

Recent Evolution of Income and Wealth Inequality: Comments on Piketty's *Capital in the Twenty-First Century*

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I. INTRODUCTION

The astounding success of Thomas Piketty's book¹ makes it clear that the topic of changing inequality in recent decades is of great interest to the public. There is huge demand for understanding what has happened and, even more so, the consequences for the future.

Piketty does three basic things in the book. First, he documents what has happened in the past to the (relative) importance of capital stock,² as well as to income and wealth inequality.³ Second, he provides an economic framework for organizing the historical data and uses this framework to project into the future.⁴ Third, having concluded that wealth concentration will increase, he makes policy recommendations.⁵

The book has received a tremendous amount of attention and much has been written about the strengths and weaknesses of the arguments in each of these parts.⁶ In what follows, I make a few critical and, given how much has already been written, not always original comments. That should not detract though from the fact that—whatever one thinks about details or even the whole message—the book is very important. It is based on the truly astounding data collection effort of Piketty and his co-authors over the last fifteen years that allowed for documenting basic facts about the evolution of inequality. It has behind it scholarship at the frontier of economic research on this topic. As with any academic work, it is never the last word but Piketty's

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¹ See Thomas Piketty, *Capital in the Twenty-First Century* (Arthur Goldhammer trans., Harvard Univ. Press 2014).

² Id. at 113-63.

³ Id. at 304-76.

⁴ Id. at 430-67.

⁵ Id. at 515-39.

⁶ See, e.g., Symposium, *Wealth and Inequality*, *J. Econ. Persp.*, Winter 2015, at 3.

research has already accomplished what everyone in his position would wish to accomplish: It set the agenda and inspired a lot of additional work. The book further cements his previous work and goes beyond it by making all of it accessible to the masses (or at least, the masses that are educated, motivated, and curious enough to push through a 700-page long book of academic origin).

I start by providing a few remarks about why one may be concerned with inequality at all. I follow with a discussion of possible explanations for an increase in inequality in recent decades, stressing the importance of technological change and being skeptical about the importance of institutional changes that play a prominent role in the book. I then comment on changes in income and wealth inequality in the United States, pointing out measurement problems that make the analysis of *wealth* inequality (which is central to the book's thesis) difficult. Subsequently, I argue that technological transition helps in understanding the patterns of wealth and income inequality, in particular controversy about whether wealth inequality has increased as much as income inequality has. In the final Part, I comment on the reasons why having the right story for why inequality has increased matters.

II. DO WE CARE ABOUT INEQUALITY (AND OF WHAT)?

There are many ways to approach inequality—one may be interested in inequality of well-being or proxies for it, such as consumption, earnings, income, or wealth. A welfarist with a preference for equity (in an ideal world, with ideal data) would focus on inequality of well-being.⁷ Consumption is a close second, though perhaps one would like to see it corrected for effort that different people exert to achieve it. Well-being is very hard to measure directly (notwithstanding an interesting line of research on subjective well-being⁸) and comprehensive consumption data is very hard to come by, so that earnings, income, and wealth that are somewhat easier to measure are of natural focus. Even then, measurement issues abound—tax sources and survey data are the source of information but they all have various problems (and relative benefits). One can think about inequality of individuals, households, or families; adjust (or not) for taxes, transfers, or fringe benefits; correct (or not) for cross-sectional and over-time differences in the cost of living; consider annual, multi-year, or perhaps lifetime measures. Inequality has many aspects to it—understanding the bottom of the distribution is not the same as understanding its top.

⁷ See Louis Kaplow, *The Theory of Taxation and Public Economics* 347 (2011).

⁸ See, e.g., Daniel Kahneman & Alan B. Krueger, *Developments in the Measurement of Subjective Well-Being*, *J. Econ. Persp.*, Winter 2006, at 3.

The attractiveness of earnings, income, or wealth is not just that the data is somewhat easier to come by than is the case with well-being or consumption. It is also due to the fact that these variables get us closer to the notion of opportunities rather than outcomes. Few people would be upset about inequality in earnings or wealth arising from different decisions about how much to work or save. However, a possible normative rationale for the analysis of inequality in earnings or wealth rather than economic well-being is the (often implicit) belief that the former reflect opportunities rather than tastes. Even then, there are different aspects of opportunities that have very different ramifications. Commanding a high salary because of one's productive skills is different than earning large incomes because of access, connections, or corruption. A billionaire hedge fund manager testing the fine line of insider trading is likely to be viewed differently than a billionaire Silicon Valley entrepreneur. Simply measuring inequality does not discriminate between these explanations.

Focusing on the very top of the distribution raises one other issue: Beyond preferences for equity in either outcomes or opportunities, one may be concerned about the direct effect that the well-to-do have on others. The notion that high wealth concentration affects the nature of the society is plausible. Piketty certainly thinks so: "The Renter, Enemy of Democracy" is a subtitle of one of the chapters.⁹ Money can buy political influence, perpetuate differences across generations, and on a more local level, stratify neighborhoods and exclude others. But it can also pay for vaccines in developing countries, museums, or education. The net effect is an empirical question.

The reason for the success of the book probably has something to do with all three motivations: redistributive concerns, a sense that growing inequality reflects growing inequality of opportunities, and the possibility that changing inequality may have an adverse effect on the whole society in the future.

