

Social Security Wealth and Federal Liabilities

Abstract

Wealth inequality has grown significantly over the last three decades and there are growing concerns about the diminishing wealth share of the middle class. Standard wealth definitions require that individuals possess a legal claim to any assets included as wealth. Consequently, accrued Social Security benefits are not considered wealth because workers and retirees lack a legal claim to the receipt of those benefits. However, as of 2018 these accrued benefits were estimated to be \$39 trillion, or about 40% of the size of conventional measures of household wealth. Though they do not meet the formal definition of wealth, the existence of these benefits has affected the lifecycle savings behavior of current recipients and will affect the savings behavior of current workers.

This study identifies Social Security wealth as accrued benefits based on past participation in the program. This definition is similar to accrued pension wealth associated with defined benefit plans. Accrued Social Security benefits are imputed to households in the 2016 Survey of Consumer Finances to determine the degree to which they reduce wealth inequality. The estimated accrued Social Security benefits are much more evenly distributed than are the estimates of savings wealth. Households, in the top 10% of the estimated wealth distribution, excluding Social Security, held 75% of wealth as of 2016, but only 18% of accrued Social Security benefits. Once accrued Social Security benefits are included in a total wealth measure, the percent of the total attributable to the same to 10% of households declines to 64%.

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Introduction

Income inequality has steadily increased in recent years and this rise has been linked to the rise in wealth inequality. With rising income inequality and uniform savings rates across the income distribution, the resulting wealth distribution will, over time, reflect the growing dispersion in the income distribution. Further, if higher income workers also have higher savings rates, the concentration of wealth at the top of the distribution will be further accentuated. Saez and Zucman (2016), attribute much of the rise in wealth concentration at the very top of the distribution to the combination of these mechanisms.

In the Saez and Zucman (2016) study, aggregate wealth is attributed to families through capitalized income tax data. Net worth is defined as the sum of a family's assets, at market value, less any liabilities. These assets are identified at market value and the family must possess a legal claim to the assets. Such assets include the market value of a family's home, less the outstanding mortgage amount as well as the value of proprietorships and partnerships, and financial instruments like stocks and bonds held outside of retirement accounts. Wealth also includes the value of defined contribution retirement accounts and the accrued value of defined benefit pensions.

Absent from these family wealth measures are accrued Social Security and Medicare benefits given that individuals do not have a legal claim to the receipt of those benefits. In Saez and Zucman (2016) accrued pensions and other retirement benefits payable to federal civilian and military personnel are also excluded because receipt of those benefits relies on current and future tax funding rather than private market financial assets. But, accrued Social Security benefits and accrued pension benefits payable to federal employees and retirees are substantial. As of 2018, the Social Security Administration estimated that accrued benefits came to \$39 trillion. To put this amount in perspective, the net worth of all households in the Federal Reserve's Distributional Financial Accounts was \$99 trillion in 2018.¹ Thus, accrued Social Security benefits were about 40% of the size of the conventional measure of wealth.

Though they do not meet the formal definition of wealth, the existence of Social Security benefits has affected the lifecycle savings behavior of current recipients and they will affect the savings behavior of current workers. But accrued Social Security benefits are not formally recognized as either liabilities of the federal government or as assets of current or future beneficiaries. The lack of an enforceable property right is the primary reason they are neither liabilities nor assets. One can argue that because Congress can unilaterally change the programs and because workers do not possess a legal

¹ This adjusted net worth measure subtracts consumer durables and nonprofit's assets and liabilities from the assets and liabilities of households and nonprofit organizations from Z.1 Financial Accounts of the United States.

claim to their benefits, they should not be included in the federal government's liabilities. By similar reasoning it is argued that they are not assets of individuals.

However, it can also be argued that individuals behave as if they possess a legal claim to the benefits. Families reduce their private wealth accumulation in light of the expected payments from the programs. In targeting a desired retirement income replacement rate, workers begin with their expected replacement rate from Social Security and adjust their lifetime savings to fill the remainder. There is, however, considerable disagreement about the degree to which Social Security affects aggregate national savings and capital accumulation and how it affects individuals' lifecycle savings, particularly in the context of models that assume workers care about the tax burdens on future generations that result from current policies.

This paper examines how the inclusion of accrued Social Security benefits in a comprehensive wealth measure affects measured wealth inequality. I find that accrued Social Security benefits are much more equally distributed than are the conventional measures that exclude them. Based on estimates from the 2016 Survey of Consumer Finances, the top 10% of households based on their net worth held 18% of accrued Social Security benefits. In contrast, these households held 75% of the total net worth in that year. When accrued Social Security benefits are included in a comprehensive wealth measure, the share of total wealth held by the top 10% declines to 64%. Among households headed by respondents 65 years of age and above, the top 10% held about 14% of accrued Social Security benefits and about 70% of the total net worth. The share of total wealth held by these households, including Social Security, declines to 58%.

Background

Feldstein's (1974) early estimates that Social Security wealth reduced savings and the capital stock by over 30 percent produced a large literature. Barro (1974) suggests that Social Security and government debt are not net wealth given that families are linked through intergenerational exchanges. These exchanges may cancel one another such that national wealth is unaffected. Because Social Security is financed through taxes, children can respond to an increase in Social Security by making fewer transfers to parents, and conversely parents can make more financial transfers to their children who bear the higher tax burden.² If, however, generations are only weakly linked, Social Security may indeed reduce savings.

² See Felstein's (1976) comment on Barro (1974) and Barro's (1976) response. See Liemer and Lesnoy (1982), and Feldstein (1982) for further comments on Feldstein (1974).

The present analysis focuses on how the distribution of Social Security is related to the annual distributions of wealth that are based on standard measures of wealth. The work by Saez and Zucman (2016) examines the distributions of wealth since 1913 and finds that wealth inequality has risen since the late 1970s with the share of wealth owned by the top 0.1% of families equal to 22% in 2012. This share is almost as high as in the 1916 and 1929 peaks and three times higher than in the late 1970s. They also find that the wealth share of the bottom 90 percent increased from 20% in the 1920s to 35% by the mid-1980s but has declined to 23% in 2012. The authors attribute the decline in the bottom 90% share to the fall in the middle-class saving rate and to rising income inequality. Saez and Zucman(2016) include as assets “all the non-financial and financial assets over which ownership rights can be enforced and provide economic benefits to their owners.”³ As mentioned, this wealth definition does not include accrued pension benefits payable to federal civilian and military personnel nor other accrued post-employment benefits, primarily health care, payable to these federal workers because they are not prefunded. Similarly, accrued Social Security benefits and Medicare benefits are not included as wealth both because they are not funded and, more importantly, because workers do not have ownership rights to the receipt of the benefits.

