Toward an Improved Definition of the Wealthy

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Abstract A definition of the wealthy was proposed in this journal [Eisenhauer, J. G. (2008). An economic definition of the middle class. *Forum for Social Economics, 37*, 103–113]. According to the definition, "the wealthy" are people who could live poorly for a year while living off the interest on their wealth. This paper suggests a more general definition of the wealthy, which encompasses that definition as well as ones based on the ability to live at higher standards of living than the poverty level over longer periods of time than one year while living off interest income alone. Previous empirical work is revisited to show new insights offered by the new definition. The evidence points to the reemergence of a rentier class.

1. INTRODUCTION

In a paper in this journal, a definition of the wealthy was proposed by the economist Joseph G. Eisenhauer (Eisenhauer, 2008). His definition was based on a tripartite division of people into the poor, the middle class, and the wealthy. "The poor" in a given year are people who do not have enough income that year to live above an official, income-based poverty line. "The wealthy" are people who have enough

The title of this paper is based on the title of O'Boyle (1999b).

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wealth they could live above the poverty line that year while living off the interest on their wealth. Finally, “the middle class” are people who are neither poor nor wealthy. The poor are defined in a conventional manner, therefore, but the definitions of the wealthy and the middle class are valuable contributions. The value of the middle-class definition was emphasized by Eisenhauer in his paper. This paper emphasizes the value of his definition of the wealthy before suggesting a more general version of it. The new definition encompasses the ability to live at higher standards of living than the poverty level over longer periods of time than a year while living off the interest on one’s wealth. This paper also extends Eisenhauer’s (2008) previous empirical work on the US to demonstrate new insights offered by the new definition. The empirical evidence suggests some Americans are wealthy enough to ensure that they and their descendants could live extraordinarily well for a century or more off their interest income alone, and the percentage of Americans wealthy enough to do that is reaching levels not seen since the beginning of the twentieth century.

2. THE WEALTHY DEFINED

As debates about how to define poverty continue, there are emerging debates about how other groups—such as the “middle class,” “the rich” in terms of income, and “the wealthy” in terms of wealth—should be defined (Atkinson, 2008; Eisenhauer, 2008; Rasch, 2015).[1] One contribution to that debate came from the above-mentioned paper by Eisenhauer. The definition of the wealthy proposed by Eisenhauer (2008) is a valuable contribution because, relative to the many definitions of the poor that have been suggested, relatively few definitions of the wealthy have been proposed. The few definitions that have been proposed include defining the wealthy as: a given number of the wealthiest people (the 400 wealthiest, e.g. as in *Forbes* magazine’s annual list of the 400 wealthiest Americans); a given percentage of the wealthiest people (the wealthiest 1%, e.g.); people with wealth in excess of a given current or constant dollar value (billionaires, e.g. as in *Forbes* magazine’s annual list of the world’s billionaires in terms of current US dollars); or people whose wealth is greater than a given multiple of a relative wealth level (1,000 times median wealth, e.g. as in Alfani, 2016).

Another definition of the wealthy that is similar to Eisenhauer’s (2008) was independently proposed by the late Tony Atkinson. In Atkinson (2008), he suggests

[1] There is some ambiguity about whether “the rich” should refer to income, wealth, or another dimension of well-being, but to be clear, we use it to refer to income and not wealth. Also to be clear, whereas a person’s “income” is the wages, interest, and other monetary flows they receive, a person’s “wealth” (or, equivalently, their net worth or net assets) is the difference the value of the assets they own, on the one hand, and the debts they owe, on the other hand.

the wealthy in a country are people whose wealth is at least 30 times the average income of the country. Atkinson defines the wealthy in that way for the following reason. To quote him at length, he says,

> What is the rationale for a multiple of 30 [times average income]? The choice of 30 is based on the fact that, at an average real yield of 3⅓ percent per annum, this level of wealth generates an amount equal to mean income per person. A person with [that level of wealth] could live off the interest [on their wealth] at an average standard of living. (p. 66)

Atkinson choose 3⅓% per annum, in particular, because it seemed like a reasonable measure of the "long-run real return" on wealth (p. 67). Of note, for his definition of the wealthy, Eisenhauer (2008) suggests an interest rate of 2 to 5% per annum should be used (p. 109), so Atkinson's (2008) preferred rate is within the range suggested by Eisenhauer (2008).

