

CM21: DISTRIBUTION 5-19-21

MOST, BUT NOT ALL OF, WHAT YOU SHOULD KNOW

1. What is the difference between a positive and a normative statement?
2. What is an example of an economic value judgment?
3. What is an interpersonal comparison of wellbeing?
4. Can economists determine what is the socially optimal (best) distribution of income?
5. Is redistribution an economic or a political issue?
6. Do high marginal tax rates lower our rate of growth?
7. What does economic theory say about how wages are determined?
8. What has happened to the relationship between income and productivity since 1980?
9. Are institutional and historical factors likely to be more important in labor markets than the markets for goods and services?
10. Given a set of numbers how do you calculate the mode, the mean, and the median of those numbers?
11. Is income symmetrically distributed?
12. Why is the median a better measure of average incomes than the mean?
13. In 2014 what were the modal, mean and median incomes in the US?
14. What is a quintile?
15. What proportion of income goes to households in the top quintile?
16. What is a Lorenz curve?
17. What shape would the Lorenz curve take if (a) income was perfectly equally distributed, and (b) if it was perfectly unequally distributed?
18. How is a Gini coefficient (GC) calculated?

19. Which country would have the more equal distribution of income: one with a GC of about 0.30 or one with a GC of about 0.60?
20. What were the four major epochs in the US distribution of income between 1914 and 2018?
21. Is the increase in income inequality something that is merely a US phenomenon?
22. Approximately, what share of income goes to the top 10% of households, the top 1% of households, the top 1/100th of 1% of US households?
23. Since the early 1990s has most of the growth in real income gone to the top 1% of households or to the bottom 99%?
24. What are the major groups of people who make up the top 1%?
25. Does the US have a high or low rate of intergenerational mobility?
26. Is the distribution of wealth more or less equal than the distribution of income?
27. Do Americans have a good idea how wealth is distributed?
28. Is there strong evidence that income inequality is harmful to the economy?

This is one of the more complex Commentaries. I just want you **to remember the broad outlines** not the fine details. Concentrate on the blue text. Email me if you need more guidance.

"The outstanding faults of the economic society in which we live are its failure to provide for full employment and its arbitrary and inequitable distribution of wealth and incomes ... I believe that there is social and psychological justification for significant inequalities of income and wealth, but not for such large disparities as exist today."
John Maynard Keynes, *The General Theory of Interest, Employment and Money*, 1936, Ch. 24.

"Markets are not, in my opinion, a full solution to any problem. The obvious problem they don't meet is the concerns of the welfare of individuals who may get lost in the operation of the system - the distributional question. We've seen this growing as we go further and further toward a market ideology in the United States and the United Kingdom." Kenneth J. Arrow

The big problem with this Commentary is that it says nothing about racial differences in income and wealth. If I was rewriting it I would expand the Commentary but it is already rather long!

1 POSITIVE VERSUS NORMATIVE STATEMENTS AND VALUE JUDGMENTS.

1 POLICY ISSUES.

1. Particle physicists do not argue about whether the Higgs boson should exist, they argue about whether the empirical evidence from the Large Hadron Collider is consistent with the predictions of the theory.

Most economists are attracted into economics, not because of the beauty or intellectual challenge of its theory, but because they are interested in contributing to economic policy debates.

2. It is widely believed that economists are a quarrelsome lot who cannot agree upon anything. (If all the economists in the world were laid end to end they wouldn't reach a conclusion.) In my less than humble opinion, although there are heated debates between the different schools of macroeconomists, the problem with micro-economists is that there is too much agreement amongst them, at least about economic policy. But when microeconomists disagree they are usually disagreeing not simply about the facts, but also about what sort of policy outcomes are desirable.

2 THE POSITIVE/NORMATIVE DISTINCTION.

1. Economics courses traditionally distinguish between positive economics and normative economics.

2. Positive economic statements are concerned with what is the actual state of the economy, that is, is a statement about the economy true or false? In principle the way to resolve disputes about positive economic issues is to appeal to evidence, data, the “facts”. The statement that the Indian economy is the largest economy in the world is a positive statement although, as we saw in CM19, we can show it to be false. “Unemployment insurance increases the length of unemployment spells” is a positive statement. We can measure how long people are unemployed and see if the length of their unemployment spells is positively correlated with the level and duration of their unemployment insurance benefits.¹ A statement is a positive statement so long as it could *in principle* be refuted by empirical evidence. The statement that the Chinese GDP will be twice as large as the US GDP in 2030 is a positive statement even though we may have to wait until 2030 to determine if it is true or false.

3. Normative economic statements are concerned with ethical issues; *what ought to be, what is desirable, what is a good or bad policy, what is the best outcome for society* (what an economist would describe as being socially optimal). Because normative statements are concerned with what is right and what is wrong, they involve *value judgments, judgments about what is desirable and what is undesirable*. These value judgments are subjective: our ethical beliefs depend on such things as our religious beliefs, our level of education, the beliefs of our parents, siblings and friends, our ethnicity, and the sort of society in which we live. Because these beliefs are subjective, we do not have a simple way of deciding whether they are true or false; unlike positive statements we cannot simply appeal to “objective” empirical evidence. Who has the authority to tell us what is right or wrong? Why should we accept their value judgments rather than someone else’s?^{2,3}

4. Examples of value judgments are: “Thou shall not kill”, “Never initiate violence”, “Do unto others as you would have them do to you”, and “Do not steal”. Although most people accept each of these value judgments most of us would have difficulty convincing a skeptic that they have universal validity, for

¹ Of course, correlation does not establish causation.

² Civil wars, which are notoriously bloody, are usually fought about value judgments, religious beliefs, or in the case of the US the legitimacy of slavery (an institution that is as old as civilization and which continues to exist in parts of the world in 2021).

³ Doctors routinely ask us about our pain levels and ask us to rate them on a scale of 1 to 10. We all know that women are the stronger sex but there is no way, yet, of determining whether my wife’s stoical 3 is really less than my crybaby 9.

example, although most people would agree that it is wrong to kill, they also believe that our soldiers can kill our enemies. But a strict pacifist would not countenance killing on any grounds. Vegans attempt to avoid consuming animal products although most people are happy to eat meat (even if we do so with a bad conscience), and wear the skins of animals. Many people would argue that capital punishment is wrong in principle, others believe in the biblical “an eye for an eye”, while others would argue that we should not execute people because there is strong evidence that we have executed people who were actually innocent.⁴

5. Ethical values sometimes change over time: consider the changes in attitudes towards suicide and homosexuality both over time and between different countries, and how our views on how animals should be treated have changed in the last hundred years.

6. The positive-normative or fact-value distinction is not a watertight one, and philosophers rejected it seventy or more years ago on the grounds that it is not logically valid. However, philosophers are often more interested in questions than answers, whereas economists are rather pragmatic people who are willing to use a dichotomy that works at the simple-minded level at which economists operate. (Moral philosophers have been arguing about ethics for more than two and a half thousand years, apparently without arriving at a consensus.) Philosophers argue that although your views on a policy issue may be largely driven by your value judgments those value judgments are usually intertwined with your positive beliefs, the evidence that you would use to demonstrate the correctness of your position to someone who disagreed with you; I may dispute your policy claim not on ethical grounds but because I believe that it is based on incorrect, unrepresentative, or irrelevant evidence.

7. Although normative statements are subjective, nonetheless it seems reasonable that they should be consistent with what we know about the economy. The claim that is sometimes made that the unemployed are too lazy to find work or that they are simply unwilling to work at the jobs that are out there involve value judgments about other people’s work ethic. What data can we collect to show that someone is too lazy to do something? If you disagree with the claim that unemployment is essentially voluntary you might point out that in the first months of the Great Recession unemployment (by definition people actively seeking employment) rose rapidly, but you could also point out

⁴ The US is one of the 40, out of 195, countries in the world that has and uses the death penalty. We would have to abolish the death penalty if we wanted to join the EU.

that there was a large drop in the number of firms wanting to hire new employees at this time (there were four people looking for jobs for every job vacancy), and that most of the newly unemployed were without a job because they had been fired not because they were voluntary quits. This is not what you would expect if the workers had initiated the work separation – workers quitting their jobs to go on holiday while enjoying unemployment benefits. Is it plausible that suddenly in 2010 there were large decreases in the number of workers that businesses wanted to employ and quite unrelatedly, there were large increases in the number of people who were lazy or unwilling to work at existing wage and benefit levels? And if the unemployment was largely voluntary why did so many of the unemployed regard their job loss as traumatic?⁵ But such arguments are unlikely to convince someone who believes that unemployment is essentially voluntary; we are all, even me, often unwilling to change our beliefs just because the evidence appears to contradict them.⁶

8. *Statements containing the words “should” or “ought” are usually normative statements.* But here is a quote from a recent Cato Institute posting: “Congress needs to control wasteful spending and shrink the size of government”.⁷ Is this a positive or a normative statement? (I would say a value judgement.) “We should require firms to purchase fair trade coffee because that will make farmers in third world countries better off” is obviously a normative statement but it also clearly makes the positive claim that farmers gain from fair trade agreements. An important consideration would be how much better off are the farmers and how much better off are the retailers of the coffee? “It is gross that the hedge fund manager John Paulson made five billion dollars in 2010” is also a value judgment.

9. Because there is strong disagreement on value judgments academic economists try to avoid making overt value judgments, and try not to overtly introduce their own value judgments into their economic analysis and policy recommendations, and try not to imply that economics proves that one policy is better than another. Economists try to confine themselves to what they call positive economics, although as I argued in CM13, there is a strong, generally accepted, implicit ideological slant to much of standard economics.

10. You will have noticed that my discussion has been concerned with positive and normative *statements*, not positive and normative *economics*. When

⁵ Becoming unemployed lowers “Happiness” by more than anything except the death of a long-time life partner.

⁶ I know that they talk nonsense on Fox News even though I have never watched it!

⁷ The Cato Institute is generally considered to be a very right-wing organization.

textbooks and lecturers distinguish between positive and normative *economics*, they seem to imply that there is a subject, normative economics, that we can study in the way that we can study environmental economics. I believe that economists have been so successful at removing explicit value judgments from academic economics that so-called normative economics does not exist; it is certainly not a separate type of economics. There are no courses on normative economics and there are no degrees in normative economics and you cannot take normative economics as one of your “fields” in your Ph.D.

11. Beware of the terminology that economists use. For example, economists are fond of words such as goods, rational, efficient, perfect, and natural: “clearly” more goods are good for us, no one wants to behave irrationally, we prefer things to be efficient rather than inefficient, we seek perfection, and, naturally, we prefer the natural to the unnatural. All of these words have strong emotive overtones and should be treated with extreme caution.

2 INCOME RE-DISTRIBUTION ANYONE?

1. Economics cannot tell us what the best (economists would say, optimal) distribution of income is, because that would require value judgments involving *interpersonal comparisons of wellbeing* (the claim that it is objectively possible to *rank* the subjective levels of satisfaction of different people). The claim that one person should or should not have more income than another, or that income should be taken from one person and given to another, clearly involves a value judgment.

2. Some households only have their labor to sell, others may own property from which they derive income, and others have financial wealth that generates financial investment income. I would argue that capitalism is probably the best generator of income known to woman, but it is also a system that inherently generates inequality of income and wealth.

3. Our incomes constrain our consumption. The size of our income and how large our income is relative to our peers is very important to most of us.⁸ So, most people are concerned with the distribution of income. Indeed, in recent years the share of income going to the top 1% has been an issue that has received wide coverage in the media. In the same month in 2015 the *New Yorker* and the *Atlantic Monthly* and the *Scientific American* all had articles on income distribution. However, standard micro principles textbooks seldom cover

⁸ A contented man is one who earns more than his brother-in-law.

the distribution of income and if they do so it is left to one of the last chapters of the text, which suggests that this is material that is not usually covered in introductory micro courses.⁹ Why is this? One explanation would be that economists don't have much to say about the subject, but that seems to suggest that economists are unaware of the work of Picketty and Saez discussed below, work that is descriptive rather than prescriptive, and has been available for at least 30 years.

3. Another possibility is that discussions of income distribution are likely to lead to discussions of income redistribution. The government could and does change the consumption constraints we face by altering how much income we have to spend: by taking income from some people (taxation) and giving it to others ("safety net expenditures", "corporate welfare", agricultural subsidies). But economists usually avoid discussing such redistribution of income (and wealth) because it is an economic dogma that we should not make "interpersonal comparisons of utility".¹⁰ An example of an interpersonal comparisons of utility is when someone argues that we should take \$1,000 from the hedge fund manager, John Paulson, and give it to a woman who has been abandoned by her husband and now finds herself homeless with three small children to feed. This proposal assumes that Paulson's loss must be less than the woman and her children's gain. But there is no way to establish whether this is true. Paulson may say that he is psychologically devastated by his loss, and that his unhappiness far outweighs the increased happiness of the woman and her children. We just do not have any way of measuring such subjective feelings and we do not have any way of comparing them. How would you persuade Ebenezer Scrooge, before the visitations of the three spirits of Christmas, that he should pay Bob Cratchit more?

4. Before you happily endorse the transfer of income from Paulson to the woman and her children you should ask yourself whether you would be willing to transfer \$1,000 of your income to the destitute family. We are often keen to redistribute other people's money but reluctant to offer our money in its place.¹¹

⁹ The recent micro text, *Microeconomics* by Daron Acemoglu – the Killian Chair of Economics at MIT, David Laibson – the Goldman Chair of Economics at Harvard and John List – the Livingston Chair of Economics and Chairman of the Department of Economics at Chicago, is 425 pages long and does not mention income distribution even in passing.

¹⁰ Utility is the term economists use to refer to people's subjective wellbeing, how well off they feel.

¹¹ If you make \$16,000 or more per year then you are in the top 10% of the world's incomes and if you make \$30,000 per year you are in the top 3.7% of the world's incomes; perhaps you should transfer a substantial part of your income to persons in a LDC.

5. If interpersonal comparisons of utility are ruled out there is no valid economic basis for the government to redistribute income and/or wealth. Redistribution is a political issue, not an economic one. Economists therefore make a careful distinction between policies that are concerned with *economic efficiency* (that are concerned with the size of the economic pie) and policies that are concerned with *equity* (that are concerned with how the economic pie is divided up). Almost all economists concentrate their attention on efficiency. Of course, this decision implicitly supports the status quo; the existing distribution of income and wealth becomes something that is simply accepted. As we will see in subsequent lectures the situation is even worse since economists argue that all income distributions are equally efficient.¹²

6. Income redistribution is usually achieved by progressive income taxation. Economists are inclined to concentrate on the disincentive effects of high marginal tax rates. However, there does not appear to be any obvious relationship between high marginal tax rates and economic growth. As we will see below marginal income tax rates were very high compared with 2021 during periods in which the US achieved high rates of growth. Marginal tax rates (what you pay on the last dollar earned) were very high until the Reagan years. The marginal rates were primarily reduced in Republican administrations. The rates during what is called below the Golden Age of the middle class (1945-1980) were very high, comparable to Western European rates even Nordic rates.

¹² In a review of Picketty's "*Capital in the Twenty-First Century*", Paul Krugman wrote: "Before this revolution, [the work of Picketty and Saez discussed below] most discussions of economic disparity more or less ignored the very rich. Some economists (not to mention politicians) tried to shout down any mention of inequality at all: "Of the tendencies that are harmful to sound economics, the most seductive, and in my opinion the most poisonous, is to focus on questions of distribution," declared Robert Lucas Jr. of the University of Chicago, the most influential macroeconomist of his generation, in 2004.

Historical Highest Marginal Income Tax Rates

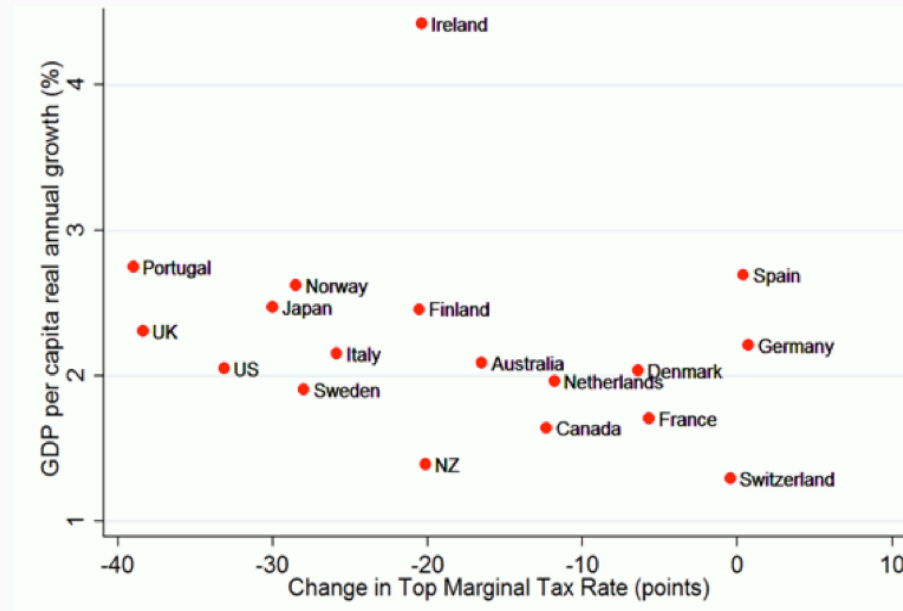
Year	Top Marginal Rate	Year	Top Marginal Rate	Year	Top Marginal Rate
1913	7.00%	1948	82.13%	1983	50.00%
1914	7.00%	1949	82.13%	1984	50.00%
1915	7.00%	1950	84.36%	1985	50.00%
1916	15.00%	1951	91.00%	1986	50.00%
1917	67.00%	1952	92.00%	1987	38.50%
1918	77.00%	1953	92.00%	1988	28.00%
1919	73.00%	1954	91.00%	1989	28.00%
1920	73.00%	1955	91.00%	1990	28.00%
1921	73.00%	1956	91.00%	1991	31.00%
1922	58.00%	1957	91.00%	1992	31.00%
1923	43.50%	1958	91.00%	1993	39.60%
1924	46.00%	1959	91.00%	1994	39.60%
1925	25.00%	1960	91.00%	1995	39.60%
1926	25.00%	1961	91.00%	1996	39.60%
1927	25.00%	1962	91.00%	1997	39.60%
1928	25.00%	1963	91.00%	1998	39.60%
1929	24.00%	1964	77.00%	1999	39.60%
1930	25.00%	1965	70.00%	2000	39.60%
1931	25.00%	1966	70.00%	2001	39.10%
1932	63.00%	1967	70.00%	2002	38.60%
1933	63.00%	1968	75.25%	2003	35.00%
1934	63.00%	1969	77.00%	2004	35.00%
1935	63.00%	1970	71.75%	2005	35.00%
1936	79.00%	1971	70.00%	2006	35.00%
1937	79.00%	1972	70.00%	2007	35.00%
1938	79.00%	1973	70.00%	2008	35.00%
1939	79.00%	1974	70.00%	2009	35.00%
1940	81.10%	1975	70.00%	2010	35.00%
1941	81.00%	1976	70.00%	2011	35.00%
1942	88.00%	1977	70.00%	2012	35.00%
1943	88.00%	1978	70.00%	2013	39.60%
1944	94.00%	1979	70.00%	2014	39.60%
1945	94.00%	1980	70.00%	2015	39.60%
1946	86.45%	1981	69.13%	2016	39.60%
1947	86.45%	1982	50.00%	2017	39.60%
				2018	37.00%

Note: This table contains a number of simplifications and ignores a number of factors, such as a maximum tax on earned income of 50 percent when the top rate was 70 percent and the current increase in rates due to income-related reductions in value of itemized deductions. Perhaps most importantly, it ignores the large increase in percentage of returns that were subject to this top rate.