Discussions of workers’ legal claims to Social Security benefits typically reference two Supreme Court rulings from 1937 and 1960. The 1937 case, *Helvering v. Davis*, basically found that “The proceeds of both taxes [employer and employee] are to be paid into the Treasury like internal-revenue taxes and payroll taxes generally and are not earmarked in any way.”⁴ Consequently, payment of these taxes did not convey a property right to Social Security benefits. The 1960 case, *Flemming vs. Nestor*, further confirmed this reasoning. In this case, Nestor challenged a 1954 law that terminated Social Security benefits for “persons deported for, among other things, having been a member of the communist party.”⁵ Nestor, a Bulgarian immigrant, had been a member of the Communist Party from 1933 to 1939, paid Social Security taxes for 19 years, and was deported in 1956 after already starting to receive benefits in 1955. The Supreme Court ruled that Nestor did not have a property right. This ruling was in opposition to Nestor’s claim that the denial of his benefits violated the takings clause of the Fifth Amendment. Writing for the majority, Justice Harlan wrote, “We must conclude that a person covered

³ Saez and Zucman (2016) p.5.

⁴ From Social Security History Archives, “Justice Cardozo – *Helvering vs. Davis*”
www.ssa.gov/history/supreme1.html.

⁵ From Social Security History Archives, “Supreme Court Case: *Flemming vs. Nestor*”
www.ssa.gov/history/nelson.html.

by the Act has not such a right in benefit payments as would make every defeasance of “accrued” interests violative of the due process clause of the Fifth Amendment.”⁶

The following statement from the 2010 *Analytical Perspectives* summarizes the logic of the Nestor decision: “Future Medicare, Medicaid, and Social Security benefits may be considered as obligations of the Federal Government, but these benefits are not a liability in a legal or accounting sense. The Government has unilaterally decreased as well as increased these benefits in the past, and future reforms could alter them again.”⁷ This statement notes that Social Security benefits are “obligations” but not “liabilities” of the federal government. The government’s ability to unilaterally change benefits thus makes Social Security benefits “obligations” not “liabilities” and if they are not liabilities of the government, they are not equivalently assets to the beneficiaries. So, anticipated Social Security benefits are not legal liabilities of the federal government nor are they assets to workers or retirees. However, while paying Social Security taxes does not endow workers with a legal claim, the expectation of benefits does affect workers’ savings behavior and wealth accumulation.

In the analysis of wealth inequality, some notion of the size of accrued Social Security and Medicare benefits is relevant. This is particularly true in considering policy proposals designed to address wealth inequality. Importantly, the federal government does include the accrued pension and post-employment benefits of federal workers as liabilities in its financial statements. The accrued liability payable to federal employees including pensions and post-employment benefits, primarily health insurance, was \$8 trillion in 2018. While not included as liabilities in the Financial Report of the US Government (FRUSG), the accrued Social Security and Medicare benefits payable to current retirees are reported in the FRUSG’s Statement of Social Insurance. Together the present value of Social Security and Medicare benefits payable to current retirees were equal to \$23.5 trillion in 2018.⁸ Adding these accrued Social Security and Medicare benefits to the other federal liabilities identified in the FRUSG produces total federal liabilities of \$48.9 trillion in 2018.⁹ In addition to the Social Security and Medicare benefits payable to current retirees, near-term retirees and younger workers have accrued considerable

⁶ From Social Security History Archives, “Supreme Court Case: Flemming vs. Nestor” www.ssa.gov/history/nesstor.html.

⁷ *Analytical Perspectives, Budget of the U.S. Government, Fiscal Year 2010*, p.186.

⁸ See p.99 of the 2018 Financial Report of the U.S. Government for the estimate of federal employees’ accrued retirement benefits and p. 61-52 for the estimates of Social Security and Medicare benefits expected by current retirees.

⁹ See Jansen, Liu, and Rettenmaier (2019) for a discussion of federal liabilities inclusive of the Medicare and Social Security benefits of current retirees.

benefits in the programs. The closer workers are to retirement age, the more likely they will receive the full anticipated benefit.

Recent papers by Devlin-Foltz, Henriques, and Sabelhaus (2016) and Sabelhaus and Volz (2019) estimate how accrued Social Security benefits affect the expected retirement wealth of households headed by individuals in their 50s. Sabelhaus and Volz (2019) show the importance of accrued Social Security benefits for households in the lower 75% of the wealth distribution. The progressive nature of Social Security is evident in their estimates in that the Social Security wealth to pre-retirement income is 7.2 for households in the lowest quartile of the wealth distribution, is 5.2 and 4.2 for the second and third quartiles, respectively, and is 1.2 for the top quartile.

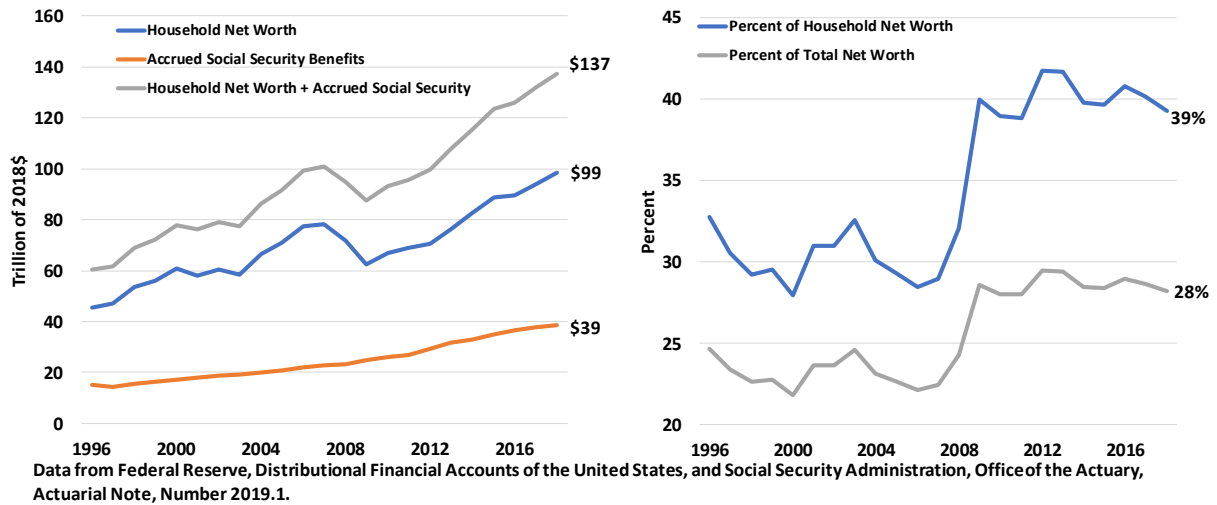
In this paper, I estimate the degree to which Social Security wealth reduces wealth inequality in the U.S. Throughout this paper, I use accrued Social Security benefits as the estimate of Social Security wealth. Accrued Social Security benefits are conceptually similar to accrued pension benefits from a defined benefit plan. Accrued Social Security benefits are based on past participation in the program, not on the expectation of continued participation. Apart from the lack of an enforceable claim to the receipt of the benefits, accrued benefits meet the definition of an asset from the perspective of workers and they meet the definition of a liability from the perspective of the federal government. This is particularly true with respect to the accrued benefits of near-term retirees and the ongoing monthly benefits paid to current retirees. Accrued Social Security wealth differs from the gross and net Social Security wealth measures suggested in Feldstein (1974). His gross measure was the present value of expected retirement benefits and the net measure subtracted the present value of lifetime Social Security taxes from the present value of lifetime benefits. Accrued benefits are used here because of their similarity to the pension wealth associated with defined benefit programs and because they approximate relative wealth from the vantage point of workers.

