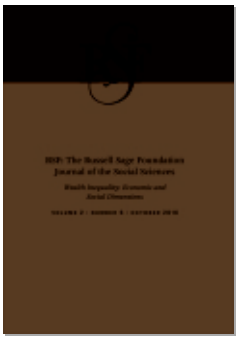
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Inequality and Mobility Using Income, Consumption, and Wealth for the Same Individuals

JONATHAN FISHER, DAVID JOHNSON, JONATHAN P. LATNER, TIMOTHY SMEEDING, AND JEFFREY THOMPSON

Recent studies of economic inequality almost always separately examine income inequality, consumption inequality, and wealth inequality, and hence, these studies miss the important synergy between the three measures explicit in the life-cycle budget constraint. Using the Panel Study of Income Dynamics (PSID), we study inequality in three dimensions, focusing on the conjoint distributions of income, consumption, and wealth for the same individuals. We find that the trends in inequality in income, consumption, and wealth similarly increase between 1999 and 2013. We examine the pairwise distributions of our measures using the average propensity to consume and the wealth-income ratios. Using the longitudinal nature of the PSID, we follow people over this period and find mobility is similar using income, consumption, and wealth. We conclude that while all three types of inequality are rising, wealth increasingly acts as a buffer to cushion income changes, which could reduce mobility—both intra- and inter-generational mobility.

Keywords: inequality, mobility, income, consumption, wealth

Growing interest in economic inequality and mobility continues to dominate the headlines. In 2013, President Obama spoke about inequality and mobility, reiterating a theme from earlier speeches: "This increasing inequality is most pronounced in our country, and it challenges the very essence of who we are as a people." Similarly, the chair of the Federal Reserve System, Janet Yellen (2014), in a speech to the Boston Federal Reserve Bank, observed that both income and wealth inequality were rising in the United States and that such increases called into question American beliefs in equality of opportunity.[1] As for consumption, an-

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1. Yellen remarked, "It is no secret that the past few decades of widening inequality can be summed up as significant income and wealth gains for those at the very top and stagnant living standards for the majority. I think

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other measure of well-being and the preferred welfare measure for most economists, Bill Gates suggested that "It's not that we should ignore the wealth and income data. But consumption data may be even more important for understanding human welfare" (Gates 2014; Piketty 2015). Hence income, wealth, and consumption are all three important gauges of inequality in economic status and their effects on social and economic mobility.

Most research shows, and Yellen (2014) stresses, the increase in income and wealth inequality has been large. Emmanuel Saez and Gabriel Zucman (2014) and Edward Wolff (2014) find that income and wealth inequality are highly related. Thomas Piketty (2015) makes this point more dramatic by arguing that the increase in income inequality yields more wealth inequality, which in turn increases income inequality. Jonathan Fisher, David Johnson, and Timothy Smeeding (2015) find that consumption inequality is about 80 percent as large as disposable income inequality and that the rise in consumption inequality was two-thirds that of income inequality in the United States from 1984 to 2011.

Income, consumption, and wealth distributions inform our perceptions of inequality. Yet most research on inequality limit analysis to just one of these variables. Even the studies using more than one almost invariably do so one at a time.[2] The most influential studies on income inequality examine income alone (Piketty and Saez 2003; Congressional Budget Office 2011). Those studying consumption inequality compare the trends in consumption inequality and income inequality, but the focus is on the univariate distributions and not the conjoint distribution (Fisher, Johnson, and Smeeding 2015; Attanasio and Pistaferri 2014, Aguiar and Bils 2015). Similarly, wealth inequality is studied by itself or with income inequality, but the focus is on the univariate distributions (Saez and Zucman 2014; Wolff, this volume; Pfeffer and Schoeni, this issue). In contrast, the *Report by the Commission on the Measurement of Economic Performance and Social Progress* states that "the most pertinent measures of the distribution of material living standards are probably based on *jointly* considering the income, consumption, and wealth position of households or individuals. . . . Give more prominence to the distribution of income, consumption and wealth" (Stiglitz, Sen, and Fitoussi 2009, 33).[3]

Studying these measures separately misses the important synergy between the three measures explicit in the life-cycle budget constraint. An increase in income held by the top of the distribution means that consumption or wealth of the top also increases. The joint distribution between any two, and more importantly the conjoint distribution among all three, provides more information than any of the univariate distributions. The concern is whether the increases over time in all three are similar, or whether the rankings across countries are similar. Recent evidence shows that the levels of income, consumption, and wealth inequality are different, wealth inequality being greater than income, which is greater than consumption (see figure 1). One must also ask how inequality of income translates to consumption or wealth. Alternatively, if one increases and another remains constant—what does that mean about well-being or the effects of inequality on social mobility? Piketty suggests that increases in wealth inequality translate to increases in income inequality: "many shocks to the wealth trajectories of families can contribute to making the wealth distribution highly unequal (indeed, in every country

it is appropriate to ask whether this trend is compatible with values rooted in our nation's history, among them the high value Americans have traditionally placed on equality of opportunity" (2014).

2. One exception is the work of Markus Jäntti, Eva Sierminska, and Timothy Smeeding (2008), who model the joint distribution of income and wealth in a cross-national context.

3. Richard Blundell, in an address to the Royal Statistical Society, states the importance of all three measures: "One thing is for sure, the results of the research presented here provide a strong motivation for collecting consumption data, along with asset and earnings data, in new longitudinal household surveys and linked administrative register data" (2014, 316).

and time period for which we have data, wealth distribution *within each age group* is substantially more unequal than income distribution)" (2015, 50). Alternatively, Dirk Krueger and Fabrizio Perri (2006) show that the increased availability of financial markets could suggest that increases in income inequality do not lead to increases in consumption inequality.

Following Jonathan Fisher and his colleagues in their study of inequality in three dimensions (2015b), we focus here on the conjoint distributions of income, consumption, and wealth for the same individuals. We examine all three measures of inequality using the 1999–2013 Panel Study of Income Dynamics (PSID). The PSID allows for longitudinal analysis and intra- and inter-generational mobility issues not feasible with any other dataset.[4]

We compare the level and trend in inequality in income, consumption, and wealth (or net worth) in the Panel Study of Income Dynamics from 1999 to 2013, and find that, similar to other research, all three measures similarly increase during this period. We also examine the pairwise distributions of our measures using the average propensity to consume (APC) and the wealth-to-income ratios and evaluate how these have changed over time. We use the longitudinal aspect of the PSID to follow people over time and find that mobility is similar using income, consumption, and wealth. Future work will examine how the changes in income and consumption are affected by changes in wealth and calculate the marginal propensities to consume for various levels of wealth.