Sources: Eugene Steuerle, The Urban Institute; Joseph Pechman, Federal Tax Policy; Joint Committee on Taxation, Summary of Conference Agreement on the Jobs and Growth Tax Relief Reconciliation Act of 2003, JCX-54-03, May 22, 2003; IRS Revenue Procedures, various years.

And the figure below does not to show any international evidence of correlations between marginal tax rates and rates of growth of GDP_{PC}.

Figure 2. GDP-per-capita growth rates and top marginal tax rates since the 1970s



Note: The Figure depicts the average real GDP-per-capita annual growth rate from 1975-9 to 2004-8 against the change in top marginal tax rates from 1975-9 to 2004-(exact years are the same as Figure 1 and vary slightly by countries). The correlation is virtually zero and insignificant suggesting that cuts in top tax rates do not lead to higher economic growth. *Source:* Piketty *et al* (2011), Figure 4B.

7. The disincentive effects of high marginal tax rates are supposed to arise from entrepreneurs and “growth generators” losing interest in making money if the government takes a large slice of the next dollar they make. But Bill Gates and the other tech billionaires would probably have worked just as hard even if they had to pay 70% of their earnings in taxes. As my brother-in-law used to say: “It isn’t about money it’s about winning, money is just a way of keeping score.” Indeed, some people might work harder if their objective was to take home as much income as they possibly could and the government took away a larger share of what they earned.¹³

3 ECONOMISTS’ THEORY OF INCOME DISTRIBUTION.

1. The standard theory of distribution is based on the theory of supply and demand. Wages (and other income payments) are prices and depend on the

¹³ <http://www.igmchicago.org/surveys/top-marginal-tax-rates>

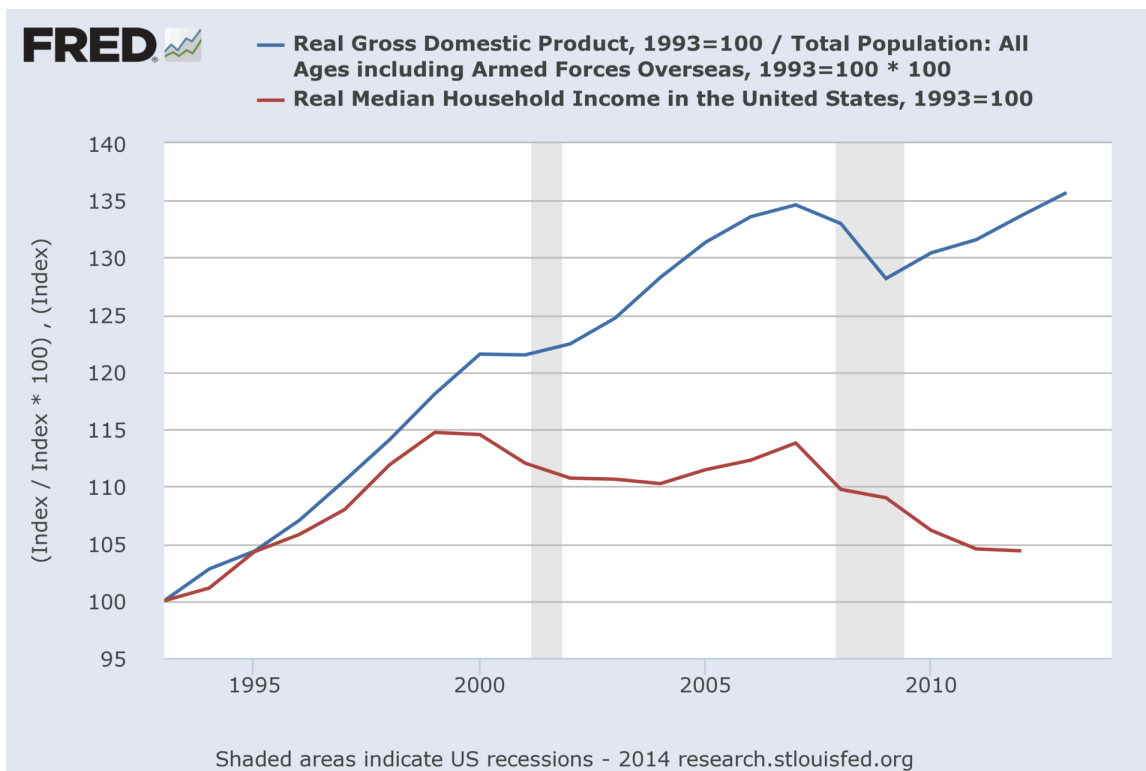
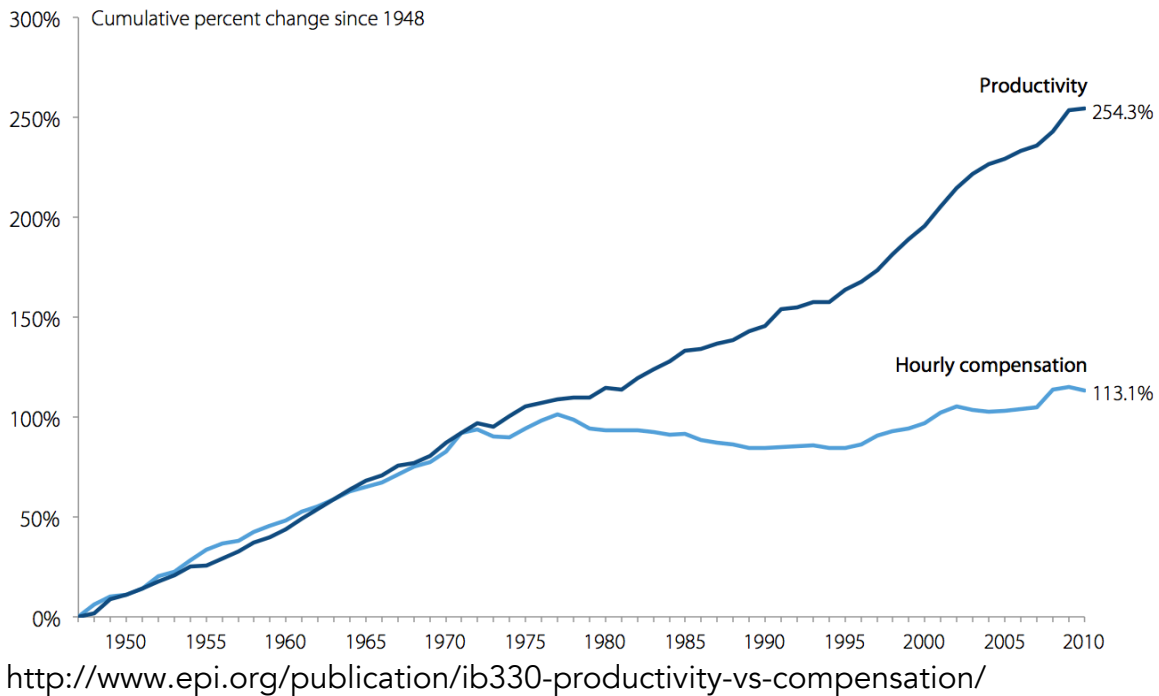
demand for labor (which is determined by profit maximization) and the supply of labor (which is determined by our willingness to trade-off leisure for goods and services). The so-called marginal productivity theory of income essentially says that workers are paid what they are “worth” – the value of their marginal product.¹⁴ In other words MR from labor must equal MC of labor.

2. However, although as a first approximation we might be willing to allow that labor markets are reasonably competitive (notice that I have switched from discussing a single labor market to a (very large) set of labor markets). It is not at all clear that labor can be analyzed as if it were a can of beans. Humans are not inanimate objects and, unlike cans of beans, we can, to some extent, bargain over the terms and conditions of employment. The study of income and how it is distributed cannot be divorced from the institutional contexts in which we bargain that have developed over many years.¹⁵

3. According to the theory there ought to be a relatively tight correlation between earnings and labor productivity. But here is some data that suggests that there has been a huge disconnect between productivity and hourly compensation since the mid-1970s. The timing of the separation of real wages from productivity is significantly close to when the income distribution becomes less equal.

¹⁴ The wage (including benefits) would be equal to the value of the Marginal Revenue Product (MRP) of labor (the change in total revenue from selling the output of the last hour worked $((\Delta TR/\Delta Q)/(\Delta Q/\Delta L) = \Delta TR/\Delta L)$). But under perfect competition this is equivalent to saying that *the worker is paid a real wage* (w/P – her nominal wage and benefits per hour worked deflated by the price level to get the real purchasing power of those dollars = the MC of hiring the additional unit of labor) *that is exactly equal to her marginal revenue product*; which under perfect competition is $P \times (\Delta Q/\Delta L)$, since under perfect competition, and only under perfect competition, $MR = P$.

¹⁵ The market for top executives is not especially competitive. There seems to be little relation between executive compensation and the profitability of the firms they are running. It is also a well-known fact that secretaries in firms that pay very high salaries to their top executives get better pay and benefits than secretaries in firms that compensate their higher management less well. Pay and earnings have a social dimension as well as an economic one.



As you can see from the second graph (using different but similar data) that disconnect has become worse in recent years.

3. Thomas Picketty in an interview in the Winter 2014 issue of *Potemkin* (a left-wing magazine) has said that he really rejects the marginal productivity theory across the board not simply for the top 1% as he had argued in his book *Capital in the Twentieth Century*. In my far from humble opinion the marginal productivity theory's major shortcoming is that it assumes that firms can determine the marginal product of their individual employees. However, most jobs involve the interactions of many workers and it is difficult to see how their individual contributions to output can be disentangled from those of their fellow workers (or from the contributions to their output that comes from the capital – buildings and machines – that they work with). My son manages several teams of workers who are all working on the same project. How can Oracle determine what Martin's marginal product is? How does the university work out what is the addition to its output when I teach for an extra hour?¹⁶

4. The marginal productivity theory fails to pass what I think of as the "How exactly" test (as does much of what is taught in economics courses): the "How exactly" test requires that we should be able to explain, step by step, exactly how some number is to be calculated.

5. Clearly the return to labor has something to do with the supply and demand for labor, and the demand for labor has something to do with what firms believe their new hires will add to the profitability of the firms, but it also depends on bargaining and convention, neither of which are taken account of in the marginal productivity theory.

6. The word distribution has several usages in economics. Distribution may refer to "factor shares" (how much income goes to labor, capital, land, entrepreneurs), how much income goes to persons (how much I get or you get), how much income goes to households (how much my wife and I get compared to what my son and his wife and two children get). I will largely discuss the work of Picketty and Saez and although I will talk about households the data really refers to tax units, but there is a reasonable correlation between tax units and households.

7. There are significant differences between before tax and after tax distributions, between individual and household distributions, and whether income includes transfer payments such as Food Stamps and Social Security, and adjustments have to be made to allow for changes in household

¹⁶ And I can't actually teach just one extra hour, since the CBE courses are two-hour courses.

composition although none of this has much impact at the upper tail of the income distribution.¹⁷

8. Picketty's book referred to below is largely concerned with "factor shares", the amount of income going to land, labor, capital and entrepreneurs, specifically the shares of labor and capital. Before the 1860's "factor shares" was the dominant concern of economics, or Political Economy as it was known in those days.¹⁸

9. Note that when we are talking about income distribution, we are talking about household income not GDP, and in 2020 household income will be about \$16t not \$20t.

4 THE FACTS OF INCOME DISTRIBUTION.

1 AVERAGES.

1. Given a set of numbers, which is how we start to build an income distribution, we can calculate at least three different averages that summarize that set of numbers. The *mode* is the number that occurs most frequently, the *mean* – what is usually meant when the word average is used – is the sum of the numbers divided by how many numbers are in the set, and the *median* is the number in the middle of the set when they are arranged in order of magnitude starting with the smallest number. (If there is an even number of numbers in the set, we take the average of the two middle numbers.)

For example: let the numbers be {1, 2, 2, 2, 4, 5, 5}. Then the *mode* is 2 because it occurs three times but no other number occurs more than twice. The *mean* is $1+2+2+2+4+5+5 = 21$ divided by 7 (there are seven numbers) which equals 3. The *median* is the middle number, which is the fourth one, that is, 2.

The mean is not a good average for a skewed – non-symmetrical distribution – because the mean is strongly influenced by the extremes at the end(s) of the set. Say that the numbers were {1,2,2,2,4,5,131} then the mode is still 2, the median

¹⁷ Data reported by the Organisation for Economic Cooperation and Development (OECD) suggests that the US income after tax and transfers is lower than any of the other OECD countries (which include all of the major Advanced Industrial Countries).

¹⁸ I taught in the department of Political Economy when I was on the faculty at the University of Glasgow – where Adam Smith had taught two hundred years earlier.

is still 2, but the mean is $147/7 = 21$, seven times larger than the previous mean, and larger than all but one of the seven numbers.

2 US INCOME DISTRIBUTION 2016.¹⁹

1. GDPpc assumes that GDP (which is more inclusive than household income) is perfectly evenly distributed – everyone gets a one 333 millionth share. However, *income distributions are highly skewed* (they are not "bell" shaped curves but are *high on the left – lots of low incomes – and have long thin tails stretching to the right because there are some extraordinarily high incomes*). The first graph shows the 2016 distribution adjusted for family size (families are getting smaller). The second graph below shows the estimated US household income distribution in 2014 in \$5,000 increments. Notice that the distribution has the distinctive long right-hand tail even though the distribution is truncated on the right to get it onto a reasonable scale. If the right end of this distribution cuts off at \$250,000 then someone making \$1m per year would be at a point four times the width of the graph, someone making \$10m would be at a point 40 times the width of the graph, and someone making \$1b a year would be at a point 4,000 times the width of the graph and so Paulson in his best year, 2010, would be at a point 20,000 times the width of the graph. (The graph is 5.5 inches wide and so Paulson would be about 3.5 miles away from the left axis.) Paulson made 100,000 times the median income in 2010; if you earned the median income in 2010 then it would take you 100,000 years to have made as much as Paulson did in one year.

In 2019

9.1% of households had incomes less than \$15,000

8% had incomes between \$15k and \$25k

8.3% had incomes between \$25k and \$35k

11.7% had incomes between \$35k and \$50k (37.1% with incomes less than \$50k)

16.5% had incomes between \$50k and \$75k

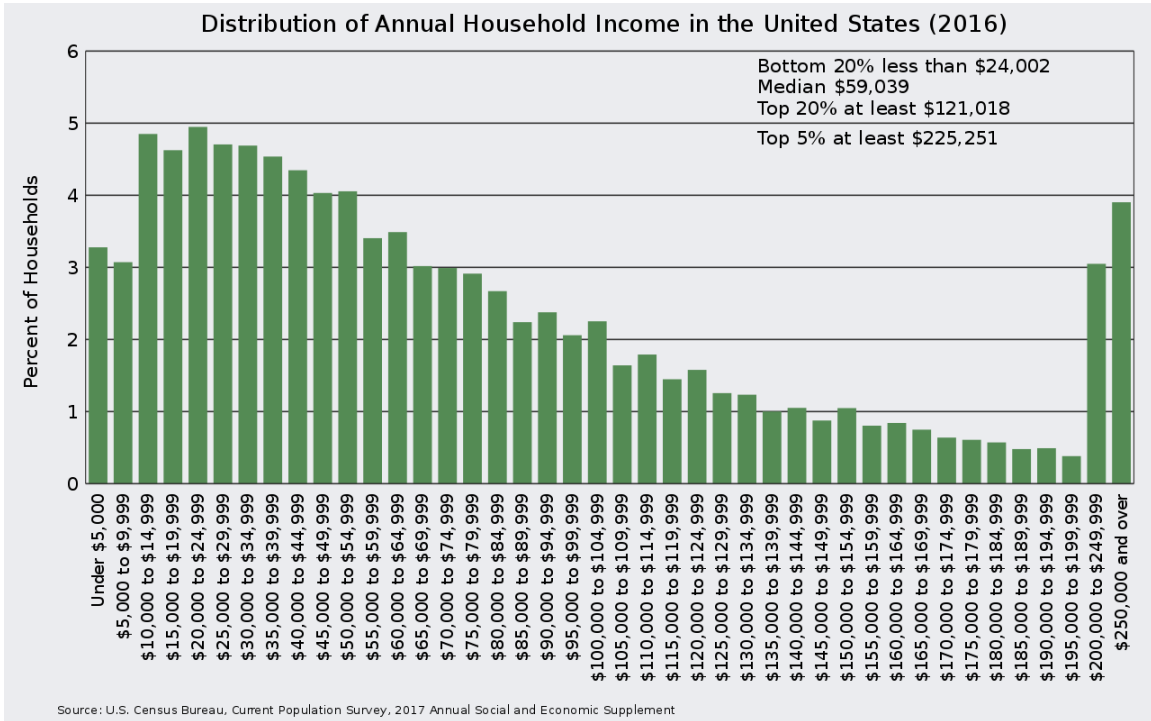
12.3% had incomes between \$75k and \$100k

15.5% had incomes between \$100k and \$150k

8.3% had incomes between \$150k and \$200k

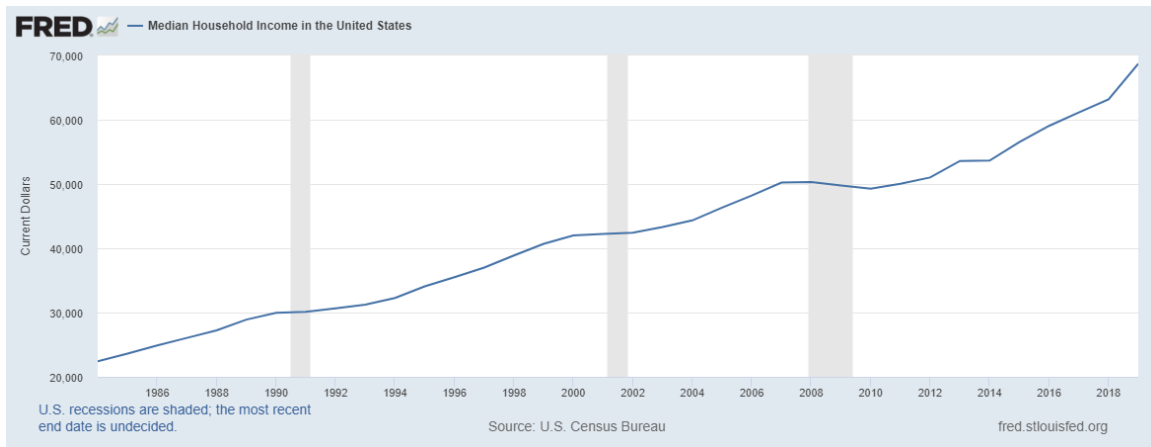
10.3 % had incomes over \$200k

¹⁹ 2014 is the most recent year for which I have a good image of the US income distribution. I give summary data for 2019 below.