III. WHY HAS INCOME INEQUALITY INCREASED?

The redistributive concern is the easiest to evaluate. Inequality has increased.¹⁰ Since the book focuses on the very top of the distribution, I focus on it as well. Income tax data has been used to construct measures of income concentration in the United States. Early work of Daniel Feenberg and James Poterba¹¹ drew attention to changes at the

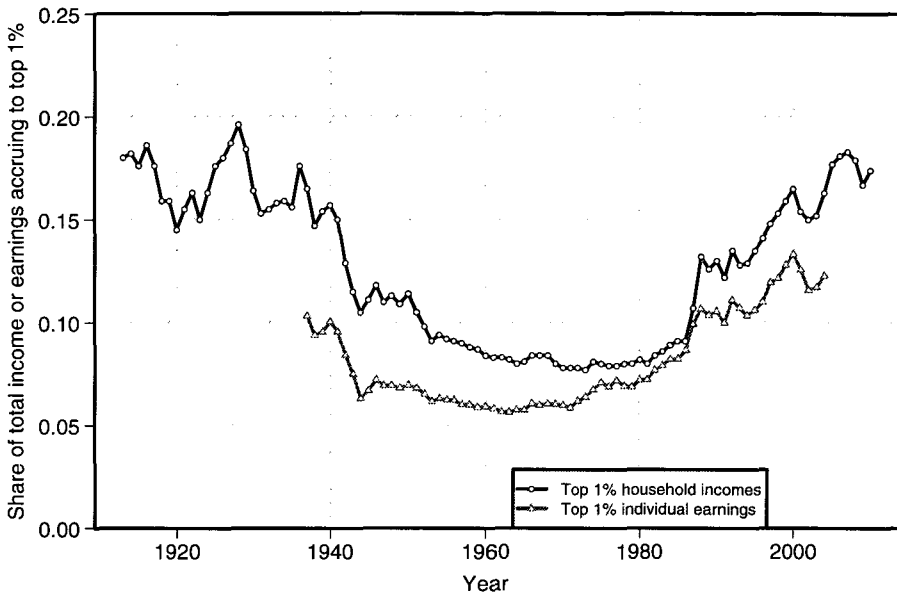
⁹ See Piketty, note 1, at 422.

¹⁰ See *id.* at 471.

¹¹ Daniel R. Feenberg & James M. Poterba, *Income Inequality and the Incomes of Very High Income Taxpayers: Evidence from Tax Returns*, in 7 *Tax Policy and the Economy* 145, 158 (James M. Poterba ed., 1993).

top of the distribution, but it is work of Piketty and Emmanuel Saez¹² that comprehensively documented the patterns of income concentration since the early twentieth century and its increase in recent decades. Figure 1 shows the evolution of the top 1% of income using their updated series.

FIGURE 1
TOP 1% INCOME AND EARNINGS SHARE¹³



A lot of subsequent literature probed the importance of various measurement issues (such as changing form of compensation, household composition, robustness to accounting for transfers or fringe benefits, and changing demographic structure).¹⁴ The increase in income concentration since the 1970's is very robust to these considerations. Figure 1 also shows labor earnings (rather than income) concentration based on payroll tax records of commerce and industry workers from the Social Security Administration analyzed by the author, Saez, and Jae Song¹⁵ to illustrate that labor income is the key component of

¹² Thomas Piketty & Emmanuel Saez, *Income Inequality in the United States, 1913-1998*, 118 Q.J. Econ. 1, 7-14 (2003).

¹³ *Id.* The figures have been updated to 2013 and are available in Excel format at <http://eml.berkeley.edu/~saez/>.

¹⁴ See David H. Autor, *Skills, Education, and the Rise of Earnings Inequality Among the "Other 99 Percent,"* 344 Sci. 843, 841-51 (2014); Jesper Roine & Daniel Waldenström, *Long-Run Trends in the Distribution of Income and Wealth*, in 2 *Handbook of Income Distribution* 469 (Anthony B. Atkinson & Francois Bourguignon eds., 2015).

¹⁵ Wojciech Kopczuk, Emmanuel Saez & Jae Song, *Earnings Inequality and Mobility in the United States: Evidence from Social Security Data Since 1937*, 125 Q.J. Econ. 91, 94-95 (2009).

these changes. The same qualitative pattern over time prevails when income tax data is used and capital income is ignored completely.

The evidence that the concentration of incomes has grown is overwhelming and it is not limited to the top of the distribution, although the patterns are most spectacular there. Rising earnings differentials by measures of skills (such as education) have been well documented and the literature has probed various explanations for it.¹⁶ There are many pieces to the story, including changing demographics, increasing labor force participation of women, the declining trade barriers and changing patterns of international trade, and changing labor market institutions (unions, minimum wage, and taxation). There is a near consensus that the most important explanation in accounting for general patterns of inequality is the changing technology—economists refer to “skill-biased technological change”¹⁷—and its interaction with education.¹⁸ The idea is that the economy has evolved in a way that favors certain types of skills—“nonroutine,” that is, those that cannot be easily substituted by technology.¹⁹

Piketty has a different explanation than technology for the growth of inequality. When summarizing his major conclusions, he states:

[T]he reduction of inequality that took place in most developed countries between 1910 and 1950 was above all a consequence of war and of policies adopted to cope with the shocks of war. Similarly, the resurgence of inequality after 1980 is due largely to the political shifts of the past several decades, especially in regard to taxation and finance.²⁰

This is a bold hypothesis that rings somewhat true, because it would be hard to argue that wars and redistributive taxation have no effect on the distribution. Indeed, the book is persuasive that they do. Figure 1 shows that the drop in the share of top incomes and earnings did not occur immediately after the Great Depression but instead happened in the 1940’s—the exact timing is hard to pin down, but other work also suggests that the 1940’s were the period of “Great Compression” in wages.²¹ This nicely coincides with wartime wage control and a rapid increase in progressivity occurring around the time. Similarly, large tax reforms of the early- to mid-1980’s coincide with the

¹⁶ See Autor, note 14, at 843, 845-48.

