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ABSTRACT

In 2009, the Federal Reserve Board implemented a survey of families that participated in the 2007 Survey of Consumer Finances (SCF) to gain detailed information on the effects of the recent recession on all types of households. Using data from the 2007–09 SCF panel, we highlight the variation in households' financial experiences by examining the distribution of changes in families' balance sheets. Further, we use information on changes in families' saving, investing, and spending behavior to consider the potential longer-term consequences of the current recession on households' finances and decisions.

Most families experienced a decline in wealth between 2007 and 2009, but many families saw only small changes on net, and others saw substantial increases in their wealth. This pattern of gains and losses typically holds within demographic groups. Changes in families' wealth over the period appear to reflect changes in asset values (particularly the value of homes, stocks, and businesses) rather than changes in the level of ownership of assets and debts or in the amount of debt held. On the whole, families appear more cautious in 2009 than in 2007, as most families reported greater desired buffer savings, and many expressed concern over future income and employment.

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The aggregate effects of the recent financial downturn were often starkly apparent and readily measured, but the microeconomic consequences were more difficult to gauge. To fill this gap, the Federal Reserve Board (FRB) designed and implemented in 2009 a follow-up survey of households that completed the 2007 Survey of Consumer Finances (SCF). The 2007 SCF was the most recent source of detailed information of families' finances, conducted just as the economy started to turn down, so re-interviewing participants in that survey provides a unique basis for measuring how the financial crisis affected families.

This paper provides the first look at changes in families' finances captured in the 2007–2009 SCF panel. The panel data allow us to examine how the effects of changes in the value of specific types of assets and debts and other economic disturbances played out at the household level. The data also allow us to consider the potential longer-term consequences of the financial crisis on families' decisions and expectations.

The broad contours of changes in households' assets, debts, and net worth align with changes in the corresponding aggregate measures, but the microdata available in the 2007–2009 SCF panel highlight the substantial variation in families' experiences over this two-year period. Although over 60 percent of families saw their wealth decline over the two year period, a sizable fraction of households experienced gains in wealth, and some families' financial situation changed little, at least on net, between 2007 and 2009. The shifts in wealth do not appear to be correlated in a simple way with families' characteristics: instead, the pattern of mixed losses, gains, and modest shifts in wealth across families generally holds within groups defined by demographic characteristics or by 2007 net worth or income.

On the whole, changes in net worth appear to stem from changes in asset values rather than changes in debt, though, again, the results vary across households. As might be expected, changes in the values of homes, stock and businesses equity appear to have been important determinants of changes many families' wealth. The economic experiences of families that might have been seen as financially vulnerable in 2007, by and large, did not differ dramatically from those of other families, except for families with high debt payments relative to income, who were more likely to have comparatively large declines in wealth. Finally, at least in the aggregate, households appear more cautious in 2009 than two years earlier, as most households

increased their desired level of buffer savings and many expressed concern over future income and employment.

The first section of the paper surveys macroeconomic changes over the 2007–2009 period and offers an overview of key technical aspects of the design and execution of the 2009 survey. The paper then examines in greater depth the changes in household wealth, shifts in portfolio composition, changes in net worth over selected demographic groups, the relationship between wealth changes and potential economic vulnerability, and a variety of measures that may point toward the future evolution of both the economy as a whole and the household sector in particular.

I. Background

I.a. Economic background

The 2007 to 2009 period covered by the SCF panel was a time of extraordinary economic upheaval and crisis most families had never experienced. As the field period for 2007 SCF concluded in the beginning of 2008, the economic downturn was in its early stages. In the fourth quarter of 2007, the growth in real GDP was still 2.9 percent and the unemployment rate remained relatively low at 5 percent. However, house prices, as measured by the CoreLogic national index, fell about 9 percent during 2007, and the major stock market indices that peaked in October 2007 began to trend downward. Real GDP was essentially steady for the first half of 2008 and fell by 4.0 and 6.8 percent in the third and fourth quarters, respectively. Unemployment rose to 7.4 percent by the end of 2008, and over the course of the year, house prices declined 17 percent and the Wilshire 5000 index of publicly traded equities fell 39 percent.

In the first half of 2009, the economic contraction continued as real GDP declined, unemployment continued to rise, and housing and equity prices continued to fall. However, in the second half of 2009, some aspects of the economy started to improve, with strong growth in real GDP of 5 percent in the final quarter of 2009, sizeable gains in the equity market, and a slowing of the decline in house prices. Despite these positive signs, the labor market continued to struggle as the unemployment rate rose to 10 percent by the end of 2009. The 2009 re-interviews

took place between July of 2009 and January of 2010, and despite the signs of the nascent recovery, the economic downturn was likely still very present for many families.

I.b. SCF 2007 Cross-Section and 2009 Re-interview

The SCF is normally conducted by the FRB as a triennial cross-sectional survey, but there is an earlier history of the collection of panel data. The collection of wealth data at the FRB began with the 1962 Survey of Financial Characteristics of Consumers and the 1963 Survey of Changes in Financial Characteristics of Consumers, which re-interviewed the earlier survey participants. The current SCF series was started in 1983, and respondents to that survey were re-interviewed briefly in 1986 and more extensively in 1989. Until the re-interview in 2009 with the participants of the 2007 SCF, no further SCF panel interviews were conducted.

The 2007 and 2009 survey instruments

The triennial cross-sectional SCF surveys, of which the 2007 is the most recently completed, provide detailed information on all aspects of household finances, and most of this information is collected at the level of individual items. For example, the survey covers up to three mortgages (aside from home-equity lines of credit) on a primary residence, with questions on all aspects of the mortgage terms. The typical interview time is between 75 and 90 minutes, but the distribution of interview length is skewed, with interviews for some participants with complicated finances requiring up to four hours and sometimes several sessions.

The 2009 SCF focused on a smaller set of variables that were most useful for understanding the nature of the changes experienced by families during the financial crisis. To maximize comparability of data between the original and follow-up interviews, the 2009 questionnaire maintained as much as possible the ordering and systematic framing of concepts in the 2007 questionnaire. In the great majority of cases, the 2009 re-interview retained virtually identical text for the highest-level questions that determine the logical flow of the interview through each of the wealth categories. To reduce the response burden, less detail was typically collected on the components of net worth. In a few important instances—particularly mortgages on primary residences and components of income—the survey retained the full detail of the 2007 survey.[1]

[1] Because of the perceived sensitivity of the information in the survey, dependent interviewing (that is, the carrying over of information from the 2007 interview to frame the changes) was limited to two narrow sets of information:

As a consequence of the panel questionnaire design, it is possible to construct parallel estimates for all of the most important aspects of wealth in both 2007 and 2009. In addition, a few new questions were introduced, most notably a sequence targeting owners of small businesses and a series of questions on mortgage refinancing and modification. The 2009 re-interview also collected information about changes in families' portfolios and about key positive and negative events for the family between 2007 and 2009. The typical panel interview required about 45 to 60 minutes.

SCF sample design and unit of observation

The SCF employs a dual-frame sample design, including a multi-stage area-probability (AP) sample and a list sample. The AP sample, which comprises roughly 60 percent of the total sample, provides broad national coverage and a sample of households selected with equal probability. The AP sample for 2007 was selected by NORC at the University of Chicago (see Tourangeau et al. [1993]). The list sample is selected from statistical records derived from individual income tax returns by the Statistics of Income (SOI) Division of the Internal Revenue Service. The list sample oversamples households that are predicted to be relatively wealthy based on a model of wealth estimated using variables available in the SOI data (see Kennickell and McManus [1993] and Kennickell [1998, 2001]). The two samples are combined to represent the population of households.

In 2007, the eligible respondent in a given household was the economically dominant single individual or the financially most knowledgeable member of the economically dominant couple.[2] Most of the questions in the interview of that sample were focused on the "primary economic unit" (PEU) a concept that includes the core individual or couple and any other people in the household (or away at school) who were financially interdependent with that person or couple.[3]

housing tenure and date the household moved into their residence, and ownership or partial ownership of a privately held business. This information was necessary to assess changes as accurately as possible for these key variables.

