Economic Vulnerability in the United States: Measurement and Trends

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Abstract

This paper examines trends in families' economic security and differences in security across demographic groups using data from the 1989–2007 U.S. Survey of Consumer Finances (SCF) cross-sections and panel data from the 2007–09 SCF. The paper examines twelve household-level measures of: i) vulnerability to health, employment, or income shocks; ii) adequacy of household savings and income; and iii) borrowing constraints. It also constructs a composite vulnerability index, following the approach of Alkire and Foster (2011a). Vulnerability decreases with income, age, and education, but the strength of the relationship depends on how the measures are combined. There is little evidence of an overall trend in household economic security between 1989 and 2007, though vulnerability declined for older and lower-income families. The measures suggest a slight decrease in economic vulnerability between 1995 and 2007, but this trend is not significant after controlling for changes in the age distribution. By comparison, the "Great Recession" is apparent in increases in nearly all of the individual vulnerability measures between 2007 and 2009. Together, the results suggest that, by these measures, the marked decline in the households' financial position over the recent recession is not explained by a longer-term decrease in economic security.

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1. Introduction

The current recession has made clear that increases in household wealth and income over the past two decades did not necessarily translate into greater economic security for U.S. households. According to data from the U.S. Survey of Consumer Finances (SCF), median family income rose 14 percent between 1989 and 2007, and median wealth increased 60 percent. Mean household income and net worth rose even more strongly, by 29 percent and 86 percent, respectively. Yet, as is well known, delinquencies, foreclosures, unemployment rates, and unemployment durations all subsequently began to rise sharply, and median household wealth declined by about 30 percent between 2007 and 2009 (Bricker et al. 2011).

This paper takes a broader perspective on families' economic security than that portrayed by income or wealth alone to assess whether the recession's dramatic effect on household balance sheets may have reflected in part a longer-term trend in families' financial security. Put differently, were the seeds of the deterioration in households' finances sown over the preceding decades, or does the extent of the decline largely reflect the magnitude of the shock brought about by the financial crisis?

The analysis draws on the seven cross-sectional SCF surveys from 1989 to 2007 and the 2007–09 SCF panel. The SCF offers the most detailed information available on U.S. families' balance sheets as well as on a range of other aspects of families' economic security including measures of the risks a family faces and of a family's ability to borrow. I examine twelve household-level measures of economic insecurity that are intended to capture these various dimensions of economic vulnerability. The paper focuses separately on changes in families' economic security over the 1989–2007 period, when six of the measures are available, and over the 1995–2007 period, when all twelve measures are available.

I begin by assessing trends in the individual measures and in the share of families that are classified as vulnerable by, say, at least two of the vulnerability criteria. Although the results are mixed, most of the individual indicators show a slight downward trend, that is, they imply modest improvements in economic security over the past two decades. Similarly, the share of families that met a minimum number of criteria fell for most values of this threshold that I consider.

However, the time-series variation and trends in the indicators are small relative to the variation across demographic groups. As might be expected, economic security increases with the age and education of the household head as well as with family income. The differences across families classified along these demographic traits are typically several times larger than the estimated differences over time.

I then combine the multiple indicators based on an approach proposed by Alkire and Foster (2011a) in the context of multidimensional poverty. Combining the potential indicators of economic insecurity into a composite index requires choosing how to weight the various indicators, and generally the results are robust to different choices of weights. Two of the four sets of weights that I consider draw on the 2007–09 SCF panel data and, specifically, assign greater weight to criteria that are more highly correlated with the deterioration in households' balance sheets between 2007 and 2009.

The most pronounced shifts in the indexes are comparatively sharp declines in the vulnerability index in 1998 or 2001 (depending on the set of vulnerability criteria examined) and a subsequent uptick in 2004. But over the 1989–2007 period as a whole, I find no significant trend in economic security based on the composite indexes. In contrast, over the 1995–2007 period, the index based on the full set of vulnerability criteria points to a slight but often statistically significant decline in families' economic vulnerability. The difference in the findings for the two time periods appears to stem from the difference in the periods, not in the set of

variables used to measure vulnerability, since the estimated 1995–2007 trend based on the abbreviated set of measures, likewise, is generally significant. However, the 1995–2007 trends are not statistically significant after controlling for the changes in the vulnerability index that would be predicted given the aging of the population and increases in educational attainment. These findings are generally robust to the choice of weights and other elements of the construction of the Alkire-Foster index.

The picture becomes somewhat clearer in looking at trends in economic security within demographic groups. In particular, the slight downward trend in vulnerability for U.S. households as a whole appears to be driven in large part by more precisely estimated and typically steeper downward trends for older households and for families at the bottom of the income distribution. In contrast to the trends for households overall, the estimated improvements in economic security for these older and lower-income groups are often significant for both 1989–2007 and 1995–2007.

2. Data and Measures

Data source

The empirical analysis uses data from the U.S. Survey of Consumer Finances (SCF), which provides the highest quality and most comprehensive data available on U.S. household wealth. The survey has been conducted by the Federal Reserve Board every three years since 1983, with a consistent survey design since 1989. In addition, this study is one of the first to use the longitudinal data collected from a 2009 follow-up survey of families that participated in the Survey of Consumer Finances (SCF) in 2007. The 2009 SCF re-interview collected data on

major components of household balance sheets as well as information about their economic experiences between 2007 and 2009.[1]

The SCF comprises a standard geographically based, multistage area-probability sample and a list sample that oversamples households that are likely to be relatively wealthy.[2] The analysis uses the SCF nonresponse-adjusted weights that account for the over-representation of wealthier households so that estimates are representative of the U.S. household population.

The SCF data are well suited to constructing a comprehensive measure of families' economic security. The survey collects detailed household-level data on not only assets and liabilities but also on demographic characteristics, income, expectations and attitudes, credit market experiences, employment, pensions, and health insurance coverage. The data are reported as of the time of the interview, except for income, which refers to the prior calendar year.

Defining economic insecurity

The starting point for the analysis is the view that a family's financial security depends on both the extent of economic risk that the family faces and the financial resources—including credit— available to the household when faced with an adverse economic shock. For example, a family confronting an unexpected expense might spend down savings, borrow, or draw on current income. However, families that have low levels of savings, have limited ability to borrow, or already devote a large share of income to debt repayment may have trouble meeting this expense and may, in turn, forgo consumption or default on debt.

[1] See Bucks et al. (2009) for a general overview of the SCF and Bricker et al. (2011) for detail on the 2007–2009 SCF panel.

[2] See Kennickell (1998, 2001, 2005) for details of the list sample design.

This definition of vulnerability is analogous to multidimensional approaches to analyzing poverty and well-being.[3] Indeed, I combine information from each of the vulnerability indicators based on the approach proposed by Alkire and Foster (2011a) in the context of multivariate poverty measurement. The perspective on economic insecurity that guides the paper is also similar to those of Osberg and Sharpe (2002, 2011) and Hacker et al. (2010). The "economic security" component of Osberg and Sharpe's broader Index of Economic Well-being likewise gauges economic security by measuring families' ability to mitigate or avoid a range of economic losses. Osberg and Sharpe construct an aggregate index, whereas the SCF allows me to examine vulnerability at a family level. Family-level data have the advantage that they allow analysis of differences in economic insecurity across groups of families and can account for correlations across dimensions of vulnerability.

Hacker et al. (2010) use the U.S. Survey of Income and Program Participation (SIPP) and the Consumer Expenditure Survey (CE) to construct a measure of economic security that takes into account the income volatility and health risks a family faces as well as the families' financial resources. The authors estimate the likelihood that a household experiences a 25 percent or greater drop in income net of expected medical expenses that cannot be offset by the family's accumulated liquid assets. Their data on income fluctuations and wealth from the SIPP and imputed medical expenses from the CE are all denominated in dollars and so can be combined in an "accounting" framework. By contrast, this paper takes a less-structured approach to combining insecurity measures from the SCF (which are ordinal and so cannot be similarly added or subtracted), but it considers a broader array of risks and potential buffers against shocks.

