
Home Equity Conversion Plans as a Source of Retirement Income

by Philip B. Springer*

This article describes in detail a variety of home equity conversion plans and discusses their relevance for social security beneficiaries, as well as for the aged in general. Under these plans, a dormant asset—accumulated home equity—is converted into current retirement income. The plans vary: Some are debt instruments; others involve the sale and leaseback of the residence. Some provide income for a fixed term; others offer a lifetime annuity. Some include a public subsidy; others are free of governmental involvement. The advantages and disadvantages of these plans, as well as examples of how they operate and their respective income potential, are discussed in this article. The relevance of home equity conversion plans for social security beneficiaries is illustrated by means of data from the Retirement History Study. These data allow comparison of various demographic groups in terms of their dependence on social security benefits. Each group is examined in terms of available home equity and home equity potential under several conversion plans.

A variety of financial mechanisms are being developed to convert the dormant assets of the aged, specifically their home equity, into retirement income. Although the homes of many aged persons have appreciated in value since the original purchase, the overall financial situation of the aged person or couple may not have kept pace with the cost of living. These persons are sometimes referred to as being “house rich and cash poor.” The first section of this article examines some recently developed home equity conversion plans and discusses their relevance as an adjunct to the basic protection provided to retired workers and their families under the Social Security Act.

The potential role of these plans in providing new income for the aged is illustrated in the second section of the article. Data from the Social Security Administration's 1979 Retirement History Study are used to show how home equity conversion plans could affect four specific demographic groups: Married men, unmarried men, unmarried women, and surviving spouses. Each group is subcategorized according to dependence on social security (old-age, survivors, and disability insurance, or OASDI), that is, the proportion of total income from OASDI. Information on home equity and its

* Division of Retirement and Survivors Studies, Office of Retirement and Survivors Insurance, Social Security Administration.

income potential under three representative plans is presented for each of the subcategories. All of the findings are given in the context of mean total income of these populations.

For many aged units (that is, married couples or non-married persons aged 65 or older), total money income is low; 23 percent of such persons are below the poverty level. As shown in table 1, the median income for all aged units in 1982 was \$8,790. When the social security program began, it was assumed that retired persons would have three sources of income: Social security, a second pension, and asset income. In 1982, about 23 percent of the aged had only one of these sources; their median total income was \$4,670. For 58 percent of the aged, social security was the only retirement pension; their median total income was \$6,310.¹

Some social security beneficiaries whose total income is low may have untapped or dormant assets that could be used to help defray their living expenses. One study indicates that home equity is the most important asset for the population aged 64–69. It was more important

¹ Another source of income is available: 22 percent of aged units have earnings. See Susan Grad, *Income of the Population 55 and Over, 1982*, Office of Retirement and Survivors Insurance and Office of Policy, Social Security Administration, 1984, table 17.

Table 1.—Retirement pensions and income from assets by marital status: ¹ Number of aged units 65 or older, and median total money income, 1982

Retirement pension	All units			Married couples			Nonmarried person		
	Total	Income from assets		Total	Income from assets		Total	Income from assets	
		Yes	No		Yes	No		Yes	No
Number of recipients (in thousands)									
Total	19,880	13,466	6,413	8,097	6,275	1,822	11,783	7,192	4,591
No benefit	1,340	598	743	417	295	122	923	303	620
One benefit	12,015	7,422	4,594	3,953	2,754	1,199	8,063	4,668	3,395
Social security only ²	11,492	7,033	4,458	3,750	2,578	1,172	7,741	4,455	3,287
Private pension or annuity only	114	69	45	54	40	13	60	28	31
Government employee pension only ³	247	208	39	85	79	6	162	129	33
Railroad retirement only	163	112	51	64	56	8	99	56	43
More than one benefit ⁴	6,524	5,447	1,077	3,727	3,226	501	2,797	2,221	576
Social security and Federal pension	540	437	102	263	231	32	277	206	71
Social security and railroad retirement, State/local, or military pension	1,546	1,243	303	754	641	113	792	601	191
Social security and private pension or annuity	4,040	3,389	651	2,428	2,082	346	1,612	1,307	305
Median total money income									
Total	\$8,790	\$12,040	\$4,940	\$15,130	\$17,810	\$8,410	\$5,880	\$7,950	\$4,220
No benefit	4,010	18,260	3,120	19,790	25,650	5,840	3,280	10,420	3,080
One benefit	6,460	8,870	4,670	11,380	14,490	7,360	5,260	6,600	4,140
Social security only ²	6,310	8,620	4,650	11,060	14,060	7,340	5,190	6,470	4,120
Private pension or annuity only	6,800	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)
Government employee pension only ³	17,640	20,940	(5)	30,550	31,240	(5)	10,850	12,980	(5)
Railroad retirement only	8,120	10,450	(5)	(5)	(5)	(5)	6,670	(5)	(5)
More than one benefit ⁴	14,480	16,010	8,670	18,470	19,780	11,680	9,970	11,310	6,810
Social security and Federal pension	17,200	18,760	9,450	21,960	22,740	(5)	11,970	14,530	(5)
Social security and railroad retirement, State/local, or military pension	13,450	15,900	7,920	19,230	20,860	11,450	10,050	11,520	6,820
Social security and private pension or annuity	13,870	15,100	8,910	16,960	18,540	11,570	9,440	10,450	6,450

¹ Receipt of sources is ascertained by response to a yes/no question imputed by the Current Population Survey of the Bureau of the Census. A married couple receives a source if one or both persons are recipients of that source.