[2] Where no one was knowledgeable or where the respondent was too busy or disabled to be able to participate, it was possible to use a proxy for the respondent if the person would be able to answer the questions on behalf of the respondent. Usually, the proxy would be an accountant, a business manager, a legal guardian, or an adult child.

[3] We use the term "family" throughout this paper to mean the PEU.

Detailed information on employment and pensions was collected on only the respondent and, as relevant, that person's spouse or partner.[4]

For the 2009 panel survey, a concerted effort was made to track every 2007 household and to conduct an interview with the original respondent or an eligible alternate, as defined below. Even over the roughly two years between the 2007 and 2009 surveys, there were large changes in the structure of some households, so it is important to be clear about who in the original households were followed in the 2009 survey. For both the AP and list samples, the target household at the time of the 2009 survey was defined as follows:

1. If the 2007 respondent was alive and not living permanently outside the U.S, the target household in 2009 was the one that contained that person.
2. If (a) the 2007 respondent was either deceased or living permanently outside the U.S. and if (b) the 2007 respondent had a spouse or partner who was a part of the PEU as defined in the 2007 survey and who lived permanently in the U.S., the target household in 2009 was the one that contained the 2007 spouse or partner of the 2007 respondent.
3. Where (a) the 2007 respondent was either deceased or living permanently outside the U.S. in 2009 and (b) either (i) there was no spouse or partner who was a part of the 2007 primary economic unit or (ii) there was such a spouse or partner but that person was either deceased or living permanently outside the U.S., then the case was considered to be out of scope for the 2009 survey.

Note that each household interviewed in 2007 corresponds to at most one household in the panel. To maximize the comparability of answers in the two interviews, whenever possible the same person who was interviewed in 2007 was re-interviewed in 2009. When that person was not available and there was a financially knowledgeable spouse or partner of that person in an eligible 2009 household, that person was allowed to serve as the respondent in 2009.[5]

[4] The SCF cross-sections include a highly summarized set of questions at the end of the interview to obtain rough information about the finances of people in the household that are not in the PEU. The panel questionnaire did not collect this information on anyone in the household outside the PEU.

[5] As in the 2007 cross section, a knowledgeable proxy was allowed to complete the interview on behalf of the respondent, if the respondent was disabled, too busy, or not knowledgeable about the finances of the household.

The FRB gave approval for the 2009 re-interview in April of 2009. The first interviews were conducted in July of that year, and nearly all interviews were completed before January 2010, when data collection stopped. When the field work ended, almost 89 percent of the eligible 2007 SCF participants had been re-interviewed, and the panel response rate based on the eligible cases was at least 87 percent in every sample group.[6] Analysis of nonresponse to the 2009 interview suggests that there is little relationship between response and the most important characteristics in the panel.

There was some change in the composition of the survey households over the 2007–2009 period. For example, in five percent of households there was a spouse or partner of the respondent in 2009 where there had no such person in 2007, and in 4.7 percent of households there was no spouse or partner in 2009 where there had been such a person in 2007. Deleting families with such large compositional changes does not affect the qualitative findings reported in this paper.

Data processing

SCF data are carefully edited to incorporate information reported by the interviewer about problems in the data and to address inconsistencies in reporting. Although the data editing for the panel focused most directly on the 2009 data, the process was organized around comparisons of the 2007 and 2009 data for each cases. Sometimes information in the panel was sufficient to cause a review of an original editing decision made for the 2007 data. Changes observed in panel data are virtually always subject to compounding of error from multiple measurements, but in general the inspection of the SCF data during the editing process suggests that there is a relatively high level of comparability between the two years. Missing data in the combined 2007–2009 data set were imputed using a multiple imputation routine developed for the SCF Data originally missing in 2007 were re-imputed conditional on the 2009 data. Weights for the panel were constructed using a procedure comparable to that applied to generate the original 2007 cross-sectional weights. As noted above, the samples of eligible respondents for the original 2007 and 2009 panel differ slightly. Even allowing for this difference, estimates of 2007 characteristics may differ from previously published estimates as a consequence of additional editing, differences in imputation, or differences in weighting.

[6] See Kennickell [2010] for an analysis of nonresponse in the 2009 panel. The response rate relative to the full sample of households selected for the 2007 SCF was, of course, lower due to non-response in the 2007 survey.

II. Wealth change and its decomposition

This section describes key dimensions of wealth change for families from 2007 to 2009. We first look at of the changes in the overall wealth distribution. Next we consider the changes in wealth for selected demographic groups and look at the role of housing, stocks and business equity, and debt in those changes. We then focus on families that experienced shocks or that might have been considered financially vulnerable. The final subsection presents behavioral and attitudinal shifts that we believe point to factors that may influence the path of families' finances and the economy.

We use the term "wealth" here to mean net worth, or total assets less total liabilities.[7] Assets include a main residence, other real estate holdings, net business equity, vehicles, trusts in which the family has an equity interest, annuities with a cash value, other financial assets, pension accounts that the family can withdraw from or take loans against, and miscellaneous assets. Defined-benefit pensions and other assets where there is no equity interest are not included here as assets. Liabilities include mortgages on primary and secondary residences, lines of credit, credit card debt, installment loans, loans against pension accounts or life insurance, and all other types of personal debt. Debt held by a family's business or non-residential real estate is netted against the value of those assets.

II.a. Changes in the distribution of wealth

The distribution of wealth for the population covered by the SCF panel shifted downward across the entire range from 2007 to 2009. Comparison of the cumulative distributions of wealth for 2007 and for 2009 given in Figure 1 shows a broad downward slide in the mass of the distribution. The mean (median) fell from $595,000 ($125,000) in 2007 to $481,000 ($96,000) in 2009. The quantile-difference plot given in Figure 2 breaks out the shifts across the full range of the wealth distribution. In dollar terms, there were substantial absolute increases in the level of negative wealth at the bottom of the distributions, about no change just above the 10th percentile, and progressively larger decreases at the higher percentiles.

[7] See Bucks, Kennickell, Mach and Moore [2009] for a detailed discussion of the wealth measure used here. All dollar values reported are given in 2009 dollars.

II.b. Changes in wealth within families

The simple comparisons discussed above take the wealth distributions in the two years as independent. A key virtue of the panel data is that it is possible to look directly at the range of changes for all types of families.

In contrast to the declines in wealth at each percentile of the overall wealth distribution, changes in the wealth of individual families were more mixed. Table 1 uses wealth percentile groups in 2007 and 2009 to summarize the joint distribution of wealth in the two years. As evidenced by the two-thirds of families along the main diagonal, the most common single outcome was relatively small or no change in a families' relative position in the distribution. This stability is, of course, in part a function of the coarse wealth categories used in the table. The fraction of families that do not move across wealth ranges falls to 43 percent if households are classified into a ten-by-ten table based on deciles of wealth for each year and to 26 percent for a twenty-by-twenty table of five-percentile-point wealth ranges for each year (not shown).

The level of wealth fell between 2007 and 2009 for 63 percent of families, and the median decline was 18 percent of 2007 wealth (Table 2Table 2). The first and second quartiles illustrate just how diverse families' financial experiences were over the two-year period; wealth fell by over 50 percent for a quarter of families, but at the opposite extreme, wealth increased by just over 25 percent for another quarter. The kernel density estimate of changes for the panel members was bimodal: most families experienced losses, and a smaller fraction realized gains (Figure 3). The histogram also shows that a noticeable share of families had essentially no change in their wealth. As a result, there was a substantial reshuffling of families across the wealth distribution.

The wealth losses and gains were generally shared across demographic groups (Table 2). The median percent change in wealth was similar—between 16 and 21 percent—across groups of families classified by 2007 income. There was greater variation in wealth changes for lower-income families, at least as measured by the interquartile range of percent changes in wealth.[8] The narrower range of wealth changes in percentage terms is also reflected in shares of

[8] A persistent problem in analyzing lower-income families is that some part of the group is quite wealthy but has either realized substantial losses or otherwise has transitorily low income and another part of the group has wealth that is negative or close to zero.

households whose wealth fell between 2007 and 2009; roughly 60 percent of families in the first three income quintiles experienced a drop in wealth, but this fraction rises to 71 percent of families in the top decile of 2007 income.

