Capital Income Flows and the Relative Well-Being of the Elderly

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1. Introduction

The introduction and expansion of national pension systems produced a marked improvement in the relative income position of the elderly in industrialized countries, including the United States. National pension systems differ widely, both in structure and generosity. Many countries' systems consist mainly of publicly provided pensions and means-tested social assistance. The U.S. system consists of publicly provided social security, public assistance, and, for many retirees, pension savings accumulated in tax-favored retirement plans. One way to assess the effectiveness of a nation's pension system is to measure its success in bringing the incomes of the aged close to those enjoyed by nonaged adults. The comparability of income estimates for the aged and nonaged depends, however, on the relative accuracy of the income reports for the two populations. Unfortunately, some income items that are particularly important to the elderly, including occupational pensions and interest and dividend income, may be significantly underreported in the Census Bureau's Current Population Survey (CPS).

In 1990 the Census Bureau estimated that only 51 percent of the interest income and 33 percent of the dividend income in the National Income and Product Accounts (NIPAs) was reflected in the CPS file (U.S. Bureau of the Census 1993, pp. C-12 – C-13). In a more recent paper, Ruser and others (2004) found that using comparable income definitions the CPS captured only about two-thirds of NIPA-reported interest and dividend income in 2001. Since the aged are more likely than the nonaged to receive interest and dividend income, the income understatement in survey files might bias our estimate of the relative position of the aged. The validity of the CPS reports of non-social-security pensions has also been called into question (Schieber 1995 and Woods 1996). Defined-contribution pensions represent a major challenge to accurate measurement of the relative position of the aged. Many workers accumulate retirement savings that they do not convert into an annuity when they retire. Instead, retirees make phased withdrawals from their retirement savings in order to support consumption in old age. A large portion of these withdrawals are not reported as income in the CPS, but they do allow many retired workers to pay for consumption in old age. Finally, one source of capital income missed in most household surveys is the flow of services from owner-occupied homes. Home ownership is higher among the aged than among nonaged adults,

so the omission of this income flow is likely to cause an understatement of the relative well-being of the aged.

In this paper we try to assess the effects of unmeasured and under-reported income flows on the relative incomes of the aged and near-aged. The next section considers the accuracy of "money income" estimates on two household survey files, the Census Bureau's CPS and the Federal Reserve Board's Survey of Consumer Finances (SCF). Income reports on these surveys are compared to aggregate income totals recorded in the NIPAs. We first define money income in a way that is consistent in both the NIPAs and the household surveys, and we then document and try to account for the reporting differences in the three sources. We compare the distributions of money income reported on the CPS and SCF to see whether these two micro-census files tell a consistent story about the relative income positions of households headed by aged and nonaged adults. In the next section we try to make adjustments in the money income reported in the CPS to reflect some of the effect of underreporting on total household income. The adjustments eliminate about two-thirds of effects of underreporting, including underreporting of capital income. Unfortunately, we cannot find a way to correct for underreporting of pension income. The fourth section considers an important source of capital income that is not included in money income, namely, the flow of income from owner-occupied housing. We compare NIPA estimates of this income item with the Census Bureau's estimates on the CPS and our own estimates for the SCF. Including this income flow in the definition of income significantly improves the relative position of the elderly and of households in the bottom half of the income distribution. The final section of the paper considers how to improve the definition of income so that it captures the contribution of DC pension plans and IRAs to the well-being of the aged.

2. Measuring Capital Income and Pensions in Household Surveys

In recent years estimates of aggregate household income from the CPS have accounted for roughly 70-75 percent of total personal income recorded in the NIPAs. Some of the difference reflects measurement error and income under-reporting in the CPS. However, much of the discrepancy is the result of conceptual differences in the definition of income between the CPS and the national accounts. The main CPS income definition ("money income") focuses on cash income directly received by households, a

measure that is closely related to the income that would be reported on tax returns. The NIPA measure of (gross) personal income is much broader. An important difference is that the NIPA measure includes and the CPS measure excludes employer supplements to wages and salaries, such as contributions for employee health and pension plans as well as for social insurance. The NIPA estimate of personal income also includes the capital income that insurance carriers and noninsured pension plans receive in their role as agents of households. For example, insurance companies receive interest, dividends, and rent payments as investment income on policyholders' reserves. This income is treated in the NIPAs as though it is a payment to households, even though survey respondents are largely unaware of this income and are not asked to report it on the CPS or SCF. The national accounts also impute to households the income that is implicitly earned as a result of home ownership, medical care financed through Medicare and Medicaid, and many financial services furnished without explicit charge by banks and financial intermediaries. Finally, the standard NIPA measure of personal income also includes the earnings of nonprofit institutions. Much or all of the NIPA-recorded income from these sources must be excluded to calculate income in a way that corresponds to the Census Bureau's definition of money income.

On the other hand, some income sources that are not regarded as part of personal income in the national accounts are included in the Census money income definition. Most important, money income excludes the flow of employer contributions in pension funds and the capital earnings of those accounts, but it includes the benefits that are paid out of many of the accounts. A similar treatment is applied to private insurance programs, such as private workers' compensation. The money income definition includes and the national accounts exclude inter-household transfers, such as alimony and child support.

Deriving money income benchmarks from the NIPAs. We have made adjustments to the NIPA estimate of personal income to align it more closely with the concept of money income used in the CPS. The adjustments are summarized below and described in some detail in an appendix. Our procedures are based on important prior contributions by Woods (1996), Roemer (2000), and Ruser et al. (2004). Figure 1 compares adjusted and unadjusted measures of personal income from the NIPAs with our estimates of total

money income reported in the CPS. These estimates cover income received in calendar years 1988 through 2005. The top line shows the trend in aggregate personal income as defined and recorded in the NIPAs. A lower line shows NIPA estimates of money income under the Census Bureau's money income definition. The figure also compares the NIPA and CPS income estimates to estimates of money income based on six of the SCF surveys, covering income received every third year between 1988 and 2003. The CPS-based estimate of money income is consistently below the adjusted measure from the national accounts, but the difference appears to be relatively stable over time. Between 1988 and 2004 money income reported on the CPS represented about 88 percent of the adjusted personal income recorded in the NIPAs.[1] We also matched the income components reported in the SCF to align with those of the CPS. The reporting of income on the SCF is more volatile, but the money income reported on that survey averages about 98 percent of the equivalent NIPA measure.

