AGING, MOVING,
AND HOUSING WEALTH

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Aging, Moving, and Housing Wealth

## ABSTRACT

We have described the relationship between family attributes
and moving, and between moving and change in housing wealth.
Moving is often associated with retirement and with precipitating
shocks like the death of a spouse or by other changes in marital
status.  Median housing wealth increases as the elderly age.  Even
when the elderly move, housing equity is as likely to increase as
to decrease.  Thus the typical mover is not liquidity constrained,
although some are.  High transaction cost associated with moving
is apparently not the cause for the lack of the reduction in
housing wealth as the elderly age.  The absence of a well
developed market for reverse mortgages may be explained by a lack
of demand for these financial instruments.  The evidence suggests
that the typical elderly family does not wish to reduce housing
wealth to increase current consumption.  For whatever reason,
there is apparently a considerable attachment among homeowners to
past housing.

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# AGING, MOVING, AND HOUSING WEALTH

by

Steven F. Venti and David A. Wise

It is often claimed that the elderly live in inappropriate housing. Indeed the claim is that many would like to live elsewhere and would, were it not for the large transactions cost associated with moving. These costs are understood to include not only direct monetary costs, but also the psychic costs inherent in changing neighborhoods, losing contact with longtime friends, and the like. This reasoning has been the rationale for the belief that reverse mortgage schemes would be of benefit to the elderly, were the market for them easily accessible. This paper is the first stage of research directed ultimately to analysis of the transaction costs associated with elderly moving. It concentrates on the empirical description of the relationship between moving and housing expenditure of the elderly.

There are three themes in the paper: The first is directly motivated by the hypothesis that a significant number of elderly would like to use housing equity to finance current consumption, were that possible without having to incur the large transaction costs of moving. The proposition is not that the elderly live in housing that is inappropriate for them and that they ought to move. It is not, for example, that an elderly couple living in a large house that it wants to leave to its children has made an inappropriate housing choice. Rather the question is whether the couple would like to use the housing resources for other purposes. If this were the case, one might expect that when moves occur

wealth would be taken out of housing and used to finance current consumption.

A second theme is the extent to which the elderly more generally draw down housing equity as they age. It is well known that a very large proportion of saving is in the form of housing and that many of the elderly have essentially no other assets. Venti and Wise [1986] report that the median level of financial assets among respondents to the 1983 Survey of Consumer Finances was about $1,300. The median level of all assets (excluding Social Security and firm pension plans) was $22,900, the vast majority of which was in housing. Evidence on the assets of the elderly is reported in Hurd and Shoven [1983], Diamond and Hausman [1984], and in Hurd and Wise [1987]. Diamond and Hausman, for example, report that 20 percent of those aged 45 to 59 had essentially no non-pension personal wealth in 1966. Nearly 50 percent had non-housing assets less than $1,000. Given that such a large proportion of personal saving is in the form of housing, one is led to ask whether it is used, as the life cycle theory would predict, to finance consumption in old age. Third, the descriptive analysis here is to serve as the first stage of analysis of moving transaction costs among the elderly. It sets forth the empirical regularities with which more formal modeling and analysis must be consistent.

The analysis is based on the Retirement History Survey (RHS). This survey follows for ten years families headed by persons who were between 58 and 63 years old in 1969. They were reinterviewed

every two years until 1979. Data were collected on a wide variety of socioeconomic measures, including income, wealth by detailed asset category, retirement, health status, and many others. Merrill [1984] used data from the 1969 and 1977 RHS interviews to study the home equity of the elderly. The focus of her work is similar to ours, although the details of the two analyses are quite different. In particular, we use each of the six RHS interviews to analyze the moving and housing choices of the elderly. By considering changes in each two-year interval, we are able for the most part to associate changes in housing equity with individual moves. By considering changes over short time intervals, we also minimize the potential effects on the conclusions of attrition from the sample. While our methods differ from hers, her basic conclusions are supported by our findings.

