A Comparison of the Household Sector from the Flow of Funds Accounts and the Survey of Consumer Finances

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Abstract

This paper compares figures on selected assets and liabilities from the flow of funds accounts (FFA) household sector with survey-based estimates from the 1989, 1992, 1995, and 1998 Survey of Consumer Finances (SCF). Previous studies generally did not fully adjust the FFA and SCF measures to place them on a comparable basis. This analysis addresses common misperceptions about the definitions of selected FFA household sector's assets and liabilities and reconciles more fully the FFA and SCF wealth components. The results show that for aggregate assets, aggregate liabilities, and specific wealth components, such as owner-occupied real estate, consumer credit, and home mortgage debt, the FFA and SCF estimates are quite close in 1989 and 1992 but move apart thereafter. Also, when placed on a comparable basis, differences between the FFA and SCF measures of savings deposits and publicly traded corporate shares were reduced from those documented in previous studies but, nevertheless, still remain substantial.

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1. Introduction

Household wealth plays an important role in macroeconomic analysis. Most models of consumption depend in part on a wealth variable, and often the components of the overall household balance sheet are examined to help explain aggregate spending patterns. Thus, accurate measures of the assets and liabilities of the aggregate household sector are critical for model building or for descriptive information on economic developments.

The most widely used source of aggregate data for U.S. household balance sheets is the time series data from the Flow of Funds Accounts (FFA).[1] In the FFA, financial assets and liabilities of the household sector are largely derived as residuals because reports on the balance sheet activities of households are generally not available, except intermittently. In other words, the FFA starts with known economy wide totals for individual transaction categories and then amounts reported to be held by other sectors are deducted, leaving the household sector with the remainder. For most transaction categories, such as home mortgage debt and time deposits, this method seems reasonable because the household sector is the largest holder. Yet uncertainty about the accuracy of the asset and liability estimates in the FFA household sector remains and at times, the FFA estimates have been in question because of their residual nature.[2]

This paper addresses some of these questions by comparing figures on selected assets and liabilities from the FFA household sector with survey-based estimates from the 1989, 1992, 1995, and 1998 Surveys of Consumer Finances (SCF)–the most comprehensive survey on household wealth. Individual households are asked detailed questions regarding the current status of their financial assets and liabilities. Moreover, to provide precise estimates of the highly skewed components of wealth, the SCF oversamples the highest income individuals and compensates for statistically high nonresponse rates among wealthy families by using data from tax files to adjust the sampling weights in the population estimates (Kennickell, McManus, and Woodburn, 1996).[3] This procedure minimizes the known biases found in wealth statistics derived from other surveys, such as the Survey of Income and Participation Program (SIPP), the Panel Study of Income Dynamics, and the Consumer Expenditure Survey.

Nevertheless, one cannot assume that the survey-based estimates yield the true picture of household balance sheets. Aggregate point estimates of assets and liabilities that are generated from micro panel studies of individual households are subject to error, and neither the FFA nor the SCF estimates are a "true benchmark." Instead, one should view the differences between the SCF and FFA estimates as a source of valuable information on possible measurement errors in both sets of data.

Population estimates of assets and liabilities from the SCF are obtained in two steps. First, the individual household responses to the financial questions are weighted by the nonresponse-adjusted sampling weights.[4] Second, these weighted responses are summed to form an aggregate estimate of households' holdings of the asset or liability. Throughout the rest of the paper, these weighted sums are referred to as the SCF estimates. Standard errors of the SCF asset and liability estimate were calculated to gauge the variability of the SCF estimates and, more important, to provide some statistical measure of the significance of the difference between the FFA and SCF. Ideally, one also would like to have standard errors on the FFA estimates. However, the complex structure of the FFA, with all sectors, in a sense, leading to the household sector, and the vast disparate sources that are used as inputs–about 3500 data series are currently used to compile the Flow of Funds Accounts–make calculating even the most simplistic standard error a daunting, if not impossible, task.

Other researchers have constructed aggregate measures of selected assets and liabilities held by households from surveys and compared these estimates to those reported in the FFA. The study by Avery, Ellihausen, and Kennickell (1987) (hereafter AEK), which examined estimates from the SCF and FFA for the years 1963 and 1983, was the most comprehensive reconciliation and set the pattern for subsequent research. For instance, Curtin, Juster, and Morgan (1989) also constructed aggregate estimates from the fourth wave of the SIPP and compare them to the figures reported in the FFA household sector. Scholz (1994) updated the AEK study using the 1989 SCF, and Eller (1994) compared aggregate estimates of households' assets and liabilities from the 1988 and 1991 SIPP with figures reported in the FFA. However, these studies generally did not fully adjust the FFA and SCF measures to place them on a definitionally equivalent basis.