The CPS concept of *wage and salary income* is very similar to that in the national accounts with one important exception. The CPS classifies income from Subchapter S corporations as wage and salary income, while in the NIPAs Subchapter S corporate income is included in corporate profits and passed through as dividend income received by individuals (Ruser et al. 2004). We are uncertain whether the Census Bureau is successful in ensuring that S corporation income is classified as wages and salaries rather than as self-employment income or capital income on the CPS. Nonetheless, we reclassified the NIPA data to match the intended treatment in the CPS.[2] Minimal adjustments, primarily to remove the capital consumption adjustment from the NIPA estimate, are required for *self-employment income*. The principal difference between the NIPA and Census money income definitions of *transfer income* is that the NIPA definition includes non-cash transfers, such as Medicaid and Medicare benefits and food

[1] We use the public-use versions of the CPS files, and these files are affected by the Census Bureau's top-coding procedures. On the public-use versions of the CPS files, only about 87 percent of the adjusted NIPA estimate of money income is reported.

[2] In the 2004 SCF a change was implemented to point individuals directly to the relevant line 17 of tax form 1040. Compared with responses in 2001 and earlier years, the 2004 SCF shows a substantial shift of income away from self-employment and into capital income. This change in response patterns suggests that many SCF respondents included their Subchapter S corporate income in self-employment income before 2003. Few SCF respondents seem to have believed that Subchapter S corporation income was equivalent to wage income.

stamps. In recent years these benefits have accounted for between 9 and 10 percent of NIPA personal income, or almost $1 trillion.

The more difficult definitional differences between the NIPA estimates and the CPS definition of money income are associated with *capital income* (interest, dividends, and rents) and *pension income*. Many of these differences arise because the NIPAs include financial accounts managed for households as part of the household sector. Thus, employer contributions to pension plans are part of labor compensation, and capital income and rents earned by the funds are included as part of personal income received by households. In contrast, the CPS collects information on cash benefit payments received by households, including the benefits paid by defined-benefit pension funds. As a rule survey respondents have little knowledge about the income earned on their behalf by fiduciaries. In order to adjust the NIPA capital income estimates so they conform with the Census Bureau concept of money income, we excluded several income items that the national accounts include as part of capital and rental income. The excluded items are the capital income and the capital consumption adjustment of life insurance and pension plans, the capital income received by nonprofit institutions, the dividends paid by Subchapter S corporations, and several forms of imputed income (mainly the value of services provided for free by financial institutions). These definitional adjustments eliminate nearly three-quarters of the capital and rental income that is included in the NIPA measure of personal income.

The most problematic adjustment to the NIPAs involves the estimate of the payouts from funded pension plans. This is not straightforward because there is no aggregate estimate of pension payments, either in the NIPAs or any other official source, that matches exactly the concept of money income used in the CPS. In the NIPAs, income is credited to households when an employer makes a contribution to a pension plan and when the pension fund obtains capital and rental income on its reserves. (Employee contributions to pension plans are included in the NIPAs as part of "wage and salary disbursements," while employer contributions are counted as "employer contributions for employee pension and insurance funds.") Since pension and annuity payments are viewed as a transaction that takes place within the household sector, they are not an identified component of personal income in the national accounts. The

technical issues are discussed in detail by Woods (1998), and some of the basic conceptual issues are discussed by Ruser et al. (2004).

The NIPAs provide supplementary information that can be used to construct benchmark estimates for government employee pension benefits, but for a number of reasons the national accounts lack good information on regular benefits paid by private pension plans. The data are not adequate to distinguish regular monthly or quarterly payments from lump sum distributions (Woods 1996). While the former count as money income in the CPS, the latter do not. Instead of using the NIPAs, we have used the estimate of pension and annuity payments from the IRS Statistics of Income files as the national estimate that is most compatible with the concept of money income in the CPS.

We have used similar procedures to align the income estimates of the SCF with the CPS concepts. However, the SCF has considerably fewer questions on sources of income and focuses on collecting information on a few broad aggregates. In addition, a change in the SCF questionnaire in 2004 to link some answers to specific lines of respondents' income tax returns greatly altered the pattern of responses. We did not attempt to adjust the wage and salary responses on the SCF to include Subchapter S corporate income because we are uncertain about the extent this income was included in self-employment income or in capital income in survey years before 2004. The variability of SCF responses highlights many of the ambiguities of relying on survey respondents to distinguish between self-employment income and various sources of capital income.

Household survey income reports compared to the NIPAs benchmarks. Table 1 shows our estimates of the percentage of benchmark money income that is reported in the CPS and SCF files. The estimates cover the six years between 1988 and 2003 for which income data were collected in the SCF. We have divided income into four broad categories – earned income, capital income, government cash transfers, and pensions. Over the six years shown, earned income, including dividend payments of Subchapter S corporations, accounted for about 79 percent of benchmark money income. A large proportion of this income is reported on both the CPS and SCF, with a higher proportion reported on the SCF. The percentage gap is particularly striking in the case of self-employment income, where between 40 percent and 54 percent of the net self-

employment income shown in the NIPAs goes unreported on the CPS. We find it remarkable that the SCF records a higher level of wage income than the CPS. As noted above, the SCF wage measure does not include Subchapter S corporate income, which represents about 0.5 percent of the benchmark wage measure. The SCF also finds a much higher level of self-employment income, at least until 2003 when a change in the SCF questionnaire led to a large shift of self-employment income into capital income.

A larger proportion of capital income is also reported in the SCF than in the CPS. Curiously, however, a larger percentage of CPS households reports receiving several forms of capital income. In 2000, for example, 58 percent of CPS households compared with just 29 percent of SCF households reported receiving interest income. One-quarter of CPS households reported receiving dividends, while only 17 percent of households in the SCF reported receipt of dividends. When compared with the adjusted NIPA money income benchmark, capital income reporting in both the CPS and SCF is quite erratic. Capital income is usually underreported on the CPS and overstated on the SCF, but the percentage gap between the household survey estimate and the NIPA benchmark varies over time. We believe some of the variability occurs because of changes in the wording or order of income questions and because of respondents' uncertainty about the correct classification of some income items. The income payment from a bond is classified as interest, for example, while income payments from a bond mutual fund are classified as dividends. Capital income reported in both the CPS and SCF surveys has risen erratically over time in comparison with the benchmark NIPA estimate of capital income.[3]

Government cash transfer payments, which account for about 8½ percent of benchmark money income, are comparatively poorly reported on both the CPS and the SCF. In this case, however, the income reports in the CPS come closer to matching the NIPA money income benchmark than the reports in the SCF. For aged Americans the most important source of government cash transfers is OASDI. Compared with most other types of transfers, a high proportion of OASDI benefits are reported on both the

[3] The surprisingly large overstatement of rent, royalty, and trust income found in the SCF in 2003 is probably due to a change in the SCF questionnaire. Respondents were directed to a line in the Form 1040 which in turn referenced income reported on Schedule E. This supplementary form is used to report income from rental properties, Subchapter S corporations, some partnerships, and trusts. This is a very broad definition of capital income that, in addition to S corporation income, might have been viewed by some respondents as self-employment or business income.