Eisenhauer's and Atkinson's definitions of the wealthy are therefore closely related, yet slightly different. In both definitions, the wealthy are people who could live above a given standard of living for a year while living off the interest on their wealth. For Eisenhauer, they could live *poorly*. For Atkinson, they could live *ordinarily well* at the standard of living that can be obtained with an average level of income. Note that conceptualizing "the wealthy" in terms of their ability to achieve a given living standard for a year while living off the interest on their wealth is one way to generalize both Eisenhauer's and Atkinson's definitions and encompass each of them as special cases.

As another special case, the wealthy could be defined as people who could live *extraordinarily well* for a year while living off the interest on their wealth. Atkinson (2008) suggests something similar when he proposes that "the super wealthy" be defined as people whose wealth is at least 30^2 or 900 times average income. Although Atkinson did not offer any rationale for that definition, the super wealthy will obviously be wealthier than the sans-adjective wealthy, and his definition can be further rationalized as follows. The super wealthy could secure an average level of income from the interest on their wealth even if they received a lower interest rate than 3⅓% per annum (specifically, just 1/9% per annum). Or, alternatively, given the same interest rate of 3⅓% per annum, the interest earned by the super wealthy would be many times higher than average income (specifically, 30 times greater) and, as such, their interest income alone could secure them a high living standard. Exactly how high their standard of living might be is unclear, however, given that any multiple of average income might correspond to different living standards depending on the extent of income inequality or other factors. The empirical application in the next section of this paper uses a more concrete measure of a high living standard, namely an income large enough for someone to be "rich."

Those definitions of the wealthy may seem arbitrary, but as argued by O'Boyle (1999a, 1999b) with respect to definitions of poverty, any definition of the wealthy is ultimately based on moral and ethical value judgments. For both Atkinson (2008) and Eisenhauer (2008), the wealthy are people who could live for at least a year without working and without deaccumulating wealth. The implicit value judgment in Atkinson (2008) and the more explicit judgment in Eisenhauer (2008) is that it is objectionable to be able to do so. The infirm and others who cannot work would not be denied the right to live by a humane society, of course, but otherwise one should not be able to live without either working or deaccumulating wealth. To be able to do so is especially objectionable in a world in which the "working poor" cannot live from working, the "debt poor" cannot live after servicing their debt, and the "asset poor" have little if any wealth to draw upon in emergencies (Figart, 2007; Henry, 2007; Pressman & Scott, 2009). Similar value judgments can also be found in Thomas Piketty's work. Piketty's (2014) concern that the average rate of return on wealth (*r* in his notation), on the one hand, will tend to outpace the average income growth rate (*g* in his notation), on the other hand, is partly a concern that rentiers will dominate the tops of the income and wealth distribution like they did in Jane Austen's age. Negative economic, social, and political consequences that may arise from a large rentier class would only strengthen the case against them.

Yet if it is objectionable that a group of people could live off the interest on their wealth, it is not so much because they could live poorly for a year, as in Eisenhauer's (2008) definition. It is perhaps not even too objectionable that they live ordinarily well for a year, as in Atkinson's (2008) definition of the wealthy sans adjective. It would be much more objectionable if they could live extraordinarily well for an extended period of time. The real-life counterparts to characters in a Jane Austen novel are objectionable, not necessarily because they can stay out of the poor house or secure a middle-class lifestyle for a year without gainful employment and without eating into their wealth, but because they and their heirs can inhabit the highest rungs of the social ladder without doing so. Indeed, Piketty's (2014) concern is ultimately about the reemergence of an era of patrimonial capitalism dominated by rentiers who are the heirs of other rentiers. If someone is wealthy enough that their interest income is 30 times average income, as in Atkinson's (2008) definition of "the super wealthy," then they may be wealthy enough to secure a high living standard for a long time, but the exact standard that can be achieved and the duration over which it can be achieved are unclear.

Thus, a more general way to generalize and encompass the definitions previously proposed by Eistenhauer (2008) and Atkinson (2008) is to define "the wealthy" as people who could live off the interest on their wealth while still living at a given standard of living—such as a poor, ordinary, or extraordinarily high living standard—for a given period of time—such as one year, one century, or forever. Note that continuing to live at any standard of living forever would require a rate

of return on wealth equal to at least the rate of growth in the cost of that living standard. Moreover, to borrow a point from Mankiw (2015, pp. 43–44), in order for a wealthy person to ensure that they and each of their descendants could secure the same living standard into perpetuity, the rate of return on their wealth after income taxes would also need to be high enough to account for estate taxes (which Mankiw estimates will halve a person's wealth every 35 years when half of an estate is taxed away each generation) and the division of one's estate among multiple heirs (which Mankiw estimates will also halve a person's estate every 35 years when it is evenly divided among two heirs each generation), as well as any consumption out of wealth (which Mankiw suggests must invariably occur because of the "sizeable" expenses of the wealthy on "not only food, shelter, and riotous living but also political and philanthropic contributions"). Only then can a wealthy person ensure an "endless stream of wealthy descendants" (Mankiw, 2015, p. 43). Mankiw downplays such a possibility, but as seen in the empirical application below, some Americans have been wealthy enough they could secure such a stream for a century or more.

