

The Relationship Between Housing Values and Demand for Reverse Mortgages

Eileen St. Pierre, Oklahoma State University

With the aging of the baby boom generation, much attention has been focused in the consumer education community on how this generation will finance their retirement given their lack of personal savings, as compared to previous generations. One financial instrument increasingly being considered is the reverse mortgage. A reverse mortgage is a special type of home loan that allows a homeowner to convert a portion of his or her home equity into cash. The value of the home is, therefore, an important determinant of the cash flow received by the homeowner from a reverse mortgage.

Home values have certainly changed in the past decade. The cause of the tremendous growth in home values experienced earlier in this decade is difficult to pinpoint. Shiller (2005) documents that housing prices started to rise above their real long-term average in 1998, but this was not a national trend. He attributed this rise to a delayed reaction to the stock market boom of 1995. But the psychology of people feeling, on a national basis, that they were going to be priced out of their homes began in 2000. Shiller considered this to be the start of a nationwide housing bubble that lasted until mid 2006. The dramatic decline in housing prices that has occurred since then has contributed to a lack of confidence in the credit markets and rising home foreclosures.

This study examines how the surge in home values between 2000 and 2006, and the precipitous drop in prices since then, are related to the demand for reverse mortgage loans in the United States. It also investigates the relationship between recent trends in reverse mortgages and borrower characteristics such as age, gender, and state/region of residence of the eligible homeowner(s). The results of this study provide insight into how consumer educators, the Federal Government, the mortgage

industry, and financial planners can better educate the older adult population about this type of financing. The results also provide insight into how the older adult population may be viewing this type of financing.

Background Information

Since December 2007, approximately 90% of all reverse mortgages have been Home Equity Conversion Mortgages or HECMs. These reverse mortgages are available through the U.S. Department of Housing and Urban Development (HUD) and sponsored by the Federal Housing Authority (FHA). For these mortgages, the FHA absorbs some or all of the loss if the loan value exceeds the value of the home.¹ There are also private reverse mortgages, but since the HECMs dominate the market, this study focuses on HECMs.

Before applying for a HECM, an individual must meet either face-to-face or over the phone with a HUD-approved counselor. The counselor must explain the loan's costs, the financial implications, and other alternatives available to the individual such as a home equity line of credit. To date, four agencies have been approved by HUD to provide reverse mortgage counseling. These agencies include Money Management International (MMI), the National Foundation for Credit Counseling (NFCC), the National Council on Aging (NCOA), and the Consumer Credit Counseling Service (CCCS).

¹ The lender selects either the assignment option or the shared premium (or coinsurance) option after the HECM loan has closed. Under the assignment option, the FHA collects all the premiums and the lender can assign the loan to the FHA when the balance reaches 98% of the maximum claim amount. Under the shared-premium option, the lender retains a portion of the periodic premium and is liable for losses that exceed the maximum claim amount. Fannie Mae now buys HECM loans with the assignment option for securitization.

There are several factors that determine how much money homeowners can borrow against their homes. These factors include: the homeowner's age, the current value of the home and its growth rate in the future, current interest rates, and the amount of equity in the home (Szymanski, 1994; Quercia, 1997; Skarr, 2008).² To even qualify for a reverse mortgage, individuals need to be at least 62 years of age and own their own home, or at least have a very large equity stake. Generally speaking, the older an individual is, the more valuable his/her home is, and the lower interest rates are, the more money the individual can access.

Once the amount of the reverse mortgage has been determined and the loan has been accepted by the borrower, the lender then makes payments to the homeowner, allowing them to draw down on the equity in the home. These payments are generally tax-free and do not affect an individual's Social Security or Medicare benefits. Also, there are no income or asset requirements so an individual's creditworthiness is not considered by the lender.