The first section of the paper describes the frequency of moving by type of housing and by the wealth and income of respondents. Section two considers the correlates of moving. Who moves? In particular, retirement and death of a spouse are emphasized. In addition, we consider the relationship between income and housing equity on the one hand, and moving on the other. The desire to sell a house to finance current consumption might be expected to be concentrated among persons with low current income and relatively higher housing equity. We consider whether there is in fact a concentration of moving among persons in this income-housing-wealth group. The third section compares

changes in housing value, housing equity, and user cost over time for movers compared to non-movers (stayers). Non-housing bequeathable wealth is also traced. If wealth is withdrawn from housing at the time of a move, it should show up as an increase in non-housing bequeathable wealth after the move.

The conclusions of the paper may be summarized briefly:

- The elderly typically do not use saving in the form of housing equity to finance current consumption as they age, contrary to the usual life cycle theory. Indeed, as Bernheim [1984] and Merrill [1984] have reported, housing equity increased with age over the period of the RHS.

- When the elderly move, they are as likely to increase as to decrease housing equity. This suggests that the reason for the virtual absence of a reverse mortgage market may be the lack of demand for such financial arrangements. Even if the transaction costs associated with moving deter many elderly from changing housing, these costs are apparently not what is causing the absence of consumption of housing equity by the elderly. Those who do move don't, on average, withdraw wealth from housing. Thus the typical mover is apparently not liquidity constrained.

- Many of the elderly with little current income also have little housing equity, so that little could be gained by converting it to an annuity, even at an actuarially fair rate. This is consistent with the findings of Manchester [1987], based on data from the Panel Survey of Income Dynamics. That annuity rates are much less than actuarially fair, as shown by Friedman and Warshawsky [1985], may be a further deterrent.

- The attachment to past living arrangements and the maintenance of housing equity may be motivated by a bequest motive, although this explanation is brought into question by the absence of a significant relationship between change in housing equity and whether the family has children, consistent with the findings of Hurd [1986] for non-housing bequeathable wealth.

- The elderly with high income and low housing equity are the most likely to move; those with low income and high housing equity are less likely than the former group but more likely than other elderly families to move. One may

conclude that moving by the elderly is just as likely to be motivated by the desire to reallocate more income to housing as to use housing wealth to finance current consumption. However, among homeowners who move, those with low income and high housing equity reduce housing equity the most; those with high income and low housing equity increase housing wealth the most.

· Moving is strongly related to retirement and to precipitating shocks like change in marital status, in particular the death of a spouse.

I.  <u>Background</u>

A.  <u>The Frequency and Nature of Moves</u>

Much of the data that will be presented pertains to changes in housing between two survey periods. Where the changes do not vary greatly over the five possible comparisons--1969 to 1971, 1971 to 1973, etc... -- we typically present data for the 1973 to 1975 interval.

The likelihood that a family moves during a two-year interval depends on housing type, as shown in the tabulation below.

| <u>1973 Housing</u> | <u>% of Sample</u> | <u>% Move</u> |
|---|---|---|
| Own | 71.4 | 9.1 |
| Rent | 21.0 | 25.8 |
| Other | 7.6 | 26.5 |

Those who rent are almost three times as likely to move as those who own. The "other" category includes persons living with relatives, living in homes owned by others, or paying no cash rent. Most moves are between the same housing tenure. This is

shown by a transition matrix for those who moved between 1973 and
1975.

### Transition Matrix for Movers

|       | Own  | Rent | Other |
|-------|------|------|-------|
| Own   | 78.2 | 15.4 | 6.4   |
| Rent  | 17.0 | 69.9 | 13.1  |
| Other | 22.6 | 41.2 | 36.2  |

Almost 80 percent of homeowners who move move to another house.
Change in housing tenure occurs mostly among the elderly who live
in other situations.  Thus when we consider changes in housing
type from one period to the next, we find that the vast majority
of people are in the same type of housing, except the small
proportion of the elderly who are in the other housing category at
the beginning of the period, as shown below.

### Transition Matrix for All

|       | Own  | Rent | Other |
|-------|------|------|-------|
| Own   | 96.7 | 1.8  | 1.5   |
| Rent  | 6.5  | 86.2 | 7.3   |
| Other | 15.1 | 20.1 | 64.8  |

Finally, some people who don't move do in fact change housing
tenure.  Some rent the housing they used to own, and vice-versa.
Ownership of others may be transferred to children or to other

relatives.  In still other cases someone else may assume the rent obligation.  Change in tenure without moving is especially common among those in the other category.[1]  This can be seen in a transition matrix for stayers (non-movers).

