

# HOME EQUITY CONVERSION: INCREASING THE PRIVATE INCOMES OF THE ELDERLY

by George Kaufman and Jon Paulsen

As has been amply documented in recent years, the U.S. population is aging. In 1980, 11.2 percent of the population was 65 years or older. In 1970 the percentage was 10.2, and in 1940 it was only 6.8. Moreover, the population is projected to continue to age. In 2020 the elderly are expected to account for almost 20 percent of the population.

Because the elderly generally are not employed, their average income from private sources is considerably lower than the income of the younger employed population, and is also lower than what they had earned prior to retirement. Moreover, the elderly are living longer. In 1960 only 5 percent of the elderly were 85 years of age or older. By 1980 the percentage had nearly doubled to 9 percent.

These "senior elderly" are even further past their previous productive earning years. As a result, a large variety of government programs are directed at improving their incomes. The share of the federal government budget directed at the elderly has jumped from 2 percent in 1940 to about 25 percent today and is expected to continue to increase as the proportion of elderly in the population continues to increase.

While many elderly are income poor, they own a significant number of assets purchased during their earning

years in order to provide later income support. These financial and nonfinancial assets generate a stream of income and can be sold to finance expenditures. Foremost among these assets are residential dwellings. Equity in homes represented 42 percent of the total dollar amount of assets of all elderly in 1975, and 70 percent of those who owned homes.<sup>1</sup> About three-quarters of the elderly own a home, up from two-thirds in 1970,<sup>2</sup> and considerably higher than the 63 percent proportion of homeownership among nonelderly. Moreover, about 80 percent of the elderly homeowners have paid off mortgages on their homes and own them outright. In contrast, only about 25 percent of the nonelderly own their homes outright, reflecting primarily the shorter time in which they have been repaying their mortgage loans. Thus, many elderly who may be relatively income poor, may be relatively wealth rich.

But unlike most other assets which are divisible and may be sold piecemeal in order to provide the amount of income required at the time, homes are nondivisible and cannot be sold a square foot or even a room at a time. The elderly have become accustomed to their homes and neighborhoods and are more fearful than younger persons to embark on a new adventure, like moving with unknown results to a new house and neighborhood. Thus, the elderly do not want to sell their homes to acquire funds, if this means having to move out.

Society's challenge is to determine how to transform or convert the equity that the elderly have stored up in residential housing into a stream of income, without requiring them to move in order to reduce both the burden of their income support on the budget and the possibility of nonelderly income and wealth poor taxpayers subsidies going to the income poor but wealth rich elderly. It is necessary to examine and evaluate a number of alternative home equity conversion plans that have been proposed.

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## Description Of Equity Conversion Plans

Home equity conversion plans permit elderly homeowners to slowly "consume" during their retirement years the equity that they had built up in their homes before retirement without having to move out of their homes. The plans may be divided into two basic types: Those that borrow against the equity, generally in the form of debt that does not have to be repaid until the death of the surviving member of the elderly household; and those that sell the equity and simultaneously lease-back the home until the death of the surviving member of the household.

The preference for one plan over another depends on a number of factors, including the age of the household, market rates of interest, and the expected appreciation in the market value of the home. The next section examines the general nature of these plans, followed by numerical simulations in order to provide more concrete examples of their operation.

Debt equity conversion plans are sometimes referred to as reverse mortgages (RM), since the homeowner is borrowing to consume rather than to purchase the home. But in both cases, the home is being used as collateral. In its simplest form, the plan involves either receiving a stream of monthly payments from the lender over the remainder of the borrower's life, adding up to the loan value of the home (rising debt RM), or, more likely, since many financial institutions specializing in residential housing finance are not in the annuity business, receiving a single payment from the lender, which is immediately used to purchase an annuity from a life insurance or similar institution (fixed debt RM). The principal of the loan generally is not repaid until the death of the surviving elderly person in the household, at which time the house is sold and the proceeds used to pay off the loan. Any remaining funds from the sale belong to the homeowner's estate.

Although the principal is not repaid during the borrower's lifetime, the interest on the outstanding balance is paid so as to prevent the value of the loan from increasing above the value of the home. Thus, the net payment to the borrower is the difference between the monthly income from the annuity and the monthly interest payment on the loan. Because the return on an annuity should be roughly of the same magnitude but, to provide a profit for the institutions involved, somewhat smaller than the rate on a loan of the same dollar amount and term to maturity, it is evident that the net payment to the homeowner is approximately equal to the amortization of the equity investment.