² Social security beneficiaries may be receiving retired-worker, dependent's or survivors', transitionally insured, or special age-72 benefits.

³ Includes Federal, State, local, and military pensions.

⁴ Includes a small number with combinations of pensions not listed below.

⁵ Fewer than 75,000 weighted cases.

Source: Adapted from Susan Grad, **Income of the Population 55 and Over, 1982**, Office of Retirement and Survivors Insurance and Office of Policy, Social Security Administration, 1984.

than liquid or other illiquid assets.² In 1975, 42 percent of the total assets of this population were in the form of home equity. In 1979, 71 percent of the respondents to the Retirement History Study owned their homes.³ A very high proportion (83 percent) of these persons owned their homes outright—with no debt—and an additional 6 percent owed less than \$5,000.

Although median home equity may represent an unused asset with the potential for creating new income, in absolute terms this equity does not appear to be high. The tabulation in the next column shows median home equity by marital status and age for respondents in the 1979 Retirement History Study.

Several alternatives face a person with some substantial equity in a home who would like to use the equity to increase income. One possibility is to sell the home and move—a kind of “do it yourself” home equity conversion. Here the person can invest the sale proceeds in an annuity, money market fund, or what-

² Joseph Friedman and Jane Sjogren, “Assets of the Elderly as They Retire,” **Social Security Bulletin**, January 1981, pages 28–29.

³ This data is from the Social Security Administration's 1979 survey of respondents in the Longitudinal Retirement History Study.

ever, and move into a smaller house, condominium, or rental unit. For example, consider a couple owning a \$75,000 home free and clear. They sell the house and buy a condominium for \$45,000. They invest the remaining \$30,000 in a money market fund yielding (at 10 percent) \$3,000 per year of new income. (Of course, if settlement charges are deducted from the proceeds of the sale, the amount available for investment would be reduced.)

But many persons want to remain in their home: they

Marital status and age	Number of respondents	Median equity
Total	4,530	\$36,279
Married men:		
68–69	1,093	38,453
70–71	935	39,000
72–73	790	39,657
Unmarried men:		
68–69	110	29,587
70–71	114	34,514
72–73	112	29,408
Unmarried women:		
68–69	261	32,548
70–71	268	29,444
72–73	219	29,598
Surviving spouses	628	33,403

are comfortable in it, familiar with the neighborhood, and unwilling to exchange their home for a lower-priced one. Further, they may fear relinquishing an asset that provides an assured shelter. If they sell and then rent, they face unpredictable rent increases. And it is possible that their now-liquidated asset could shrink if the rate of inflation becomes greater than the interest or dividend rate. Home equity plans are one of the possible answers for those persons who want to continue living in their home but who need to get income from their home equity.

Types of Home Equity Conversion Plans Available to the Aged

Home equity conversion plans can broadly be divided into loan plans and split equity plans. In the loan plans, the aged homeowner accumulates a debt to be paid off at some future time. In the split equity plans, the aged person sells the house and the equity is split into ownership rights that belong to the buyer-investor and occupancy rights that are maintained by the aged person for life.

Loan plans can be divided into those that guarantee lifetime tenure and those that do not. The former involve a nonrepayable debt—that is, the debt does not have to be repaid until the aged person dies or sells the house. The latter involve a repayable debt—that is, the debt is repaid over a given term. Both loan and split equity plans may use public subsidies.

All these characteristics are considered in the discussion that follows. Each plan is described and evaluated according to the income it provides to the aged person and what the aged person has to give up in return. All plans have advantages and disadvantages that need to be understood and carefully weighed before a decision can be made as to which is preferable in one's individual situation. A tabular summary at the end of this article compares the characteristics of the various plans discussed.

Fixed Debt Loans Without Guaranteed Lifetime Tenure

Description. These loans are rising debt repayable loans with a given term, usually 5–10 years. The debt rises to a predetermined limit and then is due. Under such a plan, the lender would loan up to 80 percent of the home's equity at a market interest rate. (The loan would not be for the full equity value to protect the lender against the risk of property deterioration.) For example, consider a home worth \$50,000 that is owned free and clear. Assume a 9-percent annual interest rate compounded monthly over a 10-year period. The 80 percent loan-to-equity ratio enables \$40,000 to be con-

verted into a term reverse annuity mortgage (RAM). The aged person receives \$206.70⁴ each month for 10 years—a total income of \$24,804. At the end of 10 years, the aged person owes the lender the full \$40,000. The difference between the \$40,000 loan and the \$24,804 income is \$15,196—interest to the lender.