Payment of the reverse mortgage loan is required when the borrower no longer uses the home as the primary residence, sells the home, or passes away. If the owner dies, then the heirs/estate may decide to pay off the loan and keep the house, or sell the house and use the proceeds to pay off the loan. Once the loan is paid off, all remaining proceeds from the house sale go to the surviving owner or estate. In any case, the loan will never exceed the home's value at the time the loan comes due. This is referred to as a non-recourse loan.

For many individuals, a home is the largest investment they make over the course of their lifetime. The expectation is that

they will accumulate equity in their home and use this equity to finance consumption needs during retirement. In recent years, a growing number of older Americans have turned to reverse mortgages because they are able to draw down the equity in their home without having to sell the home, which allows them to still live in the home during retirement. Recent declines in the housing market have affected the amount of equity older individuals can take out to support their retirement living. The result is that older Americans may delay taking out a reverse mortgage. Instead, they may turn to other forms of retirement savings until the housing market turns around.

It is important to understand how changes in home values are related to demand for reverse mortgages. Very little, if any, research has examined trends in the reverse mortgage industry and factors related to demand. This paper takes an initial step at addressing two important research questions: (1) How has demand for reverse mortgages changed during both a period of rapidly rising home prices and a period of declining home prices? (2) Has there been a nationwide change in demand and does it vary by state or region?

Trends in the Reverse Mortgage Industry

The HECM Single Family Portfolio Snap Shot contains monthly data on HECM loans from January 1990 to April 2009. These data have been made publicly available by HUD (<http://www.hud.gov>). The data contain information on the property location, the originating financial institution, the type and level of interest rate, the initial principal limit, and the maximum claim amount. The initial principal limit is the present value of the loan proceeds that are available to the borrower at closing. Even though homeowners do not make interest payments while they remain in the home, interest is accumulated over the life of the reverse mortgage. This accumulated interest is added to the principal

² In July 2008, Congress passed the Housing and Economic Recovery Act, which raised the limit on reverse mortgages to \$417,000, regardless of the home's value. Prior to this Act, lending limits were determined on a county-by-county basis. In February 2009, the limit was raised to \$625,000 with the passage of the American Recovery and Reinvestment Act. This increase is temporary for the rest of 2009. Congress will need to extend this higher loan limit or the upper limit will return to \$417,000 in 2010.

limit to calculate the loan balance.³ The maximum claim amount is the maximum amount insured for each loan and is equal to the lesser of the appraised value of the property or the upper limit (\$625,000 in 2009 or \$417,000 prior to 2009).

This data set is partitioned into three sub periods. Period 1 covers January 1, 1990 to January 31, 2000, which marks the beginning of reverse mortgages up until the housing bubble. Period 2 covers the 2000 to 2006 housing bubble, which goes from February 1, 2000 to May 31, 2006. Finally, Period 3 looks at the recent housing crisis and resulting credit crunch, which spans June 1, 2006 to April 30, 2009. Note that the beginning of the housing bubble is set at February 2000. Looking at the Case-Shiller Seasonally Adjusted Index of Home Prices, the percentage change in the monthly values of the Composite 10 Index did not rise above 1% until February 2000. The end of the housing bubble is set at May 2006. The Composite 10 Index peaked in April 2006 and began falling after that. However, the much broader Composite 20 Index (originated in January 2000) peaked in May 2006 and then began its decline.

Table 1 contains sample statistics taken from the HECM Single Family Portfolio Snap Shot for the top ten HECM states in terms of the number of endorsed loans. A few points are worth noting. First, California dominated the list in all three periods. Second, the state of Florida grew consistently over the three periods with respect to the number of HECHMs written. Third, Arizona began appearing on the list in Period 3, placing fifth with over 12,000 HECHMs being issued. These findings should not be surprising since California, Florida, and Arizona experienced some of the greatest increases in housing values in Period 2, but also suffered some of the largest declines in Period 3. Between June 2006 and April 2009, demand for reverse mortgages was still strong in these

