CENTER for RETIREMENT RESEARCH at BOSTON COLLEGE

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# DO CENSUS DATA UNDERSTATE RETIREMENT INCOME?

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## Introduction

Some commentators claim that retirees are better off financially than many think, partly because most retirement income from 401(k) plans and Individual Retirement Accounts (IRAs) is not captured in the Census Bureau's widely used *Current Population Survey* (CPS).[1] In response, others note that while the CPS does understate retirement income, this limitation affects only the top income brackets because most Americans have little or no 401(k)/IRA wealth.[2] The questions then become: to what extent do retirement income flows alone understate the amount of money that retirees actually access or could potentially access, and how does this understatement vary by income group? The answers become increasingly salient as a growing portion of retirees' money will come from stocks of wealth rather than flows of income.

The discussion proceeds as follows. The first section looks at the extent to which the CPS under-reports income from retirement plans in the aggregate, by comparing CPS totals with: 1) those in the *Survey of Consumer Finances* (SCF); and 2) those reported to the Internal Revenue Service. It also looks more closely at households with retired heads age 65-84 and compares both the CPS and SCF to a measure that includes the annuitized value of 401(k)/IRA wealth. All the comparisons confirm that the CPS dramatically under-reports 401(k)/IRA income. To assess the implications of this under-reporting, the second section examines income from these retirement plans across the income distribution, showing that the big discrepancies occur in the upper two quintiles. Since 401(k)s and IRAs are only one source of retirement income, the third section examines total retirement income, again concluding that the big concern is the top two quintiles. Since the government, like the critics, recognizes that the CPS is doing a poor job in covering 401(k)/IRA income, the fourth section describes recent changes to the survey aimed at better capturing this income. The final section concludes that while the CPS involves significant under-reporting of income from 401(k)s/IRAs, which needs to be fixed, the survey still provides a relatively accurate picture of retirement income for the typical middle-income household, who holds little wealth from retirement plans.

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# Aggregate Income from Retirement Plans

The simplest place to start is to compare taxable withdrawals from retirement plans in the CPS with two other data sources. The first is the Federal Reserve's 2013 *Survey of Consumer Finances* (SCF) – a triennial, nationally representative survey of about 6,100 households – which is considered the gold standard for data on household wealth. The second is the income reported to the Internal Revenue Service (IRS). The problem is not subtle: the CPS reports $18 billion of 401(k)/IRA income in 2012, while the SCF reports $220 billion and the IRS $229 billion (see Table 1).[3]

Although the CPS appears to under-report income from retirement plans in general, the following discussion concentrates on the defined contribution problem because under-reporting for defined contribution plans is much larger than that for defined benefit plans, and defined contribution plans will eventually be the only source of income from retirement plans for private sector workers.[4]

The analysis focuses on households with heads age 65-84 who are not working and introduces the concept of "potential" 401(k)/IRA income. Potential income is calculated by taking aggregate 401(k)/IRA wealth held by this group and assuming these assets are used to buy inflation-adjusted annuities. The wealth numbers come from the SCF and the annuity prices are based on quotes from Hueler Associates and obtained from the Vanguard website.[6] Reported income from retirement accounts can fall short of potential for two reasons. First, individuals may not withdraw the money available to them. In fact, studies show that most retirees do not withdraw money until their early 70s when they become subject to the IRS' required minimum distribution rules.[7] Second, the income that individuals actually do withdraw is not captured by the survey (see Box 1). As shown in

Table 1. Income from Retirement Plans for All Households, 2012, Billions[5]

| Source | CPS | SCF | IRS |
|---|---|---|---|
| Defined contribution | $18 | $220 | $229 |
| Defined benefit | 394 | 535 | 623 |
| Total | 412 | 755 | 852 |

*Sources:* Authors' estimates based on *Current Population Survey Annual Social and Economic Supplement* (CPS ASEC), 2013; *Survey of Consumer Finances* (SCF), 2013; and *Statistics of Income,* 2013.

## Box 1: The Importance of Survey Design

The wording of a survey question is crucial in determining what type of answer respondents will provide. Retirement income in the 2013 CPS for example is estimated through three questions: 1) Other than Social Security or VA benefits, did [you] receive any pensions or retirement income? 2) What was the source of retirement income? 3) How much did you receive from this source in 2012? Interviewees are instructed to include retirement income from company or union pensions; federal government, U.S. military, state or local government, and railroad retirement benefits; regular payments from annuities or insurance policies; *regular* payments from IRAs, Keogh, or 401(k) accounts; and other regular payments. The list does not include as-needed withdrawals from retirement accounts. Additionally, respondents in the CPS can only report a maximum of two sources for retirement income.

