Housing Price Declines and Household Balance Sheets

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Abstract

This letter introduces data from a new national household survey known as the *Consumer Finance Monthly* to quantify the impact of recent housing price declines on the balance sheets and financial stability of American households. We present data through June 2008 on loan-to-value ratios, the percentage of homeowners in delinquency, and the impact of recent events in housing on the net worth of U.S. households. We also estimate the likely losses for first mortgages on owner-occupied housing. We find that despite the recent decline in house prices, households improved their net worth position from the 2005/6 period to the 2007/8 period, except for those whose net worth was in 95th percentile and above. The period of housing price declines tended to leave lower-net worth households better off *relative* to the households higher in the wealth distribution. We find that based on data from the second quarter of 2008, losses on first mortgages on owner-occupied homes are expected to range as high as $180 billion.

Key Words: Housing Market, Survey Data, Mortgage, Net Worth

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In this letter we use a new data source to quantify the impact of recent housing price declines on the balance sheets and financial stability of American households. We find the situation does not conform to the picture frequently promoted in the popular press, especially with regard to loan-to-value ratios, the percentage of homeowners in delinquency, and the impact of recent events in housing on the net worth of U.S. households. We also estimate the likely losses for first mortgages on owner-occupied housing.

Data that track the recent upheaval in household balance sheets are very limited. Here we examine these trends with data from the *Consumer Finance Monthly* (*CFM*)[1] which began a monthly monitoring of consumers' balance sheets in early 2005. This survey has collected over 12,500 interviews through June 2008. In Tables 1-2 below we show the consistency of the *CFM* with the Federal Reserve Board's *Survey of Consumer Finances* (*SCF*), which is collected once every three years with a sample of approximately 4,500. The 2004 *SCF* data are available, but the 2007 *SCF* has not been released.

Data from the 2005 *CFM* track the data from the 2004 *SCF* fairly closely, allowing for normal growth trends and known sample differences. While the *SCF* over-samples high-income earners who are likely to have high net worth using information provided by the Internal Revenue Service, the *CFM* uses a random sample and hence includes fewer very wealthy individuals. However, aside from the extreme upper tail of the income and wealth distributions, weighted data from the *CFM* yields a balance sheet for American households that is well-matched to the *SCF* and gives researchers access to current information on critical trends in household financial condition. Tables 1-2 provide summary balance sheet data and a summary of owner-occupied house values and household debt by type for 2004 from the *SCF* and for 2005-2008 from the *CFM* respectively.[2] (Note that the aggregate balance sheet numbers in the two surveys are closer than some of the components, reflecting categorization differences.[3])

[1] *CFM* is a telephone survey collected by the Center for Human Resource Research at Ohio State University.

[2] The yearly data in both surveys coincide approximately with their respective calendar years.

[3] The *CFM* counts home equity lines of credit under "other home secured" while the *SCF* puts it under mortgage debt. Note also that the *CFM* over-samples homeowners due to its employment of random-digit dialing techniques based on listed numbers.

Table 1: SCF and CFM Balance Sheet Summary*

		Non-Financial Assets	Financial Assets	Debts	Net Worth (all)
2004 SCF	Median	$147,800	$23,000	$55,300	$93,100
	Mean	$366,300	$200,700	$103,400	$448,200
2005 CFM	Median	$145,600	$36,000	$56,000	$71,100
	Mean	$252,900	$214,000	$85,400	$300,500
2006 CFM	Median	$172,500	$51,000	$61,000	$105,000
	Mean	$289,400	$234,400	$97,800	$362,600
2007 CFM	Median	$175,000	$70,000	$67,000	$148,700
	Mean	$ 300,300	$261,700	$100,700	$402,400

*Figures refer to those holding assets/debts, except for net worth which covers all households. All data are in nominal dollars.