This analysis addresses some common misperceptions about the definitions of the various components of the FFA household sector's assets and liabilities. The paper also describes more fully the reconciliations between the SCF and FFA measures, provides a detailed classification of assets and liabilities, and offers some alternative explanations for the discrepancies between the SCF and FFA household wealth components.

The results show that, for some asset and liability categories, the SCF and FFA estimates are quite close in 1989 and 1992, but, generally, move apart thereafter. Overall, the two measures of total liabilities match up better than those for total assets. The FFA and SCF estimates of total liabilities differ by 1.4 percent in 1989, 0.4 percent in 1992, 10.4 percent in 1995, and 4 percent in 1998. Much of the wider discrepancy between the FFA and SCF liability estimates in 1995 and 1998 owes to a significant difference between the two measures of consumer credit. After nearly exact matches in 1989 and 1992, the two measures diverged, particularly in 1995, with the FFA estimate of consumer credit growing much faster than the SCF estimate. On the asset side, the differences between the two measures of total assets are 2.1 percent in 1989, 7.2 percent in 1992, 9.3 percent in 1995, and 0.9 percent in 1998. For some asset categories, such as, mutual fund shares, owner-occupied real estate, and checkable deposits, the FFA and SCF estimates are very close in 1989 and 1992, but move apart in 1995 and 1998. For other assets, such as saving deposits and corporate equity, considerable differences, although smaller than those documented in previous studies, remain due to unresolved definitional issues or measurement error in either data set.

2. Assets of the Household Sector

Table 1 provides a detailed description of each asset category of the SCF and FFA measures that can be put on a definitionally equivalent basis. Before one can compare the SCF and FFA asset estimates, several adjustments to both measures are necessary. The most crucial adjustments account for the broader inclusion of assets in the FFA and the different treatments of IRA/Keogh accounts and employer-sponsored private pension assets in the FFA and the SCF.

The household asset estimates as reported in the FFA include assets of nonprofit organizations, unit investment trusts, and investment management accounts, none of which are reported in directly held assets in the SCF.[5] These institutional assets account for between 5-1/2 percent and 7-1/2 percent of the FFA household sector's total financial assets over the 1989 to 1998 period. Failure to adjust for these asset holdings would result in large discrepancies between the FFA and SCF estimates of several asset categories, such as municipal securities, U.S. government securities, publicly traded equities, and corporate bonds.[6] All of the adjustments made to the reported FFA asset figures in order to place them on a comparable basis with the SCF estimates appear in appendix Table A.1.

In the SCF, IRA/Keogh assets are a separate transaction category, but in the FFA they are contained in the asset category in which the household places them. For example, an IRA/Keogh account in a certificate of deposit would be implicitly captured within time and savings deposits in the FFA. Since IRA/Keogh time and savings deposits cannot be separated from aggregate time and savings deposits in the FFA, for consistency one must include those certificates of deposit in IRA/Keogh accounts in the SCF in the SCF estimate of time and savings deposits. The SCF, however, does not give a specific figure for IRA/Keogh accounts in certificates of deposit or for any particular asset.

One must, therefore, make assumptions about the breakdown on the SCF IRA/Keogh accounts into specific asset categories. My assumptions in this regard are based on the roles of financial intermediaries in the economy. In the SCF, responses about IRA/Keogh accounts were distributed among time and savings deposits, money market mutual funds, and mutual fund shares based on the type of financial institution that the respondent said held the account. I assume that IRA/Keogh accounts at depository institutions are held in time deposits; those at brokerage firms are split between mutual funds and money market mutual funds based on external data from the Investment Company Institute.

Estimates of private pension fund reserves also are difficult to reconcile between the FFA and the SCF. In the FFA, private pension assets include the current value of investments in defined benefit pension funds. In the SCF, the assets of defined benefit

plans cannot be measured. Generally, households know only their current benefits or the formula for their expected benefits at retirement, but these liabilities are not indicative of the current value of assets in the defined benefit pension fund. At best, only assets in defined contribution pension plans can be consistently compared. As shown in table 2, line 15, the FFA and SCF defined contribution pension estimates are reasonably close, except in the most recent 1998 survey year.[7] Also, as shown in table 3, the 1989, 1992, and 1995 FFA estimates are close to within one standard error of the corresponding SCF estimate.