As the term to maturity of either the loan or the annuity is lengthened, the size of the monthly payments decreases. Moreover, as the spread between the higher loan rate and the lower annuity rate widens, or as the general level of interest rates increases, the net monthly payments decrease. At current interest rates, these factors tend to make simple debt equity conversion useful only to the "older" elderly.



Depending upon interest rates and house prices, the monthly payments can be enlarged by delaying the payment of part of the loan so that the amount of the debt increases through time, or by renegotiating the size of the loan if the market value of the home increases during the life of the loan. In addition, the beginning of the annuity payments may be deferred until a later date. Nevertheless, Professor Bruce Jacobs, who has analyzed these plans closely, estimated that only about 10 percent of all elderly would be able to net more than \$600 per year from reverse mortgage plans.<sup>3</sup> However, the percentage increases to about one-third for those elderly who are 75 years of age or older.

Sale-leaseback type equity conversion plans, sometimes referred to as split-equity plans, frequently permit larger monthly payments to the elderly resident. In these plans, the homeowner sells the home to an investor with a provision that he or she is able to rent the dwelling for the remaining life of the surviving elderly member of the household at a predetermined rental rate that is either fixed or may vary according to a schedule. The elderly seller invests the proceeds from the sale in an annuity. The difference between the monthly annuity income and rental payments is the net income to the seller. Thus, the mathematics of sale-leaseback plans do not differ greatly from those of the debt plans. However, these plans may generate higher net monthly payments to the homeowner primarily because the seller receives the total value of the house

rather than a percentage of its value as in the loan, and because the investor is likely to be in a higher income and also higher tax bracket than the elderly homeowner.

The transfer of ownership entails a number of tax benefits which are shared by the investor and the seller and which are greater for the investor than for the seller. These benefits include deductions of depreciation on the house, which are not available at all to owner-occupants but are permissible to investor-owners. At the same time, the elderly homeowner's lower income reduces the value to him/her of the exclusion of the implicit rental value on the home from income taxes. The elderly seller is also able to take immediate advantage of the \$125,000 one-time tax exemption on any capital gain on the sale of the house. The investor will receive any appreciation (or loss) on the home at the time of the previous owner's death. The greater the expected appreciation relative to the expected rate of inflation, the lower may be the rental charge in compensation. The new owner also accepts all responsibility for repairs and maintenance. On the other hand, the old owner surrenders the usual proprietary rights of owners to do with their property as they wish, for example, remodel, let it run down, paint it any outside color, etc. Jacobs estimates that because of these advantages sale-leaseback plans are likely to generate the highest additional incomes to the largest number of elderly.

### Examples Of Equity Conversion Plans

As discussed, the net proceeds to an elderly homeowner from equity conversion is the difference between the monthly proceeds from the annuity and the monthly loan repayments or lease payments. The amount of the monthly annuity receipt is dependent upon the interest rate paid by the insurance company that sold the annuity, the current age of the elderly, his/her expected remaining life, and the dollar amount of the annuity purchased.

Different insurance companies offer approximately the same annuity plans at widely differing yields. Inspection of *Bests' Retirement Income Guide* for April 1982, which lists the current returns on annuities offered by major insurance firms, shows that the differences between the highest and lowest paying plans exceed 100 percent. The highest paying annuity is chosen for the examples in the analysis below. Table 1 shows the

**TABLE 1**

Annuity Payment Rates for Different Age Homeowners Assuming a 12 Percent Annuity Interest Rate

Homeowner Age (years)	55	60	65	70	75	80
Expected Remaining Life (years)	19.7	16.1	12.9	10.1	7.8	5.9
Annuity Payment Rate (percent)	13.5	14.4	15.8	18.0	20.6	23.7

annual payments as a percentage of the face value of a single premium (payment) immediate annuity (SPIA) scheduled to begin at different starting ages and continue through to the end of the annuitant's life. For the sake of simplicity, the data for only a single male elderly are shown. This is not the interest rate (internal rate of return) on which the annuity is calculated, which is a lower rate since it excludes the repayment of the principal of the annuity. For the annuities shown, the implied annuity rate is about 12 percent. It is evident that the payment rates increase with the annuitant's age, so that an annuity starting at the age of 80 years (with an expected remaining life of about 6 years) pays almost twice the rate of one starting at the age of 55 years (with an expected remaining life of almost 20 years). The payment rate represents the highest interest rate that an individual could afford to pay on an interest only reverse mortgage or on lease payments.