CPS and SCF. Other sources of transfer income, which are more important for the nonaged population, are less well reported in both surveys. This pattern of underreporting is likely to yield an understatement of the relative incomes of low-income and working-age respondents rather than aged respondents. The understatement is larger in the SCF than the CPS. The proportional amount of underreporting is far less stable in the SCF than it is in the CPS, almost certainly because the focus of the SCF is on accurate measurement of household wealth rather than household income.

According to both the NIPAs and the IRS Statistics of Income file, pension payouts represent a growing percentage of household income, whether income is measured using the NIPA concept of "personal income," the IRS estimate of "adjusted gross income," or the Census Bureau's concept of money income. What is unclear is the division of pension payouts between regular income payments and lump-sum distributions or rollovers into another retirement savings plan. If a growing fraction of payouts represents lump-sum distributions and rollovers, a shrinking share should be counted as regular money income. The tabulations in Table 1 suggest that a shrinking percentage of pension payouts reported in the Statistics of Income file is being reported in the CPS and SCF as pension benefits.[4] We cannot be sure whether this reflects a growing misreporting problem on the two household surveys or a rise in the importance of rollovers and lump-sum distributions in the Statistics of Income.

The uncertainty is lower in the case of military and public employee pensions, which consist almost entirely of regular cash payments rather than rollovers or lump-sum distributions (Woods 1996, p. 6, and Roemer 2000, pp. 65-66). Figure 2 shows the percentage of military and public employee pension payments recorded in the NIPAs that is reported on the CPS file. Only about 57 percent of the NIPA benchmark was reported on the CPS in 1988. By 2003 the amount reported on the CPS fell to 41 percent of the NIPA benchmark. The implied level of pension underreporting is not far from our estimates of overall underreporting for pension income in the two years (see Table 1). Either set of estimates implies that income underreporting is a more serious problem in

[4] There is a large increase in the reporting rate for pensions in the 2004 SCF. This may be related to a change in the questionnaire that pointed respondents to a specific line in the Form 140. The 2004 SCF pension data exclude all IRA income, but they include taxable distributions (non-rollovers) from all pension and annuity accounts.

the case of pensions than it is for the other major income sources. The shortfall in reported pension income will naturally produce a larger proportional effect on the reported incomes of the aged than the nonaged.

Relative money income of the aged and nonaged. Because income reporting patterns differ in the CPS and SCF it is likely that the relative income position of the aged and nonaged differs in the two surveys. To evaluate the income positions of the aged and nonaged we have divided households into three categories defined by the age of the head of household. We classify households headed by a person who is under age 55 as "nonaged." Households headed by someone who is 55 to 64 years old are classified as "near-aged." Households with a head who is at least 65 years old are classified as "aged." Households that are headed by older adults tend to have fewer members, and this fact must be taken into account when measuring their relative income positions. One way to deal with differences in the number of household members is to estimate the change in income required to hold living standards constant when a household gets larger or smaller. In principle, such an adjustment allows us to calculate "equivalent" incomes for households of different sizes. A common adjustment, which we use here, is to assume that a household's income requirements increase in proportion to the square root of the number of household members. Formally, equivalent money income (EY) is equal to unadjusted household income (Y) divided by household size (S) raised to an exponential value (e), that is, $EY = Y/S^e$. Our assumption implies that the value of e is ½ .[5]

To compare the incomes of people who live in "nonaged," "near-aged," and "aged" households, we first calculate the equivalent money incomes of all persons in the population. Figure 3 shows the size distribution of equivalent money income as measured in the CPS and SCF files that measure 2000 incomes. The chart shows the logarithm of equivalent money income at successive points in the income distribution. At the bottom of the income distribution, reported money incomes of persons in the CPS are higher than those of people in the SCF. At the 85th percentile of each distribution, the equivalent incomes in the two surveys are identical. Above the 85th percentile incomes

[5] We chose 1/2 , a common value used in research on household income, because it represents the halfway point between two extreme assumptions about the economies of scale that individuals achieve when they live in larger households.

are higher in the SCF survey than in the CPS survey. Table 1 shows that the SCF survey uncovered more money income than the CPS. Figure 3 shows the SCF also uncovered a more unequal distribution of income.

In Table 2 we show how equivalent money income is distributed in the two surveys among people who are members of "nonaged," "near-aged," and "aged" households. The top panel displays estimates from the CPS; the lower panel, income estimates from the SCF. Average equivalent incomes and incomes at every position of the income distribution are measured as a percent of the *median* equivalent income in the CPS file. Note that the *average* equivalent income on the CPS is almost 30 percent higher than the median equivalent income estimated in the same file. The person on the CPS at the 5^{th} percentile receives an income that is slightly more than one-fifth of the income received by the median income recipient in the CPS. The CPS respondent at the 95^{th} percentile receives 326 percent of the median CPS income. The more interesting results show the relative income positions of people in "nonaged," "near-aged," and "aged" households. At the lowest positions in the equivalent income distribution, members of aged households fare somewhat better than members of households headed by a nonaged or near-aged person. That is, the 5^{th} percentile equivalent income for persons in aged households is about one-tenth higher than the 5^{th} percentile income received by a person in a nonaged or in a near-aged household. At higher ranks of the money income distribution, persons in aged households have substantially lower equivalent incomes than their counterparts in the nonaged and near-aged distributions. The median income received by people in aged households is about 72 percent of the overall median income. Among people in nonaged households, the median income is 104 percent of the overall median income, and among people in near-aged households it is 120 percent of the overall median. The mean income of people in aged households, shown in the column on the right, is also substantially lower than that received by people in nonaged or in near-aged households.