¹⁷ See, e.g., Claudia Goldin & Lawrence F. Katz, *The Race Between Education and Technology* (2010).

¹⁸ See, e.g., Autor, note 14, at 844-45.

¹⁹ See *id.* at 846.

²⁰ Piketty, note 1, at 20.

²¹ Claudia Goldin & Robert A. Margo, *The Great Compression*, 107 *Q.J. Econ.* 1, 1-3 (1992).

growth in income concentration. In particular, the second massive reduction in marginal tax rates, the Tax Reform Act of 1986,²² is clearly visible in the data series on Figure 1, though the onset of inequality growth appears to precede the first large reform—the Economic Recovery Tax Act of 1981.²³

Having said that, I find explanations for the evolution of inequality in developed countries that highlight as the primary force the role of institutional changes unattractive for a number of reasons.

First, to my knowledge, no paper has conclusively shown the direction of causality. Instead, it is almost certain that causality also runs in the opposite direction: Growing inequality increases opposition to high marginal tax rates,²⁴ declining inequality makes it easy to adopt nominally progressive policies (interestingly, top marginal tax rates of the 1940's and 1950's were set so high that they applied to very few individuals).²⁵ Increased size of capital markets and innovation in finance induces pressure to deregulate. Naturally, once adopted, such policies can further affect inequality, but such a feedback mechanism does not make them the root cause of inequality growth.

On the surface, this observation is not inconsistent with the narrative of the book. Piketty highlights the evolution of capital stock relative to GDP or incomes as the primary force in rising inequality.²⁶ Inequality follows and institutions keep it—or not—in check.²⁷ This way of thinking makes it then natural to talk about the “top 1%” or “top .1%.” There is a group of wealthy individuals and how wealthy they are depends on where the capital stock is and what institutions are in place. What this line of thinking ignores though is the role of technology and the analysis of how inequality comes about beyond a mechanical following of the path of the capital/income ratio. Perhaps this approach is fine for very long-term trends, but ignoring the process of transition is potentially unattractive when inequality is changing rapidly.

The second problem with this approach is precisely the fact that we know that technology is important for understanding the evolution of the rest of the distribution. Occam's razor would suggest that we need not look for a different class of explanations at the top. It is certainly

²² Tax Reform Act of 1986, Pub. L. No. 99-514, 100 Stat. 2085.

²³ Economic Recovery Tax Act of 1981, Pub. L. No. 97-34, 95 Stat. 172.

²⁴ See Joel Slemrod & Jon Bakija, Does Growing Inequality Reduce Tax Progressivity? Should It?, in *Inequality and Tax Policy* (Kevin A. Hassett & R. Glenn Hubbard eds., 2001).

²⁵ Thomas Piketty & Emmanuel Saez, How Progressive Is the U.S. Federal Tax System? A Historical and International Perspective, *J. Econ. Persp.*, Winter, 2007, at 3, 11-16.

²⁶ Piketty, note 1, at 50-55.

²⁷ *Id.* at 27.

in principle possible that the dynamics of the top of the distribution have been driven by different forces, such as reduced progressivity, deregulation, and rent-seeking, than those that shaped the rest of the distribution. It is even more likely that these forces have contributed. However, it is hard to believe that skill-biased technological progress is the primary force necessary for understanding the evolution of the education/college premium and the relative performance of blue- versus white-collar workers, but that it does not play the important role in explaining the top 1%.

How has technology influenced the very top of the distribution? Some ways are obvious—Apple is the world’s most valuable company,²⁸ Microsoft’s founder Bill Gates has been the richest person in the United States for years,²⁹ and technology-based fortunes abound in Forbes 400.³⁰ More subtly, fortunes of companies like Walmart that were the first in their industry to take advantage of information technology using streamlined supply chain) can be traced to the same source as well.³¹ Finance is a very different industry than it was forty years ago—technology allowed the introduction of sophisticated new products, analysis, and trading strategies. Of course, technology was improving before the 1970’s. However, the argument is that information technology is a general purpose technology: Once it arrives, it changes most sectors of the economy.³² Smaller inventions do not; hence they generate isolated fortunes, but do not change the whole structure of the economy and thus have a relatively small effect on inequality. One has to go back to the development of mass transportation or electricity to find similar examples.³³

None of this argument says that smaller stories such as rent-seeking, decoupling CEO pay from performance, rigging financial markets, and insider trading do not happen, just that they accompany (and perhaps contribute to) rather than drive the evolution of inequality. For

²⁸ Kevin Kingsbury, *Apple Is Now More Than Double the Size of Exxon—and Everyone Else*, MoneyBeat, Wall St. J. Blog (Feb. 23, 2015, 1:09 AM), <http://blogs.wsj.com/moneybeat/2015/02/23/apple-is-now-more-than-double-the-size-of-exxon-and-everyone-else>.

²⁹ Kerry A. Dolan & Luisa Kroll, *Inside the 2015 Forbes Billionaires List: Facts and Figures*, Forbes (Mar. 2, 2015, 6:45 AM), <http://www.forbes.com/sites/kerryadolan/2015/03/02/inside-the-2015-forbes-billionaires-list-facts-and-figures>.

³⁰ *The Forbes 400*, Forbes, Oct. 20, 2014, at 125-232.

³¹ Todd Traub, *Wal-Mart Used Technology to Become Supply Chain Leader*, Ark. Business, July 2, 2012, at S36.

³² Boyan Jovanovic & Peter L. Rousseau, *General Purpose Technologies*, in *1B Handbook of Economic Growth* 1181, 1185-86 (Philippe Aghion & Steven N. Durlauf eds., 2005).