### Reverse Mortgage Loans

Given the annuity payments schedule, the net benefit to the elderly fixed-debt borrower is the difference between the annuity payment rate and the monthly interest payments multiplied by the size of the loan. For example, if the interest rate on a single payment fixed-debt mortgage loan—a loan in which the payment is made in a single lump at the beginning and is invested in an annuity that pays an annual amount equal to 20.6 percent of its face value—were 13 percent, the net annual benefit to a 75-year-old male who receives a reverse fixed-debt mortgage loan would be 7.6 percent,

**TABLE 2**

Annuity Payment Rates for Alternative Mortgage Rates, Annuity Interest Rates, and Age of Homeowner

Mortgage Interest Rate	Percentage Point Spread Between Mortgage and Annuity Rates		
	.03	.04	.05
Age of Homeowner: 65 (Expected Remaining Life 12.9)			
.09	.1136	.1067	.1000
.10	.1200	.1136	.1067
.11	.1271	.1200	.1136
Age of Homeowner: 70 (Expected Remaining Life 10.12)			
.09	.135	.128	.121
.10	.141	.135	.128
.11	.148	.141	.135
Age of Homeowner: 75 (Expected Remaining Life 7.81)			
.09	.164	.158	.152
.10	.172	.164	.158
.11	.178	.172	.164

or \$3,040 on a \$40,000 loan collateralized by a \$50,000 home. If the mortgage rate increased to 15 percent, the annual net benefit would decline to \$2,240.

The net benefit rate also varies with the annuity rate but directly, so that the higher the annuity rate, the higher the benefit rate. Table 2 shows how the payments ratio varies with the mortgage interest rate and the spread between the mortgage rate and the annuity rate for a hypothetical annuity plan and different starting ages for the elderly program participant. Thus, an 11 percent fixed-debt mortgage loan rate and a 6 percent annuity rate would provide a 65-year-old who had a life expectancy of nearly 13 additional years an annual annuity payment rate of 11.4 percent. This same combination would provide an annual annuity payment rate of 16.4 percent to a 75-year-old having a remaining life expectancy of only 8 years.

If the borrower dies soon after obtaining the fixed-debt loan, the entire value of the equity in the home would be lost.<sup>4</sup> An alternative arrangement to protect against quick loss of equity is to have the loan proceeds paid each month up to the full amount of the loan rather than all at once at the beginning in the form of a rising debt loan. Part of the monthly proceeds are used as income by the borrower and the remainder is invested in a deferred annuity that begins to make payments only when the full loan value is reached. As with the regular annuity purchased with the proceeds of a single payment fixed-debt loan, the income from the deferred annuity is used both as income and to pay the current interest expense on the loan. The net proceeds to the elderly homeowner are likely to be roughly similar for both the fixed-debt and rising-debt plans.

### Sale-Leaseback Plans

Sale-leaseback plans generally permit the purchase of a larger annuity because the proceeds from the sale of the entire equity of the house may be used rather than only the proceeds of the loan against the equity. To safeguard the value of the loan, lenders typically lend less than the full value of the equity, for example, 80 percent.

As discussed earlier, other than any differences in dollar amount, the major differences between the loan and sale plans involve the transfer of certain tax expenses and of the financial responsibility for maintenance and upkeep of the house from the elderly homeowner to the investor. Because these expenses are tax-deductible, they are worth more to the assumed higher tax bracket buyer/investor than to the lower tax bracket elderly homeowner and thus increase the value of the transaction relative to the loan plans were the tax "benefits" to stay with the elderly homeowner.

An example of a sale-leaseback is given in Table 3. It is assumed for this table that the annuitant is 65, has a remaining lifespan of 15 years, receives the entire proceeds of conversion with a home having a value of \$50,000, and invests the proceeds in an immediate annuity of 15.8 percent which will yield annual payments of \$7,900. The buying investor/lessor in turn borrows 90 percent of the home's cost at 13 percent and determines the lease payments to the seller in order that he/she receives an after-tax return of approximately 10 percent. The 10 percent after-tax return is equivalent to a 6.5 percent after-tax return (assuming a tax rate of 50 percent) earned by the financial institution financing the 90 percent loan at 13 percent plus a risk premium

**TABLE 3**

Major Characteristics of Hypothetical Sale  
and 15-Year Leaseback for 65 Year Old Homeowner  
for \$50,000 Home Assumed To Appreciate 1.5 Percent Annually  
(Annual, Dollars)