The pattern is similar across when families are arrayed by their 2007 wealth. The greatest dispersion in wealth changes was among the least-wealthy quarter of families in 2007, and the interquartile range generally narrows across the groups as 2007 wealth increases.[9] The experiences of families in the bottom quartile of 2007 wealth varied most widely, but the median change was roughly zero. By comparison, the median change for other wealth groups was relatively similar.

Across the four Census regions, median wealth was highest in 2007 for families living in the northeast or in the west, and the variation in wealth within regions was also somewhat larger in those areas.[10] In percentage terms, losses tended to be greatest for families living in the west, a reflection in large part, of the relatively greater declines in real estate prices in that region.

When classified by the age of the household "head," the variation of percent changes in wealth, as captured by the interquartile range, was greatest for the youngest group, which had the lowest median wealth and the smallest median absolute change in wealth (Table 3).[11] The largest median absolute losses were for families headed by persons in the four oldest age groups, which also have progressively greater median wealth. The variation in absolute wealth changes was greatest for the 55-to-64 group.

There are limitations to any common measure of change and, as illustrated by the discussion of wealth changes by age above, the choice of measure can alter conclusions regarding the relative magnitude of changes for different groups. As is apparent from comparing median wealth and absolute wealth changes in the first four columns of Table 3, changes in absolute, dollar terms tend to follow the distribution of baseline 2007 wealth too closely to be separately informative. But percentage changes, shown in the next three columns, tend to show very large changes from

[9] Part of the spread in percentage change for the least wealth group is attributable to the fact that the 2007 base for measuring percentage change was quite small in absolute terms for many families.
[10] See Table 4 in Bucks, Kennickell, Mach, and Moore [2009].
[11] If a couple is economically dominant in the PEU, the head is the male in a mixed-sex couple or the older person in a same-sex couple. If a single person is economically dominant, that person is designated as the family head. This concept of household "head" is chosen only to provide a consistent arrangement of the data and it does not imply any judgment about actual economic relationships within a household.

low levels of baseline wealth as a consequence of quite small absolute changes or as a reflection of measurement error.

Much of the remainder of the paper classifies families by the difference in their percentile rank in the wealth distribution in each of the two years. As may be seen from the final three columns of Table 3, this measure shares some of the shortcomings of percentage changes, but the effects of these limitations tend to be more muted. The first shortcoming is that, due to the high degree of skewness in the wealth distribution, extremely large nominal changes at the top of the distribution can correspond to small shifts in terms of percentiles. Second, because the distribution of wealth is fairly flat around zero wealth, small nominal changes can imply substantial movements in terms of percentiles, but the effect is generally not as strong as for percentage changes.

It is important to emphasize that this measure of wealth change is a measure of relative change that may not correspond to changes in levels. By definition, the net change over all families under this measure is zero. When most families experienced wealth declines, as is the case in the SCF panel, even a household whose relative rank improved by this measure may have lost ground in dollar terms. For example, 18 percent of families whose rank in the wealth distribution improved by 3–10 percentile points in fact had a decline in their wealth. Similarly, over 90 percent of families whose rank in the wealth distribution shifted only modestly—an absolute change of no more than three percentile points—experienced declines in wealth between 2007 and 2009 (Table 2).

Families that moved up the wealth distribution by three or more percentiles tended to have lower wealth than other families (Table 4). Almost 30 percent of families experienced absolute change of less than three percentile points. The fact that this group has the highest median and 75th percentile for wealth of any of the groups and a 25th percentile wealth level within the range of values for the other percentile-point-change groups suggests this middle group includes families located throughout the wealth distribution. Just less than a quarter of families moved up in the wealth distribution by between three and ten percentile points, and roughly 15 percent of families fell into each of the other three groups.

II.d. Shifts in portfolio composition

Underlying the changes in family wealth over the 2007–2009 period were shifts in the composition of assets and debts in families' portfolios. Some of these portfolio shifts were the result of active decisions by families to restructure their balance sheets and others were the result of changes in asset prices over the period. We focus on three key portfolio items: home equity, stock equity and business equity, and total debt.

Most asset values fell over the 2007–2009 period. Two important components of this decline were drops in the value of home equity and the value of stock and business equity.[12] The aggregate share of the primary residence as a fraction of total assets declined 1.5 percentage points, and the share of stock and business equity fell by nearly five percentage points (Table 5). The ratio of total debt to assets, the leverage ratio, rose by about 3 percentage points to nearly 18 percent over the period, primarily due to a decline in the value of assets rather than an increase in debt, as shown below. Mortgage debt as a share of total assets rose 1.9 percentage points (not shown).

Housing is a key part of the portfolio for many families. Among the least-wealthy quarter of families, the homeownership rate is less than 20 percent, but it rises to nearly 100 percent among the wealthiest.[13] Declines in home equity were an important driver of decreases in wealth. Among families that moved down the wealth distribution by more than 10 percentile points, the value of home equity as a share of 2007 assets declined by about 13 percentage points at the median; among families who moved down 3–10 percentile points the median decline in the share was 6 percentage points (Table 6). The median share was little changed for the remaining groups. The change in the share showed the most variation among the groups of families with the largest increases or decreases in their percentile rank, which were also the groups with the largest changes in homeownership rates, shown in Table 5.[14]

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[12] The definition of business equity also includes the net value of non-residential real estate.

[13] The ownership rate for home equity shown in Table 5 treats all homeowners as having home equity, including those with zero or negative equity, so that the homeownership rate is identical to the share of families with home equity. The 2009 SCF panel indicates that homeownership increased slightly between 2007 and 2009. This is in contrast to cross-sectional Census data on homeownership that shows a decline over the same period. The modest difference is likely attributable to aging or cohort effects in the panel.

[14] The homeownership rate declined from 78 percent to 72 percent for families in the bottom percentile-change group, and the rate rose from 53 percent to 63 percent for families whose rank in the wealth distribution improved

Stock and businesses equity are less widely held among families than are houses, but they account for roughly 40 percent of families' assets overall. Ownership of stocks and business equity rises with wealth, but does so more gradually across 2007 wealth groups than homeownership (Table 5). Measured as a share of 2007 assets, the value of stock and business equity increased for families with below-median wealth in 2007 and declined for families in the top wealth quintile in 2007 (not shown).

These changes in holdings of stock or business equity from 2007 to 2009 appear to explain some of the observed wealth shifts over that time, particularly for families with the largest increases or decreases in their rank in the wealth distribution. The share of families with stock or business equity increased among families that moved up the wealth distribution by three or more percentiles, and the share declined for families that moved down the distribution by 10 or more percentiles (Table 5). Although there was little change in the median of families' holdings of these assets as a ratio of their total 2007 assets, the interquartile ranges across the wealth-change groups indicate that, for those families that did experience a change, the share of total assets fell for families that moved down the wealth distribution and increased for families that moved up the wealth distribution (Table 6). A comparison of the quartiles in the table suggests that, on the whole, changes in home equity likely played a greater role in the evolution of families' wealth between 2007 and 2009 than did changes in business and equity.

Debt is an important element of the portfolios of many families, particularly in purchasing capital assets. Indeed, in 2007 nearly 80 percent of families held some kind of debt. Mortgage debt is by far the largest component of family debt—nearly three-quarters of the total reported in the SCF in 2007.[15] Installment loans and debt on residential real estate other than the primary residence each make up about one tenth of total debt, and most of the remaining debt—three to four percent of all debt in recent SCF surveys—is owed on credit cards. These proportions changed little between the two waves of the SCF panel.

When viewed across the wealth-change categories, families that moved down the wealth distribution from 2007 to 2009 by more than three percentile points tended to become more

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by at least 10 percentile points. In contrast, the changes in the homeownership rate for the other percentile-change groups ranged from negative two percent to three percent.

