

INCOME AND WEALTH INEQUALITY: EVIDENCE AND POLICY IMPLICATIONS*

EMMANUEL SAEZ

(with an introduction by David Card)

Drawing on the author's work, this lecture presents evidence on U.S. income and wealth inequality. It presents series for top income and wealth shares, and the distribution of economic growth by income groups. It discusses the mechanisms behind the evolution of U.S. income and wealth inequality from historical and comparative perspectives. It analyzes the role of public policy and in particular taxation in the evolution of inequality. (JEL D31, F66, J24)

I. INTRODUCTION

David Card: It is my great pleasure to introduce my colleague, Emmanuel Saez, who was asked by Peter Diamond, the incoming president of the Western Economic Association International, to give this keynote address.

Emmanuel was born in 1972, so he is younger than my children. He did his first degree at the École Normale Supérieure in France and then a Ph.D. at MIT. After a brief mistaken start at Harvard, he saw the light and came to Berkeley. He has now been my colleague for 15 years. He received the John Bates Clark Medal in 2009 for, among other contributions,¹ helping to lead a resurgence of academic interest in taxation. Then in 2010 he became a MacArthur Fellow. He is well known for his research on income inequality in the United States.

He and his co-authors have made available an extensive international database of measures of earnings and income inequality, the World Wealth and Income Database² (Alvaredo et al. 2016). He is also known for work on optimal taxation. I

studied optimal taxation as a young person and thought that this topic was completely and totally dead, but Emmanuel has managed to bring it back by essentially figuring out ways to make the theory more than just a theory. He finds ways to have the formulas actually say something beyond vacuous statements about unobservable variables. He has also worked on dividend taxation and on empirical responses to taxation.

He is also well known among labor and public economists for starting the style of empirical analysis we associate with what is called “bunching,” where people respond to kinks in budget sets. Yesterday we saw that work being applied to the minimum wage debate.

Emmanuel and his colleagues (Alvaredo et al. 2013) have worked with IRS tax records to study the geographic variation in intergenerational correlation. And finally, he has done important work on the determinants of retirement savings. So this morning, it is my great pleasure to welcome Emmanuel Saez.

II. MEASURING INEQUALITY

Emmanuel Saez: Thank you very much, David, for this very generous introduction. I am delighted to be here today to talk about evidence on income and wealth inequality, and the consequent policy implications. This presentation

*This article and the following questions and answers are from an edited transcription of the Keynote Address presented at the 91st Annual Conference of the Western Economic Association International.

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1. See <http://eml.berkeley.edu/~saez/>.
2. See <http://www.wid.world/>. Accessed January 7, 2016.

ABBREVIATION

GDP: Gross Domestic Product

is based on the many studies that I and many colleagues have done over the years.

Let me first motivate the topic of measuring inequality. Inequality is an important issue because the public cares about it. People have a sense of fairness and have views on whether the distribution of economic resources is fair. Given this intrinsic public interest in inequality, our first job as economists is to help enlighten the debate by providing very transparent inequality measures that the broad public can understand. Once we have appropriately measured inequality, we then want to understand the drivers of inequality trends and the effects of public policy on inequality.

Two concepts of economic resources are income and wealth. Income is a flow typically measured on an annual basis. You get labor income from working. You also get income from your wealth, which is capital income, or effectively the return on wealth. Wealth is a stock of economic resources that are accumulated either from your own savings or from inheritances you may have received, typically from your parents. Here are the basic aggregate economic facts for the United States. Labor income is about 70%–75% of total national income. Capital income is the rest, so it is 25%–30%. For the bottom 90% of income earners, capital income is negligible relative to labor income. Total accumulated wealth measured at market prices is around four times the total annual national income. Given the ratio of 25–30:400, the implicit annual rate of return on wealth, in the form of capital income, is around 6%–7% before taxes.

Wealth inequality is always much higher than income inequality because a lot of people do not have any wealth. The bottom 50% of families, ranked by wealth, basically have zero wealth, and hence zero capital income as well.

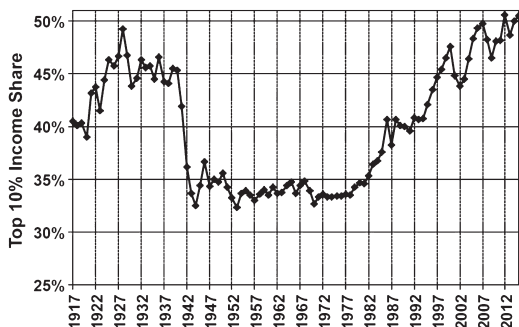
Advanced economies, or advanced societies, have decided through the will of the community, as represented by the government, to significantly affect the distribution of pre-tax incomes through public policy. Effectively, advanced economies tax between 30% and 50% of pre-tax market income. On the low end, the United States and Japan tax about 30% of national income. At the high end, European countries with larger welfare states tax about 50% of national income. Taxes are used to fund transfers, the welfare state, and a number of public goods. The fact that we have decided to do so much redistribution means that, as

societies, we do care about distribution. We find it fair to have the community do substantial amounts of redistribution through its government. Once you take out taxes and you add back transfers, post-tax income inequality is consequently substantially lower than pre-tax income inequality.

A very simple way to measure inequality that the broader public can understand is to estimate top income shares: what share of total, say pre-tax income, goes to certain groups, such as the top 10% of families, or top 1% of families, or the top 0.1% of families? Individual income tax statistics are a great resource to estimate such top income share series because they cover very long time periods. Advanced economies typically started their progressive income taxes about a century ago, for example in 1913 in the United States. These data also capture very well top incomes, because governments have typically produced distributional statistics based on individual income tax returns. These statistics provide a very clear picture of the top of the distribution, something you cannot get with survey data. In survey data, there are too few high income people in samples, and there is measurement error due to substantial nonresponse rates.

Thomas Piketty studied the case of France in Piketty (2001, 2003). Shortly afterward, we studied the United States in Piketty and Saez (2003). Since then, over 25 countries have been studied through a collective effort involving many researchers (see, for example, Alvaredo et al. 2013). The data are posted online in the World Wealth and Income Database (Alvaredo et al. 2016). It is truly a global project including statistics that cover most of Western Europe and North America, and a number of developing countries as well, such as China and India. Of course, the richness of the series produced and the time periods covered vary across countries. Typically, the more advanced economies have data for longer time periods. One caveat is that in these data the income concept is fiscal income, defined as income reported on individual income tax returns, which is a narrower concept than national income from national accounting. The focus, so far, has been on pre-tax and pre-transfer incomes. This measures inequality as it is generated by the market, before any government taxation and redistribution. Both pre-tax and post-tax income inequality measures are interesting. You want to study both, so as to assess the redistributive effects of the government.

FIGURE 1
Top 10% Pre-tax Income Share in the
United States, 1917–2015



Note: Series based on pre-tax cash market income including realized capital gains and excluding government transfers. *Source of data:* Alvaredo et al. (2016). An earlier version of the data and figure appears in Piketty and Saez (2003). *Source of figure:* Atkinson, Piketty and Saez (2011). Updated to 2015. Reprinted with permission.

III. U.S. PRE-TAX AND POST-TAX INCOME INEQUALITIES

Figure 1 shows the time series of the top 10% pre-tax income share in the United States for almost a century, from 1917 to 2015.

The figure shows that the United States has gone through large variations in income concentration. Before World War II, the top 10% of families were getting a large fraction, around 45% of total income. Then there was a precipitous decline that exactly lines up with World War II. After World War II there were decades where income concentration was much lower, with the top 10% of families getting about one-third of total income. And then, of course, what is striking in this figure, and what has been very much debated, is the extraordinary rise that started in the late 1970s. The top 10% income share has grown from 33% to over 50% in recent years and has even surpassed the peaks of pre-World War II.

The tax data capture the top very well and they allow us to disaggregate further within the top 10%. A simple way to do that is to decompose the top 10% income group into three groups: the top 1%, the next 4%, and the next 5% (bottom half of the top decile). In Figure 2, the top 1% income share is shown in black, the next 4% in blue, and the next 5% in red. The sum of those three series is the top 10% income share shown in Figure 1. Why is this decomposition interesting? The top 10% income share gained 17 percentage points since the late 1970s, going

from 33 to 50 percentage points; almost all of the 17 percentage point gain, 12 to 13 percentage points, have gone to the top 1% of income earners (families with incomes above \$443,000 in 2015), whose share of total pre-tax income rose from 9 percentage points to somewhere between 21 and 22 percentage points in recent years. The next 4%, the blue series in the figure, are families making between about \$180,500 and \$443,000 in 2015, and they have gained some, but only 3 or 4 points. And the last income share series for the bottom half of the top 10%, families with incomes between \$125,000 and \$180,000 in 2015, does not experience much gain at all since the 1970s. Even within the top 1%, gains are unequal and grow larger the higher you go.