[3] For recent contributions and references see for example Anderson, Crawford, and Leicester (2011), Alkire and Foster (2011a), and Alkire (2011).

Measuring vulnerability

In line with the framework outlined above, I construct a total of 12 measures of vulnerability. Six of these are available in all years of the SCF since 1989, and the other six are available by the 1995 survey (Table 1). The measures can be classified into four categories: i) indicators of the economic risks that a household faces; ii) measures of the sufficiency of income; iii) subjective measures of the adequacy of savings; iv) indicators and correlates of households' ability to borrow.

Economic risks. The SCF collects information on the health insurance status for each person in the household, and I classify families as susceptible to a medical shock if any person in the household is not covered by health insurance.[4] A second measure of potential health risk identifies households in which either the head or, if applicable, the spouse or partner reported being in "poor" health.

I construct two indicators of unemployment risk. The first distinguishes families in which the household head or the spouse or partner was unemployed at the time of the interview or which had income from unemployment or worker's compensation in the prior calendar year. By contrast, the second unemployment risk indicator is forward-looking and based on monthly employment and labor force data from the Current Population Survey (CPS). I estimate the average monthly U-5 unemployment rate in CPS data from September of the survey year through August of the following year for individuals given their age, gender, education and race or ethnicity.[5] Based on these regressions, I impute a prospective unemployment rate for each household head and, in the case of couples, I average the estimates for the head and the spouse or

[4] This indicator, of course, does not capture differences in the cost of the insurance and in deductibles or other out-of-pocket expenditures.

[5] The SCF typically begins interviewing in about June in a survey year, and September is commonly used as an approximate midpoint of the survey period. The estimated individual-level unemployment probabilities are based on a logit of whether an individual is considered unemployed (based on the U-5 definition) on a five-segment spline in age interacted with gender and race/ethnicity indicators interacted with educational-attainment indicators. For couples, I take the average of the predicted unemployment rates for the head and the spouse/partner.

partner. Households with an estimated unemployment rate greater than 7 percent—roughly twice the mean and median estimated rates—are designated as having a "high prospective unemployment risk".[6]

I use the U-5 definition of unemployment for consistency with my classification of individuals in the SCF. The U-5 unemployment rate includes unemployed individuals in the labor force (the group captured in the official unemployment rate) as well as marginally attached workers, those who are not currently working or looking for work but have in the past year and say they want and are available to work.[7] I identify individuals in the SCF, like many retirees, who are not currently working and who report they do not plan to start working in the next year, and I assign them a prospective unemployment rate of zero.[8] For all others, including those who are employed, unemployed, temporarily laid off, or who report they intend to start working in the next year, the estimated unemployment probabilities are estimated from the CPS regressions.

Finally, I use two measures of risk attributable to income volatility. The first identifies families that reported a drop in income last year and, more specifically, that characterized their income last year as "unusually low" relative to a "normal" year. The second indicator of income volatility uses SCF questions about income expectations and captures households that reported that they do not usually have a good idea of what the next year's income will be.

Income adequacy. The analysis incorporates two measures of income sufficiency. The first is based on a self-reported characterization of spending relative to income: a family is treated as having low income if they reported that their spending in the prior year (net of purchases of

[6] Note that the unemployment rates for individuals identified as the CPS reference person and that person's spouse or partner are 1.2–1.5 percentage points lower than overall unemployment rates in the twelve-month periods that I consider.

[7] See http://www.bls.gov/webapps/legacy/cpsatab15.htm for definitions of alternative unemployment rate measures.

[8] Not only is an unemployment probability likely irrelevant in the case of, say, a 70-year old retiree who does not intend to return to work, but the estimate would also be based on the sample of 70-year olds still in the labor force in the CPS, who are likely to be a select group.

durables or investments) exceeded income. The second criterion is an absolute poverty measure based on household income in the prior year relative to the Census Bureau's poverty thresholds defined by family size, age of household head, and number of children.[9]

Assets/savings adequacy. The measure of the adequacy of a household's savings compares the assets available to a household with the family's desired level of precautionary savings, that is the amount of savings that the family considers sufficient to cover unanticipated expenses. This level of precautionary savings for each family draws on the SCF question that asks the amount of savings needed for emergencies and similar contingencies.

Differences in households' responses to this question appear to reflect in part differences in risk preferences, access to credit, and the extent of risk that families face (Kennickell and Lusardi, 2005), which suggests that responses to this question may in part capture household-specific factors or preferences. In contrast to this subjective measure elicited from households, in their studies of poverty measures based on both assets and income, Brandolini et al (2010) and Haveman and Wolff (2004) set asset-poverty thresholds to be a constant fraction of the applicable income-poverty threshold.

Gauging the adequacy of a household's savings in this way requires defining the set of resources that a family could draw upon when faced with an adverse economic shock, and there are several measures that could be used. In their study of "assets poverty," for instance, Haveman and Wolff (2004), consider both net worth and liquid assets, a narrower measure that comprises

[9] See http://www.census.gov/hhes/www/poverty/data/threshld/index.html for the poverty thresholds. In accordance with the income definition used by the Census Bureau for assessing poverty, I exclude capital gains income in this calculation. The income measure includes income from wages and salary; interest and dividends; business, farm, and self-employment income; Social Security and other retirement income; and government transfers. As shown below, about 0.2 percent of families with above-median total income have income under this definition that falls below the relevant poverty line. The Census Bureau's poverty thresholds are intended to be constant in real terms and are adjusted annually based on the value of the Consumer Price Index (CPI-U). I instead adjust the poverty thresholds using the "current methods" version of the Consumer Price Index (CPI-U-RS), the index used to adjust dollar amounts in the SCF for inflation.

cash and financial assets that can be readily liquidated. Hacker et al. (2010) use financial assets, excluding those earmarked for retirement, plus the value of vacation homes and of real estate other than the family's home.

I take an approach similar to Kennickell and Lusardi (2005) in defining a measure of available assets or savings. This definition recognizes that families may be unable or unwilling to liquidate some financial assets, such as retirement accounts, and that families may be able to draw on a portion of non-financial assets through, for instance, a home equity line of credit. Specifically, my measure of savings includes: i) all liquid financial assets outside of retirement plans; ii) one third of equity in the families' home and other real estate; iii) one third of the value of CDs, IRAs, and defined-contribution or similar retirement accounts. I then subtract three months of debt payments, rent, property taxes, or other housing-related fees from this asset measure.

Credit market experiences and debt burdens. The final three measures of economic security are intended to provide a gauge of households' ability to borrow. The first criterion applies to families that reported that at some time in the past five years they had either: i) applied for credit but were turned down or received less credit than they had originally applied for, or; ii) considered applying for a loan but chose not to because they thought they would be turned down. Prior studies have concluded that these SCF questions about credit application decisions and outcomes indicate that a household is potentially credit constrained (Jappelli, 1990; Duca and Rosenthal, 1993). Second, I identify households that may have recently faced difficulty in meeting debt payments. This group includes families with outstanding debt who reported having fallen behind on any loan payment by two months or more in the previous year. Finally, I use the detailed information on debt and expenses in the SCF to classify families as potentially having limited ability to borrow due to a comparatively high payment-to-income ratio (PIR); specifically,

the measure applies to families with current monthly debt payments, rent, property taxes, and housing-related fees that total more than 50 percent of monthly income.[10]

3. Economic Insecurity among U.S. Households

A first glance

I begin with a descriptive analysis to provide context for the subsequent analysis as well as a sense of the behavior and quality of the vulnerability measures. It is clear, for example, that collectively these criteria yield a broad definition of economic insecurity. Combining all years of the SCF cross sections, 43 percent of households are categorized as economically vulnerable by at least one of the six measures that are available in all waves of the SCF since 1989, and about 70 percent of families meet at least one of the 12 criteria available in the 1995 survey (Table 2). But many of these families are vulnerable by only one or by a small number of measures.[11] The corresponding fractions fall to about 20 percent if families are classified as vulnerable if they meet at least one-third of the criteria (i.e., at least two of the 1989–2007 criteria or at least three of the 1995–2007 criteria). The shares—which correspond to the headcount ratio in poverty analyses—are about seven percent for a cutoff equal to half of the measures.

