

THE MYTH OF DYNASTIC WEALTH: THE RICH GET POORER

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Thomas Piketty's *Capital in the Twenty-First Century* rocketed to the top of the best-seller lists the moment it was published in 2013, and remained there for months. While this feat is quite remarkable for a weighty tome on economics, it's no mystery why Piketty's magnum opus created such a sensation; it is clearly articulated, is accessible to the non-economist, and contains a trove of historical insights.

We believe Piketty's core message is provably flawed on several levels, as a result of fundamental and avoidable errors in his basic assumptions.¹ He begins with the sensible presumption that the return on invested capital, r , exceeds macroeconomic growth, g , as must be true in any healthy economy. But from this near-tautology, he moves on to presume that wealthy families will grow ever richer over future generations, leading to a society dominated by unearned, hereditary wealth. Alas, this logic holds true only if the wealthy never dissipate their wealth through spending, charitable giving, taxation, ill-advised investments, and splitting bequests among multiple heirs. As individuals, and

Cato Journal, Volume 35, No. 3 (Fall 2015). Copyright © Cato Institute. All rights reserved.

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¹In addition to the lively debate about Piketty's core message, there has been vigorous discussion of the data sources used by Piketty where some have challenged the validity of data in Piketty's book. See Feldstein (2014), London (2014), and Reynolds (2014) for more discussion on the subject. We do not engage this topic here.

as families, the rich generally do not get richer: after a fortune is first built, the rich often get relentlessly and inexorably poorer.

The evidence Piketty uses in support of his thesis is largely anecdotal, drawn from the novels of Austen and Balzac, and from the current fortunes of Bill Gates and Liliane Bettencourt. If Piketty is right, where are the current hyper-wealthy descendants of past entrepreneurial dynasties—the Astors, Vanderbilts, Carnegies, Rockefellers, Mellons, and Gettys? Almost to a man (or woman) they are absent from the realms of the super-affluent. Our evidence—used to refute Piketty’s argument—is empirical, drawn from the rapid rotation of the hyper-wealthy through the ranks of the Forbes 400, and suggests that, at any given time, half or more of the collective worth of the hyper-wealthy is first-generation earned wealth, not inherited wealth.

The originators of great wealth are one-in-a-million geniuses; their innovation, invention, and single-minded entrepreneurial focus create myriad jobs and productivity enhancements for society at large. They create wealth for society, from which they draw wealth for themselves. In contrast, the descendants of the hyper-wealthy rarely have that same one-in-a-million genius. Bettencourt, cited by Piketty, is a clear exception. Typically, we find that descendants halve their inherited wealth—relative to the growth of per capita GDP—every 20 years or less, without any additional assistance from Piketty’s redistribution prescription.

Dynastic wealth accumulation is simply a myth. The reality is that each generation spawns its own entrepreneurs who create vast pools of entirely new wealth, and enjoy their share of it, displacing many of the preceding generations’ entrepreneurial wealth creators. Today, the massive fortunes of the 19th century are largely depleted and almost all of the fortunes generated just a half-century ago are also gone. Do we really want to stifle entrepreneurialism, invention, and innovation in an effort to accelerate the already-rapid process of wealth redistribution?

Piketty’s Core Thesis

The central thesis of Piketty’s book is his prediction that the problem of unequal wealth distribution will worsen in the 21st century, further exacerbating the economic divisions between society’s haves and have-nots. This is where his biases lead him astray. We agree that inequality in wealth distribution has intensified in the recent past, but we dispute Piketty’s rationale for its source and its persistence, as well as his

contention that it is a problem in need of fixing. Piketty devotes the largest portion of his book to a treasure trove of historical and geographical time-series on income and wealth distributions. Curiously, however, he ignores his own data, basing his predictions and prescriptions primarily on what he calls the two “fundamental laws of capitalism.”

The first “law” states that capital’s contribution to national income, denoted as α , can be expressed as

$$(1) \alpha = r\beta$$

where r is the return on capital and β is the capital-to-income ratio, a measure of the capital intensity in a given society. This relationship is intuitively obvious; if a nation’s capital is 600 percent of national income (or the equivalent of six years of national income), and if the real return on that capital is 5 percent, then the portion of national income earned from capital will be 30 percent.

The classical estimate of capital’s contribution to national income is 10 percent to 15 percent. Piketty’s estimate of α is higher, for two reasons. First, his definition of capital is very broad, including not only investment capital, but also productive industrial assets, real estate, and even public assets, such as highways and national parks. Second, and more importantly, Piketty’s approximation of r , while perhaps correct in the distant past, is irrelevant in today’s low-yield world—but more on that later.

Although Piketty’s first fundamental law is self-evident (it is, after all, purely a definition), his second “law” is less intuitive. The ratio of capital to income, β , is defined by:

$$(2) \beta = s/g$$

where s is the savings rate and g the real growth rate of the aggregate economy. For example, with a savings rate of 12 percent and an economic growth rate of 2 percent a year, long-run capital accumulation will eventually expand to 600 percent of national income. The higher the savings rate and/or the lower the labor force growth and/or the lower the productivity growth, the higher the β . The equation expresses a dynamic whose consequences can play out over decades.

The relationships represented in Piketty’s second law have important implications in a world of slower macroeconomic growth. Our research, and the research of many others, suggests that future economic growth will slow considerably due to two demographic headwinds. First, labor force growth in the developed world

has already slowed sharply, even reversing in some developed economies. Second, the global labor force is aging. Because productivity growth occurs at a much faster pace for young adults than for mature adults who are approaching peak levels of productivity, an older workforce means fewer productivity gains. A slowdown in productivity growth is already underway in the developed world, and it is only a matter of time—roughly one generation—before the emerging economies suffer the same fate: sooner in China and Russia, later in India. If growth is halved, then, *ceteris paribus*, aggregate capital must double as a multiple of income, unless r falls even further than g , either as a consequence of demographic pressures or in parallel with demographic shifts.²

Over the last 125 years or so, the global capital-to-income ratio, β , has ranged between a low of about 200 percent following the devastation wrought by two world wars and a global depression, and today's high of roughly 600 percent, the level also reached during the *belle époque*, or robber baron, period of the late 19th century. Piketty asserts β is going even higher from here, to 700 percent by the year 2100.³ His claim is based on his estimates of the factors of β —economic growth and the savings rate. He forecasts that annual real growth in global output will decline by half from the current 3.0 percent to 1.5 percent in the second half of the 21st century. We agree with his expectations of slower growth. But we have to disagree with his net savings rate assumption of a constant 10 percent. Is his presumption of a fixed savings rate not a rather heroic assumption, given the objective evidence of recent decades?

In Piketty's eyes such a high capital-to-income ratio is cause for alarm. Why so? Piketty is repelled by a high β because a society's total capital, or wealth, is almost always much more unevenly distributed than its income, and a record-high β means a larger pool of

²One of the authors has closely studied the impact of demography on GDP growth and on capital market returns; our work suggests that these demographic pressures will serve to reduce both growth and asset class returns. In Arnott and Chaves (2012), the relative impact of demography is more stark for asset class returns than for GDP growth. Therefore, we reject the conclusions that Piketty draws from his anecdotal evidence. However, we should acknowledge that the pending demographic changes are wildly "out of sample": they represent demographic profiles never seen in human history, so these demographic shifts may play out in surprising ways. Models based on past data will be unreliable guides to the future.

³The net savings rate is savings net of capital depreciation and depletion.

wealth will soon be disproportionately enjoyed by the wealthiest members of society. By way of example, Piketty posits that in 2010 the share of earned income of the top 1 percent of American workers was 17.4 percent, whereas the top wealthiest 1 percent owned a 33.8 percent share of total societal wealth.

Elementary finance, though, tells us that this matters little: A doubling of capital wealth due merely to a doubling of valuation, and so to a doubling of the concentration of capital, leaves these 1 percenters with no increase in the income earned on their capital. Incredibly, in Piketty's narrative, the return on capital, r , is insensitive to wealth accumulation, so capital's contribution to income, α , is largely driven by the capital-to-income ratio, β (Piketty 2014: 206).⁴ Indeed, to those of us who manage investments, it evokes incredulity to assert that, if the return on capital were halved, a concurrent doubling of β would not change the respective rewards to labor and capital. In fact, in our view, *these precise realignments in rewards can almost entirely explain the growing wealth inequality of the past 30 years.*

If slower demographic growth coupled with slower productivity growth would not reduce the return on capital, then Piketty would be correct that an increasing gap between capital returns and growth ($r - g$) would feed directly into a society's wealth inequality. Because g has been falling in developed nations, Piketty fears that wealth inequality may grow to dangerous levels. His fear—shared by Occupy Wall Street and similar groups—is one manifestation of a perceived widening of the social divide. The increasing attention given to this fear and the socioeconomic agendas fueled by it were important catalysts for our decision to pursue the research we present here, into the objective evidence for or against Piketty's dynastic wealth narrative.

This fear seems to us based on an invalid counterfactual. In fact, slower growth *will* affect the return on capital; this is a core assumption in modern finance, amply supported by empirical evidence.

Having mentioned Piketty's ideological bias, we must now come clean about our own. One of us (Arnott) is a free-market libertarian

⁴Piketty admits that r may have fallen and acknowledges that the more capital we throw at something, the lower its marginal return. But he returns to the idea of a 5 percent real return repeatedly, as if it's a quasi-constant. It's nowhere near that today, and has been at that level only at extreme market lows in recent decades (Arnott and Bernstein 2002).

and a reluctant Republican, the second (Bernstein) is a registered Democrat who is quite comfortable with a vigorous government role in many economic spheres, and the third (Wu) is a centrist Republican and Berkeley graduate born in communist China. Most would acknowledge the moral imperative of a humane response to poverty, which requires some economically efficient redistribution from the haves to the have-nots. The tension is, as always, between doing too little to help those who *cannot* help themselves and doing so much that inadequate incentive remains to properly reward innovation, invention, hard work, and entrepreneurial risk-bearing, or worse, an incentive to do nothing.

In addition, we believe a secondary tension exists between voluntary redistribution (charity) and involuntary redistribution (entitlement programs). At the risk of being provocative, the difference between Ayn Rand and Karl Marx can be distilled down to their respective definitions of the optimal amount of, and the central government's role in, redistribution.