The results improve our understanding of inequality in the United States since 1999 by exploring the joint relationship between various measures of economic inequality. The results indicate that the correlation between the three measures is high, but not perfect. Therefore, the individuals at the top in any one measure are not necessarily at the top in another measure. Further, individuals at the top in one year do not necessarily stay in the top over many years. Despite stickiness at both the top and the bottom of individual measures, fluidity also exists, especially given that the ranking of one measure relates to the ranking of another. Therefore, the picture of inequality proposed here not only aligns with previous research, in that it is rising, but also improves the clarity by incorporating the relationship between various measures of economic well-being that constitute inequality.

DIFFERENCES IN THE MEASURES

The differences in income, consumption, and wealth across the income distribution provide insight into why it is necessary to look at income, consumption, and wealth together rather than individually. Previous research (see Fisher et al. 2015a) shows that the APC falls with income and is extremely high for the low-income households. Alternatively, wealth increases with income and yields extremely high wealth-to-income ratios at the highest percentiles. As a result, consumption inequality is less than income inequality, and income inequality is less than wealth inequality. This suggests that households at the bottom of the income distribution appear relatively better off using consumption as a measure of inequality at any point in time, because consumption exceeds income (and wealth) in the lower ends of the conjoint distributions.[5] High-income households are better off using wealth to measure relative well-being than either income or consumption because amassed wealth can be used for future consumption and for transfers across generations. Hence, our perception of relative well-being changes depending on whether we use consumption, income, or wealth.

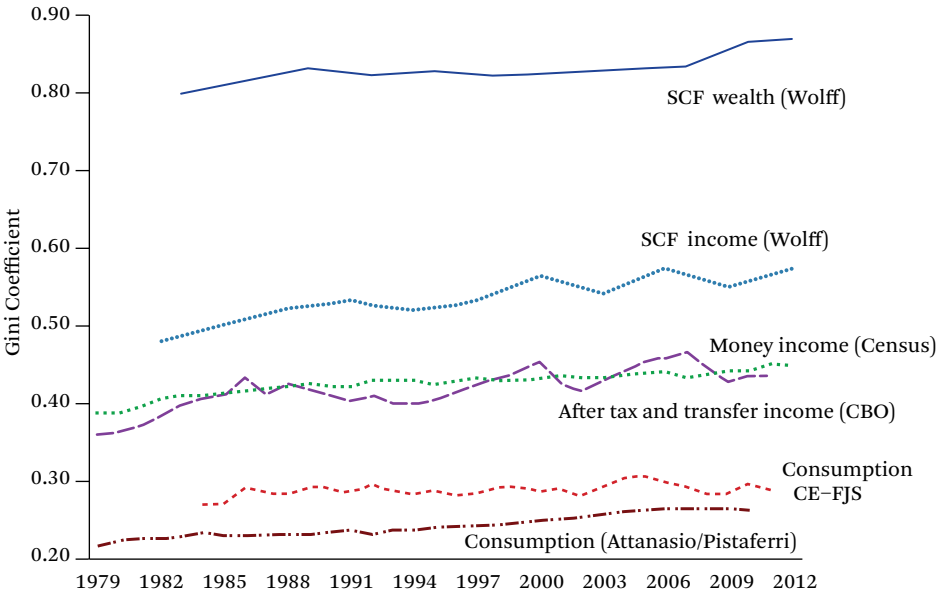
Some have estimated the flow value of wealth

4. In other ongoing comparable work, we combine income and wealth in the SCF with consumption in the Consumer Expenditure (CE) Survey databases to pursue similar aims. Although the SCF does not follow individuals longitudinally, it does include a special sample of the top one percent of the income and wealth distributions, something missing from the PSID and all other household income or consumption databases. The SCF aggregates compare well with National income and Product Accounts, suggesting an important confluence of both macro and microeconomic accounts (Dettling et al. 2015).

5. Consumption is a better measure of permanent income (see Fisher et al. 2015); however, another method to obtain a measure of permanent income would be to use a five- to ten-year average income measure.

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Figure 1. Gini Index for Income, Consumption, and Wealth



Source: Wolff (2014); Hardy et al. (2015); CBO (2011); Fisher, Johnson, and Smeeding (2015); and Attanasio and Pistaferri (2014).

to add to income in order to incorporate wealth into a measure of economic well-being (Burkhauser et al. 2009; Smeeding and Thompson 2011). But regardless of the flow values, the build-up of stocks of wealth presents opportunities and advantages (or in the case of debt, disadvantages) that may in the end be more important than any flows, as Piketty (2015) argues. In our data, wealth clearly accumulates over time and financial wealth is especially prevalent in the top strata of the wealth distribution. Wealth buildup takes place when large shares of national income go to top income families (top 3 to 5 percent) who have APCs of around 0.5 to 0.6. In these cases, high wealth and high income does not translate into consumption that is relatively as high. And so the question is what happens to unconsumed income, how does it accumulate and for what purposes, and how is economic well-being affected for such high-income and high-wealth households? None of the current analyses of inequality have fully captured the full effect of wealth on consumption and income by considering all three measures of well-being simultaneously for the same households. We know, however, that each gives a differing and important perspective on the distribution of economic well-being when considering the effects of inequality on say educational attainment of off-spring, intergenerational mobility, or even health.[6]

Figure 1 shows a variety of measures of inequality from 1979 through the most recent data available for each series—one measure of wealth inequality, three measures of income inequality and two measures of consumption inequality. As shown, all measures have increased in the past two or three decades. The money income measure is produced by the U.S. Census Bureau, and includes cash incomes received on a regular basis (exclusive of certain money receipts such as capital gains) and before payments for personal income taxes, but gross of cash income transfers such as social security. This is the most commonly referenced income measure, dating back to 1967 for households, with adjustments for household size. This measure suggests the income inequality Gini for the United States increased

6. Elsewhere in this volume, Thompson and Conley show how wealth inequality affects consumption and health.

from 0.39 in 1979 to 0.44 in 2007 and 0.46 in 2012.[7]

A second income measure shown in figure 1 is from the U.S. Congressional Budget Office, or CBO (2011). The CBO merges CPS household survey data with tax records and thus provides a more accurate picture of incomes at the very top of the distribution. According to this measure, the Gini for household income increased from 0.37 in 1979 to 0.49 in 2007. The CBO series with the more comprehensive income and an accurate top end suggests a steeper rise in inequality than does the census series. Because this CBO series suggests the importance of capital income and capital gains, it also makes the case for why changes in wealth are an important cause of growing inequality. The final income measure uses SCF income, which includes capital gains and oversamples the high end of the income distribution using an IRS list sample (see Wolff 2014). Given its more complete and more accurate coverage of the wealthy and high income (Dettling et al. 2015), the SCF income inequality measure is higher than the other measures, yet shows a similar rise in inequality. All three income Ginis increase over this period. If the purpose is to argue that inequality in the United States is or is not rising, all income measures regardless of source yield the same conclusion. If the question is by how much it is rising, that depends on the series used.