<u>Transition Matrix for Stayers</u>

|        | Own  | Rent | Other |
|--------|------|------|-------|
| Own    | 98.6 | 0.5  | 1.0   |
| Rent   | 2.8  | 91.9 | 5.3   |
| Other  | 12.4 | 12.4 | 75.2  |

The transition matrices for the other years look similar to those for the 1973-1975 period.  The transition probabilities for movers vary with age, however.  The RHS respondents were 62 to 67 years old in 1973.  In the 1973-1975 interval, renters were more likely to change to owning than owners were to change to renting.  Transition probabilities for movers by age can be calculated from the RHS by combining data from all of the survey years.  Only for the ages 60 through 65 (but not 63) is the transition probability from renting to owning greater than the probability from owning to renting; for all other ages from 58 to 71 the reverse is true.  In

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[1]There may of course be response and coding errors in the data.  And they may be concentrated among respondents reported to be in the other category.

this respect the RHS data appear to be consistent with evidence from the Annual Housing Survey (AHS).[2]

An indication of the cumulative effect of these transition probabilities over the ten year period of the RHS is provided by the likelihood of moving between 1969 and 1979 for those who responded in both years. The percent of respondents who moved at least once during this period is:

| Housing in 1969 | % Move by 1979 |
|---|---|
| Own | 27.0 |
| Rent | 63.6 |
| Other | 53.4 |

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[2]According to the 1973 AHS, 23 percent of owners with heads aged 62 to 64 who moved changed to renting; 32 percent of renters who moved changed to owning. Of those aged 65 and older, the percents were 39 and 15 respectively. (See U.S. Department of Housing and Urban Development [1979], Table a-7.) Excluding the other category, apparently making the data more comparable with the AHS, the percents by age based on the RHS are as follows:

| Age | Own→Rent | Rent→Own |
|---|---|---|
| 62 | 17.5 | 25.1 |
| 63 | 23.0 | 21.9 |
| 64 | 16.6 | 28.2 |
| 65 | 20.0 | 21.4 |
| 66 | 25.8 | 17.9 |
| 67 | 19.1 | 19.0 |
| 68 | 28.1 | 12.2 |
| 69 | 19.6 | 9.5 |
| 70 | 31.6 | 11.3 |
| 71 | 25.9 | 20.0 |

Although the RHS samples families and the AHS structures, the data from the two surveys do not appear to be inconsistent. We do not know whether other differences between the surveys should be expected to yield differences in the results from the two surveys.

Many movers, especially renters, moved more than once. Of the original owners who moved and were in the sample in 1979, 73 percent moved once, 18 percent twice, and 9 percent more than twice. Of the original renters who moved, 50 percent moved once, 24 percent twice, and 26 percent more than twice. The transition matrix for all respondents describes the net result of these moves over the ten-year period.

### Ten-Year Transition Matrix for All

|       | Own  | Rent | Other |
|-------|------|------|-------|
| Own   | 90.3 | 6.6  | 3.1   |
| Rent  | 23.0 | 68.3 | 8.7   |
| Other | 26.6 | 31.8 | 41.6  |

There is considerably more movement from renting to owning than from owning to renting. Most of the original owners still own; 7 percent rent. But 23 percent of original renters own at the end of the period. The reason is that renters are much more likely than owners to move, not that when renters move they are more likely than owners to switch tenures, as explained above. Some of the initial respondents died and others dropped out of the sample for other reasons. This attrition may have some effect on the recorded transition probabilities. Renters, for example, are more likely than owners to drop out of the sample. We do not believe,

however, that attrition seriously confounds the interpretation of the data.

Persons who buy often move out of state; renters are much less likely to leave the state. The RHS provides limited information on the distance of moves in the 1973-1975 period. For initial owners and renters, distance is indicated in the tabulation below, where the entries are percents.

### Percent Distribution of the Distance of Moves, 1973-1975

| Type of Move | Same City | Same State | Out of State | Other | All |
|---|---|---|---|---|---|
| Own to own | 35.8 | 29.2 | 22.6 | 12.3 | 43.2 |
| Rent to rent | 69.9 | 17.9 | 8.8 | 3.4 | 36.6 |
| Own to rent | 44.7 | 32.9 | 14.1 | 8.2 | 10.5 |
| Rent to own | 33.3 | 34.6 | 21.8 | 10.3 | 9.7 |
| All | 49.0 | 26.0 | 16.6 | 8.4 | 100.0 |

Half of moves are within the same city and three-fourths within the same state.[3] Almost 90 percent of moves from one rental unit to another are within the same state.