The RAM differs from a traditional home equity loan in that it does not require any periodic repayment or even interest payment. Payment is deferred until the end of the term, when a maximum loan balance is reached. If the aged person is not living, the estate pays the debt. The RAM also differs from the usual mortgage loan in that the borrower is not gradually reducing a large lump sum through repayment of principal and interest. On the contrary, the borrower receives periodic payments and gradually accumulates a debt. This receipt of installments is the "reverse" aspect of a RAM.

The pioneer implementer of RAM's is the San Francisco Development Fund, which, working with lenders in California, arranged about 35 RAM's in the early 1980's with houses having equity values of at least \$100,000. This group also developed a graduated payment RAM. In the preceding example, then, instead of receiving the same level payment of \$206.70, one could start with a smaller payment and have it gradually increased, by say 6 percent a year, to meet an anticipated increased cost of living. Yet another variation provides an initial lump-sum payment with smaller monthly payments.

Advantages. This type of loan is especially appropriate for someone waiting for a pension to begin, or who needs limited income to make home repairs, or who plans to sell and move within a few years. Its major advantage is that the maximum debt is known and the aged person does not risk loss of possible appreciation in the house's value. If the house appreciates, the borrower may be able to refinance or may choose to sell, pay off the debt, and still have a substantial profit. Further, the debt can be paid off before the end of the contract term.

Disadvantages. At the end of the term the debt must be paid or the lender could foreclose. The aged person would then have to sell and could be in the position of having neither home nor money. A further disadvantage, as with all fixed-rate loans, is that the interest rate could fall.

⁴ A simple formula to calculate the payment is

$$P = eX \frac{i}{(1+i)^n - 1}$$

where P = monthly payment
e = available home equity
i = monthly interest rate
n = term (in months).

If the available home equity is \$40,000, the monthly interest rate is 0.0075 (9 percent annually), and the term is 120 months, then the monthly payment would be \$206.70.

Fixed Debt Loans With Guaranteed Lifetime Tenure

Description. These loans were intended to overcome the objection to term RAM's—namely, that they do not guarantee lifetime tenure. Under fixed debt loans with guaranteed tenure, the aged person uses his or her available home equity to borrow a lump sum from a lending institution; the institution requires that the aged person purchase a single premium immediate annuity from a life insurance company.

Out of this gross annuity, interest only would be paid to the lender on the fixed debt. The remainder (gross annuity minus the interest paid to the lender) would be new, periodic income to the aged person that would continue for life. At the time of the aged person's death, the debt would be paid off, either by the estate or through the sale of the house. Any excess equity remains for the estate.

The following example illustrates this approach with a no-refund feature.⁵ A man aged 75 borrows \$40,000 against his home equity and buys a lifetime annuity. His annuity pays 8 percent interest, and from it he receives \$8,126 per year. On his \$40,000 loan, he pays 10 percent annual interest, or \$4,000 annually. He has a net increase in income of \$4,126 a year. (If the mortgage rate were 9 percent, he would net \$400 more per year.) Since the annuity is based on life expectancy, the figures in this example would change according to the age of the borrower. In the tabulation in the next column, figures are shown for men converting \$40,000 of home equity into lifetime annuities.

Advantages. The maximum debt is known, which appeals to a lender, and the interest payable is a constant amount. The conversion of most of home equity, for example 80 percent, into an immediate life annuity results in a substantial income stream, at least for the very old.

Disadvantages. If the homeowner should die soon after the purchase of the annuity, he or she would receive no income, and the debt incurred to purchase the annuity would have to be satisfied. For those who do not want to risk all their equity, other kinds of annuities are available. One of these provides a guaranteed minimum term of annuity receipts, which provides for a refund to the estate if the borrower dies before the end of the term. Of course, such alternatives result in lower annuities.

One problem with all plans that require the purchase of annuities is the "spread" between the interest rate the bank charges and the interest the insurance company is paying on the invested premium. The latter rate is lower, usually by several points.

⁵ A refund feature would provide for the return of some portion of the premium, either as a lump sum or in installments. This feature results in a smaller annuity.

Age	Gross immediate annuity ¹	Net increase in income with mortgage interest rate of—	
		9 percent	10 percent
65	\$5,846	\$2,246	\$1,846
70	6,782	3,182	2,782
75	8,126	4,526	4,126

¹ Source: **Actuarial Tables Based on United States Life Tables: 1969-71**, DHEW Publication No. (HRA) 75-1150, 1975, table 11 (actuarial functions at 8 percent).

Limited Rising Debt Loans With Guaranteed Lifetime Tenure—Private Plans

Description. A variation on the preceding plan, fixed debt loans with guaranteed lifetime tenure, is one that involves a limited rising debt, followed by a life annuity. In this plan, the bank makes two loans. The first, a lump sum, is used to purchase a single premium deferred annuity from a life insurance company that begins after a defined period, say 5 or 10 years, with payments to continue for life. The second loan is a series of installments paid to the borrower that end when the annuity begins. At the end of the deferral period, interest will have accrued on the lump sum and on the installments—the debt will have risen to a foreseeable amount. The limited rising debt now ends and requires only interest payments that must be made annually until the aged person's death.