Table 1
Sample Statistics for Top Ten HECM States

Period 1: 01/01/90 to 31/31/00					
Status	Cases	% Total	Lenders	Top 5%	
CA	5,481	14.40	65	35.95	
NY	3,382	8.39	32	63.24	
IL	2,107	5.54	26	75.89	
CO	2,039	5.36	13	98.38	
PA	1,992	5.23	32	68.22	
NJ	1,897	4.98	28	77.96	
WA	1,725	4.54	30	84.82	
FL	1,622	4.26	52	56.10	
VA	1,234	3.24	28	77.79	
UT	1,066	2.56	19	39.19	

Period 2: 02/01/00 to 05/31/06					
Status	Cases	% Total	Lenders	Top 5%	
CA	44,513	75.94	261	61.94	
FL	12,319	7.76	134	60.44	
TX	9,513	5.57	86	73.12	
NY	9,075	5.29	56	77.24	
MI	6,858	4.02	62	73.79	
CO	6,350	3.72	67	74.53	
NJ	6,119	3.57	6	74.24	
IL	5,166	3.01	63	62.56	
PA	4,653	2.71	55	63.26	
MA	4,515	2.63	58	82.19	

Period 3: 06/01/06 to 04/30/09					
Status	Cases	% Total	Lenders	Top 5%	
CA	53,163	16.89	855	39.15	
FL	49,325	15.67	873	29.10	
TX	18,426	5.82	277	47.39	
NY	13,167	4.13	228	54.42	
AZ	12,077	3.84	244	54.08	
MD	11,442	3.64	284	38.49	
NJ	10,690	3.40	287	47.67	
PA	10,364	3.29	251	46.81	
IL	9,561	3.04	276	33.80	
VA	9,405	2.99	259	39.62	

Note: Data were taken from the HECM Single Family Portfolio Snap Shot.

* Top 5% = market share of top 5 lenders in that particular state.

^b HECM loans were not issued in Texas until February 2001.

^a Interest accumulation depends on the way the borrower chooses to receive the proceeds of the loan. The following methods can be used alone or in some combination: lump sum, line of credit, monthly payment for life, and monthly payment for a fixed period.

hard-hit states, despite the fact that homeowners may have been unable to access as much money due to declining home values. Indeed, for all of the states listed in Table 1, the number of HECMs increased between January 1990 and April 2009.

Another interesting statistic is the number of HECM lenders in each state. During Period 1, the number of lenders was small, ranging from 13 in Colorado to 65 in California. During the housing bubble, the number of lenders in all of the top ten states increased. In less than three years following the burst of the housing bubble, the number of lenders exploded for all states, but the numbers were particularly alarming for Florida and California where the number of reverse mortgage lenders increased over 550% and 200%, respectively. In Period 3, there were over 800 different lenders in these two states alone. However, the market share of the top 5 lenders in Florida dropped between Periods 2 and 3 from 60.4% to 29.1% and from 61.9% to 39.2% in California. There were similar drops in market shares for the other states as well.

To identify key factors affecting the amount of money homeowners received from a HECM loan, the following linear regression was estimated for each period during month t on each loan in the HECM Single Family Portfolio Snap Shot database:

$$Y_t = a_0 + a_1 \Delta CS10_t + a_2 \Delta CS10_{t-1} + a_3 SP500_t \\ + a_4 REFIN_t + \sum b_n STATE_{n,t} + e_t. \quad (1)$$

In this equation, Y_t is equal to the initial principal limit divided by the maximum claim amount. Dividing the initial principal limit by the maximum claim amount is done to control for the effect of inflation, thus making the results comparable across time. $\Delta CS10_t$ ($\Delta CS10_{t-1}$) represents the change in the Case-Shiller Composite 10 Index from month $t-1$ to month t (month $t-2$ to month $t-1$); $SP500_t$ is the total monthly return on the S&P 500 Index; $REFIN_t$ is a dummy variable that equals 1 if the loan is a refinance and 0

otherwise; $STATE_{n,t}$ is a dummy variable that equals 1 for state n and 0 otherwise ($n = 1$ to 51);⁴ and e_t is a random error term.