What “ $r - g$ ” Can Investors Expect?

To his credit, Piketty recognizes that classical theory mandates that, as societal wealth increases, the return on capital, r , must fall as a result of supply and demand pressures as well as the decreasing return to marginal capital investment. And there he stops. But r also falls for at least two other reasons. First, increased longevity decreases investors' impatience for immediate consumption and increases their need to prepare for distant future consumption. Second, in recent centuries, the cost of intermediation has tumbled, increasing the attractiveness of, and decreasing the liquidity premium for, capital assets.

These are not small points. Piketty repeatedly references a 5 percent rate of return on land and government bonds, as described in the 19th-century novels of Balzac and Austen, almost as if it were a physical constant.⁵ Only one reference to Homer and Sylla's (2005)

⁵In 1997, one of us posed the question, “In the 2,001 years since the supposed date of the birth of Christ, if one had invested a single dollar [1/350th of an ounce of gold at that time] at 5 percent compounded real return, how much wealth would one now possess?” The answer was that this investor would now own a sphere of gold larger than the earth's orbit around the sun, growing at nearly 10,000 miles in diameter per day. While earning 5 percent real return may be possible, growing wealth intergenerationally at that rate, over long spans of time, is clearly impossible (Arnott and Bernstein 1997).

encyclopediaic *A History of Interest Rates*, the go-to source for the serious observer of the evolution of capital returns over the broad sweep of history, appears in Piketty's tome. He makes no mention at all of the contemporary work of Philippe Jorion and William Goetzmann (1999); William Schwert (1990a, 1990b); John Campbell and Robert Shiller (1989); or Elroy Dimson, Paul Marsh, and Mike Staunton (2002) regarding realized returns in the 19th, 20th, and early 21st centuries.

Had he paid attention to these sources, Piketty would have noticed that over the past five millennia r has fallen from near triple-digit rates to the dramatically less than 5 percent rate of today. Jane Austen's heroes and heroines may have feasted on 5 percent consols, but already by the end of the 19th century that rate had fallen to 2 percent. In a world of fiat currencies, the modern equivalent of Austen's consol is the inflation-linked bond (in the United States, these bonds are called TIPS). At the present time, if the issuer has negligible risk of default, ultra-long TIPS typically yield approximately 1 percent.

Another oversight is Piketty's disregard for the fact that past returns on stocks and other real assets, especially in recent decades, have benefited immensely from rising valuation multiples and falling yields. As with bonds, rising valuation multiples and falling yields in equities, real estate, and other assets deliver higher current returns in exchange for lower future returns. As already mentioned, this has been the key, and generally overlooked, driver of the growing wealth gap in recent decades: financial assets are owned by the wealthy. As valuation multiples soar and yields tumble, the liquidation value of the assets of the wealthy soars, but their forward-looking returns on those assets tumble. This bears repeating yet again: If PE ratios double and dividend yields fall by half, the objective spread between the wealth of the affluent and the general public seems to have doubled, but the sustainable long-term spending on those assets has not changed by one iota. The gap in spendable wealth is unaltered.

Piketty ignores the current landscape of expected real stock and bond returns, and he presumes that the affluent can readily find 5 percent real returns on passive investments. Really? Five percent? We wish! With stocks priced to generate a real return of about 3 percent (at this writing, a 1.8 percent dividend yield in the United States, plus, if the last century is a guide, a 1.3 percent growth of real per-share dividends), and 10-year Treasury bonds offering a near-zero

real return, an overall portfolio r of 2 percent seems optimistic for those who conventionally invest in mainstream stocks and bonds, even assuming they pay no taxes or fees.⁶ Piketty's dissociation from real-world capital market returns becomes most obvious when he takes the 5 percent rent-to-purchase-price ratio of Paris flats as present-day confirmation of this value of r , as if French landlords are absolved from paying property taxes and utilities, let alone any expenses for renovations and maintenance.

In both our and Piketty's views, g has been falling for long-term secular reasons that are unlikely to reverse. And to the serious observer of forward-looking capital market return expectations, r has fallen even further and faster,⁷ contributing hugely to capital market investors' recent lofty returns, raising the value of capital assets, and aggravating the soaring wealth inequality that so troubles Piketty and many others. If U.S. stocks were trading at the same dividend yield or Shiller P/E ratio as they were in 1982, the inaugural year of the Forbes 400, the S&P 500 Index would be trading at around 600 as of this writing, not 2,000, and wealth inequality would be correspondingly less impressive.

What of Piketty's Static Savings Rate?

A constant and positive net savings rate implies that the capital accumulation in any given economy, *net of capital depreciation and depletion*, is equal to a constant fraction of the national income every single year. Therefore, when economic growth slows drastically, Piketty's second fundamental law could require up to 100 percent of the national income to be devoted to investment in order to maintain his assumption of a constant and positive net savings rate. This level of capital reallocation is without historical precedent, and we hope

⁶Arnott and Bernstein (2002) showed that annual real dividend growth in the United States, for broad market portfolios, has averaged less than 1 percent per year over the past 200 years. Bernstein and Arnott (2003) showed that the U.S. growth rate of 1.3 percent per annum since 1900 was on the high end of the global range.

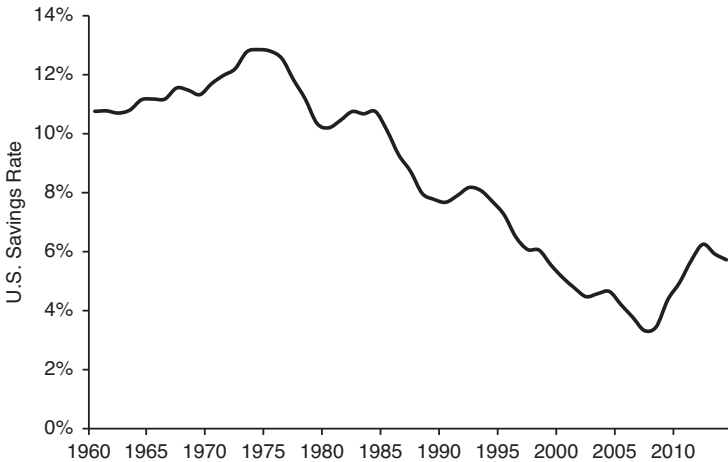
⁷Piketty argues that r is not sensitive to changes in g due to the high (greater than 1) elasticity of substitution between capital and labor; an assumption which not only conflicts with the vast body of economic theory, but also, as Acemoglu and Robinson (2015) point out, lacks empirical support. Rognlie (2014) shows the gap between r and g is likely to *shrink* when using standard empirical estimates of elasticity.

even Piketty’s most fervent enthusiasts would agree that it is implausible. Certainly, U.S. history over the past half-century suggests that a static savings rate is not realistic, as Figure 1 shows. As labor force longevity has increased, economic growth has slowed, and reliance on entitlement programs has grown, savings have inexorably declined—albeit with a meaningful savings rate “reset” in the wake of the 2008 global financial crisis.

We are not the only researchers who have challenged Piketty’s presumption of a static savings rate. Rognlie (2014) suggests that the net savings rate, s , is unlikely to be exogenous and invariant to changes in the growth rate, g . Krusell and Smith (2014) derived net savings rate formulations based on neoclassical growth models. Their formulation shows that the net savings rate varies positively with the growth rate, and when the growth rate falls to zero, the net savings rate has to be zero.

Piketty further claims that the combination of a constant and positive savings rate and a declining economic growth rate will cause the capital-to-income ratio, β , to explode, leading to increasingly unequal

FIGURE 1
U.S. SAVINGS RATE AS A PERCENTAGE OF INCOME,
1960–2014, SMOOTHED



SOURCE: Research Affiliates based on Federal Reserve Bank of St. Louis, FRED Database.

wealth distribution. But if the net savings rate declines when growth deteriorates—as history shows it is apt to do—the capital-to-income ratio could just as easily shrink as rise. We shall soon see that Piketty's prognostications of soaring dynastic wealth concentration cannot and will not come to pass.

The Implausibility of Positive Dynastic r

We are impressed with Piketty's data on the growing inequality of wealth ownership. No thoughtful observer of socioeconomic developments could disagree that today's wealthiest 1 percent have a larger share of the pie, across much of the developed world, than the affluent of past decades. A powerful bull market in equities since 1975 will have this effect and the reciprocal effect of lowering the r that those assets can produce in the future.

Piketty is mistaken to extrapolate this inequality into a hereditary, dynastic social structure. He justifies his contention with a single deeply flawed argument: the widening gap between real return on capital, r , and real economic growth, g . Over the last four decades, realized real returns have been outsized, due to that self-same massive bull market, but forward-looking returns have tumbled for the very same reason. As two of us observed (Arnott and Bernstein 2002), there is an immense difference between short-term realized returns, heavily influenced by changing valuation multiples, and long-term expected returns, which is the r that matters in Piketty's world. Piketty ignores the fact that rising asset prices benefit those who own the assets—the rich—at the cost of sharply lower future real returns. Let's examine his assumption of lofty intergenerational r leading to dynastic wealth concentration.

Piketty sensibly points out that investors will invest if they can reasonably expect r greater than g , though extended periods in which realized returns fall short of economic growth pepper the historical record. Piketty neglects to specify that the r that matters, in order for dynastic wealth to accumulate, is the r *net of taxes, spending, division among heirs, charitable giving, and other methods of depletion*. His error in this regard is both trivial in its flagrancy and profound in its importance.

Lucky indeed was the sensible consol investor of the 19th century who benefited from a gold standard and zero inflation, never needing to spend principal. Before the Industrial Revolution, the

pronounced gap between return on capital (at times, 5 percent, though not without default risk) and real economic growth (on average, approximately 0 percent) allowed an investor to live comfortably on investment income and to pass uneroded wealth—tax-free, even—typically to the first-born son. But today the situation is markedly different. Wealth suffers many indignities, by which it is rapidly and unceremoniously depleted.