[15] See Bucks, Kennickell, Mach and Moore [2009], Table 11.

highly leveraged over this period (Table 7). The median leverage ratio for families who moved down by more than 10 percentile points rose nearly 30 percentage points. For families who moved up by 10 or more percentile points, the median decrease was more than 15 percentage points, a drop that is due in part to the nearly eight percentage point decline in the fraction of these families that had any debt (Table 5). However, when debt is viewed relative to 2007 assets, the changes across the change groups tend to cluster more closely around zero, suggesting that it is variation in asset values rather than debt values that is the dominant factor (Table 7).

Figure 4 reinforces this conclusion. Families who moved up by 3 or more percentile points had positive change in assets relative to 2007 wealth, while families who either stayed in place or moved down saw a negative change in assets relative to 2007 wealth. These positive (negative) changes in assets were largest for those families who moved up (down) the most. In contrast, the median change in debt relative to 2007 wealth was zero for each group, though the interquartile ranges suggest that families who moved up (down) were more likely to have a decrease (increase) in debt.

To complete the picture of shifts in households' portfolios between 2007 and 2009, Figure 5 presents the portfolio shares for mortgage debt and non-mortgage debt separately as well as the share of assets other than net home equity and holdings of businesses and stock equity.[16] Non-mortgage debt is shown as a negative fraction of assets; to ease interpretation of home equity, mortgage debt is shown overlaid on the share of principal residences.[17]

The overall portfolio share of homes increased for both groups that moved down the wealth distribution by more than three percentile points, but the increase was more than offset by a larger rise in the share of mortgage debt. The share of business and equity holdings also declined for these groups, the share of other assets was slightly lower, and the share of non-mortgage debt increased. For families that moved up the distribution by three or more percentile points, the shares of homes and mortgage debt both declined, but the share of principal residences declined more, resulting in a decline in the share of home equity. The shares of businesses and equity and

[16] In the figure, "other assets" includes residential real estate other than a principal residence, financial assets, pension accounts, vehicles and miscellaneous assets.
[17] Thus, the portfolio share of principal residences is given by the sum of home equity and mortgage debt.

of other assets rose, while the share of other debt fell. Families that roughly maintained their place in the wealth distribution saw little change in their portfolio shares.

II.e. Shock, vulnerability and wealth change

In this section, we narrow our attention to families that might have been considered financially vulnerable in 2007 or who faced an unemployment spell. These are groups that might be considered likely to have experienced deterioration in their financial condition over the period covered by the panel.

Families that suffer a job loss may, in response, draw down their savings or to increase their borrowing; in one extreme, the consequences of an unemployment spell could include mortgage default and foreclosure. Both the 2007 and 2009 waves of the SCF panel contain information on the current employment status of the household head and that person's spouse/partner (if applicable) as well as data on any other spells of unemployment in the 12 months prior to the interview.

In general, the relationship between unemployment spells and shifts of families within the wealth distribution appears weak. Two points stand out. First, families where at least the head or the spouse or partner of that person was unemployed in 2007 but not in 2009 were the most likely to move up the wealth distribution by 10 or more percentile points (Table 8). It may be that return to employment allowed these families to rebuild their assets. Second, families that did not have an unemployment spell in either year were the most likely of any group to have only small change in their relative wealth position.

We also consider three sets of families that showed signs of having high debt burdens in 2007. The first group comprises families whose ratio of total debt payments in 2007 to their total income (PIR) exceeded 40 percent of their prior year's income (about 11 percent of all families). The second set is families that had high debt relative to assets, namely a leverage ratio greater than 75 percent (about 16 percent of all families). The final group includes families that had missed a debt payment by 60 days or more in the year prior to the 2007 SCF interview (about six percent of all families).[18]

[18] Roughly six percent of all families met two of these criteria, while only about one percent met all three.

The clearest correlation between these measures of financial vulnerability in 2007 and subsequent wealth changes is for the group with a PIR of 40 percent or more. Families with regular debt payments greater than 40 percent of income were more than twice as likely as other families to have moved down the wealth distribution by more than 10 percentile points. This relationship may indicate a greater rate of dissaving among the group, or the loss of a leveraged asset with positive net value in 2007. In contrast, families with a comparatively high leverage ratio in 2007 were disproportionately represented in the group of families that moved up within the wealth distribution by at least 10 percentile points; thus, it appears that some of these families may have made a successful leveraged bet.[19] Families that reported having missed a debt payment in the 2007 SCF were slightly more likely than families as a whole to have fallen in the wealth distribution by more than ten percentile points, but they are even more likely than others to have moved up, especially by at least 10 percentile points.

II.f. Attitudes, expectations and wealth change

The potential longer-term economic consequences of the most recent recession depend, in part, on the extent to which the downturn and financial crisis led to changes in families' expectations and behavior. The two waves of the SCF panel provide direct evidence on several of these factors: changes in families' savings intentions or behavior, their tolerance for financial risk, and their retirement planning. The 2009 survey collected a variety of attitudinal data on the economic downturn and on how families had changed or intended to the change their financial decisions as a consequence. Overall, the data suggest a shift toward caution: most families—especially those whose position in the wealth distribution improved—reported a desire for less risk and for higher reserve savings. Further, in most cases, heads of households that were working full-time planned on extending their working lives.

The SCF asks families the savings they need for emergencies and other contingencies—a measure of desired savings for precautionary purposes.[20] Families' desired level of precautionary savings tends to increase over wealth groups.[21] Most families in each of the

[19] This group might also include families whose principal residence had a mortgage that exceeded its value in 2007 and who had lost that home by 2009; however, the data show that this situation is a negligible element in the observed outcomes.
[20] See Kennickell and Lusardi [2004] for an analysis of the SCF measure of desired precautionary savings.
[21] See Bucks, Kennickell, Mach and Moore [2009], Table 3.1.

relative wealth change categories reported greater desired precautionary savings in 2009 than they had in 2007 (Table 8), as might be expected if families generally believed they were exposed to a higher level of risk than they were previously. Some families reported much higher preferred buffer savings: nearly 30 percent of families who moved up by 3 or more percentile points and nearly a quarter of all other families reported desired precautionary savings that were at least 200 percent higher in 2009 than in 2007. Nonetheless, a substantial minority of families reported either no change or a decrease in their precautionary savings in 2009.

An analysis of families' reported willingness to take financial risk in investing and saving suggests that the recession and other economic developments may have led families to become somewhat more cautious. Across the array of relative wealth changes, except for families in the highest percentile-change group, more families were unwilling to take any financial risk in 2009 (Table 9). The increases in this proportion were roughly five to six percent for families whose rank rose or fell by no more than ten percentile points, but the shift in the proportion of families unwilling to take risk was twice as large for families that moved down the wealth distribution by more than ten percentile points.

Working families that experienced negative wealth shocks from 2007 to 2009 might be expected to plan to work longer to recoup savings for retirement, and others might plan to work longer to hedge against future uncertainties. For families headed by a full-time worker aged 63 or younger in 2007 who was still working full-time in 2009, the median change in the worker's anticipated retirement age was zero across all wealth change groups (Table 9).[22] But those workers who did shift their anticipated retirement date tended to report that they would stop working full-time at date later than what they had reported in 2007. At least 25 percent of full-time household heads reported postponing retirement by two years. Not surprisingly, the largest fraction of household heads who plan to stop working two years *earlier* than planned in 2007 are the heads of households who moved up the wealth distribution by ten or more percentile points .

Generally, specifications of the wealth effect in macroeconomic analysis assume that responses to upturns and downturns are symmetrical. The SCF offers some evidence on how individual

[22] Table 9 shows the difference in the reported ages at which household heads reportedly planned to stop working full-time as reported in the 2007 and 2009 surveys. These differences are calculated only for those heads who worked full time in 2007 and 2009, who were in the household in both survey years, and who were younger than 63 at the time of the 2007 interview.

families respond to wealth changes. For a number of surveys, the SCF has included a question asking respondents whether (and to what extent) they agreed or disagreed that they would increase their spending if the value of their assets rose; the history of the question suggests that the overall response patterns are stable. For the 2009 panel interview, a new question was added using parallel language to ask about whether the family would decrease their spending if the value of their assets declined. When families are classified by their wealth changes from 2007 to 2009, the proportion agreeing with these two questions is fairly flat. However, the proportion agreeing that they would spend more if their assets rose is markedly lower than the fraction agreeing they would spend less if their assets declined in value (Figure 6). This outcome suggests that such asymmetrical spending responses could be a factor in retarding economic recovery.

