

# Value Of Home Equity Used In Reverse Mortgages As A Potential Source Of Income For Elderly Americans

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*This study examined the amount of funds available from home equity conversion or reverse annuity mortgages as income supplements for elderly people with different characteristics. Based on analysis of the 1989 Survey of Consumer Finances, substantial funds would be available. Information from this study can be useful in advising clients about alternatives for financing elder care, solving financial problems, or increasing income for special needs and wants.*

**Key Words:** *Reverse mortgages, Elderly, Home equity conversion, Survey of Consumer Finances*

A relatively new source of income for the elderly is a reverse mortgage through home equity conversion. A reverse mortgage can allow homeowners to receive a regular income in return for gradually drawing down home equity (Kutty, 1996, p. 6). Financial advisors need information about this source and its advantages and disadvantages before recommending it to clients. This study documents the availability of potential income and examines advantages and disadvantages.

The need for information about sources of funds is increasing with the increase in the elderly population. The rapid growth of the elderly population, especially the aging baby boomers, is of great importance and interest to governmental and financial institutions. Interest focuses on how to achieve intergenerational equity as well as how to improve elderly people's economic well-being (Schultz, 1992). Financial institutions need more understanding about the demographic trends of the elderly and their demand for credit and financial services including reverse mortgages with implications for expanding business when baby boomers mature. As inflation continues and lower rates of return on financial assets reduce elderly people's real income, funds from home equity become increasingly important.

Financial behavior of the elderly may depend on attitude, information about potential sources of income, economic status, income and wealth accumulation. Information about reverse mortgages is crucial because baby boomers are characterized as having fewer children per household, better-educated, double-incomes, and less assured of pension benefits. They are expected to have inherited

wealth, particularly in form of home equity (Peyton & Lotito-Badillo, 1990).

As suggested by several retirement planning studies (Burns & Widdows, 1990; Hogarth, 1991), including home equity wealth as an income-generating and expense-reducing asset in the estimation of savings needed for the retirement would significantly lower the required savings rate. Home equity is an important wealth component for the elderly (Schultz, 1992; Schwenk, 1993). Implications of this study, thus, are far-reaching.

The primary purpose of this article is to identify the potential impact of reverse mortgages on the income of elderly households. Other purposes include determination of the effect of household characteristics on levels of home equity funds, and analyses of the increase in income flow of two types of reverse mortgages.

## *Description of Home Equity Conversion Programs*

A reverse annuity mortgage can enable a qualified homeowner to convert the equity in the home into cash and can be set up to require no repayment as long as the homeowner lives in the home. Reverse annuity mortgage plans are attractive to some people because it gives them more perceived control. The homeowner can decide how to spend the money received in payment. No agency or institution mandates that the funds must be allocated for a particular use. Reverse mortgages can supplement income for the elderly who have insufficient income to support desired consumption.

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The reverse mortgage allows older persons to borrow from their home's equity. The person taking out the reverse mortgage remains the owner and is still responsible for property taxes, homeowner insurance, and repairs. When the loan is terminated, the owner or heirs must repay all cash advances plus interest. The owner can never owe more than the home is worth (Scholen, 1995).

Reverse mortgages, also called home equity conversion or reverse annuity mortgages (RAM), were officially introduced by the Department of Housing and Urban Development (HUD) in 1987 for the unique needs of elderly homeowners (Pratte, 1990). In a traditional mortgage, the lender provides a lump-sum of money at the time of loan origination and the borrower generally repays the principal and interest through monthly payments for the life of the loan. A reverse mortgage generally provides the borrower with a monthly cash flow from the lender and repayment is *not* required until the borrower moves, sells the home, or dies. In contrast, a home equity conversion loan requires an income qualification and the lender can possess the home if the loan is not repaid.

Cash from a reverse mortgage can be received as a lump-sum payment, monthly payments over a fixed period of time, monthly payments over the remaining lifetime of the borrower if the home is used as principal residence, a credit line that allows the owner to decide how much cash to get and when to get it, and some combinations of the above (Kutty, 1996). Payments are tax-free, because they are considered as part of a loan.