3. AN EMPIRICAL APPLICATION

Different definitions of poverty can offer different insights into the nature and extent of poverty (Laderchi et al., 2003). Similarly, different definitions of the wealthy may yield different insights into wealth and its distribution. Eisenhauer (2008) and Atkinson (2008) used data for the US to estimate the proportion of Americans who were wealthy according to their proposed definitions, although they used different data sources, looked at different years, and did not compare their estimates to each other. Their empirical work can be revisited by using a consistent data source to compare what their definitions of "the wealthy," other previously proposed definitions, and our newly proposed definitions suggest about wealth inequality in America. The main data source we will use is Saez and Zucman's (2016) top wealth share estimates.

To operationalize our newly proposed definitions based on living extraordinarily well, we must specify the amount of income necessary to secure such a living standard. We will use the average income of those in the top 1% of the income distribution. The top 1% of the income distribution is a popular definition of "the rich," so our approach is similar to Eisenhauer's (2008) in the sense that we are using a conventional definition of another group—albeit the rich rather than the poor—to help define the wealthy. Our approach is also similar to Atkinson's (2008) in the sense that we are using an average income—albeit of the top 1% rather than the entire population—to help define the wealthy. Of note, as income inequality changed over time, the average income of the top 1% of the income distribution changed as a multiple of the average income of the entire population; it was as high

as 36 times average income at the beginning of the twentieth century, fell to as low as 16 times average income in the middle of that century, and has risen to around 25 times average income today. Those multiples are similar to the ones suggested by Atkinson (2008) for his definition of "the super wealthy."

In terms of our newly proposed definitions based on longer periods of time than one year, we will focus on a finite but long horizon of one century and also consider an infinite horizon by drawing on Mankiw's (2015) approach. Specifically, we will assume that a person in a given year could remain wealthy if (1) they could live off the interest on their wealth after income taxes, (2) they could forgo the annualized cost of paying estate taxes and dividing their estate among heirs, and (3) they could continue to do both of those things over a given horizon, assuming the rate of return on wealth stayed the same, the cost of living continued to rise at the same rate as it did that year, and income and estate taxes remained the same. Like Mankiw, we will calculate the annualized cost of divvying up an estate by assuming an estate is equally divided among two heirs every 35 years. Lifespans, fertility rates, and bequest practices have undoubtedly varied across time and cross-sectionally, but we assume otherwise due to a lack of individual-level data on age, number of children, and estate plans; that also allows us to focus on other changes. Unlike Mankiw, we will not assume a fixed income or estate tax rate so we can account for changes in US tax policy. We will also not make any additional assumptions about the need to consume out of one's wealth because, again, Eisenhauer's (2008), Atkinson's (2008), and our newly proposed definitions are all about whether someone could live off their interest income alone.

For the pre-tax rate of return on wealth, we will measure it using an average pre-tax return estimated by Saez and Zucman (2016) for each year between 1914 and 2012, which they decompose into a yield on wealth gross of taxes and an effect due to asset price changes. We will use the yield net of asset price changes as our measure of the interest rate, although that would admittedly include other forms of income from wealth besides interest. Finally, we will assume our measure of interest income is taxed at an average income tax rate estimated by Piketty, Saez, and Zucman (2016), as discussed in more detail in this paper's data appendix. We make those assumptions because the pre- and post-tax rates of return on wealth (in general) and interest rates (in particular) received by the wealthy are uncertain, so it is debatable what rates we should assume they receive, and assuming they receive an average return taxed at an average rate is a neutral and arguably conservative assumption. Doing that, the annual after-tax interest rate between 1914 and 2012 has been as low as 3%, as high as 9%, and 5% on average. Those after-tax interest rates are similar to the ones suggested by Atkinson (2008) and Eisenhauer (2008). The after-tax return on wealth, which includes the asset price effects, has been as low as 2%, as high as 9%, and 6% on average.