In 2020 median household income in the US was \$62k, mean income was \$88k, and the mode about \$30k. The median is the best average when thinking about highly skewed distributions such as the distributions of income and wealth. In 2018 Asians had median incomes of about \$87k, whites \$66k, Blacks \$42k. (Indian Americans \$127k.)

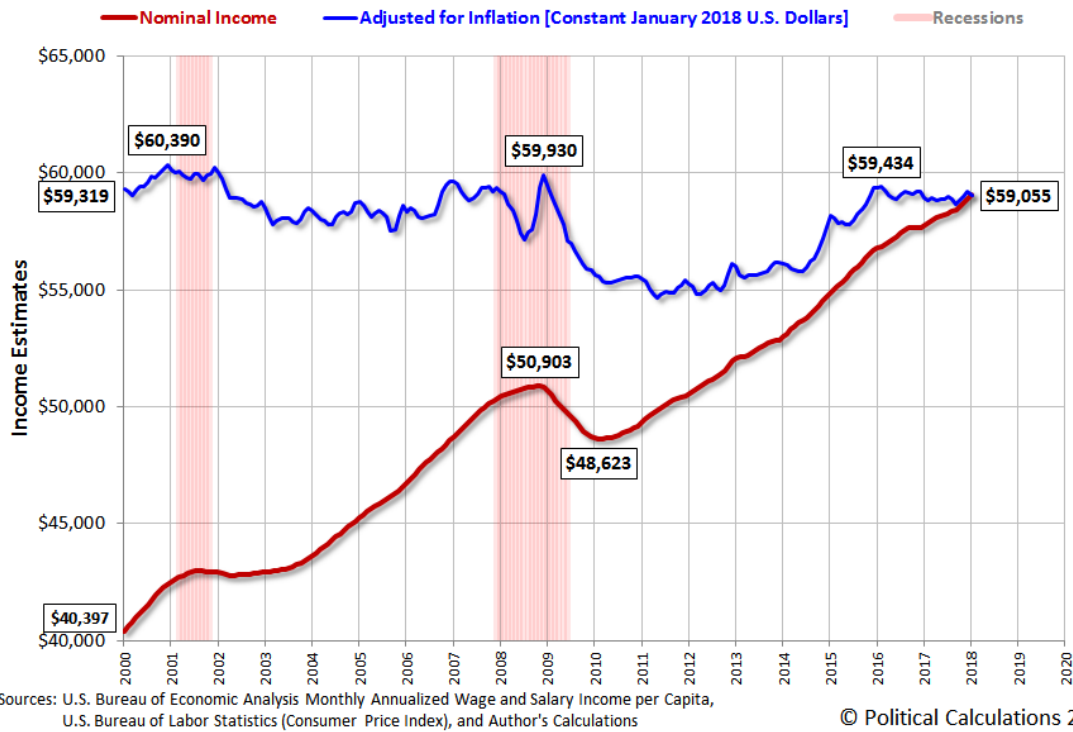
https://en.wikipedia.org/wiki/List_of_ethnic_groups_in_the_United_States_by_household_income



3 US AVERAGE AND QUINTILE INCOMES

1. The *modal income* (the most frequently observed income) was about **\$22,000** in 2014, the *mean* (the average income – total income divided by the number of households) was about **\$70,000**, and the *median* (which, divides the distribution into two halves) was **\$54,000**: half the households had incomes less than \$54,000 and half had incomes larger than \$54,000 in 2014. The mean is pulled rightwards by high incomes (what would happen to the class mean income if a hedge fund manager decided to come to our class?) The median is the best average to summarize a skewed distribution. Nominal and real incomes since 2000 are shown in the next figure.

Median Household Income in the 21st Century: Nominal and Real Estimates, January 2000 to January 2018



2. Before 1993 most economists working on income distribution used survey data and that data seldom snared people with very high incomes and when the surveys did pick-up high-income people the observations were often treated as outliers. Almost all of this work divided the samples into *quintiles*; fifths. There is not a lot of variation between the quintile shares in the 1960s and the 2010s although the top fifth were clearly getting larger shares.²⁰

In 2019 the lowest fifth of households (ranked by income) received 3.2% of total income, the second lowest fifth of households received 8.4% of total income (and so the bottom 40% of households received 12% of income), the middle fifth of households received 14.3% of total income (and so the bottom 60% received 26.6% of income), the second to highest fifth of households received 23.0% of income (and so the bottom 80% received slightly less than half of total income, 49.8% of income), and the top fifth of households received 51.1% of total income.

3. I have plotted this data in Figure 1. The horizontal axis shows the 2019 US

²⁰ See this link for data between 1970 and 2017:

<https://www.statista.com/statistics/203247/shares-of-household-income-of-quintiles-in-the-us/>.

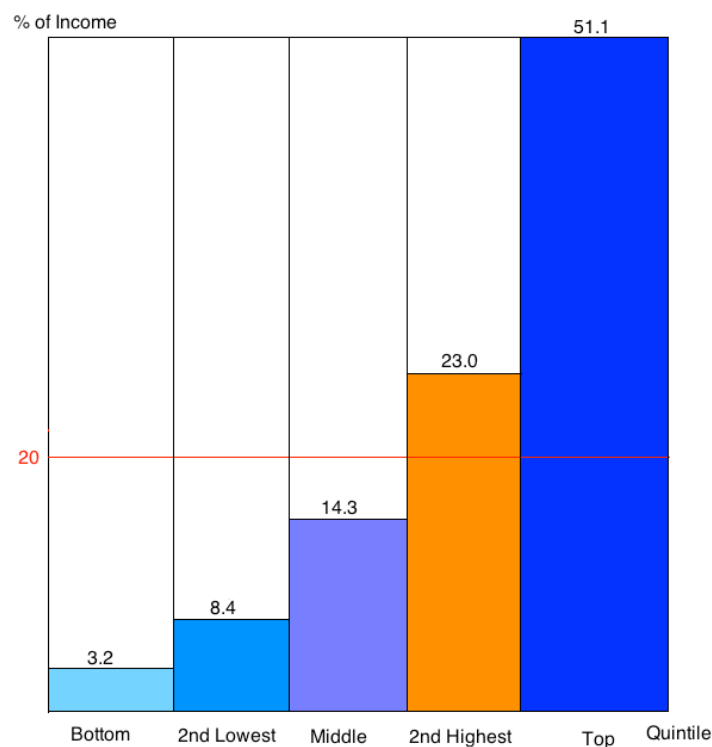


Figure 1

quintiles (which are usually labeled 1 for the lowest 20% and 5 for the highest 20%). The horizontal red line indicates where each quintile bar would be if each quintile received 20% of income. The vertical axis shows the percentage of income that is actually received by each quintile (the percentages are given at the top of each quintile column.) The top 5% received 22.3% of income almost as much as the lowest 45% of households.²¹

4 LORENZ CURVES AND GINI COEFFICIENTS

1. Graphs are easy to understand (if you are an economist!) but even an economist would have difficulty in determining which of the two distributions in Figure 2 was more equal and in practice the distribution plots may cross. In any event the plot of the income distribution is not suitable for theoretical work.

²¹ <https://www.taxpolicycenter.org/statistics/household-income-quintiles>

What we need is a simple numerical measure of the extent of income

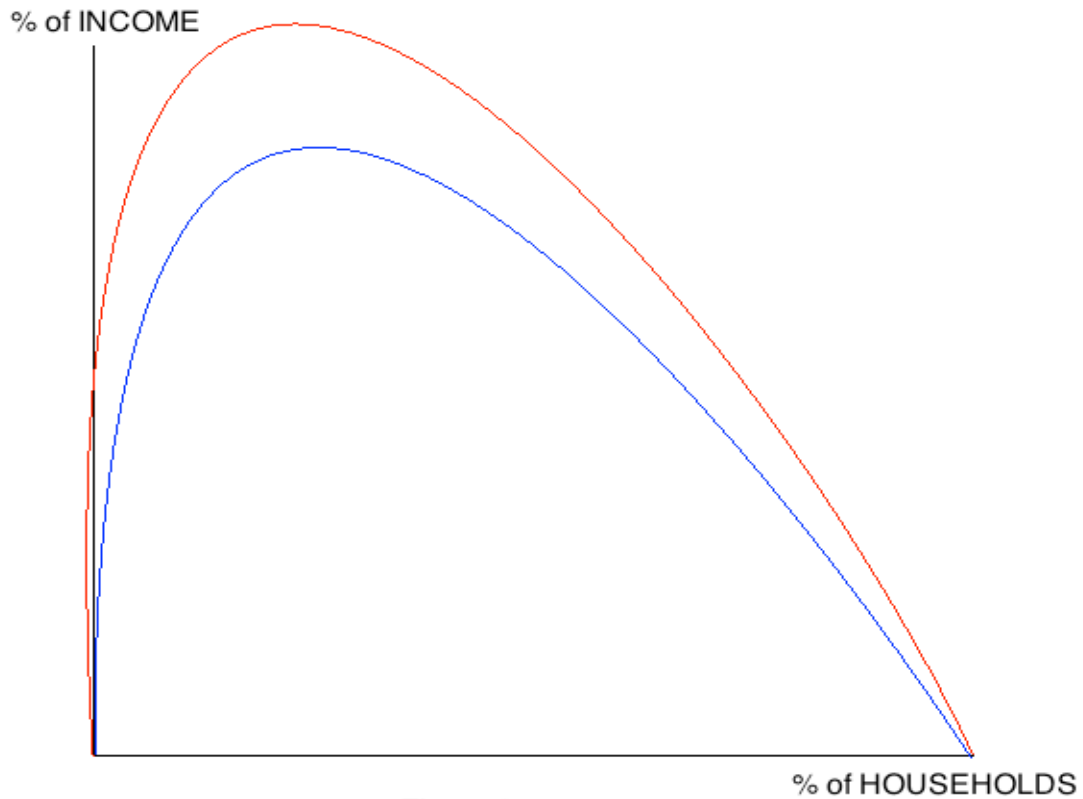
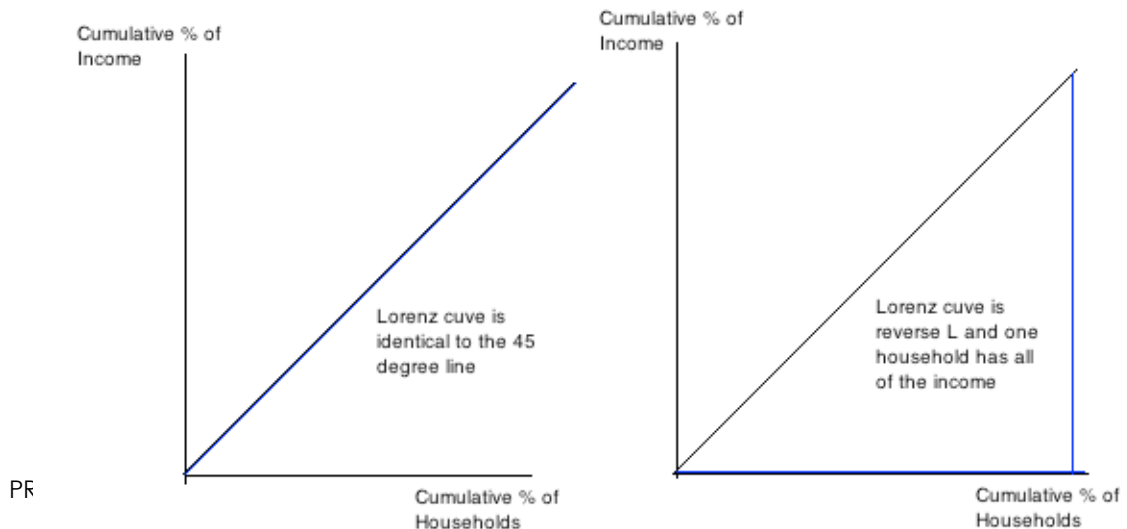


Figure 2

inequality, something that makes it easy to compare two different income distributions and determine which one is more equal. For this purpose, economists use a measure called the **Gini coefficient** (GC). But in order to understand Gini coefficients you need to know what a Lorenz curve is.

2. A **Lorenz curve** plots the *cumulative* percentage of households on the horizontal axis (lowest income households to the left and highest income



households to the right) and the *cumulative* percentage share of income on the vertical axis.

On a 45° line the horizontal coordinate and the vertical coordinate have the same value, so along such a line the cumulative percentage of households (the horizontal distance) and the cumulative percentage of income they receive (the distance along the vertical axis) would have the same numerical value; the lowest 1% of households would receive 1% of income, the lowest 26% of households would receive 26%, the lowest 73% of households would receive 73%, the lowest 98.7% of households would receive 98.7% of income, etc.

If the distribution of income was **perfectly equal** (every household has exactly the same share of income) then the Lorenz curve would coincide with the 45° line; at any point the cumulative income would be the same as the cumulative number of households. (See Left hand figure.)

A **perfectly unequal** income distribution (the Sleeman household has all of the income!) would have a Lorenz curve that was a reverse-L shape; the Lorenz curve would be the horizontal axis up to the last household, the one that has all of the income, and then would be a vertical line up to the 45° line, with the last household keeping 100% of the income. (See Right hand figure.)

If we plot the actual shares (you could use the quintiles from 4.3 above) then they will trace out a curve below the 45° line; the curve of the actual shares is called the Lorenz curve. (See Figure 3.)

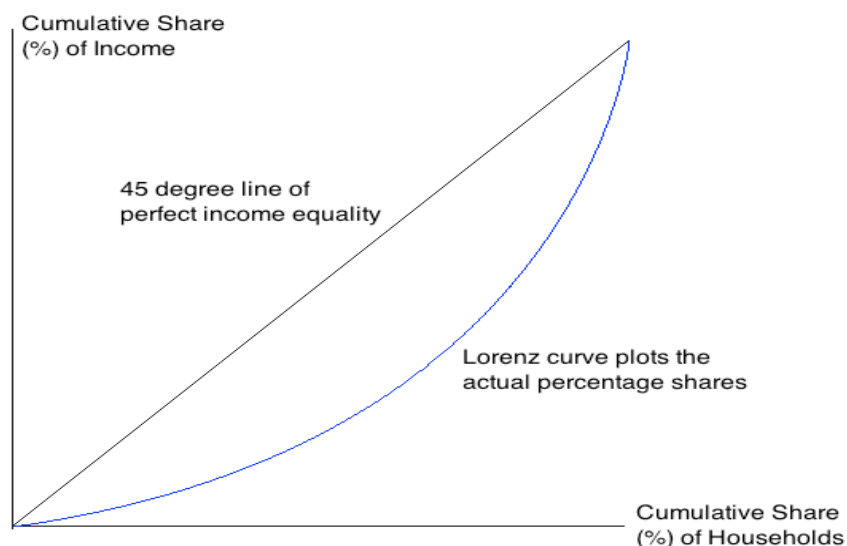


Figure 3

The calculation of the Gini coefficient is illustrated in Figure 4. If we calculate the ratio of the area *above* the Lorenz curve and *below* the 45° line (the dark blue area marked with the red A) to the area of the triangle below the 45° line ($A + B = T$) we get what is called the Gini coefficient (GC) for the distribution. That is the $GC = A/T = A/(A+B)$ (see Figure 4). The GC is a number between 0 and 1. If there is a **perfectly equal income distribution**, everyone in the population (assume there are N people) gets exactly one Nth of the total income, then the **GC = 0** (because $A = 0$ – there is no difference between the Lorenz curve and the 45° line). If there was a **perfectly unequal distribution**, one household has all of the income, then $B = 0$ and the **GC = 1** (the Lorenz curve is the reversed-L shape).