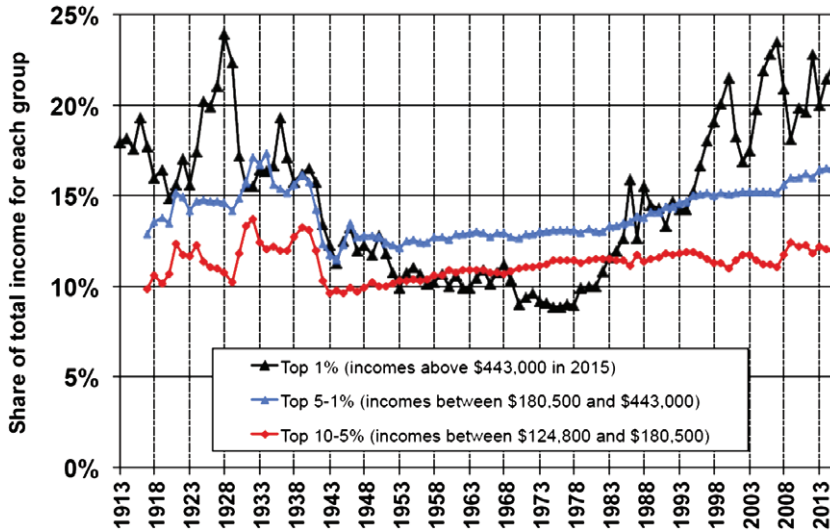
Figure 3 shows the example of the top 0.1%, families with more than \$2 million in income today. Their share of income has gone up from 3% in the late 1970s to 11% in 2015. That is an increase of 8 percentage points. Therefore, a big part of the increasing income concentration actually comes from this very top income group.

Tax data also allow you to look at the composition of income between labor and capital. Figure 4 plots the top 0.1% income share, stacked by income components: wage and salary earnings, business income, capital income (such interest, dividends, and rents), and realized capital gains. Even though the level of very top income shares today is similar, or perhaps even higher, than it was almost a century ago, the composition has changed substantially. A century ago, the very top incomes were mostly capital income. Effectively, people at the top of the income distribution owned very large fortunes from which they derived very substantial capital incomes in the form of, typically, dividends and interest income. Labor income was minimal among top income earners. These top income families were likely the inheritors of the “Robber Barons” of the Gilded Age of the late 19th century. Big fortunes were created and then were passed on to the next generation, and the people at the top could live off these fortunes.

When inequality re-emerged beginning in the late 1970s, a significant fraction of this inequality increase, at least up to the year 2000, was a labor income phenomenon. Wages and salaries and business income—which is, in part, mixed labor and capital—were growing very fast. The best illustration of that is the explosion of Chief Executive Officer compensation, which would be captured in the wages and salaries component,

FIGURE 2

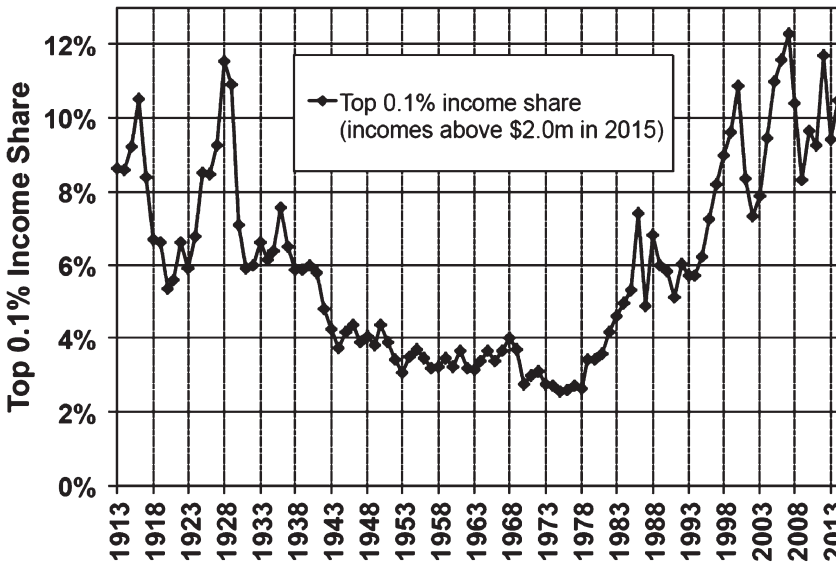
Decomposing the U.S. Top 10% Pre-tax Income into Three Groups, 1913–2015



Note: Series based on pre-tax cash market income including realized capital gains and excluding government transfers.
Source of data: Alvaredo et al. (2016). An earlier version of the data and figure appears in Piketty and Saez (2003).
Source of figure: Atkinson, Piketty and Saez (2011). Updated to 2015. Reprinted with permission.

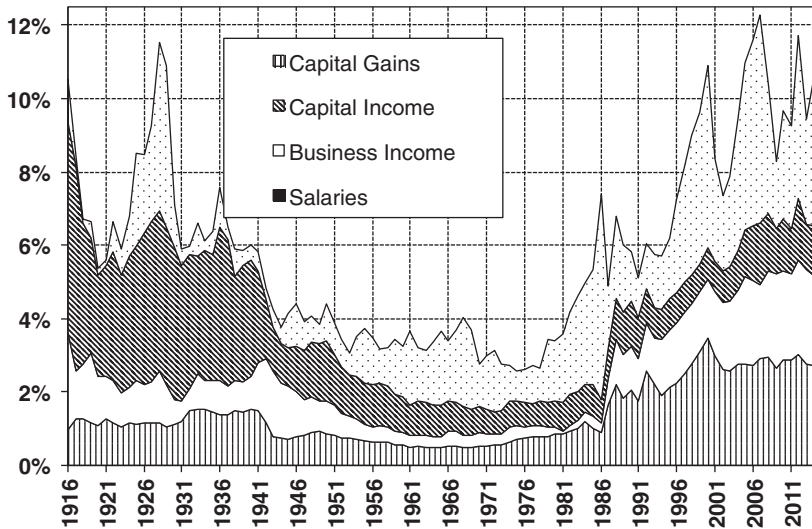
FIGURE 3

Top 0.1% U.S. Pre-Tax Income Share, 1913–2015



Note: Series based on pre-tax cash market income including or excluding realized capital gains, and always excluding government transfers.
Source of data: Alvaredo et al. (2016). An earlier version of the data appears in Piketty and Saez (2003).

FIGURE 4
U.S. Top 0.1% Pre-Tax Income Share and Composition



Note: Series based on pre-tax cash market income including or excluding realized capital gains, and always excluding government transfers.

Source of data: Alvaredo et al. (2016). An earlier version of the data and figure appears in Piketty and Saez (2003).

Source of figure: Atkinson, Piketty and Saez (2011). Updated to 2015. Reprinted with permission.

because the profits from exercised stock options are part of wages and salaries for tax purposes.

Since 2000, there has been an apparent resurgence of capital income at the very top. The very high labor income earners probably accumulate fortunes and start to derive significant capital income from their fortunes. A good illustration is Bill Gates who started as an entrepreneur. So initially it is labor income. He creates a business and then he retires from managing Microsoft, but still gets billions, literally, in dividends every year from the fortune he accumulated, which is capital income.

As I said, these data are based on fiscal income, that is, income reported on individual income tax returns. Fiscal income does not include all of total U.S. national income.

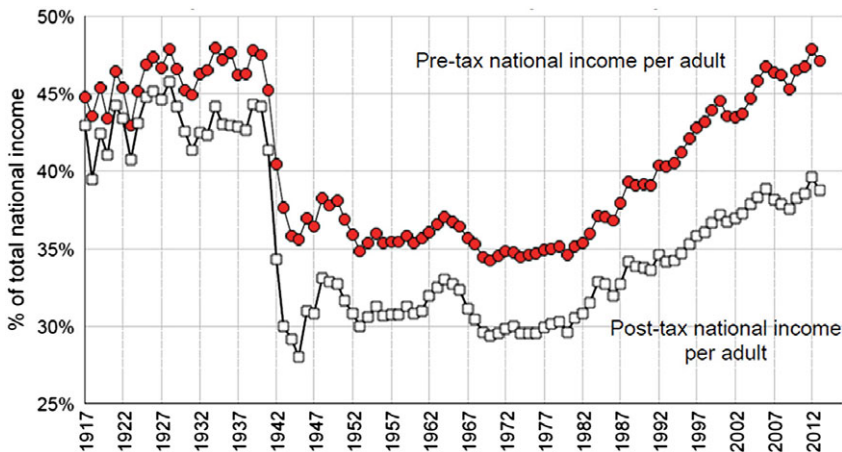
IV. INEQUALITY IN DISTRIBUTION OF U.S. NATIONAL INCOME GROWTH

The Piketty-Saez time series we have discussed actually capture only about two-thirds of national income, because a number of income components are not reported on tax returns. On the labor income side, fringe benefits such as health and pension contributions, and employer payroll taxes, are not included in tax data. On

the capital income side, it is even worse. The returns on pension funds, corporate retained earnings, corporate taxes, and imputed rents to homeowners are all missing. All of these components are truly economic incomes and go into national income estimated by national accounts, but they are not included here. Another issue is that the Piketty-Saez data are based on tax units (a tax unit is a married couple with dependents if any, or a single adult with dependents if any) instead of adults. Tax units have become smaller over time as the fraction of the population that is married has declined.

Therefore, the Piketty-Saez data are not really well designed to understand economic growth at the same time as distribution, because the economic growth you get from the Piketty-Saez data is pretty far apart from the growth in national income that is widely discussed in the public debate. The next step in our research agenda is to impute missing income to line up with national income, in what we are calling distributional national accounts. That would allow the analysis of the distribution of economic growth, both on a pre-tax and a post-tax basis. Thomas Piketty, my colleague Gabriel Zucman, and I (Piketty, Saez and Zucman 2016) have some preliminary findings. In Figure 5 the share of total national income

FIGURE 5
Top 10% U.S. National Income Share: Pre-tax versus Post-tax



Note: Series consistent with national income aggregates. Post-tax series are after deducting all taxes and adding back all transfers and government spending.