The gross annuity begins at the end of the deferral period and a portion of it is used to service (that is, to pay the interest only) the final debt to the bank. The remainder, the net annuity, continues the income payments formerly received from the bank.

Consider, as in the preceding example, a 75 year-old man with \$40,000 in home equity. Under this conversion, he could receive payments of \$3,400 a year for 5 years and then \$3,699 a year for life. This could be accomplished as follows:

- (1) He receives installments of \$3,400 a year for 5 years. At 9 percent interest, this grows into a debt to the bank of \$20,348. He also indirectly receives, at the time of contracting, a lump sum of \$12,722. This is used to purchase a single premium deferred annuity to provide payments after 5 years. At 9 percent interest, this \$12,722 grows to a debt of \$19,652 after 5 years. Thus, the total debt of the aged person after 5 years is \$40,000 (\$20,348 plus \$19,652).
- (2) Now, after 5 years, the gross annuity begins—\$7,299 a year.⁶ From this amount, \$3,600 is paid

⁶ The gross annuity is derived from actuarial functions at 8 percent as shown in **Actuarial Tables Based on United States Life Tables: 1969-71**, DHEW Publication No. (HRA) 75-1150, 1975, table 11. The premium does not take into account any expenses, taxes, profits, or losses.

the bank annually—9 percent interest on the \$40,000 debt. (This debt is serviced annually, so it never grows.) The remainder, \$3,699, is the net annuity to the aged person that will continue for life.

Advantages. The advantage of a limited rising debt loan over a fixed debt plan is that not all the equity is initially converted and risked since the borrower buys a deferred annuity, not an immediate annuity.

Disadvantages. A problem with deferred annuities is that the payout amount is uncertain. In the example, certain interest rate assumptions were made. In actuality, interest rates could vary during the deferral/accumulation phase. This would result in higher (if interest rates increase) or lower (if interest rates decline) annual payments to the aged person. Thus, the exact payout amount is not known when the aged person enters into the contract. However, the companies offering this type of plan guarantee a minimum rate—usually only 3.5–4.5 percent. (The 1984 rate was much higher—11–12 percent.⁷) An industry source observes that “with the fixed dollar annuity, the money you pay is invested in bonds and mortgages with a guaranteed return. With this plan, you are guaranteed a rate upon which payments to you will be based. You can never get less, but could get more.”⁸ Further, the income is less with this plan than with a plan that combines a fixed debt plus an immediate annuity. Less income is realized because the debt rises so rapidly that it overwhelms the advantages of deferring the annuity, a deferred annuity being cheaper than an immediate one. As was seen above, the net annuity was \$3,699 for life after the deferral period, an amount much less than what could hypothetically be provided with a fixed debt loan plus an immediate annuity, such as the \$4,526 per year shown in the preceding example. Of course, the risk of losing one’s home equity is greater with the immediate annuity.

Limited Rising Debt Loans With Guaranteed Lifetime Tenure: A Public Variant

Description. A home equity conversion plan that combines a deferred annuity with a limited rising debt is being developed in Maine with the participation of the State Housing Authority. In this arrangement, the bank would provide the aged person with a lump sum to purchase a single premium deferred life annuity and provide monthly payments during the deferral period. For example, a woman aged 68 with a home valued at \$35,000 would receive \$3,125 to purchase a deferred annuity to begin at age 78. Until then, she would receive

\$125 a month for 120 months (10 years). At the end of 60 months, her combined debt—at 14 percent interest—would have risen to \$16,791 (\$6,017 for the lump sum and \$10,744 for the installments). The State Housing Authority would then step in to purchase the note from the bank. No further interest would accumulate to the woman’s account.

She would then receive another 60 payments of \$125 per month. The debt on this second series is \$10,744. The second note would also be purchased by the State Housing Authority from the bank. Then her deferred annuity of \$125 per month for life would become payable. The woman’s final debt would be \$27,535, payable at her death to the State Housing Authority, with nothing owed to the bank. This plan, which involves a public subsidy, depends on the willingness of the Maine Bond Council to permit public sale of bonds for this purpose. The outcome is still problematic.⁹

Advantages. Obviously, because of the public subsidy, the debt is greatly limited. Consequently, the equity can be converted into relatively high income.

Disadvantages. If death occurs within 10 years, there is no return on the money used to purchase the deferred annuity. Also, because of the public subsidy, the plan would likely be means-tested, which would limit the program’s applicability.

Rising Debt Loans For Tax Deferral

Description. One public plan that guarantees occupancy and provides some saving of income is a deferred tax payment plan. Indirect loans are made by the State to the aged homeowner so that his or her real estate taxes will not have to be paid until death or the sale of the property.

The interest charged on the deferred taxes is usually below the market rate, and thus this plan constitutes a public subsidy. Since public money is involved, there is generally a means test for participation in the plan. California, among other States, has used this arrangement.

The relatively small amount borrowed on the house of a low-income person who is charged a low interest rate would not be expected to accumulate to a debt so large as to exceed the home equity—the collateral for the loan. For example, assume the \$600 average annual tax on a \$50,000 home is deferred for 20 years and the interest rate is 6 percent. The terminal debt, about \$22,000, can easily be paid by the estate. This open-ended loan is possible only because of the relatively small amounts involved.