2.1 Deposits

Total deposits in the FFA are made up of checkable deposits and currency, time and saving deposits, and money market mutual fund shares. The FFA provides a separate estimate for each transaction category, and a comparable estimate for each deposit type can be calculated from the SCF. As shown on tables 2 and 3, the FFA and SCF estimates of checkable deposits (line 2) and money market mutual funds (line 4) are fairly close, except for the most recent survey in 1998. The FFA estimates of money market mutual funds are almost within one standard error of the SCF estimates in 1989, 1992, and 1995. Although the differences between the FFA and SCF estimates of checkable deposits are somewhat larger when scaled by the SCF standard errors, which are quite tight, the FFA estimates for 1989 and 1995 remain within a 95 percent confidence band centered on the SCF estimate.

The results for checking accounts reported here differ significantly from those obtained by AEK (1987) and Scholz (1994). Unfortunately, the studies by AEK and Scholz did not use definitionally equivalent survey estimates of checking accounts in their comparison with the FFA. The researchers mistakenly categorized money market deposit accounts (MMDAs) as checking accounts in their population survey estimates; whereas, in the FFA, MMDAs are included in time and savings deposits. Their results overstated the survey estimates for checking accounts and understated the survey estimates for time and savings deposits relative to the FFA estimates. To gain a sense of the size of this error,

Scholz's total for checking accounts from the 1989 SCF is $297 billion higher than the SCF figure estimated in this analysis, which excludes MMDAs.

Nevertheless, even after shifting MMDAs into the SCF estimate of time and savings deposits, the FFA estimates remained substantially higher than the SCF figures in all four survey years (table 2, line 3) For 1998, the FFA reported that households held $2.7 trillion in time and savings deposits, while the population estimate from the SCF shows $1.9 trillion, a difference of $875 billion, or 8-1/2 SCF standard errors. There are similarly wide gaps between the two measures for the previous three survey years.

These results are not new, as other comparisons of the FFA and SCF have also been plagued by huge differences in the estimates for time and savings deposits. The implication of the scale of these differences is that the gap is more than a definitional problem. Several factors that likely contribute to the discrepancy are underreporting by households, family owned businesses, personal trusts, and charitable organizations. Nevertheless, no one factor seems to be able to account for the sizable difference in the estimates.

Curtin, Juster, and Morgan (1989) pointed out that discrepancies of this magnitude in the FFA and SCF time and savings deposits are disturbing because one would expect that households would be able to accurately report their savings deposits. Validation studies have shown that households who participate in the survey and fully answer questions regarding balances on their time deposits, on average, are truthful, accurate reporters.[8] Problems arose, however, from participants who refused to answer the question (nonreporters) and households that refused to take part in the survey altogether (nonrespondents). Nonreporters and nonrespondents had significantly higher time deposit balances than reporters; on an unweighted basis, balances were about 50 percent higher for the former group than for the latter group.

Obviously, aggregate survey estimates will be adversely affected if the imputation methods used to fill in missing data for nonreporters or the overall weights used to calculate the population estimates do not account for nonreporting and nonrespondent biases specific to time deposits. Although the SCF survey uses the most comprehensive and sophisticated techniques to correct for nonresponse bias, some downward bias from

nonreporters in the survey estimates for time and savings deposits is still possible. About [16] percent of respondents were nonreporters for time deposits. Nevertheless, any potential nonreporting error certainly could not account for an average $800 billion mismatch between the FFA and SCF estimates.

Curtin, Juster, and Morgan also conjectured that the FFA figures for time and savings deposits were less reliable than the SCF estimates mainly because they believed that the FFA estimates could not be "disentangled" from the value of time and savings deposits owned by closely held businesses, such as S-type corporations and noncorporate (mom and pop type) businesses. Unfortunately, a couple observations tend to disagree with this explanation. First, FFA source data for liquid assets held by domestic nonfinancial business, which includes S-type corporations and noncorporate business, come from balance sheet information filed by firms with the Internal Revenue Service. Also, separate work done by Samolyk (1996) using the 1989 National Survey of Small Business Finance showed that unincorporated businesses hold only about half the time and savings deposits that the FFA had previously attributed to them. Moreover, the average $800 billion gap between the FFA and SCF estimates is larger than the total amount of financial assets held by all unincorporated businesses and represents over 20 percent of total financial assets held by all nonfinancial corporate businesses. While there is no doubt some misreporting by closely held businesses, it is difficult to imagine that it could explain the considerable difference between the SCF and FFA estimates.