The results of estimating Equation (1) are presented in Table 2. Across all three time periods, almost all state variables had a positive and significant effect on the amount of money a homeowner could receive through a HECM loan. In other words, there was no state or region that had a stronger, more significant impact on the amount of a HECM loan than any other.

The change in home prices at the national level ($\Delta CS10_t$, and $\Delta CS10_{t-1}$) also had a significant impact on the amount of a HECM loan. During the housing bubble in Period 2, as home prices rose in a particular month, homeowners received more money from a HECM loan. The fact that the previous monthly change in home prices had a significantly negative effect on the amount of a HECM loan may indicate how quickly reverse mortgage lenders had to adapt their valuation formulas to the rapidly rising home values. After the housing bubble burst in Period 3, the relationship between the change in monthly home prices and the amount of a HECM loan was significantly negative. This would suggest that, as housing prices fell, the amount of a HECM loan (as a percentage of its appraised value) increased. This could lend support to the argument that older adult homeowners, feeling financially pinched by the economic recession that started in Period 3, still needed to take out HECM loans to help make ends meet.

The performance of the stock market (SP500) had a positive and significant effect on the amount of a HECM loan during Periods 1 and 2. If the stock market was doing well, older adults tended to take out a larger HECM loan to avoid cashing in

⁴ HECMs for all 50 states, the District of Columbia, and Puerto Rico are included in the database. A dummy variable for Puerto Rico was not used to ensure that the model would be of full rank and the parameter estimates unbiased. The effect of taking out a HECM loan in Puerto Rico is reflected in the intercept of Equation (1).

Table 2
Linear Regression Results for HECM Loans

Period 1: 01/01/90 to 01/31/00	Variable	Coefficient	t-value
	ACS10 _t	0.0851	13.59 *
	ACS10 _t	0.0585	9.14 *
	SP50C _t	0.0925	5.94 *
	REFIN _t	-0.0158	-7.28 *
	Constant	0.4741	47.45 *

*p<.01; R²=0.1639; Number of Obs. = 38,507
All state coefficients were positive; only ND, SD, and WI were insignificant at the 5% level.

Period 2: 02/01/00 to 05/31/06	Variable	Coefficient	t-value
	ACS10 _t	0.0388	54.79 *
	ACS10 _t	-0.0356	-44.51 *
	SP50C _t	0.1493	18.61 *
	REFIN _t	0.0040	2.48 *
	Constant	0.5953	60.95 *

*p<.01; R²=0.0471; Number of Obs. = 171,583
All state coefficients were positive and significant at the 5% level.

Period 3: 06/01/06 to 04/30/09	Variable	Coefficient	t-value
	ACS10 _t	-0.0067	-30.71 *
	ACS10 _t	-0.0377	-36.81 *
	SP50C _t	-0.0036	-1.40
	REFIN _t	0.0760	44.95 *
	Constant	0.6423	338.74 *

*p<.01; R²=0.0684; Number of Obs. = 314,689
All state coefficients were positive; only AK is insignificant at the 5% level.

Note: Data were taken from the HECM Single Family Portfolio Snap Shot. The dependent variable is defined as the initial principal limit on the HECM loan awarded to the homeowner divided by the maximum claim amount.

equities. However, this relationship was negative during Period 3, suggesting that homeowners may have been more inclined to take out a larger HECM loan as the value of their retirement portfolios

fell. However, this relationship was statistically insignificant so a definitive statement about homeowner motivation cannot be made.

Table 2 also shows that if the loan was going to be used to refinance an existing mortgage (REFIN_t), the borrower received a significantly smaller HECM loan in Period 1 and significantly greater loan amount in Periods 2 and 3. The proliferation of lenders over time into the reverse mortgage market may provide insight into why the relationship between using a HECM to refinance and the amount of the loan changed. In Period 1, there were fewer lenders. With less total money for HECM loans, lenders may have given priority to homeowners with 100% equity in their homes, explaining the significant negative relationship in Period 1. As the number of lenders grew in Periods 2 and 3, there was more total money available for HECM loans, so homeowners who wanted to use HECMs to refinance an existing mortgage were now able to borrow more money.

