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Reverse Mortgages and the Liquidity of Housing Wealth

Housing wealth constitutes most of the non-pension wealth of the elderly population. The problem that many elderly homeowners face is how to tap this housing wealth for consumption without selling the house and moving. One possible solution to this problem lies in a relatively unusual financial instrument called the reverse mortgage, which allows the consumer to spend the equity while continuing to live in the house.

Although reverse mortgages have been in existence for more than a decade, their acceptance among consumers and financial institutions has been slow. Among the barriers to acceptance so far have been the lack of consumer familiarity with the product, the high cost of originating these loans, the lack of liquidity and diversification for lenders, unfavorable required accounting treatment, regulatory and legal uncertainties, and concerns over consumer protection. Nevertheless, as solutions to these problems are gradually worked out, the reverse mortgage may prove to be a financial product of choice for many elderly homeowners, especially in the future when the numbers of elderly increase relative to the population as a whole.

The number of consumers who are, in fact, possible candidates for reverse mortgages is a matter of debate. Academic literature contains several studies of reverse mortgages that have calculated the potential demand for this product among the elderly population. Typically, these papers have found the potential pool of customers to be somewhat limited. This study will extend the previous work by focusing on the segment of the elderly population most likely to benefit. It will identify the elderly households with high levels of housing equity who could significantly increase their incomes and

liquid wealth through reverse mortgages. In addition, it will consider elderly homeowners with high debt obligations who could use a reverse mortgage to ease their debt burden as well as elderly homeowners who are childless and do not have a strong bequest motive, two segments of the population ignored in other studies.

The article is organized as follows: Section I briefly describes the features of various types of reverse mortgages offered in the private and public sectors. Section II surveys the relevant literature that has focused on the savings patterns of the elderly and their demand for reverse mortgage products. Section III describes the sample of the elderly drawn from the Survey of Income and Program Participation (SIPP). Section IV analyzes the potential demand for reverse mortgages on the basis of age, fertility history, income, housing wealth, liquid wealth, and debt. Section V discusses the difficulties in developing an established market for reverse mortgages, including legal and regulatory barriers, as well as issues of appropriate pricing and risk. Section VI concludes the paper.

I. Defining a Reverse Mortgage

A reverse mortgage allows the elderly homeowner to borrow against the equity accumulated in the home without moving or being forced to sell the house. Unlike a conventional mortgage where the homeowner makes periodic payments to the lender, a reverse mortgage provides payments from the lender to the homeowner. The loan is repaid with interest when the borrower sells the house, moves permanently, or dies. Reverse mortgages are usually available only to borrowers aged 62 or older.

While reverse mortgages differ in their terms and conditions, they come in two basic varieties--tenure and fixed term. A tenure reverse mortgage provides the homeowner with monthly payments for life, so long as the homeowner retains the house as the primary residence. After the borrower moves or dies, the house is sold and the loan is repaid. The amount the borrower receives in monthly installments during the life of the loan depends on several factors, including the amount of equity the borrower has in the house, the interest rate on the loan, the borrower's age and life expectancy, and the projected rate of house price appreciation.

The term reverse mortgage, in contrast, is extended for a fixed number of years, usually no more than 10. At the end of the term, the loan comes due, and this usually requires the sale of the house. While the term mortgage can provide higher monthly payments to most borrowers, it requires them to move and sell the house after a fixed period of time.

While both the tenure and the term mortgage provide monthly payments to the borrower, they can have other payment features, such as lump sum advances and lines of credit, or a combination of all three. Most reverse mortgages, both tenure and term, are conditional on continued occupancy of the house as the primary residence and must be repaid in cases of extended absence, such as a nursing-home stay.

Three types of reverse mortgages are currently available to consumers: the Federal Housing Administration (FHA)-insured reverse mortgage, the uninsured reverse mortgage, and the lender-insured reverse mortgage.

FHA-Insured Reverse Mortgage

The FHA-insured reverse mortgage program, officially known as the Home Equity Conversion Mortgage Insurance Demonstration (HECM), was authorized by

Congress in 1987 to encourage the growth of the reverse mortgage market. Under the program, FHA insurance, funded by collecting premiums on all insured loans, protects lenders against the risk that the loan balance may eventually exceed the value of the house. It also protects the borrower by guaranteeing continued loan payments in case of lender default. The program provides for a wide range of payment options. Consumers can receive payments monthly for a fixed term, or for as long as they live in the home. A distinctive feature of the FHA fixed-term payment option, which sets it apart from private uninsured mortgage programs, is that the loan need not be repaid at the end of the term. Instead, the payments simply stop, while the interest on the outstanding balance continues to accrue until the loan is repaid when the owner moves out, or dies, and the house is sold. The FHA program also allows elderly homeowners to access their housing equity through a line of credit or a combination of a line of credit with a tenure or term plan.