Table 2 – Comparison of SCF and CFM Home Value and Liabilities (Percent Holding, Median, Mean)

	Home Value	Home Mortgage	Other debt – Home secured	Credit Card Debt	Other Installment Debt	Any Debt
2004 SCF %	69.1%	47.9%	4.0%	46.2%	46.0%	76.4%
Median	$160,000	$95,000	$87,000	$2,200	$11,500	$55,3001
Mean	$246,800	$124,100	$166,700	$5,100	$18,800	$103,400
2005 CFM %	71.9%	38.1%	9.6%	40.1%	40.8%	64.6%
Median	$165,000	$97,000	$18,000	$1,850	$11,800	$56,000
Mean	$235,700	$121,600	$29,400	$4,700	$18,400	$85,400
2006 CFM %	74.4%	40.0%	10.2%	33.1%	40.4%	62.3%
Median	$180,000	$100,000	$22,000	$3,000	$12,000	$61,000
Mean	$256,400	$128,800	$32,200	$6,000	$19,500	$97,800
2007 CFM %	73.1%	41.9%	12.8%	32.5%	39.9%	63.0%
Median	$190,000	$100,000	$20,000	$3,000	$12,000	$84,000
Mean	$264,300	$130,200	$30,300	$7,000	$19,000	$119,400

We now turn to how household balance sheets have changed and how credit worthiness has deteriorated in the face of the fall in housing prices using only *CFM* data. We take the overall peak in house prices to be around July 1, 2007[4]. We consider three 12-month

[4] http://www.ofheo.gov/media/pdf/4q07hpi.pdf ; p. 4-6. Both our data, based on owner reported home values, and data from the Office of Federal Housing Enterprise Oversight show the peak came at different times in different regions.

periods: July 1, 2005 – June 30, 2006; July 1, 2006 – June 30, 2007; and July 1, 2007 – June 30, 2008. This allows us to look at two full years preceding the peak in housing prices and one full year after the peak.

Table 3 – Total Net Worth Summary Statistics by 12-Month Periods Before and After the Peak in House Prices

	July 2005 through June 2006	**July 2006 through June 2007**	**July 2007 through June 2008 (% Change from 2006/7)**	**% Change 2005/6-2007/8**
Net worth				
Mean	$331,500	$384,400	$358,600 (-6.7%)	+8.2%
Median	$87,500	$125,000	$127,200 (+1.8%)	+45.4%
Percentiles				
20	$4,700	$5,900	$5,000 (-14.5%)	+6.6%
40	$38,000	$81,100	$77,500 (-4.4%)	+103.9%
60	$152,000	$229,000	$200,000 (-12.7%)	+31.6%
80	$438,500	$551,800	$498,000 (-9.7%)	+13.6%
90	$868,600	$1,010,000	$900,000 (-10.9%)	+3.6%
95	$1,512,000	$1,687,300	$1,382,000 (-18.1%)	-8.6%

We see from Table 3 that while net worth fell after July 1, 2007, the fall in general has not yet brought most households back to where they had been two years earlier. Households improved their position from the 2005/6 period to the 2007/8 period, except for the 95th percentile and above. We thus find that the period of housing price declines tended to leave lower-net worth households better off *relative* to the households higher in the wealth distribution.

In Table 4, we see the increase in general delinquencies for all debt types was substantial from 2005/6 to 2006/7. The percentage of households with late payments on their home lagged the general delinquency situation, but accelerated in the 2007/8 period. Also, on average the monetary value of poorly secured mortgages (LTV>80%) which are behind in payments has gone up sharply.