Trends in Borrower Characteristics and the Reverse Mortgage Industry

Another data set made publicly available by HUD, the monthly report for Home Equity Conversion Mortgage Characteristics, contains annual averages for variables such as age and gender percentages from fiscal year 1990 to 2009. A subset of the raw data is presented at the top of Table 3. If the average age has been falling over time, particularly after the burst of the housing bubble, this could help show that seniors are relying more on reverse mortgages as an income source for longer periods of time in retirement, not just using this cash flow source for emergencies or long-term care needs (Leviton, 2001). Past literature has theorized that single elderly women would be the primary users of reverse mortgages. They tend to live longer than men and could use reverse mortgages as their final financial buffer against adversity (Morgan, Megbolugbe, & Rasmussen, 1996; Ong, 2008). However, if the percentage of dual (multiple) applicants has risen

over time, this could also indicate that reverse mortgages are being used as a more regular source of retirement income.

Linear regressions were estimated using the annual HUD data presented in Table 3 to examine trends in borrower characteristics over time and make comparisons to trends in the reverse mortgage industry. The following equations were estimated:

$$AGE_t = \alpha_1 + \beta_1 FY_t + \varepsilon_{1t} \quad (2)$$

$$SF_t = \alpha_2 + \beta_2 FY_t + \varepsilon_{2t} \quad (3)$$

$$MULT_t = \alpha_3 + \beta_3 FY_t + \varepsilon_{3t} \quad (4)$$

Within this framework, FY_t is the fiscal year, AGE_t is the average age of borrowers, SF_t represents the percentage of single female borrowers, and $MULT_t$ is the percentage of multiple (dual) borrowers. The variables ε_{1t} , ε_{2t} , and ε_{3t} represent the random error terms for each equation.

The coefficients that were generated from estimating these equations are presented at the bottom of Table 3. The results show that the average age of HECM borrowers and the percentage of single female borrowers were found to have significantly declined over the past 20 years. However, the percentage of multiple borrowers was found to have significantly increased over this same time period. These findings suggest that couples may be making the reverse mortgage decision together earlier in retirement and not leaving it as a last resort for the surviving spouse.

Note that although the number of HECM loans has been increasing over time, the rate of increase has slowed considerably in the last two years. Data from Table 3 can be used to show that the number of HECM loans increased by only 4.3% from fiscal year 2007 to 2008. During the last fiscal year, the number of reverse mortgages only increased by 2.4%. This may suggest that homeowners are weighing the decision to take out a reverse mortgage more carefully since the burst of the housing bubble and the resulting wave of mortgage foreclosures and the subsequent economic recession.

Table 3
Annual HUD Data from Monthly Report on Home Equity Conversion Mortgage Characteristics

	FY	HECMs (#)	AGE (yr)	SF (%)	MULT (%)
1990	1,57	76.75	57.32	26.11	
1991	389	76.53	56.04	30.08	
1992	1,019	76.58	57.66	27.31	
1993	1,964	75.67	54.97	30.66	
1994	3,365	75.16	54.75	30.77	
1995	4,166	76.04	56.46	30.00	
1996	3,596	75.90	56.40	31.06	
1997	5,208	75.94	56.59	30.18	
1998	7,895	75.70	55.98	29.92	
1999	7,923	75.25	54.78	30.75	
2000	6,637	75.96	56.79	30.21	
2001	7,789	75.54	54.46	31.88	
2002	13,049	75.13	51.35	34.68	
2003	18,084	74.30	48.61	37.20	
2004	37,790	74.25	48.62	36.20	
2005	43,082	73.79	46.01	37.94	
2006	76,282	73.75	44.50	38.85	
2007	107,368	73.54	44.60	37.21	
2008	112,014	73.05	43.83	35.55	
2009	114,643	72.92	41.12	37.05	

Linear Regression Results Using Annual HUD Data

$$AGE_t = 77.05 - 0.187FY_t$$

$$SF_t = 0.607 - 0.008FY_t$$

$$MULT_t = 0.266 + 0.005FY_t$$

Note: All of the coefficients for FY_t were statistically significant at the 1% level ($p < 0.01$).