Two additional factors contributing to the wide discrepancy may be asset holdings of nonreporting nonprofit organizations and personal trusts that are administered by nonbank fiduciaries in the FFA. Nonprofit organizations with less than $25,000 in annual gross receipts, religious organizations and personal trusts administered by individuals (lawyers, friends, or relatives) are not legally required to report balance sheet information. As a result, these assets remain in the FFA household sector. Although aggregate data on smaller nonprofit and religious organizations are not available, it is likely that their assets are concentrated in deposits rather than riskier financial assets, such as corporate stocks or bonds.[9] As for personal trusts administered by individuals, these types of trusts may hold a higher proportion of "safer" assets than their bank counterparts. Individual

administrators may be less financially sophisticated and, therefore, unwilling to take risks given current fiduciary responsibility laws.

2.2 Credit Market Instruments

In the FFA, the outstanding amount of bonds are reported at face value net of accumulated premiums or discounts to measure the actual amount of funds raised in credit markets. Also, because many institutional bond holders report the purchase price, more commonly referred to as book value, of the security on their balance sheets, the recorded liability and asset holdings in the FFA are fairly consistent with each other. In order to correspond to the FFA accounting method, households' responses on the face value of their bond holdings were aggregated from the SCF.

The FFA and SCF estimates of credit market instruments (line 5) match up quite well in 1989, but much less so in the subsequent survey years. According to the FFA, households held $932 billion in credit market instruments in 1989 which compared favorably with the SCF estimate of $849 billion (table 2, line 5). However, by 1992 the two measures had diverged significantly and they continued to remain far apart in 1998–by as much as nearly 9 SCF standard errors (table 3, line 5). The FFA measure depicts strong accumulation of fixed income securities, especially for government securities and corporate bonds. However, the corresponding SCF measures do not show the same pattern. Indeed, the 1998 SCF estimate of credit market instruments is below the 1989 SCF estimate.

There is no definitive explanation for the conflicting movement in the FFA and SCF estimates from 1989 to 1998, but it appears unusual in a period of bond debt expansion that households would sell off their bond holdings. According to the nearly fifty year history in the FFA, households have tended to supply funds directly to the credit markets.[10] From year-end 1989 to year-end 1998, aggregate bond-type borrowing by the U.S. government, U.S. agencies, state and local governments, U.S. domestic corporations, and foreign governments and corporations totaled nearly $6.1 trillion of which, according to the FFA, the household sector adjusted for nonprofit organizations, unit investment trusts, and investment management accounts purchased, on net, 7 percent. This proportion

is low relative to the three year period, 1987 to 1989, in which the adjusted FFA household sector purchased, on net, 22 percent of the increase in aggregate bond debt.

Also, separate data on U.S. Treasury securities purchased under the program Treasury Direct indicates that households increased their purchases of U.S. Treasuries from $45 billion at the end of 1989 to $83 billion at the end of 1998. Comparable SCF estimates of U.S. Treasury securities are $137 billion for both 1989 and 1998. The Treasury Direct figures generally are considered the lower bound on household holdings of U.S. Treasury securities.

Another contributing factor to the divergence in the FFA and SCF estimates from 1989 to 1998 may be the growth of hedge funds which, we believe, hold a large amount of fixed income securities, particularly corporate bonds and U.S. Treasury securities. Because hedge funds are not required to file any documentation on their assets or asset values, the flow of funds cannot separate these financial intermediaries from the household sector. Therefore, hedge fund assets are contained within the FFA household sector assets.

2.3 Mutual Fund Shares

The FFA and SCF estimate of household holdings of long-term mutual funds is quite close for 1989 and 1992. For 1995 and 1998, the difference between the two measures widens significantly. [Need to add more here about potential reasons for widening.]