The left-hand panel in Figure 1 depicts the total net worth of households in the U.S. along with an estimate of total accrued Social Security benefits for the years 1996 to 2018. The household net worth estimates are from the Distributional Accounts of the United States produced by the Federal Reserve (Batty, et al. 2019).¹⁰ The distributional accounts allocate the Federal Reserve's estimates of aggregate household wealth to families using the distribution of wealth from the Survey of Consumer Finances. The new distributional accounts provide quarterly estimates of household net worth held by

¹⁰ The Distributional Financial Accounts are available at: <https://www.federalreserve.gov/releases/efa/efa-distributional-financial-accounts.htm>

groups of households based on their location in the wealth distribution. The four groups are: the top 1%, the 90th-99th percentiles, the 50th-90th percentiles, and households below the 50th percentile. The household net worth amounts in Figure 1 are indexed to 2018 dollars using the consumer price index and reflect the values for the first quarter of each year for comparison to the accrued Social Security benefits which are valued at the beginning of the year. As the figure indicates, real household net worth rose from about \$46 trillion in the first quarter of 1996 to almost \$80 trillion in 2007. During the Great Recession, it fell about 20% to \$62 trillion in the first quarter of 2009, and by the first quarter of 2018 it had risen to \$99 trillion.

Figure 1. Household Wealth and Accrued Social Security Benefits



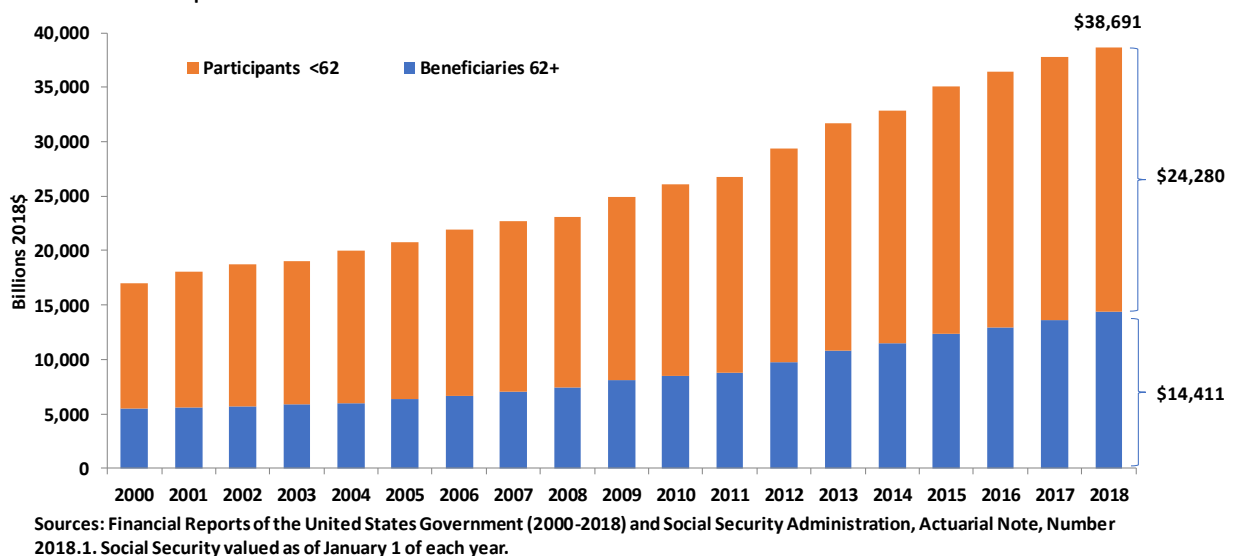
The annual accrued Social Security benefits, or maximum transition cost, including offsetting the effect of the Social Security Trust Fund, are reported in Nickerson and Burkhalter (2019). Their estimates are available from 1996 to 2019. New estimates are reported each year in an Actuarial Note published following the release of the annual Trustees Report.¹¹ The series shown in Figure 1 adds the Trust Fund amount in January of each year to the maximum transition costs from the actuarial note to arrive at the total amount of accrued Social Security benefits. Real accrued benefits grew steadily from \$15 trillion in 1996 to \$39 trillion in 2018. The top series in this panel simply adds the accrued Social Security benefits to the household net worth amounts, and by 2018 the total had risen to \$137 trillion, up from \$60 trillion in 1996.

¹¹ See Nickerson and Burkhalter (2019) Table 3, Actuarial Note, Number 2019.1.

The right-hand panel depicts the ratios of accrued Social Security benefits to the conventional total household net worth measure and to the combined measure of total net worth including Social Security wealth. Accrued Social Security benefits grew from 33% of net worth in 1996 to 39% by 2018. During the recession, as net worth fell, the relative size of accrued Social Security benefits grew over 10 percentage points. Relative to total net worth, accrued benefits grew from 25% in 1996 to 28% in 2018. Accrued Social Security benefits are thus both large relative to net worth and as a share of the inclusive measure of total household net worth.

Figure 2 presents the total accrued benefits for the years 2000-2018 allocated between workers who have reached Social Security’s age of eligibility, 62, and younger workers. The estimates for participants aged 62 and above are from the annual FRUSG for the years 2002-2018. The amounts for the participants aged 62 and above have been reported since 2000 in the FRUSG’s Statement of Social Insurances. As of 2018, the accrued Social Security benefits totaled \$38.7 trillion. Of that amount, \$14.4 trillion or 37% were payable to participants 62 years of age and above with the remaining \$24.3 trillion, or 63%, accrued by the current participants 61 and younger. The share of total accrued benefits payable to the participants who have reached the age of eligibility has grown in recent years as a result of the aging Baby Boom generation.

Figure 2. Composition of Accrued Social Security Benefits
All Participants and Beneficiaries 62+



As these first two figures illustrate, accrued Social Security benefits are large in comparison to household net worth and as of 2018, 37% were payable to program participants who had reached the

early retirement age. As will be seen, the distribution of accrued Social Security benefits across households significantly reduces measured wealth inequality, particularly for middle class households.

Data

I rely on the 2016 Survey of Consumer Finances (SCF) to estimate how accrued Social Security benefits affect the distribution of household wealth. I use the full public use data set linked to the summary extract of the public data.¹² The summary extract of the public data includes the estimates of household's net worth and its components. In the tables and figures that follow, I divide net worth into the following components: Employer Sponsored Retirement Plans, Stocks and Bonds, Other Financial Assets, Home Equity, and Other Non-Financial Assets.¹³ For all but the employer sponsored retirement plans category, I use the variables available in the summary extract file. For the employer sponsored retirement plan category, I add the values of the defined contribution plan and defined benefit plan variables from the summary extract file to my estimate of accrued pensions for current workers. These workers are those who identify that they have a traditional defined benefit plan through their current or past employer.¹⁴

As noted in Devlin-Foltz, Henriques, and Sabelhaus (2016) and Sabelhaus and Volz (2019) and Batty et al. (2019), estimates of accrued defined benefit pension wealth for current workers are not included in the full public use SCF, nor are they available in the summary extract file. I estimate accrued defined benefit pension wealth for current workers if they identified that they had a traditional pension. The workers also identify their years of work with the employer and their current earnings from their main job. I combine these variables with estimates of past earnings to calculate pension wealth for the current participants in traditional pension plans. Next, I turn to how I impute earnings histories to workers in the SCF, given that both my estimates of pension wealth for current workers and my estimates of accrued Social Security benefits rely on these earnings histories.