Compared with incomes reported on the CPS the income data in the SCF show lower real incomes in the bottom ranks of the distribution and higher incomes at the top. The overall mean equivalent income in the SCF, shown in the right-hand column of Table 3, is 143.5 percent of the median equivalent income in the CPS. This amount is

about 11 percent higher than the *average* equivalent income reported in the CPS. The average income differences are larger for people in near-aged and aged households than they are for people who are members of nonaged households. Compared with the average equivalent incomes reported in the CPS, the average incomes in the SCF are 6.4 percent higher for the nonaged, 30.3 percent higher for the near-aged, and 16.1 percent higher for the aged. Nonetheless, respondents with a lower rank in the income distribution have lower absolute incomes in the SCF than do respondents with equivalent positions in the CPS, and this generalization is valid whether a person is a member of an aged, near-aged, or nonaged household. Compared with the CPS, higher incomes are found in the SCF for people in the top fifth of the income distribution, and the difference is particularly large in the case high-income people who are members of near-aged and aged households. The two surveys show some similar income patterns. For example, at the bottom of the income distribution people who are members of aged households receive somewhat higher incomes than people who have a comparable position in the nonaged and near-aged income distributions. At higher ranks of the income distribution, people in aged households have lower incomes than their counterparts in nonaged and near-aged households. The results in Table 2 suggest that if the SCF is more successful than the CPS in matching the NIPA money income totals it is because it captures a larger percentage of high-income households' incomes. This success translates into higher relative incomes among the aged and near-aged, but primarily for households which have a high rank in the aged and near-aged income distributions.

3. Adjusting CPS Money Income to Reflect Underreporting

Less income is reported in household survey files than in the NIPAs for a variety of reasons. Some income recorded in the NIPAs is received by people who are institutionalized or who are otherwise excluded from the CPS and SCF sampling frames. Other income is received by people who are deceased by the date of the annual CPS income supplement in February, March, or April of the following calendar year. We followed Roemer (2000) in adjusting our money income benchmarks to reflect these factors, but the income reported in the CPS still falls short.

The shortfall is particularly large in the case of self-employment earnings, capital income, means-tested assistance, and public employee pensions. Assuming the NIPA

income benchmarks are correct, the remaining shortfall must be due to underreporting of actual income amounts by people who report receiving a particular kind of income or the failure to report an income item by some people who receive it.[6] For several kinds of income it is possible to compare household survey responses to income reports in administrative data sources, including W-2 forms, tax returns, and social security payment records. This kind of comparison is not always feasible, however. The large shortfall of self-employment income reported in the CPS is mirrored by an equally large shortfall in self-employment income reported in income tax returns. Many people who collect pensions do not have to report them on tax returns because their incomes are too low to require them to file a return. Thus, the underreporting of income may be just as serious a problem in administrative data records as it is in the household surveys.

It is plain in Table 1 that some forms of income are in the aggregate more accurately reported in one household survey file than another. A higher proportion of benchmark earned income is reported in the SCF than in the CPS, for example. It is conceivable that the distribution of wage and salary income is more reliably reflected in the SCF than in the CPS. In 2000 an identical fraction of households in both surveys – 77.3 percent – reported receiving wage income, and the total wages reported in the SCF were almost identical to the benchmark wage and salary total derived from the NIPAs. The principal difference between wage reports in the two surveys is that top wage earners reported receiving substantially higher wages in the SCF than in the CPS whereas low wage earners in the SCF reported receiving lower wages than their counterparts in the CPS. To determine the effect of the differing wage distributions on the relative incomes of households headed by young and old adults, we substituted the wage distribution in the SCF for that in the CPS. The substitution is straightforward in 2000 because an identical percentage of households in both surveys contained wage earners in that year. Households in both surveys were ranked from lowest to highest in order of their wage and salary earnings. A household with a given rank in the CPS sample was then assigned

[6] The Census Bureau uses hot-decking procedures to impute the value of an income item when a respondent indicates the income item was received but fails to report the income amount. The CPS income estimates shown in Table 1 and Figures 1 and 2 include these Census imputations.

the wage earnings of the SCF household who had the identical wage rank.[7] The "underreporting adjusted" wage distribution for CPS households is identical to the presumably more accurate wage distribution observed in the SCF. When summed, the adjusted wage amounts for CPS households totaled the NIPA benchmark.

Adjusting the self-employment income reports on the CPS to reduce the effects of income underreporting is more difficult. In 2000 CPS respondents reported only about half of the total self-employment income recorded in the NIPAs. In contrast, respondents to the SCF reported self-employment earnings that were about 98 percent of the NIPA benchmark. In spite of the evident superiority of self-employment income reports on the SCF, a somewhat higher percentage of CPS respondents indicated receiving self-employment income. One possibility is that a larger proportion of persons who earned small amounts of self-employment income reported their earnings on the CPS, but self-employed workers in the CPS who had high earnings reported less than the full amount of their earnings. Thus, compared with the SCF the CPS obtained more accurate reports from respondents with low self-employment income but less accurate reports among respondents with high self-employment income. To adjust the CPS self-employment income reports, we therefore left unchanged the reported self-employment earnings reports of households with self-employment income below $30,000 but adjusted the earnings amounts of households with higher annual earnings so they duplicated the earnings pattern observed in the SCF survey. (An identical percentage of households in both surveys had self-employment income in 2000 that exceeded $30,000.) The total self-employment income of CPS respondents after this adjustment was equal to the benchmark self-employment income derived from the NIPAs.

In order to adjust the CPS capital income reports so total income on the CPS approximates the amount in the NIPA benchmark, we considered a variety of adjustment methods. The SCF capital income reports did not seem to be a good alternative source of data. The reporting differences between the SCF and CPS make us skeptical that the

[7] For wage earning households in the two surveys, we implemented this idea as follows. After ranking households in each survey in order of their wage earnings, we divided households into 500 equal-size cells and calculated the mean wage earnings within each cell, say, $\hat{E}_{CPS,i}$ for the CPS households and $\hat{E}_{SCF,i}$ for the SCF households. To determine the effect of substituting the SCF wage distribution for the CPS wage distribution, we simply substituted $\hat{E}_{SCF,i}$ for $\hat{E}_{CPS,i}$ while leaving other income items unchanged in the CPS file.

capital income reported in the 2001 SCF is more accurate than the capital income reported in the 2001 CPS. In 2000 the total amount of capital income reported on the CPS is closer to the NIPA benchmark than is the capital income reported on the SCF. In comparison with SCF respondents, a larger percentage of CPS respondents reported receiving interest, dividend, and rent and royalty income. Rather than adjust the CPS capital income reports to reflect the reports in the SCF, we modestly increased the reported capital income amounts of each household who reported receiving such income. CPS respondents reported receiving 7.8 percent less capital income than the benchmark NIPA amount in 2000, so it is only necessary to increase reported capital income amounts by 8.5 percent in the aggregate.[8]

The results in Table 1 suggest that the CPS provides more accurate reports on government transfer income than the SCF. For some government transfers it may be possible to obtain more reliable income reports from the Survey of Income and Program Participation, or SIPP (Roemer 2000). However, we do not perform that exercise here. It is unclear which household survey obtains more reliable reports of pension income. The reported totals of pension income are well below the target amount derived from the Statistics of Income. Moreover, reported government employee pensions are far lower in the CPS than they are in the NIPAs, and the discrepancy has grown larger over time. Since we could identify no better source of information about regular pension payments, we left the CPS pension reports unchanged.