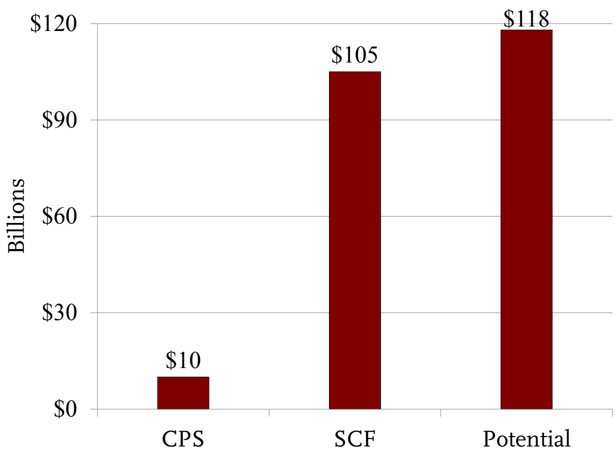
The SCF, in contrast, does not restrict its income definition to only regular payments. Moreover, the SCF does not take a bundled approach like the CPS in asking about retirement income, but rather asks about each form of retirement income separately. Non-Social Security retirement income in the SCF includes 401(k)/IRA withdrawals, defined benefit and disability pensions, pre-retirement withdrawals from defined contribution plans, and lump sum distributions and settlements from pension plans including rollovers.

The sample size and frequency of the two surveys are also quite different. The SCF occurs only once every three years and surveys a total of approximately 6,100 households, of which 1,200 are age 65-84. On the other hand, the CPS occurs each year and the sample is much larger, consisting of roughly 72,000 households, of which 12,000 are age 65-84.

The procedures, however, are quite similar. Both surveys collect responses through field representatives, who conduct both in-person and telephone interviews. Missing responses are imputed based on statistical matches for both surveys as well. Both surveys also employ systems that identify unlikely or internally inconsistent responses for verification. Hence, it seems like the nature of the questions rather than procedures explain the under-reporting in the CPS.

Figure 1, both factors contribute to the CPS problem. CPS income falls far short of that reported in the SCF, and the SCF income falls short of the potential amount that retirees could claim if they annuitized their 401(k)/IRA wealth.

Figure 1. Income from 401(k)s/IRAs for Retired Households Age 65-84, 2012, Billions




*Sources:* Authors' estimates from the 2013 CPS ASEC and 2013 SCF.

## Income from Retirement Plans by Quintile

While under-reporting of 401(k)/IRA withdrawals is substantial, the question is whether it affects all parts of the income distribution or is concentrated among the higher income. Our analysis sorts households by total retirement income, including defined benefit income, Social Security benefits, investment income and "potential" 401(k)/IRA income. Table 2 shows, by quintile, the amount of defined contribution income reported in the CPS and SCF. A cursory glance shows that dollar discrepancies are small until the two top quintiles. This finding is not surprising because the majority of households hold very little 401(k)/IRA assets (see Box 2 on the next page).

To get a clearer idea of the size of under-reporting, the analysis provides two alternatives to improving the CPS measurement of 401(k)/IRA income: 1) incorporating all actual withdrawals from defined contribution plans as reported in the SCF; and 2) incorporating the annuitized value of retirement assets,

Table 2. Reported Average Annual 401(k)/IRA Income by Quintile for Retired Households Age 65-84, 2012

| Quintile | CPS | SCF | Difference |
|---|---|---|---|
| Lowest | $18 | $215 | $197 |
| 2nd | 71 | 1,318 | 1,247 |
| 3rd | 313 | 2,810 | 2,496 |
| 4th | 623 | 5,390 | 4,767 |
| Highest | 1,827 | 16,183 | 14,357 |

*Sources:* Authors' calculations based on the 2013 CPS ASEC and 2013 SCF.

as discussed above, since households do not always withdraw the money available to them. Both values are imputed to the CPS based on SCF data using a "hot deck" multiple imputations method. Covariates such as age, race, marital status, homeownership, and total income were created for both the CPS and SCF. Actual withdrawals and annuity values were then imputed into the CPS from SCF donors with matching characteristics.[8] The results are shown in Table 3. Interestingly, households at low- and moderate-income levels are withdrawing more than their annuitized amounts, while higher income households show the expected pattern of withdrawing less. But the key message from the table is that the CPS under-reporting amounts to very little except for those with high incomes.

Table 3. CPS Original 401(k)/IRA Annual Income, Imputed Withdrawals, and Annuitized Wealth, by Quintile for Retired Households Age 65-84, 2012

| Quintile | Original | With imputed withdrawals | With imputed annutized wealth |
|---|---|---|---|
| Lowest | $18 | $663 | $230 |
| 2nd | 71 | 1,364 | 671 |
| 3rd | 313 | 2,811 | 1,615 |
| 4th | 623 | 6,841 | 5,216 |
| Highest | 1,827 | 16,161 | 23,792 |

*Sources:* Authors' calculations based on the 2013 CPS ASEC and imputations from the 2013 SCF.