2.4 Corporate Equities

One common misperception found in previous FFA/SCF comparisons is that corporate equity in the FFA contains only publicly traded stock (AEK, Scholz, and Curtin, Juster and Morgan). The market value of corporate equity in the FFA includes both the value of publicly traded shares, as well as, an estimate of the market value of closely held corporate shares. As a result, previous research compared a narrow SCF definition to broader FFA classification and concluded that the FFA figures for corporate equity were inexplicably higher than the SCF estimates. In fact, when placed on a definitionally

consistent basis, the SCF estimates for total corporate equity are higher than the FFA estimates (table2, line 11).[11]

The discrepancy between the totals is due in large part to different valuations of closely held shares (line 13). The SCF estimate of closely held shares is consistently higher than the FFA estimate by a wide margin. Two factors may explain the large difference in the FFA and SCF estimates of closely held shares. First, the FFA estimates are based on federal estate tax forms that separate publicly traded shares of corporate equity and mutual funds from privately held corporate shares. Because beneficiaries of estates have an incentive to underreport the value of any inherited closely held businesses, the FFA figures for closely held shares are likely to be downward biased.[12] In fact, work done by Johnson and Woodburn (1994) has shown that asset values based on estate tax returns tend to be lower than those found in micro-panel surveys of households. Second, figures from the SCF may have an upward bias because survey respondents may be more likely to overstate the value of their business to the interviewer. Generally, they do not realize the worth of the business until they actually sell it. The "true" figure for closely held shares is probably somewhere between the SCF and FFA estimates.

As for publicly traded corporate equity (line 12), the reverse is true: the FFA figures are consistently higher than the SCF estimates. While this measurement error offsets some of the difference between the FFA and SCF closely held estimates, I do not believe that there exists a mismeasurement relationship in the SCF between the estimates of publicly traded and closely held corporate shares. In other words, the possibility that SCF respondents mixed up their responses to the value of publicly stocks and corporate business interests seems remote. Questions regarding business interests are in a separate section in the survey and do not resemble those for publicly traded stocks.

Rather, the accounting method used by the Department of Commerce for net purchases of U.S. corporate stock by the rest of the world may be a contributing factor to the discrepancy between the FFA and SCF estimates for publicly traded corporate stock. If a foreign resident owns less than 10 percent of the equity of a U.S. corporation, the Balance of Payments (published by the Commerce Department) records this investment as foreign portfolio stock. However, if a foreign resident owns 10 percent or more, this

investment is recorded as foreign direct investment (FDI) in the United States. In the FFA, only foreign portfolio stock is included in the rest of the world sector holdings of corporate equity. Foreign direct investment is not included because not all FDI is in the form of U.S. corporate equity. The FFA is unable to apportion total FDI into corporate equity and other forms of financing. Therefore, the FFA household sector's holdings of publicly traded corporate equity are likely overstated by the amount of FDI that is held by the rest of the world in the form of publicly traded corporate shares. Foreign direct investment totaled $450 billion, $542 billion, $659 billion, and $897 billion in 1989, 1992, 1995, and 1998 respectively, more than enough to bridge the difference between the FFA and SCF estimates of publicly traded corporate equity.

2.5 Equity in Noncorporate Business

In the FFA, equity in noncorporate businesses is derived using a balance sheet approach; total assets less liabilities in the noncorporate sector equal equity in noncorporate business. Included in the FFA noncorporate tangible asset figure is the value of one-to-four family rental properties; however, the corresponding mortgage debt for these properties is not included.[13]

In the SCF, the estimate for the value of noncorporate business is based on responses to the question "How much is your family's share of this business worth; that is, how much could you sell it for today?" To derive an estimate from the SCF that is comparable to the FFA, responses on the value of business interests were sorted by form of ownership to separate sole proprietorships, partnerships, limited partnerships, and other noncorporate business arrangements from corporate enterprises. Also, the SCF estimate of the value of one-to-four family rental properties ($1.0 trillion, $1.2 trillion, $1.1 trillion, and $1.4 trillion in 1989, 1992, 1995, and 1998 respectively) was added to the value of noncorporate business interests to obtain a comparable estimate of noncorporate business equity from the SCF.

In contrast to the substantial differences between the FFA and SCF estimates of closely held shares, the two measures of equity in unincorporated businesses is much “closer” (table 2, line 14), and the FFA estimate tends to exceed the SCF estimate (table 3, line 14). In 1992, the SCF and FFA estimates were nearly the same; the difference was a

tiny $29 billion on a base of $3.1 trillion. In the other survey years, the difference was much larger, maxing at $518 billion in 1995. However, the accompanying SCF standard errors for noncorporate equity are large, and the biggest difference is 1.9 standard errors, within a 95 percent confidence band on the SCF estimate.

2.6 Owner-Occupied Housing

On the aggregate balance sheet, the value of owner-occupied housing contributes the biggest share to household wealth, and often, individual households view the value of their home as an indication of their financial well-being. The value of owner-occupied real estate and changes in the value of owner-occupied real estate can have a significant effect on households spending and saving decisions. Thus, accurate measurement of house values becomes paramount in analyzing feedback effects from changes in household balance sheets.

