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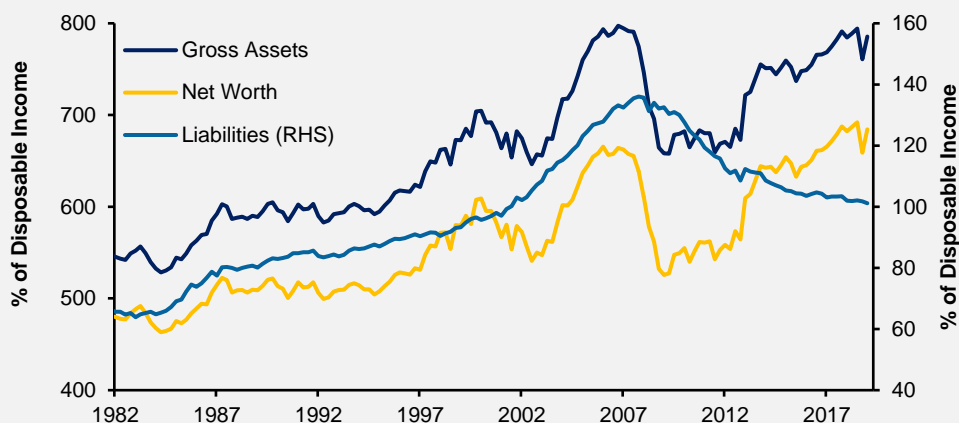
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## Wealth Inequality—A Tale of the Diverging Tails

Since the Global Financial Crisis, U.S. households in aggregate have come a long way in strengthening their balance sheets. As shown in the figure below, liabilities relative to disposable income have trended down to more sustainable levels. In tandem, household assets have surged as the value of financial assets and housing has increased. With the decline in liabilities and the rise in assets, overall net worth has risen briskly and now exceeds pre-crisis levels at around 650% of disposable income. This equates to an average of over \$800,000 for each U.S. household.

**Figure 1: U.S. Household Aggregate Balance Sheet**



Source: Federal Reserve, U.S. Bureau of Economic Analysis, and PGIM Fixed Income. Latest data: Q1 2019.

But lurking under the surface of these data is a thorny issue of aggregation. As highlighted in Figure 2, the distribution of this wealth is highly unequal. Each household in the top 1% of the wealth distribution has, on average, \$25 million of assets, including nearly \$10 million of equities. The next 9% of the distribution holds an average of \$3.5 million each, supported by over \$1 million of pension entitlements (including defined contribution and defined benefit plans). In marked contrast, the bottom half of households has only \$20,000 of net worth, on average, less than 0.1% of those at the top.

**Figure 2: Snapshot of U.S. Wealth Distribution**

Average U.S. Household in Each Cohort (Thousands of USD)				
	Bottom 50%	Next 40%	Next 9%	Top 1%
<b>Net Assets</b>	<b>20</b>	<b>574</b>	<b>3,484</b>	<b>25,014</b>
<i>Of Which:</i>				
Net Real Estate	7	128	490	2,467
Public Equity	3	59	763	9,755
Bank Deposits and Debt Securities	7	89	641	4,597
Pension Entitlements*	11	225	1,085	1,465
Private Business Ownership	2	31	364	5,539

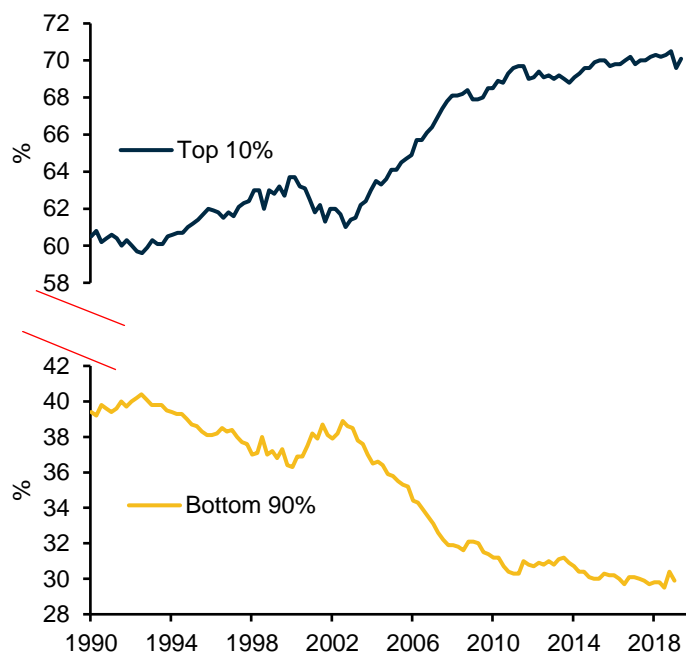
Source: Federal Reserve, U.S. Census Bureau, and PGIM Fixed Income. Latest data: Q1 2019. \*Pension entitlements include both defined benefit and defined contribution plans, but exclude Social Security benefits.

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All in all, the Top 10% now hold 70% of the wealth, while the Bottom 90% account for just 30% (Figure 3). Of equal concern, this disparity has become more severe in recent decades. From 2002 through 2010, the share of the Top 10% powered up from 62% to about 70% and has since been roughly flat around this level. What's notable is that even through the financial crisis, which saw significant wealth destruction, the share of the Top 10% continued to expand. We will focus on the underlying drivers of this rise.

**Figure 3: Shares of Aggregate Net Worth**



Source: Federal Reserve. Latest data: Q1 2019.

rising equity prices, in contrast, have been largely harvested by those at the top of the distribution. Finally, we argue that if economic inequality gets too far out of whack, it carries risks for the efficiency of the economy and, ultimately, for long-term growth.

Based on this work, we draw several policy prescriptions—these include further steps to encourage home ownership across economic cohorts and additional efforts to expand middle-class participation in pension vehicles. Such approaches will work more slowly than measures to directly restrain accumulation at the top of the distribution, such as a wealth tax, but they will also have far fewer unintended consequences.

## Economic Implications of Rising Inequality

In previous generations, economists sometimes asserted that issues of wealth distribution fell beyond their interests and expertise. Economics was about efficiently growing the pie, while it was the role of politics and other fields to figure out how the pie should be distributed. More recently, however, this debate has shifted. Economists are increasingly focused on the drivers and implications of income and wealth inequality. A range of underlying factors explain this change in perspective. We briefly summarize these issues as a useful conceptual backdrop for our following empirical work.<sup>3</sup>

First, it is increasingly clear that with rising inequality may come curtailed opportunities for lower swathes of the economic distribution. To the extent that these groups have inadequate opportunities to develop their skills, the accumulation of human capital in the economy will proceed more slowly than otherwise. This inefficiency results in slower real GDP growth and a smaller economic pie. Addressing this

<sup>1</sup> See Michael Batty, et al., "Introducing the Distributional Financial Accounts of the United States," FEDS Working Paper, Federal Reserve Board, March 2019.