Piketty turns a blind eye to this reality when he focuses his argument for an explosion of inherited, dynastic wealth on the more than 10-fold increase between 1990 and 2010 in the real fortunes of two billionaires, Bill Gates and heiress Liliane Bettencourt. Reading such folderol made us want to place an emergency call to the cherry-picking police.⁸ Is it not possible that the ability of Gates and Bettencourt's father to accumulate wealth was due to extraordinary business acumen, which brought widely sought new products to millions of customers?

And Piketty—seemingly ignoring the ebullience in the financial markets over these two decades—counts the 10-fold increase in Gates' and Bettencourt's wealth as net savings even though it was largely due to rising valuations. Does Piketty really believe that the 22.9 percent annualized return of Microsoft over the 20-year period (or even the 8.5 percent annualized return of the CRSP U.S. Total Market Index over the same period) is in any way indicative of the future return on capital and hence of the future return on the accumulated wealth of the top 1 percent?

Very rare indeed is the family whose growing fortune is due to a positive savings rate—that is, the ability to accumulate further capital on their own. Take, as a counterexample, the Vanderbilt family. When the family converged for a reunion at Vanderbilt University in 1973, not one millionaire could be found among the 120 heirs and heiresses in attendance. So much for the descendants of Cornelius Vanderbilt, the richest man in the world less than a century before. Had Piketty managed money for rich clients, he would understand why the downward trajectory of the Vanderbilt fortune is a far more common scenario for multigenerational wealth.

⁸Even more curious is the choice of Gates to support the alarming growth of wealth dynasties, because Gates' heirs will be much less wealthy than he. Gates has announced he will be giving away most of his wealth.

Impediments to dynastic wealth have always existed. Today, they are legion. So, how is dynastic wealth eroded? Let us count the ways:

1. *Low Security Returns.* As previously mentioned, the 5 percent real return estimate that Piketty repeatedly references is, especially today, quite optimistic. Piketty believes that advanced money management tools, such as hedge funds, alternative investments, and private equity, will enable the elite to garner returns higher than those available to the huddled masses invested in their pitiful index funds.

An entrepreneur through innovation, invention, and risk-bearing in a wealth-creating business may have a shot at elevated returns, but an average arm's-length investment in mainstream stocks, bonds, and REITs—the modern equivalents of Piketty's consols and real estate—offers no realistic prospects of beating, by much, the returns that mom-and-pop investors can earn.

The hyper-wealthy, in our experience, can outperform mainly by avoiding the fad-chasing behavior of the masses, rather than seeking lofty returns from unconventional methods. A willingness to pursue modest return increments is often short-circuited by the very fact that these opportunities are uncomfortable when they are most likely to be profitable. Those who believe otherwise generally fall prey to knaves and do not remain hyper-wealthy for very long.

2. *Investment Expenses.* The brokerage and real estate management fees paid by Austen's and Balzac's characters are unknown to us, but we do know that today's wealthy pay a nice chunk of change to bank trust companies, "wealth management" experts, estate attorneys, and the like—a lot of fingers are constantly dipping into the wealth pie.
3. *Income and Capital Gains Taxes.* Taxes on income and capital gains were not levied to any significant degree during the 19th century, but they consume a large fraction of pretax real return today. The modern investor is even taxed on the inflation component of return, an indignity that Balzac's and Austen's characters could not have imagined.
4. *Performance Chasing and Poor Investment Decisions.* This source of wealth erosion is nothing new. As documented by

Charles Mackay in the 19th century, neither wealth nor intelligence confers protection against foolish investment decisions (Kinnel 2005, 2014).⁹

5. *Charitable Giving*. Encouraged by the tax benefits associated with donating wealth, charitable giving has become a competitive sport amongst the hyper-wealthy.
6. *Hedonic Readjustment Borne on Technological Progress*. Productivity growth and human nature mandate that a return on wealth equal to inflation is not adequate. How many of us would be happy with the median standard of living from a century or even a half-century ago?
7. *Breeding*. Our intensive first-hand research inescapably supports the idea that people like to breed. Piketty's beloved Austen and Balzac characters certainly were fruitful and they multiplied, compelling each successive generation to watch as its comfortable £1,000 annual income was halved or worse, unless, of course, another family's income stream could be appropriated through marriage. We observe that today's affluent continue to breed, so that each generation's fortune should approximately halve.¹⁰
8. *Estate Taxes*. In contrast to Piketty's gilded era, present-day estate taxes exact a substantial toll on family wealth, that is, if a modern plutocrat would even dare to award his or her undiluted estate to progeny.
9. *Costly Estate and Tax Battles*. Rather than the novels of Austen and Balzac, Piketty would have benefited from reading Dickens' *Bleak House*, which describes how legal fees inexorably consumed a patrimony. It bears mention that tax authorities pay special attention to the wealthy, pursuing perceived tax infractions at great expense (in time, money, and distraction from their task of earning more taxable income) to the affluent.

⁹In his seminal white paper, Kinnel (2005) showed that U.S. mutual fund time-weighted returns beat the mutual funds' dollar-weighted returns (actually enjoyed by the funds' investors) by an average of 2.8 percent a year due largely to investors' passion for chasing past winners and shunning recent losers. A 2014 study by JP Morgan and Dalbar Inc. suggests that the average investor earned 2.5 percent from 1994 to 2013 versus 9.2 percent for the S&P 500 and 5.7 percent for bonds, suggesting a 5 percent annual shortfall relative to a 60/40 portfolio. Some have challenged the methodology, hence the results. But we know of no studies that fail to show a shortfall.

¹⁰Even in Japan, South Korea, and Singapore where fertility rates are around 1.3, a 25 percent dilution in wealth in every generation is to be expected.

We applaud the successful pursuit of tax abuse, but we hear less about the abusive pursuit of legitimate tax management.

10. *Spending*. And lest we forget, heirs *spend*—sometimes a lot.

Suppose Piketty is right and the elite can, indeed, earn a 5 percent real return on their invested assets. If each of the aforementioned 10 factors costs an average of just 1 percent a year of return, the “dynastic” r , or retained r , is *minus* 5 percent. This force cuts real net worth in half every 14 years and closer to 70 percent over each generation. As we shall see, this is the norm among the hyper-wealthy. In our collective experience, among mere multimillionaires, an average cost of 2 percent or more—*per factor each year*—is closer to the truth, in which case hereditary wealth evaporates faster than a puddle in the Sahara.¹¹

We can think of no better metaphor for the evaporation and generational fissuring of hereditary wealth than the sorry fate of the Rokeby estate, currently occupied by the tenth and eleventh generations of Astor heirs who are scattered among the complex’s rabbit warren of shabby apartments and whose “occupations” include organic farming, puppet making, and memoir writing. The career of the estate’s current patriarch, Richard Aldrich, educated at Johns Hopkins and Harvard, was summed up by his younger brother thusly: “You’ve never worked a day in your life” (Aldrich 2013: 51; Green 2013). A small trust fund, coupled with paying boarders and documentary producers, provides for a semblance of upkeep, but the grounds have likely seen their last generation of Astors.

This rapid fading of hereditary wealth corresponds, more or less, to what we’ve observed on the front lines of money management. A majority of our clients acquired their wealth the old-fashioned way, building wealth through innovation, invention, and business acumen. Whereas a substantial minority did inherit, in no case was that wealth transmitted beyond two generations. Some of our clients’ offspring will wind up in “the 1 percent,” but very few of their grandchildren will. Let’s turn from Piketty’s (and our own) anecdotal evidence to the empirical evidence found in the evolution of the many vast fortunes of the Forbes 400.

¹¹This is one area where the hyper-wealthy do have an advantage. A family with \$20 million of inherited wealth can dissipate it in no time at all. A family with \$1 billion or more would need to work much, much harder to waste it all in a decade or two!

The Forbes 400

As Piketty points out, the Forbes 400 list is far from a perfect measure of the wealth accumulation of society's most affluent; nonetheless, Piketty references the list to demonstrate how wealth concentration has increased over the last three decades. According to Forbes 400 data, the share of billionaires' private wealth has risen from 0.4 percent in 1987 to 1.5 percent in 2012 (Piketty 2014: 432–36). Piketty sees the growth in the threshold for extreme wealth and naively assumes that it's the same people getting richer; nothing could be further from the truth.

Figure 2 illustrates how the wealth cutoff—in both nominal terms and in 2014 dollars—for the Forbes 400 has steadily risen since the list began in 1982. Achieving membership in the Forbes 400 in its inaugural year required an estimated net worth of \$75 million; in 2014, a net worth of \$1.5 billion was needed to make the cut. Even net of inflation, the price of admission rose 8-fold over the 32 years since the list has been published.

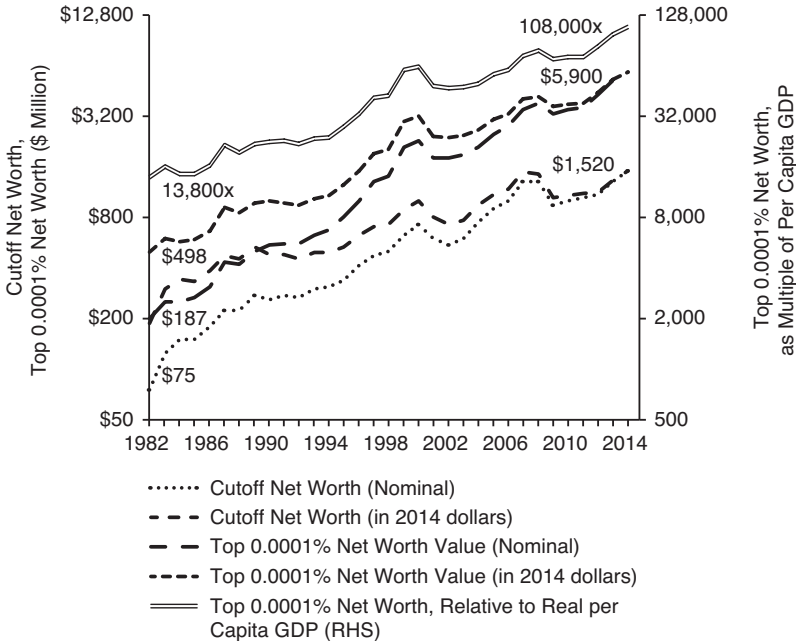
The Forbes 400 contains slightly more than one one-millionth of the U.S. population. We can thus normalize these results for population growth, to a constant share of the U.S. population.¹² In 1982, when the U.S. population totaled 231 million, Stephen Bechtel, with a net worth of \$200 million (\$498 million in 2014 dollars), ranked 231st on the list. He, and everyone above him on the list, can be considered the one-in-a-million. In 2014, when the U.S. population had reached 318 million, Ray Lee Hunt ranked 318th on the list, boasting a net worth of \$5.9 billion. In real terms, the price of admission to one-in-a-million status rose 12-fold, from 1982 to 2014.