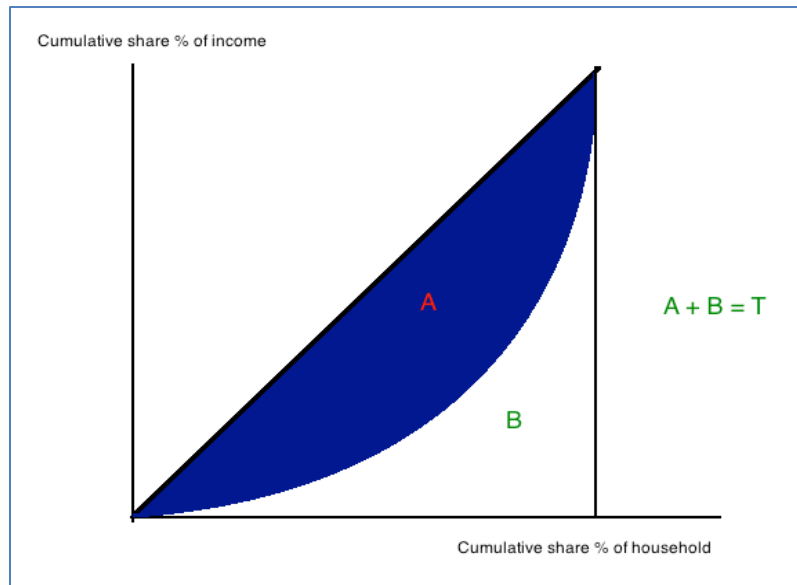
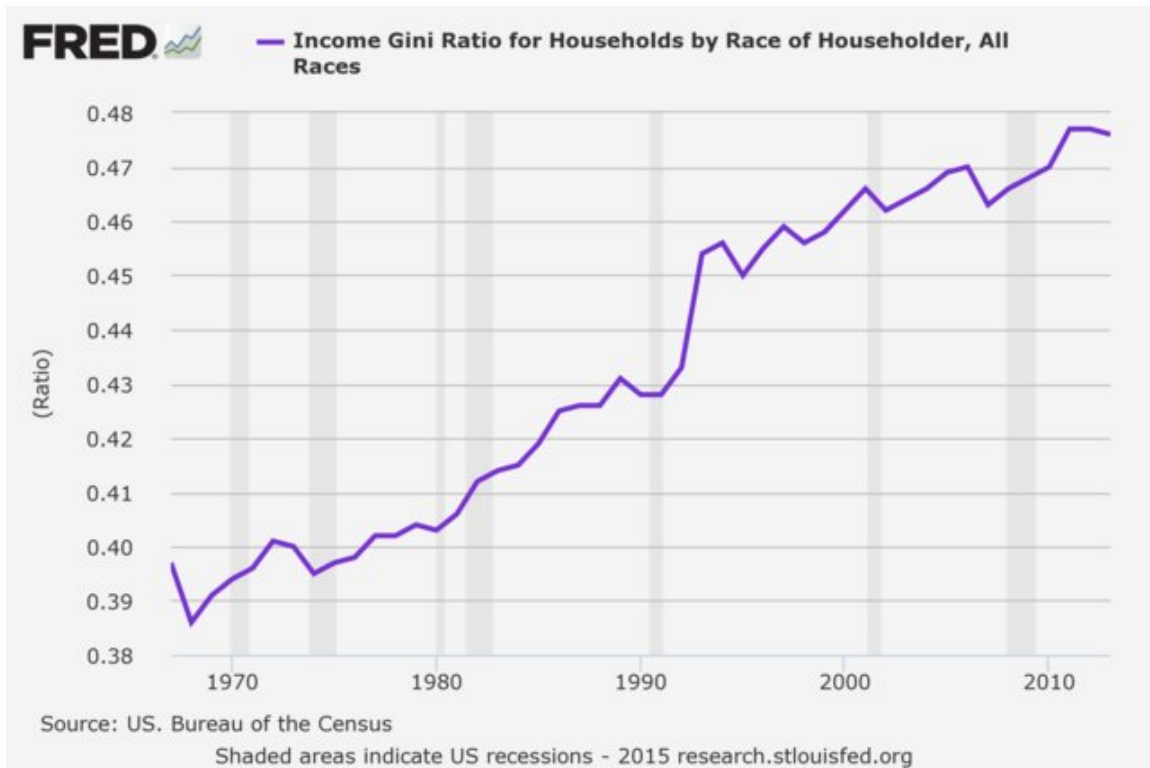


Figure 4

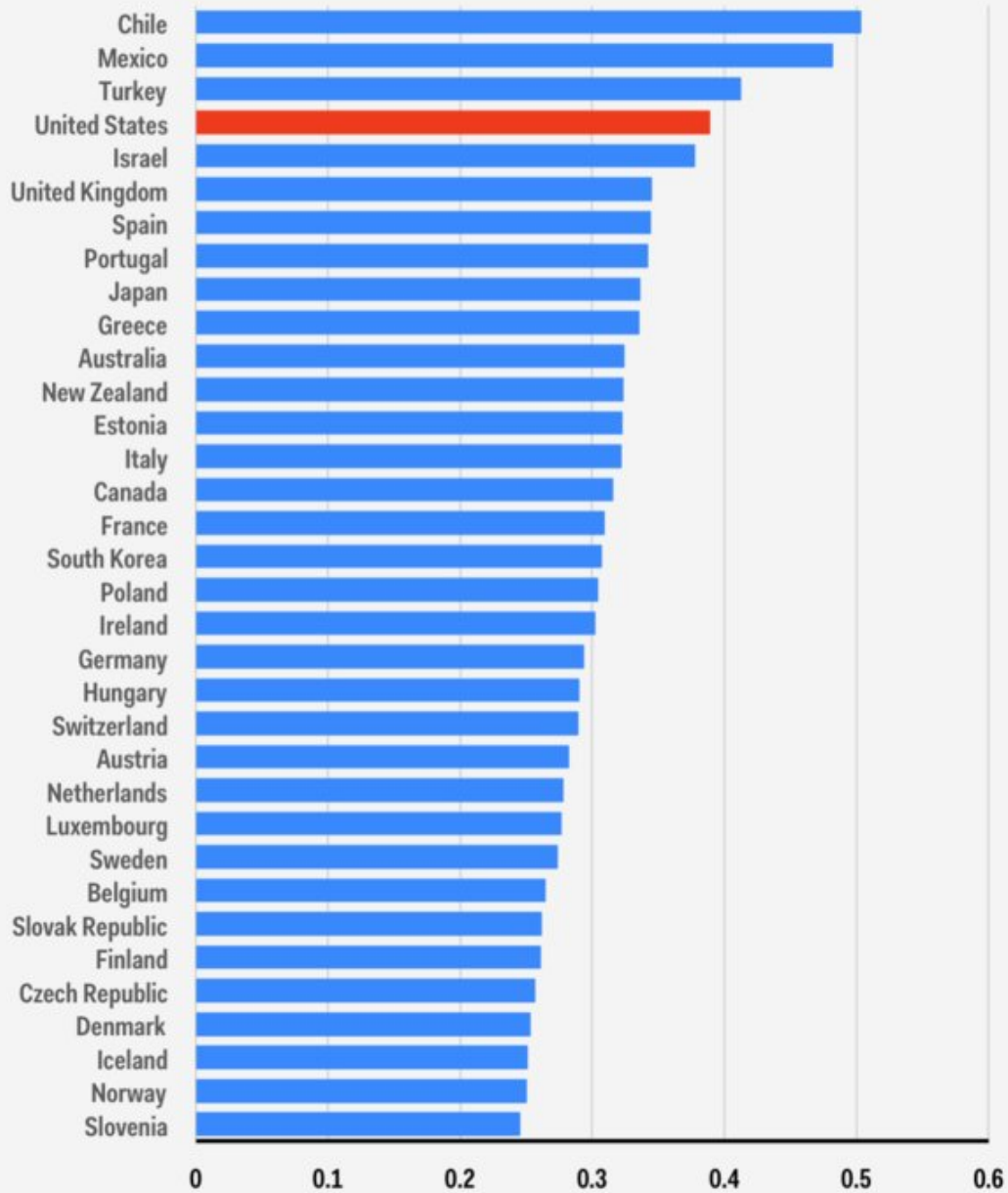
A GC of 0.20 would mean that that country had a very low level of inequality; a GC of 0.80 would indicate a very high level of inequality. A number around 0.50 indicates a very high level of inequality for a developed country. LDCs usually have very unequal income distributions and therefore have GCs close to 1. The Census Bureau started to calculate GCs in 1947. The GC for the US in 1950 was about 0.40, by 1968 it dropped to its lowest recorded level 0.386, by 1975 it was 0.397 by 1985 it was 0.419, by 1990 about 0.43, by 2000 about 0.46, and by 2014 it was 0.476; our income distribution has become progressively less equal over the last fifty years.



This phenomenon of increasing inequality over time, especially since the 1970s, is a worldwide phenomenon although more pronounced in the US than other advanced industrialized countries. Even Sweden, which has the most equal income distribution amongst advanced industrialized countries, has had a progressively more inequality since 1980. We do not have good data to make international comparisons of GCs because the data collection, definition, and quality all vary from country to country. Here are GCs for various countries (the data are mainly for 2007, (they would be very similar in 2017). but some are earlier than this – *this data is of very variable quality*). Sweden had the lowest Gini coefficient 0.23, Norway's GC was 0.25, Germany's 0.27, Denmark's 0.29, Canada 0.30, South Korea's 0.31, UK 0.34, India 0.37(?), Japan 0.38, China 0.41, Russia 0.42, Nigeria 0.44 and the US's GC was 0.45. Namibia with a GC of 0.71 had the least equal distribution of income.

Here is some Wiki data taking into account taxes and transfer payments, such as social security.

Gini ratios in OECD countries, after taxes and transfers



Source: OECD

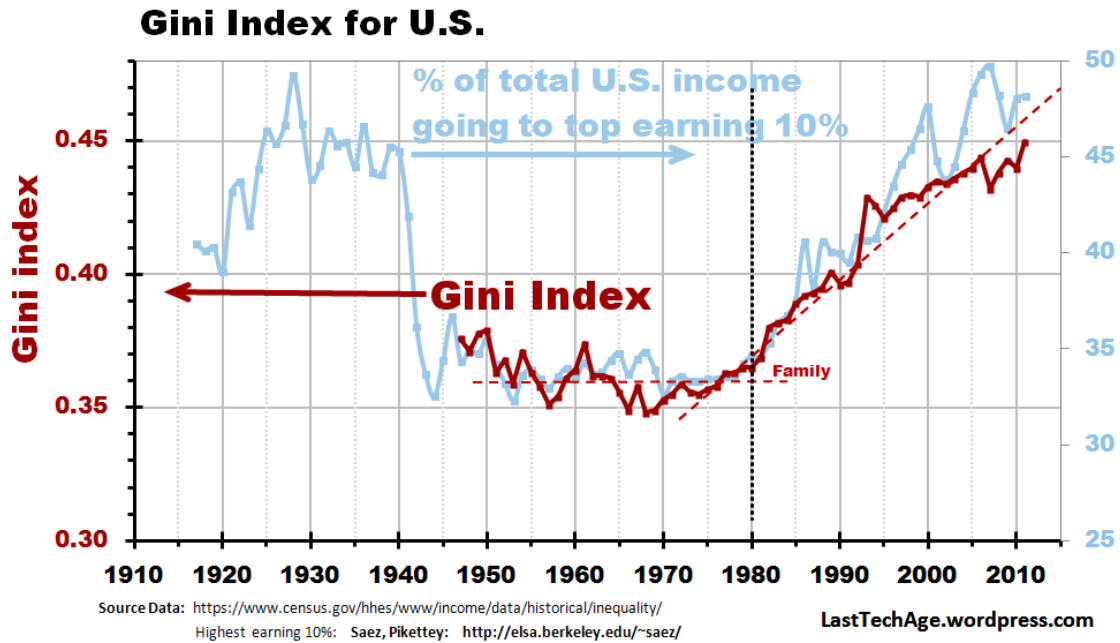
BUSINESS INSIDER

<http://conversableeconomist.blogspot.com/2011/11/lorenz-curves-and-gini-coefficients-cbo.html>

http://en.wikipedia.org/wiki/List_of_countries_by_income_inequality

<http://www.theatlantic.com/international/archive/2011/09/map-us-ranks-near-the-bottom-on-income-inequality/245315/>

If we plot the Gini coefficient (available only since 1947) and the share of income going to the top 10% of households over time we see that they both suggest that the distribution of income has become more unequal since the about 1980.



5 INCOME INEQUALITY IN THE US 1913-2013

1 PICKETTY AND SAEZ

1. The few textbooks that discuss income distribution still tend to do so using quintiles. When you look at quintiles it is clear that the top quintile has a much larger share of income than 20%, in the US its share is about 50%. But that figure, striking though it is – the top 20% of households receive as much income each year as the bottom 80% – actually hides the extent of income inequality because most of the inequality occurs inside that upper quintile.



The two gentlemen in the photographs are (on the right) Thomas Piketty (born in Clichy, France, in May 1971 and trained at the École Normale Supérieure and the LSE), and (on the left) Emmanuel Saez (born in Spain in November 1972 and trained at the École Normale Supérieure and MIT). Saez won the John Bates Clark Medal in 2009. He is professor of Economics at Berkeley, and in 2010 received a MacArthur “genius” award. Piketty is Professor and Director of studies at the École des Hautes Études en Sciences Sociales and Professor and Director at the Paris School of Economics. Piketty working with Peter Diamond published a paper that argued that the optimal top marginal tax rate in North America should be 73%. In January 2015 Piketty turned down the Legion d’honneur²² on the grounds that he did not think that it was the government’s role to decide who is honorable! With Anthony B. Atkinson of the LSE Piketty and Saez run the World Top Incomes Database.

<http://topincomes.parisschoolofeconomics.eu/>

<file:///Users/allansleeman/Documents/%20%20%20%20ECON%20206/%20%20%20COMMENTARIES/%20FILES/CM21%20DSTRBTN/CHRTBK/The%20Chartbook%20of%20Economic%20Inequality%20%E2%80%93%20Data%20on%20Economic%20Inequality%20over%20the%20long-run.htm>

Collaborating in the late eighties and early nineties Piketty and Saez revolutionized our understanding of income inequality in the US. They looked at every income tax return from 1914 to 1993 and Saez has now extended the data to 2017. This was an immense task, involving the processing of hundreds of millions of tax returns. They have gone on to extend their work to other countries and to the distribution of wealth. What Piketty and Saez did was to show how incomes at the very top of the distribution behave. It turns out that

²² Established by Napoleon in 1802; equivalent to an English knighthood and one of the most coveted awards in France, currently there are about 95,000 holders.

the curve becomes very steep as we get to the top quintile to the top 10%, the top 1%, the top 1/10th of 1%, and the top 1/100th of 1% of incomes.

4.5.2. The next three time series plots are taken from Saez's "Striking it Richer", which updates the original series generated by Picketty and Saez (1993).

Figure 1 shows the share of income going to the top 10%, which reached a peak of 50% in 2007.

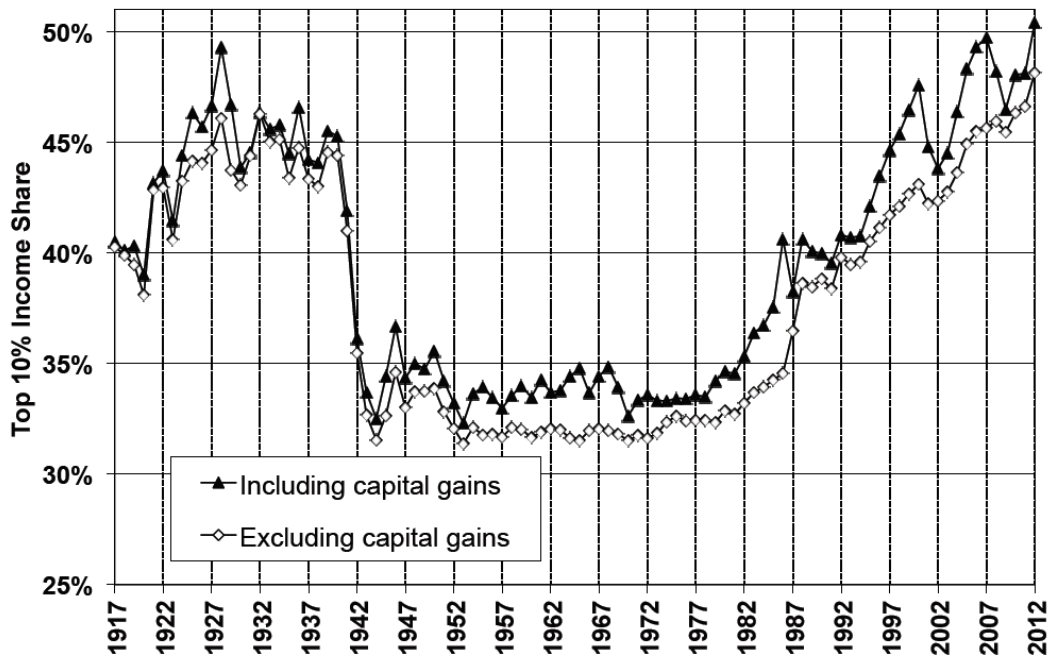


FIGURE 1
The Top Decile Income Share, 1917-2012

Source: Table A1 and Table A3, col. P90-100.
Income is defined as market income (and excludes government transfers).
In 2012, top decile includes all families with annual income above \$114,000.
2012 data based on preliminary statistics

Figure 2 shows data for the *top1%* (incomes over \$350k in 2010), which was close to 25% in both 1928 and 2007; the share going to *the next 4%* (\$150k-\$350k) rising steadily from 1943 to reach 15%+ in 2010; and *the remaining 5%* (\$108k-\$150k) who received about 12% of total income.