The estimated trend, shown in the final column of Table 1, is negative and significant for four of the six headcount ratios. The trends are likewise negative for over half of the individual indicators. Thus, at least these initial measures of economic insecurity do not appear to support the popular perception that economic insecurity has increased in the last decade or so.

One simple gauge of whether the measures I construct are reasonable indicators of economic security is to compare their 2007 and 2009 levels, since we would expect sharp increases in them

[10] This payment-to-income ratio differs from that used to classify households as having high debt payments in Bucks et al. (2009), which uses a threshold of 40 percent of income but do not consider rent, property taxes, and housing-related fees.

[11] Appendix Table 1 illustrates the association between the indicators.

over this period. Indeed, the individual indicators show that the recent financial crisis and subsequent recession on led to declines in families' economic security by all measures except the share with below-poverty income and the share with high required debt payments relative to income. Many of the measures were higher in 2009 than in any other SCF since 1989.

The SCF measures vary in the extent to which they align with estimates of similar concepts from other sources. Shifts in the two measures of unemployment risk, for instance, tend to track movements in average U.S. unemployment rates for the prior year and the following year, respectively. Although, it is difficult to compare the household-level rates of health insurance coverage in the SCF to individual-level estimates, the series are broadly similar; both show declines in 2001 and subsequent increases, although the SCF series shows greater year-to-year variation. The estimated share of SCF families with below-poverty incomes over the period, however, does not align with poverty estimates from the CPS.[12]

A series of studies of income volatility, beginning with Gottschalk and Moffitt (1994), has informed much of our understanding of economic security.[13] Studies of the volatility of family income have typically found that it increased over the 1990s and into the early 2000s (Dynan, Elmendorf and Sichel, 2008; Gosselin and Zimmerman, 2008; Nichols and Zimmerman, 2008).[14] Against this backdrop, it is interesting to note that the SCF-based volatility measure shows a slight downward trend since 1995. This may reflect the fact that the SCF variable—a qualitative, self-reported indicator of earnings predictability—is quite different than the measures of year-to-year changes in the dollar value earnings examined in prior studies.

[12] See DeNavas-Walt, Proctor and Smith (2011) for CPS estimates of poverty rates (Table B-3) and health insurance coverage (Table C-1).

[13] Dynan, Elmendorf and Sichel (2008) provide a concise overview of the literature examining trends in the volatility of individual earnings and of household income.

[14] Dahl, Deleire, and Schwabish (2011) reach a similar conclusion based on survey data from the SIPP but conclude that the trend appears to be driven by imputed earnings in the SIPP. Trends for those without imputed earnings and trends calculated using linked administrative earnings records suggest that household income variability has been relatively steady in recent decades.

Although several of the trends shown in Table 2 are statistically significant, the variation in the vulnerability measures across years is typically much smaller than the variation across demographic groups (Table 3). The fraction of families that meet at least one of the criteria available for the full 1989–2007 period falls from 54.3 percent for families headed by person younger than 35 to 41.1 percent for families whose head is aged 35–49. By comparison, the difference in the corresponding fraction across the seven years of the SCF is about one-third as large (4.2 percentage points).

As this example suggests, economic security tends to increase with age. The largest differences in the headcount ratios are for the youngest households compared to those in the next-oldest age category, and differences between the middle two age groups tend to be smaller. Based on this metric, retirement-age households are the least vulnerable despite their poorer self-reported health and comparatively high incidence of below-poverty income (Appendix Table 2). The relative security of older households stems from their reduced economic risks: higher rates of health insurance coverage, surely due in part to Medicare; low unemployment, driven by the fact that many of them are retired from the labor force; and reduced income volatility, which likely reflects of the role of income from Social Security and annuity-type pension.

The differences in economic insecurity are even starker by income. Households in the bottom quartile of the income distribution are much more likely than families with higher incomes to be classified as vulnerable. The extent to which economic vulnerability is concentrated among the lowest-income group increases as one considers greater levels of vulnerability as reflected by higher threshold values for the minimum number of criteria.

On the whole, economic security tends to improve with education as well. The headcount ratios in Table 3 decline across the education groups. By a number of individual criteria, though, families headed by a person who attended college but who did not obtain a degree are more

vulnerable than families with a head who did pursue education beyond high school (Appendix Table 2). Families in this some-college group are the most likely to have experienced a drop in income in the preceding year. They also may not be able to borrow as readily as other families: they are the most likely to have missed a debt payment by sixty days or more in the past year and to have been turned down for credit or to have not applied because they expected to be turned down for the loan.

A composite measure of economic vulnerability

It can be difficult to draw strong conclusions from a broad set of measures. Although the headcount ratio like those presented in Table 2 and Table 3 is one simple summary metric, it is insensitive to changes in vulnerability within a household that is well above or below the threshold. The headcount ratio would be unchanged, for example, if families had to meet three criteria to be classified as vulnerable, and a family that was vulnerable on four dimensions became vulnerable on a fifth.

The adjusted headcount ratio of Alkire and Foster (2011a) does not suffer from this drawback. In its simplest form, the adjusted headcount ratio in this context is the product of: i) the headcount ratio for a given threshold of vulnerability criteria; and ii) the average number of vulnerability criteria that a household meets, given that the household meets at least the threshold number.

The index can also be seen as the mean of a censored matrix, as illustrated below for a population of five families whose economic security is measured along three dimensions: insurance status, poverty, and having been turned down for credit. For each family (row) and vulnerability dimension (column), the elements of the vulnerability matrix, shown on the left,

indicates a vulnerability suffered by each family (identified by a value of one).[15] For a given threshold value *k* for the headcount ratio, all the entries corresponding to vulnerabilities suffered by families that do not meet the threshold are set to zero. This example below uses a threshold value of two, which implies only the second household is classified as economically vulnerable. Censoring the vulnerabilities in this way yields the matrix on the right. The Alkire-Foster index is simply the average of the values in this matrix, or 2/15 in this example. As noted, this is also the fraction of households that are vulnerable (1/5) multiplied by the fraction of all criteria that the vulnerable household satisfies (2/3).

Family	Uninsured	Poor	Denied Credit
1	0	0	1
2	1	0	1
3	0	0	0
4	0	1	0
5	1	0	0

Vulnerability matrix

Threshold *k* of insecurity counts = 2

Family	Uninsured	Poor	Denied Credit
1	0	0	~~1~~0
2	1	0	1
3	0	0	0
4	0	~~1~~0	0
5	~~1~~0	0	0

Censored vulnerability matrix
Adj. Headcount = 2/15 = .133

More generally, given a set of measures of insecurity, calculating the single-index value requires three sets of choices. The first are the cutoffs used to define a household as vulnerable along each dimension; for example, this paper uses a threshold of 50 percent to distinguish families as having a high payment-to-income ratio. The second choice is the vector of weights to apply to each criterion when summing vulnerability criteria for a given household. Third, one must select the number of dimensions, *k*, that a household must satisfy to be considered vulnerable.

I explore the sensitivity of results to alternative choices of *k* and to alternative weighting schemes. A variety of weighting schemes have been applied in analyses of multidimensional

[15] See Alkire and Foster (2011a, 2011b) and Alkire and Santos (2010) for additional details of the construction of the index.

poverty. As Decanq and Lugo (2010) argue, the choice of weights is important both because it can affect substantive conclusions and because it reflects assumptions about the relative importance and trade-offs between different dimensions of well-being. The first set of weights I use are "uniform" and give a weight of one to all dimensions. The second, "nested" set of weights each of the four categories of vulnerabilities. For example, for the 12 measures analyzed for the 1995–2007 period, the low precautionary savings indicator is assigned a weight of three, since it is the only measure of asset/savings adequacy, whereas each of the six economic risks is assigned a weight of one half, and the two income adequacy measures have a weight of 1.5.

