Did the housing boom increase household spending?

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By Shenyi Jiang, Wei Sun, and Anthony Webb*

Introduction

Between 1995 and 2007, inflation-adjusted house prices more than doubled in some areas of the United States. During this unprecedented boom, households spent more and reduced their saving rate. A key question is how much of the increased spending was related to rising house prices, as opposed to other factors? And, if households spent more when prices soared, are they likely to cut back during the housing bust? The answers can help in assessing retirement saving trends.

This *brief* uses the *Health and Retirement Study* to examine the spending behavior of older households during the housing boom and subsequent bust. It compares changes in spending on non-durable goods (e.g., meals out, vacations, and entertainment) of households in areas with rapid growth in house prices to those in areas with relatively stable prices. The results show that rising house prices led to a modest increase in annual consumption that, if sustained over time, could eat up a significant portion of the gain. Interestingly, the study also finds that households experiencing a decline in house prices do not correspondingly reduce their consumption.

This *brief* is organized as follows. The first section covers the economic intuition behind how households might react to changes in house prices. The second section describes the data and methodology. The third section presents the results. The final section concludes that households may undermine their retirement security if they spend their gains but ignore their losses.

Background

For some households, the house is simply a place to live. An increase in house prices should have no effect on their consumption, as it does not put money directly into their pocket. But others also think of the house as an asset that will eventually be sold; for example, upon death of a spouse or entry to long-term care. For these households, the value of the house can be divided into two components: 1) the expected present value of living in the house until it is sold; and 2) the expected present value of the eventual sale proceeds.[1] If the value of the house increases and the

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household has no intention of downsizing, it does not benefit from the increase in the value of continuing to live there.[2] But it may decide to consume part of the increase in the value of the eventual sale proceeds. It can do so in two different ways. First, it can borrow against the house's value, through a home equity loan or a reverse mortgage.[3] Second, and more simply, a household can increase its consumption by saving less. The reasoning here is that because one asset (the house) has increased in value, a household no longer needs as much in financial assets for retirement.

Some households may choose to spend all of the increase in house prices immediately. But economic theory predicts that the immediate impact on consumption will be much more modest. The reason is that many may choose to do nothing with additional home equity, allowing the appreciation to pass as a bequest, while others may choose to spread out any increase in consumption over their remaining lifetime.

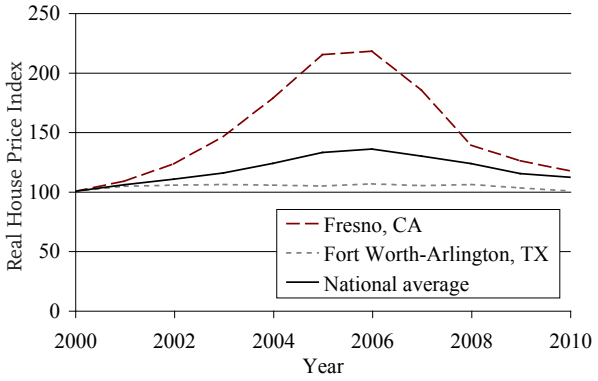
Previous studies of the direct impact of house prices on consumption have used both aggregate and household-level data. The study summarized in this *brief* uses nationally representative household-level panel data that have not been previously analyzed for this purpose and updates previous research by focusing on the impact of the recent house price boom and subsequent bust.[4]

Data and Methodology

The research uses data from the *Health and Retirement Study* (HRS), a nationally representative panel dataset of older American households, age 51 and over.[5] HRS interviews have been conducted every two years since 1992.[6] In the "off years," starting in 2001, a random subsample of initially 5,000 participants was mailed a questionnaire asking the amounts spent on a comprehensive list of goods and services, the Consumption and Activities Mail Survey (CAMS). Our analysis focuses on spending on the following categories of non-durables: food and drink, dining out, clothing and apparel, hobbies and leisure equipment, entertainment and tickets, trips and vacations, and gasoline.

The research strategy involves estimating an equation to explain the change in non-durable consumption over a four-year period – either 2001-2005 or 2005-2009.[7] The main explanatory variable of interest is the change in the value of the household's primary residence over the period. Under this approach, the change in consumption for households in areas with rapid house price growth is compared to those with slower growth. The definition of "area" used is the Census Bureau's Metropolitan Statistical Area (MSA). As an example of the variation in house price patterns by metropolitan area, Figure 1 compares two MSAs – Fort Worth-Arlington, TX, and Fresno, CA – with the national average.