Our adjustments to 2000 CPS wage, self-employment, and capital income reports add about 11½ percent to the total money income reported by CPS respondents and eliminate two-thirds of the shortfall in reported income below the NIPA benchmark. Table 3 shows how equivalent money income is affected by our adjustments for underreporting at selected points in the income distribution for aged, near-aged, and nonaged households. The top row shows income changes for the entire population. The underreporting-adjusted estimates of money income are lower than the originally reported income amounts for CPS respondents in the bottom three-quarters of the income

[8] We separately adjusted each capital income item. Respondents who reported receiving interest income had interest adjusted upward by 4.4 percent of the originally reported amount; reported dividends were increased 2. percent; and reported rent, royalty, and trust income was increased 38.7 percent. After adjustment, the new CPS capital income totals are equal to the benchmark totals derived from the NIPA.

distribution. This is due almost entirely to the fact that households with below-average wages report lower wage incomes in the SCF than in the CPS. At the 95th percentile of the income distribution, the estimated equivalent income rises by almost 11 percent. The average change for the entire population is 12.1 percent, indicating that most of the additional income is received by members of households in the top 5 percent of the income distribution.

The lower rows in Table 3 show changes in the income distribution in nonaged, near-aged, and aged households. The adjustments for underreporting have small effects on members of households headed by an aged adult. The effects are much bigger in the case of households headed by a working-age person, especially at the top and near the bottom of the income distribution. This pattern reflects the types of underreporting adjustments we made to the data. By far the largest adjustments were in earned income, that is, income from wages and self-employment. Because aged households receive relatively little of their income in the form of earnings, the adjustments will have little impact on their total incomes. The adjustments of capital income have a bigger effect on the aged, but mainly on aged households that derive a large percentage of their incomes from rent, royalty, and trust income. Not surprisingly, these households are near the top of the income distribution. Unfortunately, our adjustment procedures do not change reported amounts of government transfers or pension income, income sources where there are serious underreporting problems. It is likely that a correction for transfer underreporting would improve the relative position of lower income households headed by both aged and nonaged adults. A correction for underreported pension income would clearly improve the relative position of the aged and near-aged households. It is less clear whether the improvement would be relatively bigger near the top or bottom of the income distribution. The results in Table 3 remind us, however, that the single most important kind of underreporting is for earned income. Corrections of this underreporting will increase the average incomes of the nonaged much more than the aged.

4. Counting Income Flows from Housing

Money income is a meaningful but incomplete measure of the resource flow available to households in order to support consumption. About two-thirds of U.S.

households live in a house or apartment that is owned by an occupant. Residents of these households obtain a flow of services that is not counted in money income but that does free up part of their money income to be spent on other items.

The Census Bureau recognizes the value of the implicit income flow from home ownership. To construct one of its experimental income measures, the Bureau imputes an estimate of implicit rental income from owner-occupied homes based on the assumed financial return that homeowners could earn on the net equity they hold in their homes. A household's net home equity is simply the difference between the market value of its home and the balance on the home mortgage. The Bureau assumes that homeowners earn a return on net home equity equal to the municipal bond rate. From this estimate of financial return the Bureau subtracts one of the main costs of ownership, the home owner's property tax. The surplus of return on net home equity over the property tax liability is counted as income in the Bureau's experimental income measure number 15 (Cleveland 2005). All of these imputations of home value, mortgage balances, and property tax liabilities are based on responses from the American Housing Survey.

No imputation is needed in the SCF file to derive an estimate of homeowners' net equity. Since the SCF is a wealth survey, respondents are asked to report the value of their homes and the remaining balances on their home mortgages and loans. SCF interviewers do not ask respondents to estimate their property tax payments, however, so an imputation would be needed to calculate the implicit income from home ownership in the same way that it is done on the CPS. We can nonetheless compare the Census Bureau's imputations of return on net home equity with estimates based on home value and mortgage reports in the SCF. Measured as a percentage of households' equivalent money incomes, the estimated return on net home equity represents a somewhat larger income item in the SCF than in the CPS. In the years between 1988 and 2000 where both CPS and SCF estimates are available, the return on net home equity represents 6.7 percent of equivalent money income on the CPS and 7.2 percent of equivalent money income on the SCF. For the *median* income recipient in both surveys, the return on net home equity represents 7.4 percent and 8.5 percent of money income, respectively.[9] In

[9] Since we use the same interest rate to calculate returns on net home equity in the SCF files that the Census Bureau uses in the CPS files, the higher estimates of returns in the SCF files must be due to higher reported amounts of net home equity in the SCF files than the Census Bureau imputes on the CPS files.

both surveys, home equity returns, if included in income, would yield a larger increase in the incomes of households in the bottom half of the income distribution, and the increase would represent a substantially larger gain for aged and near-aged households than for nonaged households.

The comparisons just described do not take account of any of the costs of homeownership except the implicit cost of financing a mortgage. As noted above, the CPS files also contain an estimate of homeowners' property tax bills. These can be subtracted from homeowners' returns on net home equity to obtain the Census Bureau's estimate of housing income flows. Figure 4 shows the effect of adding these income flows to money income reports in the CPS surveys for selected years between 1988 and 2000. (The public-use version of the CPS file covering 2003 incomes does not include the Bureau's imputations of home equity returns.) In the figure we average the results for five years, 1988, 1991, 1994, 1997, and 2000. However, the results are broadly similar in all of the years. The figure shows separately our results for households with nonaged, near-aged, and aged heads. The bars on the left show estimated changes in equivalent income at selected points in the income distribution. In general, the inclusion of income flows from home ownership produces bigger proportional income gains in the bottom half of the income distribution and among aged and near-aged households. The median person in a nonaged household would see income rise 3.3 percent if housing income flows were added to money income; the median person in a near-aged household would see counted income rise 7.5 percent; and the median person in aged households would see a gain of 16.3 percent. The proportional gains in income are larger further down the distribution, and the gains shrink as incomes rise above the median. On average the equivalent incomes of members of aged households would be 11.8 percent higher if housing income flows were added to money income. The average income gain for members of nonaged households is only 3.3 percent. Clearly, counting the income flows from home ownership would significantly improve the relative income positions of people in aged households.