This observation is not inconsistent with Piketty's more formal, and inclusive, data. But are the hyper-wealthy one-in-a-million getting richer? Yes and no. As a class, they are. The top line on the graph in Figure 2 documents their progress: their wealth rose from 13,800 times U.S. per capita GDP in 1982 to 108,000 times U.S. per capita GDP in 2014.¹³ But the 32 years of the list's existence encompass the

¹²Of course, the list includes considerably more than one in a million, as almost all of the Forbes 400 represent the wealth of a family, not of an individual.

¹³One should be careful not to fall into the trap of thinking this means that, if the members of the one-in-a-million group have wealth that exceeds per capita GDP 100,000-fold, they have one-tenth of the wealth. This is a comparison of wealth with GDP, roughly akin to comparing net worth with income.

FIGURE 2
THE RICH GET RICHER:
THE GROWING WEALTH OF THE FORBES 400



SOURCE: Research Affiliates based on data from *Forbes* and Global Financial Data.

largest equity bull market (1982–2000) and the largest bond bull market (1982–2012, and perhaps beyond) in U.S. capital markets history. Greater wealth concentration over this period was a direct consequence of this dual stock-bond bull market and goes hand-in-hand with a plunge in forward-looking r , the return on invested capital.

When an individual makes a sufficiently noteworthy contribution to society—whether by invention, innovation, or entrepreneurial risk-bearing—and it hoists them into the Forbes 400, only monumental continuing achievement keeps them there. Idlers, even if in the past they were hard-working, highly competent people who played a brilliant hand, will not linger long on the list. Their wealth dissipates into society at large.

Piketty dismisses the accuracy and validity of the Forbes 400 (and other lists that rank the wealthy) because the super-affluent do not

advertise and verify the true amount of their wealth. It's a fair critique. However, it's equally fair to note that the hyper-wealthy are not that hard to find. Granted, the 1982 version of the list is suspect; the first effort will have missed many wealthy families.¹⁴ But we can reasonably assume that the accuracy of the list has improved with each passing year. *Forbes* and others will do their level best to unearth those who are secretive about their fortunes. Once found, these wealthy individuals are easy to track; consequently, their *fading* fortunes, the central feature of our analysis, are easy to document.

If dynastic wealth accumulation were a valid phenomenon, we would expect little change in the composition of the *Forbes* roster from year to year. Instead, we find huge turnover in the names on the list: only 34 names on the inaugural 1982 list remain on the 2014 list, and only 24 names have appeared on all 33 lists.¹⁵ However, as John Maynard Keynes succinctly noted, "In the long run we are all dead." Wealth, as entitling as it may be in other respects, does not offer a means of escape from this general rule. The average age of the original 1982 *Forbes* listee was 62. Many passed on—and passed on their wealth—long before 2014.

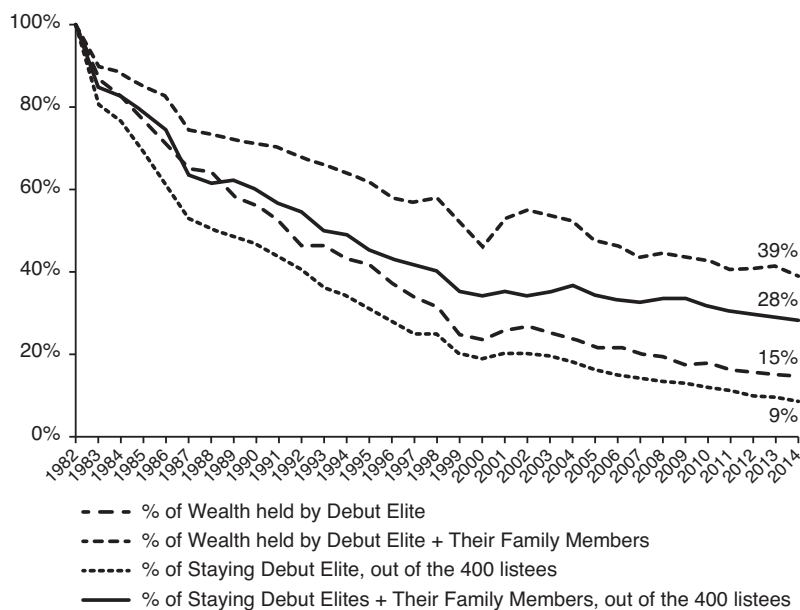
So, let's look at descendants, those with the same surname and women who retain the surname as a middle name, except for those who are clearly unrelated.¹⁶ The 2014 list includes elites and/or their descendants from 69 inaugural families, of whom only 36 inaugural families from 1982 have consistently made *all* subsequent lists. The inaugural descendants' aggregate wealth is equal to 39 percent of

¹⁴*Forbes'* first effort to compile the list was demonstrably incomplete, but not badly so. Figure 2 shows that the change in the wealth cutoff for admission to the list had its biggest year-over-year jump in 1983, yet surprisingly few of the largest fortunes were actually missed in 1982. The main oversight would appear to be the Bass family, with collective wealth of \$2.5 billion in 1983 (split five ways); followed by the Koch family, with just over \$1 billion; and the Milliken and Ford families, each with \$790 million to \$900 million (split three or four ways). It's safe to assume that they would all have made the 1982 cut had they not been "flying under the radar."

¹⁵Some debut elite were dropped from the list in certain years and reappeared in later years; therefore the number of "all-time survivors" will be less than the 34 remaining debut elite as of 2014. It also bears mention that mortality ensures that none of the debut elite will be on the 2082 list, so our assessment including heirs is more relevant.

¹⁶This method will obviously miss a modest number who marry into different last names and do not retain the family name as a middle name (as is common practice in America's elite families).

FIGURE 3
 EROSION OF THE 1982 FORBES 400 WEALTH SHARE IN
 SUBSEQUENT LISTS



SOURCE: Research Affiliates based on data from *Forbes*.

the total wealth represented on the 2014 list, implying that the other 61 percent is “new wealth”—fortunes newly created in the past 32 years.¹⁷ Figure 3 traces the erosion of the 1982 Forbes 400 from subsequent lists. The top line shows the proportion of the aggregate wealth held by the inaugural elite and their progeny who remained on the list in the years between 1982 and 2014. The solid line shows the number of the inaugural elite and their heirs who remained on the list in subsequent years.

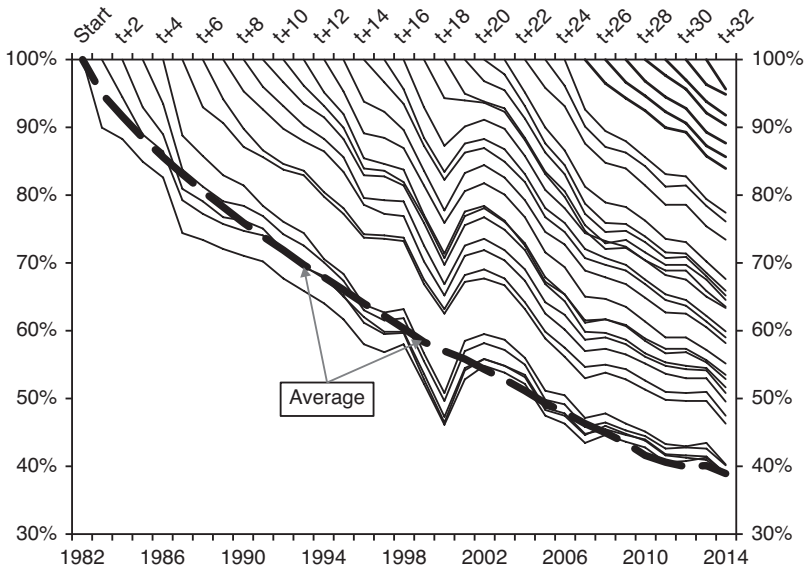
The first-year erosion of 1982 wealth was aberrantly large: 10 percent versus an average of about 4 percent. This would seem to

¹⁷Note that some family members know best to take the money and spend it, while some are gifted in creating new wealth with their share of the family fortune. Therefore, attributing 61 percent of wealth to “new wealth” could be an underestimate.

suggest that 10 percent of the wealth on the 1983 list was newly minted *in a single year*. If instead the true new wealth in 1983 was 4 percent, the same as the average year, it would indicate that the sleuths at *Forbes* may have missed a handful of hyper-wealthy in 1982, roughly 6 percent of total Forbes 400 wealth. That’s not a bad miss for the first try. It suggests that maybe the cutoff in 1982 should have been around \$100 million, not \$75 million.

The same pattern of wealth erosion, or “fall from grace,” that we saw in Figure 3 has repeated itself throughout the history of the list, as shown in Figure 4. The chart plots the percentage share of the Forbes 400 wealth held by surviving members (i.e., those remaining on the list) and their families in each year the list has been compiled. The fall from grace is essentially identical to the pattern established in 1982, with one extreme exception. Around the peak of the tech bubble in 1999 and 2000, many prior listees suddenly and dramatically fell off the list as dozens of newly

FIGURE 4
EROSION OF THE 1982–2013 FORBES 400 WEALTH SHARE IN
SUBSEQUENT LISTS



SOURCE: Research Affiliates based on data from *Forbes*.

minted tech billionaires surged on. When the tech bubble burst and the tech billionaires' wealth collapsed, some of the old-money hyper-wealthy reappeared.

If we average across all of the years, we find a remarkably stable relationship, as shown in the heavy dashed line in Figure 4, which ties to the time scale on the top of the graph. Each cohort of Forbes 400 families owns less than half of all Forbes 400 wealth just 23 years later, on average. This does not mean that the hyper-wealthy are losing 3 percent of their wealth every year. It means that the existing and established hyper-wealthy are displaced by newcomers at a rate of 3 percent of their collective wealth, each and every year. Half of the wealth of the 2014 Forbes 400 has been newly created in one generation.