Source: Piketty, Saez, and Zucman (2016). Reprinted with permission.

going to the top 10% of adults pre-tax is shown in red. These trends actually look pretty similar to previous Figures.

The figure also depicts in white the post-tax national income share for the top 10% families. To compute post-tax income, we start from pre-tax income, deduct all taxes (federal and local), and we add back all forms of government spending, including both transfers and public good spending. The comparison of pre-tax and post-tax series therefore provides a global vision of the redistribution done by the government through taxes and spending. In Figure 5, post-tax series are very similar to pre-tax series in the early period a century ago when taxes and government spending were small (around 10% of all national income). On a post-tax basis, the drop in the top 10% income share during World War II is even bigger, because taxes increased enormously at that time to fund the war, and taxes actually stayed high afterward for high incomes. On a post-tax basis, the increase in income concentration since World War II is less than on a pre-tax basis so that post-tax income concentration is not quite as high today as it was a century ago. That is due to the growth of government overtime and the overall progressivity of the U.S. tax system.

Growth in average national income is shown in Figure 6. In black you see the series of real national income per adult for the full population from 1946 to 2013, with a tripling of national

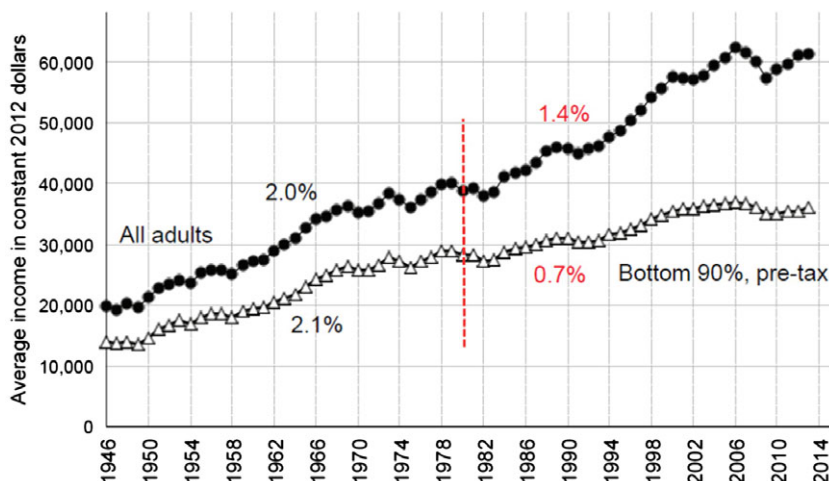
income per adult from \$20,000 to \$60,000 in real terms. Living standards increased by a factor of three since the end of World War II. You can see that the growth rate was 2% annually up to 1980, which is pretty fast. The growth rate has been slightly lower since 1980, about 1.4%.

It is interesting to look at pre-tax income growth for the bottom 90%, shown in white, also in Figure 6. In the first period from 1946 to 1980 the growth rate is 2.1% for the bottom 90%, very close to the 2% growth rate for the full population. In the second period, however, the pre-tax growth rate for the bottom 90% is only 0.7%, or half of what it is for the full population.

Why study top incomes? Why do we care how the rich are doing? Don't we want to know how living standards evolve? Yes, that is what we want to know, but Figure 6 precisely shows you why top incomes matter enormously to assess how living standards evolved for the vast majority of American families. The macroeconomic data that are discussed all the time are the black series in Figure 6, shown again in Figure 7, national income per adult. Because the share of income going to the top 10% has increased so much since 1980, if you just restrict yourself to the bottom 90%, the growth rate you obtain for this group is only about half of the average growth rate. That will be the experience for the vast majority (90%) of the population. This is why developing distributional national accounts was

FIGURE 6

Growth in U.S. Real Average National Income: Full Adult Population versus Bottom 90%



Note: Pre-tax income and post-tax income match total national income and are divided equally among spouses.
 Source: Piketty, Saez, and Zucman (2016). Reprinted with permission.

an important missing piece to help enlighten the debate on inequality and growth. The post-tax series depicted in blue in Figure 7 subtracts taxes paid by the bottom 90% and adds back the transfers they receive. On net, the bottom 90% families receive a little bit more from the government than they pay in taxes. You can see in Figure 7, since 1980, the growth rate of bottom 90% incomes, on a post-tax basis, has been somewhat better, about 1% per year, which closes about a third of the gap in growth rates between the bottom 90% and the aggregate.

Further down the income distribution, there has been stagnation over the past 45 years as shown in Figure 8 for the bottom 50% of adults, pre-tax and post-tax. On a pre-tax basis, there was total stagnation in the real incomes of the bottom 50%, from the late 1960s to the present, with the bottom 50% of adults making about \$15,000 a year over that entire period. On a post-tax basis, the bottom 50% does slightly better since the late 1960s. Average post-tax income of the bottom 50% increases, but this is still a growth rate that is extremely low relative to the full population.

To summarize, distributional national accounts are important because they really change the picture of growth. From 1980 to 2013, average national income per adult has grown by about 60% in real terms economy wide, but national income per adult for the bottom 90% has grown only by 30%. National

income per adult for the bottom 50% has essentially stagnated since 1980.

V. U.S. WEALTH INEQUALITY

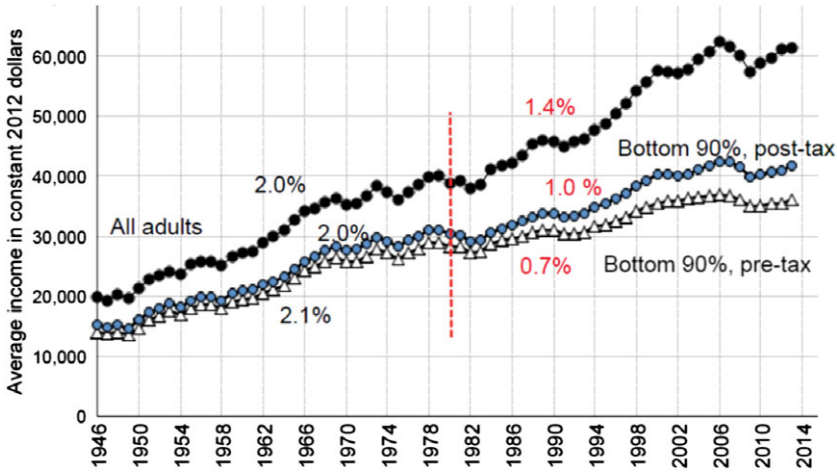
Is income inequality driven solely by labor income or is wealth and capital concentration also increasing, thus skewing capital income?

In a recent paper (Saez and Zucman 2016) we capitalized dividends, interest, and other forms of capital income reported on individual tax returns to infer wealth and create distributional statistics for wealth in the United States since 1913.

Figure 9 shows that inequality in wealth has also surged in recent decades, but the phenomenon is even more concentrated for wealth than for income, because the gains happen really for the top 0.1% of families (families with wealth above \$20 million in 2012). Figure 9 depicts the share of total wealth going to the top 0.1% of families. This time series also has that U-shaped pattern, with a very big decrease in wealth concentration over the first part of the 20th century, followed by a resurgence in wealth concentration, so that today the top 0.1% of families have slightly more than 20% of household wealth, almost as much as in the peak years of wealth inequality just before the Great Depression.

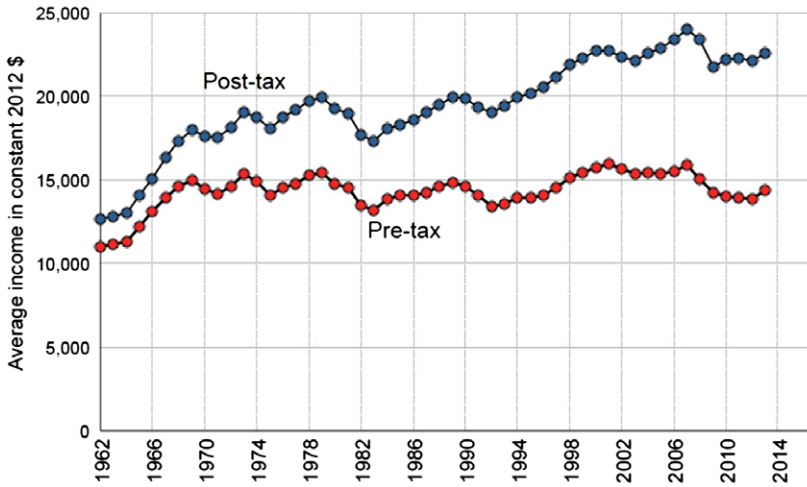
U.S. wealth is so concentrated today that the share of wealth owned by the bottom 90% of families is only slightly above 20%, and hence

FIGURE 7
Growth in U.S. Real Average National Income: Full Adult Population versus Pre-tax and Post-tax Bottom 90%



Note: Pre-tax income and post-tax income match total national income and are divided equally among spouses.
Source: Piketty, Saez, and Zucman (2016). Reprinted with permission.