5. Counting the Annuity Value of Household Wealth

As we have seen, pension income is substantially underreported in both the CPS and SCF surveys. Even if the payments from defined-benefit pension plans were

accurately reported in household surveys, however, there would remain a problem with the way defined-contribution (DC) pension accounts and IRAs are treated in the money income statistics. The treatment of DC pension and IRA withdrawals in the definition of money income leads to a substantial understatement of DC pension plans' contributions to resources available for financing consumption in old age. If we compare two workers, one enrolled in a DB plan and another enrolled in a DC or IRA plan, the treatment of their withdrawals from their pension accounts differs greatly under the current definition of money income. Regular pension payments from a DB plan are clearly included in the definition of money income. However, withdrawals from a DC or IRA plan are only included if they represent a regular income flow. For most workers, withdrawals from a DC plan or from an IRA may be too erratic to be classified as a regular income flow. Consequently, a large fraction of withdrawals is intentionally excluded from money income. (We do not know how many workers disregard interviewers' instructions and include irregular DC and IRA pension withdrawals in their reports of pension income.) The problem with this treatment is that retired workers can finance as much consumption using $100 in DC or IRA retirement plan withdrawals as they can with $100 in DB pension payments.

One approach to the problem is to include DC and IRA pension withdrawals in money income, thus treating these withdrawals as equivalent to DB pension payments. From an accounting standpoint, one advantage of this approach is that is closely aligns the definition of money income with the taxable income flows from pension plans, included IRAs. Workers who make taxable withdrawals from an IRA or DC pension accounts would be asked to report these withdrawals as money income in the income survey. Of course, they are also required to report them on federal income tax returns. The total reported withdrawals on the survey can then be compared with estimates derived from IRS tax files. In order to implement this approach, it is necessary to change the questions posed in the CPS interview. A disadvantage of the approach is that it may produce a spurious increase in measured income inequality. Many retirees make large withdrawals in some years and negligible withdrawals in others. Funds in their retirement accounts are available to pay for consumption, even in years when no withdrawals are made. Under the proposed approach, a worker who makes no

withdrawal may be erroneously classified as "poor," even though funds in the retirement account are earning good returns.

An alternative approach to measuring DC incomes is to calculate the annuity payment a worker can purchase with the funds available in his or her account. Under this procedure, both regular and irregular withdrawals from a DC or IRA account would be excluded from the new measure of income. Instead, the new measure would include the predicted annuity payment. The prediction would vary with workers' IRA and DC account balances, with their ages and marital status, and with prevailing interest rates, but in combination these sources of variability are probably less important than the variability of irregular pension withdrawals. This approach to measuring DC and IRA pension flows can be implemented in a survey, such as the SCF, that asks workers about their IRA and DC account balances as well as their incomes. In an extension of the work described here, we plan to estimate hypothetical annuity payments that can be financed with IRA and DC account balances reported on the SCF. These will be combined with new estimates of regular pension plan payments to form a more comprehensive estimate of the pension resources available to pay for retirement consumption.

6. References

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Table 1. Money Income Reported on Household Survey Files as a Percent of NIPA Benchmark, 1988 - 2003

Percent

Category of income	1988	1991	1994	1997	2000	2003
Income reported on Current Population Survey as % of NIPA benchmark						
Earnings	**89.6**	**88.3**	**86.0**	**90.3**	**88.5**	**91.2**
Wages (including Subchapter S corporate income)	93.3	91.9	91.4	94.8	93.4	96.4
Self-employment income	60.2	59.5	46.2	56.5	51.7	51.6
Capital income	**68.7**	**62.3**	**72.8**	**108.0**	**92.2**	**78.3**
Interest	67.7	62.7	77.7	127.9	95.8	86.3
Dividends	53.2	47.4	62.0	92.2	97.7	60.6
Rents, royalties, and trusts	111.1	96.9	75.0	86.6	72.1	99.2
Government cash transfers						
Workers compensation and unemployment insurance	68.2	71.7	70.9	64.1	62.3	64.9
SSI and other cash public assistance	86.8	91.7	88.2	87.5	86.2	86.4
OASDI	90.5	85.7	90.6	90.7	92.6	90.9
Pensions 1/	**96.6**	**93.1**	**87.6**	**79.7**	**70.8**	**74.9**
Total Income	**88.6**	**86.5**	**86.2**	**91.3**	**88.5**	**90.0**
Income reported on Survey of Consumer Finances as % of NIPA benchmark						
Earnings	**99.7**	**101.8**	**98.3**	**98.3**	**100.2**	**97.2**
Wages (excludes Subchapter S corporate income)	100.1	98.6	99.3	97.0	100.5	101.8
Self-employment income	96.2	127.9	90.8	107.4	98.3	61.8
Capital income	**116.7**	**95.9**	**122.8**	**123.1**	**131.9**	**184.7**
Interest	83.0	65.2	92.6	93.2	99.0	93.7
Dividends	98.1	76.1	115.4	95.9	102.3	72.5
Rents, royalties, and trusts	402.9	352.5	225.5	239.1	280.3	733.0
Government cash transfers						
Workers compensation and unemployment insurance	41.2	48.9	34.8	30.7	32.4	39.3
SSI and other cash public assistance	55.4	47.2	41.5	26.5	20.8	28.4
OASDI	77.9	67.6	64.8	67.5	85.1	88.4
Pensions 1/	**105.6**	**94.9**	**96.9**	**84.4**	**70.3**	**93.9**
Total Income	**101.5**	**105.6**	**97.2**	**96.6**	**99.2**	**100.3**

1/ Federal employee pensions, military pensions, state and local employee pensions, and private pensions. The pension benchmark is derived from the IRS Statistics of Income file rather than the NIPA.

Sources: Bureau of Economic Analysis NIPA files; IRS Statistics of Income files; and authors' tabulations of public-use Current Population Survey and Survey of Consumer Finances files, selected years.