The amounts that can be borrowed under this reverse mortgage program are limited, however. The caps are set by the FHA and currently vary according to geographic area from $67,500 in most rural areas to $151,725 in some urban areas.[1] Furthermore, to make sure that borrowers understand the product and to guard against its misuse, the program requires potential borrowers to receive counseling from an FHA-approved independent counseling agency before taking out a reverse mortgage.

Initially limited to 50 lenders allowed to make 50 loans each, the program was expanded by Congress in 1989 and now authorizes all 10,000 FHA-approved mortgage lenders to make FHA-insured reverse mortgage loans.

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[1]"Summary of Reverse Mortgage Plans," American Association of Retired Persons, June 1993.

Congress authorized a total of 25,000 reverse mortgages to be made under the program, which is set to run until 1995. As of August 1992, a total of 2,155 loans had been closed by 52 lenders (HUD 1992).

Uninsured Reverse Mortgage

In contrast to the FHA-insured reverse mortgages, uninsured loans are offered only for a fixed term and become due and payable on a specific date. Because the elderly homeowner would face foreclosure unless the loan was repaid when due, such loans are usually made only in conjunction with independent counseling agencies that refer suitable customers to lenders. Such agencies help the borrowers with long-range planning and making arrangements for moving or for other sources of loan repayment. The agencies also help their clients find possible alternatives to reverse mortgages, such as government assistance programs for which they may be eligible. Since such counseling is an expensive and time-consuming process and the agencies are nonprofit organizations supported by voluntary and government contributions, the number of clients they can serve is necessarily limited. In addition, income tests usually restrict client eligibility. Because the number and size of fixed-term reverse mortgages are small, they are viewed by lenders (mostly banks and thrifts) as a community-service type activity rather than as a current or even potential profit center.

Lender-Insured Reverse Mortgage

Currently, only three financial institutions offer lender-insured reverse mortgages.[2] All are headquartered in California, but they offer their

[2]As reported in "Summary of Reverse Mortgage Plans," American Association of Retired Persons, June 1993, these lenders are Providential Home Income, Freedom Home Equity Partners, and Transamerica HomeFirst. Another lender, Capitol Holdings, has recently discontinued its reverse mortgage program.

products in a number of states. As in the FHA program, the lenders levy an insurance premium or risk-pooling charge in addition to interest, but unlike the FHA program, the lenders do not have a government guarantee. Some lenders also take a share of the future price appreciation of the house. The programs allow borrowers to reserve some portion of their equity (usually 25 or 30 percent) that would not be accessible to the lender for the purposes of the loan repayment. This reduces the monthly payments available to the borrower through a reverse mortgage but assures that the estate or the heirs will participate in the future house price appreciation. Monthly payments are available for as long as the borrower lives in the house or, in the case of one lender, for life.[3] Unlike FHA-insured mortgages, regulations do not limit the size of the loan, which is therefore constrained only by the amount of equity the borrower has in the house. Reverse mortgages are particularly popular in California because high levels of equity have been accumulated there by many homeowners as a result of historically high rates of house price appreciation.

II. Review of Relevant Literature

There is some doubt in the economic literature about the willingness of many elderly households to utilize a reverse mortgage if it were available. Venti and Wise (1989, 1990) argue that if elderly households wanted to reduce

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[3]The reverse mortgage product of this lender (Transamerica HomeFirst) is distinctive in that it uses the proceeds of the reverse mortgage to immediately purchase an annuity for the borrower from an insurance company. The annuity continues for life regardless of whether the borrower moves or continues to live in the house. Currently, Transamerica's reverse mortgage does not allow lump sum payments or lines of credit. In a conversation with one of the authors, however, Transamerica indicated that they are considering allowing up-front lump-sum payments for borrowers who wish to use them to pay off outstanding debts.

their housing equity, then those households would move to smaller houses. They show that elderly homeowners who have moved recently are as likely to increase as to decrease their housing equity, rejecting the hypothesis that high transaction costs associated with selling a house and moving leave the elderly with "too much" housing equity. Alternatively, one might argue that the desire to maintain the same level of housing consumption, combined with the lack of an efficient rental market for single-family homes (and the tax benefits associated with ownership) lead the elderly to choose high levels of housing equity. They do not have the option of a mortgage with interest-only payments.

Others argue that the elderly might choose not to consume their housing equity, as they might do in the usual life-cycle model, because they intend to use this wealth as a bequest. Consistent with a strong bequest motive, several cross-section studies (Mirer (1979) and Menchick and David (1983) are examples) show that wealth accumulation increases after retirement. Kotlikoff and Summers (1981) estimate that about 80 percent of household wealth is inherited, indicating that bequests are an important component in aggregate wealth accumulation.

Evidence also exists showing that the bequest motive is not very important in explaining individual savings behavior. The Kotlikoff and Summers estimates might not reflect the desired behavior of most elderly because of the skewed distribution of wealth and unintended bequests due to early death. Hurd (1987, 1990) attributes the cross-sectional evidence that the elderly continue saving after retirement to difficulties in detecting individual savings trajectories using aggregate data, especially given that wealthier households may live longer than their poorer counterparts. Using

panel data, Hurd shows that changes in wealth (net saving) over time are similar for individual elderly households, both with and without children, and thus he rejects the hypothesis that the bequest motive is important in explaining the savings of the elderly.