¹² These data sets for 2016, as well as earlier years of the Survey of Consumer Finances, are available at:

<https://www.federalreserve.gov/econres/scfindex.htm>.

¹³ Debt is netted out of Non-financial Assets.

¹⁴ See the SAS macro available at <https://www.federalreserve.gov/econres/scfindex.htm>, for the variables that are used to estimate the defined contribution and defined benefit values that are components of the net worth estimates reported in the September 2017, Federal Reserve Bulletin. Specifically, the defined contribution plan variables from the extract public use file are the values of individual retirement accounts, (variable IRAKH) plus thrift savings plans (variable THRIFT). The defined benefit plan variables are future pensions (variable FUTPEN) plus current pensions (variable CURRPEN).

The imputed earnings histories for each current worker are estimated from a public use data file from the Social Security Administration (SSA). The 2006 Earnings Public-Use File (EPUF) includes annual earnings records between 1951 and 2006 for a 1 percent sample of individuals who were issued Social Security numbers prior to January 1, 2007. There are 4,384,254 unique individuals in the EPUF sample, 3,131,424 of which have earnings greater than zero in at least one year between 1951 and 2006, producing 60,326,474, annual earnings records.¹⁵

The EPUF data are delivered in two files: the demographic and the annual earnings file. The two are linkable by unique individual identification numbers. The demographic file includes the following variables in addition to the identification number year of birth, sex, total earning credits between 1937 and 1950, total credits combined for 1951 and 1952, and aggregate earnings for the years 1937 to 1950. The annual earnings file includes these variables: year, annual quarters of Social Security coverage, and annual earnings capped at the Social Security taxable maximum.

Estimating Earnings Histories Based on Observed Earnings in 2016

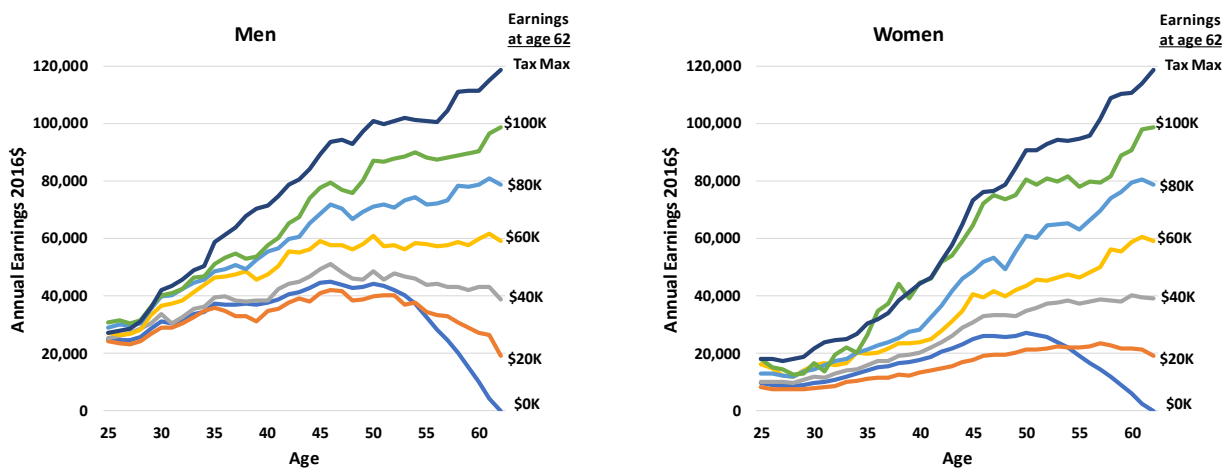
The SCF does not include earnings histories for the respondents, but does include reported earnings for their main jobs, if working, and a measure of “usual” earnings. Devlin-Foltz, Henriques, and Sabelhaus (2016) and Sabelhaus and Volz (2019) utilize the usual earnings in their estimates of Social Security wealth for workers in their 50s, given that is more reflective of lifetime average earnings. However, I opt to estimate lifetime earnings for each worker using the EPUF data. These earnings histories will approximate the lifetime distribution of earnings. I link accrued Social Security benefits based on the earnings histories from the EPUF data to the workers in the SCF based on their reported earnings in 2016. To utilize the workers’ earnings histories from the EPUF data that span the years 1951 to 2006, I convert the annual earnings records to the years 1961 to 2016 by adjusting each year’s earnings by the respective 10-year growth in the Social Security average wage. I then build separate retrospective work history files for workers at each age 25 to 70 as of 2016.

Figure 3 depicts an example of the earnings histories for men and women who were 62 years of age in 2016, based on categories defined by their earnings as of 2016. For example, the top line in each panel depicts the average real earnings by age for men and women whose earnings were at the taxable

¹⁵ The documentation and the Earnings Public Use data files are available on the Social Security Administration’s webpage at: <https://www.socialsecurity.gov/policy/docs/microdata/epuf/>. See Compson (2011) for a description of the EPUF data. Kopczuk, Saez, and Song (2010) use lifetime Social Security earnings histories to identify income inequality and mobility since 1937.

maximum at age 62. Men who had earnings at the taxable maximum when they were 62 had real earnings of about \$100,000 at the age of 50. Women who had earnings at the taxable maximum when they were 62 had real earnings of about \$91,000 at the age of 50. Each of the other series depict the average annual earnings by age for different categories defined by the earnings workers had at age 62. Men whose earnings were \$60,000 in 2016 had about the same earnings on average back to 45 years of age. Women who were in the same \$60,000 earnings cell at the age of 62, however, had real earnings of about \$40,000 at the age of 45. The series for workers who had no earnings in 2016 is limited to workers who had at least one year of positive earnings in the ten years between 2006 and 2016.

Figure 3. Average Earnings by Based on Earnings Category in 2016 for 62 Year Old Men and Women



Source: Social Security 2006 Earnings Public Use File. Earning categories based on earnings at age 62.

Estimating Accrued Social Security Benefits for Non-Retirees

My estimates of the accrued benefits for the workers in EPUF follow the same methodology described in Goss (1999) and Nickerson and Burkhalter (2019).¹⁶ Calculating accrued benefits begins with estimating individuals' primary insurance amounts (PIAs) based on their past earnings up to 2016. Basically, the PIA is a worker's monthly benefit should he or she begin receiving benefits at the normal retirement age (NRA), 66 in 2019.¹⁷ The PIA is derived from the worker's average indexed monthly

¹⁶ Both Goss (1999) and Nickerson and Burkhalter (2019) provide a full discussion of the Maximum Transition Cost estimate.