FIGURE 8
Stagnating U.S. Real Income of Bottom 50% Adults: Pre-tax vs. Post-tax



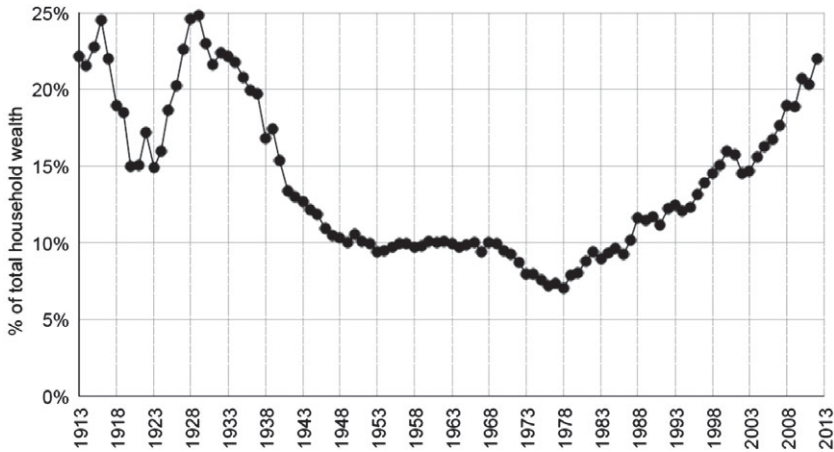
Note: Real values are obtained by using the national income deflator and expressed in 2012. Income is divided equally among spouses. Post-tax is income net of all taxes and adding all transfers and government spending.
Source: Piketty, Saez, and Zucman (2016). Reprinted with permission.

about the same as the share for the top 0.1%, as seen by comparing Figures 9 and 10. That means that the wealth of the top 0.1% of families is 900 times bigger, on average, than the average wealth of the bottom 90% of families. While this comparison for today is a snapshot, wealth

inequality has changed over time, both in amount and composition.

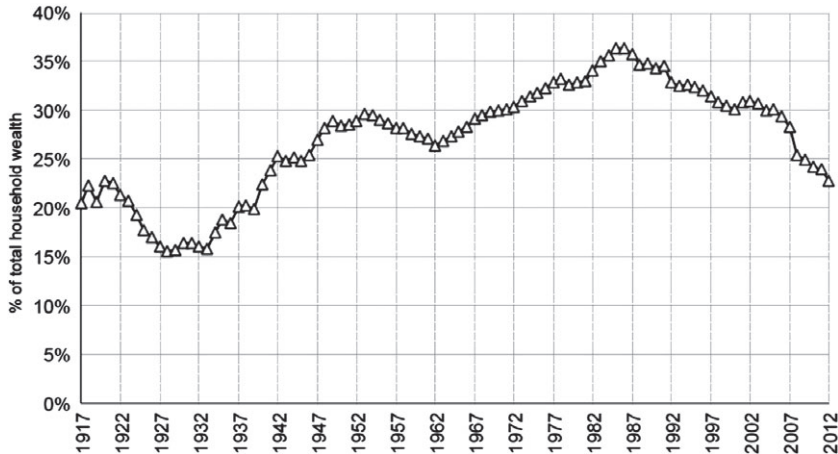
What is striking on the wealth side, clearly seen in Figure 10, is that there was democratization of wealth in the first part of the 20th century, when the share of wealth going

FIGURE 9
Top 0.1% (above \$20 million) Wealth Share in the United States, 1913–2012



Note: This figure depicts the share of total household wealth held by the 0.1% richest families, as estimated by capitalizing income tax returns. In 2012, the top 0.1% includes about 160,000 families with net wealth above \$20.6 million.
Source: Saez and Zucman (2016). Reprinted with permission.

FIGURE 10
Bottom 90% Wealth Share in the United States, 1917–2012

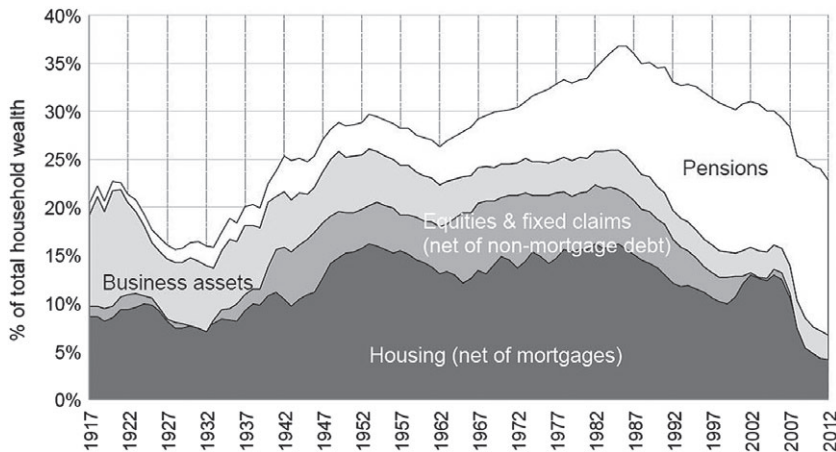


Note: Wealth shares estimated using capitalization method.
Source: Saez and Zucman (2016), Appendix. Reprinted with permission.

to the bottom 90% doubled, from between 15% and 20% of total household wealth in the 1920s and 1930s to a peak above 35% in the 1980s. Figure 11 shows the composition of the bottom 90% wealth and its share since 1917. It shows that the democratization of wealth was mostly due to two phenomena. One is that home ownership becomes much more widespread. The second is the development of funded pensions, which

are a form of wealth more equally distributed than other forms of financial wealth. Those gains have actually been lost over the last 30 years, mostly due to an increase in debt. Pensions have stayed relatively strong, but the indebtedness of the vast majority of American families has increased enormously. On the housing front it is well known that the explosion of mortgage refinancing has eaten into the equity of the bottom

FIGURE 11
Composition of the Bottom 90% U.S. Wealth Share



Source: Saez and Zucman (2016). Reprinted with permission.

90% of families. Other forms of debt, including consumer credit cards and student loans, have also really made a dent in the wealth of the bottom 90% of families.

This explosion in debt means effectively that the bottom 90% has been saving 0% of their income over the last 30 years. The bottom 90% families save zero on average while top wealth holders save a lot, in part because their incomes have increased so much that they can afford to save large shares of their incomes. The result is a huge increase in wealth inequality that, unfortunately, is likely to persist, short of adopting more drastic policies aiming at curbing the wealth at the top and encouraging wealth accumulation at the bottom.

Another way to represent this alarming trend in wealth disparity is shown in Figure 12. Figure 12 depicts the real wealth per family of the bottom 90% of families in white and the top 1% of families in black since 1946. Today, the bottom 90% of families have about \$80,000 in wealth on average and the top 1% have about \$14 million on average. The figure shows that average wealth for the bottom 90% in 2012 is the same as it was in the mid-1980s, at the time when their wealth share peaked. There was an increase in the bottom 90% average wealth in the 1990s and early 2000s, but that was really the housing bubble. When the Great Recession hit, destroying the value of housing, the wealth of the 90% plummeted. There has not been much of a comeback, at least up to 2012. In contrast, the

top 1% wealth holders were hit less by the Great Recession, and their wealth, mostly in the form of corporate stock, bounced back much faster as the stock market recovered quickly.

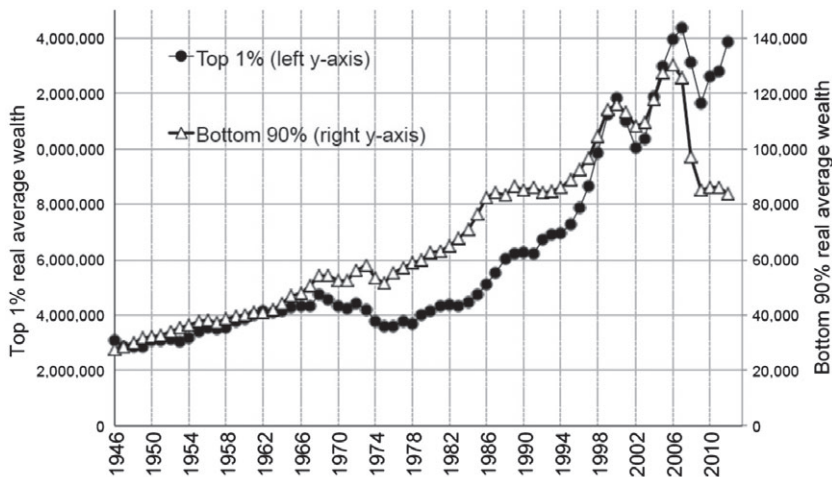
In sum, U.S. income and wealth concentrations both fell dramatically during the first part of the 20th century, and remained low and stable during three decades after World War II, but there has been a sharp increase in inequality since the 1970s. The United States now combines extremely high labor income inequality with very high wealth inequality. What are the drivers of these trends?

VI. INTERNATIONAL COMPARISONS

International evidence is quite useful to understand the drivers of inequality. Drawing from the World Wealth and Income Database (Alvaredo et al. 2016), Figure 13 shows the top 1% income share for three English-speaking countries. What is striking is that all three countries follow an overall similar U-shape, with high inequality initially, a big drop during the first part of the 20th century, and then a big increase again since the late 1970s, although the increases for the United Kingdom and Canada have not been quite as large as for the United States.