II.g. Future expectations and between-survey events

SCF respondents in 2007 and 2009 were asked about their expectations of the economy over the next five years relative to the last five years—specifically, if they expected the economy would be worse, better, or about the same. In addition, in 2009 the respondents were also asked whether they thought the economy next year would be "better than now." Across the wealth-change groups, the most striking result is the greater optimism for all groups in 2009 in the five-year economic outlook (Figure 7). Because the overall economic situation at the time of the 2009 interview was substantially worse than at the time of the 2007 interview, this result might be taken to reflect a tendency to believe in mean reversion. The outlook over the next year after the panel interview is less optimistic, and it is similar to the five-year outlook from 2007.

In addition to these questions about the economic outlook, at the conclusion of the 2009 panel interview, respondents were asked open-ended questions about their experiences over the preceding two years, their reactions to those experiences, and their plans looking forward. We examine several of these questions in turn, classifying the distributions of responses by the changes in wealth the families experienced.

In all the wealth-change groups, most families found at least something positive in their experience, and the most common response was an answer that indicated a recognition that the workers in the family had managed to keep or get a job or that their income had somehow

otherwise been maintained at an adequate level (Table 10).[23] Nonetheless, substantial fractions of families reported that there had been no positive events, and unsurprisingly the group most likely to report this answer was the one that had moved furthest down the wealth distribution.

As might also be expected, far fewer families reported that there were no negative events. Families' perceptions of negative events affecting their finances varied more. Though a substantial fraction of families reported negative income- or job-related events, a nearly equivalent-sized group reported a range of outcomes classified as "other," a category which includes perceptions of recent political events, the international situation, family problems, and a broad miscellany of other answers.

Finally, the most common concern among families' future financial challenges was maintaining income or employment. Portfolio management was also a key challenge for the groups with the largest positive or negative changes in their relative wealth position.

III. Conclusions

From 2007 to 2009, wealth declined for most families across the initial 2007 wealth spectrum, and it declined very substantially for some. Yet many families saw only small changes and a non-negligible group of families saw substantial increases in their wealth. This diversity of outcomes is pervasive in the data. For that reason, in this paper we use distributions to describe as clearly as possible the central tendencies and dispersions of outcomes or changes.

By definition, changes in families' portfolios underlay the observed wealth shifts, but it is sometimes not directly obvious from the data whether the changes were driven by portfolio rebalancing or by revaluation of portfolio items. Responses to direct questioning on general portfolio changes made during the interval between the 2007 SCF and the 2009 panel interview indicate that the large majority of families passively accepted changes in portfolio shares driven by changes in asset prices. Unemployment spells are also associated with wealth declines, whether because of the necessity of dissaving or because cumulated late payments might have caused the loss of an asset, such as a home, through foreclosure. Although continued saving

[23] Although some respondents provided more than one answer in their open-ended response, in this and the remaining figures we have included only the answer the respondent deemed most important. Including all the answers in the analysis does not qualitatively change these results, but it would complicate the interpretation, since the sum of the shares of each answer category would exceed 100 percent.

might also account for some marginal differences, it appears that the major shifts were driven by revaluation of assets. As expected, changes in the values of principal residences and of stock and businesses equity appear to have played a substantial part in explaining the observed changes in wealth. Shifts in leverage that took place over the period are largely explained by the general decline in the value of assets.

The data show signs that families' behavior may act in some ways as a brake on reviving the economy in the short run. Two things stand out in this regard. First, a large proportion of families in all wealth groups and across the range of changes in wealth expressed the need for greater precautionary savings. The perceived desire for additional savings is further amplified by answers to open-ended questions about recent and future adjustments to family finances. Second, the data show a tendency for families to respond asymmetrically to changes in wealth. Overall, it appears that families may be relatively reluctant to spend more when assets prices rise and may more readily reduce spending when asset prices fall. In general, the families with relative gains appeared more pessimistic and cautious before the crisis than the families with relative losses, and families with gains still appeared more cautious and less likely to spend as the economy enters a recovery

This paper has provided only a basic outline of the results from 2007–2009 SCF panel data. Subsequent research will explore more detailed behavioral responses and consider more deeply the implications of the data for the future.

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Table 1. Joint distribution of 2007 and 2009 wealth

Percentile of 2007 wealth	Percentile of 2009 wealth				
	Less than 25	25 – 49.9	50 – 74.9	75 – 89.9	90 – 100
Less than 25	19.6	5.4	0.7	0.1	0.0
25 – 49.9	4.8	15.0	4.8	0.2	0.0
50 – 74.9	1.1	4.1	15.2	4.0	0.2
75 – 89.9	0.2	0.3	3.6	8.9	1.8
90 – 100	0.0	0.1	0.4	1.7	7.9

Table 2. Changes in family wealth between 2007 and 2009 and share of families with wealth declines, by selected characteristics of families

Family characteristic	Percent change (Percent)			Share with decline in wealth (Percent)
	Median	25th percentile	75th percentile	
All families	-18.1	-56.9	26.9	62.5
Percentile of 2007 income				
Less than 20	-18.3	-67.6	39.7	60.7
20-39.9	-15.7	-62.8	41.3	57.8
40-59.9	-20.6	-63.7	33.7	60.9
60-79.9	-18.5	-51.5	19.9	64.8
80-89.9	-18.5	-46.5	16.9	66.1
90-100	-18.2	-44.2	3.4	71.1
Percentile of 2007 wealth				
Less than 25	0.0	-98.8	161.0	49.3
25 – 49.9	-18.1	-66.6	32.7	59.8
50 – 74.9	-17.2	-46.9	12.4	66.5
75 – 89.9	-21.6	-43.5	1.3	74.0
90 – 100	-23.8	-46.7	-2.2	76.9
Region				
Northeast	-9.5	-45.7	26.7	58.7
North Central	-17.5	-54.8	27.7	62.7
South	-17.7	-58.1	32.7	61.5
West	-27.7	-62.6	16.1	67.5
Age of head (2007)				
Less than 35	-25.5	-86.9	69.1	59.5
35 – 44	-19.5	-64.3	37.0	58.7
45 – 54	-19.6	-51.1	16.8	67.0
55 – 64	-15.2	-46.6	20.5	61.8
65 – 74	-13.9	-38.8	16.5	62.7
75 or more	-20.4	-43.5	11.9	68.7
Change in wealth percentile, 2007–09				
Less than -10	-86.8	-115.9	-67.5	100.0
-10 – -3.1	-48.2	-70.9	-38.6	100.0
-3 – 2.9	-22.4	-40.3	-12.8	92.7
3 – 9.9	15.9	1.6	38.3	18.0
10 or more	160.1	86.3	417.5	0.0

Table 3. Change in wealth by 2007 wealth percentile and age of household head

Thousands of 2009 dollars unless specified

Family characteristic	Median 2007 wealth	Absolute change			Percent change (Percent)			Change in wealth percentile (Percentage points)		
		Median	25th	75th	Median	25th	75th	Median	25th	75th
Percentile of 2007 wealth										
Less than 25	1.7	0.0	-6.6	8.5	0.0	-98.8	161.0	4.0	-0.4	10.6
25 – 49.9	61.3	-10.7	-36.3	18.1	-18.1	-66.6	32.7	1.4	-7.3	8.1
50 – 74.9	237.5	-40.1	-108.3	27.7	-17.2	-46.9	12.4	0.6	-8.1	6.6
75 – 89.9	616.0	-134.1	-261.8	7.7	-21.6	-43.5	1.3	-0.8	-6.6	3.2
90 – 100	2039.2	-449.3	-1216.2	-36.4	-23.8	-46.7	-2.2	-0.3	-2.4	0.5
Age of head (2007)										
Less than 35	14.2	-4.9	-34.3	9.5	-25.5	-86.9	69.1	1.5	-5.4	8.3
35 – 44	97.1	-6.8	-91.1	17.4	-19.5	-64.3	37.0	1.0	-7.6	7.1
45 – 54	203.0	-23.9	-134.3	10.7	-19.6	-51.1	16.8	0.4	-6.0	5.4
55 – 64	257.7	-13.7	-154.3	29.3	-15.2	-46.6	20.5	0.9	-3.7	5.9
65 – 74	232.7	-18.2	-118.0	16.2	-13.9	-38.8	16.5	0.9	-2.0	5.7
75 or more	228.9	-20.5	-123.2	13.8	-20.4	-43.5	11.9	0.3	-4.6	5.3