Figure 1 also shows two measures of consumption inequality using both the CE (Fisher, Johnson, and Smeeding 2015) and PSID (Attanasio and Pistaferri 2014). Both show an increase between 1985 and 2006, but consumption inequality fell (or remained flat) during the Great Recession, and has only started to increase again in the last few years. As with income and consumption, various researchers have examined inequality in wealth. Elsewhere in this issue, Wolff reports Gini coefficients for wealth using the SCF, which also increase during this period. Showing the changes in wealth held by the top 5 percent, Yellen also shows rising wealth inequality across the SCF years (2014).

In summary, all three measures of well-being matter, wealth inequality being higher than income inequality, which is higher than consumption inequality. Consumption and income inequality have diverged since 2007 (Fisher, Johnson, and Smeeding 2015), mainly because of the fall in house prices. Consumption from assets, especially housing, rose in the early 2000s and then fell sharply after the financial crisis (Cooper and Dynan 2013). The role of assets, debts, and changes in net worth are the key missing elements that connect income and consumption to produce a complete picture of economic inequality. The rise, fall, and change in wealth (net worth) over the past twenty-five years has been instrumental in financing consumption generally, and schooling, health care, entrepreneurship, and retirement especially.

DATA AND DEFINITIONS

Using a consistent theoretical framework to define these measures is critical. The most comprehensive concept of income and consumption is drawn from the suggestions of Robert Haig (1921) and Henry Simons (1938), where income represents the capacity to consume without drawing down net worth. Economists have used the equation that income (Y) equals consumption (C) plus the change in net worth (Δ) as the working definition of Haig-Simons income. No studies use this definition to the fullest extent because no household survey has the necessary variables to create a full measure of Haig-Simons income.[8] Our research goal is to have measures of disposable income, consumption, and net worth that are accurate and as closely linked as possible given the data limitations. Our measures of income and consumption do not completely characterize the Haig-Simons income measure. One particular item missing from both income and consump-

7. This series is adjusted to remove the break in series between 1992 and 1993 that is attributable to survey changes (see Atkinson, Piketty, and Saez 2011; Hardy et al. 2015).

8. Timothy Smeeding and Jeffrey Thompson (2011) discuss the Haig-Simons income measure and construct a "More Complete Income" measure that attempts to account for the realized and unrealized returns on asset income.

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tion is government-provided in-kind health benefits, which would lead to lower levels of inequality (see Hardy et al. 2015).

To evaluate all three measures it is important to have one data set with all three measures. Most evaluations use different data sets to examine income inequality or wealth inequality, or consumption vs income inequality. As Jonathan Heathcote, Fabrizio Perri, and Giovani Violante write, "The conclusion we draw is that one should be very cautious when combining data on inequality in wages and earnings from the CPS or PSID, and data on inequality in net worth from the SCF" (2010, 41). Building on earlier results that use the SCF and impute consumption (Fisher et al. 2015b), we use the PSID that includes all three measures.

Since 1968, the PSID has collected a broad range of socioeconomic and other information on families on an annual basis and since 1997 on a biannual basis. The PSID first introduced an extensive wealth module in 1984, which was repeated every five years until 1999 and on a biannual basis since then. The PSID first introduced something approaching a full measure of consumption in 1999. Before 1999, the PSID only had spending on food and housing. Thus our analysis starts in 1999 because it is the first year with all three measures in every wave.

Data are collected in the year of the survey; income is reported for the previous taxable year, wealth is reported for the time of interview (the survey year), and consumption is a mixture of time periods. In our analysis, we use the survey year to represent the year for the resource means and convert measures to constant 2013 dollars, we adjust by family size using an equivalence scale given by the square root of family size, and we use the family level file and longitudinal weights.[9]

Total family income is the sum total of taxable, transfer, and social security income of the head, wife, and other family units. We use after-tax income, by imputing taxes using a model that Sara Kimberlin, Jiyoun Kim, and Luke Shaefer constructed using NBER TAXSIM (2014).

Total household wealth is the sum total of eight asset variables minus debt. Asset variables are farm and business, checking and savings, other real estate (such as second home, land, rental real estate, or money owed on a land contract), stocks, vehicles, other assets (such as life insurance policy), annuity or individual retirement account (IRA), and home equity. Until 2007, debt was total debt. Beginning in 2009, debt is the sum total of debt from farm or business, real estate, credit card, student loan, medical, legal, family loan, or other. The PSID wealth module also covers all major wealth components—namely, housing wealth, a range of financial and real assets, retirement wealth, and various types of liabilities—but it draws on fewer survey items than the SCF does. Total wealth estimates produced from the PSID are comparable to those from the SCF. The primary exception is for the wealthiest 1 to 3 percent of households, which the SCF reaches through its IRS oversample and the PSID does not (Juster, Smith, and Stafford 1999; Pfeffer et al. 2016).[10]

The definition of consumption changes in the PSID. Until 2003, consumption is the sum of food, housing, transportation, education, and child care.[11] Beginning, in 2005, consumption also includes spending on travel, clothing, other recreation, home repair, home furnishings, and home phones. Hence, we use a consistent measure of consumption over the entire period and include a rental value of home ownership given by 6 percent of the house value.[12]