The final two sets of weights I consider take advantage of the longitudinal information in the 2007–09 SCF panel data, and each of these assigns greater weight to those dimensions that were more highly correlated with sharp declines in the families' finances over this period. The first set of weights is based on the probability that a family either filed for bankruptcy or lost their home to foreclosure between 2007 and 2009. Overall, three percent of families meet this criterion. I then estimate the share of families that filed for bankruptcy or were foreclosed upon for the sets of families that met a given vulnerability criterion in 2007. For example, a slightly higher fraction, 3.8 percent, of families that were uninsured in 2007 filed faced bankruptcy or foreclosure over the period covered by the SCF panel (Appendix Table 3). The most highly correlated vulnerability was late payments; 13.1 percent of families that reported in 2007 that they had missed a debt payment by two months or more subsequently filed for bankruptcy or were foreclosed upon. This estimated percentage is the initial weight, and all weights are then rescaled to sum to approximately the number of dimensions.

The second set of SCF-panel based weights are constructed similarly and are proportional to the likelihood that a family that was vulnerable on a given dimension in 2007 experienced an increase in its leverage ratio (the ratio of total debt to total assets) of greater than 25 percent

between 2007 and 2009. Overall, 17.7 percent of households experienced an increase in their leverage ratio of this magnitude over the two-year period.

The Alkire-Foster adjusted headcount ratios in each year for different threshold values are presented in Table 4 and plotted in Figure 1. The series follow roughly similar patterns, with differing values of the threshold serving largely to shift the level of the index, while leaving the time-series variation largely unchanged. The time series do differ slightly between the index values based on the six vulnerability measures available over the full sample period relative to the twelve available beginning in 1995. In particular, there is a noticeable decline in 1998 for the 1995–2007 indexes, but the most marked drop occurs in 2001 for those beginning in 1989.

A second difference between these sets of indexes is that the index based on twelve criteria shows a statistically significant downward trend, while there is no significant trend in the 1989–2007 indexes.[16] The difference in the findings for the two time periods appears to stem from the difference in the periods, not in the set of variables used to measure vulnerability, since the estimated 1995–2007 trend based on the abbreviated set of measures, likewise, is generally significant. The age and education of household heads rose over this time period (Figures 3 and 4). Both of these would tend to reduce vulnerability since. After controlling for the changing age distribution, the trends are no longer significant for four of the six 1995–2007 trends. I control for age by including a quadratic in the age of the household head, given the steep declines in the adjusted headcount ratio with age, as illustrated in Figure 5. None of the trends over the shorter time period are significant after controlling for both age and education (and in fact the trend over the 1989–2007 period for a threshold of one criterion is positive and significant).

The results are broadly similar for different choices of weights, except for the weights based on the probability of a family filing for bankruptcy or losing their home in foreclosure. Using

[16] These trends are shown in the columns labeled "None" in Table 4, denoting no controls for demographic changes.

these weights, the adjusted headcount ratio drops in 1992 and attains its highest level in 2004, neither of which is the case for the other sets of weights (Table 5 and Figure 2). In contrast to the other choices of weights, the trend over the 1995–2007 period is also not significant before controlling for changes in the distributions of age and education. To understand why the weights based on subsequent bankruptcy and foreclosure produce different results, note that these weights depart most substantially from the uniform weights, and they assign disproportionate weight to the least common on the vulnerability measures—late payments. The movements of the adjusted headcount ratio using these weights mirrors to some extent the time series of the late-payments measure, which likewise peaks in 2004 and reaches its lowest point in 1992. A final difference is that, as shown in the final column of Table 5, the 1995–2007 time trend for the smaller set of measures remains significant even with the addition of these controls when nested weights are used.

Table 6 examines the time trends in greater depth by looking within demographic subgroups. This analysis suggests that the overall declines in measured vulnerability might be attributed to declines in vulnerability for households in the two oldest age categories and for families in the bottom quartile of the income distribution. A more precise determination of which vulnerability dimension underlie these clearer trends is the focus of ongoing analysis. As was the case for the analysis of the overall indexes, the trends for the index based on weights proportional to the correlation between 2007 vulnerability measures and subsequent bankruptcy or foreclosure are often not significant for groups that exhibit statistical significant trends for all other sets of weights.

4. Conclusions

This paper takes a comprehensive approach to measuring vulnerability using data from the 1989–2007 SCF cross-section and 2007–2009 SCF panel. The analysis reveals that economic security increases with age, income, and education. Economic security also likely declined sharply in the wake of the recent recession, as nearly all vulnerability measures that I examine rose sharply between 2007 and 2009.

Contrary to the perception that economic insecurity has risen over this period, the analysis by and large finds no evidence of such an increase. Instead, if anything, the measures of economic vulnerability examined here are more likely to point to decreases in U.S. families' vulnerability, though often these apparent declines could be explained by increases in education and aging of the household population.

These results contrast to the findings of Osberg and Sharpe (2011) and Hacker et al. (2010) who take conceptually similar approaches to defining vulnerability and conclude that vulnerability has generally increased over the past two decades. A fuller exploration of the differences between those studies and this paper is ongoing. One difference is that this study largely uses ordinal variables that are translated into binary indicators, which may result in loss of key variation. One point where this may clearly be the case is in the comparison to Osberg and Sharpe (2011). The declines in their measure of economic security for the United States appears to reflect in large part an marked increase health care expenditures as a fraction of disposable income. This information would not be captured by my comparatively blunt measures of medical risk. On the other hand, this paper arguably examines a more comprehensive set of measures than those considered in either Osberg and Sharpe (2011) or Hacker et al. (2010).

References

Alkire, Sabina (2011). "Multidimensional Poverty and its Discontents," Oxford Poverty and Human Development Initiative, Working Paper No. 46, University of Oxford.

Alkire, Sabina, & James Foster (2011a). "Counting and Multidimensional Poverty Measurement," *Journal of Public Economics*, 95: pp. 476–87.

Alkire, Sabina, and James Foster. (2011b). "Understandings and Misunderstandings of Multidimensional Poverty Measurement." *The Journal of Economic Inequality*, 9: pp. 289-314.

Alkire, Sabina, & Maria Emma Santos (2010). "Acute Multidimensional Poverty: A New Index for Developing Countries," Oxford Poverty and Human Development Initiative, Working Paper No. 38, University of Oxford.

Brandolini, Andrea, Silvia Magri, Timothy M. Smeeding (2010). "Asset-Based Measurement of Poverty." *Journal of Policy Analysis and Management*, 29(2): pp. 267–284.

Bricker, Jesse, Brian Bucks, Arthur Kennickell, Traci Mach, and Kevin Moore (2011). "Surveying the Aftermath of the Storm: Changes in Family Finances from 2007 to 2009," Finance and Economics Discussion Series 2011–17. Washington: Board of Governors of the Federal Reserve System.

Bucks, Brian K., Arthur B. Kennickell, Traci L. Mach, and Kevin B. Moore (2009). "Changes in U.S. Family Finances from 2004 to 2007: Evidence from the Survey of Consumer Finances." *Federal Reserve Bulletin*: pp. A1–A55.

Dahl, Molly, Thomas DeLeire and Jonathan A. Schwabish (2011). "Estimates of Year-to-Year Volatility in Workers Earnings and In Household Incomes from Administrative, Survey, and Matched Data." *Journal of Human Resources,* 46(4): pp. 750–774.

DeNavas-Walth, Carmen, Bernadette D. Proctor, and Jessica C. Smith, U.S. Census Bureau, Current Population Reports, P60-239, *Income, Poverty and Health Insurance Coverage in the United States: 2010*.

Decancq, Koen and María Ana Lugo (forthcoming) "Weights in Multidimensional Indices of Well-Being: An Overview" *Econometric Reviews*

Deutsch, Joseph and Jacques Silber (2005). "Measuring Multidimensional Poverty: An Empirical Comparison of Various Approaches." *Review of Income and Wealth*, 51(1): pp. 145–174.

Duca, John V. and Stuart S. Rosenthal (1993). "Borrowing Constraints, Household Debt, and Racial Discrimination in Loan Markets," *Journal of Financial Intermediation* 3(1), pp.77-103.