Years	Home-owner Annuity Income	Home-owner Lease Payments	Maintenance	Depreciation	Investor's Loan Interest	Investor's Principal Payments	Investor's Profit	Investor Cash Flow	Value of Future Cash Flow
1	\$7,900	\$4,817	\$500	\$3,333	\$5,850	\$1,113	\$4,317	\$ -310	\$ -702
2	7,900	4,817	500	3,333	5,705	1,258	4,317	-380	-810
3	7,900	4,817	500	3,333	5,542	1,422	4,317	-458	-922
4	7,900	4,817	500	3,333	5,357	1,607	4,317	-547	-1,039
5	7,900	4,817	500	3,333	5,148	1,815	4,317	-647	-1,159
6	7,900	4,817	500	3,333	4,912	2,051	4,317	-761	-1,285
7	7,900	4,817	500	3,333	4,645	2,318	4,317	-889	-1,416
8	7,900	4,817	500	3,333	4,344	2,619	4,317	-1,033	-1,554
9	7,900	4,817	500	3,333	4,003	2,960	4,317	-1,197	-1,698
10	7,900	4,817	500	3,333	3,619	3,345	4,317	-1,381	-1,849
11	7,900	4,817	500	3,333	3,184	3,780	4,317	-1,590	-2,008
12	7,900	4,817	500	3,333	2,693	4,271	4,317	-1,826	-2,175
13	7,900	4,817	500	3,333	2,137	4,826	4,317	-2,093	-2,351
14	7,900	4,817	500	3,333	1,510	5,453	4,317	-2,394	-2,537
15	7,900	4,817	500	3,333	801	6,162	4,317	42,273	42,273

of 3.5 percent. The risks of the lease include the uncertainty of the maintenance costs of the home and its future appreciation.

Maintenance costs for the home are assumed to be 10 percent of the home's value per year. For tax purposes, straight-line depreciation was used over 15 years (\$3,333 per year) and capital gain treatment is applied to the proceeds from the sale of the home when the elderly lessee dies. The home was assumed to appreciate at 1.5 percent per year and to be sold at the end of the fifteenth year, the expected life of the lessee.

The investor's after-tax return was computed as a compound return so that the future value of the investor's equity (10 percent of the house price) at the end of 15 years would just equal the future value of the sum of the after-tax cash flows (compounded at 6 percent) received by the investor from the lease of the house plus its future sales price. The annual cash flows received by the investor are determined based on the following equation:

$$\text{Cash flow} = (\text{lease} - \text{maintenance})(1 - t) + t(\text{dep} + \text{int}) - \text{loan payment},$$

where: lease = lease payment,  
dep = depreciation,  
t = ordinary income tax rate,  
int = interest.

Based on the reasonable assumption that the investor would require a 10 percent after-tax return in order to make the lease financially acceptable and that  $t = 48$  percent, the lease payments equal \$4,817 per year. Thus, the annual net benefit to the elderly homeseller is \$3,013.

To the lessee, the benefits of the lease compared to the loan are the lower cost of the lease and the greater amount of equity that can be borrowed and invested in an annuity. In the example, the annual interest payments on an 80 percent interest-only reverse mortgage loan at 13 percent would have been \$5,200 ( $\$40,000 \times .13$ ) compared to \$4,817 under the above lease. At the same time, the annual income from an annuity that could be purchased would have been only \$6,320 per year for the loan versus \$7,900 for the sale. The annual net benefit to the elderly would have been only \$1,120, or \$1,963 less than for the sale-leaseback. The numbers will, of course, differ for different assumptions but will almost always favor the sale-leaseback plan.

### Equity Conversion Experiments Across The U.S.

A number of experiments in equity conversion programs for elderly homeowners have been placed in operation. Most of these programs are community-run with initial funding from various sources. Buffalo's Home Equity Living Plan (HELP) is a modified sale-leaseback arrangement referred to as a "split-equity" plan. It provides a monthly cash annuity payment for life plus payment of property taxes, maintenance and immediate property rehabilitation. In return, the homeowner surrenders title

to his/her home at death. A goal of the program in addition to converting home equity to income is to rehabilitate the elderly homeowner's property plus pay for maintenance expenses.

Some California residents have access to reverse mortgages or sale-leaseback conversion plans. The loan program, developed by the San Francisco Development Fund, provides for a loan to homeowners over 62 years old for a specified time period, generally 10 years. The loan is of the rising-debt type and payments are made to the homeowner monthly. The plan is unique in that during the life of the loan, the homeowner makes no payments whatsoever on either interest or principal. At the end of 10 years, the loan and accrued interest must be repaid, although it may be refinanced at the option of both parties.

A sale-leaseback plan, developed by the Fouratt Corporation in Carmel, California, provides for the senior citizen to sell his/her home to a private party at a discount below appraised value. The size of the discount is primarily a function of the cost of a lifetime annuity which is purchased by the buyer for the seller. The seller receives a down payment and monthly payments from which lease payments are deducted. If the seller lives past the end of the loan period, annuity payments from the deferred annuity purchased by the buyer will begin.