### B. Wealth and Income

Income and wealth by tenure are shown for 1969 in tables 1a and 1b. Since a large proportion of personal wealth is in

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[3]The "same state" percents in the tabulation exclude the "same city".

housing, it is not surprising that homeowners have much more wealth than renters. Owners also have much higher incomes. And they have much more non-housing bequeathable wealth and more Social Security wealth, the latter reflecting higher lifetime earnings.

The extent to which housing equity could be used to increase current consumption depends of course on how much housing equity there is. The extent to which individuals might wish to do that may depend on housing equity compared to current income. For example, persons with low income but large housing equity stand to gain the most by converting housing equity into current consumption. An indication of the potential for such transfers is provided by the distribution of housing equity by income.[4] It is shown below by the income and housing equity quartiles of home owners.[5]

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[4]Income includes wages, capital income, pension income, and Social Security income.

[5]The income quartiles are: <$5,400, $5,400-$10,651, $10,651-$17,902, and $17,902+. The housing equity quartiles are: <$16,334; $16334-$27,767; $27,767-$45,407; and $45,407+. The non-housing wealth quartiles are: <$64,254; $64,254-$101,599; $101,599-$152,731; and $152,731+.

### Distribution of Housing Equity by Income, 1973

#### Housing Equity

| Income | low | 2nd | 3rd | 4th |
|--------|------|------|------|------|
| low | 41.0 | 26.0 | 18.3 | 14.8 |
| 2nd | 26.5 | 27.0 | 26.7 | 19.8 |
| 3rd | 18.6 | 27.3 | 31.0 | 23.1 |
| 4th | 8.9 | 19.7 | 28.4 | 43.0 |

Over 40 percent of those in the lowest income quartile also are in the lowest housing equity quartile.

Thus a reverse mortgage may not expand much the opportunity for this group to increase current consumption. For example, consider a family with housing wealth of $16,334, the maximum in the lowest housing equity quartile (1979 dollars). Assume approximate average male life expectancy at 65 of 15 years. Suppose that the household obtains a loan for the value of the house and uses the proceeds from the loan to buy an annuity. If both the mortgage rate and the annuity "yield" are 10 percent, the annual income from the reverse annuity mortgage would be only $548. In fact, this is an overestimate. The annuity yield is typically much lower than the mortgage rate. In 1979, the average mortgage rate was 10.8 percent and the average annuity yield 4.8 percent.[6] With these rates, the income from the reverse annuity

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[6]See Friedman and Warshawsky [1985].

mortgage would be negative, -$212 per annum.

Housing equity together with other wealth is possibly a better measure of consumption possibilities. Their joint distribution is shown below.

Distribution of Housing Equity by Other Wealth, 1973

| Other Wealth | Housing Equity | | | |
|--------|------|------|------|------|
| | low | 2nd | 3rd | 4th |
| low | 45.6 | 27.6 | 18.1 | 8.8 |
| 2nd | 28.4 | 30.2 | 26.3 | 15.2 |
| 3rd | 14.7 | 26.0 | 33.2 | 26.2 |
| 4th | 6.4 | 16.2 | 26.8 | 50.2 |

Again, those with little non-housing wealth tend to have little housing equity as well. Close to half of those in the lowest non-housing wealth quartile are also in the lowest housing equity quartile and almost three quarters are in the lowest half. Data for other years look very similar to those for 1973.


II. Who Moves?

    A.   Descriptive Data

The likelihood of moving is highest for those with an apparent imbalance in income versus housing equity. The percent that moved during the 1973-1975 period by income and housing equity quartiles is shown for homeowners in the matrices below;

the first presents the data by income and housing equity and the second by housing equity and other wealth.