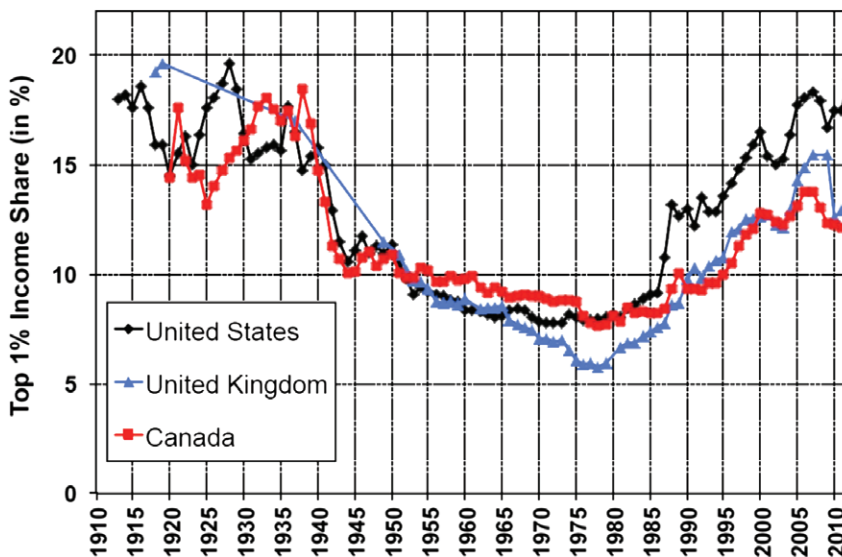
From Figure 13, you might think, perhaps this evolution is universal and due to deep economic forces such as globalization or technological progress (e.g., the information revolution and

FIGURE 12
Real Average Wealth of Bottom 90% and Top 1% U.S. Families



Note: Real values are obtained by using the GDP deflator, 2010 dollars.
Source: Saez and Zucman (2016). Reprinted with permission.

FIGURE 13
Top 1% Income Share: English Speaking Countries (U-shaped)



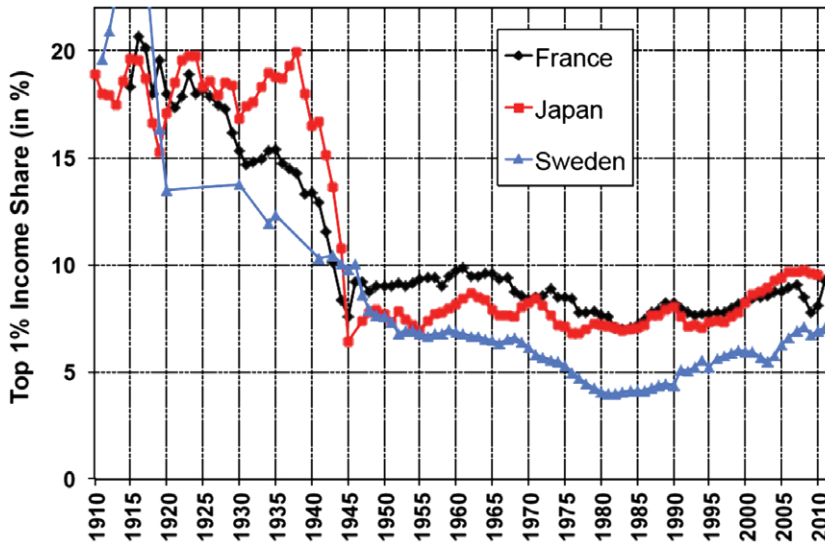
Source of data: Alvaredo et al. (2016).

computers). In reality, that is not so. Figure 14 depicts the top 1% income share in France, Sweden, and Japan. The first part of the graph looks similar to the English-speaking countries. All three countries had very high levels of income inequality a century ago, as high if not higher than

the English-speaking countries from Figure 13. Sweden was literally off the charts around World War I, even though today it is known as a country with low inequality. Looking at that data gathered in the World Wealth and Income database, what is striking is that, almost universally, a century ago,

FIGURE 14

Top 1% Income Share: Continental Europe and Japan (L-shaped)



Source of data: Alvaredo et al. (2016).

after the Industrial Revolution but before government had really started to grow, income inequality was very high pretty much everywhere among the advanced economies of the time.

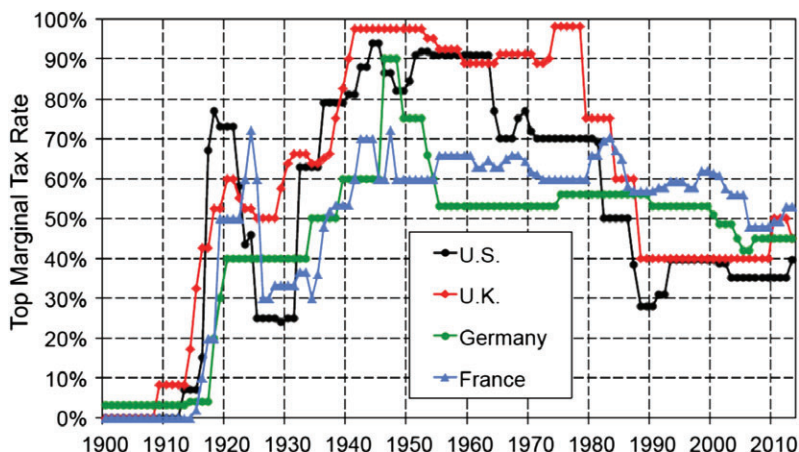
Then inequality dropped, and the drop reflects the history of each country. For example, in Japan the traumatic event is obviously World War II, which really had an enormous impact on Japanese inequality while it did not for Sweden, which stayed out of the war. The striking contrast between Figures 13 and 14 is that France, Sweden, and Japan do not experience nearly as large an increase in income concentration since the 1970s compared to the United States. Contrasting the two sets of countries (Figures 13 and 14), this very simple finding is important because it tells you that growing income inequality since the 1970s is not just due to globalization or technological progress (e.g., computers) because all six countries depicted in Figures 13 and 14 have gone through the same process of technological progress, and they are subject to the same forces of globalization, yet the evolution of inequality or income concentration varies. Globalization and technological progress undeniably likely play a big role, but the data show that these phenomena interact with the institutions specific to each country to produce an outcome in inequality that varies significantly across countries.

VII. PUBLIC POLICY AND INEQUALITY

In the remainder of my talk, I want to look at a specific aspect of public policy, namely individual income taxation, that I have studied the most. The role of progressive taxation as a determinant of inequality appears actually to be very important. A quick summary of progressive taxation history over the 20th century is depicted in Figure 15, which shows the top marginal tax rate for the individual income tax for four countries, with the U.S. series in black, the United Kingdom in red, Germany in green, and France in blue. Roughly speaking, a little over a century ago progressive taxation hardly existed. Although some countries had adopted modest individual income taxes in the late 19th century or early 20th century, individual income taxation began to be used in earnest only at the onset of World War I. That is definitely true for the United States where the top marginal tax rate jumps from 7% before World War I to over 60% during World War I. Then some countries cut back their progressive income tax. Significant progressive taxation was then reintroduced with the Great Depression in the United States, and World War II in some countries.

The United Kingdom and the United States increased their top tax rates greatly in the 1930s and World War II and kept very high top tax rates

FIGURE 15
Top Marginal Income Tax Rates, 1900–2013



Source: Piketty (2014). Figure also appears in Piketty and Saez (2014).

for decades after World War II. The U.S. top tax rate was above 70% from 1936 to the beginning of the Reagan administration in 1980. Then the U. S. top tax rate went down precisely during the Reagan administrations from 70% to 28%, as you can see in the black series in Figure 15. During the Thatcher administration the UK top tax rate also drops dramatically from over 90% down to 40%, shown in red. The United States and the United Kingdom had the most progressive tax systems in the post World War II decades, at least at the very top of the income scale, and then they moved to being the least progressive. You can see that France and Germany did not have nearly as big of a change in this period. Germany implemented very progressive income taxation only briefly during the Allied Occupation after World War II, when the United States was effectively in charge of designing the German income tax system.

Why does this matter? Figure 16 plots together the top marginal tax rate (in red) in the United States and the pre-tax top 1% income share (in black). This is the share of income going to the top 1% pre-tax, so that there is no mechanical effect here of the taxes on the incomes, because the incomes are pre-tax. Nevertheless, those two time series really look like the mirror images of each other. Namely, pre-tax top income shares were high when top tax rates were low. Conversely, pre-tax income shares were low when top tax rates were high.