<sup>2</sup> See <https://wid.world/team/>.

<sup>3</sup> Consistent with the observations in this paragraph, the academic literature on inequality is burgeoning. For example, two recent seminal papers are Emmanuel Saez and Gabriel Zucman, "Wealth Inequality in the United States since 1913: Evidence from Capitalized Income Tax Data," NBER Working Paper No. 20625, October 2014, and Thomas Piketty, Emmanuel Saez, and Gabriel Zucman, "Distributional National Accounts: Methods and Estimates for the United States," NBER Working Paper No. 22925, December 2016.

problem requires, at a minimum, steps to ensure equality of opportunity. But there are also self-reinforcing factors at play—if eventual outcomes become too unequal, they may jeopardize the prospects for equitable opportunities. Thus, the pursuit of efficient human capital development cannot turn a blind eye if outcomes become highly skewed.

Second, a closely related concern is that highly unequal distributions of income and wealth, beyond potentially generating unequal opportunities, may also blunt the economic incentives facing lower parts of the distribution. Some inequality of outcomes can promote investment and risk taking, but if the distribution becomes too skewed, those toward the bottom may feel that the probability of rising is discouragingly low. Moreover, entire communities may not experience, at least in any first-hand way, the benefits of economic engagement through education, skill acquisition, employment, and investment. This blunts incentives to participate in the traditional economy and, perhaps, provides incentives to play outside the system.

A third economic consideration is somewhat more proximate. Highly unequal distributions of income or wealth may bring with them hidden vulnerabilities for the economy or the financial system. For example, the balance sheet data reported in Figure 1 paint a very favorable picture of the U.S. consumer sector. But, as we will show, households in the Bottom 50% of the wealth distribution are really struggling. Given the limited financial resources of these households, they have few buffers to absorb a shock, especially a deterioration in labor market conditions. This means that the economy is more brittle than the aggregate data suggest and, notably, more brittle than if the same wealth was held evenly across the population.

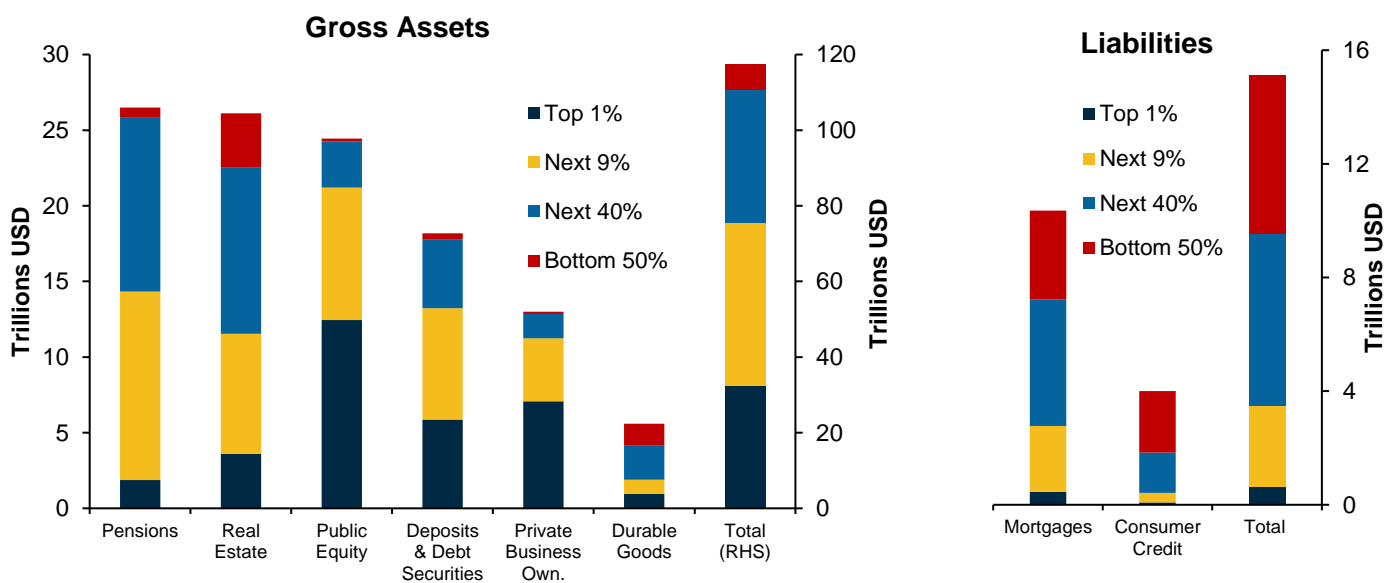
Finally, as we are now seeing in a number of countries, economic divergences also manifest themselves in the political environment. Inequality economically disenfranchises those who are poorer, while the spending patterns of those at the top are economically far more significant given that they command exponentially more resources than those at the bottom. But in the ballot booth, the votes of the Bottom 50% count exactly the same as those at the top. Thus, if the economic system is viewed as unfair, or is otherwise creating frustrations, this will manifest itself in the outcome of elections and, eventually, in government policies. The result could be policies that challenge or disrupt the existing economic order.

We will return these considerations as we interpret our empirical results below.

## A Snapshot of U.S. Household Balance Sheets

Figure 4 provides a quick overview of U.S. household gross assets and liabilities.

**Figure 4: Household Assets and Liabilities**



Source: Federal Reserve. Latest data: Q1 2019.