Dynan, Karen E., Douglas W. Elmendorf, and Daniel E. Sichel. “The Evolution of Household Income Volatility.” Finance and Economics Discussion Series 2007–61. Washington: Board of Governors of the Federal Reserve System.

Gosselin, Peter and Seth Zimmerman (2008). “Trends in Income Volatility and Risk, 1970–2004,” Urban Institute Working Paper.

Gottschalk, Peter and Robert A. Moffitt. 1994. “The Growth of Earnings Instability in the U.S. Labor Market.” Brookings Papers on Economic Activity 1994(2): 217-272.

Hacker, Jacob S. Gregory A. Huber, Philipp Rehm, Mark Schlesinger, and Rob Valletta (2010). “The Economic Security Index: A New Measure of the Economic Security of American Workers and Their Families,” mimeo Rockefeller Foundation.

Haveman, Robert and Edward N. Wolff (2004). “The Concept and Measurement of Asset Poverty: Levels, Trends, and Composition for the U.S., 1983–2001.” *Journal of Economic Inequality*, 2: pp. 145–169.

Jappelli, Tulio (1990). “Who is Credit-Constrained in the U.S. Economy?” *Quarterly Journal of Economics*, 105(420): pp. 219–234.

Kennickell, Arthur (1998). “List Sample Design for the 1998 Survey of Consumer Finances.” mimeo, Federal Reserve Board.

——— (2001). “Modeling Wealth with Multiple Observations of Income: Redesign of the Sample for the 2001 Survey of Consumer Finances.” mimeo, Federal Reserve Board.

———(2005). “Darkness Made Visible: Field Management and Nonresponse in the 2004 SCF.” mimeo, Federal Reserve Board.

Kennickell, Arthur and Annamaria Lusardi (2005). “Disentangling the Importance of the Precautionary Savings Motive.” CFS working paper No. 2006/15.

Nichols, Austin and Seth Zimmerman (2008). “Measuring Trends in Income Variability.” Urban Institute working paper.

Osberg, Lars (1998) “Economic Insecurity.” Social Policy Research Centre, Discussion Paper No. 88.

Osberg, Lars and Andrew Sharpe (2002). “An Index of Economic Well-Being for Selected OECD Countries.” *Review of Income and Wealth*, 48(3): pp. 291–316.

Osberg, Lars and Andrew Sharpe (2011). “Moving from a GDP-Based to a Well-Being Based Metric of Economic Performance and Social Progress: Results from the Index of Economic Well-Being for OECD Countries, 1980–2009,” CSLS Research Report 2011-12.

Figure 1. Adjusted headcount ratios by year for alternative thresholds, 1989–2007 SCF

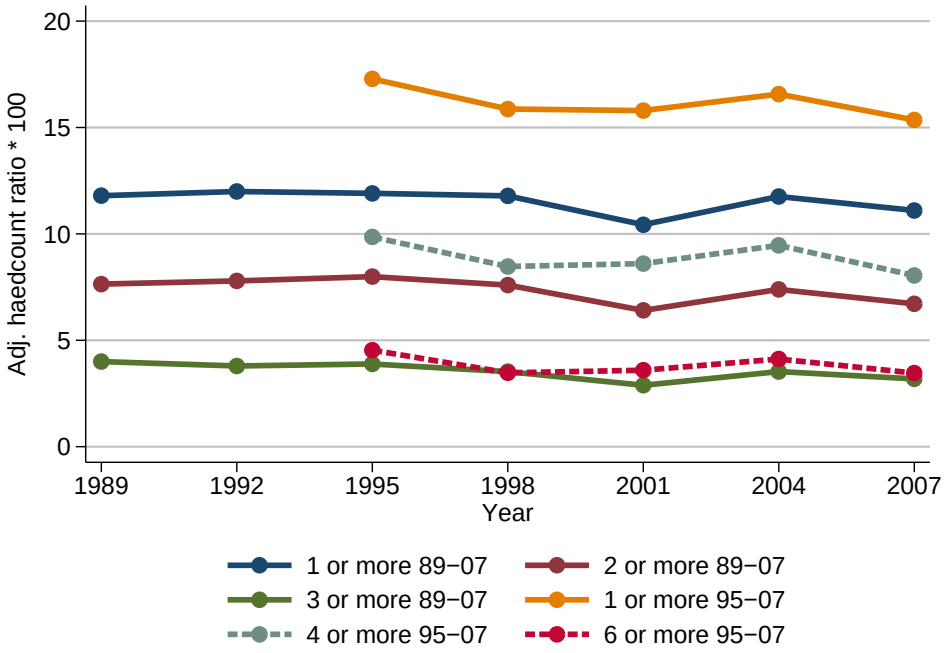

Figure 2. Adjusted headcount ratios by year for alternative weights, 1989–2007 SCF