Similarly, looking at international evidence, we can exploit the fact that countries have

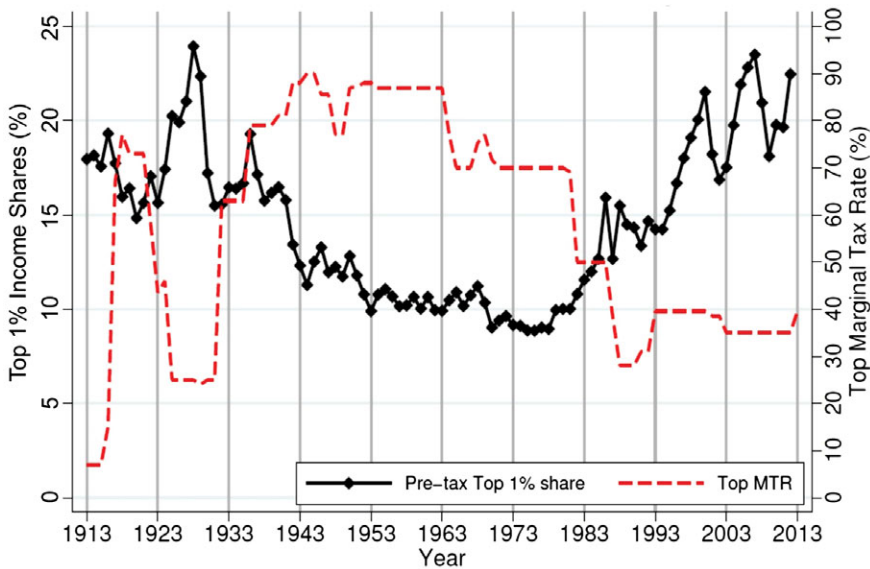
followed very different paths in how they have changed their top tax rates, especially since the 1960s. In Figure 17, we line up countries by how much they cut their top marginal tax rate from the early 1960s to the 2005–2009 period. The United States and the United Kingdom cut marginal tax rates the most, and a number of countries, like Germany, did not change top marginal tax rates much.

To compare the two periods 1960–1964 to 2005–2009, on the y-axis in Figure 19 we have the change in the top 1% income share, again pre-tax. On the x-axis we have the change in the top marginal tax rates. This graph shows that the countries roughly line up along a diagonal, meaning that the countries that experienced a surge in their top incomes are the ones that cut the top tax rates the most. Therefore, both the U.S. historical evidence and the cross-country evidence since the 1960s suggest that there is a strong link between the level of progressive taxation and the income share of high earners measured, very simply, by the top marginal tax rate and the size of the top income share (Piketty, Saez, and Stantcheva 2014 discuss this evidence in more detail).

Why are pre-tax top incomes negatively affected by top tax rates? In Piketty, Saez, and Stantcheva. (2014), we discuss three main possible scenarios that have very different policy implications.

First, all economists learn the standard supply side scenario whereby top earners work less

FIGURE 16
Top 1% U.S. Pre-tax Income Share and Top Marginal Tax Rate



Source of data: Alvaredo et al. (2016). An earlier version of the data and figure appears in Piketty and Saez (2003). Top MTR data source is the Tax Policy Center.

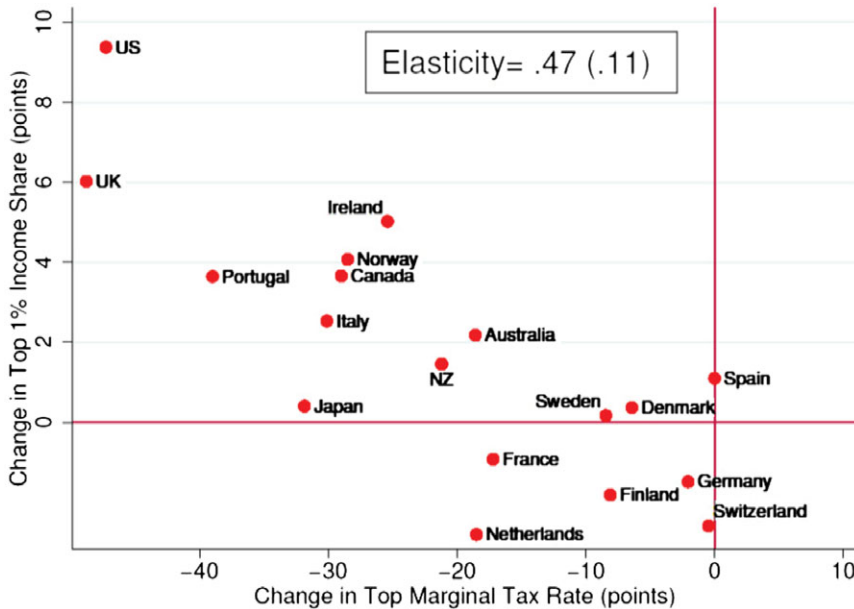
and earn less when the top tax rate increases. In that scenario, top tax rates should not be too high because they reduce economic activity. Indeed, that is exactly the argument that was used by the Reagan and Thatcher administrations when they decided to cut top tax rates. The argument went as follows: The most talented people are not working that hard because the government is taking too much of their income, so cutting top tax rates will incentivize them to work more. They are going to work harder and make more, and that is going to be good for overall economic growth.

In the second scenario, top earners avoid and evade tax obligations more when top tax rates increase. It looks a little bit like the supply side scenario, but it has very different policy implications. That is because, if people work less when taxes are high, there is not much the government can do about it. In contrast, if people avoid taxes more when tax rates are high, there is a lot a government can do to fix the tax system. A situation where tax avoidance is easy is typically due to a malfunctioning or poorly designed income tax system. If you are in that second scenario, you want to first eliminate loopholes and improve enforcement, and then once your tax base has become less elastic, you can increase top tax rates.

The third scenario is what we call the rent-seeking scenario, where top earners extract more pay when marginal tax rates are low, but this is at the expense of the rest of the economy. With a high top tax rate, for example, an executive has less incentive to try to increase his or her compensation package because most of the pay raise will be taken away in taxes. To put it simply, high top tax rates put a lid on greed, defined as the ability to extract more pay at the expense of others.

The example of academics will be familiar to some. Faculty pay, at least at the University of California, is pretty rigid. It might reflect, in some vague way, your product, but there is no systematic market force leading it to do this. The way market forces play a role here is that if you get a competitive outside offer you can get a salary increase through a retention case. Your success in gaining a raise affects the limited budget of the University of California and, therefore, taxpayers and students. The higher education sector is not necessarily the place where this phenomenon is most prevalent. In the corporate world, top managers certainly can use their marketability to influence compensation boards. The point is that successful rent-seeking imposes a cost elsewhere. In the rent-seeking scenario, high top tax rates

FIGURE 17
Change in Top 1% Pre-tax Income Share and Change in Marginal Tax Rates
from 1960–1964 to 2005–2009



Source: Piketty, Saez, and Stantcheva (2014). Reprinted with permission.

are actually desirable precisely to prevent people at the top of the labor income distribution from extracting too much at the expense of others.

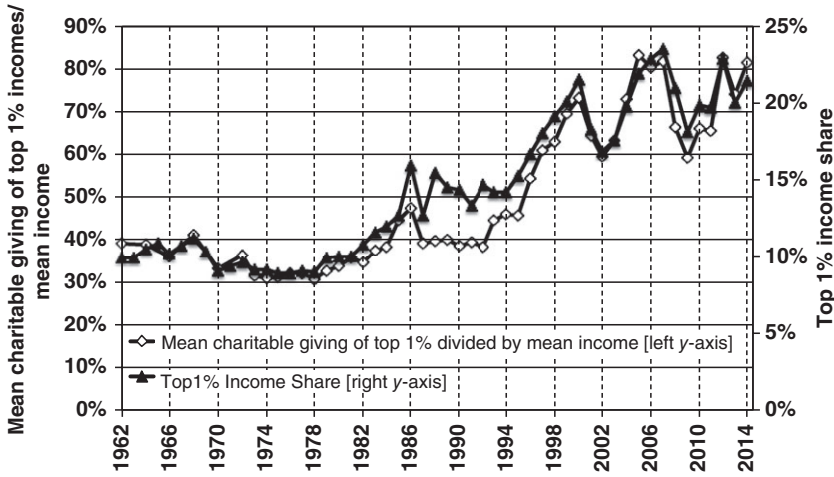
A. Empirically, Which Scenario Best Reflects Reality?

First, let us rule out the tax avoidance scenario. The reaction to Figure 16 is often that it is a nice time series, but perhaps the data do not tell us anything about real income concentration, the data just reflect tax avoidance. When tax rates were very high, of course the rich were doing everything they could to report taxable incomes as small as possible to the IRS to avoid paying those very high tax rates. Then, since tax rates have come down, the rich no longer need to be as careful, so they avoid less. The underlying critique is that, actually, real inequality may not have changed much. In the 1960s and 1970s, the rich looked like they were not so rich, but this could be because they were hiding a very large fraction of their incomes.