Advantages. The clear benefit is the out-of-pocket saving of a significant and growing expense for elderly homeowners.

⁷ See *Best’s Retirement Income Guide*, August 1984.

⁸ “What You Should Know About IRA’s,” American Council of Life Insurance, January 1983.

⁹ Personal communication from Jill Duson, Esq., Bureau of Maine’s Elderly, July 15, 1983.

Disadvantages. Since only a small portion of home equity is converted, little income saving is available. Further, the program is usually means-tested, which limits the program's applicability.

Combination Loan-Equity Plan

Description. None of the plans discussed so far provides for the possible appreciation of the aged person's house. This plan involves the aged homeowner accruing both a debt and the obligation to share with the lender the possible appreciation in the house's value. This instrument is called a reverse shared appreciation mortgage, or reverse SAM. Specifically, the aged homeowner receives monthly loan installments at below-market rates in exchange for giving the investor a share of the appreciation. The investor's share of equity could be 50 percent or more—even 100 percent. A greater share provides a greater annuity. The payment continues for life, or until the homeowner wishes to sell. At sale or death, the loan balance, including interest plus the share of the appreciation, is due. Annuity income is related to life expectancy as well as to initial home value.

In the past, open-ended reverse annuity mortgages were not possible even on a small scale because some persons would live longer than expected and their debt could easily exceed home equity at death. With mortality risk-sharing and appreciation sharing, these rising debt loans are now feasible.

A model of the reverse SAM was presented in a recent study, which discussed offering adequate profits to attract investors.¹⁰ For a woman aged 72 (with life expectancy of about 12 years), a reverse SAM will provide an annuity of \$34.20 per \$1,000 of initial property value, or \$200 per month on a \$70,000 house. The model assumes a 12.4-percent mortgage interest rate and 100 percent appreciation sharing. In comparison, a term reverse annuity mortgage for a period of 12 years with a higher market interest rate of, say, 14 percent, would yield an annuity of \$35.67 per \$1,000 of home value, an amount similar to the payment provided by the reverse SAM. Since the reverse SAM provides guaranteed payments for life—not just for life expectancy—the reverse SAM's total payments could be higher. Of course, the trade-off for higher payments is appreciation sharing.

Another example: Consider a woman aged 85 with a life expectancy of 5 years. With a reverse SAM, she could receive a yearly annuity of \$70.50 per \$1,000 of initial home value. Although this is much more than what the woman aged 72 could receive, it is relatively

low. With a term RAM for 5 years at 14 percent she would receive \$151.28 per \$1,000. True, the reverse SAM provides a lifetime guarantee of occupancy and payments, but a woman aged 85 could take out a term RAM at 14 percent for 8 years—3 years more than life expectancy—and still receive at this interest rate \$75.57 per \$1,000 of initial home value, which is more than the reverse SAM would provide.

Advantages. Payments and occupancy are guaranteed for life and the debt can be paid off at any time.

Disadvantages. In cases where there is 100 percent sharing, the homeowner cannot take out future home loans based on the appreciation since any appreciation has accrued to the lender. Under the term RAM, on the other hand, appreciation represents an asset against which the homeowner can borrow. A further disadvantage is that if the homeowner dies early (that is, before life expectancy), he or she has given up all home equity—initial value plus appreciation—in exchange for a minimal number of payments.

Split Equity Plans: A Public Variant

Description. Apart from equity conversions by means of loans, a variety of split equity plans has been developed. These provide that the aged person can sell the home and keep occupancy rights for life. These plans can be public or private and can also provide a mix of cash and noncash income.

The first public plan in the United States—The Buffalo Home Equity Living Plan (HELP)—began functioning in 1981.¹¹ Buffalo HELP is a public corporation that uses block grants from the Department of Housing and Urban Development to purchase homes for neighborhood restoration and to provide income and continued occupancy to the elderly homeowner. In exchange for the residual equity, Buffalo HELP rehabilitates the house, does the major maintenance, and pays the taxes and insurance. The aged person receives cash, either as monthly income or as a lump sum. When the aged person dies or moves out permanently, the corporation takes possession of the house, sells it, and the cycle begins again.

Illustrative annual cash payments for men per \$1,000 of prerehabilitation value are shown in the tabulation on the next page. The plan also provides some in-kind benefits. Total benefits, then, include both cash plus in-kind benefits. With inflation, the total benefits will tend to be constant, since, as the level cash payment loses value, the in-kind benefits increase.

HELP, which began in one neighborhood, is now expanding into other areas of Buffalo. To participate, one must be more than age 60, have home equity of \$15,000

¹⁰ See Robert Garnett and Jack M. Guttentag, "The Reverse SAM," *Housing Finance Review*, January 1984. This article deals specifically with a version developed by American Homestead Mortgage Corporation in New Jersey.

¹¹ Robert Garnett and Jack M. Guttentag, "HELP in Buffalo," *Housing Finance Review*, October 1982.