Figure 1. Changes in House Prices in Selected MSAs and Nationwide, 2000-2010



Note: All prices are in inflation-adjusted terms and are rebased to 2000 equals 100.
Source: Federal Housing Finance Agency, *House Price Index* (2000-2010).

A potential concern is that local economic conditions might affect house prices and incomes, and that incomes might in turn affect consumption, resulting in a spurious relationship between changes in house prices and in consumption. The analysis addresses this concern by controlling for changes in MSA-level unemployment rate and per capita income.

A second potential concern relates to the measurement of house prices. One approach would be to use self-reported values. But these are subject to reporting error. The project therefore assumes that each household experiences the average percentage house price increase for their MSA of residence.

The study excludes renters, who at older ages are a small minority with very different socioeconomic characteristics from owners. It also excludes those who move and who therefore have additional opportunities to adjust consumption. And it excludes households whose composition changed during the four-year period.

Results

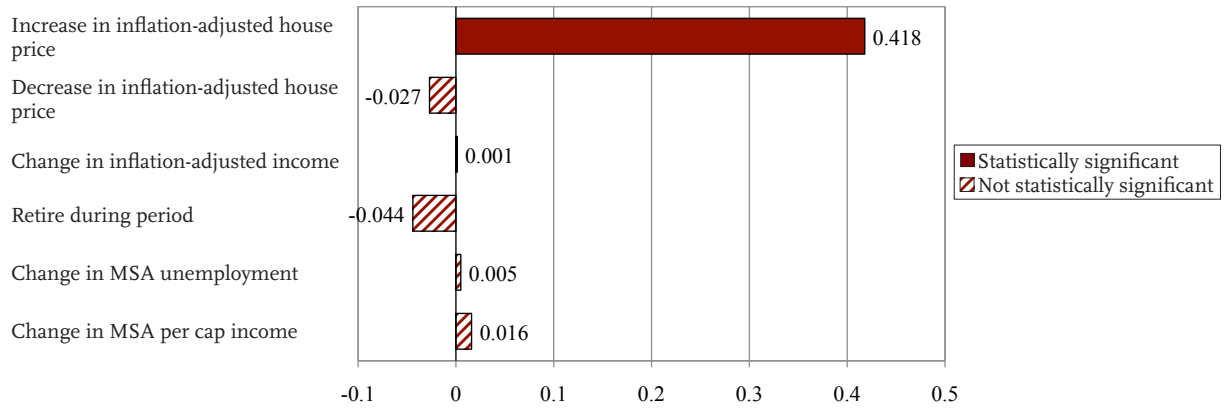
Figure 2 reports the baseline results; the key finding is that more rapid growth in house prices does increase consumption of non-durable goods. For example, in 2001, house values for the sample households averaged about $171,000, and annual non-durable consumption of older homeowners about $13,000. If house prices increased by 10 percent, or $17,000, our results predict that non-durable consumption would increase by 4.1 percent, or $533 a year, an amount that is about 3 percent of the increase in house price.[8] At first glance, this response may appear small. But it reflects only a single year's consumption. Households might choose to continue to spend more in subsequent years, so that the cumulative portion of house price appreciation that is consumed could be much greater. For example, if a household continued its higher spending level over 20 years, it would consume over half of the increase in its house value. In addition to non-durable consumption, households might also increase other types of consumption.[9]

The influence of other economic and demographic factors in explaining the change in consumption appears to be minimal. The effects of the MSA-level unemployment rate and per capita income are small and statistically insignificant, indicating that local economic conditions have little effect on the behavior of older households. Surprisingly, changes in incomes also have little effect on changes in consumption, possibly reflecting the relative predictability of the income of these older households.[11]

It may be perfectly reasonable for a household to spend a bit more when the value of its assets rises – if the increased value of the assets is sustainable. However, the housing boom was a temporary phenomenon and, of course, it has been followed by a steep and prolonged decline in prices. So, to assess the implications of the tendency to spend more when house prices rise, it is important to understand how households might behave when prices fall. Do they cut back on their spending to compensate for declining asset values? Our analysis was able to test this reaction as the period we studied included the initial years of the housing bust.