Broadview Savings, a state-chartered savings and loan in Broadview, Ohio, offers several maturity rising-debt reverse mortgage loans. The longest maturity mortgage is for 10 years and provides proceeds equal to 80 percent of the appraised value of the home. At the end of the term of the loan, borrowers have three options: 1) the property can be reappraised to determine if further equity conversion is possible; 2) the loan may be paid off; and 3) the loan may be refinanced. Interest is based on current mortgage rates and is due each month.

Boiling Springs Savings and Loan of Rutherford, New Jersey offers a three-year reverse mortgage loan for up to 70 percent of the home's value. The mortgage provides for an initial lump sum payment and monthly payments and may be refinanced at the end of the three-year term at the option of the homeowner. Interest payments may be paid monthly or accrued to the end of the loan at the option of the elderly homeowner.

Milwaukee's Westside Conservation Corporation offers a 15-year reverse mortgage loan with an option for the lender to buy the home at a specified price at the maturity of the loan or sooner at the option of the owner. The loan may be refinanced at the end of the 15-year term at the option of the owner. To date, no interest has been charged on the loans so that the only payment to which the owner is obligated is the repayment of the principal at maturity. The program is funded by the Retirement Research Foundation, a private, not-for-profit organization in Park Ridge, Illinois.

## Conclusions

The elderly have become a rapidly growing segment of the U.S. population in recent years. Because their income from private sources declines sharply after retirement, they require government income support and therefore account for an increasing share of the federal budget. But on the average the elderly are not as poor as is widely believed. Public and private pension support, lower taxes, and reduced prices provide them with a reasonably high standard of living, so that a smaller percentage of elderly than of the population as a whole live below the poverty level. Moreover, many elderly own a significant number of assets, the largest single asset being their home.

Some three-quarters of all elderly own their home and about 80 percent of these own it outright. Homes, however, are not liquid and cannot easily be transformed into a stream of income. Even if they could, the elderly would not want and should not be required to move out. The problem is how to convert the homes owned by the elderly into income without requiring them to move out.

A number of proposed plans have been examined here. These plans basically involve either obtaining a loan against the owner's equity in the home, that is not repayable until after the owner is deceased, or selling the home with a provision to rent the house for the remainder of the owner's life. The proceeds from the loan or sale are used to purchase an annuity that provides a monthly stream of income. Some examples of these plans are developed. The annual income additions to elderly homeowners are computed based on the average value of homes owned by the elderly and the current mortgage and annuity rates.

The figures in these examples suggest that in practice equity conversion programs may not be as appealing as they may appear at first blush, particularly in today's economic environment. In addition, the transformation of housing equity to income may have other limitations.

Most income programs for the elderly, for example, social security, do not include either the value of the home equity or the implicit rental value of the home in the computation of minimum eligibility. On the other hand, they do include the liquid assets in which the proceeds from a house sale may be invested or income from an annuity purchased with the proceeds. Thus, gains from equity conversion may be swept away by equal losses in income support.

These criteria must be reexamined and modified before it becomes reasonable to expect equity conversion programs to become widespread, particularly among lower income elderly. The income from annuities purchased with the proceeds from the sale of a home is also taxed, in contrast to the tax-exemption for implicit rental income obtained from living in one's own home.

Nevertheless, a number of experiments with one or more home equity conversion programs are in operation, and it is still too early to determine their success. But given the importance of the income support problem for elderly both to themselves and to society, it is worthwhile to continue to explore the potential for this promising approach.

## NOTES

1. Joseph Friedman and Jane Sjogren, "Assets of the Elderly as They Retire," *Social Security Bulletin* (January 1981), 16-31. It is likely that these figures understate the importance of homeownership. The average home equity reported by elderly homeowners in 1975 was \$17,000. Because, as noted later, most elderly have paid off their mortgage debt, and for those that have not the remaining debt may be expected to be small, the reported values are significantly below the \$35,300 value of the average existing home sold in 1975.

2. Bruce Jacobs, "The Housing of Elderly Americans," Keynote Address to the 1981 White House Conference on Aging, University of Rochester, December 1981.

3. Bruce Jacobs, "An Overview of the National Potential for Home Equity Conversion into Income for the Elderly," *A Report to the Home Equity Conversion Project* (University of Rochester), March 1982.

4. Any increases in the value of the equity after the loan origination would accrue to the borrower's estate.