What evidence can disprove the tax-avoidance scenario? The simplest way is to look at charitable giving of top income earners because charitable giving is tax deductible, which means that

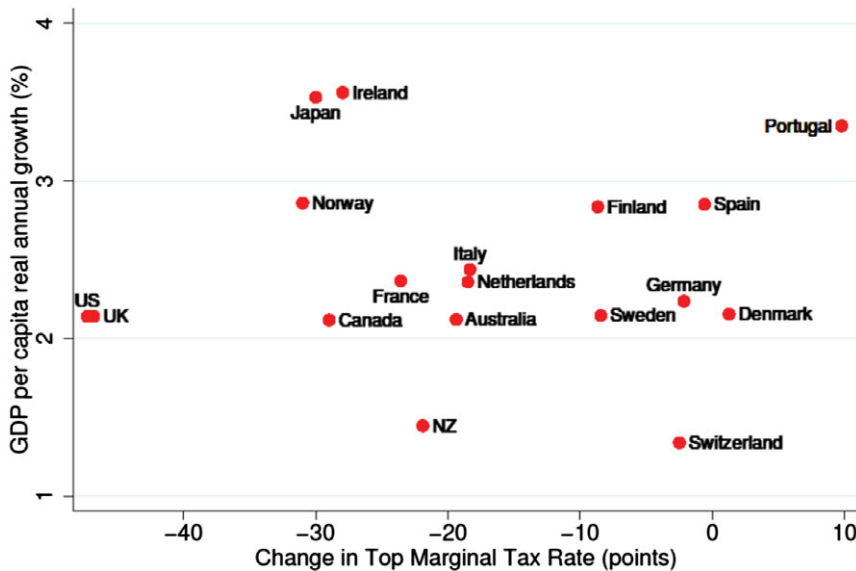
the incentives to give are stronger when tax rates are higher. Under the tax avoidance scenario, the rich in the 1960s were actually super-rich, but they were reporting only a fraction of their real incomes. They should have been able to give a lot to charity because, in reality, they were rich and also they would have saved a lot in taxes by deducting charitable giving as tax rates were so high. However, empirically, charitable giving of top income earners has grown pretty much in tandem with reported top incomes. This is illustrated in Figure 18, where there are two scales, the top 1% income share (shown in black triangles), and a comparable measure of how much the wealthy give relative to the mean income (shown in white diamonds). Over time these two series tightly line up. In the 1960s, the top 1% income earners gave on average about 35% of the average income economy wide. Today, they give 80% of the average income in the economy. Their ability to give has grown almost parallel to the share of their reported income, which grew from about 10% to 22% today. This strongly suggests that, in reality, the surge in reported top income shares reflects real income increases because it follows so closely from the real behavior, in the form of

FIGURE 18
Charitable Giving of U.S. Top 1% Income Earners, 1962–2014



Note: The figure depicts average charitable giving of top 1% incomes (normalized by average income per family) on the left y-axis. For comparison, the figure reports the top 1% income share (on the right y-axis). Computations made by the author using individual income tax data (Saez 2016).

FIGURE 19
Change in Top Tax Rate and GDP per Capita Growth Since 1960



Source: Piketty, Saez, and Stantcheva (2014). Reprinted with permission.

charitable giving. To put it simply: the rich are richer today (relative to the average income) than in the 1960s and so they are able to give a lot more today (again relative to the average income) than in the 1960s.

The second scenario, tax avoidance, implies that there is a change in the size of tax avoidance with a change in the marginal tax rate. While this may occur, from Figure 18 we can conclude that the size of any change in tax avoidance is

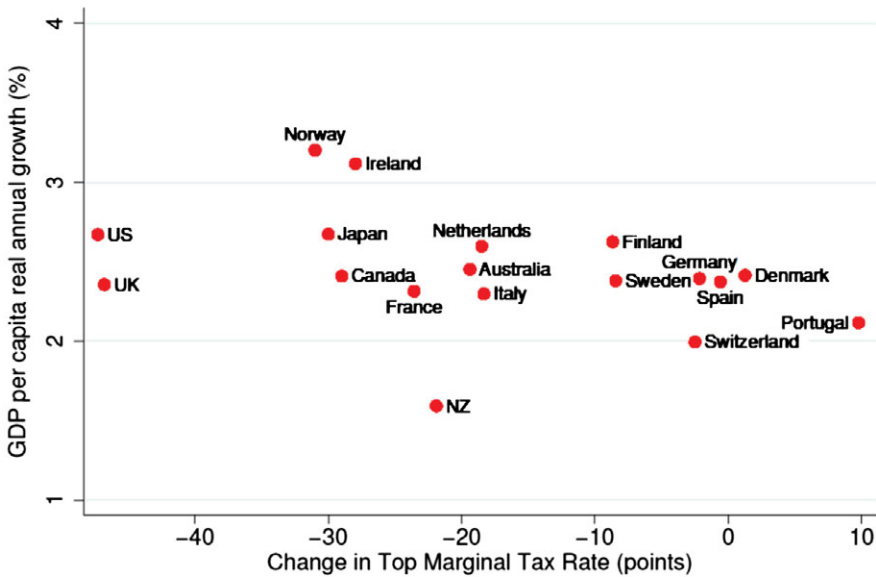
insufficient to explain the inverse relationship between the change in the highest tax rates and the change in pre-tax income shown in Figure 16 for the United States over a century and shown in Figure 17 across countries.

Discarding the tax-avoidance scenario, this leaves the two other scenarios: supply side versus rent-seeking. It is hard to disprove one relative to the other fully convincingly. Probably the world is a mix of both. You can find examples where taxes reduce work incentives and work behavior, and where taxes reduce the ability to extract more pay at the expense of others. We want to know quantitatively what is the closest to reality. What separates the two scenarios the most starkly is the real growth effects of top tax rate cuts. Under the supply side scenario, growth in the top 1% of incomes due to cuts in the top tax rate comes from more economic activity and should therefore register as more economic growth. In contrast, under the rent-seeking scenario, growth of the top 1% of incomes due to top tax rate cuts comes at the expense of the bottom 99%, and hence is not associated with more economic growth. Based on the international macro-evidence, it is actually hard to find an effect of top tax rate cuts on economic growth.

While it is clear that there is a strong correlation between top tax rates and the share of pre-tax income going to the top 1% income earners (as we have seen in Figures 16 and 17), it is much harder to see any link between top tax rates and economic growth. For the international comparison, in Figure 19, we change the y-axis from Figure 17 to measure economic growth instead of top income shares. There is no clear correlation between cuts in top tax rates since the 1960s and growth in gross domestic product (GDP) per capita since the 1960s. Certainly, the United States or the United Kingdom did not show growth performance much better than say Germany, another advanced economy.

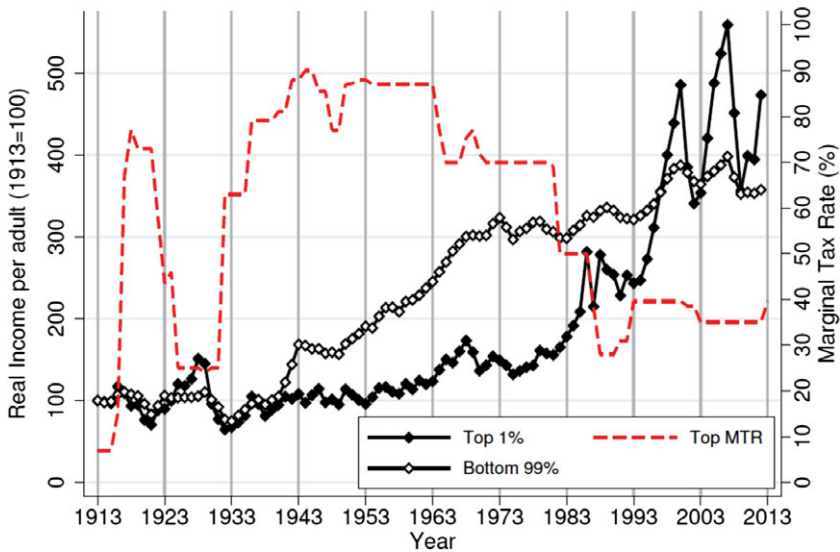
Obviously, growth per capita since 1960 is higher for countries that start poorer in 1960 such as Japan, Ireland, or Portugal. Hence, it is useful to control for the initial level of economic development, as shown in Figure 20. When you do that, growth rates are closer across countries. But even then, there is no obvious correlation whereby the United States and the United Kingdom, which cut the top tax rate the most, experience better growth than the European countries that did not adopt those policies. As economists, we know that this lack of correlation is not a very

FIGURE 20
Change in Top Tax Rate and GDP per Capita Growth Since 1960
Growth Adjusted for Initial (1960) GDP



Source: Piketty, Saez, and Stantcheva (2014). Reprinted with permission.

FIGURE 21
U.S. Top 1% and Bottom 99% Income Growth and Marginal Tax Rates



Source of data: Alvaredo et al. (2016). An earlier version of the data and figure appears in Piketty and Saez (2003).
Source of figure: Piketty, Saez, and Stantcheva (2014). Updated to 2013. Reprinted with permission.

compelling test and hence it is not sufficient to fully disprove the supply side scenario. The challenge for economists is to understand whether the surge in top incomes really aligns with a similar increase in actual economic activity. It might be possible that such studies would be doable in specific case studies using, for example, data linking employees and employers.

The rent-seeking scenario asks whether the growth in income share of the top 1% comes at the expense of the bottom 99%, and I do not know for sure. But I want to finish by showing you in Figure 21 the contrast between the growth of the bottom 99% (in white) and the top 1% (in black), relative to the top marginal tax rate (in red) for the United States. For this comparison, both the bottom 99% and top 1% groups start at a base indexed to 100 in 1913, and they end up at about 400 one century later. In the long run, economic growth lifts all boats, and that is indeed what has happened in the United States over the course of a century. Real incomes per adult for the top and for the bottom have multiplied roughly by four in real terms. What is striking is that the timing of growth is really different across groups. The period from the New Deal in 1933 to the late 1970s, when top tax rates were extremely high, was a time when the income of the bottom 99% grew pretty fast, while the income of the top

1% was growing much more slowly. Conversely, after top tax rates came down in the 1980s, the pattern of growth flips. Namely, this is the time when the incomes of the top 1% are growing extremely fast, while the incomes of the bottom 99% are growing much more slowly.