There are three categories of reverse mortgages available in the mortgage market: FHA (Federal Housing Administration)-insured reverse mortgages, public-sector reverse mortgages, and private-sector reverse mortgages (Devaney, Del Vecchio & Krause, 1990; Scholen, 1985). Public-sector reverse mortgages, which are different from the other two categories, offer a very low cost program to eligible low-income elderly homeowners for the purpose of home repairs, improvements, or for property tax deferral. Private-sector reverse mortgages are quite similar to the FHA-insured ones but usually are more costly to the borrower. The borrower receives a less amount of cash or monthly payment from the privately-underwritten reverse mortgages, everything else being equal (Pratte, 1990). FHA-insured reverse mortgages offer three options depending on the borrower's financial needs: tenure, term, and line of credit. The tenure option

provides monthly payments to the elderly borrower as long as he or she remains in the home. Under the term option, the borrower gets monthly payments from the lender for a fixed period of time and repays in a lump-sum when the loan matures. This is considered riskier to elderly homeowners because they may lose their homes at the end of the loan contract. Elderly who do not need a supplement to their income, but may need a lump sum of money at times for paying large health care bills or home repairs, may choose the line of credit option, which is similar to open-end credit in the financial market.

The monthly payment of a reverse mortgage depends on these variables: borrower's age (life expectancy), sex, marital status, amount of equity in the house, (75%-80% available for loan) mortgage interest rate, ratio of the loan amount to the house's value, origination cost (e.g., 3% of the principal) and projected rate of appreciation in the home's value (Mayer & Simons, 1994). The monthly or lump-sum payment by a reverse mortgage is positively related to the borrower's age and the value of home equity, but negatively related to his or her life expectancy and market rates.

## Review of Literature

### *Previous Research*

Findings from the Health Insurance Association of America (*Long-term care*, 1992) suggest that home equity conversion plans serve as useful mechanisms for financing long-term care (LTC) expenses:

Three-quarters of the over-65 age group own their own homes and approximately 80% are mortgage-free. Older women are most likely to incur significant LTC expenses due to greater longevity and lower incomes than men. Because about 65% of older women own their own homes, and others will inherit their husbands' homes, a substantial number of elderly women could meet their LTC expenditures through home equity conversions. (*Long-term care*, 1992, 132).

For a typical homeowner, home equity represents over half of wealth. (Skinner, 1991, 7). Over the 1980s rapid increases in housing prices led to large increases in home equity in many parts of the U.S. (Venti & Wise, 1993, p. 27). Venti and Wise (1991) analyzed the potential effects of reverse annuity mortgages for increasing the current income of the elderly stratified in four age groups: age 55 to 64, 65 to 74, 75 to 84, 85 and over. The major component of total income of elderly homeowners was Social Security benefits except for the group age 55-64. The oldest low-income couples (age 85

and over) could get a payment equal to a 35% increase over their original income (Venti & Wise, 1991). Single low-income elderly (age 85 and over) could get almost a 50% increase in income. On the average, however, a reverse annuity mortgage would add little to the current income of elderly households. Those that benefitted from this type of mortgage were a small proportion of the elderly, the low-income and oldest. However, this group was the least likely to have housing equity.

Venti and Wise (1993) later concluded that home equity was the only form of wealth that could increase the current income level of the elderly. The majority of households (70%) over age 62 owned their home and most of these (80%) had no mortgage (Mayer & Simons, 1994). The median housing equity was \$64,000 while the median level of liquid assets was \$15,000.

Weinrobe (1987) found that the age of a homeowner and the value of home equity were positively related to the decision to convert home equity. However, the ratio of monthly income to equity, being married, and the homeowner's child as a principal advisor in the conversion decision were negatively related to home equity conversion.

Mayer and Simons (1994) found that, based on the most optimistic assumptions, slightly more than one-half of all borrowers could have a reverse mortgage payment less than 10% of their monthly income, 23% could increase monthly income by more than 20%, and 8% could increase it by 50% or more (Mayer & Simons, 1994).