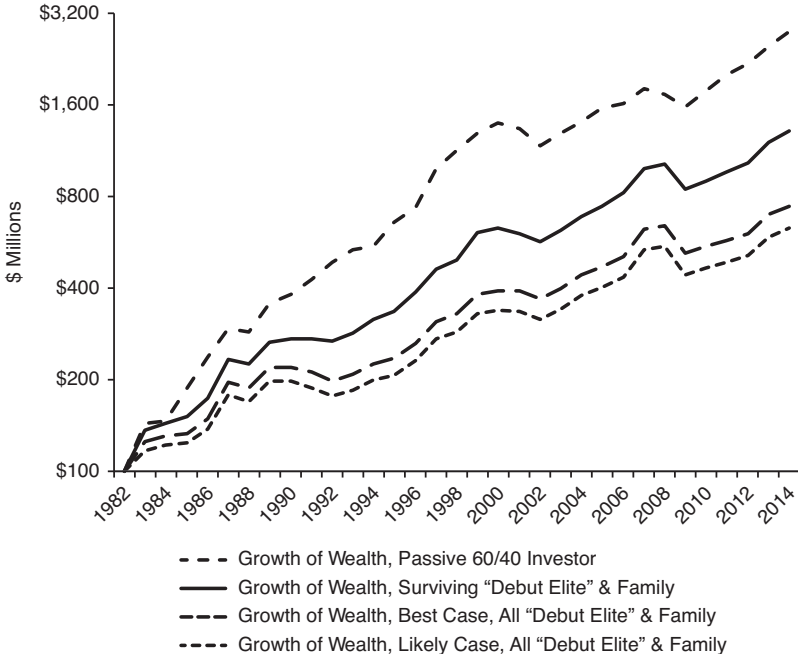
Yes, the rich have (collectively, not individually) been getting richer, but not for the reasons that Piketty rues. The reason the rich are getting richer is a combination of the newly rich creating wealth, matching the old wealth in each generation, while the older rich—over the 32-year span that we analyze—have benefited from the largest bull market in history, with rising valuations as a consequence of falling future yields on capital. Capital is *worth* more in part because it *earns* less. Falling yields deliver rising valuation multiples and rising asset prices.

We can use these same data to examine with surprising precision how quickly the rich get richer. Consider Figure 5, which compares the growth of wealth from 1982 to 2014 of a passive 60/40 investor to the growth of wealth of the list's surviving debut elite and family members as well as to the best case and likely case of the debut elite and their families.

Suppose the typical Forbes 400 family in 1982 had put their fortune into a passive portfolio, invested 60 percent in the S&P 500 and 40 percent in the Barclays Aggregate (formerly Lehman Aggregate) Bond Index.¹⁸ The top line in Figure 5 traces the return trajectory of the 60/40 portfolio. Since mid-1982, bond yields have tumbled from

¹⁸*Forbes* estimates wealth as of August of the previous year, so we're using a July 31 "fiscal year" to measure the 60/40 performance. This presumably has particular relevance for families whose wealth is measured in publicly traded stock holdings. Results are not materially different if we use calendar years, but the correlation of 60/40 returns with changes in average family wealth, for the surviving families, soars from 0.19 to 0.73 when we use this peculiar fiscal year.

FIGURE 5
 COMPARATIVE RETURN SERIES:
 FORBES 400 WEALTH ACCUMULATION VS. 60/40 STRATEGY



SOURCE: Research Affiliates based on data from *Forbes* and Ibbotson Associates.

the mid-teens to just over 2 percent and stock market valuations have soared from 16 years' worth of dividends (a yield of 6.3 percent) to 52 years' worth of dividends (a yield of 1.9 percent), delivering an 11.0 percent annualized real return over the 32-year period the *Forbes* 400 has been in existence. With compounding and—please humor us, as this appears to be Piketty's assumption—without spending and taxes, every \$100 million of starting wealth would have grown 28-fold, to nearly \$2.8 billion. Such is the impact of a secular bull market.

The handful of 2014 survivors from the inaugural 1982 list—just 69 families—did *less* well, growing their wealth 13-fold as depicted by the solid line in Figure 5. We can think of these 69 surviving families as the *Forbes* 400 analogues of Gates and Bettencourt, cited as

typical by Piketty. The growth in the wealth of these 69 families from 1982 to 2014 was a consequence of entrepreneurial ventures supplemented by additional innovations and inventions, not a result of clipping coupons. Over this period, these families are still led by the visionaries who created the wealth in the first place. After the visionary is gone, the progeny typically cannot fill his or her shoes, and, absent the founding entrepreneur, the family fortune inevitably evaporates.

We take two approaches to defining the wealth erosion of the 77 percent of the 297 inaugural Forbes 400 families who no longer appear on the 2014 list. An analysis of their fates is enlightening. One approach, the “best case” approach, is to truncate a family’s wealth at the cutoff point for the first year in which the family did not make the list, as if they missed being included in the list by just a dollar. The second approach, a more relevant “likely case” result, is to assign each family a return on wealth, in the year they exited the Forbes 400, that matches the average return on wealth of the families who lost ground in that year. These rates of return, products as they are of the real world, reflect the ravages of spending and taxes. For any family that failed to remain in the 400, either of these outcomes can be included through the year of the family’s departure and ignored thereafter.

When the 77 percent of non-surviving families are counted in the calculation of the growth of wealth, we find a less-than-impressive result, especially relative to the 28-fold growth that a passive 60/40 investor could have achieved. The growth in wealth of the full roster—the 23 percent who survived and enjoyed a 13-fold growth in wealth and the 77 percent who fell off the list—suggests a “best possible” average outcome of a 7-fold increase in wealth and a “most likely” average outcome of a 6-fold increase in wealth over the 32 years, shown respectively by the two bottom lines in Figure 5.

Net of spending and taxes, the most likely scenario equates to a 5.9 percent average annual growth in wealth, about 5.1 percent per year *less* than the return earned by the 60/40 investor who faces no tax or spending obligations, a return that Piketty presumes is so easy to beat. True, the 11 percent annualized return of the 60/40 portfolio exceeds Piketty’s hypothetical norm for the hyper-wealthy, but it was earned in the context of the greatest secular bull market in liquid stock and bond markets in world history. And it occurred in the

context of the greatest decline in forward-looking real capital market yields in world history.¹⁹

What does the 5 percent return shortfall relative to passive 60/40 investor (11 percent minus 5.9 percent) mean? It represents the annual *wealth transfer* from the hyper-wealthy to society at large—a direct consequence of their spending, charitable giving, paying taxes, and so forth. There is a vigorous debate about the extent to which efforts to accelerate this redistribution reduce the incentives for the next generation of entrepreneurs, inventors, and innovators to step in and achieve their own fortunes, and in so doing create their own productivity marvels, technological advances, and legions of new jobs. Redistributionists should be careful of what they wish for.

What of Piketty's thesis that inherited wealth is on the march? At least in the United States, the opposite seems true, even with a conservative definition of inherited wealth.²⁰ Indeed, with each passing generation, the 4 percent wealth erosion is, if anything, accelerating.

Over the past 32 years, an average of just 26 percent of newcomers' wealth, representing an average of just 1.5 percent of the aggregate wealth of the 400 families, was inherited; much of this wealth was subsequently dissipated. Since 2005, in terms of headcount, the silver spoon crowd has comprised just 10 percent of the newcomers and just 15 percent of the newcomers' wealth in the Forbes 400. Further, a large part of the already meager accumulation of inherited Forbes 400 assets was likely due to the historically high stock and bond returns of the past three decades. Going forward, it is likely to be even less impressive.

¹⁹A comparison is even more extreme with the S&P 500, which transformed each \$100 into just over \$4,000 in 32 years, if there was no spending or taxes. Even if all of the income is spent, if a Forbes 400 centi-millionaire in 1982, ranked 229th, simply invested in the S&P 500, such wealth in 2014 would be \$1.8 billion, growing 18-fold (nearly 6-fold net of inflation), and the investor would have enjoyed over \$400 million in pretax spending in the interim. This is even better than results for the "surviving elite and family" (13-fold) and starkly better than the overall average for the "debut elite and family" (6-fold). So much for the superior investment acumen of the super-wealthy.

²⁰We broadened the definition of inherited wealth by assuming all family members of the elite (for example, those who have the same last name) have inherited a portion of the family fortune. This has obvious "Type 1" errors, missing those heirs who lose the last name, and "Type 2" errors, failing to credit next-generation entrepreneurs for their own successes, if they happened to also be descendants of wealth.

It bears repeating: we do not dispute the growing concentration of private wealth in the coffers of the wealthiest 1 percent. We do contest Piketty's explanation of why it is happening. Were this development a result of unearned investment returns and dynastic accumulation, as postulated by Piketty, all three of us, even with our diverse political orientations, would be alarmed. But even allowing for the imperfections in the compilation of the Forbes 400, the transitory nature of the list clearly demonstrates that wealth accumulation is not primarily a product of inheritance. Rather, the accumulation is largely due to entrepreneurial activity and is redistributed within society at a measurable 4 percent annualized pace. Thus, we view the increasing pace of wealth concentration as being of much less serious societal concern.

Some of the Forbes 400 are building great fortunes. They cannot easily do so without creating greater wealth for society at large. The rest are presumably dissipating great fortunes—recycling them back to society at large—through spending and giving. It is not unreasonable to ask: What part of this picture needs fixing?

Where Are the Astors, the Vanderbilts, the Rockefellers?

Another test that the Forbes 400 data allow us to perform—albeit with gaping statistical flaws—is an examination of the legendary fortunes of yesteryear. The Forbes 400 list confirms that the Vanderbilt anecdote is more relevant to the transient nature of fortune than Piketty's reliance on the more recent fortunes of Gates or Bettencourt. Gates' wealth is estimated at approximately half of 1 percent of the nation's GDP. That's impressive. At least eight such fortunes were created in the 19th century, those of Stephen Girard, Stephen Van Rensselaer, John Jacob Astor, Cornelius Vanderbilt, Alexander Stewart, Jay Gould, Frederick Weyerhaeuser, and Andrew Carnegie. Not one has descendants listed in any of the Forbes 400 lists.