## Box 2: Are Holdings at the Mean Zero?

The general rule-of-thumb for describing the income or wealth of a typical respondent from a population sample is to report the median. Since populations are rarely symmetrically distributed, the mean value can easily be skewed by the holdings of those at the top of the income distribution.

When looking at the distribution of various components of income or wealth by quintile, the likelihood of a few extreme values distorting the results is substantially reduced. Thus, one can select either the mean or the median within the quintile. That choice produces very different results, because income components and wealth are asymmetrically distributed within income brackets as well as across income brackets. As shown in the Table, the median value for retired households (sorted by total retirement income) shows no SCF 401(k)/IRA wealth for the first three quintiles, while the mean shows some modest holdings. We have chosen to report mean values for each quintile because it more accurately reflects the fact that some households within each quintile do hold some 401(k)/IRA wealth.

Table. Mean and Median 401(k)/IRA Holdings by Quintile for Retired Households Age 65-84, 2012

| Quintile | Median | Mean |
|---|---|---|
| Lowest | $0 | $206 |
| 2nd | 0 | 11,376 |
| 3rd | 0 | 17,392 |
| 4th | 14,000 | 69,225 |
| Highest | 120,000 | 400,647 |
| Total | 0 | 98,641 |

Note: While the SCF shows no 401(k)/IRA holdings for the median household in the third quintile, this household does have a small amount of defined benefit wealth.
*Source:* Authors' calculations based on the 2013 SCF.

## Total Retirement Income

Income from employer-sponsored defined benefit and defined contribution plans is only one component of total retirement income; Social Security is the major source for most households. Therefore, it is useful to see the difference between total retirement incomes as reported in the CPS compared to a scenario where income from defined contribution plans is more accurately reported. As Table 4 shows, the average income for the middle quintile is 4 percent lower than that including the imputed annuitized defined contribution wealth. So, for middle-income households, the CPS provides a very reasonable measure of the income of retirees. The story is quite different for the top quintile, where the CPS understates total retirement income by about 25 percent.

It is also interesting to look at the under-reporting by age group (see Table 5). One might have thought that the degree of under-reporting would be greater for younger groups than for older ones given the shift

Table 4. CPS Total Annual Retirement Income by Quintile for Households Age 65-84, 2012

| Quintile | Original | Percent under-reported | |
|---|---|---|---|
| | | With imputed withdrawals | With imputed annutized wealth |
| Lowest | $10,651 | 6 % | 2 % |
| 2nd | 20,367 | 6 | 3 |
| 3rd | 30,009 | 8 | 4 |
| 4th | 41,558 | 13 | 10 |
| Highest | 67,685 | 17 | 25 |

*Sources:* Authors' calculations based on the 2013 CPS ASEC and imputations from the 2013 SCF.

Table 5. CPS Total Annual Retirement Income by Age Group for Households Age 65-84, 2012

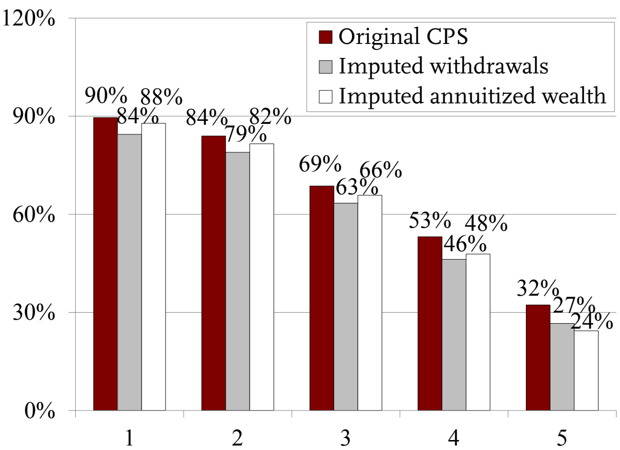
| Age | Original | Percent under-reported | |
|---|---|---|---|
| | | With imputed withdrawals | With imputed annutized wealth |
| 65-69 | $32,160 | 7% | 9 % |
| 70-74 | 31,979 | 10 | 8 |
| 75-79 | 27,628 | 9 | 6 |
| 80-84 | 24,000 | 6 | 6 |

*Sources:* Authors' calculations based on the 2013 CPS ASEC and imputations from the 2013 SCF.

from defined benefit to defined contribution plans. Instead, the under-reporting looks fairly constant across age groups when including imputed withdrawals and slightly larger for younger households when including imputed annuitized wealth.