Given those assumptions, a person with wealth W in the current year could live off their interest income any number $n \geq 0$ years into the future if

$$(1 - t)iW_n > Y(1 + \pi)^n \tag{1}$$

where W_n is their wealth n years in the future, i is the pre-tax interest rate, t is the income tax rate, Y is the cost of a standard of living in the given year, and π is the rate of growth in the cost of that living standard. Note that living off their interest income in the current year would only require that $(1-t)\ i\ W > Y$. The wealth of the person (or any one of their descendants) would evolve over time according to equation

$$W_{n+1} = W_n[1 + (1 - t)i + k - (Ln[2/(1 - d)]/35)] - Y(1 + \pi)^n \tag{2}$$

where k is the asset price effect, d is the estate tax rate, and $Ln[2/(1-d)]/35$ is an approximation to the annualized cost of paying estate taxes and dividing the estate in half every 35 years. Living off their interest income forever would require

$$(1 - t)i + k > \pi + (Ln[2/(1 - d)]/35) \tag{3}$$

That expression does not depend on the person's initial wealth or the initial cost of their living standard because, if their wealth grows too slowly, then the person would eventually not be able to live off their interest income alone. Of course, it could take a long time—perhaps a century or more—before that would happen if their initial wealth was high enough.

Other ways of operationalizing our newly proposed definition are possible, but given those specifications, we can look how the wealthy fared in the US across the twentieth century and into the twenty-first. Table 1 shows, for different definitions of "the wealthy" and for each year between 1914 and 2012, estimates of their proportion of the US population and their share of wealth. That table shows the population and wealth shares for the wealthiest 1% of the population, for example. Their population share has obviously always been 1%, but their share of wealth was high at the beginning of the last century, fell during the middle of that century, and then rose back up to the levels seen today.

Similar U-shaped trends in wealth shares are observed for other groups, including those who could live poorly, ordinarily well, or extraordinarily well for a year or century off their interest income. Their wealth shares, as well as their population shares, generally follow U-shaped trends and are now reaching levels not seen since the beginning of last century. The population and wealth shares for those who could live poorly, in particular, are now at their highest levels for any year for which we have data.

Only a small proportion of the population has ever been able to live extraordinarily well for a century off their interest income. In the last year for which we have data, only about 0.001% of the population or 1,640 people in total could live that high for that long. Of note, however, that is larger than the number of billionaires in the same year; we estimated there were only 537 billionaires that year and

Table 1: The Wealthy in the US, 1914 to 2012.

	Population share (%)			Wealth share (%)		
Definition of wealthy	1914		2012	1914		2012
Wealthiest 1% of population	1.0		1.0	45		39
Billionaires in 2012 dollars	8E-6		2E-4	0.3		3.4
Could live off interest poorly for one year	4.9		21.7	65		87
“” ordinarily well for one year	4.9		4.5	66		59
“” extraordinarily well for one year	0.1		0.1	28		18
“” poorly for one century	0.5		7.1	40		67
“” ordinarily well for one century	0.3		0.4	36		29
“” extraordinarily well for one century	7E-3		1E-3	8		5

Notes: This table shows, for different definitions of “the wealthy,” estimates of the percentage of the US population that was wealthy and their share of that nation’s wealth in each year between 1914 and 2012. Sparklines are drawn to illustrate the qualitative trends over time. Numerical values are reported for the first and last years.

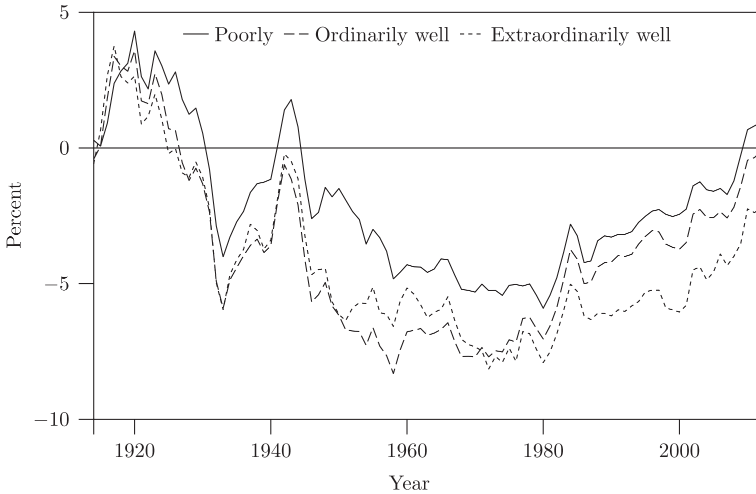

Figure 1: Excess Rates of Return.
Note: This figure shows, for each year from 1914 to 2012 and for different living standards, the difference between the left- and right-hand sides of equation (3). If the difference is non-negative, then the rate of return on wealth is high enough for a wealthy person and each of their descendants to live poorly, ordinarily well, or extraordinarily well off their interest income forever.