Table 4 – Percentage of Households with Delinquency

	July 2005 through June 2006	July 2006 through June 2007	July 2007 through June 2008
60 or more days late on any payment	13.4%	14%	15.1%
For Homeowners:			
60 or more days late on home payment	1.6%	2.3%	4.4%
Fraction households with LTV over 80%	13.7%	16.8%	19.4%
Homeowners with LTV>80%			
60 or more days late given LTV>80%	3.4%	4.6%	8.5%
Mean late mortgage with LTV>80%	$61,500	$117,900	$165,600

According to the Census Bureau's 2005 *American Housing Survey*, of the nation's roughly 75 million owner-occupied homes, about 50 million or 67 percent, have a conventional first mortgage or home equity loan. Based on *CFM* data, roughly 80 percent of the homeowners with a first mortgage in 2007/8 had an LTV ratio under 80 percent and hence their first mortgages are reasonably well secured. Of the 20 percent of mortgages with LTV>80%, which we will refer to as "subprime" [5] for convenience, 8.5 percent have reported payments late 60 or more days in 2007/8, and the average size of these late mortgages is $165,600. By this definition, there are about $140 billion in delinquencies on poorly-secured mortgages for owner-occupied homes. However, other *CFM* data show that the fraction of mortgages in this subprime category that were late 60 days or more in the second quarter of 2008 has risen to between fifteen and twenty percent.

Default results in approximately a 40 percent loss in loan value [6] with an estimated additional 20 percent loss due to administrative costs dealing with the default, split between the lender and mortgage insurer, if any. This means that there are about $90 billion in nascent mortgage losses on borrowers in trouble during the 2007/8 period and possibly as much as twice that amount, or $180 billion, if one uses the higher late rates we see during the second quarter of 2008. Despite the decline in housing prices, the fact that total home-owners' equity is still about 70 percent of the value of their homes [7]

[5] Survey data cannot reliably determine which mortgages would have been considered "subprime" using conventional definitions at the time of origination. However, surveys can measure the outstanding balance on mortgages and the current value of the home. While our definition is unconventional, we will use the term "subprime" to refer to loans for which the remaining principal is more than 80% of current house value.

[6] Figures on recovery vary. A recent report from Fannie Mae (http://bloomberg.com/apps/news?pid=20601208&sid=aMz0dl3IdwjU&refer=finance) stated that in the first quarter of 2008 they recovered 74% of the loan amount on foreclosures versus 97 percent in 2005.

[7] The popular press has recently reported that homeowner equity is less than 50 percent of housing value. This is based on Flow of Funds data and is inconsistent with the 2004 *SCF*, the 2005 *Census of Housing* and *CFM*.

constitutes a substantial fire break for the mortgage security market, although large loan losses are on the horizon.

The market clearly faces substantial uncertainty about the value of mortgage portfolios, and many institutions are fleeing the market, which creates additional liquidity and valuation problems. Nevertheless, the evidence thus far suggests the problem of first mortgages on owner-occupied homes, while large, is not disastrous. In aggregate, growth in household financial wealth has offset losses in home equity for all but the most affluent. Of course, not all mortgage debt is on owner-occupied housing. Mortgages on new construction and the purchase of houses and apartments in anticipation of a future profitable sale have created a large part of the current problem, although *CFM* does not allow us to measure the condition of such mortgages.

More troubling than the nascent $90 – $180 billion loss in mortgages on owner-occupied homes that may be liquidated is the resultant uncertainty in how to value mortgage-backed portfolios. Based on the findings above, even if mortgages on owner-occupied homes generated $180 billion in losses, the situation would be manageable. However, mortgage portfolios frequently contain mortgages that do not cover only owner-occupied housing and hence have even more speculative pedigrees[8], exacerbating the situation. Thus there is uncertainty as to what sorts of debt are in which portfolios of collateralized mortgage obligations, and this makes the value of banks holding such assets even harder to determine. The decline in house valuations varies by state, but the resultant illiquidity affects the entire country.

In summary, we have seen here that, except for the top 5 per cent, the mean net worth of households continues to grow despite the fall in housing prices.[9] The great mass of consumers appears to have been more conservative in the management of the debt on the homes they occupy than the difficulties described in the popular press suggest.

References

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[8] Personal communication with individuals connected to bundling mortgage debt, such as mortgages to developers or to individuals making real estate investments in rentals or to "flip" homes.
[9] The increase in financial assets may reflect the shift from defined benefit plans, which are difficult for respondents to value, to defined contribution plans that are easier for respondents to value.