Several recent studies have looked more specifically at the potential market for reverse mortgages. Venti and Wise (1991) use the 1984 Survey of Income and Program Participation (SIPP) to estimate the impact of a reverse mortgage on the income and assets of homeowners age 55 and older. They find that the median elderly homeowner, even in the lowest third of the income distribution, would only have a small percentage increase in income from a reverse mortgage. Although they note that most elderly could substantially increase their liquid wealth with a lump-sum payment from a reverse mortgage, Venti and Wise conclude that the potential market for reverse mortgages is limited to single persons who are very old.

Merril, Finkel and Kutty (1992) use a different data set--the American Housing Survey--and assume that the potential market for reverse mortgages is composed of households aged 70 or older, with annual incomes less than $30,000, owning fully paid-off houses valued between $100,000 and $200,000, who have lived in their homes at least 10 years. They find that about 800,000 households in the United States meet those criteria, out of 12 million elderly homeowners aged 62 and older. Looking at metropolitan areas, the paper concludes that most of these elderly live in California and the Northeast, areas that have had large real increases in house prices.

These studies employ methodologies that might lead them to underestimate the potential demand for reverse mortgages. Venti and Wise consider only median reverse mortgage payments within a particular group--for example, low-

income couples aged 65 to 70--rather than looking at the distribution of households whose incomes might increase substantially with a reverse mortgage. Merril, Finkel, and Kutty choose somewhat arbitrary income and house value cutoffs, which eliminate some cash-poor, house-rich households who might otherwise be prime candidates for the increase in income afforded by a reverse mortgage. Neither study considers the benefits of using a reverse mortgage to pay off debts for the smaller number of elderly who have high levels of indebtedness.

III. Data

This paper uses data from the Survey of Income and Program Participation (SIPP), a nationally representative stratified random sample of about 20,000 households. The SIPP is particularly well-suited for a study of potential demand for reverse mortgages among the elderly, because it provides data on household composition, fertility history, sources and amounts of monthly income, and complete data on household balance sheets, including housing equity, other assets, and debts. Most of this analysis is done using the 1990 panel, though some comparisons are made with the 1984 panel. The data on fertility history came from the second wave of the 1990 SIPP, while the financial data came from the fourth waves of the 1984 and 1990 SIPP.[4]

The sample used in this study contains elderly households consisting of either single persons aged 62 or older or couples with both members aged 62 or

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[4]The interviews for the fourth wave of the 1984 and 1990 SIPP were conducted in January through April of 1985 and 1991, respectively. The interviews for the second wave of the 1990 SIPP were conducted May through August of 1990. While most households included in the 1990 SIPP were interviewed as part of both the second and fourth waves, a few households were omitted from one of the waves. The number was not large enough to affect the results.

older. There were 4,840 such households in the 1990 panel, 3,405 of them homeowners. Table 1 presents median values of the variables used in the analysis for the whole sample and also by homeownership status. The table reveals rather dramatic differences in median income and wealth between homeowners and non-homeowners, with homeowners the wealthier by every measure. Homeowners have higher monthly income, higher pension wealth (which includes the present discounted value of private, government, and military pensions, as well as Social Security benefits), and higher liquid wealth (bank deposits, stocks, bonds, and mutual fund shares). The median total wealth for homeowners is almost three times that of non-homeowners ($256,398 vs. $94,974). It is notable, however, that despite the relatively high median wealth of the homeowners, 8 percent of them have incomes below the poverty line and could, presumably, benefit from an income-enhancing product like a reverse mortgage. The table also shows that almost 23 percent of the elderly households in the data set have never had children. The percentage of childless households is lower among the homeowners than the non-homeowners. Still, one out of five homeowners in the sample is childless and, presumably, does not have a strong bequest motive that would discourage him or her from taking out a reverse mortgage.