Table 2. Equivalent Money Income Reported in the CPS and SCF Surveys, by Position in the Income Distribution, 2000

Median income in the CPS file = 100

	Percentile of income distribution						Overall mean
	5	10	25	50	75	95	
Money income on the CPS file							
All households	20.6	30.8	56.6	100.0	160.8	325.7	129.8
Households with heads --							
Age less than 55	20.1	31.4	59.7	103.8	162.1	323.2	131.5
Age 55-64	20.9	32.5	67.6	120.3	193.0	392.6	155.9
Age 65 or older	22.5	28.5	43.3	71.7	117.2	278.0	100.4
Money income on the SCF file							
All households	15.6	23.8	46.6	89.2	157.0	361.7	143.5
Households with heads --							
Age less than 55	14.9	23.6	47.8	92.6	157.0	351.9	139.9
Age 55-64	15.1	28.2	52.7	105.4	198.7	498.7	203.1
Age 65 or older	17.6	23.2	37.2	68.2	124.4	320.8	116.5

Note: Calculations are performed using "equivalent" or household-size-adjusted incomes for each household. Entries show equivalent income measured as a percent of the median size-adjusted income reported in the 2001 March CPS file.

Source: Authors' tabulations of 2001 March CPS file and 2001 SCF file.

Table 3. Change in Equivalent Money Income Resulting from Corrections for Underreporting of Money Income in the CPS File, 2000

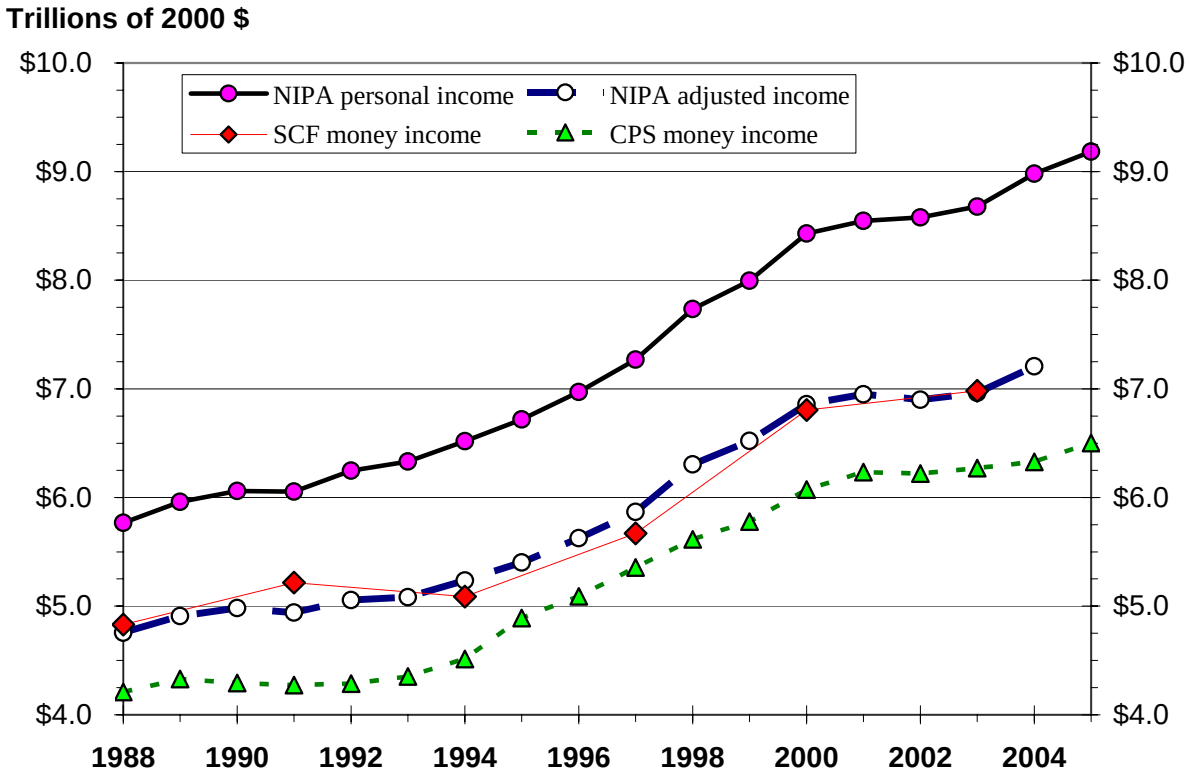
Percent change

	Percentile of income distribution						Overall mean
	5	10	25	50	75	95	
All households	-4.1	-3.6	-3.9	-3.5	0.4	10.9	12.1
Households with heads --							
Age less than 55	-6.3	-5.2	-5.5	-3.1	0.5	11.3	12.1
Age 55-64	-2.9	-2.0	-3.8	-3.0	1.7	13.9	16.6
Age 65 or older	0.2	-0.7	-0.5	-0.4	-0.4	4.8	6.9

Note: Calculations are performed using "equivalent" or household-size-adjusted incomes for each household. Changes in equivalent income are calculated as a percent of equivalent incomes before adjustment for underreporting.

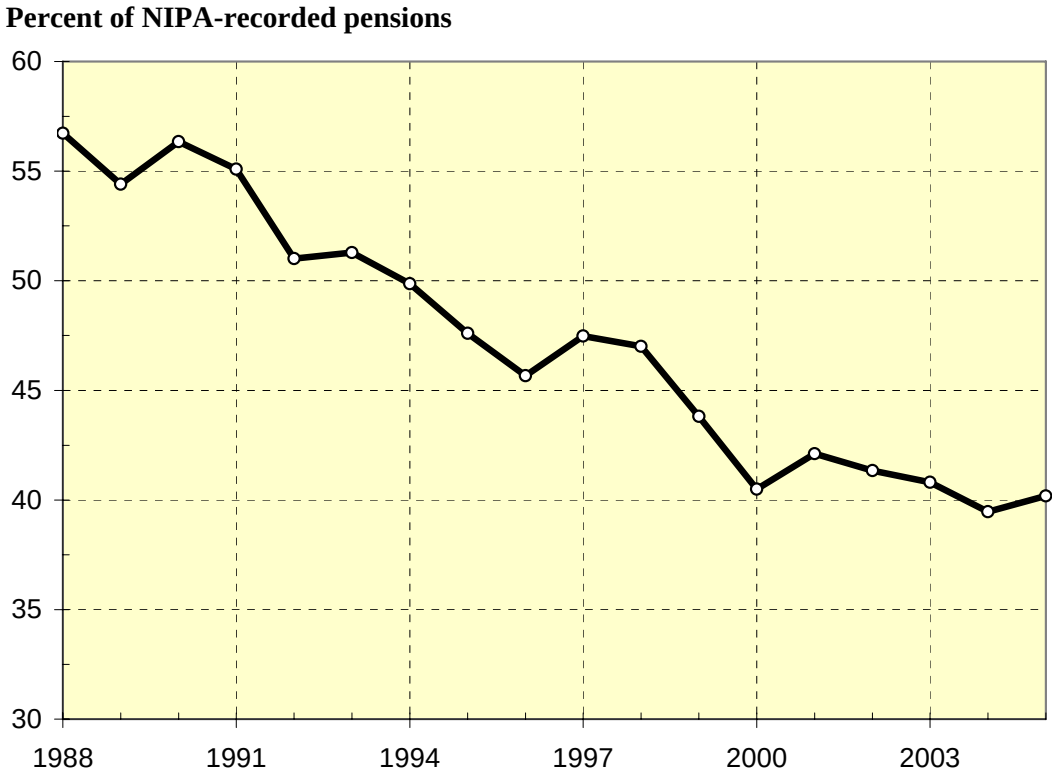
Source: Authors' tabulations of 2001 March CPS file (see text).