Another point to note is that the percentage of multiple (dual) borrowers has stabilized over the past three years. This percentage peaked in 2006 at 38.9% and has since fallen. While it still has not returned to pre-housing bubble levels, these results suggest that couples are likely considering all of their options for financing their retirement cash flow needs. During the housing bubble, many homeowners were quick to draw down the equity in

their homes. Now that the housing bubble has burst, homeowners may be realizing the consequences of this action.

Implications for Consumer Educators

While the rate of increase has slowed in the past two years, the demand for reverse mortgages has continued to increase nationwide despite the recent drop in home values. The number of individual lenders has also increased. This increase in competition may have left homeowners confused about which company to trust. Seniors appear to be taking our reverse mortgages earlier in their retirement years, indicating that they may be relying on reverse mortgage as a more predictable income source, not just as a last resort that enables them to remain independent. Given the recent declines in the value of seniors' retirement portfolios, consumer interest in reverse mortgages will remain high. It is imperative that seniors and those individuals who are nearing retirement fully understand reverse mortgages. Older adults can avoid becoming victims of reverse mortgage fraud, by considering the following:

- (1) Compare rates from up to four lenders.
- (2) Never pay another company or "estate planning service" to help find a reverse mortgage lender or provide information about reverse mortgages; HUD provides this information free of charge.
- (3) Meet face-to-face with a loan counselor, and avoid lenders who downplay the need for pre-loan counseling or want to do it quickly over the phone.
If the lender pressures you to sign documents that have blanks or incorrect information, cancel the deal immediately and contact HUD about this lender.
- (4) Be suspicious if the lender also wants to sell you other products such as insurance or annuities.
- (5) Beware of lenders who offer home improvement services or repairs through a recommended contractor. Chances are the

contractor is "in" on the scam and will charge very high prices.

- (7) A HECM will never be marketed directly to a homeowner by a government representative. If a salesman claims to be a government representative, then he is not legitimate.
- (8) Other victims report that the lender forged documents or signatures on checks.

For consumer educators, the bottom line is that they need to make sure they counter ads from reverse mortgage lenders with a sound curriculum that provides unbiased and accurate information about the benefits and risks of reverse mortgages.

References

- Leviton, R. (2001). Reverse mortgage decision-making. *Journal of Aging & Social Policy*, 13(4), 1-16.
- Morgan, B., Megbolugbe, I., & Rasmussen, D. (1996). Reverse mortgages and the economic status of elderly women. *The Gerontologist*, 36(3), 400-405.
- Ong, R. (2008). Unlocking housing equity through reverse mortgages: The case of elderly homeowners in Australia. *European Journal of Housing Policy*, 8(1), 61-79.
- Quercia, R. (1997). House value appreciation among older homeowners: Implications for reverse mortgage programs. *Journal of Housing Research*, 8(2), 201-223.
- Shiller, R. J. (2005). *Irrational exuberance* (2nd Ed.). Princeton, NJ: Princeton University Press.
- Skarr, D. (2008). Financial Planner's Guide to the FHA Insured Home Equity Conversion Mortgage. *Journal of Financial Planning*, 21(5), 68-75.
- Szymanski, E. (1994). Risk and the home equity conversion mortgage. *Journal of the American Real Estate and Urban Economics Association*, 22(2), 347-366.

Eileen St. Pierre is Assistant Professor, Department of Human Development and Family Science, Oklahoma State University, 233 Human Environmental Sciences, Stillwater, OK 74078; (405)744-8072; E-mail: eileen.stpierre@okstate.edu