Table 4. Wealth percentiles and share of families by change in wealth percentile

Percentile point change in 2007–09 in wealth	Percentiles of wealth (Thous. of 2009 dollars)			Share of families (Percent)
	Median	25th	75th	
Less than -10	168.0	58.7	349.2	15.7
-10 – -3.1	191.9	38.2	478.2	15.0
-3 – 2.9	248.2	27.8	941.4	29.8
3 – 9.9	73.9	5.1	284.2	23.2
10 or more	30.8	1.4	146.8	16.3

Table 5. Ownership of selected assets and of debt, all families and by 2007 wealth and 2007–09 change in wealth percentile

Family characteristic	2007 Percent of families with any (percent)			2007–09 change (percentage points)		
	Home equity*	Businesses and equity	Debt	Home equity	Businesses and equity	Debt
All families	68.9	58.7	79.7	1.4	1.9	-2.2
Percentile of 2007 wealth						
Less than 25	15.5	20.5	72.8	5.5	5.3	-3.3
25 – 49.9	73.8	51.7	84.8	2.0	4.4	3.4
50 – 74.9	93.0	69.8	82.1	-2.2	0.8	-3.3
75 – 89.9	95.4	92.7	80.3	0.3	-3.9	-4.2
90 – 100	96.8	97.9	77.7	-0.2	-2.2	-7.5
Change in wealth percentile, 2007–09						
Less than -10	78.3	64.1	88.7	-6.1	-7.7	0.6
-10 – -3.1	76.6	65.9	80.1	-2.1	-0.9	0.3
-3 – 2.9	74.5	63.5	76.2	1.4	0.2	-1.0
3 – 9.9	61.6	50.6	72.5	2.7	3.8	-3.4
10 or more	53.0	49.8	87.0	10.2	14.1	-7.7
MEMO						
Aggregate value as a share of assets	19.8	41.4	14.7	-1.5	-4.7	3.1

* Ownership of home equity is identical to homeownership.

Table 6. Changes in home equity and businesses and equity as a share of 2007 assets, by changes in wealth percentile

Percentage points

Change in wealth percentile	Change in home equity as a share of 2007 assets			Change in businesses and equity as a share of 2007 assets		
	Median	25th percentile	75th percentile	Median	25th percentile	75th percentile
Less than -10	-13.1	-30.4	0.0	-0.4	-15.8	0.0
-10 – -3.1	-6.0	-19.3	0.0	0.0	-12.2	0.0
-3 – 2.9	-1.6	-9.3	0.0	0.0	-8.5	0.0
3 – 9.9	0.0	-2.2	2.9	0.0	0.0	5.0
10 or more	0.0	0.0	20.2	0.3	0.0	31.3

Table 7. Changes in leverage ratio and in debt as a share of 2007 assets, by change in wealth percentile

Percentage points

Change in wealth percentile	Change in leverage ratio			Change in debt as share of 2007 assets		
	Median	25th percentile	75th percentile	Median	25th percentile	75th percentile
Less than -10	29.7	13.8	59.9	0.2	-4.6	10.7
-10 – -3.1	10.6	0.3	22.6	0.0	-2.2	7.6
-3 – 2.9	0.5	-0.4	7.8	0.0	-3.0	4.0
3 – 9.9	-1.2	-8.2	0.0	0.0	-8.5	0.8
10 or more	-16.0	-47.3	-2.0	-3.1	-28.5	6.0

Table 8. Changes in wealth percentile by unemployment, payment-to-income, leverage, and late debt payments

Family characteristic	Unemployment				High debt burden		
	Both 2007 and 2009	2007 but not 2009	2009 but not 2007	Neither 2007 nor 2009	Leverage > 75	PIR > 40	Late 60 days
All families	7.4	7.7	13.9	71.0	16.1	11.5	5.9
Change in wealth percentile							
Less than -10	7.9	8.4	18.1	65.6	15.3	24.5	7.1
-10 – -3.1	7.0	6.6	17.0	69.4	9.3	11.2	4.0
-3 – 2.9	6.4	7.1	12.6	73.9	11.5	7.9	4.1
3 – 9.9	8.4	7.5	12.4	71.6	13.5	8.8	6.3
10 or more	7.7	9.4	11.7	71.2	35.4	9.8	9.1

Table 9. Changes in desired precautionary savings level, expected retirement, and attitude toward financial risk

Change in wealth percentile	Percentiles of change in desired precautionary savings (percent)			Unwilling to take financial risk (percent)		Change in age at which stop full-time work* (years)		
	Median	25th	75th	2007 level	2007–09 change	Median	25th	75th
Less than -10	24.4	-29.7	189.7	40.8	11.8	0	0	5
-10 – -3.1	18.6	-45.5	189.7	38.1	5.7	0	-1	4
-3 – 2.9	28.8	-35.6	189.7	35.2	4.9	0	0	3
3 – 9.9	54.5	-21.9	262.1	45.9	6.0	0	-1	5
10 or more	60.9	-3.4	286.3	45.8	-0.5	0	-2	3

*For household heads aged 63 or younger working full-time at the time of the 2007 and 2009 surveys who either reported a stopping age in both surveys or said they would never stop full-time work in both surveys.

Table 10. Positive and negative financial events in 2007–09 period and biggest financial challenges by change in wealth percentile

Change in wealth percentile	Income / Employment	Portfolio	Economy	Long-term saving	Other	None
	Most important positive event for family's finances					
Less than -10	40.0	12.6	0.9	n/a	10.7	35.9
-10 – -3.1	43.8	11.3	2.0	n/a	12.2	30.7
-3 – 2.9	43.4	14.6	1.6	n/a	11.5	28.9
3 – 9.9	46.2	11.7	1.0	n/a	11.1	30.0
10 or more	47.6	14.5	0.9	n/a	11.5	25.5
	Most important negative event for family's finances					
Less than -10	34.1	18.5	16.2	n/a	23.1	8.0
-10 – -3.1	28.7	15.7	18.3	n/a	28.9	8.4
-3 – 2.9	24.7	24.0	17.1	n/a	24.7	9.5
3 – 9.9	29.1	17.3	15.9	n/a	24.4	13.2
10 or more	27.4	15.7	15.2	n/a	26.9	14.9
	Biggest financial challenge					
Less than -10	37.8	27.5	n/a	23.1	7.1	4.5
-10 – -3.1	33.7	20.4	n/a	30.0	9.5	6.5
-3 – 2.9	29.8	17.7	n/a	31.6	13.5	7.4
3 – 9.9	34.0	18.9	n/a	30.6	10.8	5.7
10 or more	30.7	24.3	n/a	29.3	8.9	6.9