The pattern of growth for the top 1% and bottom 99% income for the United States shown in Figure 21 and the cross-sectional international comparison of differential cuts in marginal tax rates and economic growth since the 1960s shown in Figures 19 and 20 are consistent with the rent-seeking scenario. Consistent, but they do not prove the rent-seeking scenario definitively because this is, again, a correlation in terms of growth. The debate has to go on, and hopefully economic research will provide better insights on this key issue for the proper taxation of top incomes in the future.

VIII. CONCLUSION

The U.S. and international historical evidence shows that tax policy measured, very simply, by the progressivity at the top of the individual income tax system, seems to play a big role in shaping income concentration. High top tax rates reduce the pre-tax income gap without, so

far, having a clear negative effect on economic growth. My sense is really that the public will favor more progressive taxation only if it is convinced that top income gains are detrimental to economic growth of the 99%, and that taxation can ameliorate this. In America, people do not have a strong view against inequality per se, as long as inequality is fair. And what does fair mean? As an economist, you would say fair means that individual income and wealth reflect the value of what people produce or otherwise contribute to the economic system. This is why distinguishing between the standard supply side scenario versus the rent-seeking scenario is so important.

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QUESTIONS AND ANSWERS: INCOME AND WEALTH INEQUALITY – EVIDENCE AND POLICY IMPLICATIONS*

EMMANUEL SAEZ

(moderated by David Card)

Comments, questions and answers about inequality. (JEL D3)

David Card: Thanks very much, Emmanuel. We're going to take a few questions now. Please state your name and affiliation and then speak. Emmanuel's talk will appear as an article in *Contemporary Economic Policy*. The July 2016 issue has contributions on inequality by Peter Diamond (2016) and Sir James Mirrlees (2016), and also includes audience questions and their responses from the symposium on which those articles are based. And so, we'd like to again include audience interaction as part of that future issue of *COEP*.

Juan De Dios: My name is Juan De Dios from the University of Liverpool. I'm a little bit surprised at not hearing anything about the impact of taxes on efficiency and the use of this estimation as a counterfactual.

Emmanuel Saez: I haven't used the word "efficiency." But efficiency is implicit in my analysis. In the supply side scenario, taxes make people work less. This response to taxation creates efficiency costs. Similarly, a system where tax avoidance is easy creates efficiency costs because people avoid paying taxes, but to do so, they do things that waste economic resources (like hiring accountants to reorganize their affairs and minimize taxes paid). You could describe this using the expression "efficiency costs." In contrast, under the rent-seeking scenario, progressive taxes on the top are actually efficient because they reduce wasteful activities from top earners aimed at increasing their own pay at the

expense of others. To put it simply, under the supply side scenario, high top tax rates are inefficient; under the rent-seeking scenario, high top tax rates are efficient.

Craig Medlen: Craig Medlen, Menlo College. The thing that strikes me is that there's a lack of class analysis in your presentation. The Democrats, basically, had labor backing since the 1930s up until, roughly, the 1970s. So the inverted correlation between the top marginal rates and inequality might reflect the fact that the rich just have more political power.

And I'd like you to address that question, with outsourcing and the technological advances that, basically, increase unemployment in particular worker categories. That may have nothing to do with rent-seeking or supply side economics. It might just have to do with political power.

Emmanuel Saez: This is a good question. Let me answer in two steps. The first one is that the policy changes that took place during the Reagan administration of the 1980s are much broader than simply reducing income tax progressivity. In particular, the Reagan administration reduced the bargaining power of many unions, and also continued the policies of deregulation.

And these other policies, union policy and deregulation, might also have played a role in the surge in income concentration. And the weakening of unions really fits well with the rent-seeking scenario. With unions, there is bargaining or, if you want, a class power struggle for how the economic pie is split between workers and owners of capital. The pie is not necessarily going to be split according to neo-classical theory, that is, based on marginal product. It's going to be split, in part, by relative economic power. And I really think that this played a role. The ability of top earners to extract more was likely made possible in part by the fact that the unions became much weaker.

*This article forms part of an edited transcription of the Keynote Address presented at the 91st Annual Conference of the Western Economic Association International.

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The second thing then, is that then you have a positive feedback loop. As the top earners are able to make more, they are possibly able to have more influence because income is power. Especially at the top, you can influence politicians by campaign contributions, but it's much broader than that. You can fund think tanks; you can fund various causes that will make it harder to reverse the policies that favored higher incomes in the first place.

Bob Eisenbeis: I'm Bob Eisenbeis from Cumberland Advisors. There's another side to this story. And that is the relationship between marginal tax rates and tax revenues collected, and the shares of tax revenues paid by each income group. And if you look at the relationship between the highest marginal tax rate and revenues collected, it's essentially a flat line at approximately 18%. So there's more underlying this analysis in terms of the whole story than just looking at income shares.

Emmanuel Saez: Yes. Indeed, it's often heard that, in the United States, the top 1% is paying. I think the number is something like 40% of total federal individual income tax. That is true. And it's true that the top 1% is paying now a much higher share of federal income taxes than it was in the 1960s. This is because even though the tax system is less progressive than in the 1960s, top 1% income earners are making so much more income that they are paying more overall. In my view, it's a misleading way of looking at it.

Think about it this way. Suppose we had, like some conservatives advocate, a simple flat tax, and everybody pays 15% of their income. Suppose inequality increases. Then the rich are going to pay a higher share of taxes because everybody pays 15%. Would you advocate, in that case, cutting down the tax rate on the rich and move to a regressive tax so that the rich continue paying the same share of taxes as before? That does not seem fair. While the rich pay more, you really want to know what is due to increasing inequality versus changes in the progressivity of the tax system. If you put the two together, you gain this important perspective. Otherwise, you can give the impression that the rich are already paying a lot, when, in reality, they're paying a lot because their pretax incomes are so high.

Florence Neymotin: Florence Neymotin from Nova Southeastern University. I have a little bit of an issue with treating people who are in the bottom 50% in the same way in 1920 with those who are in the bottom 50% in 2015. The makeup of this population demographically is now very

different. In part, this is endogenous to the education incentives that we've created with the tax structure, and labor and wage policies, etc. In the 1920s, who we're talking about isn't the same as who we're talking about today. So raising their incomes might not be the same kind of question. Can you address that?

Emmanuel Saez: Obviously, the development of mass education plays a large role in the shaping of inequality. There's an enormous body of work on that. Claudia Goldin and Larry Katz have written a pretty famous book about the race between education and returns in equality (Goldin and Katz 2010).

I agree that education is an important factor. And hopefully economists will be able to sort out the role of mass education. It is an interesting question to know what inequality in income was early in the twentieth century, at a time when the high school graduation rate was much lower than it is today. However, this fact does not invalidate this analysis of inequality among all adults.

I think your question might come from the fact that economists have looked at inequality often by comparing the earnings of college graduates, high school graduates, etc. Comparing these groups over long time periods can be misleading as the fraction of individuals in each group can change dramatically in the long run. The use of top income shares avoids this problem: the top 10% of adults is always the top 10% of adults.

Denise Stanley: Denise Stanley, California State University Fullerton. You spent a lot of time on tax policies as a driver of income distribution. Could you comment a bit on spending policies to reduce a heavily skewed income distribution? You also put more emphasis on national institutions as a factor, as opposed to globalization and technology. Do you think programs for spending related to social security are key? Or might trade adjustment assistance, outsourcing adjustment assistance, and globalization spending mechanisms address this inequality?

Emmanuel Saez: Here I bring back Figure 8 showing the bottom 50% of adult income, pretax and posttax. It's obvious that, in dollar terms, transfers play a big role for the bottom 50%. Even without doing any economic analysis of how people respond to transfers, the impact of government transfers, or benefits from government spending, is going to be very large.

Actually, one reason why we wanted to go to national income definitions was precisely so that we could compare countries on a more equal footing, using the same definitions. Even in the

United States, known as a country to have a relatively small welfare state, when you go from pretax to posttax for the bottom 50%, it makes a big difference. In a country like France, the difference would be even bigger. Then, of course, you can discuss what shape those transfer programs should take and what they should be conditioned on. All of those are very interesting economic questions. But here, I just want to show you, in pure dollar amounts, transfers are already very significant to the lower income group, and some countries do even more.

Venoo Kakar: This is Venoo Kakar from San Francisco State University. My question is related to the effects of inflation on the redistribution of income, wealth and, consequently, consumption in the United States. Does inflation make inequality worse or better?

Emmanuel Saez: The first thing is that all of our numbers are real, so that we adjust everything for inflation. We haven't had much inflation in the United States since the early 1980s. And it doesn't look like we'll have inflation any time soon, given the overall macroeconomics.

Certainly, historically in the 1970s, I would say that inflation was an overall equalizing effect because this was a time where unions were still relatively strong and many companies provided cost of living adjustments.

In contrast, other forms of income, typically interest income, weren't able to adjust for inflation as closely. That's why you see the least level of income and wealth concentration precisely at the time where inflation picks up. It's not always like that. Sometimes high inflation situations, when there is no mechanism through which compensation can adjust, can widen inequality and generate riots and economic disruptions.

David Card: I'd like to, once again, thank Emmanuel for an outstanding presentation.

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