In the FFA, special effort is made to construct a reliable measure of the market value of owner-occupied real estate. Owner-occupied real estate in the FFA consists of the value of single-family properties, condominiums, cooperatives, vacant homes for sale, and vacant land. Benchmarks for these series are estimated every two years using data from the biennial American Housing Survey (AHS). The values for the intervening years are based on movements in the Office of Federal Housing Enterprise Oversight Existing Home Repeat Sales Index and net new investment in owner-occupied structures available from the Bureau of Economic Analysis. Moreover, the FFA takes into consideration the tendency for survey respondents in the AHS to overstate the value of their home and reduces the AHS estimate by 6 percent.[14]

The FFA and SCF measures of owner-occupied real estate match up well in 1989 and 1992, differing by only $132 billion and $179 billion, respectively on over a $6 trillion base (table 2 and table3, line 16), and the differences are within one SCF standard error. In 1995, the FFA estimate is about 1.5 standard errors above the SCF estimate. However, in 1998, the SCF estimate is $538 billion larger than the FFA estimate

3. Liabilities of the Household Sector

To compare estimates of liabilities of the household sector in the FFA with those in the SCF on a consistent basis requires several adjustments to both datasets. First, liabilities incurred by nonprofit institutions must be removed by eliminating commercial mortgages, trade credit, and tax-exempt debt from total household liabilities in the FFA. Similarly, deferred and unpaid life insurance premiums were also deducted from the reported FFA total because the SCF does not inquire about this information. Lastly, although the SCF contains information on the amount of multi-family, farm and commercial mortgage debt held by households, none of this type of debt is included in the SCF figures reported below. The reason is that households are not considered a direct debtor for these types of mortgages in the FFA.[15]

3.1 Home Mortgages

Estimates of mortgage debt on one-to-four family residences, the largest component of household debt, is the most difficult to reconcile. Careful grouping of the SCF responses on home loans is required to produce an estimate consistent with the FFA (see table 4 for specific details).

The definition of home mortgage debt in the SCF used in this paper is broader than that calculated in previous studies. For example, the AEK study does not appear to have included mortgage debt on one-to-four family rental properties and business loans secured by the owner's principal residence. Rather, the estimate of home mortgage debt in AEK was defined as "principal outstanding on mortgages against principal and secondary residences and other small residential properties." Investment properties would not qualify as residences in this definition, and it is unclear whether they would have been included in other small residential properties. The omission of these two sources of mortgage debt may explain why AEK's SCF estimate of home mortgage debt for 1983 was significantly lower than the FFA estimate.

In contrast, if adjusted for definitional differences, the SCF and FFA estimates of home mortgage debt are fairly close, although they do move apart a bit in 1995 and 1998, but still remain to within close to one SCF standard error. (tables 5 and 6).

3.2 Consumer Credit

Consumer credit is the second largest category of household debt. Again, the SCF responses must be grouped carefully to correspond to the definition of consumer credit in the FFA (table 4). SCF responses on car loans, credit card debt and charges, student loans, and personal loans for furniture, education, mobile homes, professional expenses, and other items were summed to obtain an estimate of consumer credit from the SCF. In addition, the remaining one-half of business loans secured by personal assets was added to the SCF consumer credit total. This business debt is likely to take the form of a personal loan from a bank or a finance company or reflect personal credit card usage for investment in the business. Such debt would be included in the consumer credit total reported in the FFA.

One adjustment to the FFA consumer credit figures is necessary to achieve comparability between the SCF and the FFA estimates. Student loans transferred to the Student Loan Marketing Association (SLMA), and student loans extended directly by the federal government must be added to the FFA consumer credit figures.[16] Respondents in the SCF report total student loan debt and generally would not know or remember if those loans were funded by the federal government, or sold to SLMA by their financial institution.

As shown in tables 5 and 6, the two measures of total consumer credit are extremely close for both 1989 and 1992. But, as with the home mortgage debt, they move quite a bit apart in 1995 with the FFA estimate over $200 billion higher than the SCF estimate. The gap narrows a bit in 1998 with the FFA estimate about 1.9 standard errors higher than the SCF estimate.

4. Summary

Although previous researchers have compared FFA and SCF estimates, often the estimates were not on the same definitional basis. For example, FFA estimates of total corporate equity include shares of closely held corporations. Previous research had counted only the value of publicly traded shares and determined that the FFA estimates were inexplicably higher than the SCF estimates. However, when the value of closely

held shares is added to the SCF estimate of corporate equity, the SCF estimates are, in fact, higher than the FFA estimates.