Age	Payment	Age	Payment
60	\$38.00	78	\$120.00
61	41.00	79	128.00
62	44.00	80	136.00
63	46.50	81	145.50
64	49.50	82	154.50
65	52.00	83	166.50
66	56.00	84	178.00
67	60.00	85	190.00
68	63.50	86	206.00
69	67.50	87	222.00
70	71.50	88	242.00
71	76.50	89	262.00
72	81.50	90	282.50
73	86.50	91	311.00
74	91.50	92	340.00
75	97.00	93	373.50
76	104.50	94	407.50
77	112.00	95	441.00

Source: Robert Garnett and Jack M. Guttentag, "HELP in Buffalo," *Housing Finance Review*, October 1982, page 398.

or more, have little or no mortgage outstanding, and have limited income (80 percent of median area income). Thirty-six family units have been accepted so far (and 20 have actually closed). Of these, 21 were single women, 9 were single men, and 6 were couples. Median market value of their homes is \$20,000. Under the program, cash benefits continue while the aged person is in a nursing home. In such cases, HELP rents the property to a short-term tenant.

These total benefits appear equitable when evaluated using a measure of expected annuity based on initial property value, expected appreciation, required rate of return, and life expectancy.¹² Of course, the required rate of return is only what is necessary to maintain the integrity of the program; hence, it is low from a commercial viewpoint.

For example, the actual yearly annuity is \$52 per \$1,000 of home value for a man aged 65. If his house is worth \$20,000, he would receive the following during the first year: \$1,040 in cash; \$380 in paid taxes and insurance (computed at 1.9 percent of market value of the home); \$400 in maintenance; and \$167 in rehabilitation. (The program provides for up to \$2,500 in rehabilitation costs during the first 3 years. If his unit is rehabilitated with the maximum expenditure, his average annual rehabilitation benefit over his 15 years of life expectancy is \$167.) Thus, his total annual benefits equal \$1,987. If administrative and legal fees are added, the total first-year benefit is more than \$2,000.

These actual program benefits can now be compared with a measure of expected annuity based on the present value of the residual equity. In the case above, Buffalo HELP has assumed a 6 percent appreciation rate, a 6 percent rate of return, and a 15-year occupancy (the life expectancy of the 65-year old man). The annuity would

¹² Formulas for expected annuities were provided by Jack M. Guttentag, "Creating New Financial Instruments for the Aged," *Bulletin*, New York University Graduate School of Business Administration, 1975.

be \$2,059¹³—very close to the actual benefits shown above.

Advantages. What is especially significant about this program is the indexed nature of the noncash benefits—the payment of taxes, rehabilitation, and maintenance. These in-kind benefits are a large proportion of total benefits for those with longer life expectancies. The program's provision of initial rehabilitation (for example, a new porch) has no effect on individual cash benefits. Accordingly, those with homes requiring such rehabilitation would gain more from the program than would others.

Disadvantages. The plan imposes some income limitations on applicants and provides small amounts of cash income. The entire equity in the house is signed away, and the risk of net loss exists in the event of an early death. Also, the aged person cannot move from the home without losing all the plan's benefits.

Split Equity Plans: A Private Sale-Leaseback

Description. In this type of arrangement, the aged homeowner sells his or her house to a private investor; the investor then leases it back to the former homeowner. Although conceptually no rent need be paid, without such consideration the seller and buyer may not be able to use certain tax advantages (such as the depreciation deduction for the investor and the one-time capital gains exclusion for the aged seller). The aged seller continues to live in the house, but surrenders all rights after death.

An example of this type of plan is the Fouratt plan, which was developed to enable the buyer and seller to avoid negotiating many of the details of a sale-leaseback. Under Fouratt, an investor is found to purchase the home at a discounted price. The investor puts 10 percent down and pays monthly installments to the aged person to amortize the loan over a term related to the seller's life expectancy. Should the aged person live beyond the term of the note, he or she can remain in the home and continue to receive income in the form of a life annuity (a single premium deferred annuity) pur-

¹³ This figure was determined by annuitizing the present value of the residual equity using the required rate of return. The following formula can be used to determine the present value:

$$pv = iv X \frac{(1 + p)^n}{(1 + r)^n}$$

where pv = present value of the residual equity
iv = initial value
p = expected appreciation rate
r = required rate of return
n = term (in years).

If the initial value is \$20,000, the expected appreciation rate is 6 percent, the required rate of return is 6 percent, and the term is 15 years, then the present value of the residual equity is \$20,000. Annuitized over 15 years at 6 percent, the annual payment would be \$2,059.

chased by the investor at the time of the original contract. The aged person pays rent;¹⁴ after the first 3 years, the rent may increase as retirement income increases. The investor pays for major maintenance, taxes, and insurance.

The discount on the price of a home varies from 15 to 30 percent of the appraised value depending on the seller's age and sex—his or her life expectancy. "The maximum 30 percent applies to the youngest eligible seniors, the 70 year old female and the 65 year old male," according to a plan spokesman. "For each additional year of age at entry, the discount is one percentage point less, that is, a 25 percent discount for a 75 year old female. The minimum 15 percent discount is for a female 85 or over."¹⁵

The term of the loan is 10–15 years, with the longer terms going to the younger sellers. For each additional year of age at entry, the term of the note is 4 months less; the minimum term is 10 years. The interest rate on the note approximates that of a long-term Treasury bond.