Figure 1. Aggregate Household Income Estimated in the NIPA and in Two Household Surveys, 1988-2005



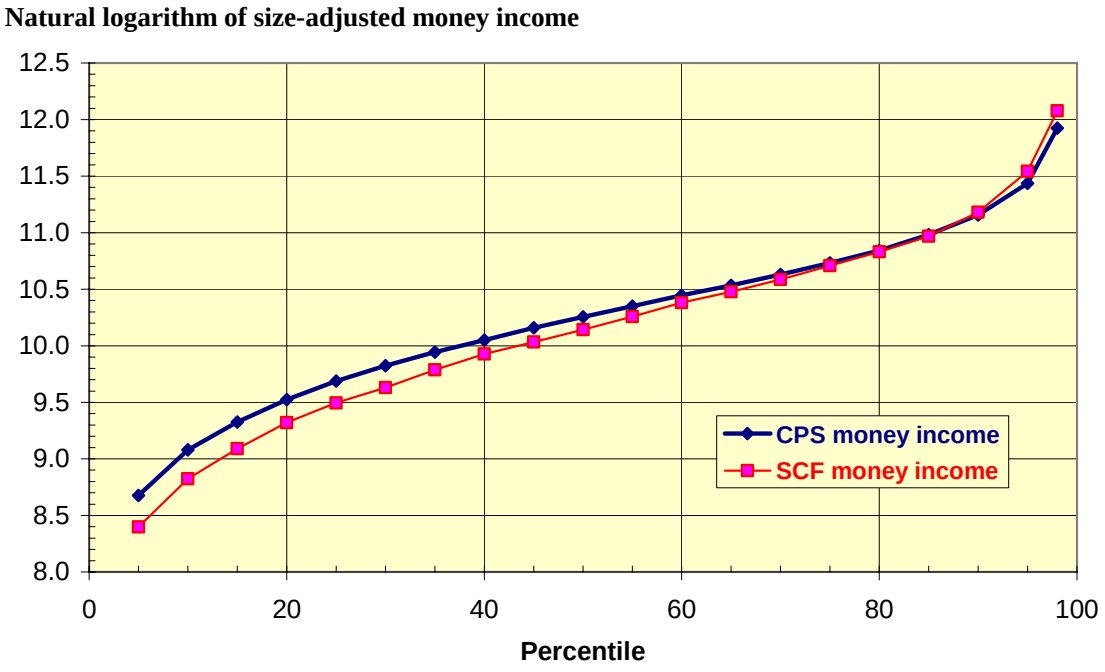
Source: Bureau of Economic Analysis and authors' tabulations of CPS and SCF public-use files for selected years.

Figure 2. Military and Public Empoyee Pensions Reported on the CPS as a Percent of Equivalent Income Recorded in the NIPA, 1988-2005



Sources: Bureau of Economic Analysis NIPA Table 6.11 and authors' tabulations of public-use Current Population Survey files for calendar years 1988-2005.

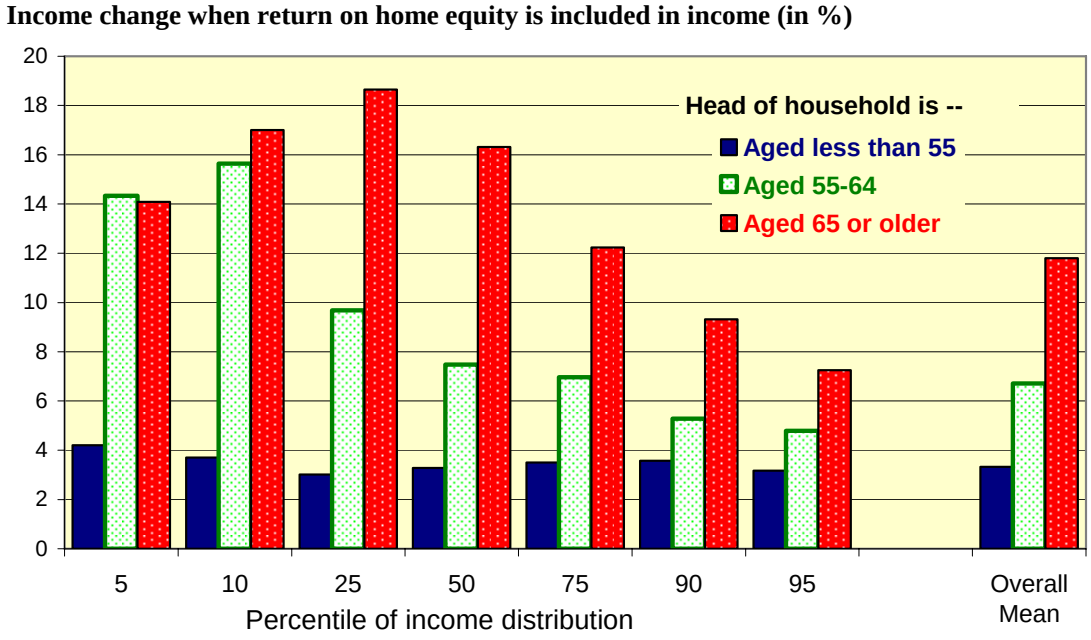
Figure 3. Distribution of Equivalent Money Income in the CPS and SCF, 2000



Note: Calculations are performed using "equivalent" or household-size-adjusted incomes for each household.

Source: Authors' tabulations of public-use 2001 March CPS and SCF files.

Figure 4. Impact of Including Return on Home Equity in Income Definition, by Age and Position in the Income Distribution, 1988-2000



Note: Calculations are performed using "equivalent" or household-size-adjusted incomes for each household.

Source: Authors' tabulations of 1989, 1992, 1995, 1998, and 2001 public-use CPS files.