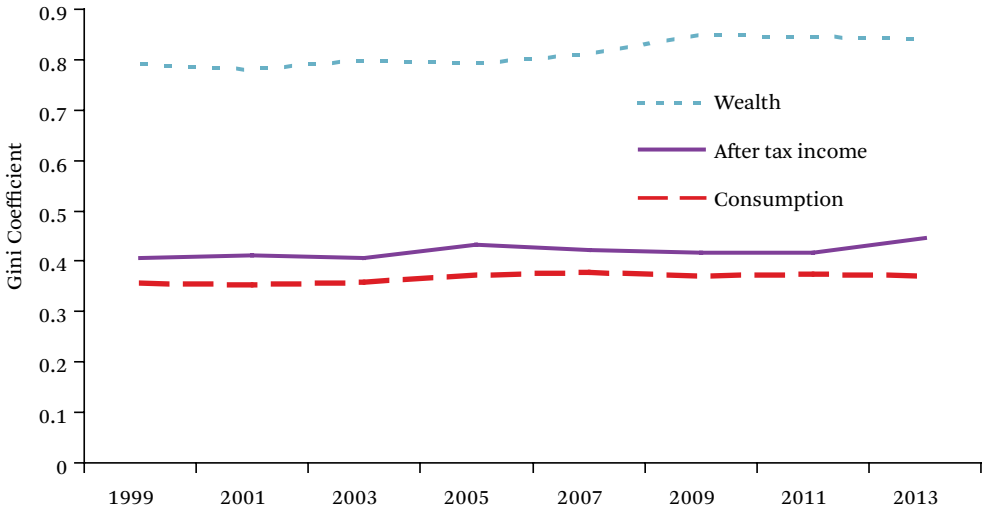
9. Results are similar if we exclude the supplemental low-income (SEO) sample, and restrict the analysis to the Survey Research Center (SRC) sample. We also compare the cross-section results using the family weights; results are qualitatively similar.

10. Wealth does not include defined-benefit retirement or Social Security holdings (see Wolff, this issue). Future work will attempt to include this pension wealth following Sebastian Devlin-Foltz and his colleagues (this issue).

11. Following Fisher and David Johnson (2006) and Orazio Attanasio and Luigi Pistaferri (2014), we include the amount of food stamps (SNAP) in the total food consumption.

12. We also compare the cross-section results using the family weights, and results are qualitatively similar.

Figure 2. Gini Coefficients for Income, Consumption, and Wealth



Source: Authors' calculations based on PSID.

As Patricia Andreski and her colleagues show (2014), the consumption measure from PSID is similar to that in the CE. Other research also shows the consistency between the PSID and SCF wealth measures: Dirk Krueger, Kurt Mitman, and Fabrizio Perri (2015) confirm that the trends in income and consumption from the PSID are similar to the trends shown in the national accounts from the Bureau of Economic Analysis (BEA).[13] Fisher and Johnson demonstrate that the PSID captures more income than the CE (2006). Andreski and her colleagues compare the income levels in the PSID to the CPS (2014). However, Bruce Meyer, Wallace Mok, and James Sullivan demonstrate that all of the income and consumption surveys do not fully capture the level of government transfers in their income measure (2015).

RESULTS

Between 1999 and 2013, inequality has increased. As shown in figure 1, using the equivalized money income from the Census Bureau yields an increase in the Gini of 4.6 percent between 1999 and 2012; all of the other measures also increase. Our measures for income, consumption, and wealth are shown in figure 2 and display increases in all three measures (comparable to other measures shown in figure 1)—consumption Gini increases 6 percent, income increases 9 percent, and wealth increases 6 percent. Wealth inequality increases substantially during the Great Recession (see also Wolff, this issue). These results are similar to those obtained using the SCF (Fisher et al. 2015b). In fact, the level and trend in wealth inequality using the PSID and SCF are almost identical, even though the SCF captures more wealth than the PSID (see also Pfeffer, Danzinger, and Schoeni 2014), whereas income and consumption inequality differ because of the slightly different definitions used.

Top Shares

Inequality can also be examined using the share of the resource measure held by the top percentages of each resource (as in Piketty and Saez 2003; Saez and Zucman 2014). Table 1 shows the shares for the top 5, 10 and 20 percent for each measure. The increases are more apparent in the changes in the top 20 percent, the wealth share increasing the most. The shares for the top 5 percent for income and wealth are lower than those found using the SCF (from Fisher et al. 2015b); this is mainly because the SCF captures more wealth and in-

13. Dettling and her colleagues, however, suggest that only the SCF has levels of wealth accumulation that correspond well to the national aggregates in the Financial Accounts from the Federal Reserve (2014).

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Table 1. Shares for Income, Consumption, and Wealth

	Top 5 Percent			Top 10 Percent			Top 20 Percent		
	W	I	C	W	I	C	W	I	C
1999	51.2	18.9	16.4	64.9	29.3	26.2	79.9	45.4	41.5
2001	48.8	20.7	16.1	62.8	30.9	26.1	78.8	46.4	41.5
2003	51.9	19.6	16.0	65.2	29.9	26.1	80.7	45.7	41.6
2005	49.6	22.1	16.9	64.1	32.4	27.2	80.4	47.9	42.9
2007	52.3	20.4	17.7	66.2	31.1	28.0	82.1	46.9	43.8
2009	57.0	20.1	17.1	70.7	30.7	27.1	85.6	46.6	42.5
2011	53.1	19.5	17.8	69.0	30.0	27.9	85.8	46.1	43.1
2013	52.7	21.2	16.5	68.6	32.0	26.8	85.6	48.2	42.4

Source: Authors' calculations based on PSID.
Note: I = income; C = consumption; W = wealth.

come at the top of the distribution than the PSID.[14] Thus the rest of the results using the PSID focus on the top 20 percent.

For the top 20 percent of the consumption distribution, we again see an increase in the share of consumption held by the top between 1999 and 2007 and then a fall during the Great Recession (similar to Fisher, Johnson, and Smeeding 2015). The income and wealth shares tend to show a consistent rise over the period, with the income share showing a slight dip after the recession. Wolff (this issue), Killewald and Bryan (this issue), and Fisher, Johnson, and Smeeding (2015) show that changes in home values substantially affected the change in inequality during the Great Recession.

These separate (or marginal) changes are similar to previous measures of inequality. But as Krueger, Mitman, and Perri explain, "Although the marginal distributions of earnings, income and wealth are interesting in their own right, the more relevant object for our purposes is the joint distribution of wealth, earnings, disposable income and consumption expenditures" (2015, 7). The PSID allows us to examine the conjoint distribution of all of these measures.

One method to evaluate the joint distribution is to examine the shares of income and consumption held by the top 20 percent of wealth holders. Table 2 shows the separate shares of the other resources held by the top 20 percent of wealth, income, and consumption. For example, in 2013 the top 20 percent of wealth holders (86 percent of wealth) also have about 37 percent of income and 34 percent of consumption. The proportion of consumption held by the top 20 percent of wealth holders increases between 1999 and 2007, and decreases during the Great Recession, similar to the patterns for consumption inequality found in Fisher, Johnson, and Smeeding (2015). Although the share of wealth held by the top 20 percent of wealth-holding households increases after 2007, the share of consumption falls slightly and the share of income remains fairly constant. This suggests that the wealthy decreased consumption by a greater percentage than lower wealth households did over the course of the Great Recession. Another way to consider these relationships is that only 34 percent of consumption can be attributed to the top 20 percent of wealth holders. This is consistent with Krueger, Mitman, and Perri (2015) and suggests that a significant amount of consumption occurs outside the wealthy.