³³ See *id.*

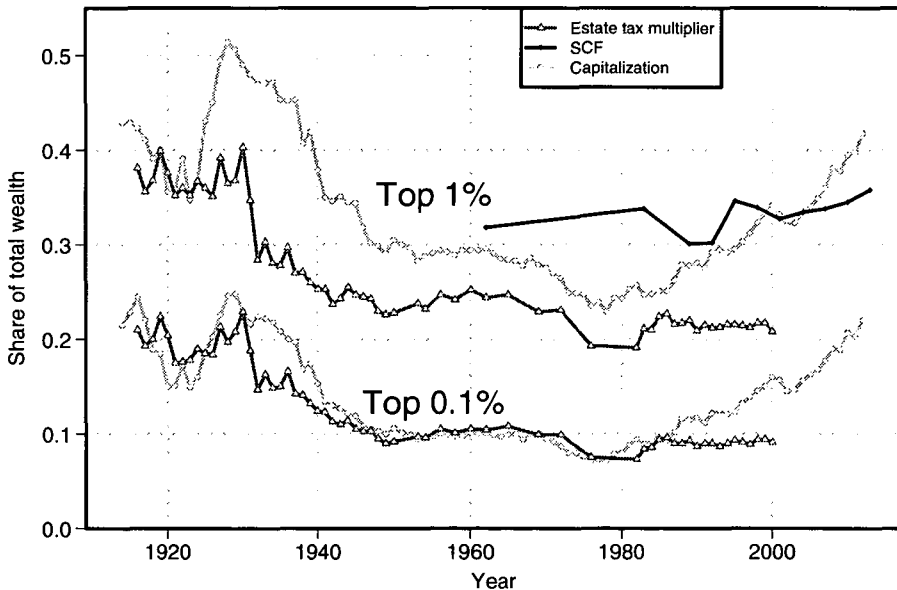
all the talk about CEO pay, the Forbes list has few nonfounder CEOs on it.³⁴

IV. WEALTH VERSUS INCOME INEQUALITY

The book is primarily about wealth but our best evidence is about income. I focus on the recent decades. The most systematic evidence on wealth and inheritances that is presented in the book comes from France. In a nutshell, wealth inequality in France has been quite stable since the 1970's and so has labor income inequality.³⁵ At the same time Piketty documents that inheritances in France have been increasing.³⁶

The U.S. evidence is less systematic and somewhat more controversial, as I explain below. Figure 2 presents estimates of the shares of wealth held by the top 1% and the top 0.1% of the wealthiest in the United States. Until recently, all existing estimates of wealth concentration in the United States (based on surveys and estate tax data) suggested that this pattern has not changed much. This is the evidence that is reported in Piketty.³⁷

FIGURE 2
WEALTH SHARES³⁸



³⁴ See the Forbes 400, note 30.

³⁵ Piketty, note 1, at 272.

³⁶ *Id.* at 380.

³⁷ *Id.* at 347-50.

³⁸ Wojciech Kopczuk, What Do We Know About the Evolution of Top Wealth Shares in

In very recent work, however, Saez and Gabriel Zucman document an increase in the concentration of capital income on individual tax returns and interpret the data as reflecting increased wealth concentration (the so called “capitalization method”).³⁹ I discuss these various sources of data below. I acknowledge uncertainty of what we know, but personally find the direct measures of wealth concentration (which show little change) more compelling.

A. *Measurement of Wealth Inequality*

In a recent paper I discuss in detail the existing estimates of wealth concentration, methodological issues that underlie these series, and the potential explanations for discrepancies where they exist.⁴⁰

In a nutshell, there are three ways of measuring wealth at the very top of the distribution.⁴¹ The first one is surveys that oversample high-net-worth families. The only such survey in the United States is the Survey of Consumer Finances.⁴² Second, one can estimate wealth distribution based on estate tax returns by adjusting wealth holdings of decedents to be representative of the whole population.⁴³ Third, much (though not all) of income that wealth generates (capital income) is taxable and potentially observable. One can attempt to learn from income about the underlying capital stock and construct estimates of wealth distribution in this fashion—this is known as capitalization method.⁴⁴

the United States?, *J. Econ. Persp.*, Winter 2015, at 47, 50.

³⁹ Emmanuel Saez & Gabriel Zucman, *Wealth Inequality in the United States Since 1913: Evidence from Capitalized Income Tax Data 37-38* (Nat'l Bureau Econ. Research, Working Paper No. 20265, 2014), available at <http://www.nber.org/papers/w20265>.

⁴⁰ Kopczuk, note 38, at 48-64.

⁴¹ Separately, named lists of the wealthiest (such as Forbes 400) provide a less systematic supplementary source of information.

⁴² Jesse Bricker, Lisa J. Dettling, Alice Henriques, Joanne W. Hsu, Kevin B. Moore, John Sabelhaus, Jeffrey Thompson & Richard A. Windle, *Changes in U.S. Family Finances from 2010 to 2013: Evidence from the Survey of Consumer Finances*, Fed. Res. Bull., Sept. 2014, at 5-6.

⁴³ This is known as the “estate multiplier” approach. Robert J. Lampman, *Changes in the Share of Wealth Held by Top Wealth-Holders, 1922-1956*, 41 *Rev. Econ. & Stat.* 379, 380 (1959). The idea is to consider people indexed by i who died as being sampled from the living population—the sampling rate is the mortality rate m_i . If m_i is known, the distribution for the living population can be simply obtained by reweighting the data for decedents by inverse sampling weights $1/m_i$ (“estate multipliers”). Lampman was the first to provide such estimates for the United States (there are earlier estimates for the United Kingdom). *Id.* at 384-90. The key methodological difficulty has to do with selecting the mortality rate appropriate for the group studied. *Id.* at 380. Wealth measured in this way reflects wealth at death and hence is skewed by any tax avoidance and planning in anticipation of death.