A key point is that the distribution of assets across households is strikingly unequal, while the distribution of liabilities shows much greater equality. The following are some of the quantitative and qualitative differences in the balance sheet features of households at various points of the wealth distribution:

- The gross assets of U.S. households total about \$115 trillion, nearly six times GDP. The holdings of the Top 1%, Next 9%, and Next 40% are all roughly similar in magnitude, while those of the bottom half are just a sliver in comparison.
- These data imply that households in the Top 1% holds roughly *seven times* more assets on average than those in the Next 9% but, in turn, those in the Next 9% hold *five times* more than households in the Next 40%. Similarly, the assets of the Next 40% on average are themselves *six times* larger than those of the Bottom 50%. This highlights the appreciable differentiation across the distribution of wealth. Rather than a mere incremental increase, moving up in the distribution entails a quantum leap in the amount of asset holdings.
- The assets of the Top 1% are heavily concentrated in public equity, but their private business assets, and to a lesser extent, bank deposits and debt securities are also significant. The assets of the Next 9%, by comparison, are distributed relatively evenly across assets classes; this suggests that there are many routes into this second-tier of the wealth distribution.
- The Next 40% hold their wealth primarily in the form of pensions and real estate (housing). To the limited extent that the Bottom 50% have accumulated assets, it's been in real estate and durable goods. The difference between these groups highlights the importance of two critical life-time financial decisions: (1) Whether to buy a house and (2) Whether to participate in a pension plan. Households that pursue these two tracks of wealth accumulation seem likely to be in, at least, the upper half of the wealth distribution.
- The right panel displays the distribution of household liabilities, which total about \$15 trillion, just under 13% of gross assets. The fact that asset holdings far outstrip liabilities underscores the overall strength of U.S. consumer balance sheets. Nevertheless, as we have noted, vulnerabilities may arise from the distribution of those liabilities relative to the distribution of assets.
- Looking at the distribution of liabilities, we are struck particularly by the comparative prominence of households in the Bottom 50%. They hold roughly a third of total liabilities and loom especially large in consumer credit, a costly form of financing. Their gross assets slightly exceed their liabilities, as we showed in Figure 2, but the scale of their liabilities is nevertheless concerning. Whether this ultimately proves to be a good thing (expanding consumption opportunities for these households) or a bad thing (piling on debt that they ultimately cannot afford) will become clear when the business cycle eventually softens. In contrast, the Top 1% holds very little debt; the balance sheets of these households are exceptionally clean. The Next 9% have some mortgage debt but seem to avoid consumer credit.

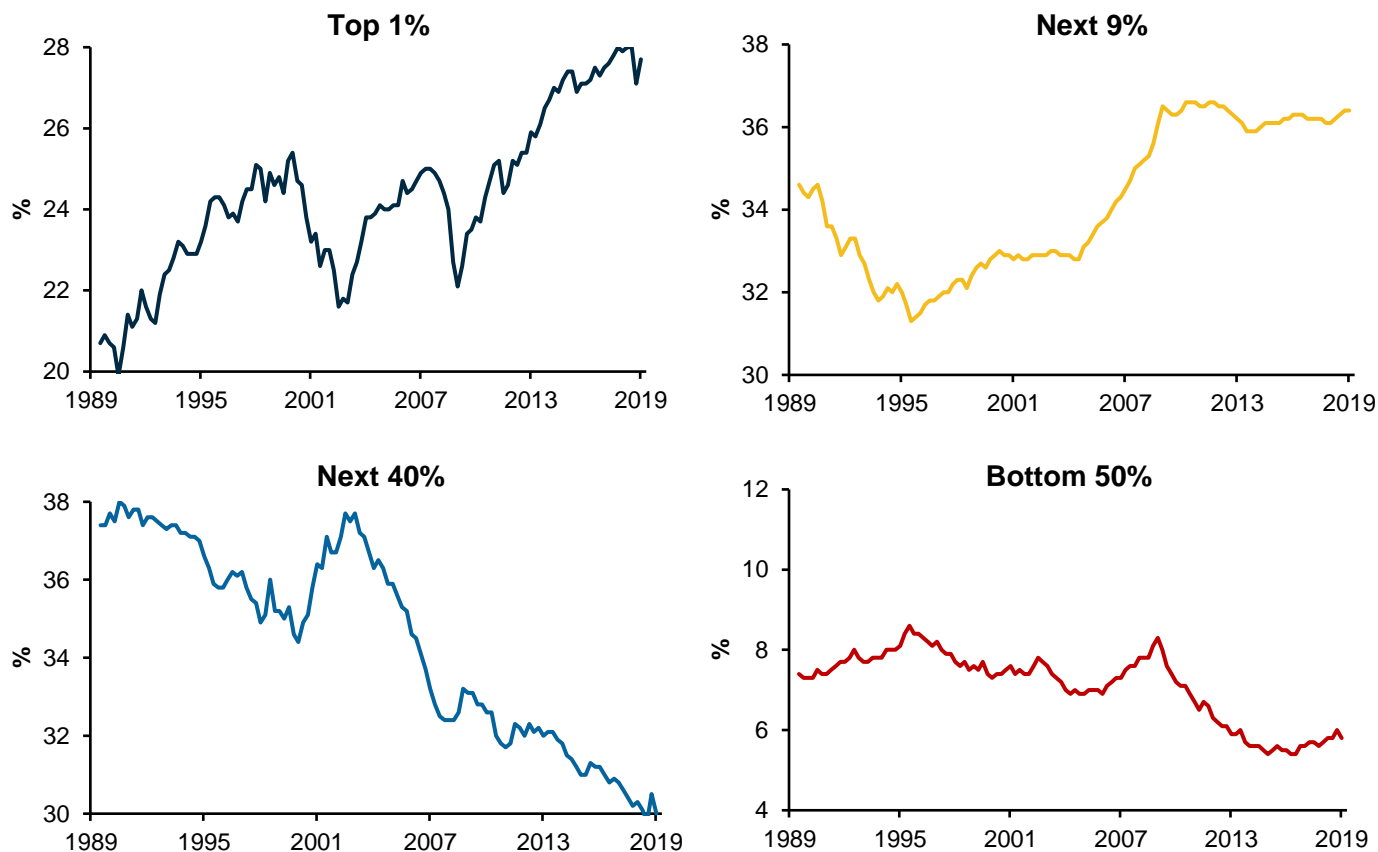
## How Has the Wealth Gap Evolved Over Time?

In this section, we look first at the evolution of gross assets across the four cohorts, then at the trajectory of liabilities, and finally at net worth—the difference between gross assets and liabilities. We find that over the past thirty years, the wealth share of the Top 1% has trended markedly higher and that this rise has come largely at the expense of households in the Next 40%. The Bottom 50% had little wealth at the beginning of the period, and they have seen their situation deteriorate slightly further, including enduring a period of negative net worth following the financial crisis. Following much of the recent academic work, we focus on differences in wealth shares across the various cohorts, rather than on Gini coefficients, because we find the share differences more intuitive and easier to interpret.<sup>4</sup>

<sup>4</sup> In any event, the wealth gap between the Top 10% and the Bottom 90% generally tracks the evolution of the Gini coefficient (for further information on the Gini coefficient, see <https://www.census.gov/topics/income-poverty/income-inequality/about/metrics/gini-index.html>).