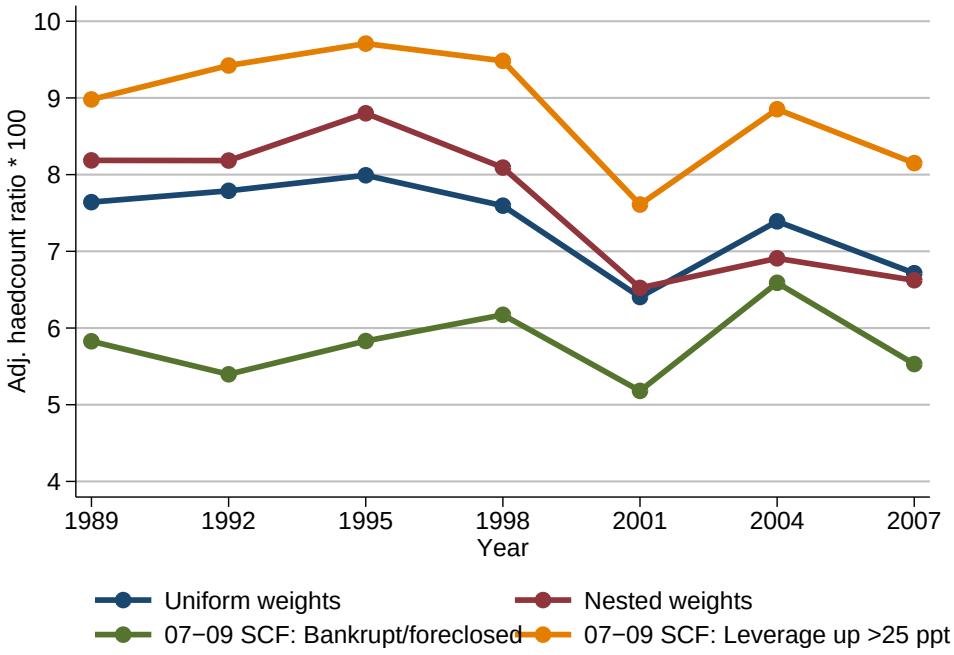

Figure 3. Shares of households by age range, 1989–2007 SCF

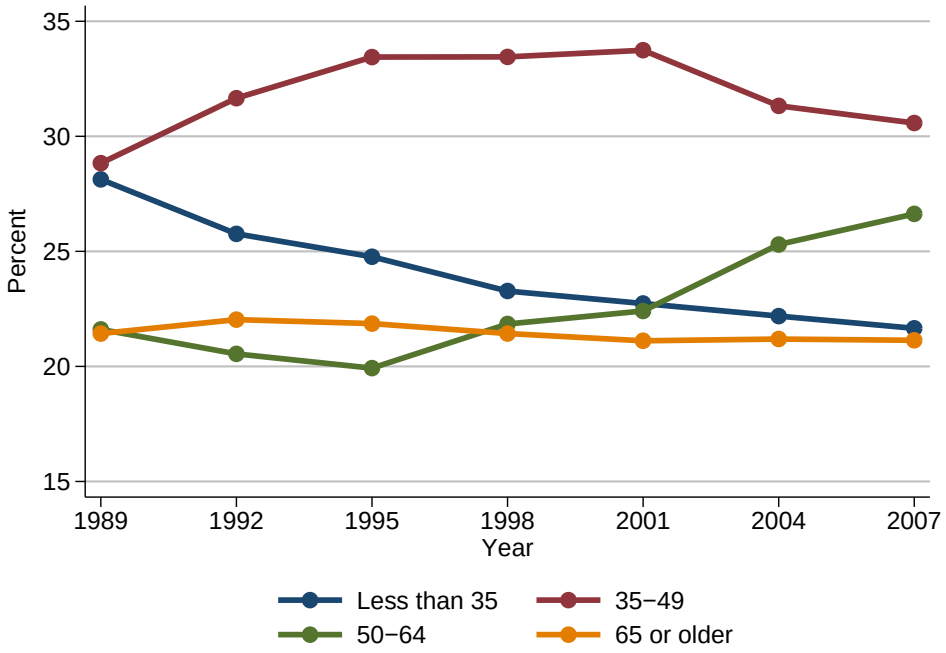

Figure 4. Shares of households by education of household head, 1989–2007 SCF

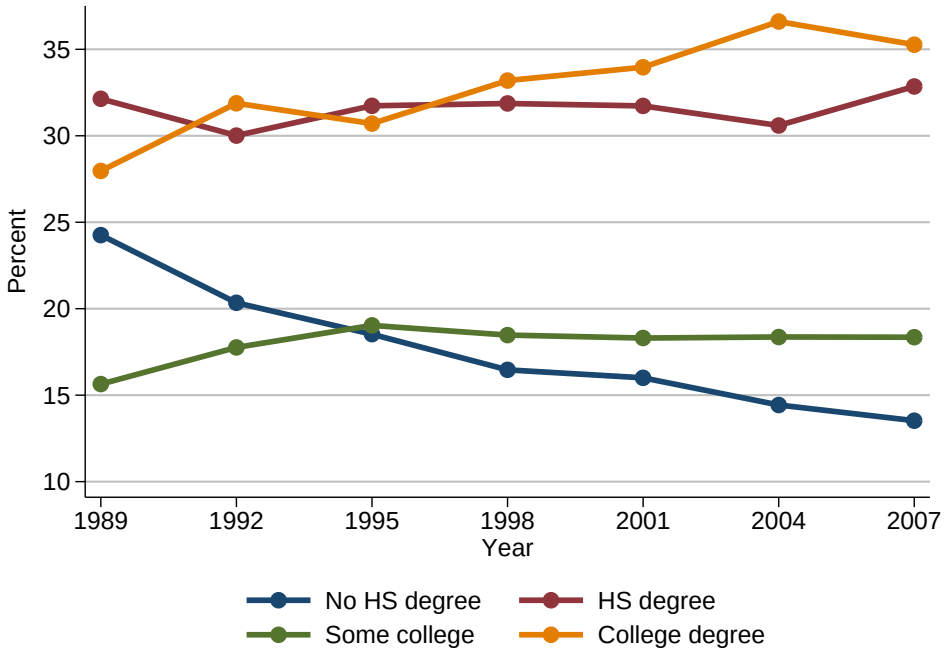

Figure 5. Adjusted headcount ratios by age of household head, 1989–2007 SCF

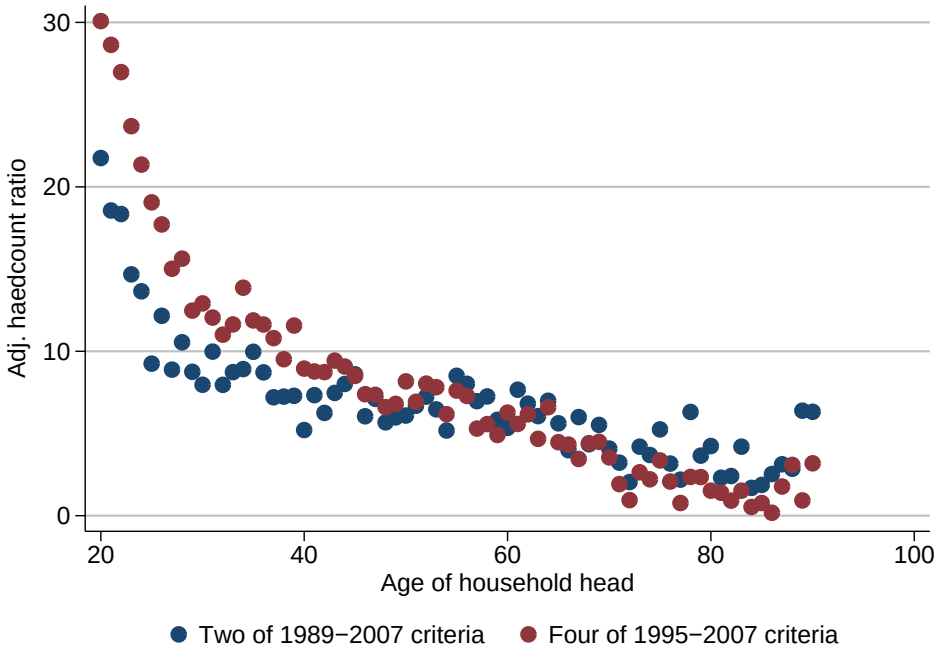

Table 1. Definitions of SCF-based measures of economic insecurity

Category Measure	Availability	Definition (all variables are dichotomous)
Economic risks		
Uninsured	1989–2009	1=Any households member not covered by health insurance
Poor health[a]	1989–2007	1=Either head or spouse/partner [if applicable] self-reported health was "poor"
Recent unemployment spell	1989–2009	1=Head or spouse/partner [if applicable] unemployed at time of interview or unemployment/worker's compensation income received last year
High prospective unemployment risk	1995–2009	1=average (head's estimated prospective unemployment rate, spouse/partner's estimated prospective unemployment rate [if applicable]) > 7 percent. Rates based on CPS regressions for 12-month period starting with September of SCF survey year.
Income drop last year	1992–2009	1=Income last year unusually low
Income volatility	1995–2009	1=Does not usually have a good idea of next year's income
Income adequacy		
Spending > Income	1992–2009	1=Spending (net of investments and purchase of durables) exceeded income last year
Income < poverty level	1989–2009	1=Household income (excl. capital gains and government housing (or similar) subsidies) below Census poverty threshold (varies with family size and structure)
Assets/savings adequacy		
Low precautionary savings	1995–2009	1=[(Liquid financial assets, excl. retirement plans) + 1/3*(home equity + other real estate equity + CDs + IRAs + defined-contribution and similar accounts)] – (3 mos. debt payments + rent and other housing expenses) < reported desired precautionary savings
Credit market experiences and debt burden		
Credit constrained[b]	1995–2007	1=Applied for credit in past 5 years and turned down or received less credit or considered applying for credit but did not because thought would be turned down
Late payments	1989–2009	1=Missed any debt payment by two months or more in the past year (asked of families with any debt at the time of the interview)
High payment-to-income ratio (PIR)	1989–2009	1=Monthly debt payments + rent, property taxes and housing-related fees > 1/2 * monthly income

Notes: [a] Criterion added after initial analysis of restricted-access data for 2007–09 SCF panel and will be added. [b] Similar questions were asked in 1989 and 1992 SCF surveys but are not comparable due to changes in question sequence in 1995 SCF; similar questions were also asked in 2009 SCF follow-up survey but are not comparable because they referred to credit experiences in the prior 2 years.