⁴⁴ Saez & Zucman, note 39, at 9-11.

The SCF series in Figure 2 was compiled by Jesper Roine and Daniel Waldenström.⁴⁵ The estate tax series is based on work by the author and Saez.⁴⁶ Capitalization estimates are the most recent and are based on unpublished work of Saez and Zucman.⁴⁷ Shortcomings in coverage of data that have their source in availability in tax and survey information explain why not all series contain estimates for each year. Differences in the wealth accounted for by different sources and in the unit of observation (that is, individual versus household) account for level differences but probably do not spill over to differences in trends.

As Figure 2 shows, different series produce very different patterns. This is most stark in recent decades.⁴⁸ In recent decades, the concentration of capital income has increased but that increase does not seem to be reflected by direct ways of measuring wealth in the SCF series⁴⁹ and estate tax data. Saez and Zucman have their preferred explanations: They propose that the SCF series fails to adequately sample the rising top of the wealth distribution and suggest that the estate tax estimates err by assuming that the difference in mortality rates of the wealthy and general public stayed constant when, in fact, they may have diverged.⁵⁰

These are plausible explanations but not without weaknesses. The SCF series would have to become progressively worse over time to explain the difference in trends. A significant nonresponse rate in particular is certainly an issue with the SCF series, but as far as I can tell, it does not result in systematic bias.⁵¹

⁴⁵ Roine & Waldenström, note 14, at 537-38. Roine and Waldenström's data is based on Peter H. Lindert, *Three Centuries of Inequality in America*, in 1 *Handbook of Income Inequality* 167, 189 (Anthony B. Atkinson & Francois Bourguignon eds., 2000); Edward N. Wolff, *International Comparisons of Wealth Inequality*, 42 *Rev. Income & Wealth* 433, 436 (1996); Arthur B. Kennickell, *Ponds and Streams: Wealth and Income in the U.S., 1989 to 2007*, at 35 (Fin. & Econ. Discussion Series, Working Paper No. 2009-13, 2009), available at <http://www.federalreserve.gov/pubs/feds/2009/200913/200913pap.pdf>; Arthur B. Kennickell, *Tossed and Turned: Wealth Dynamics of U.S. Households 2007-2009*, at 13 (Fin. & Econ. Discussion Series, Working Paper No. 2011-51, 2011), available at <http://www.federalreserve.gov/pubs/feds/2011/201151/revision/201151pap.pdf>.

⁴⁶ Wojciech Kopczuk & Emmanuel Saez, *Top Wealth Shares in the United States, 1916-2000: Evidence from Estate Tax Returns*, 57 *Nat'l Tax J.* 445, 450-81 (2004).

⁴⁷ Saez & Zucman, note 39, at app. fig. 1.

⁴⁸ However, even for prior decades, relying on capital incomes produces a much smoother pattern in the decline of wealth concentration in the 1930's and 1940's than does the estate tax series. See Kopczuk, note 38, at 50.

⁴⁹ Roine & Waldenström, note 14, at 537-44.

⁵⁰ Saez & Zucman, note 39, at 3-4.

⁵¹ See Arthur B. Kennickell, *Getting to the Top: Reaching Wealthy Respondents in the SCF* 3-5, 23 (2009), available at http://www.federalreserve.gov/econresdata/scf/files/ASA_200911.pdf. For further discussion, see generally Jesse Bricker, Alice M. Henriques, Jake A. Krimmel & John E. Sabelhaus, *Measuring Income and Wealth at the Top Using Administrative and Survey Data*, (Federal Reserve Bd. Fin. & Econ. Discussion Series, Working

Saez and Zucman show that the people that they classify as very wealthy (say the wealthiest 1% of “tax units”) have significantly lower mortality rates than the general public and that the differential has increased over time.⁵² However, the magnitude of this change is not sufficient for explaining the difference between estate tax estimates and capitalization estimates.⁵³ Furthermore, the mortality rates that underlie Saez and Zucman’s evidence are much lower than those based on other sources (such as Social Security data), suggesting that deriving mortality estimates from the tax data is a perilous exercise due to the fact that not everyone files a tax return.⁵⁴

The evidence of increasing differentials in mortality rates observed in tax data that Saez and Zucman document, however, points to an interesting possibility. Their evidence pertains not to the people that are classified as wealthy based on their wealth holdings (because those are not observable directly), but rather the evidence is about people with high capital incomes.⁵⁵ It is possible and likely that, as income inequality has increased, people with the highest capital income are increasingly active rather than passive earners, and that capital income increasingly reflects compensation rather than return on wealth. Furthermore, tax incentives, such as a step-up in basis at death,⁵⁶ discourage realizing capital income shortly before death, so that the population of high-capital-income earners is likely to have a longer expected lifespan. A shift to representation of more active earners at the top of the distribution may very well explain why the top of the capital income distribution appears much healthier.

The problems with the capitalization approach are significant. One needs to assume that the observed capital income reflects the normal rate of return on broadly defined asset classes.⁵⁷ This presumes that people at the top of the distribution do not earn rents in the form of capital income but, instead, effectively invest like everyone else within each asset class, so that the sole source of differences are differences

Paper 2015-030, 2015), available at <http://www.federalreserve.gov/econresdata/feds/2015/files/2015030pap.pdf>; Kopczuk, note 38.

⁵² Saez & Zucman, note 39, at 35-36.

⁵³ See Kopczuk, note 38, at 62 n.5.