After careful adjustments for conceptual and definitional differences in the FFA and SCF transaction categories, I find that the FFA and SCF estimates for total liabilities and total assets are extremely close in 1989. Indeed, the 1989 FFA estimates of home mortgage debt, consumer credit, U.S. government securities, corporate and foreign bonds, municipal securities, mutual fund shares, publicly traded corporate equity, money market mutual funds, equity in noncorporate business, and owner-occupied real estate are all within one standard error of the SCF estimates. The match up between the FFA and SCF estimates becomes progressively worse for the remaining survey years. By 1998, only the FFA estimates of home mortgage debt, municipal securities, and equity in noncorporate business are within one standard error of the SCF estimates.

The main trouble between the SCF and FFA estimates primarily lies in the consistent and puzzling offsetting differences between the SCF and FFA estimates for time and saving deposits and the value of closely held corporate equity. The FFA shows higher time and saving deposits than the SCF, while the SCF shows higher closely held corporate equity. Future work in the SCF and the FFA would be to investigate better measurements for these two transaction categories.

Footnotes

1. The Z.1 release of the Flow of Funds Accounts, Flows and Outstandings is published by the Board of Governors of the Federal Reserve approximately 75 days after the end of the quarter.

2. Curtin, Juster, and Morgan (1989), and Eller (1994).

3. The SCF selects households according to two sampling strategies. The majority of households are chosen via a standard multistage area-probability sample from among the continental United States. The remaining households were chosen from a sample of federal income tax returns using an algorithm to select a stratified sample overrepresenting households more likely to be wealthy (Kennickell and Woodburn, 1993).

4. For a description of the weighting design for the SCF see Herringa, Conner, and Woodburn (1994); Kennickell and Woodburn (1992); and Kennickell, McManus, and Woodburn (1995).

5. The SCF inquires about the value of unit investment trusts and managed accounts; however, the questions concerning the financial asset composition are broad. Rather than apply another layer of assumptions on the SCF estimates, I adjusted the FFA assets for these type of investments.

6. The AEK study also adjusted the FFA household sector estimates for the financial asset holdings of nonprofit organizations; however, source data for nonprofit organizations asset holdings are nonexistent for 1963 and very limited for 1983.

7. The SCF inquires about defined-contribution pension assets, thrift savings, 401(k), profit sharing and stock purchase plans, and supplemental retirement accounts, specifically excluding IRA/Keogh accounts in these questions.

8. Ferber (1965, 1966a, 1966b), Ferber, Forsythe, Guthrie, and Maynes (1969), Mandell and Lundsten (1978), and Maynes (1965). Unfortunately, these validation studies are quite dated, and stricter privacy and confidentiality barriers erected in the past few decades have made this type of research very difficult, if not impossible, to update.

9. While not remotely considered evidence, the limited number of balance sheet statements of churches that I have seen showed nearly 100 percent of assets in deposits, mainly time and savings deposits.

10. Bond debt is defined as the outstanding amount of U.S. Treasury securities, U.S. agency securities, municipal securities, corporate bonds, and U.S. residents' holdings of foreign bonds.

11. The SCF estimate that is definitionally equivalent to the FFA is the sum of the value of publicly traded stock--the SCF question specifically asks respondents to exclude any shares held through mutual funds, pension accounts, trusts, or in business to avoid double

counting--and the sales value of privately held subchapter S corporation and other corporate businesses of which the household owns an interest.

12. However, some beneficiaries may overvalue the shares in order to establish a high tax basis to minimize future capital gains taxes.

13. The source data for tangible assets of the noncorporate sector are from the Bureau of Economic Analysis and include the value of rental property. The source data for the mortgage debt of the noncorporate sector come from the internal revenue Service and do not include mortgage debt on the one-to-four family rental properties owned by households.

14. Using the AHS, Goodman and Ittner (1992) find that the average home owner overestimates the value of his/her house by 6 percent.

15. However, the liabilities of noncorporate business, which includes these types of debt affect the household sector balance sheet through the transaction category, "equity in unincorporated business."

16. Consumer credit in the FFA includes only student loans kept on the books of financial institutions or those loans held indirectly by depositories via asset-backed security obligations.

References

Avery, Robert B., Gregory E. Elliehausen, and Arthur B. Kennickell. "Measuring Wealth with Survey Data: An Evaluation of the 1983 Survey of Consumer Finances, " Review of Income and Wealth, Volume 34(4), December 1988, pp. 339-369.