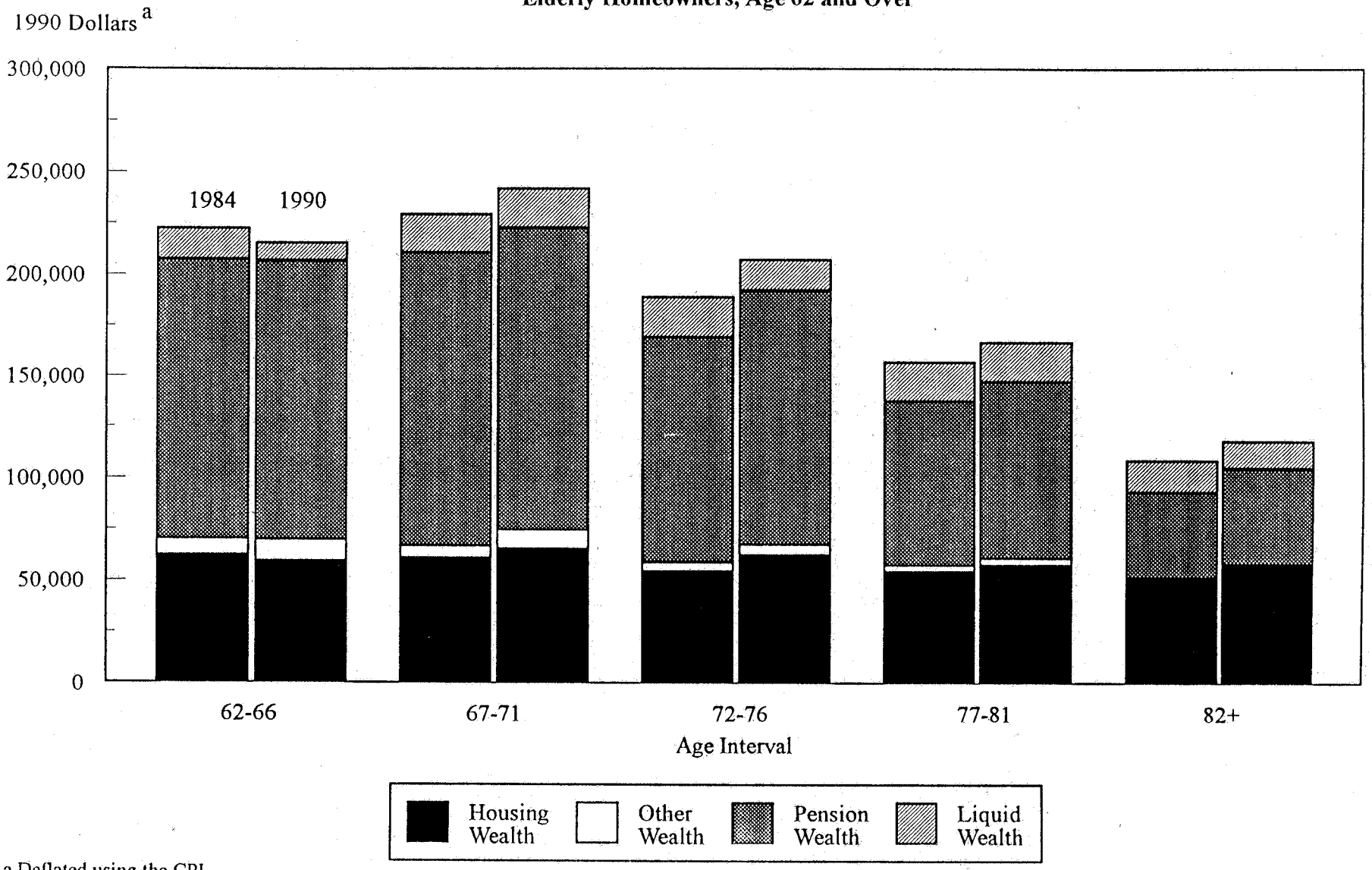
While projections of the future rate of home equity accumulation among the elderly are outside the scope of this study, this rate has increased in the second half of the 1980s. Figure 1 displays the wealth composition of the elderly homeowner sample from the 1990 SIPP by age and compares it to comparable data from the 1984 SIPP. Among elderly homeowners in all age

Table 1
Descriptive Statistics of 1990 SIPP Panel
All Elderly, Age 62 and Over

	Total Sample	Homeowners	Non-Homeowners
Sample Size	4,840	3,405	1,435
Median:			
Age (years)	72	71	73
Monthly Income ($)	1,460	1,733	955
Home Equity ($)	41,000	64,000	0
Pension Wealth ($)	103,152	118,434	76,253
Liquid Wealth ($)	9,475	15,000	1,449
Total Wealth ($)	199,357	256,398	94,974
Percent under Poverty Line	11.8	8.0	20.8
Percent with No Children	22.9	21.1	27.2

Source: U.S. Bureau of the Census, Survey of Income and Program Participation, 1990.

Figure 1
Real Wealth Composition by Age and Year
Elderly Homeowners, Age 62 and Over



a Deflated using the CPI.

Source: U.S. Bureau of the Census, Survey of Income and Program Participation.

categories except the youngest, wealth is greater in 1990 than in 1984. Moreover, the wealth of the elderly is concentrated disproportionately in non-liquid categories, such as the present value of the future stream of pension payments and housing equity, while liquid wealth is a relatively small proportion of total wealth. Furthermore, this pattern is more pronounced in 1990 than in 1984, with liquid wealth smaller and non-liquid wealth higher as a percentage of total wealth in 1990. If these trends continue, the elderly in the future will have a greater need as well as more opportunity to consume their housing wealth through reverse mortgages.

