

Wealth Shocks, Unemployment Shocks and Consumption in the Wake of the Great Recession

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In 2008, American households experienced a loss of 13.6 trillion in wealth, compared to a disposable income of 11 trillion. Between October 2007 and October 2008 the stock market declined by almost 40 percent, and house prices by almost 20 percent. The unemployment rate, which throughout 2007 averaged 4.8 percent, doubled in less than two years, from 5 percent in January 2008 to 10.1 percent in November 2009. Many analysts link this large, unexpected and unprecedented fall in the market value of household wealth and the dramatic increase in unemployment to the drop in consumption that took place in the second half of 2008 and 2009. Indeed, real consumption expenditures dropped from 9,285.8 billion dollars (in constant 2005 prices, seasonally adjusted at an annual rate) in the second quarter of 2008 to 8,898.5 billion dollars in October 2008, i.e., a decline of about 3.1 percentage points (pp). All these figures suggest that a special feature of the Great Recession is that households were simultaneously hit by three different shocks: a large drop in house prices, a strong decline in the stock market, and a dramatic worsening of the labor market conditions.

This paper attempts to estimate the separate impact of these three shocks on households' expenditures, using recently available microeconomic data. Our first data source is the Health and Retirement Study (HRS), which is a longitudinal, nationally representative micro survey interviewing those aged fifty and above in the US. The survey, conducted on a biannual basis since 1992, provides extensive information on households' socioeconomic characteristics, income, and assets holdings.

Wave 9 of the HRS, which was conducted between February 2008 and February 2009, interviewed 16,477 individuals belonging to 11,187 different households. In 2009, the HRS asked a subset of the Wave 9 respondents to participate in an Internet survey (our second data

source), with the aim to collect information on households' experiences and circumstances during the ongoing recession. Most of the targeted individuals had participated in wave 9 of the HRS and had reported having Internet access, while the few who had not, had been selected for participation in previous waves of the Internet Survey (2003, 2006, or 2007). The 2009 Internet Survey was conducted from March 2009 through August 2009, and its sample consists of 4,415 respondents belonging to 3,438 households (the sample response rate was about 77 percent). The survey provides information on the wealth losses that respondents have experienced, on the adjustments they have made in their consumption, on changes in their labor status, and on how they cope with financial difficulties. In our analysis we merge the 2009 Internet Survey with the 2008 main survey, thus ending up with a sample of 3,328 households.

For our purposes, a most important feature of the Internet Survey is that respondents are asked about changes in their total spending compared to the previous year (i.e., 2008). They are first asked to indicate whether their current spending is lower, higher, or has stayed the same. Subsequently, they are asked to report the percentage change in their total spending. In our analysis, we are going to examine both the continuous (percentage) and the qualitative (categorical) change in expenditure as our outcomes of interest.

Furthermore, the Internet Survey asks a series of questions aiming to measure the wealth losses that households have suffered. Specifically, households are asked whether their own home is worth more, less or about the same compared to its value in the summer of 2006, which is the year in which house prices peaked in the US. Then, they are also asked to report the change in the value of their house, both as an amount and as a percentage. We use as a forcing variable in our specifications the answer to the percentage change question, given that the questions on changes in spending and, as we will see below, in the value of financial assets are also asked in percentage terms.

Finally, the Internet Survey also asks a series of questions regarding the percentage losses in the value of the following financial assets: employer retirement saving plans (incl. 401k's); individual retirement accounts (IRAs) or Keogh plans; investment trusts; mutual funds; directly held stocks; and stocks held through other assets. For each of these assets owners are asked to report the percentage decline of the asset value since September 2008, which was the month in which Lehman Brothers collapsed, resulting in a major upheaval in financial markets worldwide. Unlike the questions on the change in the value of the house, the questions on changes in the value of financial assets ask only about losses, and hence the values of the corresponding variables are censored at zero. However, given the fact that

financial markets went in a tailspin in the fall of 2008, and that the US stock market in particular hit bottom in March 2009 (i.e., one month before the Internet Survey began), we think that very few, if any, households in the survey may have experienced any financial gains. In any case, in order to test the sensitivity of our results to this feature of the data, we also tried as an alternative to the continuous percentage change variable a four-level categorical variable, the top level of which denotes no losses or gains, while the other three levels the terciles of financial losses. Using this alternative categorical variable did not change our results in any significant way.

Our primary objective is to examine the relationship between changes in consumption and changes in housing wealth and in financial wealth. The latter will be expressed either as a weighted average of the percentage change in the aforementioned six financial assets, or as six separate percentage change variables. We construct the weighted average of the percentage change in the value of financial assets, by weighing the percentage change in each of the six asset categories with the financial portfolio share of the respective asset, as recorded in the Internet Survey.