Board of Governors of the Federal Reserve System. "Flow of Funds Accounts, Flows and Outstandings," Z.1 statistical release.

Board of Governors of the Federal Reserve System. "Balance Sheet of the U.S. Economy," C.9 statistical release.

Board of Governors of the Federal Reserve System. "Guide to the Flow of Funds Accounts," 1993.

Curtin, Richard T., F. Thomas Juster, and James N. Morgan. "Survey Estimates of Wealth: An Assessment of Quality," The Measurement of Saving, Investment and Wealth, National Bureau of Economic Research, Studies in Income and Wealth, Volume 52, 1989, pp. 473-548.

Eller, T.J. "Household Wealth and Asset Ownership: 1991", The Survey of Income and Program Participation, U.S. Department of Commerce, Bureau of the Census, January 1994.

Federal Financial Institutions Examination Council, Trusts Assets of Financial Institutions.

Ferber, Robert. "The Reliability of Consumer Surveys of Financial Holdings: Time Deposits," Journal of the American Statistical Association, Volume 61, March 1965, pp. 148-163

Ferber, Robert. "The Reliability of Consumer Surveys of Financial Holdings: Demand Deposits," Journal of the American Statistical Association, Volume 61, March 1966a, pp. 91-103

Ferber, Robert. " The Reliability of Consumer Reports of Financial Assets and Debts", Urbana, IL: Bureau of Business and Economic Research, 1966b.

Ferber, Robert, John Forsythe, Harold W. Guthrie, and E. Scott Maynes. "Validation of a National Survey Survey of Consumer Financial Characteristics," Review of Economics and Statistics, Volume 51, November 1969, pp. 436-444.

Goodman, John R. and John B. Ittner. "The Accuracy of Home Owner's Estimates of House Value, " Journal of Housing Economics, Volume 2, 1992, pp. 339-357.

Herringa, Steven G., Judith H. Connor, and R. Louise Woodburn. "THe 1989 Survey s of Consumer Finances Sampling Design and Weighting Documentation," April 1994.

Investment Company Institute. Mutual Fund Fact Book.

Johnson, Barry and R. Louise Woodburn. "The Underlying Methodology of the Estate Multiplier Technique, Recent improvements in Estimates for 1989," Compendium of Federal
Estate Tax and Personal Wealth Studies; Department of the Treasury; 1994.

Kennickell, Arthur B. and Douglas A. McManus. "Sampling For Household Financial Characteristics Using Frame Information On Past Income,"

Kennickell, Arthur B., Douglas A. McManus, and R. Louise Woodburn. "Weighting Design for the 1992 Survey of Consumer Finances," March 1996.

Kennickell, Arthur B. and Janice Shack-Marquez. "Changes in Family Finances from 1983 to 1989: Evidence from the Survey of Consumer Finances," Federal Reserve Bulletin, January 1992.

Kennickell, Arthur B. and R. Louise Woodburn. "Estimation of Household Net Worth Using Model-Based and Design-Based Weights: Evidence from the 1989 Survey of Consumer Finances," April 1992.

Mandell, Lewis, and Lorman L. Lundsten. "Some Insight into the Underreporting of Financial Data by Sample Survey Respondents," Journal of Marketing Research, Volume 15, May 1978, pp. 294-299.

Maynes, E. Scott. "The Anatomy of Response Errors: Consumer Saving," Journal of Marketing Research, Volume 2, November 1965, pp. 378-387.

McNeil, John M. and Enrique J. Lamas. "Year-Apart Estimates of Household Net Worth from the Survey of Income and Program Participation," National Bureau of Economic Research, Studies in Income and Wealth, Volume 52, 1989, pp. 431-471.

Samolyk, Katherine. "New Flow of Funds Estimates for Unincorporated Businesses: Evidence from the National Survey of Small Business Finance," mimeo, march 1996, Federal Reserve Board of Governors.

Scholz, John Karl. "Tax Progressivity and Household Portfolios: Evidence from the Surveys of Consumer Finances," Tax Progressivity and Income Inequality, Cambridge University Press, 1994, pp. 219-267.

Smolensky, Eugene. "Comments to Survey Estimates of Wealth: An Assessment of Quality," The Measurement of Saving, Investment and Wealth, National Bureau of Economic Research, Studies in Income and Wealth, Volume 52, 1989, pp. 549-551