Figure 1. Distribution of wealth: 2007 vs. 2009

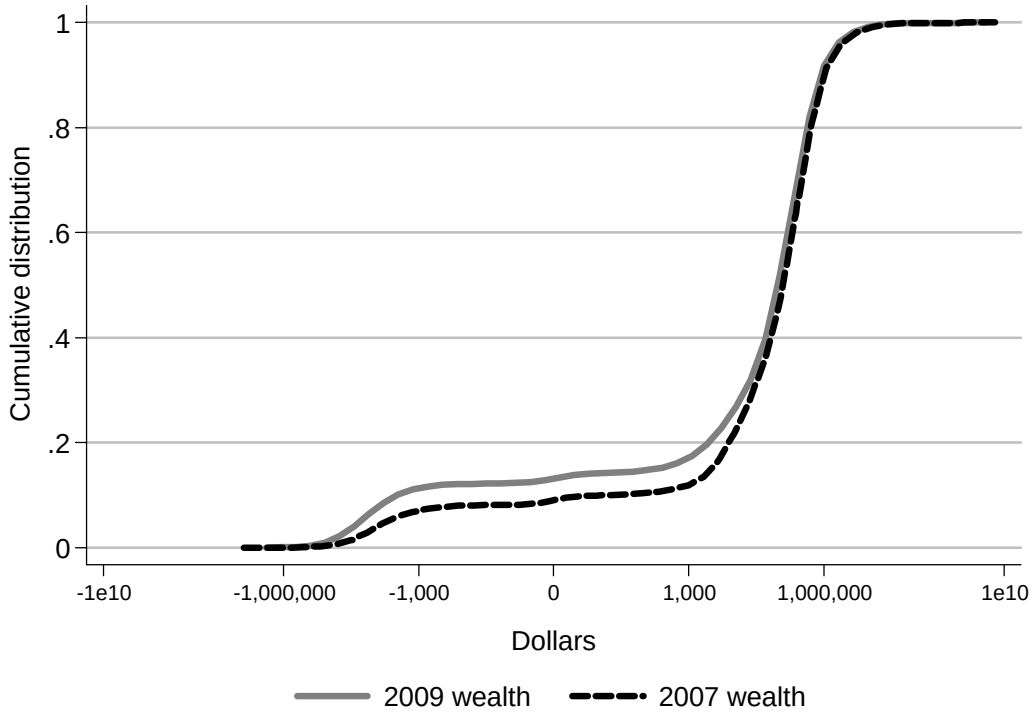

Figure 2. Quantile-difference: 2009 wealth- 2007 wealth

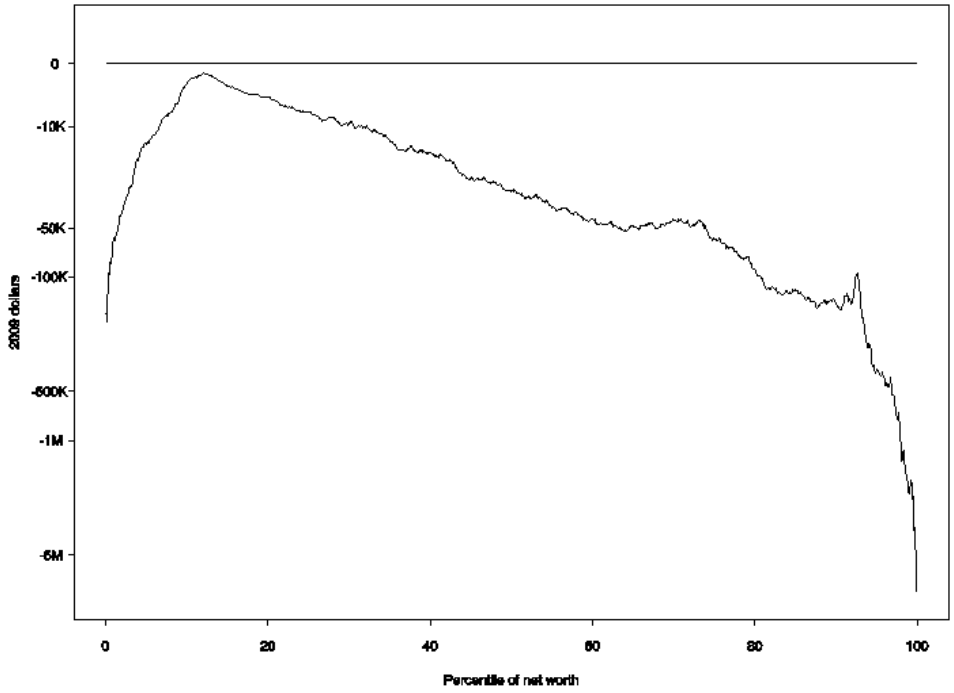

Figure 3. Density of changes in wealth

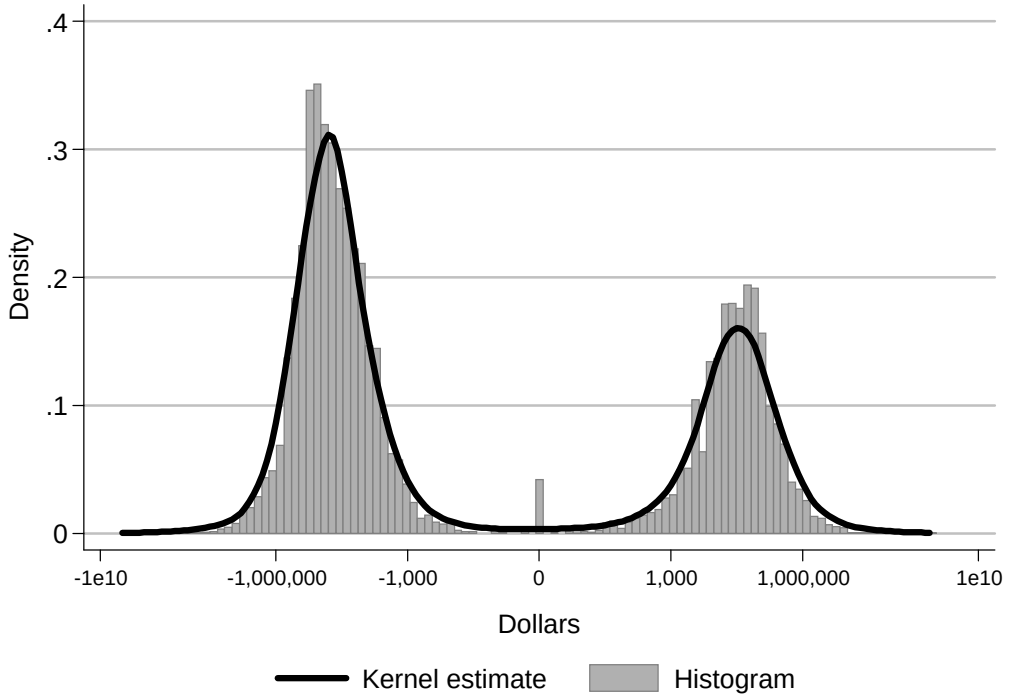

Figure 4. Change in assets and debt as a share of 2007 wealth, by change in wealth percentile

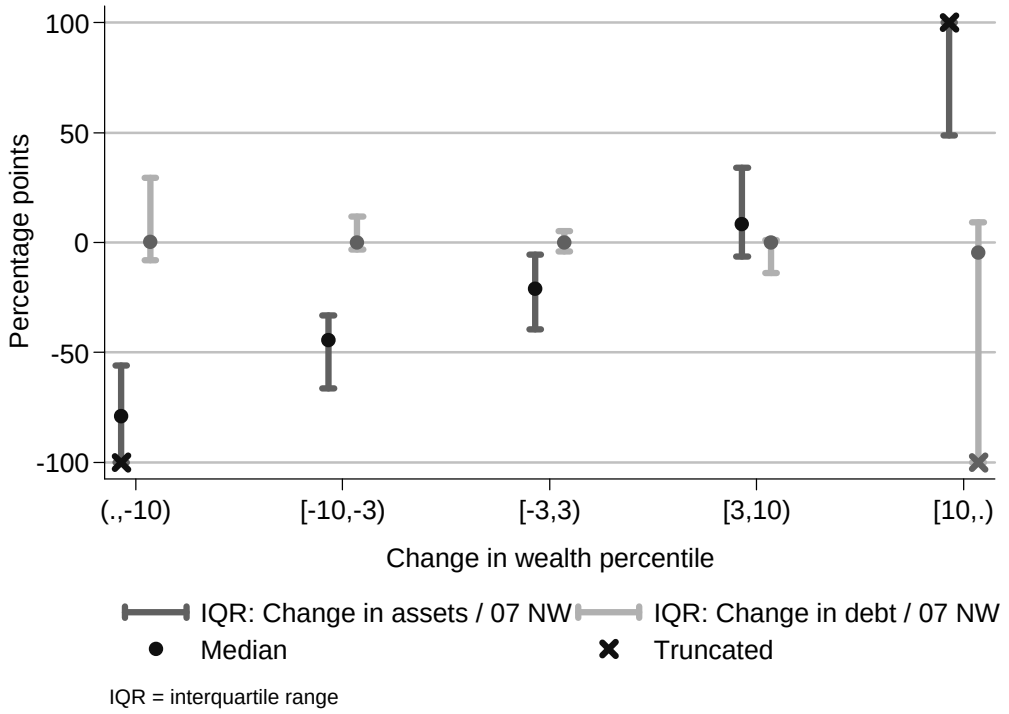

Figure 5. Portfolio shares relative to assets, by year and change in wealth percentile