The data we use in this paper refer to the population aged 50 or older, and are therefore particularly well suited to analyze the impact of wealth shocks on consumption. Indeed, older households have accumulated significant amounts of wealth over the lifecycle and therefore control a large fraction of society's resources; thus their decisions have pronounced aggregate implications. Those aged fifty and above typically have higher stock market participation rates than the rest of the population, and a higher fraction of their wealth is invested in risky financial assets. Furthermore, over 90 percent of households in the sample own their home. Hence, our analyses are less likely to suffer from the endogeneity bias that arises when one examines consumption responses to housing wealth losses over homeowners, and the heterogeneity of responses with respect to wealth losses experienced by owners and renters. Finally, recent studies emphasize that co-movements in consumption and house prices may be driven by a common factor such as income expectations. Given that the elderly typically face a relatively flat future income profile, this problem may be less severe in our sample. Our data have also drawbacks, however, chiefly that the unemployment rate and the probability of job loss tend to be lower among older households.

We find that capital losses on housing and financial assets, as well as the income loss from becoming unemployed, do indeed lead households to reduce their spending, and that these effects are net of the influence of a number of important socio-economic characteristics including change in family size, health deterioration, and change in working and retirement

status. We also look closely at disaggregated financial assets and show that the effects of financial losses come primarily through losses experienced from directly held stocks and in IRAs.

More specifically, we estimate that the elasticity of consumption to financial wealth is about 0.08, implying a marginal propensity to consume with respect to financial wealth equal to 3.3 pp. In addition, households in which at least one of the two partners in the main couple (or the single head) became unemployed in 2008 and early 2009 reduced consumption by 10 percent in 2009. Finally, we find that the fall in house prices also has an important impact on consumption (the estimated elasticity is about 0.054 and the associated marginal propensity to consume reaches 1 pp).

We then attempt to generalize these results from our sample population of the 50+ to the whole US population by applying our estimated (semi-)elasticities of consumption to capital losses and unemployment to aggregate data on these factors. When we perform this calculation we find that housing and financial capital losses and unemployment have a combined negative impact on aggregate expenditure equal to -2.8 percent from the 2nd quarter of 2008 to the 2nd quarter of 2009. This result means that capital losses and increased unemployment account for about 90% of the observed drop in personal consumption expenditure in that same period. One should keep in mind, however, that these results rest on the assumption that younger households will react to the three aforementioned negative shocks in the same way as older households. This assumption might not be warranted, as younger households have a longer horizon in which they can adjust their consumption, and thus the current drop in their expenditure could be smaller. On the other hand, the perceived drop in permanent income due to the recession could be larger for younger households, given that their older counterparts are at the end of their working lives, or already retired. This effect would work in the opposite direction from that of the longer lifespan, i.e., it could make younger households' consumption drop larger than that of the older ones.

According to several models of intertemporal choice, the impact of wealth shocks on consumption depends on the nature of the shocks (permanent or transitory) and the opportunities to smooth them through credit and insurance markets. We attempt to distinguish between permanent and transitory shocks to financial wealth relying on subjective expectations elicited in the Fall of 2008 about stock market gains or losses expected one year ahead. We split the sample between households that expected the stock market to recover in a year's time, and those who did not. We expect the consumption response to wealth shocks to be larger for the latter group, who are likely to perceive the negative shock to their financial

wealth as permanent. Indeed, we find that the response of consumption to this shock is very strong for this group of households, while it is insignificant for the other group.

We performed several test in order to check the robustness of our results, which remain largely unchanged in all cases. These tests consist of the inclusion in our specifications of variables denoting: i) a change in the households' permanent income; ii) a measure of the uncertainty that households face; iii) regional economic conditions that might affect households' economic outlook and expectations; iv) the potentially differential impact of capital losses on more indebted households; v) whether households sold or bought any of the financial assets reported in the survey. Additional checks included the use of a categorical variable as our measure of consumption change instead of a continuous one, the use of quartiles of losses instead of linear terms, and the estimation of a nonlinear statistical model for consumption change. Once more, in none of these cases did our results change in any substantive way.

We thus conclude that the consumption expenditure of older US households during the Great Recession was strongly negatively affected by the large capital losses on their housing and financial wealth, as well as by any job loss that they experienced. This means that as long as the housing and stock markets remain at depressed levels, and as long as the employment situation does not improve, it will not be easy to obtain a rebound in household expenditure because households will need to rebuild their assets position by saving. This process is unlikely to be brief, given that households have lost such a large chunk of their wealth, while still being saddled with considerable debt and experiencing very modest income growth. In addition, it is very likely that this slowdown in expenditure negatively affects firm investment, which could lead to more layoffs and continued low asset prices. In order to break this vicious circle policy makers need to take measures that make households feel more optimistic about their economic prospects, thus making them more likely to consider the drop in their wealth to be temporary, which in turn should induce them to spend more. Unless this happens, the US is unlikely to experience robust growth in the short term.