Because wealth is so skewed toward the top end, those in the top 20 percent of wealth holders are likely better off than those in the top 20 percent of the consumption or income distributions. However, households in the top 20 percent of the consumption distribution ap-

14. These are also comparable to Krueger, Mitman, and Perri (2015), who find the top 10 percent of wealth holds 67.4 percent, income holds 31.6 percent, and consumption holds 29.8 percent.

Table 2. Shares of Resources Within Top 20 Percent

	Top 20% Wealth			Top 20% Income			Top 20% Consumption		
	W	I	C	I	C	W	C	I	W
1999	79.9	33.1	32.4	45.4	31.9	52.3	41.5	35.3	58.2
2001	78.8	34.4	32.2	46.4	32.7	56.3	41.4	36.6	58.0
2003	80.7	33.3	33.4	45.7	33.6	57.1	41.6	36.7	60.7
2005	80.4	36.4	35.9	47.9	35.4	53.3	42.9	40.2	57.3
2007	82.1	36.9	35.8	46.9	36.1	59.9	43.8	38.7	65.3
2009	85.6	34.9	34.9	46.6	33.5	50.9	42.5	36.2	55.9
2011	85.8	35.1	35.2	46.1	35.4	55.6	43.1	37.5	63.5
2013	85.6	36.9	34.4	48.2	35.4	61.3	42.4	40.2	63.5

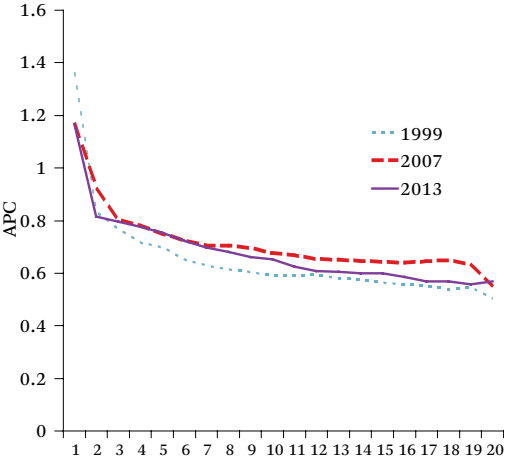
Source: Authors' calculations based on PSID.
Note: I = income; C = consumption; W = wealth.

pear to be well off by all three measures. A consistent pattern for the entire period is that households in the top 20 percent of consumption own slightly more of the wealth than those in the top 20 percent of income, and households in the top 20 percent of consumption earned slightly more income than the top 20 percent of wealth holders.[15] Regardless, looking at the top 20 percent of income is less informative than looking at the top 20 percent of wealth or consumption when using all three measures, despite the fact that most of the research attention in the general inequality literature as well as the top shares literature has focused heavily on the top 5 or top 1 percent's shares of income alone (see Fisher et al. 2015a).

Average Propensity to Consume

Another measure of the joint distribution unfolds when considering the APC and wealth-to-income ratios. Figures 3 and 4 show the APCs and wealth-to-income ratios for each income vingtile (each 5 percentile point) using the PSID for 1999 to 2007 and 2013.[16] These APCs are slightly lower than those found using the CE because the PSID consumption measure captures about 80 percent of CE consumption on average.

Figure 3. APC and Wealth-to-Income Ratio, APC



Source: Authors' calculations based on PSID.

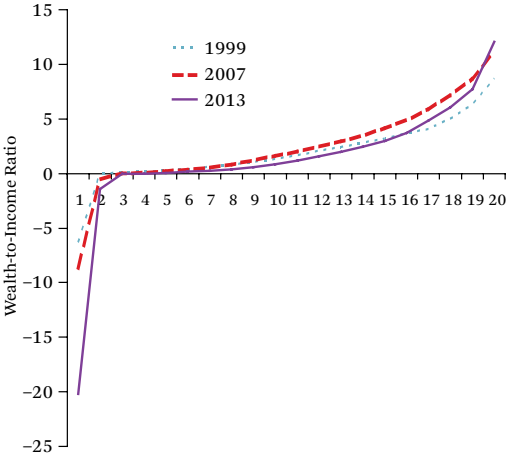
Figures 3 and 4 confirm that the APC falls and wealth-to-income increases with income. However, the numbers change over the years. The APC uniformly increases between 1999 and 2007, except for the bottom vingtile, and then falls in 2013. The wealth-to-income ratio displays a similar pattern for much of the income distribution, except that the highest income

15. This may be because many higher wealth households are living on retirement incomes, which are below their preretirement income levels. The elderly are more likely to be in the top of the wealth and consumption distribution and thus the impacts of the shares may be sensitive to the age distribution of the population.

16. The figures use the ratios of median income, consumption, and wealth for each vingtile.

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Figure 4. APC and Wealth-to-Income Ratio, Wealth to Income



Source: Authors' calculations based on PSID.

households experience an increase in the wealth-to-income ratio between 2007 and 2013. This confirms other research that the top 5 percent are experiencing much of the gains in wealth as well as income during this latter period (Yellen 2014).

A third measure of the joint distribution would be the transition matrices for each pair of measures (as in Fisher et al. 2015b). Income and consumption are more highly correlated than income and wealth or wealth and consumption (see also Fisher et al. 2015b).[17] The distribution of each of the measures by age differs (see Fisher et al. 2015a). Specifically, elderly are more likely to be in the top wealth and consumption quintiles. This suggests that the high APCs for higher wealth households at the bottom of the income distribution are in large part due to retirees, and that the joint distributions will be affected by the age distributions.

Intragenerational Mobility

Finally, we can exploit this longitudinal availability of all three measures in the PSID to examine the mobility of people across the various distributions. To examine intragenerational mobility, we restrict the sample to those adults who are between twenty-five and fifty in 1999, and construct transition matrices between 1999 and 2013 for these adults (we also examined mobility between 1999 and 2007, and 2007 and 2013). Fisher and Johnson use the PSID to show that income mobility and consumption mobility were similar between 1984 and 1999 using an imputed measure of consumption (2006). Table 3 shows the transition mobility matrices for income, consumption, and wealth. All three show the standard twin peaks phenomenon seen in the relative mobility literature—larger percentages remaining in the top and bottom quintiles (see Fisher and Johnson 2006). These tables suggest that mobility for all three measures is similar. The main difference is that the stickiness at the top is more apparent in wealth than in income and consumption. Table 3 shows that 64 percent of people in the top wealth quintile in 1999 remain there in 2013, and only 53 percent for income and 50 percent for consumption remain in the top quintile. The respective percentages remaining in the bottom quintiles are much more evenly split, 51 percent for both income and consumption and 46 percent for wealth.