⁵⁴ Saez & Zucman, note 39, at 35. They also show that using their mortality rates to apply an estate multiplier technique on the population of decedents in their data replicates their capitalization estimates, and they interpret this in favor of their approach. *Id.* at 35-37. This exercise has, however, a tautological element to it: By construction, the mortality rates reflect a sampling rate corresponding to the population of decedents in the same data. Hence, mechanically, the two approaches should produce the same result except for the sampling error and do not provide independent evidence about the performance of the estate multiplier approach.

⁵⁵ *Id.* at 5-21.

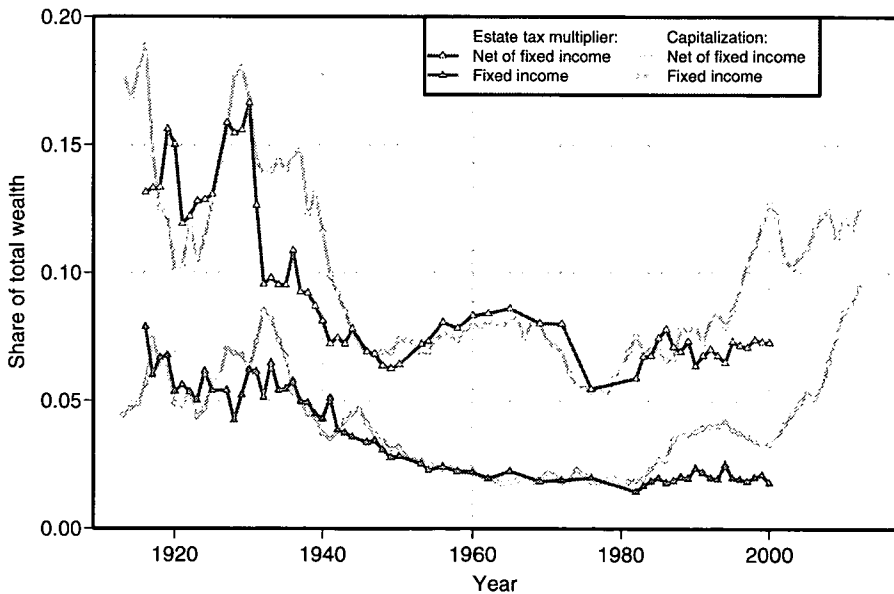
⁵⁶ IRC § 1014.

⁵⁷ See, e.g., Saez & Zucman, note 39, at 15-21.

in portfolio composition. It also presumes that the quantitative importance of the level and/or changes in the compensation component of capital income is small, ruling out the increased importance of carried interest, stock option compensation, and various other ways of reclassifying labor as capital income. Furthermore, tax incentives have changed over time in a way that favors capital income and realizing income on individual income tax returns rather than retaining it within a firm. As an illustrative data point, the effect of the Tax Reform Act of 1986⁵⁸ is again visible in the capitalization-based wealth series without similar effects being present using the other two methods.

The most surprising aspect of the estimates presented by Saez and Zucman is that the growth in wealth concentration since 2000 is fully accounted for by assets generating fixed income.⁵⁹ One possibility is that it is true, although I would like to see some additional corroborating evidence. The alternative explanation is that declining rates of return require adjusting capital income from these types of assets by a large factor and relatively small mistakes in estimating the rate of return translate into very large errors in capitalization factors.

FIGURE 3
COMPOSITION OF THE TOP 0.1% WEALTH SHARE⁶⁰



⁵⁸ Pub. L. No. 99-514, 100 Stat. 2085 (1986).

⁵⁹ See Figure 3.

⁶⁰ Kopczuk, note 38, at 58.

As a final point, the assumption of no extraordinary capital incomes for the wealthy is inconsistent with what Piketty appears to think. Piketty notes that large investors are likely to rely on intermediaries and be both more patient and more willing to take risk, resulting in a higher rate of return.⁶¹ In fact, one of the important claims of the book is that large fortunes have been growing faster than average wealth in recent decades.⁶² While part of the explanation may be differences in portfolio composition, the rough division into stocks, bonds, housing, entrepreneurial wealth, and bank accounts is unlikely to account for it.

V. CHANGES IN THE COMPOSITION OF THE TOP WEALTH HOLDERS

At the end of the day, I suspect that estimates that are based on direct observation of wealth (the SCF series or the estate tax method) are more reliable: While they may suffer from some sampling issues, it seems unlikely that the bias is sufficient to explain the difference in trends between capitalization and the direct methods; at the same time the assumptions behind the capitalization method are heroic and some of the patterns that emerge from it are quite puzzling. However, I acknowledge uncertainty of what we know, so that which of these approaches provides the right picture of wealth concentration is certainly not a settled question.

The discrepancy between the different approaches starts in the early 1980's. If, in fact, there has been no rapid trend in wealth shares, as the SCF series and estate tax approaches indicate, how can it be consistent with rapidly growing income inequality? Alternatively, if top wealth has been trending, why did the other two approaches get progressively worse?

I suspect that the difficulty with measurement in this case reflects the changing nature of inequality in the United States and it is not an accident that results start to diverge at the same time that inequality has started growing. Explanations for differences between series have a common theme. Being based on individual income tax data, the capitalization method captures the changing patterns of capital incomes. Any reporting bias in the SCF series that increases over time probably would have its sources in the difficulties of capturing new wealth. Mortality assumptions and the perceived massive improvement in mortality of top capital income earners are likely to correspond to changes in the composition of that group. The bottom line is

⁶¹ Piketty, note 1, at 430-31.