The Rockefellers, who achieved supreme wealth early in the 20th century, scored 13 seats on the 1982 *Forbes* debut list, with collective wealth of \$7 billion in inflation-adjusted 2014 dollars. As of 2014, only one Rockefeller (David Rockefeller, who turned 100 in June 2015) remains, with a net worth of about \$3 billion.²¹ The du Ponts,

²¹This figure is less than half of the wealth the family collectively owned back in 1982, and only about 1 percent of his grandfather's (John D. Rockefeller) wealth in real terms—according to Wikipedia—three-quarters of a century ago.

once owning the extraordinarily wealthy gunpowder monopoly in America, scored 25 slots on the *Forbes* 1982 list, and yet from 1999 to date not a single family member remains.

Let's move beyond anecdotal evidence, and get as scientific as the rudimentary data at our disposal will permit. In addition to the legendary names just mentioned, many other uber-rich clans have prospered throughout history. We use the various wealth lists collected and published by Kevin Phillips (2002) to build a roster of the legendary rich of past generations, which represents 76 distinct families.²²

We pose two questions, which the *Forbes* 400 history allows us to examine. First, which of these families were able to pass on dynastic wealth that lasted until 1982, let alone until today? Second, for those who survived until the advent of the *Forbes* list, and using heroically optimistic assumptions for those who did not,²³ what was the annualized rate of decay of these fortunes? Answering these two questions permits a direct assessment of the dynamism of inherited legendary wealth. Our analysis of the *Forbes* data suggests that descendants of only 29 of the 76 legendary rich families on our list²⁴ ever made it onto any of the *Forbes* 400 lists.

Based on Phillips' lists, Figure 6 shows the evolution of wealth for the top 10 families in 1918, 1930, 1957, 1968, and *Forbes*' first list in 1982. Phillips' lists comprise the 25 to 30 wealthiest Americans in each of the years for which he compiled the list. We focus on the extremes of wealth, the top 10 wealthiest families on each list.²⁵ If family wealth is divided by per capita GDP, we can trace the progress

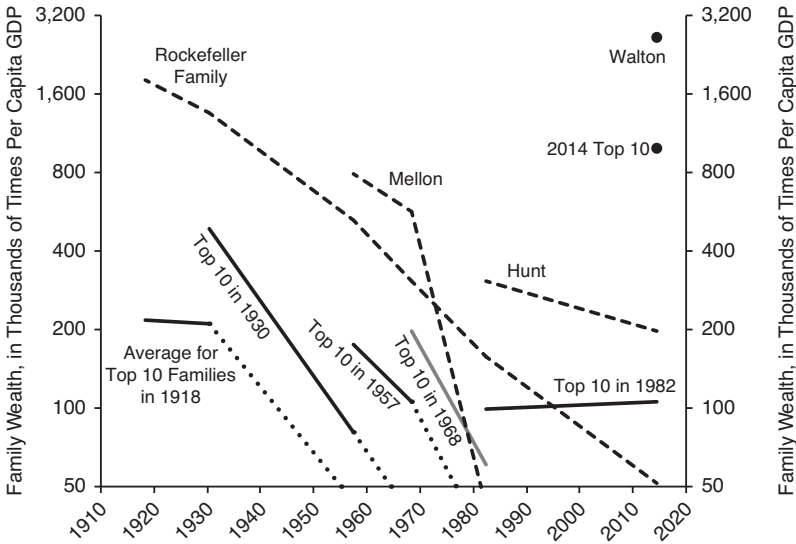
²²Phillips consulted several data references including *Forbes*, Lundberg (1937), *Fortune* magazine and the *New York Times Magazine* to sort out the following wealth lists: Top 30 Richest of 1918, Top 29 Richest in 1930, Top 25 Richest of 1957, and Top 30 Richest in 1968.

²³We assume that the 1982 fortune misses the cutoff for the 1982 *Forbes* 400 list by \$1, for all families that failed to make any of the *Forbes* lists. The cutoff wealth for the 1982 *Forbes* 400 list was \$75 million.

²⁴For this set of descendants list, we check *every individual name* to make sure they are legitimately related to the wealthy legend. Of course, our method will miss a small number of descendants who married into different families and chose not to keep their original family name in any part of their new names. But, we also fail to credit those who inherited wealth and built their own entrepreneurial fortunes with the latter source of success.

²⁵In this illustrative example, for any top 10 families that failed to make any of these lists in the subsequent year (shown in dashed lines), we assume their fortune misses half the cutoff for the 1930, 1957, and 1968 lists and the exact cutoff for the *Forbes* 1982 and 2014 lists by \$1.

FIGURE 6
 SUSTAINABILITY OF INTERGENERATIONAL WEALTH,
 EVOLUTION OF TOP 10 LISTS (1918–2014)
 FAMILY WEALTH RELATIVE TO PER CAPITA GDP



SOURCE: Research Affiliates based on data from Kevin Phillips and *Forbes*.

of these families relative to the average American; an upward-sloping line means that the elite family is becoming richer faster than the average American. It turns out that situation is very rare.

The wealthiest man in the world in 1918 was John David Rockefeller, with an estimated net worth of \$1.35 billion. This was a whopping 2 percent of the U.S. GDP of \$70 billion at that time, nearly two million times our per capita GDP, at a time when the nation was the most prosperous in the world. An equivalent share of U.S. GDP today would translate into a fortune of over \$300 billion. The expression “rich as a Rockefeller” had real meaning in 1918.

Are the Rockefellers of today richer than the Rockefellers of 1918? In nominal dollar terms, yes. But a 2014 dollar is not the equivalent of a 1918 dollar. Adjusting for growth in per capita GDP, as shown in Figure 6, the Rockefeller family, represented by the sole remaining family member who makes the Forbes 400 list in 2014, David Rockefeller, has fallen from nearly two million times per capita

GDP to 51,000 times per capita GDP. That's still awfully wealthy, but it represents a 97 percent erosion in wealth measured relative to the prosperity of the average American. This works out to 3.6 percent erosion in Rockefeller family wealth, relative to the average American, year after year from 1918 to 2014.

As we write this, the Rockefeller family is vacating their space in the Rockefeller Center. Writing in the *New York Times*, reporter Sam Roberts opined, "While there was one John D., there are now hundreds of Rockefellers. So in a sizzling real estate market, even the Rockefeller family must worry about the rent" (Roberts 2014).

Second wealthiest in 1918? Andrew Carnegie's colleague, Henry Frick. Following his death in 1919, his family fell clear off the top 30 list by the time of the 1930 list. A few decades on, who remembers the Fricks except aficionados of the Frick Collection museum in New York City? Rounding out the 1918 top 10 list were the families of Carnegie, Baker, Harkness, Armour, Ford, Vanderbilt, Green, and Harriman. Most of us are familiar with the Fords, Carnegies, Harrimans, and Vanderbilts, but many would be hard pressed to identify the Bakers, Harknesses, Greens, and even Armours.

As it happens, by 1930—on the heels of the Roaring Twenties, no less—5 of the 1918 top 10 elite families had lost so much of their wealth that they did not rank in even the top 30 of the 1930 list of ultra-wealthy. By 2014, only David Rockefeller remained on the Forbes 400, to represent all of the wealthiest families in America in 1918. Even he was far removed from the top 10, top 30, or even top 100.

The change in the average wealth of all families in the top 10 roster of 1918 is represented by the line (solid and dotted) at the bottom left of Figure 6.²⁶ While the average wealth of the families had diminished slightly by 1930, even with the monumental bull market of the 1920s, the dashed line shows that subsequent decades were far less kind, as wealth declined precipitously compared to the growing wealth of the average American measured in per capita GDP.

For the top 10 families of 1930, by the time the next top 10 list was compiled in 1957, only 3 of the families were wealthier (in notional terms), 7 were poorer, and 5 had lost so much net worth they had

²⁶We use a geometric average of wealth for 1918 and 1930 for these families, so that the one or two families at the top of the list do not dominate the average.

dropped out of the top 25. Net of inflation, the average family had lost five-sixths of its wealth. In the years from 1957 to 1968, the wealthy seem to have fared better, but only in notional terms. Only 3 of the 1957 top 10 families failed to make the top 30 in 1968, while the other 7 families on the 1957 list had achieved higher nominal wealth by 1968. But, net of inflation, the average family lost ground, relative to the average American by about 40 percent. The top 10 families in 1968 exhibited a similar pattern, with a gradual decrease in nominal value and—in a period of rising inflation—a plunge in both real value and relative to U.S. per capita GDP.

Finally, 8 of the top 10 elite from 1982 still remain on the 400 list, and 6 families remain in the top 10. From 1982 to 2014, the 1982 top 10 elite families' growth in wealth has uncharacteristically kept pace with—not exceeded—the average American's income growth, as measured by per capita GDP. This relatively robust survival of the 1982 top 10 list was helped considerably by an unprecedented 32-year bull market for stocks and bonds, which came at the cost of a corresponding crash in r , the forward-looking return on capital.

Another way to examine the dynamism of legendary wealth is to observe how fast it has fallen in past generations. Piketty's core thesis is that the rich know how to get richer. If they do, our evidence would suggest that they're not trying. For the 10 wealthiest families of 1918, the average erosion of wealth relative to the prosperity of the average American was 5.3 percent a year between 1918 and their disappearance from subsequent top 10 lists, suggesting a half-life in relative wealth of 13 years. The average wealth erosion for the 10 wealthiest families of 1930, 1957, and 1968, until they were last evident on any list, was 6.6 percent, 5.3 percent, and 8.7 percent, respectively.²⁷ These figures correspond to a half-life of wealth—the length of time it takes for half of the family fortune to be redistributed within society through taxation, spending, and charitable giving—of 10 years, 13 years, and (remarkably) 8 years, respectively.

Let's now examine the 1982–2014 time span covered by the Forbes 400 survey. In expanding the survey from 30 families to 400, we find the coattails of once-great wealth. Consider Henry Frick, the second wealthiest man in the world in 1918, whose fortune of

²⁷These numbers were estimated using the same method and assumptions we used in Table 1 so as to ensure consistency across analysis.