Figure 5 shows the evolving shares of gross assets for each of these groups. The share of the Top 1% dipped during the global financial crisis (as it had during the dot.com bust as well), reflecting how the sharp decline in the equity market affected their significant equity holdings. The share then surged during the following decade as equity and other asset prices recovered briskly. At present, the Top 1% account for nearly 28% of asset holdings, up from around 20% in 1989.

**Figure 5: Shares of Gross Assets by Cohort\***



Source: Federal Reserve. Latest data: Q1 2019. \*By net worth percentile.

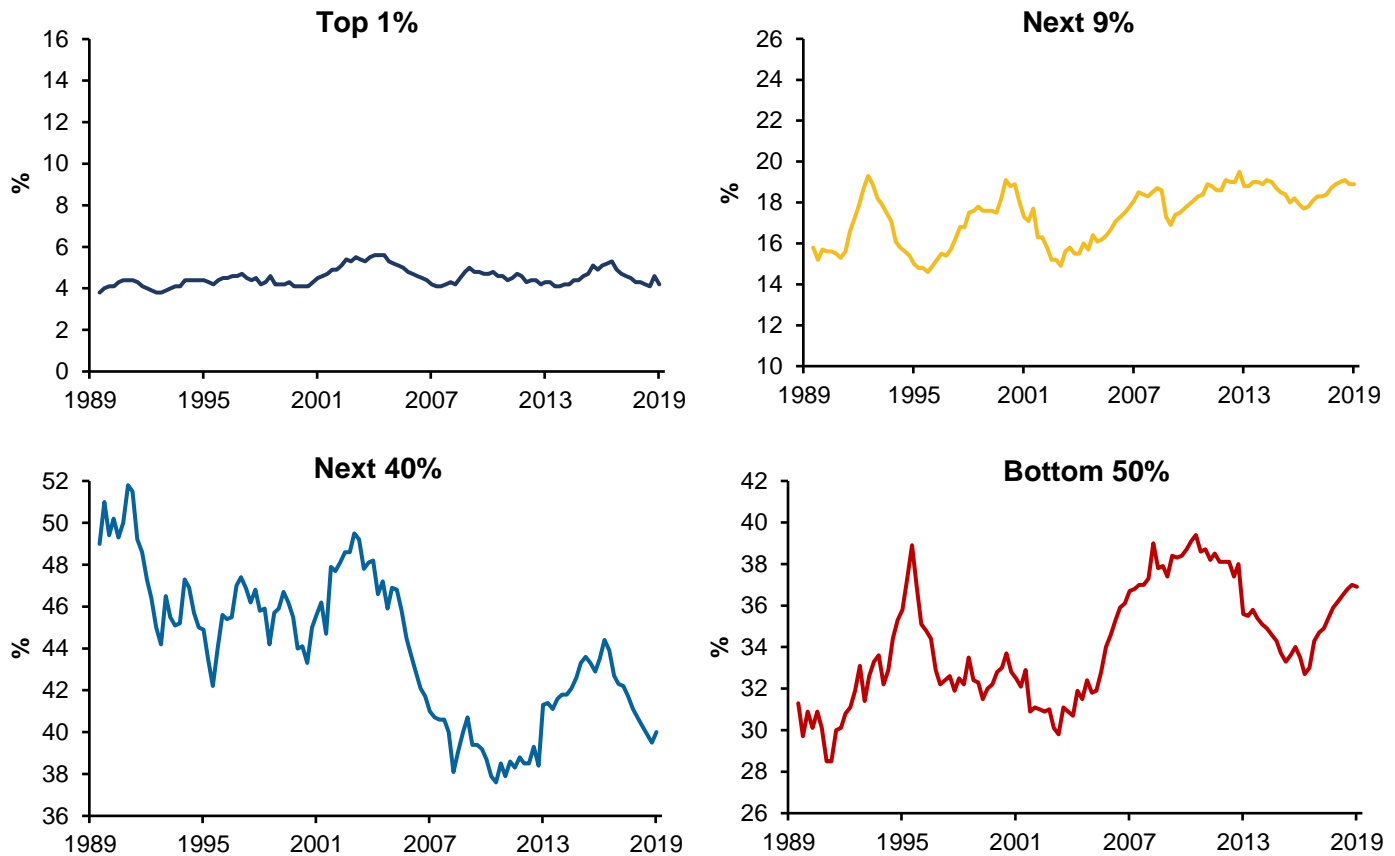
The story for the Next 9% is different. This group saw its share decline during the 1990s (as the Top 1% were posting big gains), but it then rose sharply during the years immediately preceding the financial crisis. Since the crisis, their share has been relatively flat at just over 36%, supported by a comparatively strong performance from their pensions. On balance, the share of the Next 9% has edged up 2% over the past three decades.

The share of households in the Next 40% has been on a sharp downward trend over the past thirty years. The short-lived exception was the early 2000s, when it was boosted by rising home prices. But in the post-crisis period, their asset holdings have failed to keep pace. In particular, their pensions—which account for about one-third of their assets—have been lackluster. In total, the share of the Next 40% has plunged from 38% at the beginning of the period to just 30% at present. In some sense, the rise in the share of the Top 1% has been “financed” essentially one-for-one by a decline in the share of the next 40%. Further, we note that the share of the Top 1% is fast approaching that held by the next 40%. Thirty years ago, this ratio was around half.

Finally, the share of the Bottom 50% was roughly flat at a little under 8% until the onset of the global financial crisis. In the years immediately following the crisis, their share retreated to around 6%, where it has since stabilized. This cohort generally finds itself financially strapped and has little scope for fresh saving. This, along with their limited initial asset holdings, means that they have not benefitted from generally rising asset prices since the financial crisis.

The next figure takes a look at the distribution of liabilities in the economy. As noted above, the punchline is that wealth is highly concentrated at the top end of the distribution, but debt is spread more evenly across households. Households in the Top 1%, which hold 28% of the assets, have only 4% of the liabilities. Balance sheets at the top end of the wealth distribution are very clean. In marked contrast, the Bottom 50% now account for 37% of total liabilities, up from 30% in 1989, while holding just 6% of the assets. As discussed further below, the resulting net worth of this group is now positive, but just barely. Finally, we note that the Next 40%—who have seen their share of assets squeezed—have also sharply deleveraged the liability side of their balance sheets.