A brochure from the Fouratt plan¹⁶ provides the following example: A widow aged 79 owns an \$80,000 house. This price is discounted by 21 percent to \$63,200. The widow receives a downpayment of \$6,320 and takes back a promissory note of \$56,880 amortized over 12 years at 11 percent. The investor's gross payment to the widow is \$713 monthly. The widow's rent is \$285. Her net income, then, is \$428 a month. At the end of the 12-year term, she will continue to receive \$713 a month from a life annuity, regardless of whether she continues to live in the house.

In this example, the 12-year term of the note exceeds her life expectancy of 8 years. Should she die in 8 years, loan payments would be paid to her estate for the next 4 years. Should she live longer than 12 years, the life annuity would provide income payments to her until death.

How do payments provided by this plan compare with commercial annuities? The formula used in the Buffalo HELP example first calculates the appreciated property value as discounted by a required rate of return to the investor. The resulting amount is the present value of the residual equity. This amount is then converted into annual payments to the aged person. In this example, the woman owns an \$80,000 house, her life expectancy is 8 years, the expected appreciation rate is 6 percent, and the investor's required rate of return is 13

¹⁴ According to "The Fouratt Senior Citizen Equity Plan," gross rent is usually set at 40 percent of the monthly payment to the aged person, but it could be less or it could be as high as 47 percent. It also may be subject to upward adjustment after 3 years if the aged person's monthly retirement income increases.

¹⁵ Personal communication from G. Robert Henry, Fouratt Corporation, Carmel, California.

¹⁶ "The Fouratt Senior Citizen Equity Plan," The Fouratt Corporation, Carmel, California, 1983.

percent. The woman's annuity, then, would be about \$10,000 per year.

Under Fouratt, she would receive a down payment of \$6,320, which when annuitized over 12 years equals \$1,062 per year. She also receives \$5,136 per year in new additional net income, around \$1,500 per year in insurance and taxes, plus the annual value of the premium that purchased the deferred life annuity. All told, she will receive annually somewhat less than the "expected" \$10,000. The amount received under Fouratt is close to what would be received (\$8,633) from a commercial investor (such as a second mortgage investor) whose required rate of return is 17 percent.

Apply the Fouratt algorithm to a man aged 65, also with a home worth \$80,000. The price is discounted by 30 percent; the amortization period is 15 years, and the interest rate is 11 percent. His total income under Fouratt would be about \$6,000 a year. This compares very favorably with the \$5,143 he would receive from an investor based on the formula for expected annuity, given an expected appreciation of 6 percent and an expected rate of return of 12 percent.

Advantages. Total equity conversion makes substantial new income available to the elderly. The plan also provides for paying taxes, insurance, and major maintenance.

Disadvantages. The right of the aged person to benefit from future appreciation of the property is irrevocably lost, as he or she has sold the property and has become a leasee. Further, the private sale-leaseback contract is more complicated than a normal loan instrument.

Illustrative Income Potential

The role of home equity conversion plans in providing new income can be illustrated by means of data from the Retirement History Study (RHS). For 10 years the RHS followed a sample of persons aged 58–63 in 1969.¹⁷ In the following discussion, four demographic groups are considered: Married men, unmarried men, unmarried women, and surviving spouses. The groups represent aged populations for whom a home equity conversion might be appropriate.

Each of these demographic groups is classified in terms of its dependence on income security programs. What proportion of their total income is composed of retirement, survivor, and/or disability benefits under the social security program (OASDI)? In table 2, home equity conversion is then examined for each of these groups.

¹⁷ For a detailed description of the sampling plan, see Alan Fox, "Income Changes At and After Social Security Benefit Receipt: Evidence From the Retirement History Study," *Social Security Bulletin*, September 1984, pages 22–23. Surviving spouses were not part of the original sample selection but were interviewed to replace their husbands who died after the initial interview.

Table 2.—Social security dependence: Illustrative income potential from home equity conversion plans, by marital status, 1982

Item	Percent of total income made up of social security benefits for—											
	Married men			Unmarried men			Unmarried women			Surviving spouses		
	Less than 50	50-79	80 or more	Less than 50	50-79	80 or more	Less than 50	50-79	80 or more	Less than 50	50-79	80 or more
Total number ¹	1,622	1,050	549	273	242	166	637	515	539	350	189	255
Percent with no home equity	13	16	25	42	57	63	53	52	62	23	30	42
Number with home equity	1,330	834	372	152	98	58	276	222	184	242	113	123
Mean home equity	\$55,460	\$38,040	\$31,420	\$43,480	\$35,420	\$23,920	\$38,710	\$34,280	\$25,230	\$46,780	\$36,030	\$26,130
Mean age	70	70	71	70	71	71	70	70	71	65	68	68
Mean income	\$13,630	\$6,890	\$4,530	\$8,790	\$5,240	\$3,080	\$8,450	\$4,180	\$2,690	\$9,750	\$5,190	\$3,170
10-year RAM annual income	\$2,939	\$2,016	\$1,665	\$2,304	\$1,877	\$1,268	\$2,051	\$1,816	\$1,337	\$2,479	\$1,909	\$1,385
Lifetime sale-leaseback annual income	\$3,384	\$2,321	\$1,963	\$2,653	\$2,213	\$1,495	\$2,107	\$1,866	\$1,405	\$2,274	\$1,877	\$1,361
Reverse SAM annual income	\$2,576	\$1,767	\$1,538	\$2,019	\$1,734	\$1,171	\$1,798	\$1,592	\$1,235	\$1,628	\$1,505	\$1,091
Percent with home equity of \$80,000 or more	17	5	5	12	6	2	7	6	0	10	6	1
Mean home equity	\$143,080	\$126,190	(2)	(2)	(2)	(2)	(2)	(2)	...	(2)	(2)	(2)