¹⁷ The normal retirement age (NRA) is the age at which workers receive 100 percent of their primary insurance amount. Between the start of the program and 2002 the NRA was 65 for workers born in 1937 and earlier. For worker born in 1938 to 1942 the NRA rose 2 months per year until it reached 66 for workers born in 1943. For birth years 1943 to 1954 the NRA is 66 but beginning with birth year 1955 the NRA will again rise 2 months per year until

earnings (AIME). In the case of a worker retiring at the NRA, the AIME is calculated by wage indexing past earnings, determining the highest 35 years of indexed earnings, and then dividing those highest earnings by 420 (35×12).¹⁸ For workers between the ages of 22 and the NRA, I also calculate an AIME and the associated PIA based on the benefit formula in 2016. The number of months in the elapsed years since the age of 22 are the denominator for workers who have yet to attain the NRA. The workers' AIMEs are then converted to their PIAs based on the 2016 formula.

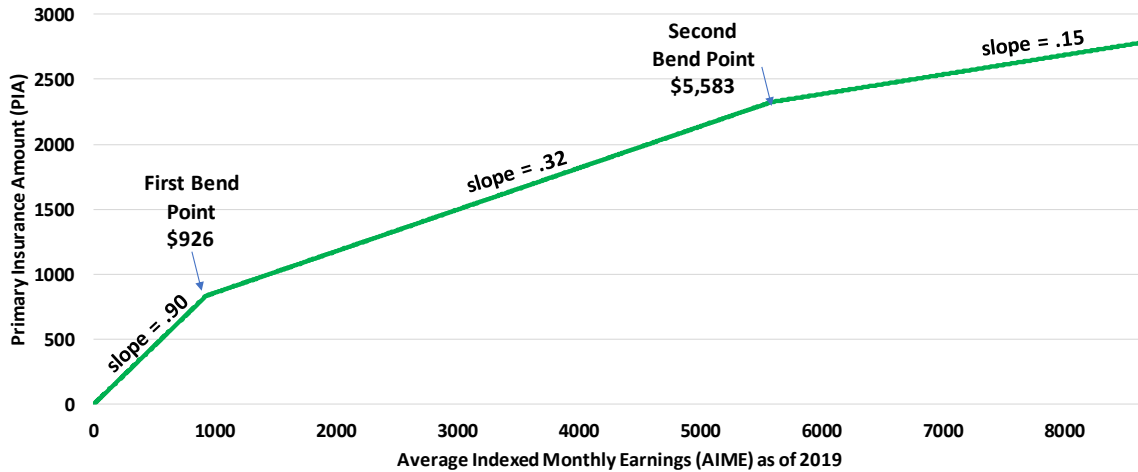
Figure 4 depicts the relationship between AIMEs and PIAs for newly eligible retirees in 2019. Ninety percent of average monthly earnings between 0 and \$926 are converted to monthly benefits, 32% of additional monthly earnings between \$926 and \$5,583 are added to the benefit, and then 15% of any earnings beyond \$5,583 are added to determine the PIA at the NRA for the birth year. The slope of the ray from the origin to the PIA formula reflects the rate at which the Social Security benefits replace the average indexed earnings. As average wages rise, the replacement rate declines, indicating the progressive nature of the benefit formula in calculating initial benefits. Another factor that limits the dispersion of Social Security benefits is the taxable maximum. Social Security benefits are effectively capped at the PIA resulting from the wage indexed taxable maximum. For workers turning 65 in 2019, the maximum annual benefit is \$35,355.

For workers at or above the age of eligibility, the computation of their PIAs is straightforward. Younger workers who are yet to retire are credited a portion of their benefits that will be received once they reach the normal retirement age for their birth year, NRA_{by} . Here the factor is $(age-22)/(NRA_{by}-22)$. Thus, for workers younger than 62, their PIAs are proportional to their years in the program between 22 and the NRA. However, their proportional PIAs will be received beginning in the year they reach the NRA. The benefit is adjusted to that year by the ratio of the Social Security average wage in the year the worker attains the NRA to the wage in 2016.

it reaches 67 for birth year 1960. Workers who retire early between ages 62 and the NRA receive reduced benefits relative to their PIA while workers who delay receiving benefits up to the age of 70 receive higher benefits relative to their PIA. For example, workers born in 1949 who first claimed benefits at age 62 receive 75% of their PIA, but those who wait until age 70 to claim benefits receive 132% of their PIA.

¹⁸ This description simplifies the details of the actual calculation. For workers retiring at age 62 and above, past earnings are wage indexed to age 60 based on the Social Security average wage, any nominal earnings after age 60 are also included in the determination of the 35 highest earnings years

Figure 4. Relationship Between Average Indexed Monthly Earnings (AIME) and Primary Insurance Amount (PIA) for Newly Eligible Retirees in 2019



Once the full or proportional PIAs are determined for each worker between the ages of 25 to 70 in 2016, the present values at the age of retirement, for younger workers and for workers at or above the NRA, are calculated. The present values are estimated assuming a real rate of return of 2.7% which was the real rate of return used by the Social Security and Medicare Trustees in producing their 2016 annual reports. The separate mortality assumptions for men and women are based on birth cohort life tables produced by the Social Security Administration. In the present paper, no adjustments for mortality differences based on lifetime income, race, or education are made.¹⁹

For worker who are 62 and above in 2016, benefits are assumed to be received annually up to the conditional life expectancy based on their age and sex. For workers younger than 62, the proportional Social Security benefits are assumed to be received in the year the workers reach their NRA and to continue up to the assigned conditional life expectancy. These deferred annuity values are further adjusted by the probability of survival to the respective NRAs, and their present values are

¹⁹ See Bosley, Morris, and Glenn (2018) and Waldron (2007) for estimates of differential mortality based on lifetime earnings. Goda, Shoven, and Nataraj (2011) provide evidence of how accounting for differential mortality affect Social Security’s progressivity. Devlin-Foltz, Henriques, and Sabelhaus (2016) and Sabelhaus and Volz (2019) also account for differential mortality rates in their estimates of pensions and Social Security wealth. The birth cohort mortality tables used here compatible with the 2007 Trustees Report used here are from the Social Security Administration. The Social Security Administration also provides period of life tables compatible with the 2014 to 2019 Trustees Reports at: <https://www.ssa.gov/oact/HistEst/PerLifeTablesHome.html>.

calculated using the discount rate based on the real rate of return, 2.7%, and the long run inflation rates assumption of 2.6%, also from the 2016 Social Security Trustees Report.²⁰

With the accrued Social Security retirement benefits estimated for each worker as of 2016, I then calculate the average accrued benefit, AIMEs, and PIAs by age, sex, and income cell, where the income cells are based on the workers' incomes as of 2016.²¹ These estimates are then linked to workers in the SCF. They are linked to the workers – respondents and spouses, if present – by age, sex, and the identical income cells based on their reported annual earnings from their main job. Ultimately, accrued Social Security benefits are assigned to households in the SCF as follows. For respondents and their spouses who report the receipt of Social Security benefits in the SCF, I calculate the present value of their benefits again using the birth cohort mortality tables and the real discount rate of 2.7%. Households in which either the respondent or spouse or both do not report receipt of benefits are assigned the imputed estimates based on the EPUF data.