#### *Disadvantages*

Both lenders and elderly homeowners have been conservative in taking reverse mortgages because they are new financial instruments and the regulatory provisions are insufficient. The orthodox life cycle model predicts that the elderly will convert their home equity but the evidence indicates they have not, perhaps because the equity is relatively small for most (Skinner, 1991). Venti and Wise (1991) suggested that the small increase in income that would result from reverse mortgages (4-10% of income) may not be worth the transaction costs (cited in Skinner, 1991, 17).

At the end of the loan period, the equity remaining in the home will be substantially reduced, because the homeowner has received it in the form of monthly loan advances and imputed interest and loan charges. Taking out a reverse mortgage usually implies the bequeathing of

a smaller inheritance (Golant, 1992). Although one-third of all elderly homeowners have liquid wealth below \$5,000, and a reverse mortgage in a lump sum payment or a line of credit could help in an emergency, many elderly people with children want to pass on this asset to their heirs (Mayer & Simons, 1994). Depending on the state of residence, loan advances from a reverse mortgage may affect eligibility for Supplemental Security Income, Medicaid, and other welfare benefits such as food stamps (Golant, 1992).

Reverse mortgages can be an expensive way to generate cash income, especially in periods of high interest rates. In a reverse mortgage, a borrower is borrowing his or her own money (equity), and for this privilege, paying out a substantial amount of interest and loan charges. Persons living alone, especially the very old with lower incomes, may benefit the most in percentage gains in income from reverse mortgages. Unfortunately, many in this very group are living in low-valued homes with low appreciation potential because of declining neighborhoods, and financial institutions do not consider them to be potentially attractive for a reverse mortgage (Golant, 1992).

Reverse mortgage loans are ill-advised for older persons who have investment or savings income and less attachment to the home. Elderly couples in the oldest age brackets with the lowest incomes could experience a substantial relative increase in their income flow from reverse mortgages. If the elderly person is willing to move, he/she is probably better off selling the home and investing the proceeds than obtaining a reverse mortgage.

The price of a reverse mortgage may include a flat monthly fee for servicing, origination fee (i.e. 1% of adjusted property value or flat \$1,500 fee), closing costs such as an up-front mortgage insurance premium (e.g., 2% of adjusted property value,) and other fees (Case & Schnare, 1994). Issues in pricing are the use of prevailing house price inflation versus zero rate, type of neighborhood, and deferred maintenance and depreciation versus appreciation (Chinloy & Megbolugbe 1994, p. 381).

The Home Equity Commission Mortgage (HECM) insurance demonstration, a program administrated by the U.S. Department of Housing and Urban Development (HUD), encourages "the development of reverse mortgage programs to address the needs of the elderly homeowners" (Case & Schnare, 1994, p. 301).

Disadvantages or difficulties are reported by HECM in the required financial or housing counseling required. There are few agencies responsible for HECM counseling and they usually have a large geographical territory (Case & Schnare, 1994). HUD requires counseling on a one-to-one basis or by telephone but computation of financial comparisons requires HECM software, making at-home sessions not feasible. Also, an heir or trusted advisor is to attend the meeting.

Funding for counseling is limited at the federal, state, and local counseling agencies. Agencies report that their services are not fully compensated by reimbursement of HUD at \$35 per unit while costs are about \$200-\$250 (Case & Schnare, 1994).

#### *Advantages*

The use of reverse mortgages is supported by the life cycle hypothesis (Modigliani & Ando, 1960) suggesting that elderly desire to finance consumption by liquidating assets including home equity that were acquired in their younger days (Kutty, 1996). Reverse mortgages would be attractive to elderly homeowners if they become less risk averse and more economically rational. They need to understand the great opportunity cost of not utilizing their housing assets (Chen & Jensen, 1985; Peyton & Lotito-Badillo, 1990). Home equity is the major type of wealth of most elderly, and according to the 1989 Survey of Consumer Finances, more than 80% of retired households own their homes and the median value of housing assets is about \$50,000 (Kennickell & Shack-Marquez, 1992). Therefore, appropriate use and management of home equity as an income generating asset could enhance their economic status and alleviate their heavy reliance on public benefits during retirement (Burns & Widdows, 1990; Hogarth, 1991).

