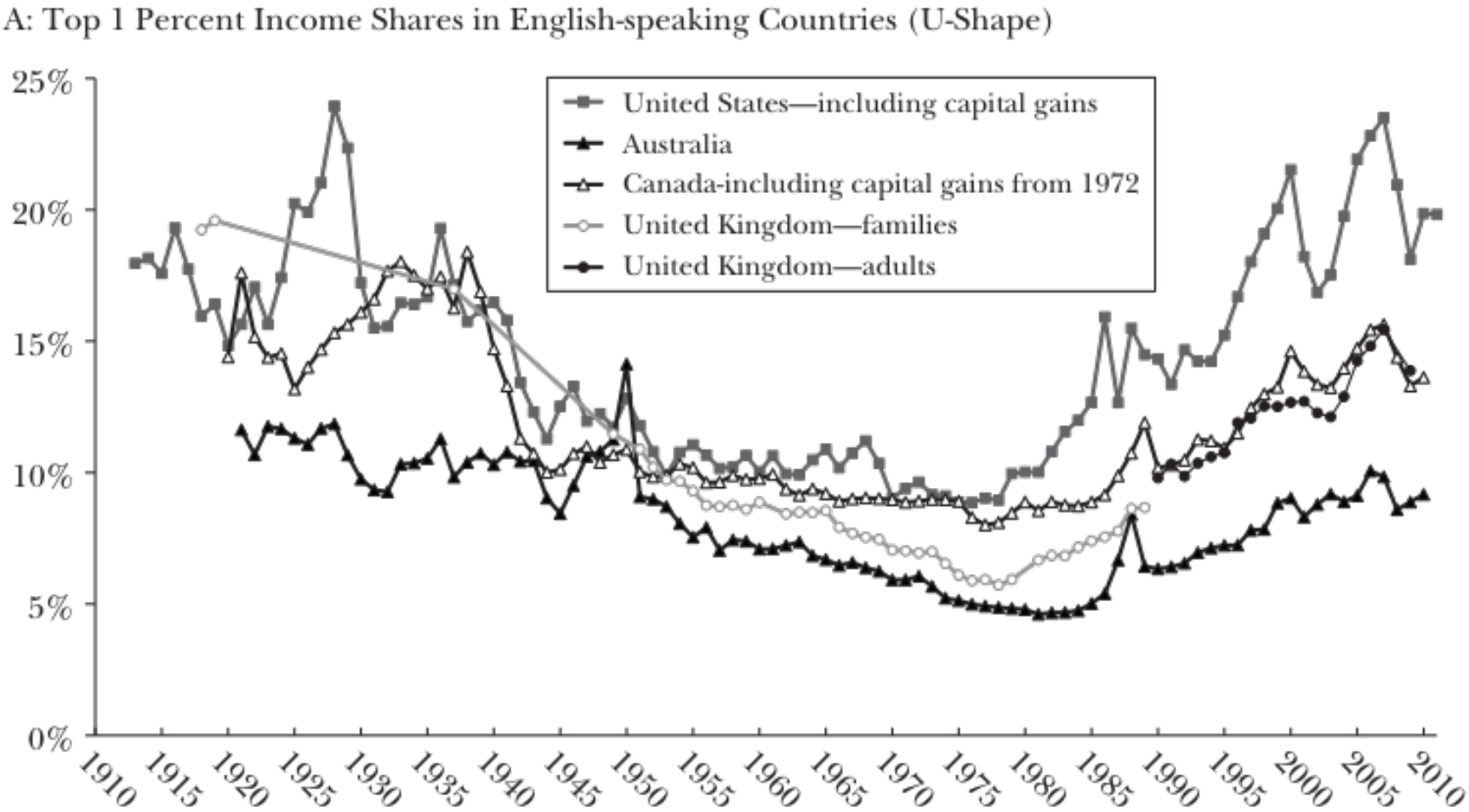


Figure 2. Decomposing the Top Decile US Income Share into three Groups, 1913–2007