Estimating Accrued Pension Benefits for Non-Retirees

As mentioned earlier, the SCF does not report accrued values of defined benefit plans for the current workers who identify that they have a traditional defined benefit plan through their current or past employer. Batty et al. (2019), Devlin-Foltz, Henriques, and Sabelhaus (2016) and Sabelhaus and Volz (2019) all describe how estimates of accrued defined benefit pension wealth for current workers are made. I also estimate accrued defined benefit pension wealth for current workers if they identified that they had a traditional defined benefit pension plan. For these workers I estimate an annual retirement benefit based on their reported years of work with the employer, a multiple for each year of service, producing an income replacement rate, and the higher of either their current earnings from their main job or their imputed average indexed annual earnings from the EPUF. As with estimated Social Security benefits, I assume these benefits begin at the NRA. However, these benefits are not indexed by the Social Security average wage index to the workers' NRAs. The present values again use the birth cohort life tables and a real rate of return of 2.7%. These estimates of accrued defined benefits are the only

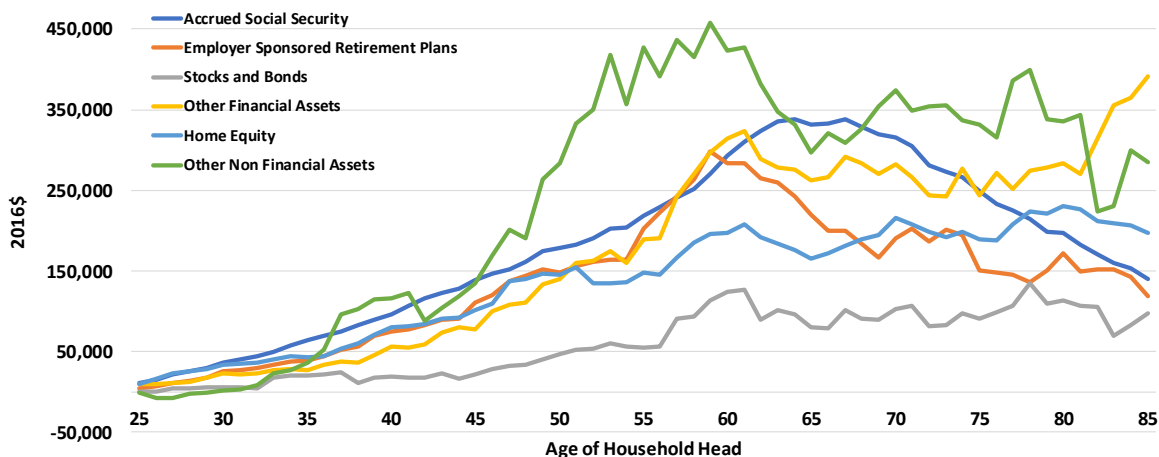
²⁰ The long-run real interest rate and inflation rate are from Table II.C1 in the 2016 Social Security Trustees Report. All workers are assumed to begin receipt of their retirement benefits at the NRA for their birth year. This abstracts from the actual experience of different workers that include the benefit reductions for earlier retirement ages and the delayed credits for later retirements ages, however, these adjustments are roughly actuarially fair, so the assumptions used here is a reasonable approximation.

²¹ The income cells span each \$2,000 increment between 0 and the taxable maximum of \$118,500 in 2016. Separate averages are also made for the workers reporting no earnings and the workers reporting taxable maximum earnings in 2016.

adjustments I make to the net worth values reported in the 2016 SCF summary extract file. As noted previously, they are included in the wealth category “employer sponsored retirement plans” along with the values of the defined benefit and defined contribution plans available in the SCF’s summary extract file.

Figure 5 presents the average values of each household wealth component by the age of the household head.²² Other non-financial assets, net of household debt, is the largest component of net worth at each age. These assets are primarily business equity holdings and are highest when the household heads are in their 50s and early 60s. Employer-sponsored retirement plans and other financial assets like mutual funds, life insurance, and bank deposits also peak in the late 50s. Home equity rises to about 60 years of age and is then relatively stable thereafter. Accrued Social Security benefits peak at about the normal retirement ages of 66 and then decline at later ages, given that it is valued as an annuity. The same pattern is evident for the employer-sponsored retirement plans that include defined contribution and defined benefit plans. This figure illustrates the relative size of each wealth component and, in particular, the importance of the Social Security wealth component.

Figure 5. Mean Wealth Components by Age



Sources: 2016 Survey of Consumer Finances. Employer Sponsored Retirement plans includes estimated accrued defined benefit amounts for current workers who have traditional pensions. Accrued Social Security benefits estimated from SCF responses, and estimates based on Social Security earnings histories. See text for discussion of accrued defined benefits and accrued Social Security estimates for current workers.

Table 1 presents the unconditional and conditional average of each wealth component for all households, for household headed by individuals 25 to 64 years of age, and for those headed by

²² All averages are weighted by the non-response sampling weight (variable X42001) and are smoothed using a moving average over five ages centered on the ages reflected on the horizontal axis.

individuals 65 years of age and above. Accrued Social Security benefits are the second largest wealth component across all households. Among households headed by individuals 65 and above, Social Security is the third largest component behind other financial assets and other non-financial assets. For each age grouping in Table 1, the conditional average value of employer-sponsored retirement plans exceeds the average accrued Social Security benefits across all households. As seen in this table, average accrued Social Security benefits are about 25% of the size of the average households' net worth. This percentage is markedly smaller than the 40% based on the ratio of accrued benefits to net worth presented in Figure 1. This lower percentage in Table 1 is primarily due to the fact that I estimate accrued retirement benefits from Social Security for the working-age population. That is, I do not estimate potential survivors' benefits, disability benefits for current workers, or disability conversions.²³ Consequently, my estimates of accrued Social Security wealth underestimates total accrued benefits.

Table 1. Average Wealth and Conditional Average by Component and Age Group in 2016

	Age of Household Head					
	25+		25-64		65+	
	Mean	Conditional Mean	Mean	Conditional Mean	Mean	Conditional Mean
Accrued Social Security	180,393	180,393	153,508	153,508	254,418	254,418
Employer-Sponsored Retirement Plans	140,641	249,401	130,355	216,996	168,959	365,273
Stocks and Bonds	57,535	386,730	42,338	312,200	99,376	537,148
Other Financial Assets	166,169	169,203	124,411	126,852	281,141	285,228
Home Equity	132,094	205,099	108,248	184,174	197,751	247,704
Other Non-Financial Assets	239,456	364,607	209,130	341,901	322,953	415,823
Net Worth	735,895	821,309	614,482	707,939	1,070,180	1,102,014
Total Wealth Including Social Security	916,288	941,160	767,990	796,869	1,324,598	1,324,920

Sources: 2016 Survey of Consumer Finances. Employer-Sponsored Retirement Plans include estimated accrued defined benefit amounts for current workers who have traditional pensions. Accrued Social Security benefits estimated from SCF responses, and estimates based on Social Security earnings histories. See text for discussion of accrued defined benefits and accrued Social Security estimates for current workers.