Forbes magazine estimated a similar number (specifically, 425 US billionaires; Kroll, 2012). Also of note, even if they may seem trivially small in terms of their share of the population, they own a disproportionately large share of the nation's wealth, and that share is larger today than it was in the middle of the last century.[2]

Thus, the new definitions proposed in this paper reveal that a non-trivial proportion of the US population is now wealthy enough that they and their descendants could live extraordinarily well for at least a century without working or deaccumulating wealth. The wealthy today or their children or their grandchildren could choose to work or to eat into their wealth, of course, but they would not be forced to do so. Piketty's (2014) concern about the emergence of a rentier class therefore seems to be well-founded.

[2] The rise in their population and wealth shares would be even sharper if we were to define an "extraordinary" living standard in terms of the average *labor* income of the top 1% of the *labor* income distribution. It is unclear how that compares to the beginning of the twentieth century because Piketty, Saez, and Zucman (2016) do not provide top-labor-income shares before 1962.

Whether someone who could live off their interest income alone for a given year could continue to do so *forever* depends on whether the inequality in Equation (3) holds. Figure 1 shows the difference between the left- and right-hand sides of that equation for the poor, ordinary, and extraordinary living standards.

As seen in the figure, for most years over the last century, the rate of return on wealth was too low to secure any of those living standards forever. That finding supports Mankiw's (2015) argument that Piketty's (2014) "fundamental inequality" of $r > g$ may not hold and, even if it does hold, that does not necessarily mean wealthy people will be able to ensure an endless stream of equally wealthy descendants. Yet, as also seen in the figure, the rate of return on wealth was high enough at the beginning of the twentieth century for the wealthy to secure a poor, ordinary, and even extraordinary living standard forever if growth rates and tax policies had stayed the same. Similarly, the rate of return on wealth is now high enough for the wealthy to secure a poor living standard forever, almost high enough to secure an ordinary living standard forever, and if recent trends continue, it may soon be high enough to secure an extraordinary living standard forever. The rise and fall of the estate tax rate over the last century is part of the reason why it became harder and has now become easier for the wealthy to perpetually live off their interest. If not for the estate tax, the roughly 4.5% of the population who could live ordinarily well off their interest income in 2012 would be able to do that forever, we estimate.

4. CONCLUSION

Moving toward an improved definition of any group—such as the poor, middle class, rich, or wealthy—requires being explicit about the value judgments underlying one's preferred definition (O'Boyle, 1999a, 1999b). For Eisenhauer's (2008) and Atkinson's (2008) definitions of "the wealthy," the underlying judgment is that it is objectionable to be able to live for a year at a poor or ordinary living standard without working or deaccumulating wealth. We suggested defining the wealthy in terms of even higher standards of living for even longer periods of time. A high enough living standard for a long enough time period should seem objectionable to almost anyone; even a self-proclaimed "defender of the 1%" like Greg Mankiw (cf. Mankiw, 2013) suggests it would be indefensible if a wealthy person could ensure an endless stream of equally wealthy descendants (Mankiw, 2015). The inability to secure such a stream would not necessarily make someone "middle class," of course, but it would almost surely make them excessively wealthy.

The empirical application in this paper showed that, in any given year over the last century, some Americans were wealthy enough to live poorly, ordinarily well, and even extraordinarily well off their interest income alone for at least that year. Our empirical application also showed that, if we assume growth rates and tax

policies in any given year would have stayed the same, then some Americans—especially, at the beginning of the twentieth century and today at the beginning of the twenty-first—were wealthy enough that they could continue to achieve those living standards for at least a century and, in some cases, forever.

Admittedly, the staunchest defenders of inequality may not have any qualms about anyone's wealth, no matter how extreme. Given such a stance, it is important to not simply debate the definition of "the wealthy" or to catalog their size and wealth. The economic, social, and political causes and consequences of their concentrated wealth should be studied, too. Here, the analogy with poverty is instructive. Trying to define and catalog "the poor" is a necessary first step toward trying to understand the causes and consequences of poverty and, ultimately, toward trying to improve the well-being of everyone in society to the extent possible. Similarly, for "the wealthy."