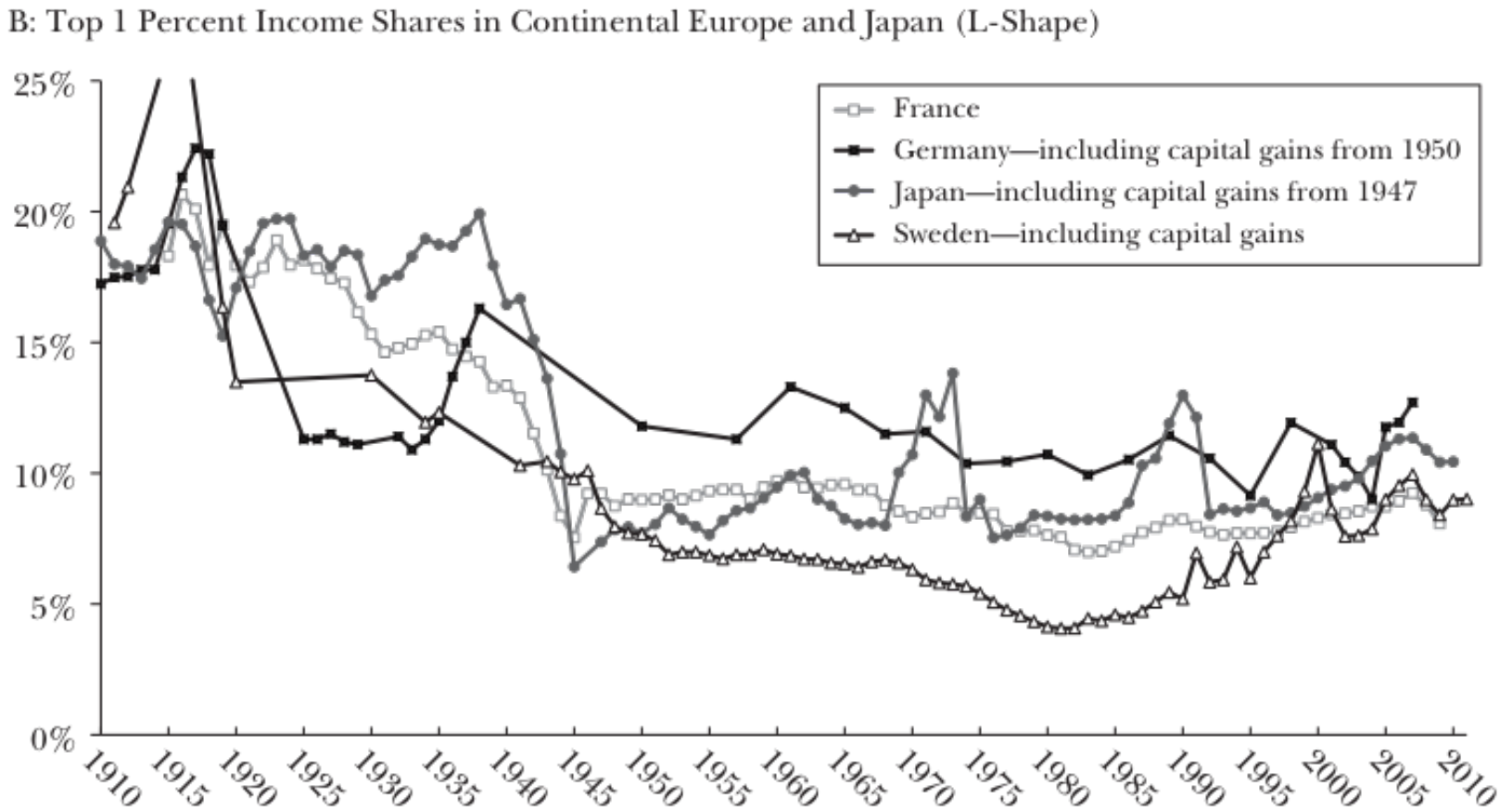
Source: Alvaredo et al. (2013)

Figure 2

The Evolution of the Shares of the Top 1 Percent in Different Countries



Source: Alvaredo et al. (2013)



Source: Alvaredo et al. (2013)

TABLE 1
TOP PERCENTILE SHARE AND AVERAGE INCOME GROWTH IN THE UNITED STATES

	Average income real annual growth (1)	Top 1% incomes real annual growth (2)	Bottom 99% incomes real annual growth (3)	Fraction of total growth captured by top 1% (4)
Period				
1976–2007	1.2%	4.4%	0.6%	58%
Clinton expansion				
1993–2000	4.0%	10.3%	2.7%	45%
Bush expansion				
2002–2007	3.0%	10.1%	1.3%	65%

Notes: Computations based on family market income including realized capital gains (before individual taxes). Incomes are deflated using the Consumer Price Index (and using the CPI-U-RS before 1992). Column (4) reports the fraction of total real family income growth captured by the top 1 percent. For example, from 2002 to 2007, average real family incomes grew by 3.0 percent annually but 65 percent of that growth accrued to the top 1 percent while only 35 percent of that growth accrued to the bottom 99 percent of U.S. families.

Source: Piketty and Saez (2003), series updated to 2007 in August 2009 using final IRS tax statistics.