Some elderly homeowners may find it most advantageous to use a reverse mortgage to pay off other debts, including mortgage debt, thus increasing disposable income. Table 2 shows the numbers and percentages of elderly homeowners with debt, as well as the mean and median sizes of their monthly debt payments and the size of their debt burden relative to income. While most elderly homeowners are free of debt, over 38 percent have some form of debt and over half of those have mortgage debt. For those who have debt, the median monthly payment is $177 a month, or 8 percent of their monthly income. While the median debt burden among elderly homeowners does not appear large, it masks a small number of people with heavy debt burdens. The final panel of Table 2 shows the distribution of monthly debt payments as a percentage of the monthly income of elderly homeowners. Seventeen percent have monthly debt payments in excess of 10 percent of their monthly income, and 1.4 percent have debt payments that are more than half their monthly income. At least some members of the latter group could certainly increase their standard of living significantly by reducing their debt burden through a reverse mortgage.

Table 2
Elderly Homeowners with Debt, 1990

	Total Debt	Mortgage Debt	Other Debt
Number of Elderly Homeowners with Debt in Sample	1,303	680	930
Percentage of the Total Sample of Elderly Homeowners	38.3	20.0	27.3
For Elderly Homeowners with Debt			
Mean Monthly Debt Payments	$271.30	$342.60	$129.50
Median Monthly Debt Payments	$177.30	$243.40	$76.50
Mean Monthly Debt Payments as a Percentage of Monthly Income	14	18	6
Median Monthly Debt Payments as a Percentage of Monthly Income	8	11	4
For All Elderly Homeowners			
Monthly Debt Payments as a Percentage of Monthly Income			
Less than 10%	83.1	89.0	94.2
10% - 20%	9.5	6.1	4.2
20% - 30%	3.8	2.4	1.1
30% - 40%	1.4	.7	.4
40% - 50%	.9	.6	.1
Over 50%	1.4	2.1	.1

Source: U.S. Bureau of the Census, Survey of Income and Program Participation, 1990.

IV. Reverse Mortgage Simulations

This section describes the impact that a reverse mortgage would have on the income of the elderly in the sample. The reverse mortgage simulation employed in this study assumes that the proceeds of the loan are converted to an annuity for the borrower.[5] Thus, the length of time the payments are expected to continue depends only on the borrower's life expectancy. Simulations of a more typical (and restrictive) tenure reverse mortgage loan would require assumptions about the length of time the borrower can be expected to stay in the house before moving, for example, to an assisted living facility or a nursing home (known in the insurance industry as the "move-out rate").

The monthly reverse mortgage payment was calculated as follows: First, the maximum amount of the reverse-mortgage loan was determined; that is, the amount the borrower could take out in a lump sum. That amount was based on the value of the house, the amount of equity the borrower has in the house, the projected rate of house price appreciation, and the borrower's sex and age (or ages in case of a couple). The maximum loan-to-value ratio, including the reverse mortgage balance plus existing mortgage debt, was set at 75 percent and the origination cost was assumed to be 3 percent of the equity applied to the reverse mortgage, financed from the proceeds of the loan. The mortgage interest rate was assumed to be 9.25 percent, the average fixed rate on a 30-year mortgage prevailing in January 1991.[6] The rate of future housing price

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[5]This feature of the model most closely resembles the reverse mortgage contract offered by Transamerica HomeFirst.

[6]Flow of Funds data, Federal Reserve System, 1991. Recall that interviews for the fourth wave of 1990 SIPP were conducted in the first half of 1991; therefore, 1991 data were more appropriate than 1990 data.

appreciation, equal to the expected inflation rate, was set at 4.3 percent.[7] Once the lump-sum reverse-mortgage payment was determined, it was converted to a lifetime annuity with monthly payments. The spread between the mortgage rate and the annuity rate was assumed to be 2 percent, resulting in an annuity rate of 7.25 percent.

Because women live longer than men, they receive lower reverse mortgage payments than men. Life expectancies were found in the Vital Statistics of the United States, published in 1989. In the case of couples, the joint "life expectancy" based on both ages resulted in a lower reverse mortgage payment than the payment received by single borrowers. No attempt was made in the study to correct for any self-selection bias that may cause the life expectancy of the population of reverse-mortgage borrowers to be different from the life expectancy in the population as a whole. The existence and size of such a bias cannot be known with certainty until the reverse mortgage market has become broader and has been in existence for a longer time. On the one hand, the annuity feature of a reverse mortgage should attract people with life expectancies longer than the average. On the other hand, if people use reverse mortgages to help pay for unusually high medical expenses or long-term care, then the reverse mortgage population may be in poorer health than the average person of the same age and, thus, have a shorter life expectancy.

Simulations showing the effect of monthly reverse mortgage annuity payments on household income are presented in Table 3. Although more than 40 percent of all elderly homeowners would receive a boost in income of less than 10 percent, a significant minority of potential borrowers would see a much

[7]The expected inflation rate was the 10-year consensus CPI forecast in the first quarter of 1991, according to the Federal Reserve's quarterly Survey of Professional Forecasters.