The PSID is viewed as the cornerstone survey to examine mobility (see Haskins, Isaacs, and Sawhill 2008; Pew Charitable Trusts 2012). Fabian Pfeffer and Alexandra Killewald (2015) examine intergenerational wealth mobility and also find that the top is more immobile, 44 percent of children being in the top wealth quintile at the same age as when their parents were in the top quintile, and 34 percent having both in the bottom wealth quintile at the same age. Given that this is a longer period than fourteen years, it could be that extending our results to twenty-five years (or a generation) may yield similar levels of individual mobility as compared to intergenerational mobility (and this extension is part of future research).

One method to summarize the levels of mobility is to use the Shorrocks mobility index (as in Fisher and Johnson 2006).[18] These summary measures, shown in table 4, confirm that mo-

17. Results from the PSID are not shown but are available on request.

18. The Shorrocks measure for a quintile transition matrix is (5—sum of main diagonal)/4. A higher Shorrocks number indicates higher mobility. Another measure Fisher and Johnson use is the Gini index of mobility (2006).

Table 3. Mobility Transition Matrices Between 1999 and 2013

	Q1	Q2	Q3	Q4	Q5
Income					
Q1	51	28	14	4	3
Q2	27	29	25	14	5
Q3	10	21	27	30	12
Q4	7	15	21	30	27
Q5	3	8	14	22	53
Consumption					
Q1	51	25	15	7	2
Q2	27	28	21	17	7
Q3	11	24	24	24	17
Q4	6	16	24	29	25
Q5	4	7	16	24	50
Wealth					
Q1	46	32	14	5	3
Q2	27	33	25	13	4
Q3	16	22	33	22	6
Q4	7	9	19	39	25
Q5	3	4	8	21	64

Source: Authors' calculations based on PSID.
Note: Figures are percentages; rows add to 100.

Table 4. Shorrocks Mobility Coefficient

	Income	Consumption	Wealth
1999–2013	0.775	0.794	0.713
2001–2007	0.677	0.741	0.668
2007–2013	0.664	0.731	0.674
1984–1999 (Fisher/Johnson)	0.815	0.819	
1984–1990 (Fisher/Johnson)	0.701	0.676	
1990–1999 (Fisher/Johnson)	0.745	0.702	

Source: Authors' calculations based on PSID.

bility for all three measures is similar over the 1999 to 2013 period. This is also similar to the results of Fisher and Johnson (2006) shown in the bottom part of table 4.[19] The Shorrocks index can be interpreted as the proportion of individuals moving across the distribution. Hence, between 1999 and 2013, 77.5 percent of individuals move across the income distribution and 79.4 percent move across the consumption distribution and fewer, 71.3 percent, move across the wealth distribution. As usual, shorter periods yield less mobility. Although consumption mobility is slightly smaller than income mobility in Fisher and Johnson (2006), we find it to be slightly larger in the more recent time periods.

Finally, we can examine the mobility for income and consumption by the level of wealth by creating separate mobility matrices for each wealth quintile. Results show less income mo-

19. Because Fisher and Johnson (2006) use a different sample, one cannot make the claim that mobility has fallen between decades even though both sets of results use the PSID.

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Table 5. Percentage Who Remain in Same Quintile

	1999–2007	2007–2013	1999–2013
Q1 income	35.0	45.5	23.4
Q1 consumption	31.5	38.2	20.3
Q1 wealth	32.8	28.8	16.4
Q5 income	37.5	47.2	27.1
Q5 consumption	35.1	40.1	25.1
Q5 wealth	47.0	55.7	39.0
Q1 for all three	8.7	5.6	3.8
Q5 for all three	12.1	15.7	8.0

Source: Authors' calculations based on PSID.

bility at lower wealth quintiles. Although half of those in the bottom income quintile in 1999 remain in the bottom in 2013, 60 percent of those in the bottom wealth quintile remain in the bottom income quintile in 2013, but only 20 percent of those in the top wealth quintile do. Wealth creates more stickiness at the top, suggesting that intragenerational income mobility decreases with wealth.

These measures show the stickiness at the bottom and top of the distributions, but they also show a fair amount of intertemporal mobility. One manifestation of overall economic inequality comes from the number of people who continuously remain in the top or bottom of the distributions. We can examine the permanency of the lack of mobility by finding the percent of people who are always in the top and bottom quintiles for each period between 1999 and 2013. Table 5 shows the percentage of people who were in the top or bottom quintiles in 1999 and remained there for each period until 2013. As expected, because the period before the recession began (in 2007) is longer, fewer people are stagnant for all years. But for the entire period, 23 percent of people in the bottom income quintile are stuck there for all periods, and 4 percent of those in the bottom wealth quintile in 1999 remain there for all three measures in 2013. Similarly, 8 percent of those in the top quintile in 1999 remain in the top for all three measures for all years.

As before, the top is stickier; 7.5 percent of people in the top quintile remain in the top quintile of all three measures from 1999 to 2013, compared with 4 percent in the bottom quintile of all three measures over the same span of years. In fact, 40.7 percent of all people in the top wealth quintile in 1999 remained there for all eight periods (2001, 2003, 2005, 2007, 2009, 2011, and 2013). Additionally, 8 percent of people in the top quintile (for one measure) in 1999 remain in the top quintiles for all three measures for all years.

CONCLUDING REMARKS

Our work on the conjoint distributions of income, consumption, and wealth is just beginning. Inequality in all three measures is rising, but the changes are not perfectly correlated. Many households have relatively high consumption but low income, suggesting spending out of wealth (or increases in wealth not recorded in standard income definitions). Many high-wealth households consume modestly and have lower incomes, suggesting that retirees play a role in what we see here. However, when the elders are removed from the sample in our SCF work, the patterns observed are not much changed (see Fisher et al. 2015b). Still, we find a high correlation where 20 percent of all people in the top quintile and 10 percent of those in the bottom quintile for all three measures in 1999 remain there for all three measures in every year between 1999 and 2013.