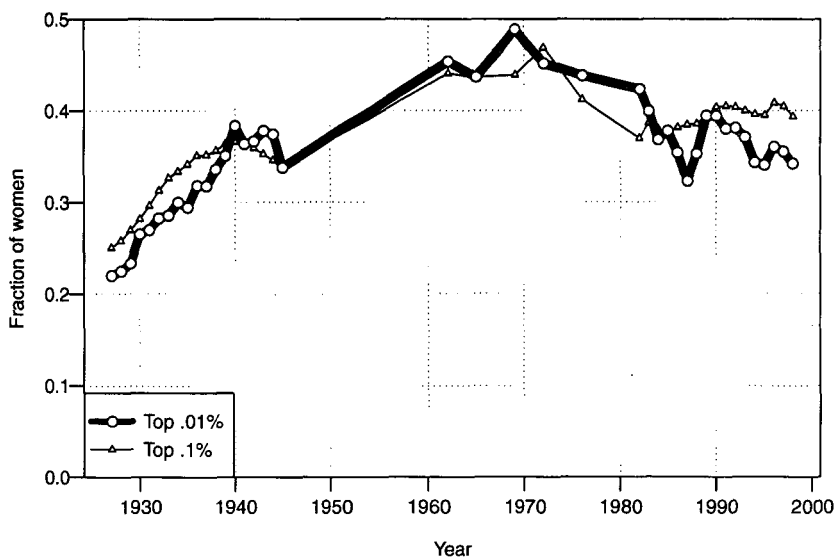
⁶² *Id.* at 431-35.

that the top of the wealth distribution has likely been fluid in recent decades.

If the top 1% of income and wealth distribution were the same people, we would expect that the top of wealth and income distribution would behave in a similar way. If these are different people but the composition of the types of individuals making up the two groups is roughly constant over time, we would expect that the distributions would follow different paths reflecting relative trends in capital and labor income. However, it is extremely unlikely that any of these possibilities is true. The top of the income distribution has increasingly reflected labor incomes, the point emphasized by Piketty and Saez.⁶³ The top of the wealth distribution has changed significantly too.

Figure 4 shows the estimate of the number of women at the very top of the wealth distribution based on estate tax data and estate multiplier adjustment.⁶⁴

FIGURE 4
SHARE OF WOMEN AT THE VERY TOP OF WEALTH
DISTRIBUTION⁶⁵



In my previous work with Lena Edlund we show evidence suggesting that the importance of inheritances as the source of wealth at top of the wealth distribution in the United States peaked at the top of

⁶³ Piketty & Saez, note 12, at 14-17.

⁶⁴ Lena Edlund & Wojciech Kopczuk, *Woman, Wealth, and Mobility*, 99 *Am. Econ. Rev.* 146, 170 (2009).

⁶⁵ *Id.* at 169-70.

the wealth distribution in the 1970's and has declined since.⁶⁶ Our main piece of evidence relies on the changing gender composition of the wealthiest estate taxpayers. Since the 1970's, the number of women among those with the highest estates has actually declined.⁶⁷ This is during the era when women have been making significant strides in the labor market, including the top groups. We concluded that this change reflects a shift away from inherited wealth and toward self-made wealth—inherited wealth is split roughly equally across genders but self-made wealth is skewed toward men.⁶⁸ This is also visible in the Forbes 400 list (Table 1) that shows both a decline in the number of women and the corresponding decline in inheritance as the source of wealth.⁶⁹

TABLE 1
FORBES 400 BY GENDER: 1982-2003⁷⁰

Year	#Women	%Women	# with inheritance			% with inheritance		
			Total	Women	Men	Total	Women	Men
1982	72	0.18	143	64	78	0.36	0.89	0.24
1983	74	0.19	142	67	74	0.36	0.91	0.23
1984	67	0.17	135	60	74	0.34	0.90	0.22
1985	83	0.18	159	75	83	0.34	0.90	0.22
1986	88	0.19	150	76	73	0.32	0.87	0.19
1987	87	0.18	143	73	69	0.29	0.84	0.17
1988	66	0.14	107	52	55	0.23	0.79	0.14
1989	67	0.14	114	51	63	0.24	0.76	0.16
1990	70	0.16	109	51	58	0.24	0.73	0.15
1991	74	0.16	110	51	59	0.24	0.69	0.16
1992	70	0.16	107	49	58	0.24	0.70	0.15
1993	73	0.16	104	49	55	0.23	0.67	0.15
1994	76	0.17	105	50	55	0.23	0.66	0.15
1995	75	0.17	96	46	50	0.21	0.61	0.13
1996	76	0.17	99	47	52	0.22	0.62	0.14
1997	73	0.16	91	42	49	0.20	0.58	0.13
1998	69	0.15	87	40	47	0.19	0.58	0.12
1999	67	0.14	84	37	47	0.18	0.55	0.12
2000	49	0.12	58	24	34	0.14	0.49	0.10
2001	47	0.12	60	25	35	0.15	0.53	0.10
2002	49	0.12	58	26	32	0.14	0.53	0.09
2003	52	0.13	66	30	36	0.16	0.58	0.10

⁶⁶ Id.

⁶⁷ Id.

⁶⁸ Id. at 165.

⁶⁹ Stephen Kaplan and Joshua Rauh also analyze the Forbes list (including more recent years), reaching similar conclusions. Steven N. Kaplan & Joshua D. Rauh, Family, Education and Sources of Wealth Among the Richest Americans, 1982-2012, 103 Am. Econ. Rev. 158, 160 (2013).

⁷⁰ Edlund & Kopczuk, note 64, at 164 tbl.4. The authors used data about popular baby names to classify members of the Forbes lists by gender from 1982 to 2003. Id. at 176.