**Figure 6: Shares of Aggregate Liabilities by Cohort\***

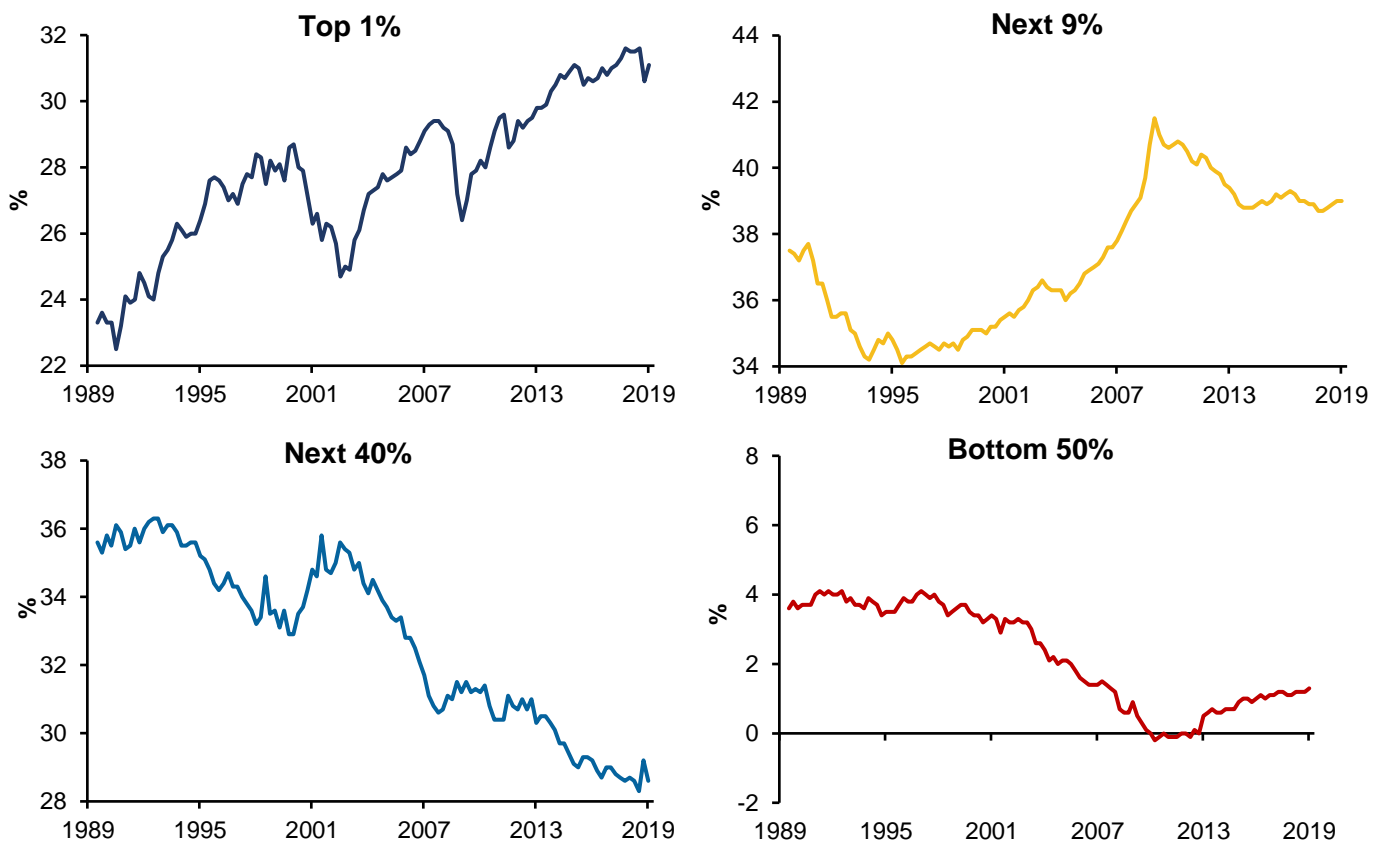


Source: Federal Reserve. Latest data: Q1 2019. \*By net worth percentile.



Putting these two variables together, Figure 7 looks at aggregate net worth (i.e., gross assets minus liabilities). As shown in the top left, the share of the Top 1% has shown some volatility, but has still trended distinctly upward, increasing from below 24% in the early 1990s to over 30% in recent years. In tandem, the portion of net worth held by the Next 40% (bottom left) has fallen almost in lockstep with the rise of the Top 1%. By comparison, the shares for the Next 9% and the Bottom 50% have changed relatively little, on net, over the past thirty years. The net worth of the latter group drifted negative in the aftermath of the financial crisis, but it has recently climbed back into marginally positive territory; this group started the period with just a tiny share of wealth, and its share has diminished further.

**Figure 7: Shares of Aggregate Net Worth**



Source: Federal Reserve. Latest data: Q1 2019.

All in all, we see two main stories emerging from Figures 5-7. The first is the remarkable further rise of the Top 1% and the corresponding squeezing of the Next 40%. This narrowing of U.S. wealth holdings not only brings economic and financial risks, but it translates into political risks as well. This cohort of households tends to be politically engaged and has good reasons to be frustrated with the economy's long-term trajectory. The second key story is the mismatch between the assets shares and liability shares. As a result of this mismatch, the bottom half of the distribution is left with very little net worth and, equivalently, with limited buffers to absorb shocks.

## Can We Explain These Shifts in Wealth?

In this section, we seek to identify some factors that explain the observed shifts in the wealth distribution. The results indicate that the widening wealth gap reflects, in part, the well-documented divergence in incomes that has occurred in recent decades. Our work further indicates that the gap increases as equity prices rise, but narrows with rising house prices and during periods of upside inflation surprises.<sup>5</sup>

<sup>5</sup> We emphasize upfront that we are not attempting to identify the deep underlying drivers of net worth or inequality and, hence, won't be making any statements regarding economic causality. Instead, we are asking whether there are any variables that are proximately correlated with wealth accumulation and, if so, the features of those correlations.

We begin by examining aggregate household net worth, i.e., the overall size of the economic pie. Our simple empirical model relates the growth rate of this variable to the growth rates of household incomes, equity prices (as measured by the S&P 500), house prices (as measured by the Case-Shiller index), and to a measure of inflation surprises.<sup>6</sup> All variables enter the regression in “real” terms, which is simply the nominal variable divided by the contemporaneous CPI. In various specifications, we considered other variables, including household and corporate tax rates, but they were not generally significant.