Table 2 presents the average wealth components by age group and by net worth percentiles. The first three rows reflect the results for all households headed by individuals age 25 and above.²⁴ The

²³ For those SCF respondents who are younger than the retirement age and who report the receipt of Social Security benefits I estimate the accrued value of disability benefits. However, I do not estimate potential disability benefits for workers who may become disabled later, but do not report receipt of benefits in 2016.

²⁴ The percentiles are based on conventional net worth (not including Social Security) and are defined within each age group.

first row is identical to the first column in Table 1. The importance of accrued Social Security benefits for households in the lower 90 percentiles is evident in the second row of the table, where these benefits are 81% of the size of net worth and account for about 45% of total wealth inclusive of Social Security. For families in the top 10% of the wealth distribution, accrued Social Security benefits are only 6% the size of the households' net worth and are 5% of these households' total wealth inclusive of Social Security.

Table 2. Average Wealth Components by Age Group and Net Worth Categories in 2016
Households sorted by Net Worth

Age of Head	Net Worth Percentiles	Accrued Social Security	Employer-Sponsored Retirement	Stocks and Bonds	Other Financial	Home Equity	Other Non-Financial	Net Worth	Total Wealth
25+	All	180,393	140,412	57,535	166,169	132,094	239,456	735,895	916,288
25+	0-90	165,027	62,570	4,585	34,889	76,389	25,209	203,642	368,670
25+	>90	318,653	843,093	533,956	1,347,384	633,307	2,167,180	5,524,921	5,843,581
25-34	All	34,501	21,310	4,401	17,545	30,081	1,332	74,669	109,170
25-34	0-90	32,353	12,262	1,043	9,109	15,591	-11,844	26,162	58,514
25-34	>90	53,830	102,736	34,614	93,460	160,472	119,910	511,192	565,022
35-44	All	96,353	68,539	20,709	48,532	69,687	92,523	299,991	396,344
35-44	0-90	91,396	39,345	1,302	15,895	39,374	7,023	102,939	194,335
35-44	>90	140,935	331,051	195,217	341,999	342,262	861,332	2,071,862	2,212,797
45-54	All	172,585	149,830	43,548	137,027	135,824	278,8029	745,030	917,614
45-54	0-90	166,044	88,230	4,031	24,605	73,887	24,416	215,170	381,214
45-54	>90	231,187	701,726	397,589	1,144,252	690,737	2,557,946	5,492,250	5,723,437
55-64	All	280,355	252,962	90,411	264,146	178,108	410,668	1,196,294	1,476,649
55-64	0-90	270,171	131,550	8,425	53,491	111,954	59,182	364,602	634,773
55-64	>90	371,978	1,345,308	828,042	2,159,432	773,293	3,573,011	8,679,087	9,051,065
65-74	All	314,583	193,949	93,072	271,676	188,391	327,433	1,074,520	1,389,103
65-74	0-90	301,680	87,925	12,839	74,632	122,213	53,118	350,728	652,407
65-74	>90	430,558	1,146,908	814,211	2,042,738	783,205	2,793,019	7,580,081	8,010,639
75+	All	178,445	137,404	107,337	293,094	209,570	317,296	1,064,700	1,243,145
75+	0-90	170,935	60,417	18,012	87,655	143,863	58,535	368,482	539,417
75+	>90	245,453	824,326	904,345	2,126,136	795,848	2,626,114	7,276,770	7,522,223

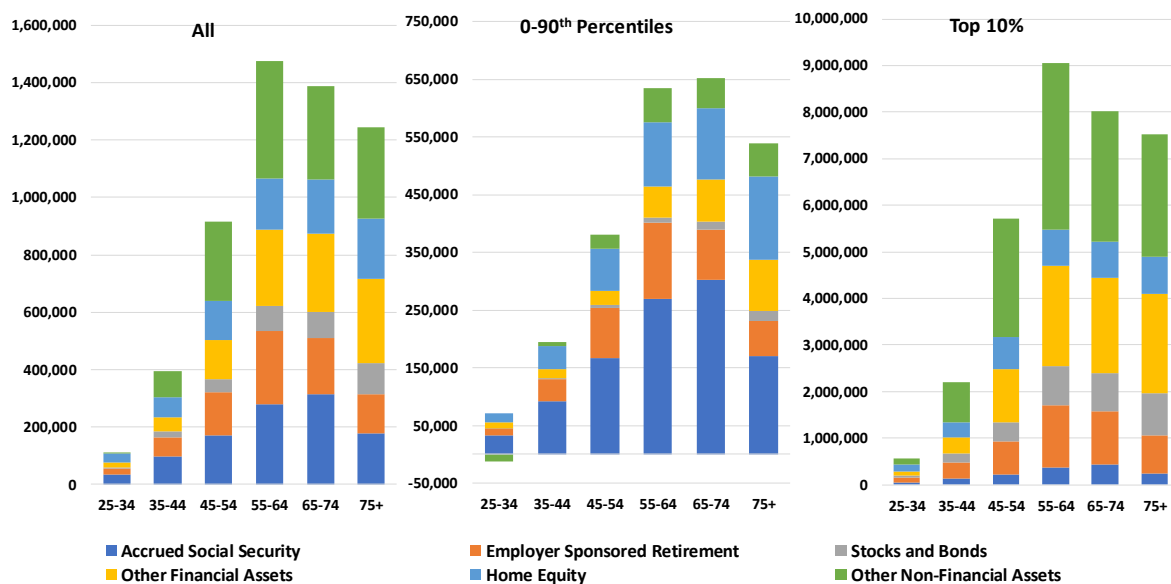
Sources: 2016 Survey of Consumer Finances. Employer-Sponsored Retirement plans include estimated accrued defined benefit amounts for current workers who have traditional pensions. Accrued Social Security benefits estimated from SCF responses, and estimates based on Social Security earnings histories. See text for discussion of accrued defined benefits and accrued Social Security estimates for current workers.

Among all households headed by individuals 65 to 74 years of age, Social Security is about 30% the size of net worth and accounts for about 23% of total wealth. However, for the bottom 90% of

households in this age group, accrued Social Security benefits account for 46% of total wealth and are 86% the size of net worth.

Figure 6 depicts the values from Table 2 grouped by net worth percentiles within the age groups. The middle panel illustrates the relative importance of Social Security wealth for the bottom 90 percentiles within each age group. While home equity and employer sponsored retirement plans are also large wealth components at ages 55 and above, Social Security is the dominant wealth category for middle class households approaching retirement and in the first decade of retirement. As indicated in the panel for the top 10% of households in each age group, Social Security is a relatively small component of their total wealth.