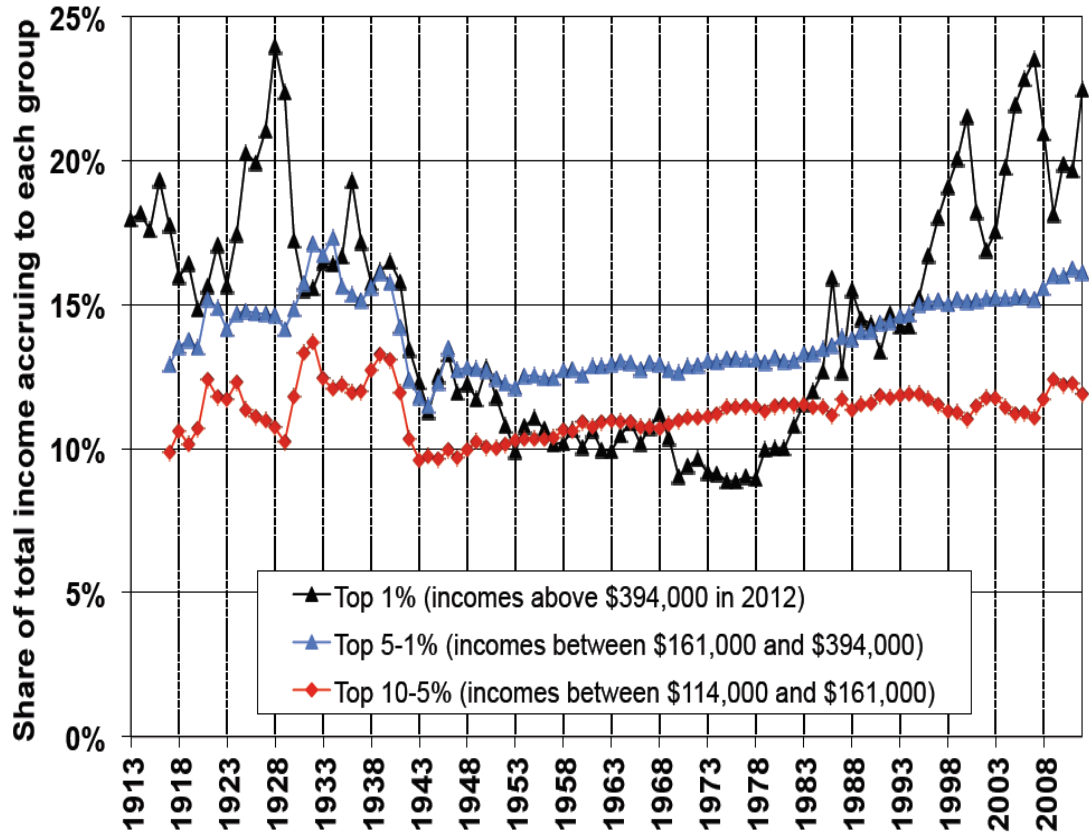


FIGURE 2

Decomposing the Top Decile US Income Share into 3 Groups, 1913-2012

Source: Table A3, cols. P90-95, P95-99, P99-100.

Income is defined as market income including capital gains.

Top 1% denotes the top percentile (families with annual income above \$394,000 in 2012)

Top 5-1% denotes the next 4% (families with annual income between \$161,000 and \$394,000 in 2012)

Top 10-5% denotes the next 5% (bottom half of the top decile, families with annual income between \$114,000 and \$161,000 in 2012).

2012 data based on preliminary statistics

Figure 3 shows the share of income going to the top 1/100th of 1% (about 15,600 households in 2007), which peaked at 6% in 2007 (minimum income in 2007 to be in this group was about \$7.8m, which is probably now – in 2017 – about \$10m).

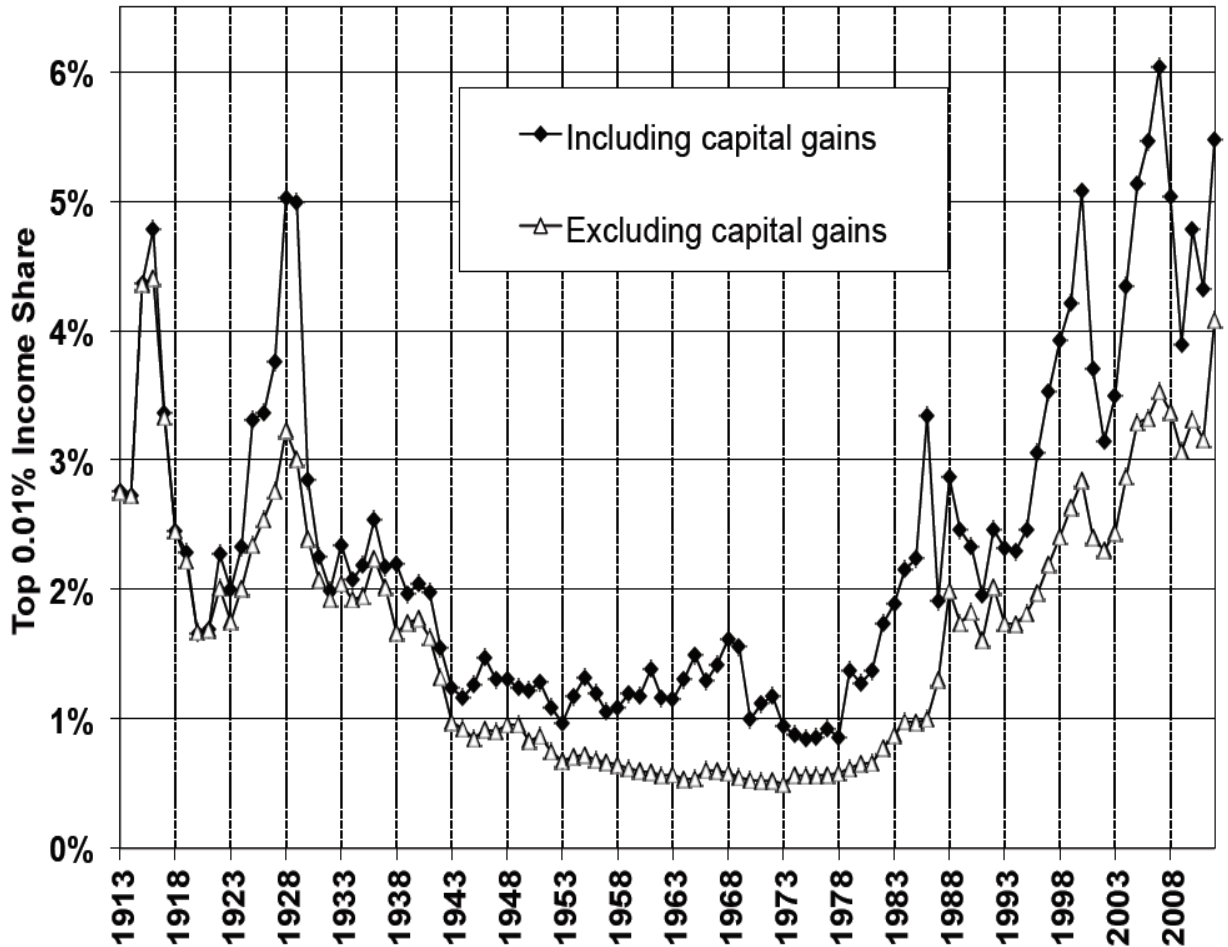


FIGURE 3
The Top 0.01% Income Share, 1913-2012

Source: Table A1 and Table A3, col. P99.99-100.

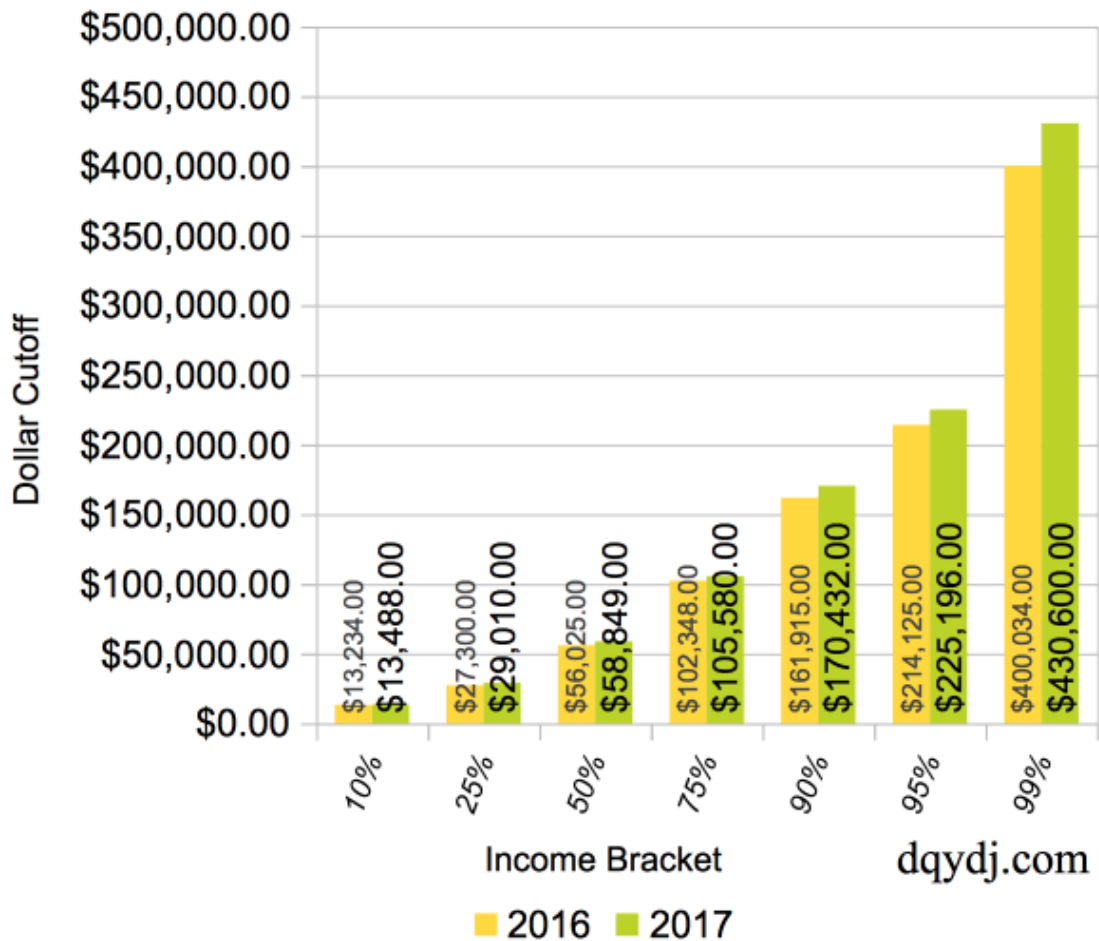
Income is defined as market income including (or excluding) capital gains.

In 2012, top .01% includes the 16,068 top families with annual income above \$10,250,000.

2012 data based on preliminary statistics

Selected Household Income Brackets 2016-2017

ASEC Data, IPUMS-CPS University of Minnesota

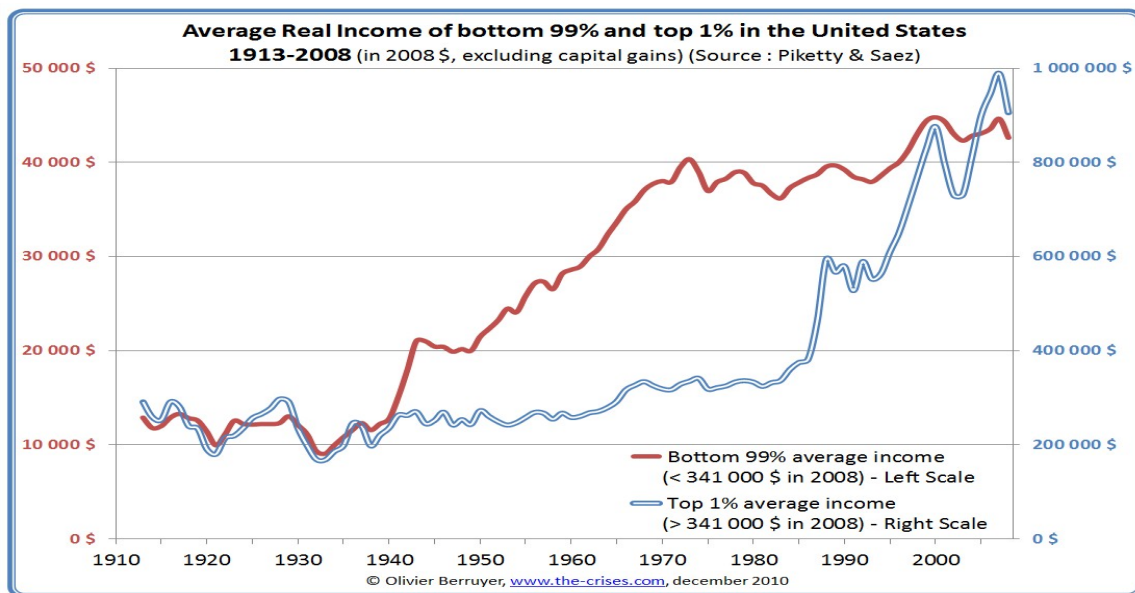
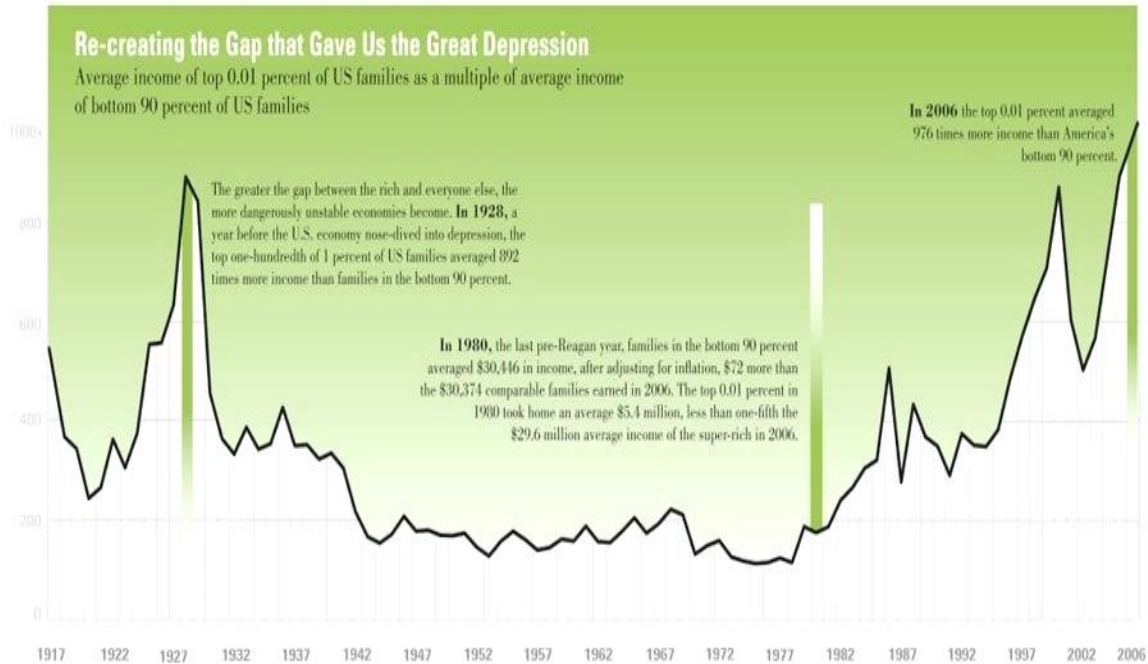


3 THE US INCOME DISTRIBUTION DATA SHOW FOUR DISTINCT EPOCHS

As you can see from the diagrams above the historical record seems to show four epochs: 1913-1929 (the year in which the stock market crashed), 1929-1947 from the Great Depression to the end of WW2, 1947-1980 the best 30 years for the middle class, 1980-2018 the boom years for top income earners.

PLUTOCRACY REBORN

A half-century ago, thoughtful Americans considered the Gilded Age ancient history. By the 1950s, robber baron fortunes no longer dominated – or dazzled – America’s political and economic landscape. But that’s all changed. The awesomely affluent haven’t just returned. Today they cast an even greater shadow.



(1) *The Gilded Age, 1913-1929.*²³ There were a small number of very rich households whose income largely came from inherited financial capital and property (economists call them rentiers), a larger, but still small, number of rich professionals (lawyers/bankers), a large number of poor households with incomes from wages, and a significant number of households in dire poverty (many older people and many working in agriculture).

(2) *The Great Depression and WW2, 1930-1947.* This was one of the most tumultuous periods in recent history. The Great Depression lasted from 1930 almost to the beginning of the US entry into WW2 in November 1941. There was massive unemployment – only 5% in 1929 but that rose dramatically in 1930 and peaked at around 23% in 1933 and stayed above 15% from 1930 to 1940. There was a huge increase in poverty, a general decrease in wage incomes, some rich people lost their fortunes but the very rich remained very rich; if you lose 90% of \$200b then you still have \$20b and the Rockefellers did not lose badly in the stock market crash. There were high levels of income taxation during the Second World War but also very high employment and large increases in benefits such as health benefits and pension plans that were used to lure workers away from other firms during that period in which there was price and wage control; it was also a period of high profits. Poverty declined and living conditions improved for millions of Americans.

(3) *The Golden Age of the Middle Class, 1947-1980.* This period saw the proportion of very rich fall as a result of higher taxes, especially on financial capital (stocks and bonds), a big increase in the size and prosperity of the "middle class", an improvement in the incomes of households at the bottom of the distribution and a decline in poverty especially amongst the elderly (largely because of the introduction of Social Security in 1938). The New Deal and WW2 saw increases in taxes and changed social attitudes towards the spending behavior of the rich. America had a huge technological and scale economy advantage during this period when there was a "dollar crisis" because Americans were able to dominate world trade during a period in which Europe and Japan were still recovering from WW2.

(4) *The Triumph of the Capitalists, 1980 to 2018.* Most gains were at the very top of the income distribution (the top 5%, 1%, 1/10th of 1%, 1/100th of 1%), with a corresponding contraction of the share of the "middle class", and virtual stagnation at the bottom. Between 1993 and 2010 52% of real income

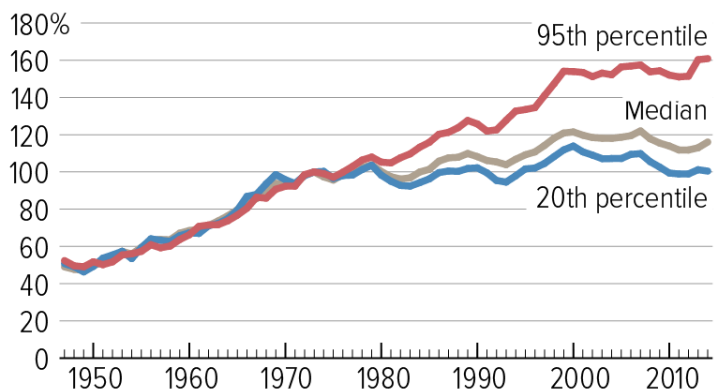
²³ This period really extends back to the end of the nineteenth century – the Age of the Robber Barons – but the Picketty and Saez data starts in 1914 when the modern income tax system was introduced.

growth went to the top 1% of households and during the initial recovery after the Great Recession (which technically ended around 2009-2010 but whose effects are still with us) the top 1% gained 93% of the increased real incomes. The pie got bigger but the amount that went to the poorest 99% of households was little more than crumbs.