Home equity or reverse annuity mortgages enable qualified elderly homeowners to increase their retirement income without having to move or lose their home. Reverse mortgages have the advantage of receiving monthly payments, remaining in the home, and having insurance that guarantees the homeowner would never owe more than the future value of the house (Mayer & Simons, 1994). If a homeowner moves, the sale of the home can be used to pay off the balance of the reverse mortgage. Advantages of a lump sum payment from a reverse mortgage are: liquidity for financial emergencies, such as medical bills or house repairs, and consolidation of outstanding debts (Mayer & Simons, 1994).

Advantages of home equity conversion include (Rose &

Ross, 1993):

- No repayments as long as borrower stays in the home. The borrower cannot be forced from the home to repay loan.
- Income payments are received income tax-free.
- Payments are not counted as earnings for Social Security or Medicaid purposes.
- Payments continue for the lifetime of the homeowner (or a spouse, if such election is made). Total payments in most cases may exceed the market value of the home. They can exceed if, for example, the borrower lives very long. However, in fact they hardly actually exceed the value.
- HUD-FHA programs require HUD-approved counseling of the borrower before entering into contract. Counselors are required to discuss alternatives to reverse mortgages.

Whether an elderly person will benefit from a reverse mortgage depends on factors such as desire for proximity to family and friends, emotional attachments to the home, and financial factors (Chinloy & Megbolugbe, 1994, p. 367). Case and Schnare (1994, 334) state that the elderly desire to stay in their homes. The cash from reverse mortgage is not taxable to the borrower. Chinloy and Megbolugbe (1994) suggest that a reverse mortgage will not result in a loss of entitlement income.

Another benefit is that the homeowner stays in the home while consuming equity (Merrill, Finkel & Kutty, 1994). Surveys by AARP indicate there are liquidity-constrained elderly who want to get cash out of their home (Merill, et al., 1994). Those that would benefit the most (25% or more of their income) from a reverse mortgage have been identified as being single women, residing in the South, older, lower monthly income, lower liquid wealth, shorter life expectancy, and poverty status (Mayer & Simons, 1994). Income from a reverse mortgage would reduce the poverty rate of the "most benefit" elderly group from 20% to 5% (Mayer & Simons, 1994).

#### *Potential Market*

Case and Schnare (1994) concluded that there is a strong demand for reverse mortgages, based on the growth of the HECM program. There are households who are "house-rich, cash-poor," need increased current income, or have unexpected lump-sum expenses (Case & Schnare, pp. 345-346). Merrill, et al., (1994) estimated that 1,538,085 households age 62 or older would benefit from reverse mortgages.

Monthly payments under the HECM tenure plan were reported by Kutty (1996) through simulation using the 1991 American Housing Survey. Monthly payments that could be obtained by elderly homeowners for a \$100,000 home ranged from \$214 for a 65 year old to \$602 for an 85 year old. Kutty (1996) estimated that 29% of elderly homeowners in poverty could be raised above the poverty line by obtaining a reverse mortgage.

#### Regulations

Several regulatory and tax issues affect use of reverse mortgage. For example, some states prohibit loans with negative amortization (Chinloy & Megbolugbe, 1994, p. 384). (No reverse mortgage can avoid this). Tax policy determines “whether the reverse mortgage payment should be treated as nontaxable loan proceeds or as eventually taxable installment sales revenue” (Chinloy & Megbolugbe, 1994, p. 384).

### Methodology

#### Conceptual Framework

A theoretical background of this study is built on the life-cycle income hypothesis (Ando & Modigliani, 1963; Hanna, Fan & Chang, 1995). This theory suggests that households base their consumption and saving decisions on their total resources available over their lifetime to maximize the intertemporal satisfaction through current and future consumption, and leave no bequests. Elderly people would dissave after retirement and deplete their accumulated assets by the time they die. Therefore, elderly people might borrow against their home equity by drawing reverse mortgages to obtain additional income through the monthly payments of loans, which are a function of the value of their home, age, and market interest rate. Assumptions for purposes of this study are: 1) Householders’ wealth other than home equity is not considered in the analyses and 2) Householders are not qualified for other mortgages or home equity loans.