\$225 million faded fast, so fast that his heirs were off the top 30 list by 1930. His granddaughter, Helen Clay Frick, with \$150 million, the entry level of wealth for the 1984 list, just managed to make the list that year, the last time a Frick descendant appeared. During the 66 years from 1918 to 1984, in which one-third of the notional value of the Frick fortune was dissipated into society at large, U.S. per capita GDP rose 20-fold from \$743 in 1918 to \$14,707 in 1984. Relative to the average American's economic progress, the Frick fortune shrunk by 97 percent, the same magnitude of decay the Rockefeller family experienced, albeit in 30 fewer years.

The attentive will note that the Walton family registers the top rank on the 2014 *Forbes* 400. Not Bill Gates? No. We're looking at families. The Walton family collectively has wealth of \$140 billion, according to the data sleuths at *Forbes*. The Koch family ranks second with \$87 billion. Gates falters into third place with a mere \$80 billion, and the Mars family ranks fourth with its \$69 billion chocolate empire. By inventing a mass distribution model that offers deeply discounted pricing to the middle and lower-middle classes, by dint of slashing the cost of every step in the process of bringing product to the end consumer, it would seem that Sam Walton fostered the closest thing we now have to a dynasty.²⁸ Our data suggest that it will not last many generations, but it is an impressive accomplishment.

Our next analysis illustrates the dynamism of inherited legendary wealth after the originators of wealth are gone. While alive, the founders of great wealth typically continue to build their fortunes, but the progeny of the wealth originator generally do not share his or her one-in-a-million talent and are unable to generate similar levels of new wealth.

Table 1 tallies the wealth erosion of the 25 to 30 families on each of the Phillips lists. Fueled by the doubling of valuation levels in the immense bull market of the 1920s, the average growth in wealth of the ultra-rich, from 1918 to 1930, slightly outpaced the income growth of the average American by an annualized 1.9 percent. As the progeny of the ultra-rich assumed the reins, the wealth dissipated. By the time the families disappeared from Phillips' lists

²⁸We leave it to the pundits on the left and the right to argue over this interesting tidbit that seems to have gone largely unnoticed. We find it interesting that the left finds the Walmart business model so deeply offensive, when the customers are the main beneficiaries of that business model, and those customers are often the working poor.

TABLE 1
ANNUALIZED AVERAGE GROWTH IN WEALTH RELATIVE
TO PER CAPITA GDP GROWTH

List Year	Wealth Erosion, Relative to PCGDP, through Year				
	1930	1957	1968	1982	2014
1918	1.9%	-2.7%	-2.5%	-4.2%	-4.0%
1930		-6.0%	-4.7%	-6.2%	-5.7%
1957			-4.7%	-6.6%	-5.5%
1968				-9.7%	-7.8%

NOTE: Ending wealth for dropouts is assumed to be half the cutoff for the 1930–68 lists, and exactly the cutoff for the Forbes 400 lists.

SOURCE: Research Affiliates based on data from Kevin Phillips and *Forbes*.

(or by 2014 for the single exception that did not), the annualized rate of wealth erosion was around 4 percent a year. For the newer hyper-rich families included on Phillips' lists of 1930, 1957, and 1968, respectively, the pace of erosion accelerated. Compare, for example, as shown in Table 1, the erosion in wealth relative to U.S. per capita GDP of 6.2 percent and 5.7 percent in 1982 and 2014, respectively, for the families on the 1930 list with the 9.7 percent and 7.8 percent rates of erosion for the families on the 1968 list. Perhaps the lessons of the Great Depression, freshly etched into the psyches of the progeny of the "Class of 1918," called for a frugality forgotten by later generations. It bears repeating that these rates of wealth erosion are based on *best-case* assumptions about end-point wealth when families disappear from our radar screen.

The legendary wealth of the robber barons was steadily replaced through the 20th century by the fortunes of the nouveau riche. As shown in Table 2, two-thirds of the wealth of the top 30 families in 1930 was still owned by families on the 1918 list. This means that one-third of the 1930 wealth was new, created by new entrepreneurs, innovators, and employers of legions, such as Andrew Mellon, on his way to becoming the wealthiest man in the world, and the descendants of Samuel du Pont de Nemours, on their way to building the eighth-largest fortune in the nation a half-century later. By 1957, only one-third of the wealth of the top 25 families was owned by those

TABLE 2
SHARE OF WEALTH ON LATER “TOP 30” LIST

List Year	Share of Wealth in Later “Top 30” List, through Year				
	1930	1957	1968	1982	2014
1918	66%	33%	16%	5%	0%
1930		57%	39%	6%	0%
1957			69%	33%	0%
1968				39%	8%

NOTE: For *Forbes* lists (1982 and 2014), this table shows the share of the top 30 wealth owned by descendants of legendary wealth. If they are on the 400 list but not in the top 30, they count as zero.

SOURCE: Research Affiliates based on data from Kevin Phillips and *Forbes*.

from the 1918 list, and by 1968, a half-century later, the fraction had fallen to one-sixth. By 2014, none of the top 30 fortunes in the United States was owned by a descendant from the 1918 list, nor any descendants of the 1930 or 1957 lists.

The rotation in the top 30 lists, documented in Table 3, seems to average 4–6 percent a year since 1968, considerably faster than in the previous half-century. This suggests that every generation breeds a new generation of super-entrepreneurs and super-innovators who achieve great success, in most cases by advancing society’s wealth alongside their own. As they pass on, and pass wealth on to the next generations, that wealth is returned to society through taxes,

TABLE 3
IMPLIED ANNUAL ROTATION IN TOP RANKS OF WEALTH

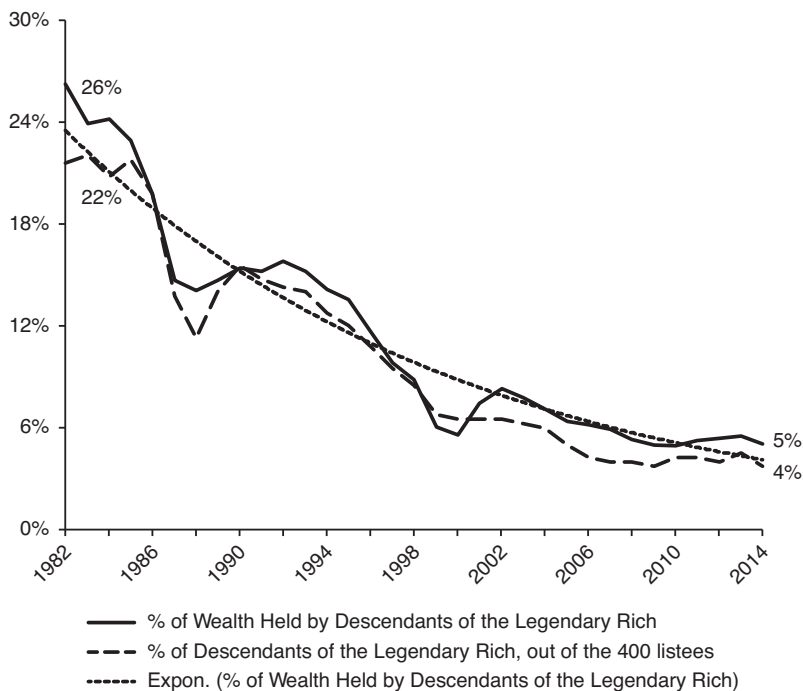
List Year	Annual Rotation in “Top 30” Wealth, through Year				
	1930	1957	1968	1982	2014
1918	–3.4%	–2.8%	–3.6%	–4.7%	–4.7%
1930		–1.7%	–2.1%	–5.3%	–5.3%
1957			–3.4%	–4.3%	–4.3%
1968				–6.5%	–4.4%

SOURCE: Research Affiliates based on data from Kevin Phillips and *Forbes*.

charitable gifts, and spending. Dynastic wealth creation, apart from occasional examples in which one additional generation produces one additional round of growth, simply does not exist. Subsequent generations cannot even keep pace with the average American's prosperity as measured by per capita GDP growth.

Figure 7 traces the decay of the legendary wealth of the families on the 1918, 1930, 1957, and 1968 Phillips lists during the 32 years spanned by the Forbes 400 list. The dashed line shows the number of descendants of the legendary rich as a percentage of the 400 on the *Forbes* list in successive years. The solid line shows the proportion of the aggregate wealth held by the privileged children of legendary wealth with the passage of time. The rate of decay in dynastic wealth, relative to the creation of new wealth by new elite,

FIGURE 7
THE EROSION OF INHERITED LEGENDARY WEALTH



SOURCE: Research Affiliates based on data from Kevin Phillips and *Forbes*.

averages 5.4 percent a year. This rate of decay compares to the overall decay of wealth for Forbes 400 members of 3 percent a year when measured relative to the aggregate wealth of the list. Those who inherit wealth dissipate it faster than the wealth creators.

Rags to Riches and Back Again in Three Generations

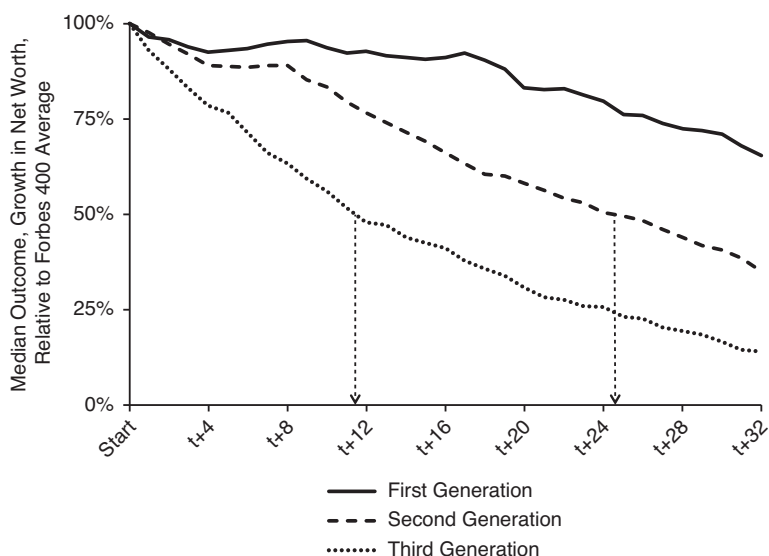
Our final test looks at the dynamism of the wealth erosion by generations. Do the second and third generations dissipate inherited wealth faster than those who create the wealth in the first place? We find that the ancient Chinese proverb “wealth does not pass three generations” is demonstrably accurate. We focus on “the Richest of the Rich”—those listed as the top 30 wealthiest individuals in Forbes 400 lists from 1982 to 2013. This is partly for consistency with the earlier lists from Phillips, which spanned 25 to 30 ultra-wealthy individuals or families, and partly because it is challenging to track down precisely which generation an individual represents.²⁹

We can track the erosion of wealth of members of the top 30, partitioned into the three generations, averaged across all of the years, as long as they are alive and remain anywhere on the Forbes 400 list, whether they are on the top 30 or not.³⁰ Figure 8 shows that, among top 30 hyper-wealthy, if they are first-generation creators of the wealth, their share of Forbes 400 wealth erodes very slowly in subsequent years, falling by barely one-fourth in a quarter century. For the second generation, wealth is halved in 24 years, and in just 11 years for the third generation. Relative to the rapid rotation of wealth in the Forbes 400, the first, second, and third generations lose ground at an average rate of 1.1 percent, 3.2 percent, and 6 percent, respectively.