By presenting results using income, consumption, and wealth for the same households, we have improved our understanding of inequality in the United States. The three measures are not perfectly correlated, but correlation in the tails of the distribution is much higher, suggesting that unidimensional inequality understates the true level of overall economic inequality. Most research on inequality focuses on income alone, but that may well not be the best single measure of inequality. Economists prefer consumption as a measure of permanent income, and wealth incorporates both the ability to increase income and the ability to consume directly. Although this paper focuses on the overall population without a complete examination of the differences by age, race, or other demographics, future

work will follow the methods of Fisher and his colleagues (2015a) to evaluate the demographics of mobility.

Wealth is a stock that can be used to stabilize consumption in times of misfortune, or to increase realized income flows. Because wealth is so highly skewed and becoming more skewed over time, it also allows the wealthy to ensure the economic success of their children. That is, personal and business wealth provides an ever-increasing cushion against economic misfortune and a dynastic advantage to maintaining social position over time. Alicia Eads and Laura Tach demonstrate elsewhere in this issue that wealth increases family stability, which affects the well-being of children, and hence could affect the level of intergenerational mobility. This advantage can also extend across generations, providing the ability to save, purchase durables, finance education, and borrow at less cost. This can also increase the ability to provide more inter-vivos transfers, which affects intergenerational mobility (see Rauscher, this issue). Accumulated wealth clearly leads to benefits for the children of high-wealth households over other children, and thus may compromise equality of opportunity and diminish intergenerational mobility (Fisher et al. 2015a).

Increasing wealth inequality also provides the wealthy with increased ability to use their wealth and power to shape public policy and receive favorable legal treatment and tax treatment (Stiglitz 2012). One method to shift more benefits to lower and middle-income families could be to modify the personal and child tax exemptions, which are of equal value to all (Smeeding 2016). This increase in inequality and concentration of power may also lead to lower rates of human capital accumulation, and hence slow economic growth (OECD 2014). The accumulations of wealth suggest that policy is needed to limit the influence of the wealthy without diminishing overall savings behavior.

We document the rise in income, consumption, and wealth inequality in the United States and identify some of the ways in which these three are correlated. We also argue that the most serious inequality is that of wealth as it influences consumption, income, and tax policy. Because this increase in inequality reduces equality of opportunity and mobility, policy could focus on methods to reduce the concentration of wealth as it passes from generation to generation and to lessen its impact on mobility and political life.

REFERENCES

Andreski, Patricia, Greg Li, Mehmet Samancioglu, and Robert Schoeni. 2014. "Estimates of Annual Consumption Expenditures and Its Major Components in the PSID in Comparison to the CE." *American Economic Review* 104(5): 132–35.

Aguiar, Mark, and Mark Bils. 2015. "Has Consumption Inequality Mirrored Income Inequality?" *American Economic Review* 105(9): 2725–56.

Atkinson, Anthony, Thomas Piketty, and Emmanuel Saez. 2011. "Top Incomes in the Long Run of History." *Journal of Economic Literature* 49(1): 3–71.

Attanasio, Orazio, and Luigi Pistaferri. 2014. "Consumption Inequality over the Last Half Century: Some Evidence Using the New PSID Consumption Measure." *American Economic Review* 104(5): 122–26.

Blundell, Richard. 2014. "Income Dynamics and Life-Cycle Inequality: Mechanisms and Controversies." *Economic Journal* 124(576): 289–318.

Burkhauser, Richard V., Shuaizhang Feng, Stephen P. Jenkins, and Jeff Larrimore. 2009. "Recent Trends in Top Income Shares in the USA: Reconciling Estimates from March CPS and IRS Tax Return Data." *NBER* working paper no. 15320. Cambridge, Mass.: National Bureau of Economic Research. Accessed May 6 2016. http://www.nber.org/papers/w15320.

Congressional Budget Office. 2011. "Trends in the Distribution of Household Income Between 1979 and 2007." *CBO* report no 4031. Washington: U.S. Government Printing Office.

Cooper, Daniel, and Karen Dynan. 2016. "Wealth Effects and Macroeconomic Dynamics." *Journal of Economic Surveys* 30(1): 34–55. doi: 10.1111/joes.12090.

Dettling, Lisa J., Sebastian Devlin-Foltz, Jacob Krimmel, Sarah Pack, and Jeffrey Thompson. 2015. "Comparing Micro and Macro Sources for Household Accounts in the United States: Evidence from the Survey of Consumer Finances." *Finance and Economics* Discussion Series no. 2015–086. Washington: Board of Governors of the Federal Reserve System.

[44.197.113.64] Project MUSE (2024-03-19 08:36 GMT)

Devlin-Foltz, Sebastian, Alice Henriques, and John Sabelhaus. 2016. "Is the U.S. Retirement System Contributing to Rising Wealth Inequality." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6). doi: 10.7758/RSF.2016.2.6.04.

Eads, Alicia, and Laura Tach. 2016. "Wealth and Inequality in the Stability of Romantic Relationships." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6). doi: 10.7758/RSF.2016.2.6.10.

Fisher, Jonathan, and David Johnson. 2006. "Consumption Mobility in the U.S.: Evidence from Two Panel Data Sets." *Topics in Economic Analysis and Policy* 6(1)(September): 1–38.

Fisher, Jonathan, David Johnson, and Timothy M. Smeeding. 2015. "Inequality of Income and Consumption: Measuring the Trends in Inequality from 1984–2011 for the Same Individuals." *Review of Income and Wealth* 61(4): 630–50.

Fisher, Jonathan, David Johnson, Timothy M. Smeeding, and Jeffrey Thompson. 2015a. "The Demography of Inequality: Income, Wealth, and Consumption 1989–2010." Paper presented at Population Association of America annual meeting. Washington, D.C. (May 2, 2015).

———. 2015b. "Inequality in 3-D: Income, Consumption and Wealth." Paper presented at the Association for Public Policy Analysis and Management's 37th Annual Fall Research Conference. Miami, Fl. (November 12, 2015).

Gates, Bill. 2014. "Why Inequality Matters." *GatesNotes*, October 13 2014. Accessed May 6 2016. https://www.gatesnotes.com/Books/Why-Inequality-Matters-Capital-in-21st-Century-Review.

Haig, Robert M. 1921. "The Concept of Income: Economic and Legal Aspects." In *The Federal Income Tax*, edited by Robert Murray Haig. New York: Columbia University Press.

Hardy, Bradley, Marina Gindelsky, Dennis Fixler, and David Johnson. 2015. "Inequality in America: The Role of National Income, Household Income, and Transfers." Unpublished working paper, Bureau of Economic Analysis, Washington, D.C.