Table 3
Distribution of Monthly Reverse Mortgage Payments as a Percentage of Monthly Income, All Elderly Homeowners, 1990

	Income from Reverse Mortgage Payment		
	As a Percentage of Total Monthly Income	As a Percentage of Income After Debt Payments	As a Percentage of Income after Debt Payments and after Retirement of High-Interest Debt[a]
Under 10 Percent	41.8	40.8	36.2
10 Percent to 20 Percent	23.8	23.3	25.3
20 Percent to 30 Percent	11.1	11.7	12.7
30 Percent to 40 Percent	6.9	7.0	7.4
40 Percent to 50 Percent	4.2	4.3	4.8
Over 50 Percent	12.2	12.9	13.6

[a](Monthly reverse mortgage payments after paying off debts + (original payments - debt payments remaining))/(income - original debt payments), assuming that households take a lump sum reverse mortgage to pay off their debts, from highest interest rate to lowest, and then use the remaining balance to pay off their mortgage if the existing mortgage rate is greater than 9.25 percent.

Source: Authors' calculations based on 1990 Survey of Income and Program Participation.

bigger jump in income. Over one-third of homeowners could increase their monthly income by 20 percent or more, and a little over one-tenth of the sample would see income rise by over 50 percent.

The second column examines changes reverse mortgage payments would make in elderly homeowners' net income after debt payments. Consistent with the small fraction of income that debt typically represents for elderly households (Table 2), the number of households that would have increases in income greater than 20 percent would rise by only about 1.5 percentage points. That number jumps to a little over 4 percent when the simulated program allows households to use lump-sum payments from the reverse mortgage to retire existing debt which carries higher interest rates (Column 3 in Table 3). Besides the interest savings, retiring existing debt with a reverse mortgage has the additional advantage of setting the term for repaying the principal equal to the borrower's actual lifetime. In contrast, most debt contracts involve a pre-set term; the rules for a typical mortgage or car loan, the two most common types of debt, almost always specify a fixed repayment period.

Table 3 makes clear that simply considering the median reverse mortgage payment among all households (or even a subset of households in specific age or income categories) ignores important information. Examination of the distribution of households indicates that this instrument potentially would provide a large boost in income for a significant minority of homeowners.

The Reverse Mortgage Group

To examine in more detail the types of households that might be interested in taking out reverse mortgages, this section focuses on the elderly reverse mortgage group, defined as all households aged 62 and older who could increase their post-debt effective income by at least 20 percent

using a reverse mortgage with an up-front, lump-sum option (as defined in the third column of Table 3). Although not all such households would be interested in a reverse mortgage were it available, it is useful to look at the characteristics of those who could potentially receive the greatest benefits from a reverse mortgage.

The reverse mortgage group represents 38.5 percent of elderly homeowners and 26 percent of all elderly households. Table 4 indicates that this group is cash-poor and house-rich, with median monthly income that is $700 below that of all elderly homeowners and housing equity significantly above the median for all elderly homeowners. These homeowners typically are also older and therefore have a shorter life expectancy than all elderly households. This shorter life expectancy translates into higher reverse mortgage payments. The median household in the reverse mortgage group would receive a monthly payment of $400, representing an increase in income of almost 40 percent.

Members of about one-quarter of all reverse mortgage group households have never had a child. This is an extremely important factor because many critics believe that future bequests are a major reason that a market for reverse mortgages will never work. Data from the FHA-insured program show that about three-quarters of all reverse mortgage recipients have no living children (HUD 1992). The large number of childless households means that bequests alone will probably not exclude the operation of a reverse mortgage market.

Reverse mortgages could substantially improve the welfare of many impoverished elderly households. Almost 16 percent of households in the reverse mortgage group are below the poverty line, a percentage that is higher than the poverty rate for all elderly households. Including reverse mortgage

Table 4
Comparison of Reverse Mortgage Group to All Elderly Homeowners, 1990

	Elderly Reverse Mortgage Group[a]	All Elderly Homeowners
Median:		
Age (years)	76	71
Income ($)	1,064	1,733
Home Equity ($)	85,000	64,000
Liquid Wealth ($)	10,340	15,000
Total Wealth ($)	215,101	256,398
Reverse Mortgage Payment ($) (monthly)	400	218
Life Expectancy Remaining (years)	10	13
Number in Sample	1,273	3,405
Percent:		
No Children	24.3	21.1
Liquid Wealth Under $5,000	40.6	36.8
Incomes below:		
33rd Percentile of All Incomes	46.7	25.1
Poverty Line	15.9	8.0
Poverty Line After Reverse Mortgage	4.2	3.1

[a]The reverse mortgage group includes all elderly households whose monthly incomes, net of debt, would increase at least 20 percent with a reverse mortgage.

Source: U.S. Bureau of the Census, Survey of Income and Program Participation, 1990; U.S. Department of Health and Human Services, Vital Statistics of the United States, 1988, Volume II, Part A, Table 6-3.

payments in income, however, lowers the poverty rate to 4.2 percent. Among all elderly households, reverse mortgages could cut the poverty rate from 12 percent to 8 percent.