In order to have a longer time series, we draw on data published by the World Inequality Database. This source provides annual observations on the distribution of net worth dating back to 1913. Our empirical work focuses mainly on the post-war period—we start the regressions in 1950. Results are shown in Figure 8.

**Figure 8: Explaining the Trajectory of Net Worth**

<b>Dependent Variable: Net Worth (1950-2017)</b>				
	<b>Aggregate</b>	<b>Top 10%</b>	<b>Bottom 90%</b>	
<b>Inflation Surprise (10-year average)</b>	<b>-0.256</b> (-2.3)	<b>-0.334</b> (-2.3)	0.006 (0.0)	
<b>Aggregate Income</b>	<b>0.409</b> (4.3)			
<b>Income of Top 10%</b>		<b>0.267</b> (3.3)		
<b>Income of Bottom 90%</b>			0.165 (0.9)	
<b>S&amp;P 500 Index</b>	<b>0.193</b> (15.6)	<b>0.190</b> (10.7)	<b>0.176</b> (6.2)	
<b>Case-Shiller House Price Index</b>	<b>0.400</b> (8.7)	<b>0.322</b> (5.2)	<b>0.628</b> (6.2)	
<b>Observations</b>	68	68	68	
<b>Adjusted R-Squared</b>	0.867	0.776	0.583	

*Note: All regressions include an unreported constant; bold indicates t-statistic (reported underneath coefficient) significance at the 5% level. All variables except inflation surprise enter as growth rates and are deflated by the CPI. Sources: World Inequality Database, Bureau of Economic Analysis, Census Bureau, Standard & Poor's, and PGIM Fixed Income.*

Unsurprisingly, we find that aggregate net worth trends upward with aggregate income—a 1% increase in earnings growth is associated with a 0.4% increase in the growth of net worth. This suggests that households convert rising incomes into additional saving and net worth. But there is also much more going on. Equity prices and housing prices both enter the regression with coefficients that are statistically significant and large in magnitude. The coefficient on house prices, however, is roughly twice the size of that on equities. Housing is held in a leveraged form by many households, while equities are typically not leveraged. Hence, a 1% rise in equity prices tends to raise the value of households' equity holdings by 1%, but a 1% rise in housing prices raises the value of housing net worth by more. In addition, the share of housing in household portfolios has typically been larger. Both of these factors magnify the coefficient on housing relative to that on equities.

We also find that a 1% inflation surprise is associated with a ¼ percentage point drag on the growth of aggregate net worth. Unexpectedly high inflation creates a “tax” that inhibits wealth accumulation.<sup>7</sup> Finally, we note that these results are quite robust. A number of other specifications, including those with alternative representations of inflation and differing lag structures, yield results that are broadly similar.

<sup>6</sup> Specifically, we assume that inflation follows a quadratic trend, and we define deviations from that trend as “surprises.” The variable that ultimately enters the regressions is the ten-year moving average of these surprises, consistent with our view that that inflation surprises are likely to have persistent effects on the economy's underlying wealth generation process.

<sup>7</sup> Of course, in recent years, central banks have been reminded about the risks of unexpectedly low inflation as well. But clearly, over this seven-decade period as a whole, the risk of higher-than-desired inflation was dominant.

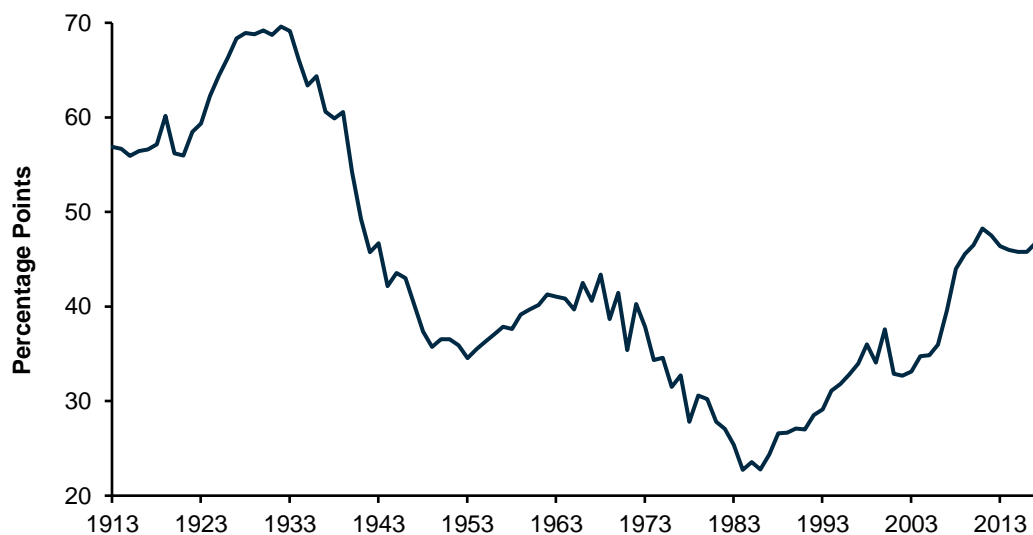


Next, we replicate the regressions above looking at the Top 10% and Bottom 90%. The wealth generation process for these two groups shows some marked differences. First, the net worth of the Top 10% is more sensitive to income growth, with the coefficient for the Bottom 90% falling far short of statistical significance. The results suggest that many households in the latter group are spending, rather than saving, income gains.<sup>8</sup> The higher U.S. saving rate since the financial crisis is driven mainly by economically better-off households.<sup>9</sup> Both the Top 10% and the Bottom 90% show sensitivity to equity prices, but the net worth of the Bottom 90% is far more sensitive to housing prices. This highlights that housing has been a major mechanism through which these households have accumulated wealth.<sup>10</sup>

Notably, inflation surprises meaningfully crimp the net worth of the Top 10% but have little impact on the Bottom 90%. While periods of unanticipatedly high inflation tend to generate broad economic instabilities, which impose costs throughout the economy, two factors likely buffer such effects for lower portions of the distribution. First, unanticipated inflation tends to transfer resources from creditors to debtors, and this cohort carries a significant portion of the liabilities. Second, during such periods, real estate prices have tended to outperform equity prices.

As a further, but related, empirical exercise, we examine the difference in the net worth shares of the Top 10% and Bottom 90%. As shown in Figure 9, this variable fell sharply during the 1930s and 1940s. It edged back up through the mid-1960s, but then plunged to its low of roughly 25% in the early 1980s. Since then the gap has again surged upward, to above 45%, and is similar to its level in the early 1940s. Our next regression seeks to explain this trajectory.<sup>11</sup>

**Figure 9: The Evolving Wealth Gap** (Difference in the net worth of the Top 10% and Bottom 90%)



Source: World Inequality Database and PGIM Fixed Income. Latest data: Q1 2019.