During this period high incomes largely came from work rather than inherited capital. Business owners did well on average as did the owners of the few very successful “start-ups” such as Microsoft, Amazon, Google, eBay, etc. There was also what economists call “Super Star” and “Winners Take All” effects that raised the incomes of athletes, entertainers, surgeons, and even university professors.

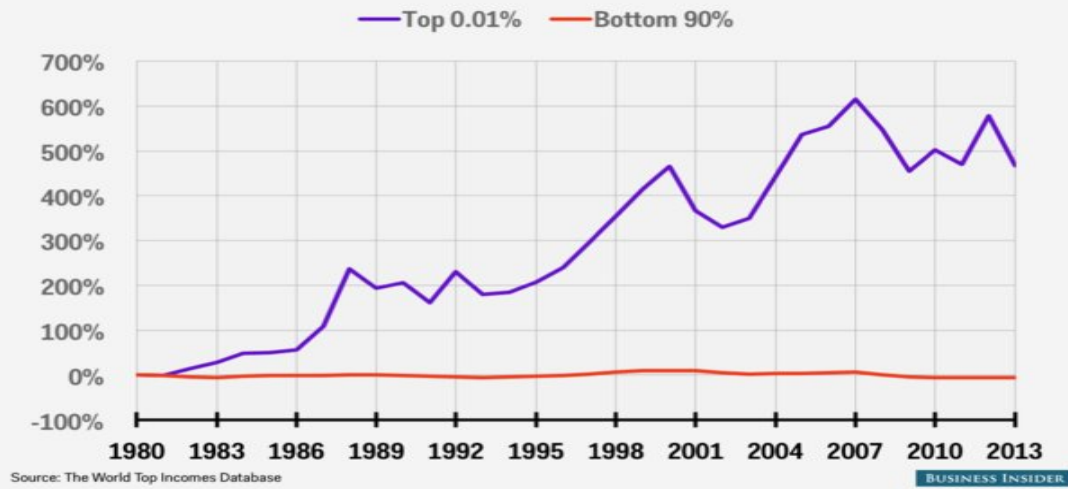
Income Gains Widely Shared in Early Postwar Decades — But Not Since Then

Real family income between 1947 and 2014, as a percentage of 1973 level



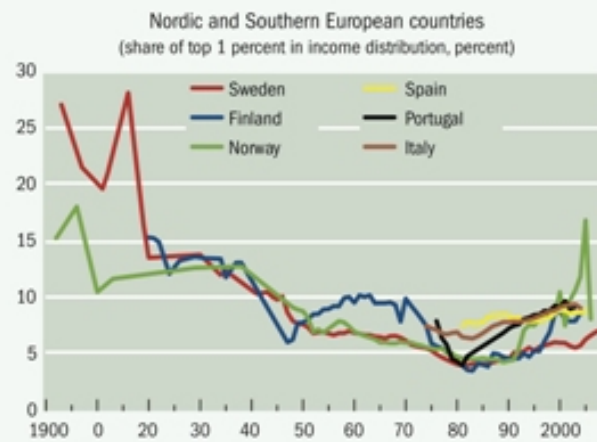
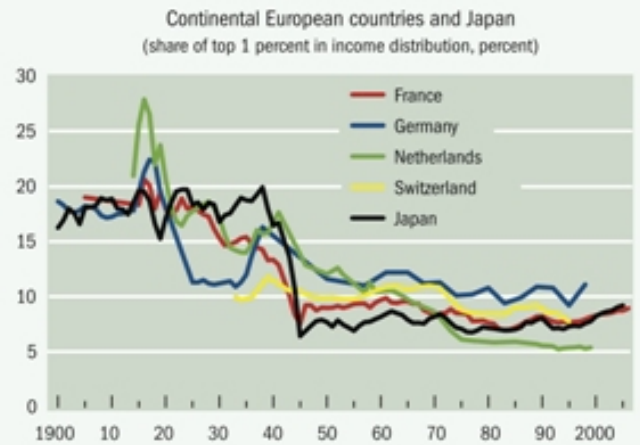
CENTER ON BUDGET AND POLICY PRIORITIES | CBPP.ORG

Percent change in real income since 1980



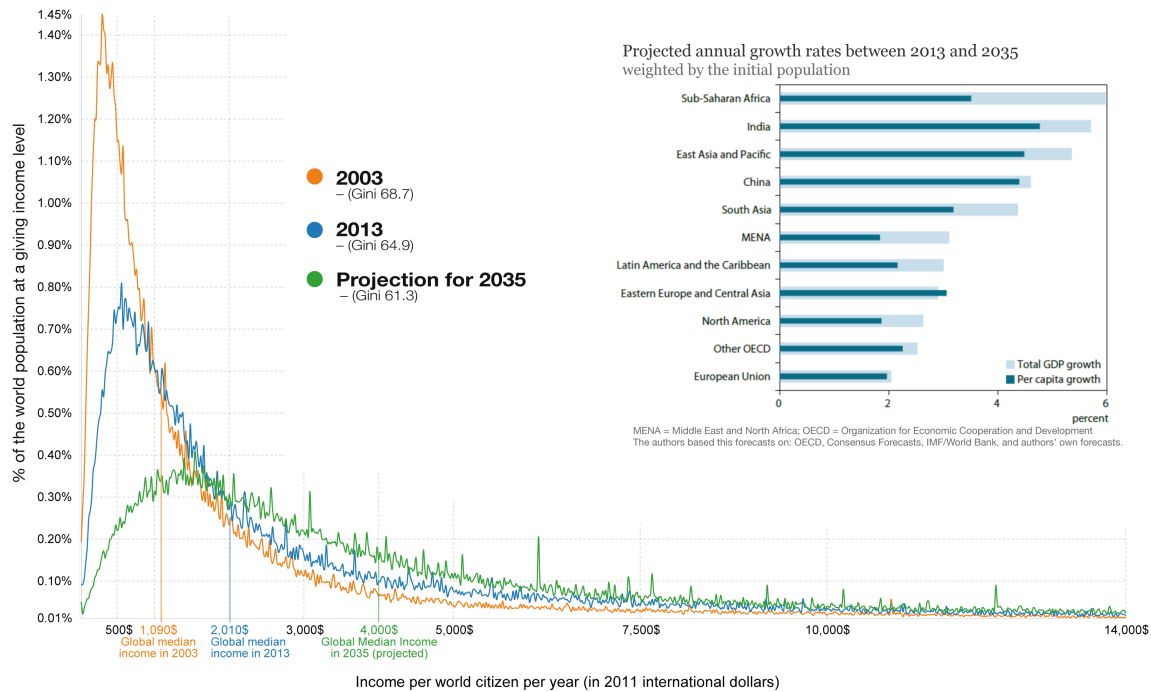
4. It is important to note that although the huge increase in the incomes of those at the very top of the income distribution was most pronounced in the US it was a *worldwide phenomenon amongst advanced industrial countries* (especially Canada and the UK, but also in Western Europe and the rest of the world) and so any explanation for this phenomenon must be sufficiently broad to cover other countries, not just the US although the increase in inequality seems to have been most pronounced here.

Income inequality has increased in most countries over the past 30 years.



The global income distribution in 2003, 2013, and the projection for 2035

Incomes are adjusted for price changes over time and for price differences between countries (purchasing power parity (PPP) adjustment).



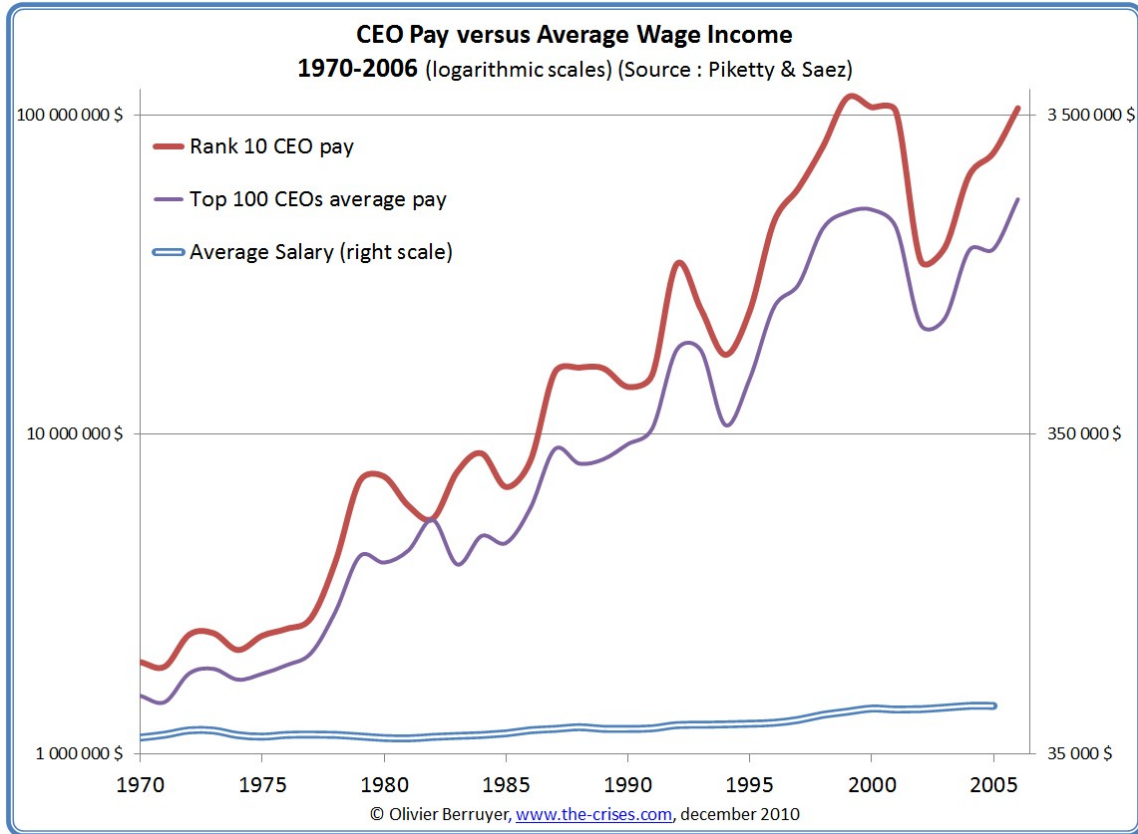
Source for all data: Tomáš Hellebrandt and Paolo Mauro (2015) – The Future of Worldwide Income Distribution, working paper. The interactive data visualization is available at OurWorldinData.org. There you find the raw data and more visualizations on this topic.

Licensed under CC-BY-SA by the author Max Roser.

There is no single generally agreed explanation amongst economists for why income has become less equal over the last thirty years. Contributing factors were *IT biased technical change* generating very high returns to quantitative education, lower tax rates especially on income from financial capital, changes in financial regulation that caused incomes in the financial sector to increase rapidly (the share of GDP produced by the financial sector increased from about 2% in 1970 to about 8% in 2010), and especially in the US *changes in taxes* and *changes in business remuneration* (executive pay), which raised incomes at the top of the pile, and *globalization* and *technical change* which caused stagnation at the bottom of the distribution.

Distribution of CEO Compensation, 2013

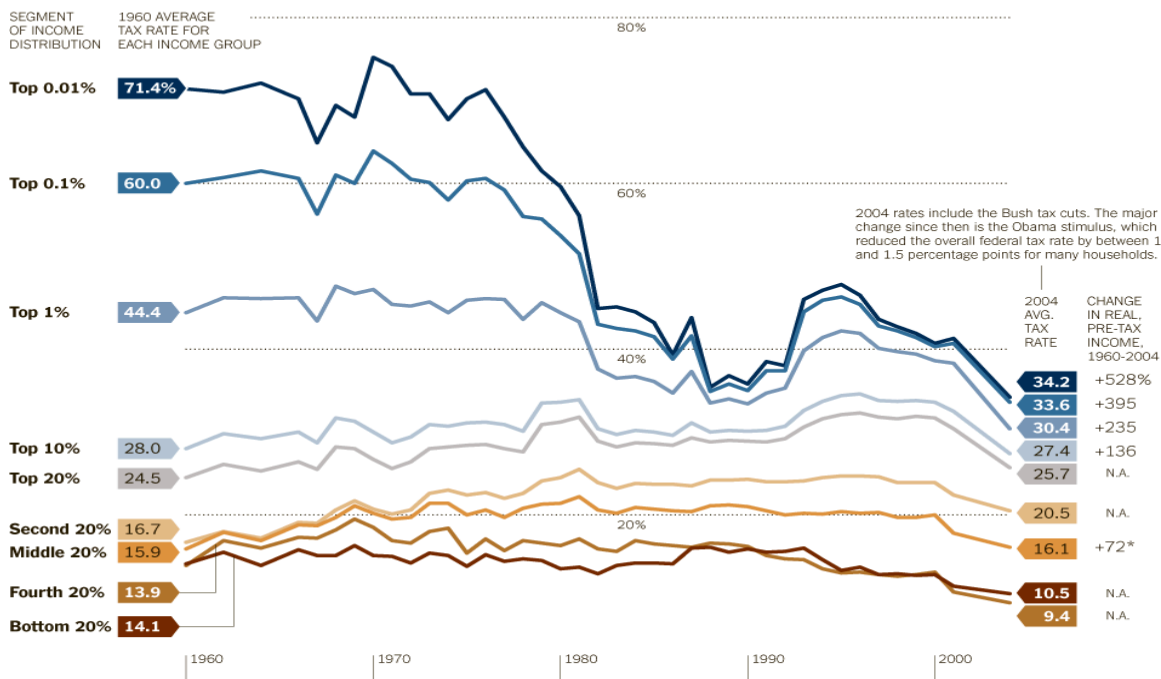




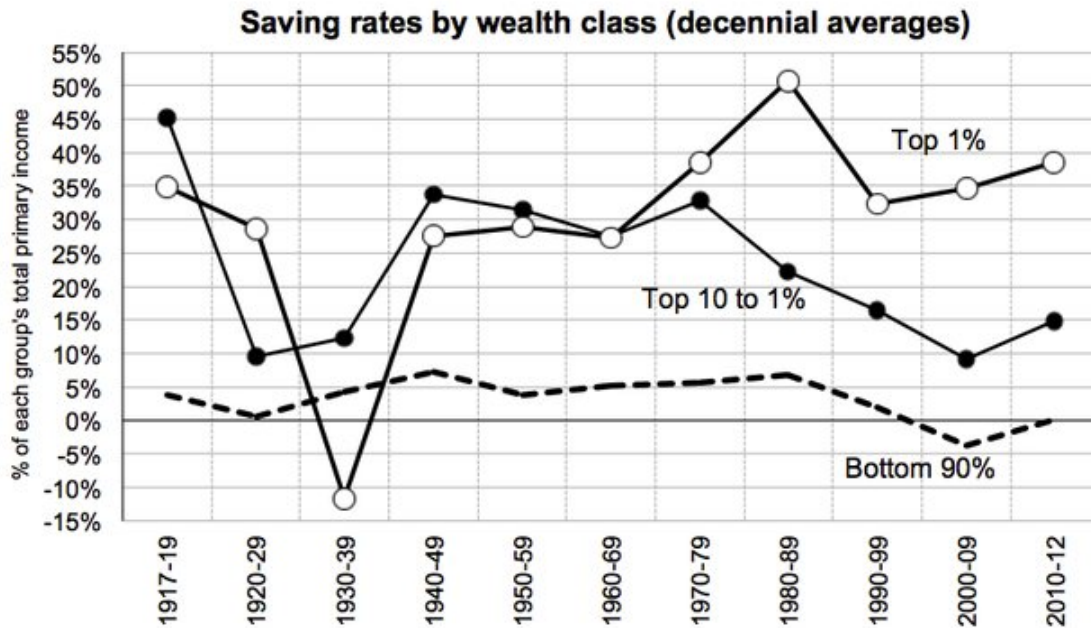
In 2017 there were major tax reductions that had bigger impacts at the top of the distribution – most politicians received significant tax cuts. These cuts do not seem to be paying for themselves as was claimed at the time.

Whose Tax Rates Rose or Fell

Change in total federal tax rate — which includes income, payroll, estate and other taxes — for income groups from 1960 to 2004, the most recent data available.



6. There is a positive feedback cycle from high incomes to wealth accumulation to high income from financial investments. If your income is very large then you can save a lot of it, which increases your wealth. As your wealth increases you can obtain higher returns than poor peons like your professor because you can afford to ante up enough to get into a successful hedge fund and be able to bear the high risk that accompanies the high returns. These high returns from your financial capital cause your wealth to increase even more. Say you make, after tax, \$10m in 2015 and that you spend \$5m and save \$5m. If you get a 20% rate of return on your \$5m then you will have an income from your wealth of \$1m. So at the beginning of 2016 you have Net Worth of \$6m and an income of \$10m. If you repeat everything in 2016 then you will be able to spend \$5m and still end up with \$12.2m in investments (\$11m plus the 20% on your \$6m portfolio), and so it grows Tiddely-Pom as your favorite Bear would hum.



This link has ten articles on possible reasons why income inequality has been increasing in recent years.

<http://feeds.feedburner.com/slate-great-divergence>

Piketty and Saez have updated their data to 2013, which is included in the Saez paper linked below. (Start at page 2 and when you get to the end of the paper go back and read the first two pages, skipping the technical stuff at the end.) I reproduced the three figures at the start of this section.

<http://www.learningace.com/doc/4862843/f97d4be355c780d4f917722bdce7cf41/saez-ustopincomes-2010>.