Table 2. Shares of households classified as economically insecure, 1989–2007 SCF cross-sections and 2007–09 SCF panel

Percent

Criteria	Headcount ratio: 1989/95–2007	SCF cross-section survey year							2009 SCF follow-up	Time trend: 1989/95–07
		1989	1992	1995	1998	2001	2004	2007		
Any of 89–07 criteria	43.0	43.0	44.0	42.8	44.0	40.1	44.3	42.8	–	-0.03
2 or more	17.9	18.1	18.8	19.4	18.8	16.0	18.2	16.5	–	-0.12 *
3 or more	6.5	7.2	6.8	7.0	6.6	5.4	6.6	5.9	–	-0.07 *
Any of 95–07 criteria	70.1			72.3	70.1	69.7	70.1	68.6	–	-0.25 **
4 or more	20.6			22.5	19.9	20.2	21.8	18.7	–	-0.19 **
6 or more	6.9			8.0	6.3	6.5	7.4	6.2	–	-0.08
Individual criteria										
Uninsured	19.2	19.4	19.9	18.0	19.1	17.2	20.6	20.0	21.2	0.03
Poor health	8.2	9.6	8.7	8.1	6.9	7.8	8.8	7.8	–[a]	-0.06 *
Recent unemp. spell	8.8	9.6	10.6	9.4	8.3	7.1	9.2	7.6	13.0	-0.13 **
High prosp. unemp. risk	14.5			16.9	8.9	17.9	15.1	13.6	51.0	-0.01
Income drop last year	17.5		22.8	17.6	16.1	14.7	19.8	14.5	21.4	-0.34 **
Income volatility	29.0			31.2	28.2	29.1	29.6	27.2	27.6	-0.22 *
Spending>Income	15.0		14.8	15.7	14.2	14.5	15.4	15.2	16.5	0.01
Income<poverty level	13.6	15.1	15.1	16.2	14.8	11.9	11.8	11.6	10.3	-0.26 **
Low precaut. savings	28.3			31.3	30.0	29.1	26.0	25.9	29.6	-0.50 **
Credit constrained	22.2			23.2	22.3	21.7	22.4	21.2	–[b]	-0.13 *
Late payments	5.6	5.3	4.4	5.3	6.0	5.3	6.9	5.5	7.8	0.07 **
High payments/income	13.7	11.9	13.2	14.4	15.7	13.3	13.4	14.2	13.4	0.07 *

Notes: [a] Criterion added after initial analysis of restricted-access data for 2007–09 SCF panel and will be added. [b] Similar questions were asked in 2009 SCF follow-up survey but are not comparable because they referred to credit experiences in the prior 2 years. Standard errors are based on 999 bootstrap replicates drawn in accordance with the SCF sample design.

Table 3. Shares of households classified as economically insecure by selected demographic characteristics, 1989–2007 SCF cross-sections

Headcount ratios (percent)

Criteria	*Age of head (years)*				*Percentile of income*				*Education of head*			
	Less than 35	35–49	50–64	65 or older	Less than 25	25–49.9	50–74.9	75–100	No HS degree	HS degree	Some college	College degree
Any of 89–07 criteria	54.3	41.1	40.3	36.2	78.6	47.6	30.7	16.5	67.1	46.7	43.5	26.5
2 or more	26.6	17.4	16.1	10.9	49.3	15.1	6.5	1.8	33.8	20.0	17.1	7.9
3 or more	10.2	6.7	6.1	2.4	21.8	3.4	1.0	0.2	13.7	7.1	5.7	2.4
Any of 95–07 criteria	84.2	69.2	65.6	61.3	91.3	79.5	65.4	44.8	88.9	74.5	73.5	55.5
4 or more	37.5	21.2	15.7	6.7	48.8	23.0	9.1	2.1	40.5	23.5	21.6	8.2
6 or more	14.5	7.0	4.5	1.1	21.0	5.4	1.1	0.3	15.8	8.1	6.5	1.8

Table 4. Multidimensional indexes of economic insecurity for selected thresholds, 1989–2007 SCF surveys

All estimates multiplied by 100

Threshold of insecurity counts *k*	Headcount ratio *H*	Adjusted headcount ratio							1989–2007 trend			1995–2007 trend		
									Additional controls			Additional controls		
		1989	1992	1995	1998	2001	2004	2007	None	Age	Age, Educ.	None	Age-adj.	Age, Educ.
1989–2007 criteria														
1 criterion	43.0	11.8	12.0	11.9	11.8	10.4	11.8	11.1	-0.05	-0.03	0.05*	-0.05*	-0.03	0.03
2 criteria	17.9	7.6	7.8	8.0	7.6	6.4	7.4	6.7	-0.06	-0.04	0.02	-0.09**	-0.07*	-0.02
3 criteria	6.5	4.0	3.8	3.9	3.5	2.9	3.5	3.2	-0.05	-0.04	0.003	-0.04*	-0.03	-0.002
1995–2007 criteria														
1 criterion	70.1			17.3	15.9	15.8	16.6	15.4				-0.10**	-0.06*	0.02
4 criteria	20.6			9.9	8.5	8.6	9.5	8.0				-0.09**	-0.04	0.03
6 criteria	6.9			4.5	3.5	3.6	4.1	3.5				-0.05*	-0.02	0.01

Notes: Dimensions weighted using uniform weights. Standard errors are based on 999 bootstrap replicates drawn in accordance with the SCF sample design. ** significant at 1 percent level. * significant at 5 percent level

Table 5. Multidimensional indexes of economic insecurity and trends for alternative weights, 1989–2007 SCF surveys

All estimates multiplied by 100

Dimension-specific weights	Headcount ratio *H*	Adjusted headcount ratio							1989–2007 trend			1995–2007 trend		
									Additional controls			Additional controls		
		1989	1992	1995	1998	2001	2004	2007	None	Age	Age, Educ.	None	Age	Age, Educ.
Two of 1989–07 criteria														
Uniform	17.9	7.6	7.8	8.0	7.6	6.4	7.4	6.7	-0.06	-0.04	0.02	-0.09	-0.07	-0.02
Nested	15.5	8.2	8.2	8.8	8.1	6.5	6.9	6.6	-0.11	-0.10	-0.02	-0.18**	-0.16**	-0.10**
2007–09 SCF weights														
Bankrupt or forecl.	9.3	5.8	5.4	5.8	6.2	5.2	6.6	5.5	0.01	0.03	0.06**	-0.01	0.02	0.05
Leverage increase > 25 ppt	15.4	9.0	9.4	9.7	9.5	7.6	8.9	8.2	-0.07	-0.04	0.03	-0.12**	-0.08*	-0.03
Four of 1995–07 criteria														
Uniform	20.6			9.9	8.5	8.6	9.5	8.0				-0.09**	-0.04	0.03
Nested	25.8			13.4	12.4	12.3	12.0	11.2				-0.16**	-0.11**	-0.02
2007–09 SCF weights														
Bankrupt or forecl.	15.3			8.4	7.7	7.5	8.6	7.2				-0.05	-0.01	0.04
Leverage increase > 25 ppt	19.3			10.9	9.5	9.5	10.5	9.0				-0.09**	-0.04	0.04

Notes: Standard errors are based on 999 bootstrap replicates drawn in accordance with the SCF sample design. ** significant at 1 percent level. * significant at 5 percent level

Table 6. Trends in economic insecurity by demographic characteristics and alternative weights, 1989–2007 SCF surveys

All estimates multiplied by 100

Dimension-specific weights	*Age of head (years)*				*Percentile of income*				*Education of head*			
	Less than 35	35–49	50–64	65 or older	Less than 25	25–49.9	50–74.9	75–100	No HS degree	HS degree	Some college	College degree
Two of 1989–07 criteria												
Uniform	-0.01	-0.02	-0.09*	-0.09**	-0.29**	-0.02	0.002	0.003	0.03	-0.04	0.02	-0.01
Nested	-0.06	-0.05	-0.13**	-0.18**	-0.51**	-0.04	0.01	0.01	-0.01	-0.11**	-0.03	-0.005
2007–09 SCF weights												
Bankrupt or forecl.	0.02	0.04	0.02	0.01	-0.13*	0.10*	0.06*	-0.02	0.06	-0.03	0.21**	-0.02
Leverage increase > 25 ppt	-0.02	-0.02	-0.05	-0.10**	-0.35**	0.004	0.003	0.01	0.07	-0.08	0.03	-0.02
Four of 1995–07 criteria												
Uniform	0.003	0.000[a]	-0.16**	-0.10**	-0.29**	-0.01	-0.10**	0.004	0.19*	-0.13*	-0.01	-0.04
Nested	-0.06	-0.04	-0.21**	-0.21**	-0.40**	-0.08	-0.19**	-0.03	0.04	-0.16*	-0.03	-0.13**
2007–09 SCF weights												
Bankrupt or forecl.	-0.03	0.04	-0.09	-0.04	-0.15*	-0.003	-0.06	-0.02	0.10	-0.08	0.06	-0.04
Leverage increase > 25 ppt	0.01	-0.01	-0.17**	-0.08*	-0.30**	0.000[a]	-0.12**	0.01	0.23*	-0.14*	-0.005	-0.06*