Source: Alvaredo et al. (2013)

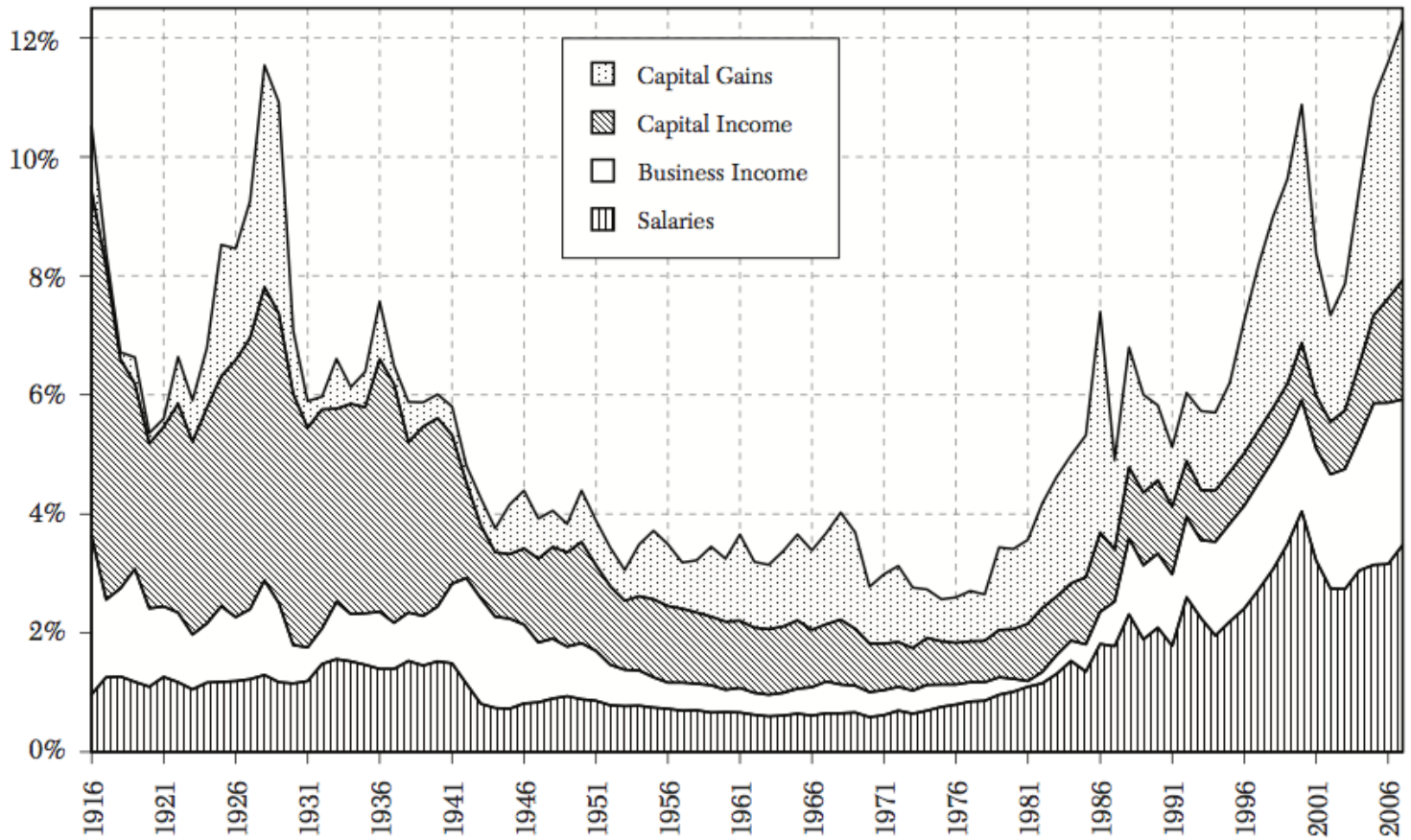


Figure 3. The Top 0.1 Percent Income Share and Composition, 1916–2007

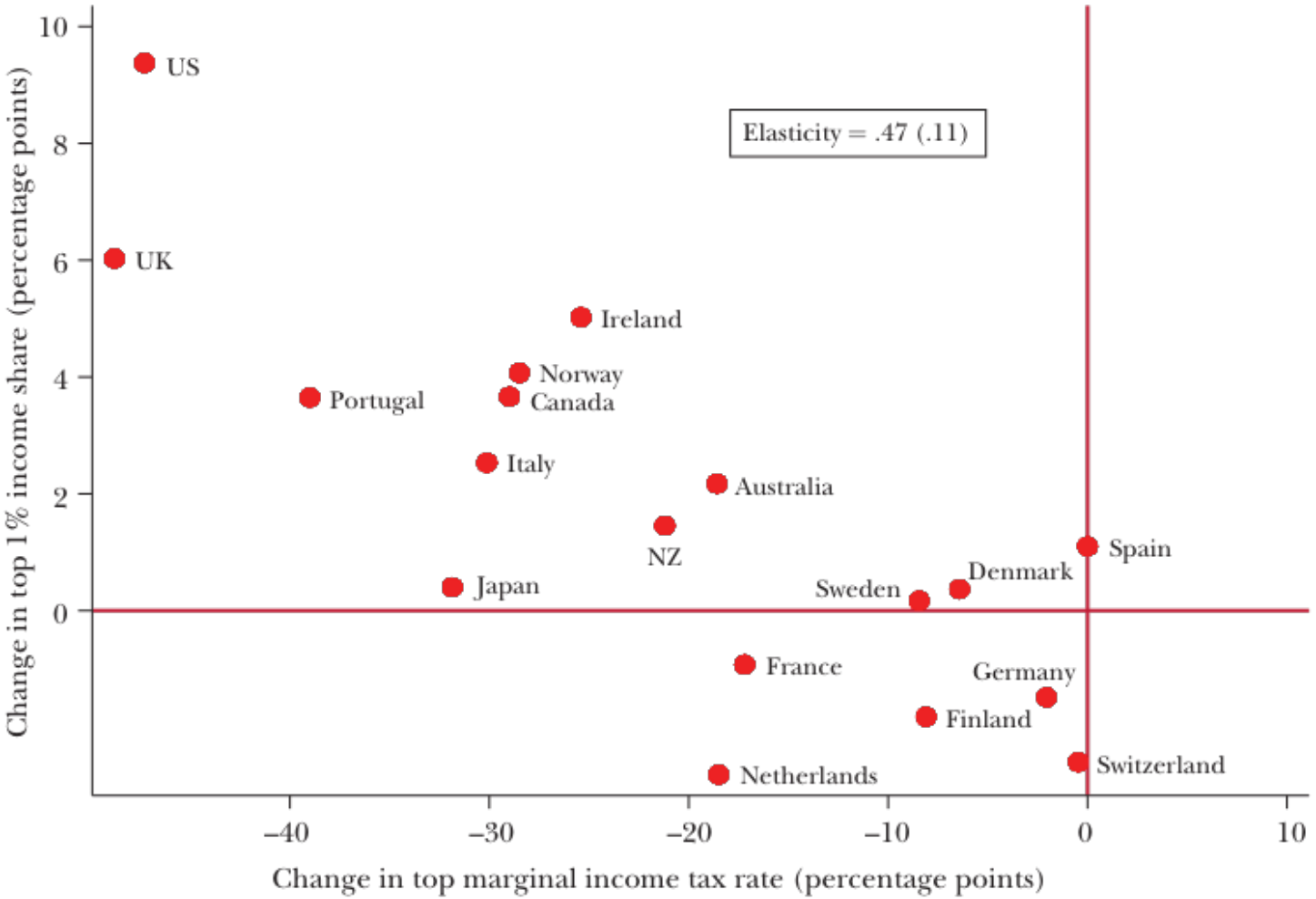
Notes: The figure displays the top 0.1 percent income share and its composition. Income is defined as market income including capital gains (excludes all government transfers). Salaries include wages and salaries, bonus, exercised stock-options, and pensions. Business income includes profits from sole proprietorships, partnerships, and S-corporations. Capital income includes interest income, dividends, rents, royalties, and fiduciary income. Capital gains includes realized capital gains net of losses.

Source: Alvaredo et al. (2013)

Figure 4

Changes in Top Income Shares and Top Marginal Income Tax Rates since 1960

(combining both central and local government income taxes)



Program for next class

- The distribution of incomes is very different from the distribution of "abilities".
- **Economics** will help us understand why this is the case.
- Why was there an increase in some countries, not in others?
- Next class (next week):
  1. Your (perhaps) first economic model. "Pareto" efficiency.
  2. Mechanisms generating inequality. Complementarities.
  3. Economic analysis of optimal taxation and government intervention.

Bibliography I

Alvaredo, Facundo, Anthony B. Atkinson, Thomas Piketty, and Emmanuel Saez, "The Top 1 Percent in International and Historical Perspective," *Journal of Economic Perspectives*, September 2013, *27* (3), 3–20.

Rosen, Sherwin, "The Economics of Superstars," *The American Scholar*, 1983, *52* (4), 449–460.