Figure 6. Mean Wealth Components by Age of Household Head



Sources: 2016 Survey of Consumer Finances. Employer Sponsored Retirement plans includes estimated accrued defined benefit amounts for current workers who have traditional pensions. Accrued Social Security benefits estimated from SCF responses, and estimates based on Social Security earnings histories. See text for discussion of accrued defined benefits and accrued Social Security estimates for current workers.

Table 3 provides further evidence of how Social Security affects the distribution of household wealth. Panel A presents the shares of net worth, accrued Social Security benefits, and total wealth held by the top 10% of households within each age group, where households are again sorted by the conventional measure of net worth. Across all households, the top 10% held 75% of total net worth. These households, however, held only about 18% of accrued Social Security wealth and they held 64% of total wealth inclusive of Social Security. Thus, the much more even distribution of Social Security benefits reduces the share of wealth held by the top 10% of households by 11 percentage points. Within

each age group, Social Security wealth has the same effect of lowering the concentration of wealth at the top of the wealth distribution. The top 10% of households headed by individuals 65 to 74 held 71% of net worth and only 14% of Social Security wealth. Due to the size of Social Security wealth among these younger retirees, the share held by the top 10% of the inclusive total wealth measure dropped 13 percentage points to 58%.

Table 3. Share of Wealth Component Held Top 10 % of Households and Gini Coefficients

Panel A. Share Held by Top 10% of Households			
Age of Head	Net Worth	Accrued Social Security	Total Wealth
25+	75.10	17.67	63.79
25-34	68.47	15.60	51.76
35-44	69.12	14.64	55.88
45-54	74.02	13.45	62.63
55-64	72.57	13.27	61.31
65-74	70.63	13.76	57.74
75+	68.88	13.88	60.98
Panel B. Gini Coefficients			
Age of Head	Net Worth	Accrued Social Security	Total Wealth
25+	0.820	0.414	0.716
25-34	0.693	0.419	0.587
35-44	0.765	0.322	0.639
45-54	0.812	0.276	0.695
55-64	0.810	0.271	0.689
65-74	0.796	0.271	0.656
75+	0.778	0.326	0.689

Sources: 2016 Survey of Consumer Finances. Employer-Sponsored Retirement Plans include estimated accrued defined benefit amounts for current workers who have traditional pensions. Accrued Social Security benefits estimated from SCF responses, and estimates based on Social Security earnings histories. See text for discussion of accrued defined benefits and accrued Social Security estimates for current workers.

Panel B in Table 3 presents the Gini coefficients based on net worth, accrued Social Security benefits, and total wealth within each age group. The net worth Gini coefficient for all households was 0.82 in 2016, the Gini coefficient based on Social Security wealth was 0.41, and it declined to 0.72 when

based on the total wealth measure. As anticipated, within age groups, the Gini coefficient based on Social Security wealth declines relative to the coefficient based on all ages. For households headed by the younger retirees ages 65 to 74, the Social Security wealth Gini coefficient is 0.27. The coefficient within this age group declines from 0.80 when based on net worth to 0.66 when based on the distribution of total wealth.

Discussion

My use of accrued Social Security wealth is based on its similarity to accrued defined benefit pension wealth. While there is more uncertainty in the receipt of the current accrued benefits for the younger birth cohorts, the role played by Social Security in providing resources for current retirees significantly reduces conventional measures of inequality.²⁵ The inclusion of Medicare “wealth” would further reduce measures of wealth inequality for older Americans. Based on the Statement of Social Insurance from the 2018 Financial Report of the US Government, accrued Medicare benefits, net of premium payments expected from current retirees, came to \$9.1 trillion. This amount is 63% the size of the accrued Social Security benefits of retirement age participants that were depicted in Figure 2. Medicare benefits net of premium payments, even with accounting for differential mortality, would further reduce wealth inequality among the retirement age population.

Potential avenues for additional work include alternative estimates of defined benefit pension wealth for current workers. My estimates of defined pension wealth rely on the responses provided in the SCF and are smaller than the values identified in Batty et al. (2019) and in Sablehaus and Volz (2019). These authors’ estimates also include distributing aggregate pension wealth from the Federal Reserve’s Financial Accounts to the households in the SCF. Another factor that affects the current results is my use of the same mortality tables across all wealth classes in estimating accrued Social Security benefits and the defined benefits for current workers who report participation in traditional pension plans. Differential mortality based on income or wealth would increase the dispersion in accrued Social Security wealth and pension wealth of current workers relative to the dispersion I estimate.

²⁵ Geanakoplos and Zeldes (2010) provides estimates of accrued Social Security benefits that takes into account uncertainty in the receipt of the benefits. They estimate that risk-adjusted total accrued benefits are about 20% lower than the value estimated by the Office or the Actuary at Social Security.

Conclusions

Social Security is an essential component of most workers' retirement plans, comprising a substantial share of the anticipated resources on which they expect to rely as they age. However, Social Security is not included in conventional wealth measures, given that workers do not have a legal claim to the receipt of the benefits. The legal claim criteria is appropriate in a strict accounting of wealth. But the discussion of wealth inequality requires the consideration of how the anticipated benefits from Social Security and Medicare impact workers' lifecycle savings decisions, how they are distributed across different wealth categories, and how the distribution of these benefits has changed overtime.

This study addresses how the distribution of Social Security benefits informs the discussion of wealth inequality. I adopt a Social Security wealth measure based on workers' accrued benefits from past participation in the program. This measure is comparable to measures of the accrued pension wealth of defined benefit plans. My estimates of accrued Social Security benefits follow the methodology described for the calculation of the Social Security Administration's annual estimates of the maximum transition costs.

Pairing estimates of accrued Social Security benefits to the households in the 2016 Survey of Consumer Finances, I estimate that Social Security wealth is 25% of the size of conventional wealth measures. Among retirement age households, I estimate that Social Security wealth is just slightly smaller at 24%. However, when considering households up to the 90th percentile, Social Security plays a much more prominent role. Across the bottom 90% of all households, accrued Social Security benefits are equal to 81% of the size of the conventional measure of net worth. And when considering the bottom 90% of households headed by individuals 65 to 74 years of age, Social Security wealth is equal to 86% of the conventional measure of wealth.

I also estimate that the top 10% of households held 18% of accrued Social Security benefits in 2016. In contrast, these households held 75% of the total net worth. When accrued Social Security benefits are included in a comprehensive wealth measure, the share of total wealth held by the top 10% declines to 64%. Among households headed by respondents 65 years of age and above, the top 10% held about 14% of accrued Social Security benefits and about 70% of the total net worth. Their share of total wealth, including Social Security, declines to 58%.

These results point to the importance of accrued Social Security wealth in understanding the distribution of total wealth. Accrued benefits are both large and they substantially reduce total wealth

inequality relative to inequality based on conventional wealth measures. Whether accrued Social Security benefits should be included in measures of households' wealth and its dispersion largely depends on how the measures are used and interpreted. While accrued Social Security and Medicare benefits are not assets in the legal sense, it is critical that policy interventions aimed at addressing wealth inequality recognize the role these programs have played in producing the evolving wealth distributions that do and do not include their accrued values.

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