Potential purchasers of reverse mortgages reside in all areas of the country, with each Census region having at least 29 percent of all elderly homeowners in the reverse mortgage group (Table 5). The highest percentages of potential reverse mortgage purchasers live in the New England, Middle Atlantic and Pacific regions, areas where real house prices have increased the fastest relative to incomes.[8]

The reverse mortgage group is composed mostly of older, single-person households (Table 6). More than three-quarters of all single homeowners aged 82 or over would potentially benefit significantly from a reverse mortgage. Even among younger couples, however, significant numbers of households might find reverse mortgages appealing, including over 12 percent of 62- to 71-year-old homeowners and 22 percent of homeowners aged 72 to 81.

Reverse Mortgage Payments as Liquid Wealth

While the potential market for reverse mortgages is typically evaluated in terms of changes in a borrower's monthly income, many elderly households might prefer to get irregular payments, whether in a single lump sum or as an equity-based line of credit, to draw upon in times of need. In fact, one-half of all borrowers in the FHA-insured program chose to use the reverse mortgage solely for a credit line, while another 23 percent chose the credit line combined with either the term or tenure option (HUD 1992). An American

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[8]Merril, Finkel and Kutty (1992) found a much more limited geographic concentration of demand for reverse mortgages, possibly because they imposed income and house value constraints that may not have been met by households in some regions of the country.

Table 5
Geographic Profile of the Reverse Mortgage Group

	Percent of Elderly Reverse Mortgage Group[a]	Percent of All Elderly Homeowners	Reverse Mortgage Group as a Percentage of Elderly Homeowners in Region
New England	6.1	4.6	50.0
Middle Atlantic	19.5	17.1	42.7
East North Central	16.1	18.0	33.4
West North Central	7.7	9.3	31.1
South Atlantic	17.6	19.1	34.4
East South Central	5.6	6.7	31.1
West South Central	6.9	8.9	29.0
Mountain	3.4	4.3	29.1
Pacific	17.1	12.0	53.4

[a]The Reverse Mortgage Group includes all elderly households whose monthly incomes, net of debt, would increase at least 20 percent with a Reverse Mortgage.

Note: Alaska included in Mountain Region.

Source: U.S. Bureau of the Census, Survey of Income and Program Participation, 1990.

Table 6
Marital Status and Age Distribution of the Reverse Mortgage Group and All Elderly Homeowners

Age Interval	Status	Percent of Elderly Reverse Mortgage Group[a]	Percent of All Elderly Homeowners	Elderly Reverse Mortgage Group as a Percentage of All Elderly Homeowners, by Age and Marital Status
62 to 71	Married	8.7	26.2	12.5
	Single Male	6.4	5.6	42.6
	Single Female	17.3	18.7	34.5
72 to 81	Married	10.0	16.4	22.7
	Single Male	7.9	4.6	64.7
	Single Female	25.8	15.7	61.6
82+	Married	4.1	3.6	42.6
	Single Male	4.1	2.1	74.3
	Single Female	15.7	7.2	81.6
		100.0	100.0	

[a]The Reverse Mortgage Group includes all elderly households whose monthly incomes, net of debt, would increase at least 20 percent with a reverse mortgage.

Source: U.S. Bureau of the Census, Survey of Income and Program Participation, 1990.

Association of Retired Persons (AARP) survey showed that even among persons expressing no current need for a reverse mortgage, 84 percent wanted the instrument available in case a problem developed.[9]

The interest in equity-based lines of credit is not surprising, given the illiquid wealth profile of many homeowners. About 37 percent of elderly homeowners have less than $5,000 of liquid wealth and are susceptible to financial shocks that could force them to sell their home. These financial shocks could be housing-related (such as the failure of a roof or rotting tile in the bathroom), health-related (for example, the need for specific care or drugs not covered by insurance), or even auto-related. Even seniors not facing financial distress might want to use a lump sum, possibly for the vacation of their dreams or to help finance a grandchild's education.

As is clear from Table 7, lump sum payments would substantially increase the liquid wealth of many elderly homeowners. A reverse mortgage could increase the liquid wealth of almost one-third of all households by more than 200 percent, with about 14 percent of all homeowners potentially increasing liquid wealth tenfold or more. The median lump sum payment for all homeowners would be $24,000 (as compared with liquid wealth of $15,000); whereas households with liquid wealth of less than $5,000 would receive a median payment of over $17,000.

V. Barriers to Acceptance of Reverse Mortgages

Despite the large numbers of elderly homeowners who could potentially benefit from a reverse mortgage, few financial institutions have shown

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[9]See Scholen (1993) for more detail about the AARP survey.

Table 7
Distribution of Ratio of Lump Sum Payment to Liquid Wealth Among All Elderly Homeowners

Ratio of Lump Sum to Liquid Wealth	Percentage of Elderly Homeowners
Less than 50 Percent	44.4
50 Percent to 100 Percent	12.9
100 Percent to 200 Percent	12.4
200 Percent to 500 Percent	10.2
500 Percent to 1,000 Percent	6.5
Greater than 1,000 Percent	13.7

Memo:	
Median Lump Sum ($)	
All Homeowners	24,507
Homeowners with Liquid Wealth < $5,000	17,607

Source: U.S. Bureau of the Census, Survey of Income and Program Participation, 1990.

interest in offering the product. Older consumers tend to be more financially conservative than the general population and one difficulty is the high cost of borrower counseling and the slow process of educating them about the properties of a complex new financial product.