Roughly speaking the top 10% of households receive about 50% of incomes (5 times their proportionate share), the top 1% of households receive about 25% (25 times their proportionate share), and the top 1/100th of 1% receive about 5% of incomes (500 times their proportionate share). **(These are the numbers you need to remember.)** Thus the 16,000 households at the very top of the income pyramid receive more income than the 2.5m households at the bottom of the pyramid.

7. The following Tables show that most of the income gains between 1970 and 2012 went to the top 1%.

Table 2**U.S. Overall Average Income Growth: 1970 – 2008**

	<u>No. Of People</u>	<u>Average Income</u> (inflation adjusted)	<u>1970-2008 % Change</u>
Top 0.1%	15,000	\$5.6 Million	+385%
Top 0.1 - 0.5%	610,000	\$878,100	+141%
Top 0.5% - 1%	762,000	\$443,100	+90%
Top 1% - 5%	6.0 Million	\$211,500	+59%
Top 5% - 10%	7.6 Million	\$127,200	+38%
Bottom 90%	137.2 Million	\$31,300	-1%

Table 1. Real Income Growth by Groups

	Average Income Real Growth	Top 1% Incomes Real Growth	Bottom 99% Incomes Real Growth	Fraction of total growth (or loss) captured by top 1%
	(1)	(2)	(3)	(4)
Full period 1993-2012	17.9%	86.1%	6.6%	68%
Clinton Expansion 1993-2000	31.5%	98.7%	20.3%	45%
2001 Recession 2000-2002	-11.7%	-30.8%	-6.5%	57%
Bush Expansion 2002-2007	16.1%	61.8%	6.8%	65%
Great Recession 2007- 2009	-17.4%	-36.3%	-11.6%	49%
Recovery 2009-2012	6.0%	31.4%	0.4%	95%

Computations based on family market income including realized capital gains (before individual taxes). Incomes exclude government transfers (such as unemployment insurance and social security) and non-taxable fringe benefits. Incomes are deflated using the Consumer Price Index.

Column (4) reports the fraction of total real family income growth (or loss) captured by the top 1%. For example, from 2002 to 2007, average real family incomes grew by 16.1% but 65% of that growth accrued to the top 1% while only 35% of that growth accrued to the bottom 99% of US families.

Source: Piketty and Saez (2003), series updated to 2012 in August 2013 using IRS preliminary tax statistics for 2012.

8. However, as the following Table shows there are some adjustments to the Picketty and Saez data that paint a less gloomy picture of the growth of incomes over the last thirty years. However, the last column of the Table seems to me to be very problematic. The data is mainly quintile, with two breakouts for the top 10% and the top 5%, both of whom increased their adjusted shares of income growth 1979-2007. I would expect that there would be similar effects for the top 1%, top 1/10th of 1% and the top 1/100th of 1%.

1979-2007 income growth, by income quintile					
	Tax unit Pre-tax Pre-transfer	Household Pre-tax Post-transfer	Household Size-adj. Pre-tax Post-transfer	Household Size-adj. Post-tax Post-transfer	Household Size-adj. Post-tax Post-trans + Health Ins.
Bottom quintile	-33.0%	9.5%	9.9%	15.0%	26.4%
2nd quintile	-5.5%	4.3%	8.6%	15.0%	25.0%
Middle quintile	2.2%	15.3%	22.8%	29.5%	36.9%
4th quintile	12.3%	23.0%	29.2%	34.6%	40.4%
Top quintile	32.7%	34.6%	42.0%	49.4%	52.6%
Top 10%	36.7%	37.3%	34.6%	46.1%	56.0%
Top 5%	37.9%	38.0%	39.1%	48.7%	63.0%
1979 Gini	0.515	0.424	0.384	0.349	0.330
2007 Gini	0.566	0.462	0.430	0.396	0.362

4 WHO ARE THE TOP 1%?

The Top 1% is dominated by persons who own their own firms, are the Chief Executive Officers (CEOs) and top executives of large corporations, but also include entertainers, and sports stars and even academics.

Numerous articles and graphics can be found at:

http://www.nytimes.com/top/reference/timestopics/subjects/e/executive_pay/

<http://work.chron.com/average-income-ceo-fortune-500-company-5348.html>

<http://www.usatoday.com/story/money/business/2014/04/03/2013-ceo-pay/7200481/>

To be in the Top 25 Hedge Fund Managers in 2010 you needed to make \$210m. John Paulson made \$3.8b in 2007, \$2b in 2008, \$2.2b in 2009, almost \$5b in 2010. This is equal to 20,000 times the earnings of someone who made \$250k – 98% of us make less than \$250k. That is, it would take someone making

\$250k per year 20,000 years to make as much as Paulson made in one year. In 2013 Ray Dalio's and John Simons' hedge funds both had bad years doing less well than the S&P 500 but both men took home more than \$1b because of the high fees that their funds charge. Paulson's funds also had a bad year. If you type Hedge Fund Managers into the Google search box you will get some interesting links.

<http://www.forbes.com/sites/robertlenzner/2011/01/29/heres-how-john-paulson-made-5-billion-last-year/>

For more on the very highly paid see:

<http://visualizingeconomics.com/blog/2010/12/29/highest-paying-jobs-in-the-us-2005-2/>

The VisualizingEconomics site has a lot of interesting graphics on income and wealth distributions.

Although the stereotypical member of the top 1% works in the finance industry the largest group comprises the owners of successful companies and also top executives of large firms.

<http://www.motherjones.com/mojo/2011/10/one-percent-income-inequality-OWS>

<http://www.nytimes.com/packages/html/newsgraphics/2012/0115-one-percent-occupations/>

6 INTERGENERATIONAL INCOME MOBILITY: THE AMERICAN NIGHTMARE?

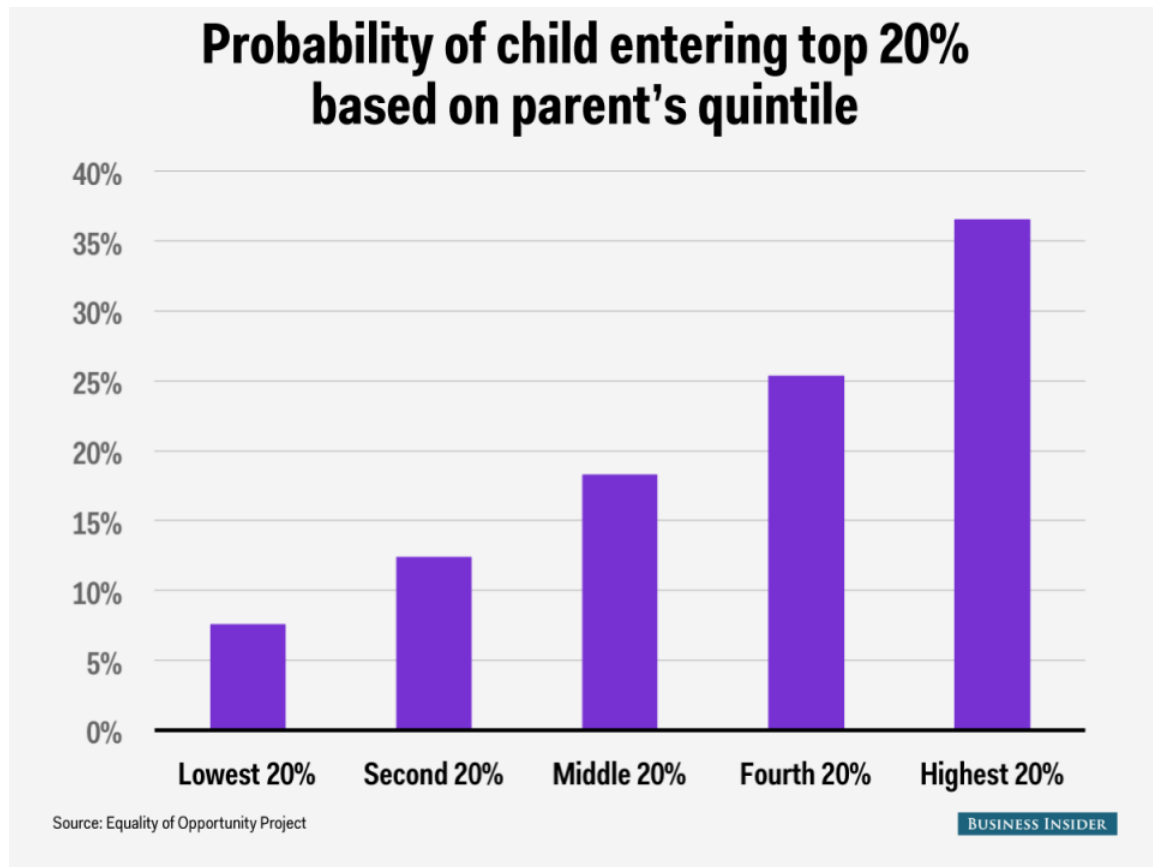
1. US income mobility – measured by the correlation between parent's and children's incomes is very low, only the UK has less inter-generational mobility amongst industrialized countries. Economists in the 1960s thought that the correlation between a father's and son's income was low, about 0.15. This meant that if the father's income was twice the national average, it took about 90 years for the grandson's income to get back to the national average (revert to the mean). Recent research using much better data, more sophisticated statistical techniques and eliminating some problems with the earlier calculations, has increased the estimated correlation by four times (r about .65). This means that it would take 150 years for the great, great, great grandchild of someone with an income twice the national average to drop to back to the average.

2. Note that this result is very different than that given in most textbooks that use inter-quintile changes to argue that there is considerable mobility in the US.

3. However, even the quintiles show how the "American Dream" (the idea that if you work hard then you and your children and their children will move up the income ladder) seems to have faded in recent years. Between 2007 and 2009

about 80% of persons in the top quintile stayed in the top quintile, and about 70% of the bottom quintile stayed in the bottom quintile. There was more mobility in the middle three quintiles.

http://www.nytimes.com/2012/01/05/us/harder-for-americans-to-rise-from-lower-rungs.html?pagewanted=all&_r=0



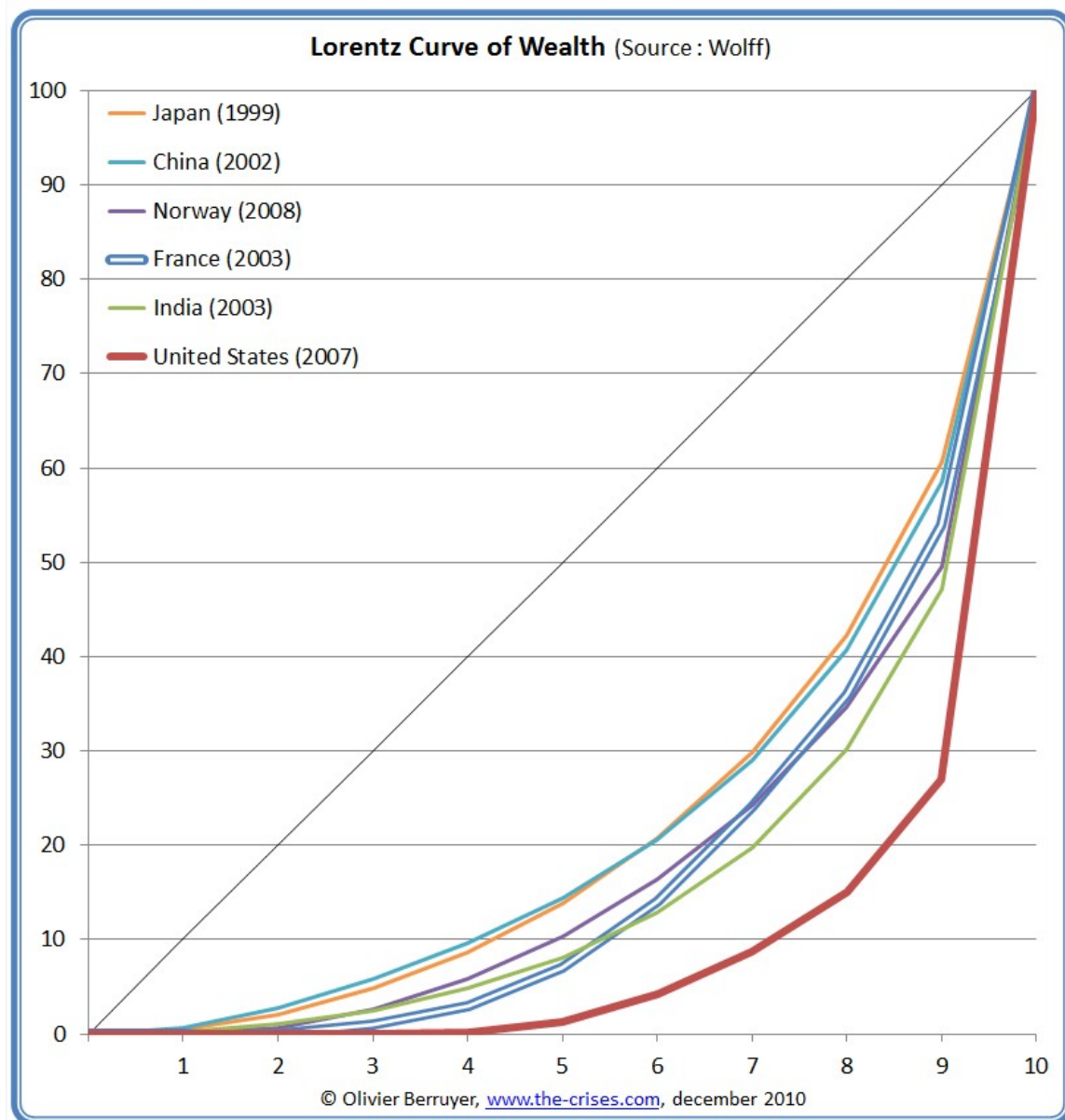
If you are interested in this topic there is an excellent longer article by Timothy Noah

<http://www.tnr.com/article/politics/magazine/100516/inequality-mobility-economy-america-recession-divergence>

7 THE DISTRIBUTION OF WEALTH

1 WEALTH.

1. The distribution of wealth (Assets-Liabilities) is less equal than the distribution of income. Even Scandinavian countries have wealth GCs of 0.58, while the EC as a whole has a wealth GC of 0.67 and the US of 0.73 (all data for 2010).



2. The best data that we have is from a paper by Saez and Zucman (2014). US wealth in 2014 was somewhere around \$54t.

The **top 10%** of households had about **75%** of wealth in 2017 slightly down from their 82% share between 1926-1934, and the **bottom 90%** had about **25%** of wealth in 2012, down from their peak of 38% in 1986. The share going to the **top 1%** peaked at 48% in 1928, fell to 24% in 1978 and rose steadily from then until it reached **40%** in 2013. The top **1/10th of 1%** of households share of wealth was 23% in 1928 fell to 10% from 1948 and stayed about there until 1987 and then rose steadily to 2013 when it was **23%**.

TOTAL INCLUDING HOUSING

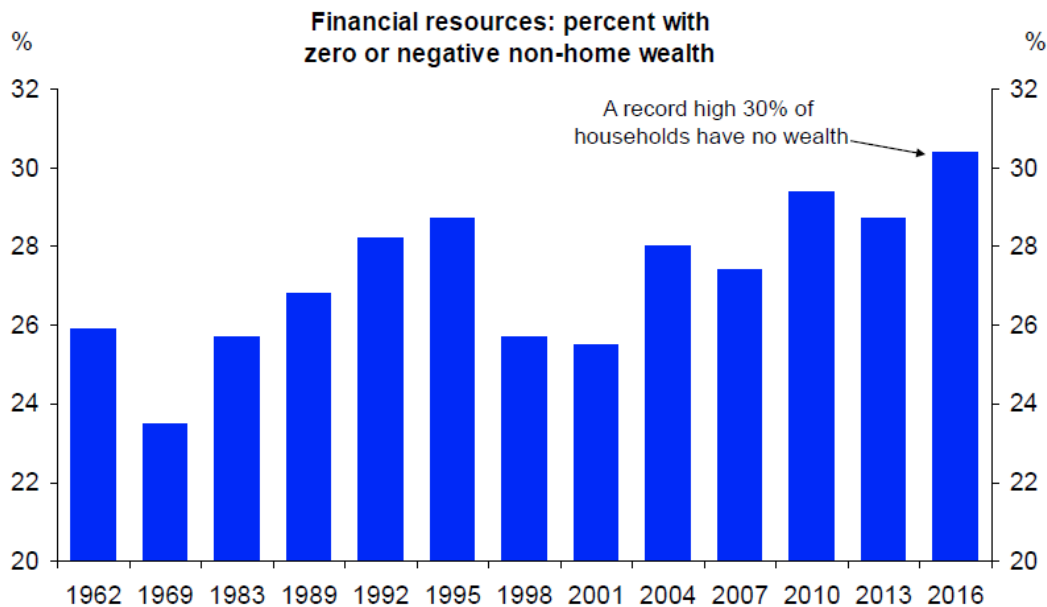
1%	34.6%	
1-5%	27.3%	61.9%
5-10%	11.2%	73.1%
10-20%	12%	85.1%
20-40%	10.9%	96.0%
40-60%	3.8%	99.8%
60-100%	0.2%	100.0%

FINANCIAL

Top 1%	42.7%
Top 20%	93.0%
Bottom 80%	7.0%

In 2009, if you were to add up the total fortune of America's richest 400 (1/100,000th of 1% of households) people, that amount—\$1.27 trillion—would be more than the holdings of the bottom 50 percent of Americans, less than \$1.22 trillion.