#### Data and Sample

The 1989 Survey of Consumer Finances (SCF) was used (Kennickell & Shack-Marquez, 1992). The data are weighted based on the weight variable produced by the Survey Research Center. One implicate of the dataset was used. Analysis revealed that 79% of the household heads age 65-74 and 70% of household heads age 75 and over owned their homes. Household heads who were age 62 and over were selected from the dataset for the sample used in the analysis because elderly people must be at least age 62 years of age or older to qualify for a reverse mortgage, resulting in 665 eligible reverse mortgage

borrowers. The final sample size was 639 after excluding 16 households who had an annual income greater than one million, as it was expected that those outliers would skew results more than be useful.

#### Analysis

Chi-square tests were used to determine relationships between home equity and selected socioeconomic and demographic characteristics. The Chi-square test compares the observed distribution expected if there were no systematic variation between the dependent variable, home equity, and each independent variable. Differences among mean home equity for the various characteristics can assist in predicting amount of funds available. The analysis of variance (ANOVA) technique was used to test for differences. A variation of ANOVA, general linear model, was used for multivariate analysis to determine the effect of characteristics when controlling for income (SAS Institute, Inc., 1990).

A simulation of reverse mortgages was undertaken to calculate the potential increase in income through reverse mortgages. The monthly payments to the borrowers of reverse mortgages were calculated based on the formulas and principal limit factors provided by the Department of Housing and Urban Development (U.S. Department of Housing and Urban Development, 1993).

HUD formulas are used in the Home Equity Conversion Mortgage Insurance Demonstration (HECM) reverse mortgages that are insured by the Federal Housing Authority. There are advantages of simulating this widely available reverse mortgage instead of a hypothetical reverse mortgage as done in Mayer and Simons (1994). Analyses were made for term and for tenure reverse mortgages, the two major types. As mentioned earlier, loan payments of reverse mortgages are a function of the borrowers’ age, value of home equity, and interest rate. That is:

$$\text{Loan Payment} = f(\text{age, value of home, interest rate}).$$

The procedure is first to determine the maximum principal amount which is the home equity value multiplied by the actuarial principal limit factor based on a borrower’s age and interest rate. Then the insurance premium is subtracted (2% of total claim amount). The future value of principal limit is calculated. Finally the monthly payment is generated. This procedure written as a formula is:

$$P = (1-2\%)*(A*V)*I/[I-(1+i)^n/i].$$

where  $P$  is the monthly payment,  $A$  is the actuarial

principal limit factor based on a borrower's age and interest rate,  $V$  is the current value of home equity,  $i$  is monthly compounding interest rate, and  $n$  is number of months. It is assumed:

1. The reverse mortgages are all HUD-FHA insured, and thus incur a closing cost or insurance premium (2% of total claim amount).
2. The market compounding interest rate is 10.5%, which generates a monthly compounding interest rate 0.875%.
3. The life of the loan is 10 years (i.e.,  $n=120$  months) for term reverse mortgages and is 12 times the difference between 100 and each respondent's age (i.e.,  $12*(100 - \text{age})$  months for tenure reverse mortgages, when the life expectancy for each respondent is calculated.

One hundred years was adopted by Department of Housing and Urban Development to generate conservative results for calculating possible mortgage payments. Since most people do not live to be 100 years old, they could receive more income from *another* plan that assumes a lower life expectancy and, therefore, the estimates are conservative.

**Results**

The mean age of the sample was 72 years (Table 1). Elderly households in the sample had an average annual income of \$27,400 in 1988. Most lived in their own homes, with a mean net value of \$86,000. In terms of aggregate income of the elderly, Social Security benefits accounted for 31% of the total, wage and salary 20%, business and professional practice 20%, and investment income 31%. Most (93%) received Social Security benefits.

Forty two percent of the households had home equities valued under \$50,000, 30% had equities of \$50,000 to \$99,000 and 29% had equities of \$100,000 or more. Chi square tests (available from the first author) indicated that the distribution of home equity was significantly related to income, age, race, marital status, gender, education, employment, and family size.

Home equity ranged from \$1,000 to \$1,600,000 for the elderly households in the sample (Table 2). ANOVA (available from the first author or on the journal web site) revealed that the value of home equity differed significantly ( $p<.001$ ) by income, age of household head, race, gender of household head, marital status, education, and attitude toward credit. Multivariate analysis utilizing general linear procedure, however, revealed that the value of home equity was not significantly related to these

selected characteristics except for age and education, when income was included in the model. Age and income explained 19% and 22% of the variation in home equity, respectively.