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DATA APPENDIX

Returns on wealth: Saez and Zucman (2016) estimate an average pre-tax rate of return on wealth per annum for the adult (i.e. 20 years of age or older) US population in each year between 1914 and 2012. That return is composed of a yield on wealth gross of taxes, on the one hand, plus an effect due to asset price changes, on the other hand. We use the former as our measure of the pre-tax interest rate. To adjust for taxes, we assume that yield is taxed at Piketty, Saez, and Zucman's (2016) estimate of the average annual income tax rate for the adult US population. The total after-tax return on wealth is then the sum of the after-tax yield plus the asset price changes. The asset price changes are volatile, so we smooth them by taking a moving average over as much as 35 years worth of changes when there is enough data to do so. The moving averages are half that long at the beginning and end of our dataset. We use that same technique to smooth changes in the costs of living standards, which are also volatile. Smoothing both of those series makes it easier to identify long-run trends in our estimates of the size and wealth of wealthy groups, so there is a practical reason to do that. Smoothing them also seems reasonable in principle when trying to project rates of return on wealth and rates of growth in living standards over long horizons. Of note, the above-cited papers by Piketty, Saez, and Zucman estimate the average returns on wealth and average income tax rates for various parts of the income and wealth distributions, but as discussed in this paper, it is a neutral and arguably conservative assumption to assume the wealthy receive an average return on wealth taxed at an average rate. The method used by Saez and Zucman (2016) to estimate wealth inequality is also based on the assumption that everyone receives the same rate of return on a given class of assets and, as such, the rate on

return on wealth only differs with portfolio composition.

Wealth inequality: Saez and Zucman (2016) estimate the shares of wealth held by select groups (ranging from as small as the top 0.01% of the wealth distribution to as a large as the top 10%) for every year from 1913 to 2012. Their estimates are based on applying the income capitalization method to income tax records. Eisenhauer (2008) used the Federal Reserve's Survey of Consumer Finances, while Atkinson (2008) used Kopczuk and Saez's (2004) wealth share estimates based on applying the estate multiplier method to estate tax records. See Saez and Zucman (2016) for a discussion of different data sources and methods for estimating top wealth shares. We use the Saez–Zucman wealth shares for select groups and a Pareto interpolation method to estimate the size and wealth of other groups. Specifically, we estimate a two-parameter Pareto distribution using the wealth shares of their two smallest groups (the top 0.01% and 0.1%), unless the lower bound parameter of the estimated Pareto distribution was above a wealth level of interest, in which case we used the wealth shares of progressively larger groups; such an approach to Pareto interpolation is necessary because Saez and Zucman (2016) do not estimate wealth thresholds for their select top wealth groups. The only exceptions to that method were that, in a small number of cases where the wealth level of interest was lower than the lower bound parameter of a Pareto distribution fit using the wealth shares of the two largest groups (the top 5% and 10%), we fit a two-parameter lognormal distribution using the mean wealth of the entire population and the top 10%'s wealth share. Assuming the distribution of wealth fits a Pareto distribution in its upper tail and a lighter tailed distribution like a lognormal distribution elsewhere are standard assumptions although not without controversy.

Income inequality: Estimates of the average income of the adult US population and the top 1% of the income distribution before taxes or transfers were taken from Piketty, Saez, and Zucman (2016). To adjust for income taxes, we use the same tax rate we use to calculate the after-tax rate of return on wealth; namely, Piketty, Saez, and Zucman's (2016) estimate of the average annual income tax rate for the adult population. Changes in the average income of the entire population and the top 1% are volatile, so we smooth them using the same technique used to smooth changes in wealth due to the asset price effects.

Estate tax rates: To account for estate taxes, we assume all wealth is taxed at the top US Federal estate tax rate, which was taken from Piketty (2014). The wealthy would not pay the top tax rate on their entire wealth if only because of exemptions, but we assume otherwise to try to be conservative and also to try to account for any state-level estate taxes. Like Piketty (2014), we ignore the fact that the estate tax was temporarily eliminated in the year 2010 and use the rate for the next year instead.

Poverty line: For 1959 to the present, we use the US Census Bureau's poverty line for one person of any age. For earlier years, we deflate the 1959 poverty line of $1,467 backward using the Consumer Price Index. We do not use poverty lines for larger families (a three-person family with two children, e.g.) because the poverty lines would be larger than average income in several years when deflated backward. Even the one-person poverty line is slightly larger than average income in two years (1932 and 1933). Changes in the poverty line are smoothed using the same technique used to smooth changes in the costs of other living standards.