More families than ever before have zero or negative non-home wealth



Source: Edward N. Wolff (2017). Survey of Consumer Finances, , DB Global Markets Research

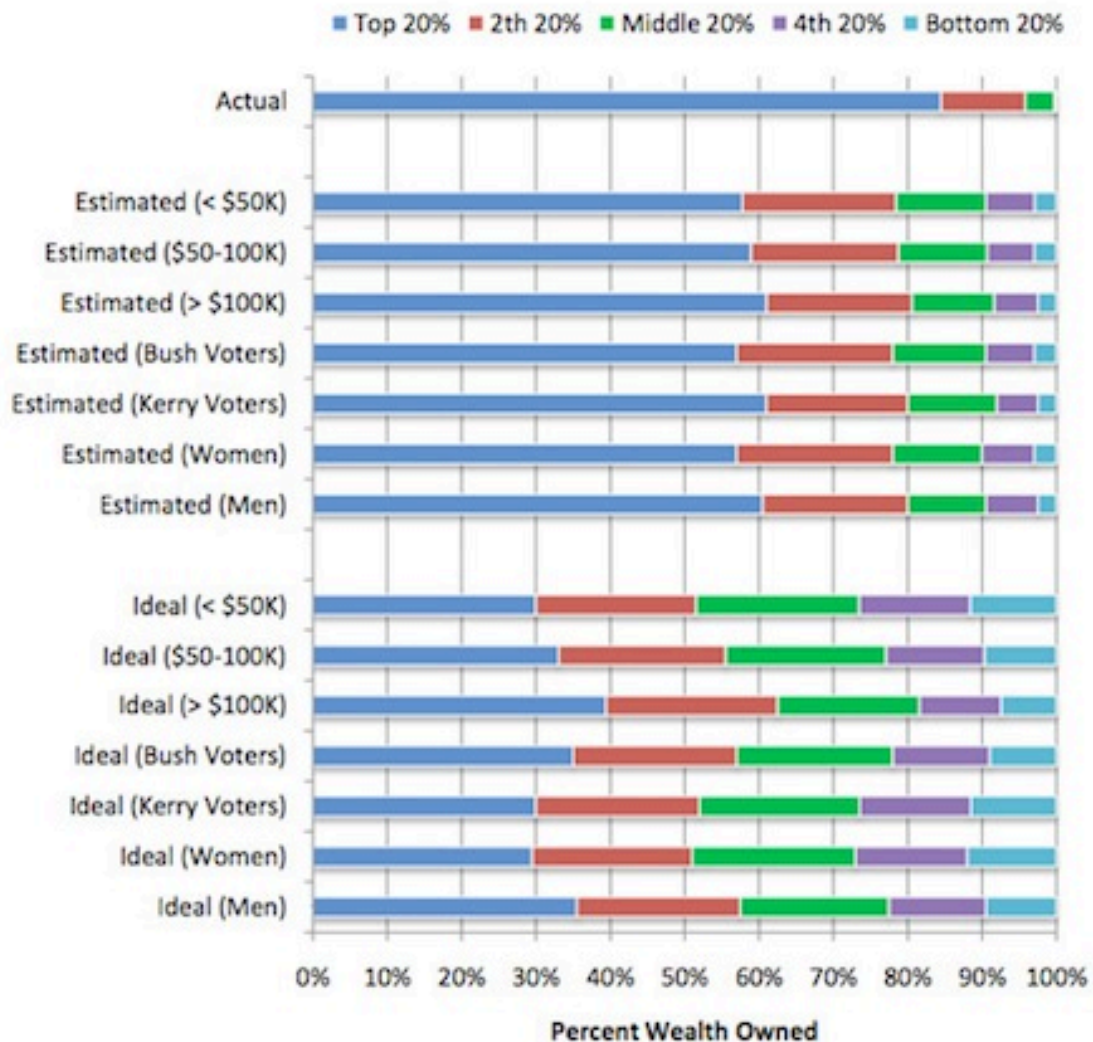
Deutsche Bank
Research

Torsten Slok,
January 2018

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2. The lowest 25% of households have less than 1% of total wealth (the purple line in the diagram below), the lowest 50% have 1.1% of total wealth.
3. Americans seem to want a more equal distribution of wealth than we have at present.

Real vs. Imagined Wealth Distribution in the U.S.



Source: Michael Norton and Dan Ariely, "Building A Better America—One Wealth Quintile At A Time."

<https://www.youtube.com/watch?v=QPKKQnijnsM>

US

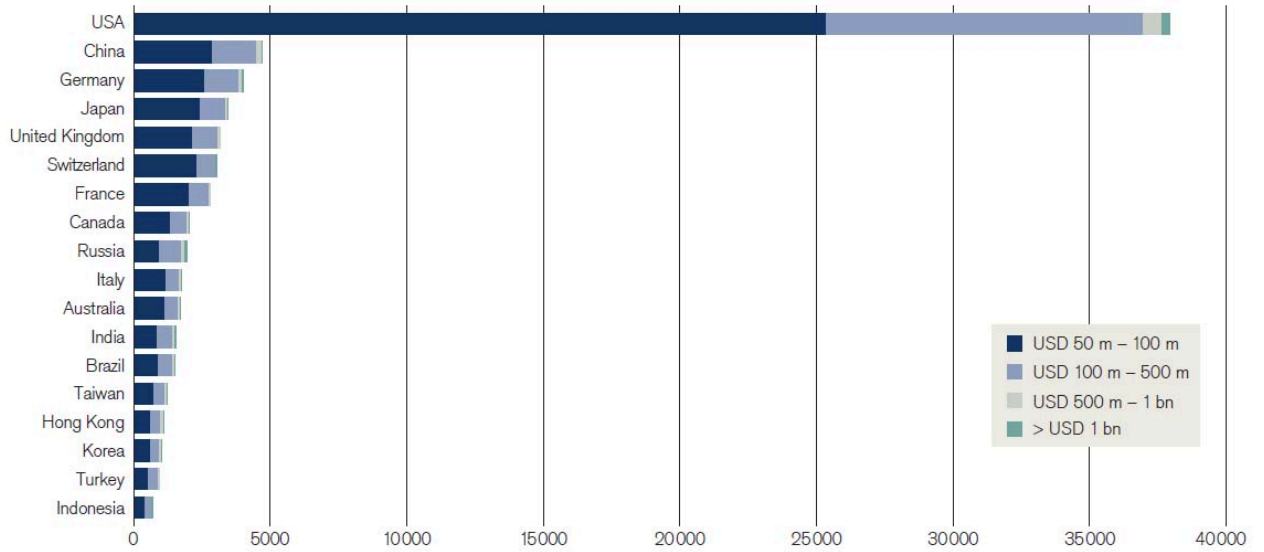
<https://www.youtube.com/watch?v=uWSzzyMNpU>

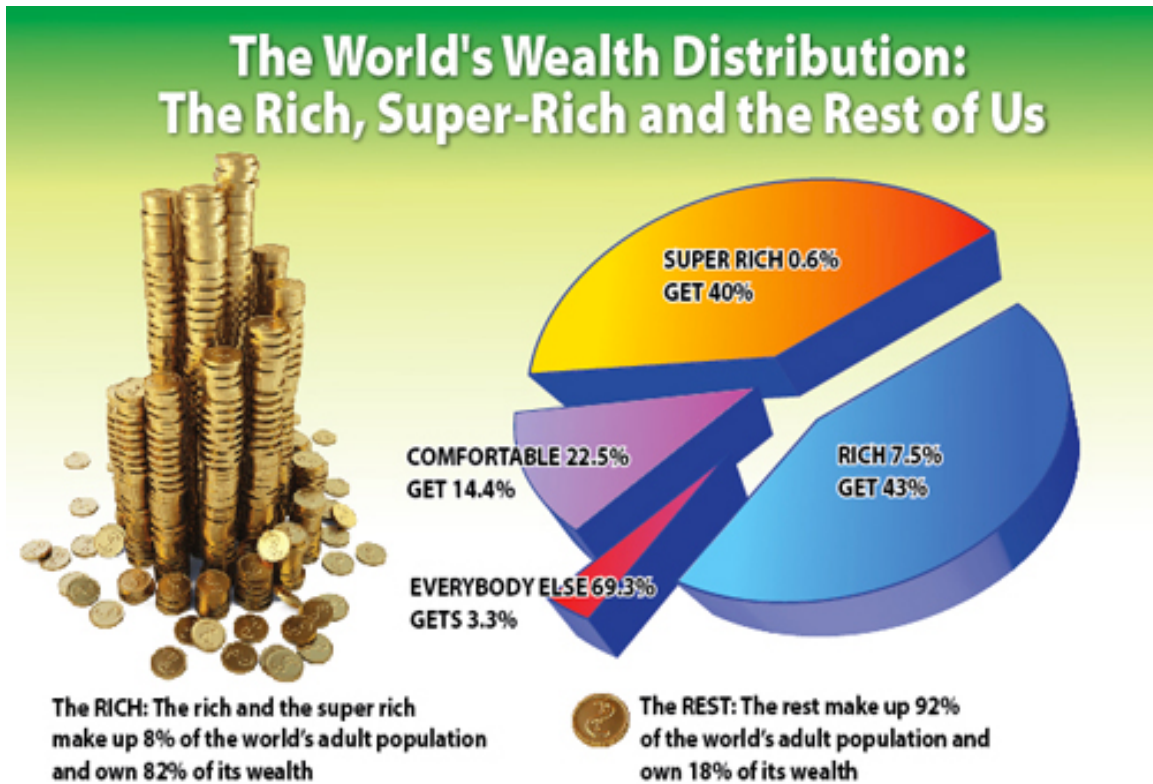
Here are some more graphs for you to *look* at.

Figure 5

Ultra high net worth individuals 2012: Selected countries

Source: James Davies, Rodrigo Lluberas and Anthony Shorrocks, Credit Suisse Global Wealth Databook 2012





2 WEALTH AND POLITICAL POWER.

1. Income and wealth buy power and influence and, perhaps, lower tax rates. Politics in the US is unusually, by Western European standards, dominated by money. The last Presidential election cost \$2b. Most parliamentary democracies have quicker election processes (in the UK a general election takes about six weeks) and involve relatively small expenditures by the candidates and political parties. One consequence of our system is that it is extremely difficult to displace incumbents.

<http://www.motherjones.com/politics/2011/02/income-inequality-in-america-chart-graph>

<http://www.washingtonspectator.org/index.php/WHY-THEY-JUST-SAY-NO/posted-prices-and-the-capitol-hill-stalemate-machine.html>

[Just read the first paragraph in italics.]

6 SO WHAT?

1. Does inequality matter? Most people in the US are aware that the top 1% of households by income have a large share of US income but most are unaware of the actual disparities.

<http://www.theatlantic.com/business/archive/2012/08/americans-want-to-live-in-a-much-more-equal-country-they-just-dont-realize-it/260639/>

2. Because we are not confronted with income and wealth disparities on a daily basis there does not seem to be much interest in income and wealth redistribution. Perhaps Americans still believe in the “American Dream” of “rags to riches” and aspire to being in the top 1% rather than envying or resenting them. There seems to be very little evidence that there is going to be a serious “class war” in the US. Warren Buffett, the third richest person in the world at that time (2011), who should know, said that: “Through the tax code, there has been class warfare waged, and my class won”. 78% of Americans attribute differences in incomes to work ethics and abilities and very little to luck – Bill Gates versus my kid or someone raised in poverty with inadequate schooling, nutrition and access to medical care.

http://en.wikipedia.org/wiki/Bill_Gates

3. Joseph Stiglitz, 2001 Nobelist, has argued that our increasing income inequality is a bad thing, however there is not much actual evidence that inequality has any major deleterious impacts on the economy, for example, there is no clear relationship between inequality and lower growth rates of GDP. Stiglitz’s views are summarized in:

<http://www.vanityfair.com/society/features/2011/05/top-one-percent-201105>

If you are really interested then read Stiglitz’s book: *The Price of Inequality*, which is now available as a paperback – all 414 pages of it!

Although people are concerned with “fairness” we tend to have different ideas about what is and is not fair. And concerns over fairness do not seem to have had much impact on politics in America. Perhaps that is because most people do not know much about these issues despite extensive coverage in the media. And disparities in income and wealth over the last thirty years have, to a large extent, reflected disparities in human capital and luck – most of the top 1% got their on their own talent, although luck is a major factor in who gets to the top of the income and wealth ladders.²⁴ However, because the US has become an income and wealth immobile society, and because income and wealth generate political power, the rapid increase in income and wealth inequality in the last thirty years may have interesting implications for our future social structure.

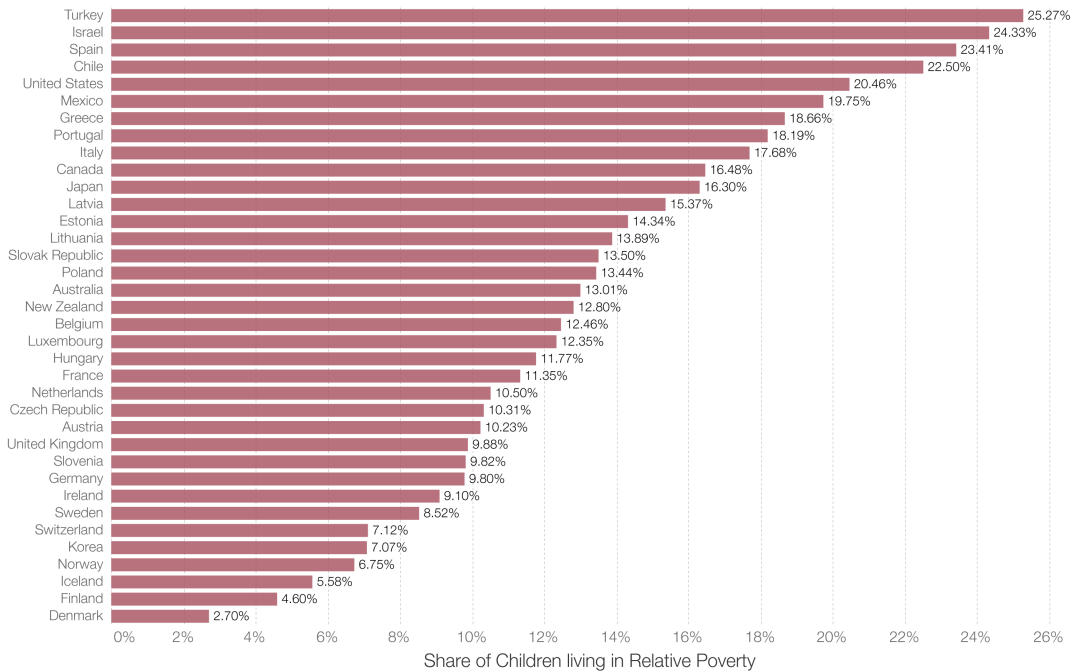
My view, *for what it is worth*, is that while I have no problem with the incomes and wealth of the 1% of very rich Americans, so long as they pay “reasonable” taxes and do not throw their political weight around. I think that in the US there

²⁴ Bill Gates grew up in a wealthy household, attended an exclusive high school that gave him access to a mainframe computer. He was is incredibly bright but if he had been born to a single mother in an inner city ghetto he might just be a very rich drug lord, or dead.

is little interest in the bottom 10 to 20 percent of the income distribution, families that live in poverty and near poverty. The Nordic model of capitalism is concerned with alleviating the conditions of these people. In America there seems to be an assumption that if you are poor then it is because you do not work hard enough, not that your poverty may be the result of life circumstances that are beyond your control. Child poverty is high in the US compared to the Nordic countries. But it is not my function to convert you to my beliefs.

Share of children living in relative poverty

Share (%) of children (0-to-17) living in an household in poverty. Poverty is defined as living with an equivalised post-tax-and-transfer income of less than 50% of the national annual median equivalised post-tax and transfer income.



Data source: OECD Family Database. This data visualization is available at OurWorldinData.org. There you find the raw data and more visualizations on this topic.

Licensed under CC-BY-SA by the author Max Roser.

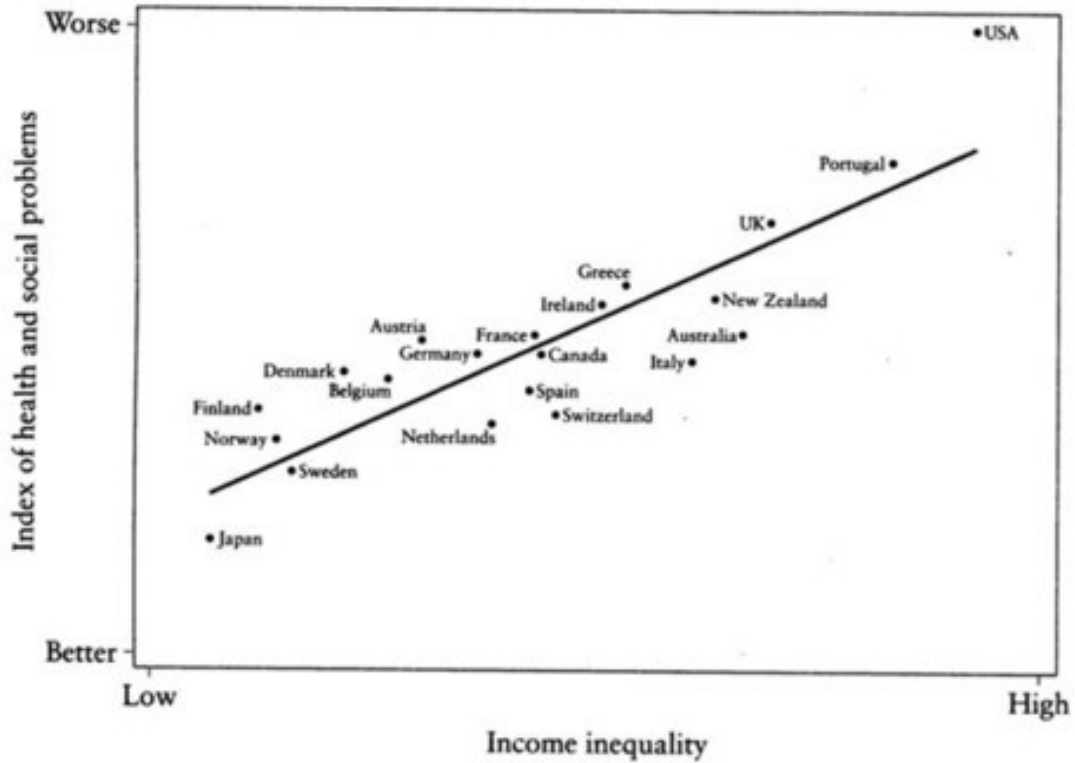


Figure 2.2 *Health and social problems are closely related to inequality among rich countries.*

This is one of my favorite graphs. Notice that the steep slope is determined by the two outliers – the US at the top right and Japan at the bottom left. Remove those data points and you still get a positive relation but less steep. Remove Portugal and the UK and there is almost no relation between income inequality and the Index of health and social problems (I have no idea how that index was constructed).

(10,065)