**Table 1**  
Sample Characteristics and Sources of Income

	Mean	
Age	71.9	
House value	\$86,000	
Income (annual, before tax)	27,400	
Components of income	% of income	Mean
Social Security income	31.1	10,900
Wage and salary	19.7	6,900
Business & prof. practice	19.7	6,500
Investment	30.7	10,700

n=665

**Table 2**  
Mean, Minimum and Maximum Home Equity by Income and by Education

	mean	minimum	maximum
Income			
<\$10,000	\$39,214	\$1,000	\$250,000
10,000-19,999	68,664	5,000	900,000
20,000-29,999	79,326	3,000	1,123,000
30,000-49,999	95,799	3,000	500,000
50,000 & above	193,831	10,000	450,000
Education			
#High school	101,507	3,000	250,000
Some college	160,857	15,000	1,600,000
College & above	52,485	5,000	1,600,000

Elderly householders could obtain average monthly loan payments of \$427 if they were to borrow with a 10-year term reverse mortgage and \$305 if they were to borrow with the tenure type of reverse mortgages (Table 3) based on the assumptions and calculation procedures presented in the method section. The increase in annual income was 18.7% for the term type and 13.4% for the tenure type of reverse mortgage. The results of t-tests indicated that increase in household income differed significantly by type when the 10-year term and tenure reverse mortgages were compared. That is, annualized loan payments would be income supplements to elderly householders' current level of income, if they borrowed a reverse mortgage against their home equity but the amount varies with the type.

**Table 3**  
Increase in Income if Home Equity is Used for Reverse Mortgage by Type.

	Reverse Mortgage Type	
	Term	Tenure
Income increases		
Monthly	\$427.25	\$304.95
Annually	\$5,127	\$3,659
Mean income before reverse mortgage	\$27,400	\$27,400
Percentage increase in annual income	18.71%	13.35%
Standard error	272.99	199.71
T-value	18.7***	18.3***

\*\*\*p<0.001

**Conclusions and Implications**

On the average, the home equity fund available for reverse mortgages for the elderly sample was \$88,587. This figure is comparable to the \$86,692 mean equity reported from the American Housing Survey of 1989. Funds available ranged from about \$39,000 for those with income of less than \$10,000 to \$194,000 for those with \$50,000 and above. Home equity funds differed by age of household head, race, gender of household head, marital status, family size, and attitude toward credit and, when income was controlled in multivariate analysis, by age and education of household head. Income explained about 20% of the variation in home equity funds available.

Income flow could be increased by \$427 monthly if the term reverse mortgage plan were used and \$305 if the tenure reverse mortgage procedure were used. Home equity through reverse mortgages would be a significant income supplement to elderly householders' current level of income regardless of type utilized according to results of this research. In contrast to Skinner's observation, the transaction cost would be worth the extra income.

The finding that home equity varied by attitude toward credit implies that one-third of the sample who thought credit was a "good idea" would probably be the proportion of elderly more willing to use home equity for a loan.

Education by financial planners, financial counselors,

educational agencies, government and financial institutions is essential to make people aware of the advantages and disadvantages of reverse mortgages. Advantages and disadvantages need to be examined for the unique client in recommending action.

Financial professionals need to be aware of the agencies that regulate the reverse mortgage agency and keep up-to-date on new regulations of reverse mortgages. More disclosure of understandable information is needed. Policies will need to be evaluated to lower costs to attract elderly homeowners.

Lending institutions have no basis for discriminating on characteristics examined in this study except for income and age. That college educated and above householders had less mean home equity than those with levels below them can perhaps be explained that they also were on the average younger, not having time to build equity. As confirmed in results the older groups had lived through eras with greater appreciation in real estate.

Financial planners, counselors, and educators can apply the results in recommendations for wealth accumulation, housing decisions and resolving a cash flow problem. They must inform clients of reverse mortgages as an alternative income flow and as an alternative to long-term insurance. Otherwise, they will be performing "errors of omission."

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