¹ Excludes cases in which home equity amount, social security benefits, or total income were unknown.

² Sample too small to estimate mean.

An initial observation is that many persons, especially the unmarried, have no home equity at all. These persons, mostly renters rather than owners, are generally more dependent on OASDI. The proportion with no home equity is higher within each demographic group for persons with higher dependence on OASDI benefits than for those with less dependence. (High dependence means that 80 percent or more of the person's income is composed of OASDI benefits; low dependence means that less than 50 percent comes from OASDI.)

For persons with home equity, mean home equity is less where dependence on OASDI is greater. For example, among married men with high dependence on OASDI, mean home equity was only \$31,420. Where dependence was low, mean home equity was \$55,460. Married men who are highly dependent on OASDI also have lower mean incomes than those who are not.

These observations are based on averages. This leaves open the question: Is there a substantial number of persons among the dependent populations with larger home equity assets? The proportion of those who have a home equity of \$80,000 or more is very low. Among surviving spouses depending on OASDI for 80 percent of their income, it is 1 percent. Even among married men with low dependence on OASDI—the most affluent of these demographic groups—only 17 percent have at least \$80,000 in home equity.

The income potential from home equity for the various demographic and dependency groups can be estimated under certain assumptions about the plans. In table 2, three of the plans discussed above are applied to the various groups to illustrate each plan's income potential. The first plan is a 10-year RAM that assumes a 13.5 percent annual interest rate (similar to a mortgage rate of the mid-1980's) and converts all home equity.

The second plan is the sale-leaseback annuity—based on an approach similar to the Fouratt plan. The interest

rate is tied to long-term Treasury bonds in the recent period—here, 12 percent. The Fouratt plan, not available for women younger than age 70, is extrapolated in this example to cover surviving spouses who are younger than age 70.

The third plan, the reverse SAM or shared appreciation mortgage, uses annuities provided by the American Homestead Company. The assumptions were an interest rate of 11.4 percent and 100 percent appreciation sharing. (Unisex annuities were provided for ages 65, 70, 75, and 80 only, so it was necessary to interpolate annuities for other ages.)

The income potential of these three plans is roughly the same, within a few hundred dollars. Generally, persons with lower incomes and with more dependence on OASDI would gain more from home equity conversion than persons who have higher incomes and less dependency. This is because, although mean home equity and mean total income both decline as OASDI dependence increases, mean home equity declines at a slower rate. Consequently, for married men who are highly dependent on OASDI benefits, sale-leaseback income can augment total income by 43 percent, compared with only 25 percent if their dependence on OASDI is low.

Conclusion

A variety of home equity conversion plans is being developed to provide retirement income for elderly persons who want to remain in their homes. Some of these plans can be arranged by the individual with the cooperation of lending institutions and insurance companies or investors.

The following tabular summary compares the plans along important dimensions of concern to potential consumers and summarizes the preceding discussion. No one plan is necessarily better than any other, since

one's choice of plans depends on specific objectives and the risks one wants to incur, as well as the income generated. As more experience is accumulated, and as these

plans are systematically assessed, it is likely that further efforts will be made to utilize home equity assets to increase retirement income.

Characteristics of home equity conversion plans

Type of plan	Example of implementation	Public or private	Guaranteed lifetime tenure	Risk of appreciation loss	Cash income	Noncash income
Loan plans:						
Rising debt repayable loan	San Francisco Development Fund (RAM)	Private	No	None	High for short term loan	No
Fixed debt nonrepayable loan	None known	Private	Yes	High	Varies with age: Medium for very old, low for younger retirees	No
Limited rising debt nonrepayable loan (no subsidy)	None known	Private	Yes	Moderate	Low	No
Limited rising debt nonrepayable loan (subsidy)	Under consideration in Maine	Public	Yes	Moderate	High	No
Rising debt for tax deferral	California	Public	Yes	None	Low, indirect	No
Combination loan-equity (reverse SAM)	American Homestead, New Jersey	Private	Yes	Usually 50-100 percent	Medium to high	No
Split equity plans:						
Subsidized split equity	Buffalo HELP	Public	Yes	All	Low	Yes
Sale-leaseback	Fouratt	Private	Yes	All	High	Yes