²⁹It’s labor-intensive to assess whether someone on the *Forbes* list was the originator of the wealth, or second generation, or third generation, or later. Because the earlier lists from Kevin Phillips included up to 30 individuals or families, we opted to focus on the top 30 on each of the *Forbes* lists, so that we could gauge the individual’s correct generation. In the very few instances that we could not confirm genealogy through Wikipedia and other sources, we assume that a top 30 *Forbes* elite is second generation if the *family* name, but not the individual’s name, was first seen in 1957 or 1968, or any of the prior Forbes top 30 lists, and third generation if the *family* name was first seen in 1918 or 1930.

³⁰We aggregate the sole fourth generation example, who made the Forbes top 30 exactly once, with the third generation.

FIGURE 8
AVERAGE EROSION OF TOP 30 WEALTH, BY GENERATIONS

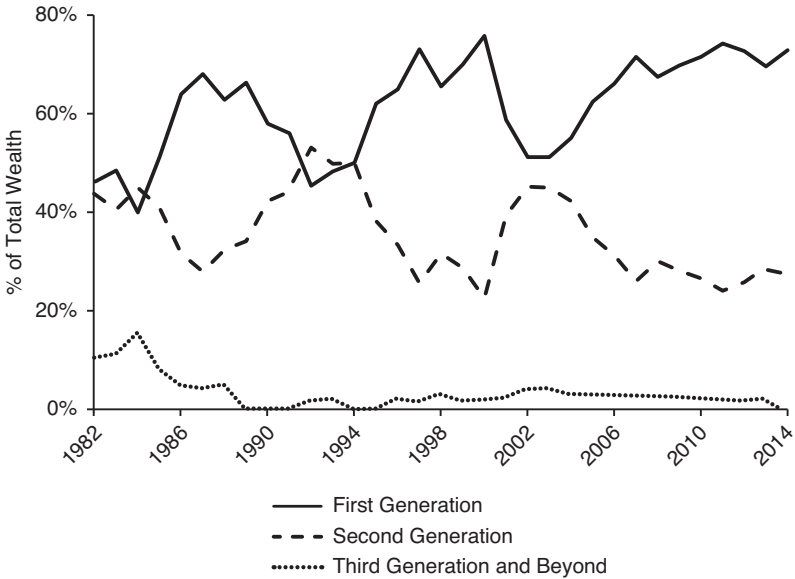


SOURCE: Research Affiliates based on data from Kevin Phillips and *Forbes*.

Figure 9 further demonstrates the fallacy of Piketty's narrative. Collective second-generation wealth from the early 1980s through the early 1990s was sometimes just as large as collective first-generation wealth, as a share of top 30 wealth. No more. In recent years, first-generation wealth—wealth earned by creating products that people want and jobs that people need—has comprised over 70 percent of the top 30 wealth list, while second-generation and third-generation wealth has comprised less than 30 percent and about 2 percent, respectively. Dynasties? By the third generation, they're in free fall. In the history of mankind, no great wealth has ever escaped the eventual "fall from grace."

The founder of a fortune possesses a one-in-a-million talent. His or her progeny, most particularly after the second generation, are unlikely to inherit the same highly attuned business acumen. Absent such genius, the challenge of growing, much less maintaining, the family fortune, buffeted by the headwinds of taxes and the machinations of competitors, regulators, and others who want to take market share or expropriate the wealth outright, is a near impossibility.

FIGURE 9
AVERAGE SHARE OF TOP 30 WEALTH, BY GENERATIONS



SOURCE: Research Affiliates based on data from Kevin Phillips and *Forbes*.

The Cause of Income Inequality

If there’s a “sleeper” in *Capital in the 21st Century*, it has to do with the sources of *income* inequality, not *wealth* inequality. As we have seen, there’s a rapidly rotating cast of entrepreneurs in the ranks of the hyper-wealthy, with old money dissipating surprisingly quickly as new fortunes are created. If we hasten this process, we hasten the inevitable: great wealth is recycled into the macroeconomy with a half-life of a generation or less. If we adopt policies aimed to accelerate the redistribution of wealth and, in so doing, trigger an unintended consequence by lessening the incentives for entrepreneurialism, innovation, and invention, the costs may be *much* larger than the “benefits” wrought by the small marginal increase in the already vigorous redistributive process that we document.

That said, there is a concurrent—and not unrelated—hollowing out of the opportunity set for the unskilled worker, for the marginally skilled worker, and perhaps soon for the moderately and significantly skilled worker. In theory, it is a good thing if society can produce the

same goods and services with less effort, as a consequence of technological innovation, setting the stage for rising efficiency and time-leveraging productivity enhancements. But how is that bounty to be shared? Back to Ayn Rand versus Karl Marx: Societies must decide with care how to allow the benefits to spread throughout society without eroding the incentives that drive these innovations in the first place.

Corporate executives make up nearly three-fifths of the top 0.1 percent of the income pie. Even more remarkably, as the share of national income going to this group quadrupled over the past quarter-century—from 2 percent to 8 percent—fully 70 percent of the rise accrued to corporate executives (Bakija, Cole, and Heim 2012). *Income* is now a path to the Forbes 400. We have no qualms about paying entrepreneurial rewards (i.e., vast compensation) to executives who create substantial wealth for their shareholders or who facilitate path-breaking innovations and entrepreneurial growth.

None of the authors would begrudge the well-earned billions of Steve Jobs and countless other visionaries who have profited from inspirational leaps that have bettered the lives of millions, nor to executives who do the same. But an abundance of research shows little correlation between executive compensation and shareholder wealth creation (let alone societal wealth creation). Nine-figure compensation packages are so routine they only draw notice when the recipients simultaneously run their companies into the ground, as was the case with Enron, Global Crossing, Lehman Brothers, Tyco, and myriad others. It's difficult for an entrepreneur to become a billionaire, in share wealth, while running a failing business. How can even mediocre corporate executives take so much of the pie?

Bertrand and Mullainathan (2001) cleverly disentangled skill from luck by examining situations in which earnings changes could be reasonably ascribed to luck (say, a fortuitous change in commodity prices or exchange rates). They found that, on average, CEOs were rewarded just as much for “lucky” earnings as for “skillful” earnings. The authors postulate what they term the “skimming” hypothesis: “When the firm is doing well, shareholders are less likely to notice a large pay package.” A governance linkage is also evident: The smaller the board, the more insiders on it, and the longer tenured the CEO, the more flagrant “pay for luck” becomes, while the presence of large shareholders on the board serves to inhibit skimming. Perhaps shareholders should be more attentive to governance?

Conclusion

When great wealth is achieved through entrepreneurialism, innovation, and invention, society benefits, jobs are created, and life becomes easier and better. For generations, this process has fueled American exceptionalism. When great *income* is achieved through entrepreneurialism, innovation, and invention, society again benefits for the same reasons. We find it puzzling that Piketty underplayed what even he recognizes as the major driver of growing American income inequality: the massive appropriation of the wealth of corporations by their executives. When it is objectively deserved, terrific; when it is not, it siphons resources out of the macroeconomy and hollows out the opportunity set for the populace at large.

A second driver of the “politics of envy” is the perception—and reality—that children of privilege get a head start on becoming the elite of the future, usurping the potential opportunity of others in the population to become the next Henry Ford or Steve Jobs. Each of us—libertarian, centrist Republican, and centrist Democrat—would be thrilled to find a way to double or triple the number of future entrepreneurs and innovators by granting those who are not born into privilege a similar opportunity to blossom. We have different views on whether government is more likely to play a positive or negative role in such an endeavor if empowered to do so. We all recognize that the next Bill Gates is unlikely to emerge from squalid poverty, and we agree on the benefits to society if that were more plausible. We all agree that the hollowing out of the middle class is real and is a serious problem, which is better addressed by improving opportunities for the have-nots to better their lot than by aggressively redistributing from the haves. It is well beyond the scope of this article, however, to propose answers to society’s challenges as they relate to bettering the opportunity set for the middle class and for the poor.

Instead of focusing on access to opportunity, Piketty focuses on a deeply flawed narrative of dynastic wealth, while overlooking the fact that most immense pools of wealth are first generation, newly created by those who have also just created great wealth for society, and ignoring the fact that the wealthy, especially after this first generation, are masters at redistributing—or, to be more frank, dissipating—their own wealth. When someone has achieved monumental success, it’s tempting to encourage redistribution.

When someone has inherited wealth, earned by a previous generation, or has built great wealth from lofty income without having themselves built a great business, envy or a sense of fairness may lead some to say, “Let’s redistribute it.” Dare we forget the trivial fact that “fairness” is subjective?

The point of this research is that, whether we are governed by acolytes of Ayn Rand or Karl Marx, *redistribution will occur, no matter what policies are pursued*. The only question is whether, in an effort to accelerate the process, we stifle the innovation and entrepreneurial spirit that achieves great wealth *by creating great societal wealth*, which as we have shown will be redistributed into the macroeconomy with surprising speed, by the wealthy and their offspring.

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