Notes: Standard errors are based on 999 bootstrap replicates drawn in accordance with the SCF sample design. [a] Absolute value<.0005. ** significant at 1 percent level.
* significant at 5 percent level

Appendix Table 1. Associations between criteria of economic insecurity, 1989–2007 SCF surveys

Percent

Criterion	Percent of families in row meeting column criterion											
	Uninsured	Poor health	Recent unemp. spell	High prosp. unemp. risk	Income drop	Income volatility	Spending > income	Income< pov. line	Low precaut. savings	Credit constrained	Late payments	High PIR
All households	19.2	8.2	8.8	14.5	17.5	29.0	15.0	13.6	28.3	22.2	5.6	13.7
Uninsured	—	10.3	17.3	33.3	28.0	47.3	20.9	26.9	51.6	37.8	11.1	24.8
Poor health	24.0	—	8.6	11.8	20.8	32.8	23.6	30.3	40.8	24.1	8.8	18.0
Recent unemp. spell	38.0	8.1	—	26.7	38.9	45.6	24.8	23.1	42.5	37.8	12.0	19.8
High prospective unemp. risk[a]	43.9	6.4	15.3	—	24.8	52.7	20.1	29.2	58.0	42.7	9.5	25.3
Income drop last year[b]	30.7	9.6	19.3	21.7	—	47.8	24.4	27.9	40.0	34.3	10.8	30.6
Income volatility[c]	31.0	8.9	13.0	26.3	27.2	—	20.4	23.9	41.7	31.1	8.5	21.8
Spending > income[b]	26.7	12.6	14.3	19.3	28.5	39.4	—	21.5	41.9	39.0	14.0	25.0
Income < poverty line	37.8	18.2	14.8	32.2	36.2	52.9	24.0	—	61.1	34.1	8.3	45.0
Low precautionary savings[c]	34.6	11.3	12.4	29.6	23.3	42.7	22.2	28.3	—	40.4	10.7	25.5
Credit constrained[d]	32.4	8.6	14.2	27.8	25.5	40.8	26.4	20.2	51.7	—	16.8	22.1
Late payments	38.2	13.0	18.9	23.6	33.5	42.3	37.4	20.4	52.2	63.9	—	26.2
High payments / income	34.7	10.7	12.6	25.8	38.1	44.7	26.7	44.7	51.0	34.6	10.6	—

Notes: [a] Not estimated for 1989 and 1992 due to change in CPS data in 1995. [b] Not asked in 1989 SCF. [c] Not asked in 1989 or 1992 SCF surveys. [d] Similar questions were asked in 1989 and 1992 SCF surveys but are not comparable due to changes in question sequence in 1995 SCF.

Appendix Table 2. Shares of households classified as economically insecure overall and on individual criteria by selected demographic characteristics, 1989–2007 SCF cross-sections

Percent

Criteria	*Age of head (years)*				*Percentile of income*				*Education of head*			
	Less than 35	35–49	50–64	65 or older	Less than 25	25–49.9	50–74.9	75–100	No HS degree	HS degree	Some college	College degree
Any of 89–07 criteria	54.3	41.1	40.3	36.2	78.6	47.6	30.7	16.5	67.1	46.7	43.5	26.5
2 or more	26.6	17.4	16.1	10.9	49.3	15.1	6.5	1.8	33.8	20.0	17.1	7.9
3 or more	10.2	6.7	6.1	2.4	21.8	3.4	1.0	0.2	13.7	7.1	5.7	2.4
Any of 95–07 criteria	84.2	69.2	65.6	61.3	91.3	79.5	65.4	44.8	88.9	74.5	73.5	55.5
4 or more	37.5	21.2	15.7	6.7	48.8	23.0	9.1	2.1	40.5	23.5	21.6	8.2
6 or more	14.5	7.0	4.5	1.1	21.0	5.4	1.1	0.3	15.8	8.1	6.5	1.8
Individual criteria												
Uninsured	28.8	21.0	18.0	7.0	31.7	25.6	13.7	6.3	31.7	22.4	18.9	9.7
Poor health	2.5	4.6	11.2	16.7	17.4	8.5	4.7	2.5	20.2	8.0	6.1	3.3
Recent unemp. spell	13.2	10.9	8.2	1.2	11.0	9.7	8.7	5.7	10.6	10.9	8.9	5.6
High prosp. unemp. risk[a]	34.1	11.0	8.4	5.2	26.3	19.4	9.8	2.6	43.3	16.8	11.2	0.8
Income drop last year[b]	23.4	18.9	17.1	9.2	29.1	19.6	13.1	8.5	18.4	18.0	20.0	15.0
Income volatility[c]	38.8	29.4	26.5	20.8	44.5	31.3	22.5	18.2	42.0	31.8	29.5	20.2
Spending>Income[b]	15.4	16.8	14.3	12.5	22.2	17.2	12.4	8.4	18.4	15.4	16.3	12.2
Income<poverty level	19.5	10.8	11.1	14.1	53.0	2.6	0.2	0.2	32.6	14.4	10.9	4.4
Low precautionary savings[c]	49.2	27.3	18.7	18.1	52.3	35.5	19.7	6.6	45.5	32.0	30.1	16.1
Credit constrained	38.4	26.5	15.9	5.0	28.2	28.7	21.6	10.2	25.8	24.9	28.8	14.4
Late payments	8.7	6.6	4.8	1.3	7.2	7.7	5.4	2.0	5.9	6.1	7.1	4.0
High payments/income	21.0	12.9	11.3	9.5	35.8	12.5	5.5	1.9	17.3	14.3	15.5	10.4

Notes: [a] Not estimated for 1989 and 1992 due to change in CPS data in 1995. [b] Not asked in 1989 SCF. [c] Not asked in 1989 or 1992 SCF surveys. [d] Similar questions were asked in 1989 and 1992 SCF surveys but are not comparable due to changes in question sequence in 1995 SCF.

Appendix Table 3. 2007–09 SCF-based weights of insecurity dimensions

Criteria	Percent meeting row criterion: 2007 SCF	Percent of families meeting row criterion that:		Rescaled weights: 1995–2007		Rescaled weights: 1989–2007	
		Filed bankruptcy or foreclosed	Leverage increased > 25 ppt	Filed bankruptcy or foreclosed	Leverage increased > 25 ppt	Filed bankruptcy or foreclosed	Leverage increased > 25 ppt
Uninsured	20.0	3.8	27.2	0.76	1.10	0.74	1.24
Recent unemp. spell	7.6	5.0	25.2	1.00	1.02	0.98	1.15
High prosp. unemp. risk	13.6	3.3	31.5	0.65	1.28		
Income drop last year	14.5	5.2	27.5	1.03	1.12		
Income volatility	27.2	3.9	22.3	0.78	0.90		
Spending>Income	15.2	5.1	24.2	1.02	0.98		
Income<poverty level	11.6	2.5	24.8	0.49	1.00	0.48	1.13
Low precautionary savings	25.9	5.4	27.1	1.07	1.10		
Credit constrained	21.2	6.6	31.9	1.31	1.29		
Late payments	5.5	13.1	27.2	2.61	1.10	2.56	1.24
High payments/income	14.2	6.4	27.1	1.27	1.10	1.24	1.23

Notes: For comparability to other estimates, the weights are rescaled to approximately total the number of dimensions considered for the 1995–2007 period (12 dimensions) and 1989–2007 period (6 dimensions). Poor-health dimension excluded because this criterion was added after initial analysis of restricted-access data for 2007–09 SCF panel but will be added