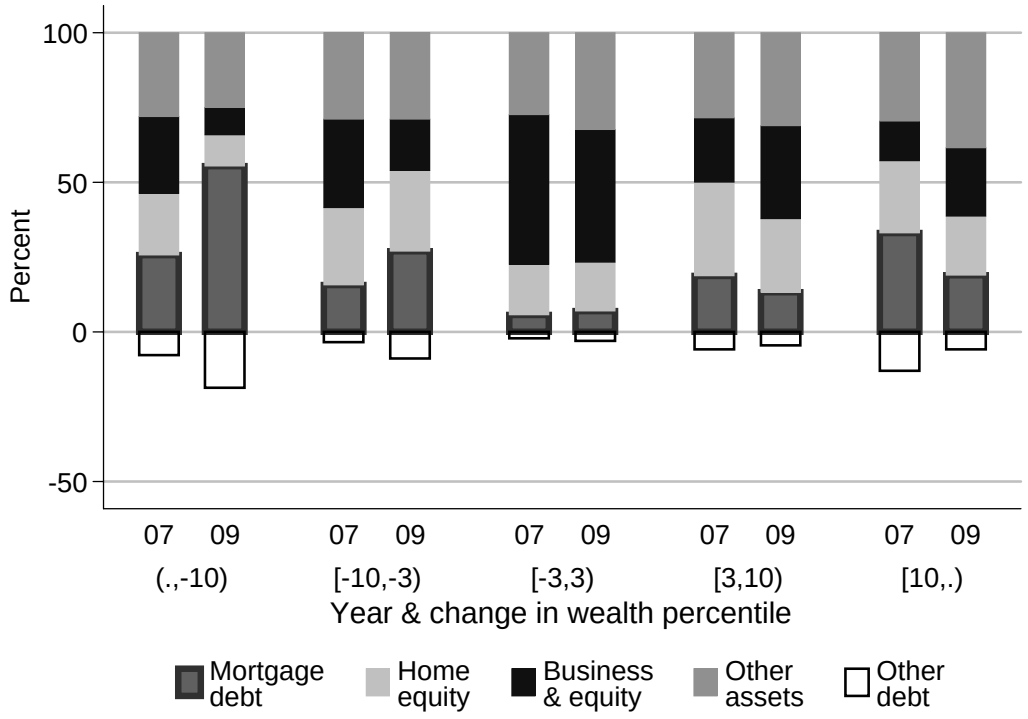

Figure 6. 2009 Share that spend more (less) if value of assets goes up (down)

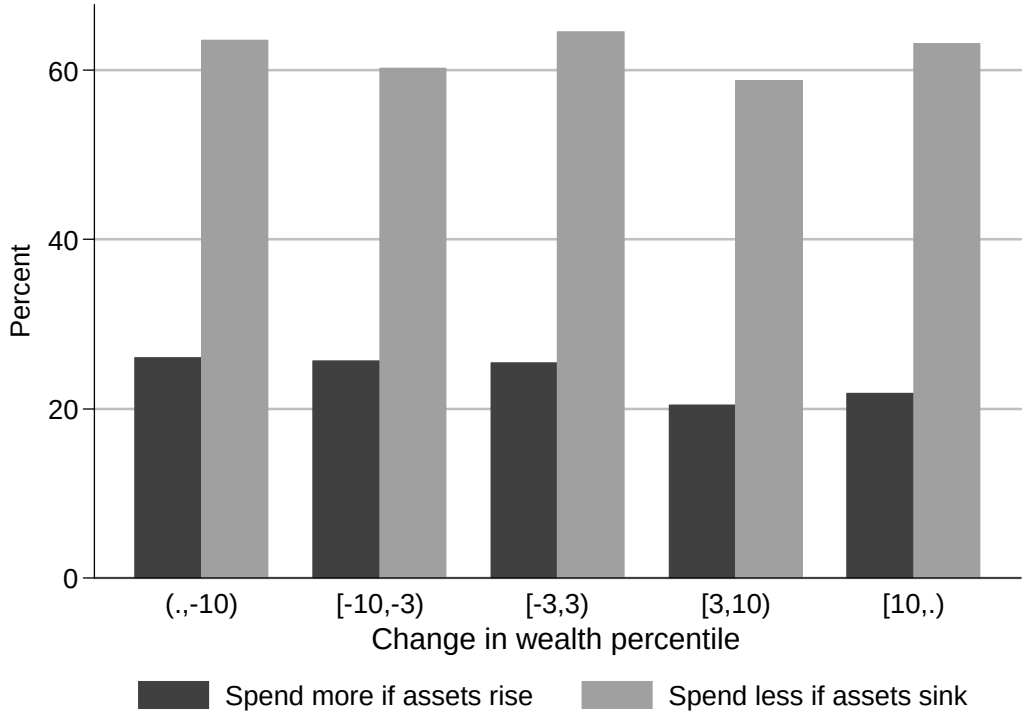
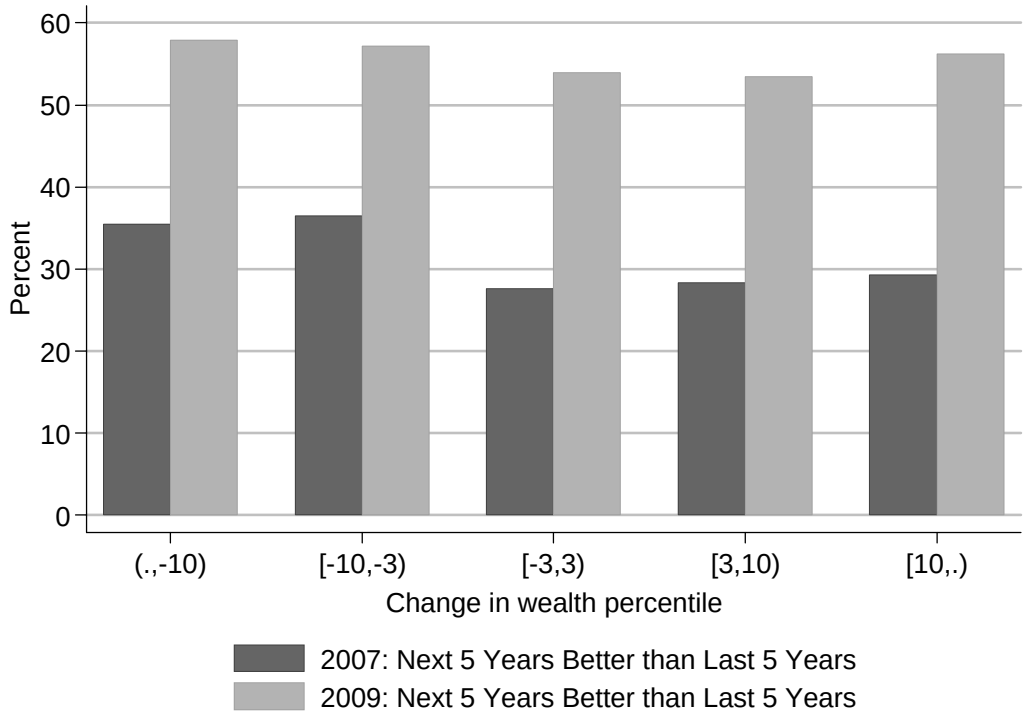
Figure 7. Economic expectations by change in wealth percentile