Overall, the number of households in our sample experiencing house price declines was significantly smaller than those experiencing increases. Therefore, the impact of such declines on consumption should be interpreted with caution. But, interestingly, price declines do not have a statistically significant effect on spending (as shown in Figure 2).[12] Thus, faced with a

Figure 2. Impact of Selected Factors on Change in Household Spending on Non-Durable Goods, 2001-2005 and 2005-2009



Note: For all variables except "retire during period," the values represent the percentage impact on spending of a 1-percentage-point change in the variable.[10]

Source: Authors' calculations using University of Michigan, *Health and Retirement Study, Consumption and Activities Mail Survey*, linked to SSA administrative data (HRS-CAMS-SSA) 2001-2009.

decline in house prices, households do not appear to reduce their spending. This result may reflect a tendency for spending patterns to become a habit that is resistant to change even when circumstances change.

Conclusion

The housing boom increased spending on non-durables by older households. The amount of the annual increase is relatively modest. A typical older household increased its annual non-durables spending by 3 percent of the increase in the value of its house. But if it continued to spend at this rate, over 20 years it might spend more than half of the increase in value. One finding of potential concern for retirement readiness is that, while households are willing to spend more when the value of their house rises, they appear less likely to tighten their belts when their house price falls.

Endnotes

1 Expected present values are calculated using a rate of interest, reflecting the fact that money or value received in the future is worth less than the same amount received today.

2 Venti and Wise (2004) show that downsizing is relatively uncommon among older households.

3 Sinai and Souleles (2007) calculate the percentage of housing wealth that can be consumed through a reverse mortgage at various ages.

4 Using aggregate data, Elliot (1980) found no relationship between house prices and consumption. In contrast, later studies, including Bhatia (1987); Skinner (1989); Benjamin, Chinloy, and Jud (2004); Case, Quigley, and Shiller (2005); and Carroll, Otsuka, and Slacalek (2006) found significant effects.

Using U.K. household-level data, Campbell and Cocco (2007) found an effect. In contrast, Attanasio et al. (2009), again using U.K. data, found no effect. Using U.S. household-level data, Bostic, Gabriel, and Painter (2009) found an effect for 1989 to 2001. Using data from 1984 to 1989, Engelhardt (1996) concludes that house prices affect active saving (the excess of current income over current consumption), but not total saving. Using data from the 2004 *Survey of Consumer Finances*, Munnell and Soto (2008) found that households with larger unrealized housing capital gains were significantly more likely to both withdraw and consume housing equity. They also projected to 2008 the impact of the housing boom on household net worth.

5 For an overview of the HRS, see Juster and Suzman (1995).

6 The original HRS sample consists of households in which the head was ages 51-61 in 1992. Over time, additional households – both older and younger than the original sample – have been added. The youngest household heads in our sample were age 51 in 2004.

7 Given this approach, some households appear twice: once for 2001-2005, and again for 2005-2009.

8 The model is estimated in logarithms, so the "increase in house price" coefficient of 0.418 approximates to, but does not precisely equal, the percentage change in non-durables consumption over a four-year period resulting from a 1-percent increase in house prices over the same period.

9 The study summarized in this *brief* does not analyze durables consumption. Durables yield a flow of consumption services over their life, and it is difficult to relate the amount of that flow to the initial purchase price.

10 A household is defined as retiring if the CAMS respondent reports that he is not retired at the initial CAMS interview, but states that he is retired at the subsequent interview. We also experimented with an alternative definition of retirement – if the male head of the household was working for pay at the HRS interview immediately before the first CAMS interview and not working for pay at the HRS interview four years later. The coefficient on this variable was also small and insignificant.

11 Some of the households retired during the survey period, resulting in a significant decline in income. But if retirement was planned, the household may be able to maintain its pre-retirement consumption.

12 Although the coefficient is imprecisely estimated due to the small sample size, statistical tests enable us to reject the hypothesis that the "house price increase" and "house price decrease" coefficients are identical – that house price decreases result in declines in consumption that equal the increases in consumption when house prices rise.

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