Haskins, Ron, Julia B. Isaacs, and Isabel V. Sawhill. 2008. *Getting Ahead or Losing Ground: Economic Mobility in America*. Washington, D.C.: Brookings Institution. Accessed May 6, 2016. http://www.brookings.edu/~/media/research/files/reports/2008/2/economic-mobility-sawhill/02_economic_mobility_sawhill.pdf.

Heathcote, Jonathan, Fabrizio Perri, and Giovanni Violante. 2010. "Unequal We Stand: An Empirical Analysis of Economic Inequality in the US 1967–2006." *Review of Economic Dynamics* 13(1): 15–51.

Jäntti, Markus, Eva Sierminska, and Timothy M. Smeeding. 2008. "How Is Household Wealth Distributed? Evidence from the Luxembourg Wealth Study." In *Growing Unequal: Income Distribution and Poverty in OECD Countries*. Paris: OECD Publishing.

Juster, F. Thomas, James P. Smith, and Frank Stafford. 1999. "The Measurement and Structure of Household Wealth." *Labour Economics* 6(2): 253–75.

Killewald, Alexandra, and Brielle Bryan. 2016. "Does Your Home Make You Wealthy?" *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6). doi: 10.7758/RSF.2016.2.6.06.

Kimberlin, Sara, Jiyoun Kim, and Luke Shaefer. 2014. "An updated method for calculating income and payroll taxes from PSID data using the NBER's TAXSIM, for PSID survey years 1999 through 2011." Unpublished manuscript, University of Michigan. Accessed May 6, 2016. http://ebp-projects.isr.umich.edu/NCRN/papers/PSID-TAXSIM.pdf.

Krueger, Dirk, Kurt Mitman, and Fabrizio Perri. 2015. "Macroeconomics and Household Heterogeneity." *Handbook of Macroeconomics*. Accessed May 6, 2016. http://economics.sas.upenn.edu/~dkrueger/research/Handbook.pdf.

Krueger, Dirk, and Fabrizio Perri. 2006. "Does Income Inequality Lead to Consumption Inequality? Evidence and Theory." *Review of Economic Studies* 73: 163–93.

Meyer, Bruce, Wallace Mok, and James Sullivan. 2015. "Household Surveys in Crisis. *NBER* working paper no. 21399. Cambridge, Mass.: National Bureau of Economic Research.

OECD. 2014. "Focus on Inequality and Growth." Paris: Organisation for Economic Co-operation and Development. Accessed May 6, 2016. https://www.oecd.org/social/Focus-Inequality-and-Growth-2014.pdf.

Pew Charitable Trusts. 2012. "Pursuing the American Dream: Economic Mobility Across Generations." Washington, D.C.: The Pew Charitable Trusts. Accessed May 6, 2016. http://www.pewtrusts.org/~/media/legacy/uploadedfiles/pcs_assets/2012/pursuingamericandreampdf.pdf.

Pfeffer, Fabian T., Sheldon Danzinger, and Robert D. Schoeni. 2014. *Wealth Levels, Wealth Inequality, and the Great Recession*. New York: Russell Sage Foundation.

Pfeffer, Fabian T., and Alexandra Killewald. 2015. "How Rigid Is the Wealth Structure and Why? Inter- and Multigenerational Associations in Family Wealth." *Population Studies Center* research report no. 15-845. Ann Arbor: University of Michigan. Accessed May 6, 2016. http://www.psc.isr.umich.edu/pubs/pdf/rr15-845.pdf.

Pfeffer, Fabian T., and Robert F. Schoeni. 2016. "How Wealth Inequality Shapes Our Future." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6). doi: 10.7758/RSF.2016.2.6.01.

Pfeffer, Fabian T., Robert F. Schoeni, Arthur Kennickell, and Patricia Andreski. 2016. "Measuring Wealth and Wealth Inequality: Comparing Two U.S. Surveys." *Journal of Economic and Social Measurement* 41(2): 103–20.

Piketty, Thomas. 2015. "About *Capital in the Twenty-First Century*." *American Economic Review: Papers and Proceedings* 105(5): 48–53.

Piketty, Thomas, and Emmanuel Saez. 2003. "Income Inequality in the United States 1913–1998," *Quarterly Journal of Economics* 118(1): 1–39.

Rauscher, Emily. 2016. "Passing It On: Parent-to-Adult Child Financial Transfers for School and Socioeconomic Attainment." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6). doi: 10.7758/RSF.2016.2.6.09.

Saez, Emmanuel, and Gabriel Zucman. 2014. "Wealth Inequality in the United States Since 1913: Evidence from Capitalized Income Tax Data." *NBER* working paper no. 20625. Cambridge, Mass.: National Bureau of Economic Research.

Simons, Henry. 1938. Personal Income Taxation: *The Definition of Income as a Problem of Fiscal Policy.* Chicago: University of Chicago Press.

Smeeding, Timothy M. 2016. "The Case for Reducing Child Poverty in America." *Pathways.* Stanford Center on Poverty & Inequality, Stanford University, in press.

Smeeding, Timothy M., and Jeffrey P. Thompson. 2010. "Recent Trends in the Distribution of Income: Labor, Wealth and More Complete Measures of Well Being." *Research in Labor Economics* working paper no. 225. Amherst: University of Massachusetts.

Stiglitz, Joseph E. 2012. *The Price of Inequality: How Today's Divided Society Endangers Our Society*. New York: W. W. Norton.

Stiglitz, Joseph E., Amartya Sen, and Jean-Paul Fitoussi. 2009. *Report by the Commission on the Measurement of Economic Performance and Social Progress*. New York: United Nations Press.

Thompson, Jason, and Dalton Conley. 2016. "Health Shocks and Social Drift: Examining the Relationship Between Acute Illness and Family Wealth." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6). doi: 10.7758/RSF.2016.2.6.08.

Wolff, Edward. 2014. "Household Wealth Trends in the United States 1962–2013: What Happened over the Great Recession?" *NBER* working paper no. 20733. Cambridge, Mass.: National Bureau of Economic Research.

———. 2016. "Household Wealth Trends in the United States, 1962 to 2013: What Happened over the Great Recession?" *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6). doi: 10.7758/RSF.2016.2.6.02.

Yellen, Janet. 2014. "Perspectives on Inequality and Opportunity from the Survey of Consumer Finances." Remarks at the Conference on Economic Opportunity and Inequality, Federal Reserve Bank of Boston. Boston, Mass. (October 17, 2014).