The decline in the importance of old wealth potentially counterweights an increase that might result from higher wealth concentration due to increasing income inequality. The notion that the top of the wealth distribution has been changing in the direction of self-made wealth is consistent with the idea that the recent decades have been a period of disruptive technological change that created a lot of possibilities to make extraordinary fortunes. The top of the wealth distribution cannot be explained by excessive CEO salaries (one of the Piketty's favorite explanations for the growth in income inequality)⁷¹ simply because few nonfounder CEOs are at the top of the Forbes list, even though they are well-represented among the highest incomes.

The key point here is that technological explanations have a potential for explaining what has been happening both with income and wealth distribution in the United States. The main objection to this argument has to do with international evidence. If technology is the same everywhere, why has income inequality followed a different path in continental Europe than in the United States?⁷² I suspect that this is the place where institutions do in fact start to matter, but in a way that is different from that emphasized by Piketty.⁷³ Globalization should be viewed as a technological development too. Information technology makes it possible to manage businesses elsewhere, out-source in many different ways, optimize supply chains, share information, reach bigger markets, and the like, thereby resulting in both greater opportunities for economic cooperation and increasing returns to scale in many economic activities. In a global economy, workers (and, especially, highly skilled workers) are mobile. It is not an accident that the main financial centers are in London and New York and that Silicon Valley is a mecca for technology entrepreneurs. In each of these places, highly skilled and successful people come from all over the world. The natural explanation is that there are economies of scale from co-locating. Hence, we would not necessarily expect to see every country being able to attract successful workers or entrepreneurs. High taxation, over-regulation and policies that hamper innovation would then affect which countries are winners of this competition. If so, the lack of an increase in income inequality in France and some other countries may be evidence of the failure rather than the success of the policies that are behind it—France may have simply exported its inequality elsewhere.

⁷¹ See Piketty, note 1, at 315-20.

⁷² Compare *id.* at 272 tbl.8.1, with *id.* at 291 tbl.8.5.

⁷³ See *id.* at 471-92 (discussing institutions in largely redistributive terms).

VI. CONCLUSIONS

Why does the explanation for changes in inequality in recent decades matter? There are multiple reasons.

The first one is simply to have the right description of who we are talking about when referring to the top of the distribution. CEOs, entrepreneurs, highly skilled workers, and inheritors are all very different groups. If the composition of the top income and wealth holders is changing, then presumably our view of the appropriate policy reaction changes as well.

The second reason has to do with merits. I subscribe to Piketty's view that large inheritances are not meritocratic and I have written on the role of estate taxation in addressing externalities that may result from concentration of inheritances.⁷⁴ Many members of the new elites are highly educated and entrepreneurial. There is certainly a contribution of family background to being successful based on these characteristics, but nevertheless there is an important meritocratic component to the growth in inequality that stems from favoring skilled labor.

The third reason has to do with projecting into the future. If technological change is an explanation for the current transition in inequality, predictions about future changes in inequality become difficult. Clearly, today, we are no longer talking about ownership of capital just as a way of controlling means of production. The nature of the information-technology-based economy does not necessarily favor physical capital. The importance of capital versus labor in the future remains to be seen, but it is not clear at all that patterns from agricultural or industrial economies provide any information about substitutability of labor and capital in the future.

The fourth point is about the potentially transitional nature of current inequality. The Kuznets curve is a useful framework for thinking about the evolution of inequality over the course of economic development: Inequality first increases when early adopters benefit, but then technology spreads out, benefits others, and ultimately inequality declines.⁷⁵ There is no reason why there should be a single Kuznets curve and every reason to believe that we are at the stage of technological change in which early adoption is happening. In fact, multiple transitions can be happening at once: Evidence of improvements in the standard of living in less developed economies (declining global income inequality, though not necessarily income or wealth concen-

⁷⁴ Wojciech Kopczuk, *Economics of Estate Taxation: Review of Theory and Evidence*, 63 *Tax L. Rev.* 139, 151-52 (2009); see also Piketty, note 1, at 417.

⁷⁵ Simon Kuznets, *Economic Growth and Income Inequality*, 45 *Am. Econ. Rev.* 1, 3-6 (1955).

tration) suggests that this process may be happening on the global scale.⁷⁶

The final point has to do with the recommended policy prescription. Piketty predicts a mechanically increasing role of capital and wealth inequality that will follow and proposes a global wealth tax as a way of addressing the problem.⁷⁷ Implementing a policy like this would yield no benefit but only distortions if the problem that it intends to address ultimately does not materialize. Of course, Piketty is also well aware of administrative issues that make implementation of such a tax difficult.⁷⁸ Similar administrative issues that would need to be resolved to implement wealth taxation would also help in improving our ability to tax capital income, so that I find a preference for taxing wealth over capital income difficult to justify.

A separate point that I want to emphasize has to do with the poor equity properties of such a tax. A tax on wealth is primarily a tax on the normal return to capital—precisely the opposite of what best tax practice would suggest. To see that, imagine a 5% normal rate of return and 1% wealth tax. Such a tax would collect slightly more than 1% of the original principal. A 10% or so income tax would do so as well. However, consider the possibility of extraordinary returns—rents, privileged investments, and the like. Such extraordinary returns would be taxed lightly (at 1%) by a wealth tax but would be taxed highly (say at 10%) by an equivalent income tax. A wealth tax provides a tax break for precisely the wrong component of return on capital.

If there is one thing to take from these comments, it is that the last thirty years have been a period of technological transition. We have made progress in documenting and understanding changes in income inequality, although we clearly still do not have the full picture of the forces behind it. The research on wealth inequality is still incomplete—both in terms of reaching consensus about what has happened and understanding how changes in income and wealth concentration are related. Understanding the causes of wealth and income inequality changes is key for informing policy.

⁷⁶ See Piketty, note 1, at 430-70.

⁷⁷ *Id.* at 515-39.

⁷⁸ See *id.* at 515-18.