The model that we estimate is similar to that for net worth, and the findings are resonant. Our dependent variable is the gap in the net worth shares. The explanatory variables are the difference in real income shares between the two groups, the growth rates of real equity prices and real housing prices, and the de-trended CPI (to control for the evolution of the overall price level). The model also includes lags of these variables.<sup>12</sup>

<sup>8</sup> Theoretically, this result is consistent with these households being “liquidity constrained.” In optimizing economic models, this behavior arises when consumers’ current incomes are below their assessment of their future sustainable lifetime incomes. But, in reality, it could also reflect deviations from the optimizing models; for example, perhaps consumers are impatient to raise their consumption profiles, have unrealistic expectations about their sustainable lifetime incomes, or have over-extended themselves and need additional resources to keep just “treading water.”

<sup>9</sup> See also our previous paper, “[The Surprisingly Restrained U.S. Consumer: A Source of Stability for the Global Economy?](#),” November 2018.

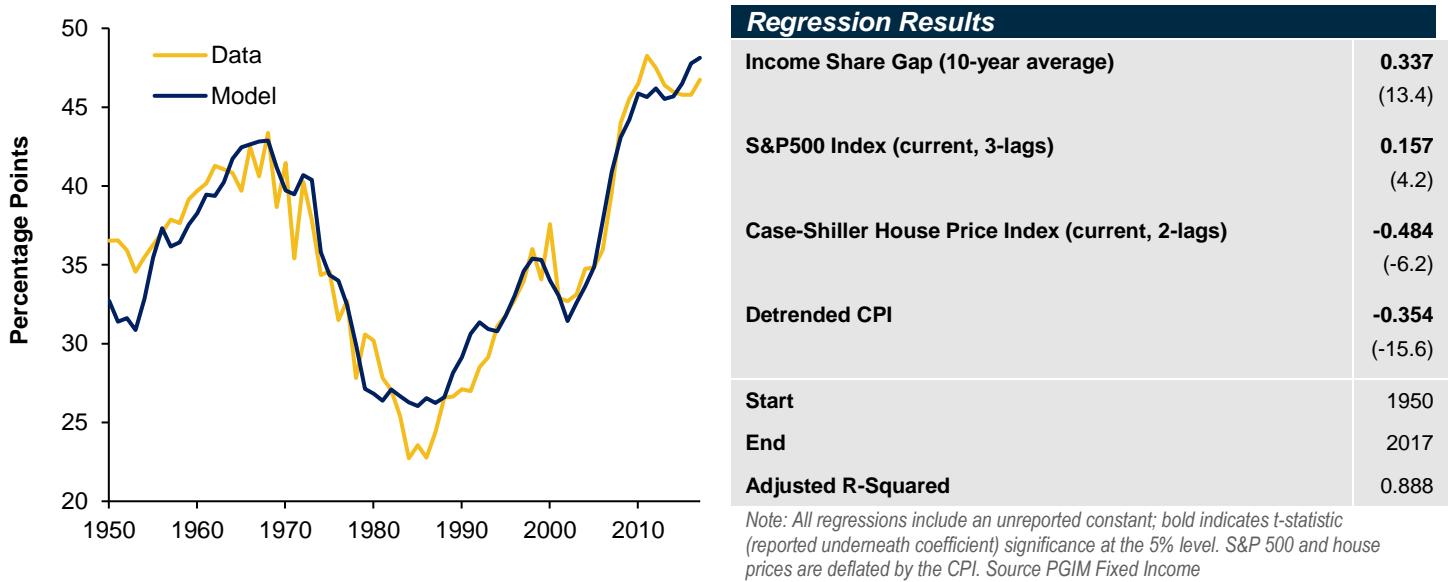
<sup>10</sup> We found consumer delinquencies to be strongly (negatively) correlated with the net worth of the Bottom 50%, but this variable was less powerful in regressions for the Bottom 90% as a whole.

<sup>11</sup> As noted above, the Fed inequality data are available starting in 1989. For the period when both sources are available, the difference in net worth shares derived from the Fed data broadly track, but lie somewhat below, those from the World Inequality Database. For a detailed discussion of the differences between these two sources see Batty, et al., cited in footnote 1.

<sup>12</sup> We found modeling the time series features of the wealth gap to be econometrically challenging; but the framework that we have landed on performs well, and the residuals pass a cointegration test, reinforcing the view that our approach is reasonable. The specification includes changes in contemporaneous house prices plus two lags and changes in contemporaneous equity prices plus three lags. The difference in income shares is a ten-year moving average. We also tested several metrics of bond market performance (e.g., real ten-year Treasury yields and mortgage rates), but these variables did not add appreciably to the regression.

As shown in Figure 10, the results are stark. First, the difference in income shares is strongly significant. As the income share of the Top 10% widens by 1% relative to that of the Bottom 90%, the wealth gap increases by one-third as much. We see this variable as capturing many of the structural forces, such as globalization and automation, that have driven a widening of inequality in income and, as a result, in wealth over the past decades. Second, increases in house prices tend to powerfully and significantly reduce inequality, consistent with our observations. Equity prices, however, move strongly in the opposite direction.

**Figure 10: The Wealth Gap** (Difference in the net worth of the Top 10% and Bottom 90%)



Sources: World Inequality Database, Census Bureau, S&P, and PGIM Fixed Income

Finally, the de-trended CPI enters negatively and with great significance. As discussed above, periods of rapid price increases particularly hurt the holders of wealth and, thus, narrow the gap across wealth cohorts. More generally, other specifications that we considered underscored the economic significance of inflation in explaining inequality. Consistent with the model's relatively high adjusted-R2, it closely tracks the observed difference in shares over time.

**One sharp conclusion that flows from our results is that the economic environment that has prevailed in recent decades has created headwinds for any narrowing in the wealth distribution.** As shown in Figure 11, since 1984 the income differential has widened appreciably, equity prices have surged, while house prices have put in a more modest rise. For good measure, inflation has also stepped down. In contrast, during the two episodes over the past 100 years that saw a significant narrowing of the wealth gap, 1933-53 and 1968-84, equity prices significantly lagged house prices. Further, the differential income shares fell sharply during the first of these episodes and was roughly flat during the second.