Another interesting question is the extent to which fixing the under-reporting in the CPS affects the importance of Social Security as a source of retirement income. The numbers decline slightly with a more adequate measure of defined contribution income, but the pattern remains the same. Social Security is the main source of retirement income for the bottom three quintiles of the income distribution. At the top, however, with a proper reporting of 401(k)/IRA income, Social Security accounts for significantly less than previously thought (see Figure 2).

Figure 2. Social Security as a Percentage of Total Income for Retired Households Age 65-84, 2012




*Sources:* Authors' calculations based on the 2013 CPS ASEC and imputations from the 2013 SCF.

## Proposed Improvements in the CPS

Concern over the CPS method for measuring retirement income is not new. In fact, this discussion dates back almost two decades.[9] But the issue is becoming more pressing with the move from defined benefit to defined contribution plans. In response to the obvious problems, the government is testing some changes in the 2014 survey using a split sample that retains the old methodology for 60 percent of the participants and uses new procedures for the rest.[10] The major proposed changes include the following:

- Individual questions to identify each income source;
- Separate questions on amount from each source;
- Question re-ordering based on income level to minimize misreporting and effect of respondent fatigue;
- Income range follow-ups to help estimate unanswered income questions; and
- Different questions that identify withdrawals and distributions.

Everyone interested in the CPS as a source of income data will be eager to learn the results of this test. These proposed changes could potentially provide improved measures of not only 401(k)/IRA income but also defined benefit income.

One item not on the list is the possibility of requiring all respondents to provide information about the assets in their 401(k)/IRA plans.[11] Such a question seems much easier to answer than one targeting income. Having asset data would also make it possible to estimate "potential" defined contribution income, which may become an increasingly relevant metric if households fail to draw down their accumulations until the required minimum distribution rules kick in.

## Conclusion

As defined contribution plans become more and more prevalent as a source of income for retirees, the CPS's failure to capture income from 401(k)s and IRAs leads to increasing under-reporting of retirement resources. In the extreme, the SCF and IRS report about $220 billion of defined contribution income in 2012, while the CPS reports $18 billion. Such an enormous discrepancy undermines confidence in the CPS. This loss of confidence is serious given the value of the survey in terms of providing annual data, the large sample size, and the number of demographic variables.

All is not lost, however. Because low-and middle-income households have little 401(k)/IRA assets, the under-reporting is minimal for these groups; the main problem occurs in the top quintiles. As a result, the CPS provides a reasonably good measure of income for the typical middle-income household. More importantly, the government has responded with plans to test different question patterns to try to improve responses. In the end, however, the CPS may want to include a measure of 401(k)/IRA assets both to verify their income estimates and to calculate "potential" defined contribution income in cases when households are not drawing on their retirement wealth.

# Endnotes

1 See Miller and Schieber (2014). The specific Census data source in question is the CPS *Annual Social and Economic Supplement*.

2 See Morrissey and Sabadish (2013), Anguelov, Iams, and Purcell (2012), Czajka and Denmead (2012), and Rhee (2013).

3 The SCF estimated receipts from defined contribution plans are $449 billion. Eliminating lump-sum distributions, which most likely are rollovers, reduces total distributions from defined contribution plans to $220 billion, very close to the distributions reported to the IRS.

4 Defined benefit plans are still the dominant form of pension for state and local government workers. But these workers make up only about 10 percent of the U.S. workforce.

5 The aggregates for both the SCF and the CPS include those who do not file tax returns. Excluding those who do not file in the SCF produced aggregate retirement plan income of $724 billion.

6 The annuities are priced separately for single males and single females and for couples assuming a joint annuity with a two-thirds survival probability. The prices are as of October 15, 2014 for deposits of $100,000. Historical prices are not available, but both 2012 and 2014 are years of very low interest rates.

7 To avoid tax penalties, the IRS requires a minimum annual withdrawal amount from IRA or retirement plan accounts when a recipient reaches the age of 70 ½. Studies have found that, prior to age 70 ½, most households with personal retirement accounts tend to hold on to their assets. Even after age 70 ½, many households only withdraw the minimum required amount. See Poterba, Venti, and Wise (2013) and Blakely and Copeland (2014).

8 To adjust for the oversampling of the wealthy in the SCF, we perform multiple imputations, weight the draws, and randomly assign one of the draws to the CPS, based on the weighted probability of selection. The final values were selected from a uniformly distributed random number generator. The imputed actual withdrawals and the annuitized amounts then replaced any reported withdrawal of 401(k)/IRA wealth.

9 See Schieber (1995) and Woods (1996).

10 See U.S. Census Bureau (2014) and Semega and Welniak (2014).

11 The current questionnaire allows respondents to give the full amount of the balance in retirement accounts if they do not know how much interest income is earned in the accounts, but such information is not collected on a regular basis.

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