Reverse mortgages are also hampered by regulatory and accounting uncertainty, chiefly by the question of how and when reverse mortgage interest can be booked as income. Industry practice had been to report accrued interest as income before the loans were repaid. In July 1992, however, the Securities and Exchange Commission (SEC) issued a ruling advising one private reverse mortgage lender either to report interest only when it is received or to assume no appreciation in the houses used as collateral.[10] Since the reverse mortgage product is new and few loans are being paid off, either of these accounting procedures will cause lenders to show artificial losses for reverse mortgages until they are repaid. Although SEC rules apply only to publicly traded lenders, auditors are likely to adopt the same standards for privately held lenders, further discouraging participation in reverse mortgages.

Product Risk and Diversification

Another problem for lenders, at least at the beginning of a reverse mortgage program, is generating a large enough volume of loans to reduce risk through an adequately diversified portfolio. While the risk of adverse real estate price movements in particular geographic regions could be reduced through a geographically diversified portfolio of conventional and reverse mortgage loans, the same cannot be done for the tenure risk of reverse mortgages. The risk that certain borrowers would live in their homes and

[10]Reported in The Wall Street Journal, page B1, August 21, 1992.

receive payments for longer than expected could be reduced only by increasing the size of the reverse mortgage portfolio so that unusually long-lived loans would be balanced by short-lived ones.

Among institutions, life insurance companies should find issuing reverse mortgages most attractive. The characteristic cash flows of the tenure reverse mortgage--fixed monthly outlays by the lender followed by a lump-sum repayment at an uncertain future date--are difficult for banks and thrifts to hedge. Life insurance policies, however, have cash flows that closely mirror the reverse mortgage, with regular premium payments that are followed by the death benefit payout. This complementarity makes reverse mortgages more suitable for life insurance companies than for banks and thrifts, which do not have a matching liability. In addition, life insurance companies are well-suited for the actuarial work involved in issuing and pricing a reverse mortgage.

Banks and thrifts might prefer to sell off their reverse mortgages, but the cash flow pattern makes the instrument difficult to securitize. If reverse mortgages were pooled and sold to investors, those investors would be obliged to make monthly payments into the pool until the mortgages were paid off. The necessity of conducting credit evaluations of the investors and difficulty in administering and servicing such pools would probably make securitization impractical or prohibitively expensive, unless these pools were sold directly to a large institution such as an insurance company.

Problems with securitization could be alleviated if the annuity portion of the reverse mortgage were "unbundled" from the loan. One lender currently does this by buying an annuity for the borrower and collecting the premium, with interest, when the house is sold. In this case, the reverse mortgage

becomes a conventional annuity plus an instrument with cash flows, like a zero-coupon bond with an uncertain term. Institutions could either hold these assets in their portfolios and match-fund them by issuing zero-coupon bonds with similar expected maturities, or alternatively, these unbundled reverse mortgages could be securitized since they would not require monthly payments by investors.[11]

VI. Conclusion

This paper shows that the potential market for reverse mortgages is large. Calculations from this study, using 1990 Census population estimates of the number of persons age 62 and over, show that over 6 million households in the United States could increase their effective monthly income by at least 20 percent by using a reverse mortgage.[12] Of these, more than 1.3 million elderly households have no children. Furthermore, a reverse mortgage market would allow over 1.4 million poor elderly persons to raise their income above the poverty line.

Almost 5 million households could receive a lump sum payment from a reverse mortgage that is at least twice as large as their current holdings of liquid assets, and 2.3 million households could increase their liquid assets more than 10 times with a reverse mortgage. These households could especially

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[11]These securities might be more attractive to investors than current mortgage-backed securities because "prepayment" risk does not depend on changes in interest rates, but instead on more easily predictable move-out rates.

[12]Because the SIPP is a representative sample, the Census estimate of 24 million elderly households in 1990 and the population percentages shown in the paper can be used to estimate the size of the reverse mortgage market.

benefit from a market for reverse mortgages, giving them access to resources in case of financial emergencies without losing their home.

Financial institutions could also benefit from reverse mortgages, by using the product to hedge existing life insurance contracts and to maintain or develop new relationships with the sizable and growing elderly population. Today over 37 million persons are elderly--the Census Bureau expects that number to increase to 41 million by the year 2000, and to almost 66 million by the year 2020. The growth of a market for reverse mortgages, however, will depend not only on the size of the potential market, but also on institutional constraints, the structure and attractiveness of private-sector reverse mortgage contracts, and consumer acceptance. Government involvement may help demonstrate consumer interest in such a market. Private institutions, however, will determine how these issues are resolved and whether the reverse mortgage market grows to the extent that many people have predicted.

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