**Figure 11: Key Variables in Three Episodes** (Cumulative Percent Change)

	1933-1953	1968-1984	1984-2017
<b>Wealth Share Gap (pp)</b>	-34.6	-20.6	24.0
<b>Income Share Gap (pp)</b>	-26.6	3.8	26.8
<b>Case-Shiller House Price</b>	53.6	2.8	54.5
<b>S&amp;P 500</b>	18.7	-46.1	577.5

Sources: World Inequality Database, Census Bureau, S&P, and PGIM Fixed Income

## Concluding Thoughts: What Can Be Done?

*In this paper, we have argued that rising inequality may dampen economic performance over the medium to long term. Further, we have provided evidence that the distribution of wealth is more polarized than at any time since World War II. Preempting an additional rise will require key economic variables to shift course relative to their evolution in recent decades. These observations, in turn, also raise the question of what steps can be taken by policymakers to address rising wealth inequality?*

*Broadly speaking, we see two classes of approaches to addressing this problem—first, lifting the bottom portion of the distribution or, second, compressing the top of the distribution. For reasons of economic efficiency, we prefer the former approaches. Market economies rely crucially on the willingness of individuals to take risks and to invest capital. To operate at peak efficiency, it's important for people to generally reap the benefits or shoulder the losses that flow from their decisions. However, given the breadth of the polarization that exists in the United States, policy measures that narrow the distribution by clipping the top are also on the table. Indeed, more fundamentally, these two approaches may not be entirely independent. Measures to lift the lower portion of the distribution may need to be financed by increasing the burden of those at the top. Our regression results offer some hints as to possible steps forward.*

*First, over time, home ownership has proved to be one of the best ways for middle class families to accumulate wealth. This reflects both that housing allows broad access to a relatively safe, but leveraged, asset class. The capacity to accumulate wealth through buying a house has been significant. Of course, in the aftermath of the financial crisis, all of this is less certain than before. But we find the historical record to be compelling. On balance, our judgment is that policy initiatives to encourage broad-based home ownership are likely to help mitigate inequality over the medium to long run. A further observation is that, apart from accumulating a downpayment, owning a home may not require a household to increase its saving, since rent payments can be converted to mortgage payments. In other words, home ownership allows families to adjust their financial footprint without disrupting their other consumption patterns.*

*Second, the equity market has been a core driver of wealth for the upper portion of the income distribution, and our regressions show that rising equity prices are a key factor explaining increasing inequality. The policy prescriptions should not focus on penalizing the stock market or those holding equities, but rather seek to expand the set of equity investors. How this can be achieved broadly in the economy is very much an open issue. Over the years, a number of proposals to invest social security contributions in the equity market have been considered. But this entails enormous complications, including who is to bear the losses if stocks sag for extended period? Alternatively, employed workers generally have access to 401(k) or similar vehicles. Further policy focus on maximizing participation in these vehicles could include some form of tax credits (rather than just deductions) for contributions by lower-paid workers and their employers.*

*This discussion brings us to the issue of pensions. Returning to Figure 2, we see that a defining feature of households in the top half of the wealth distribution, versus those in the bottom half, is appreciable pension entitlements. A recent paper from the Federal Reserve addresses two related points.<sup>13</sup> First, it examines whether the demise of defined benefit plans has contributed to rising wealth inequality in the United States. The paper finds that the distribution of wealth across various types of pension schemes does not vary significantly. Defined contribution plans appear to be a comparably effective saving mechanism. Notably, this paper also found that the distribution of wealth inside of pension plans was not much different than that outside of pensions. Thus, the fundamental policy question is raising the overall retirement saving of households in the bottom half of the distribution. This could happen through increased saving by these households directly or through larger contributions by their employers (perhaps with tax subsidies).*

*The Fed paper addresses a second important issue. The wealth data as published do not incorporate social security onto household balance sheets. The authors show that the discounted value of social security payments is large relative to other sources of saving. For example, they estimate that the present value of social security for the average worker in the lowest quartile is \$129,700 and is*

<sup>13</sup> John Sabelhaus and Alice Henriques Volz (2019). "Are Disappearing Employer Pensions Contributing to Rising Wealth Inequality?," FEDS Notes, Federal Reserve Board, February 1, 2019.

\$238,200 for the average worker in the next quartile. Once this source of wealth is considered, the situation for lower-tier households seems somewhat less severe.

Our regressions raise three other issues that deserve mention. First, periods of upside inflation surprises tend to be periods in which the wealth gap narrows. While the economic experience of the post-War period also highlights the costs of inflation, our results underscore the importance of central banks taking steps to hit their targets and, hopefully, attenuating the frequency and size of downside inflation surprises. Further, the implications for the distribution of wealth could be an additional consideration pointing to somewhat higher inflation targets. We see this as a question ripe for further research. Second, the income gap is another core driver of rising wealth inequality. Broadly, this gap also has been on a sustained upward trajectory, fueled by automation and globalization. Steps to narrow this gap must include efforts to strengthen skills of lower-paid workers through education and training.<sup>14</sup> Third, an important issue is the extent to which demographics are driving changes in the wealth distribution. For example, what are the demographic characteristics of the Top 10% versus the Bottom 90%? We will examine such questions in our future work.

Finally, proposals for various kinds of wealth taxes are increasingly on the table. Given the breadth of the gap in net worth, this debate strikes us as appropriate. Even so, for reasons of economic efficiency, we are far from convinced that the United States would be well served by such a tax. It might be viewed as hostile to the accumulation and preservation of wealth. Further, it would bring enormous practical complexities; for example, how is wealth to be measured, tracked, and reported over time? It might also be seen by those holding wealth as a slippery slope—today's tax of, say, 2%, could be much larger in the future. The upshot would be incentives to move resources out of the United States and out of reach of the taxing authorities. Another possibility is a tightening of inheritance taxes, although this idea has proved controversial in the past. For now, we think it better to focus on other proposals, including some of those put forward in this section, that aim mainly to lift households at the bottom of the distribution. Such an approach is likely to address inequality at a more gradual pace than directly taxing away the wealth of those at the top. But actions to address the problem of inequality should avoid disrupting the economy's underlying productive capacity and, inadvertently, creating even more severe problems for the economy and society.

<sup>14</sup> More specifically, if the goal is to lift the bottom half of the economic distribution, we see a strong case for focusing on programs that provide vocational training along with broad access to community colleges. Proposals to eliminate the expense of all university education or provide blanket forgiveness of student loans should be evaluated with great care. One important question is the extent to which such measures benefit individuals who will ultimately rise to somewhere in the top half of the distribution even without additional government support.

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