### Percent Move by Income and Housing Equity 1973-75

| Income | Housing Equity low | 2nd | 3rd | 4th | All |
|--------|-----|-----|-----|-----|-----|
| low | 12 | 7 | 10 | 16 | 11 |
| 2nd | 8 | 7 | 10 | 8 | 8 |
| 3rd | 10 | 7 | 7 | 8 | 8 |
| 4th | 16 | 8 | 8 | 10 | 10 |
| All | 11 | 7 | 9 | 10 | 9 |

### Percent Move by Other Wealth and Housing Equity 1973-75

| Other Wealth | Housing Equity low | 2nd | 3rd | 4th | All |
|--------------|-----|-----|-----|-----|-----|
| low | 10 | 6 | 10 | 9 | 9 |
| 2nd | 9 | 7 | 8 | 11 | 8 |
| 3rd | 11 | 8 | 9 | 9 | 9 |
| 4th | 20 | 9 | 8 | 10 | 10 |
| All | 11 | 7 | 9 | 10 | 9 |

The most striking feature of these data is that persons who have relatively high non-housing wealth, but low housing equity are the most likely to move. Persons in the highest non-housing wealth quartile are more than twice as likely to move if they have low rather than high housing equity. Families with low non-housing

wealth but high housing equity are not unusually likely to move, contrary to what would be expected if moving typically were used to withdraw wealth from housing and reallocate it to current consumption.

According to the first matrix, however, families with high housing equity but low income are about as likely to move as families with high income but low housing equity. Persons with high incomes but devoting relatively little of it to housing may move to reallocate more of their income to housing. This may simply reflect optimal adjustment to desired housing expenditure, given current circumstances. But it may also be a response in part to government policies. Medicaid rules, for example, often require virtual exhaustion of non-housing wealth, but not housing equity, before nursing home expenses are paid. Families with low income but high housing equity, may move to withdraw wealth from housing; they may be liquidity constrained. The evidence in the next section supports these presumptions.

In principle, homeowners could withdraw wealth from housing by increasing the mortgage on the house. Presumably those with the most housing wealth would be in the best position to do this. And indeed housing equity could be increased by paying off a mortgage. But change in the amount of home mortgages has been rare in the absence of a move. Thus in practice it would appear that moving is typically the mechanism by which housing wealth has been increased or decreased. Recent tax legislation that eliminates the tax deductibility of interest on consumer

borrowing, other than mortgages, may change the frequency of home equity loans, however.

The probability that a renter moves shows little relationship to income, to wealth, or to rent. In particular, it does not appear that families with high rent and low income, or with low income and high rent, are more likely than others to move. The percent of renters who move is shown by income and total wealth quartile and by income and rent quartile below.

### Renters % Move by Income and Total Wealth 1973-75

| Income | Total Wealth | | | | |
| | low | 2nd | 3rd | 4th | All |
|--------|-----|-----|-----|-----|-----|
| low | 26 | 25 | 35 | 15 | 26 |
| 2nd | 35 | 25 | 26 | 10 | 27 |
| 3rd | 30 | 30 | 23 | 31 | 27 |
| 4th | 29 | 19 | 18 | 26 | 23 |
| All | 29 | 26 | 24 | 25 | 26 |

### Renters % Move by Income and Rent 1973-75

| Income | Rent | | | | |
| | low | 2nd | 3rd | 4th | All |
|--------|-----|-----|-----|-----|-----|
| low | 24 | 28 | 29 | 24 | 26 |
| 2nd | 27 | 25 | 27 | 30 | 27 |
| 3rd | 32 | 22 | 24 | 33 | 27 |
| 4th | 24 | 15 | 23 | 26 | 23 |
| All | 26 | 24 | 25 | 28 | 26 |

Moving is often associated with job change. Among the elderly, it is more likely to be associated with retirement. It is also strongly associated with precipitating shocks, the death of a spouse in particular. The relationship of moving to retirement is shown in table 2 and to death of a spouse in table 3.[7] Homeowners are about twice as likely to move if the respondent retires during the two-year interval than if retirement does not occur.[8] The difference is also substantial, although somewhat less, for renters. The death of the respondent almost doubles the likelihood that homeowners and renters move during many of the two year intervals. (The effect of change in family size is shown in appendix table 1. The numbers are close to those pertaining to death of a spouse in table 3, although change in family size could occur for many other reasons, as well as death of the respondent.)

Possibly the most informative description of the relationship between age and moving is the empirical hazard rate, the percent

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[7]Respondents are defined to be retired if they report that they are retired or that they are partially retired but are neither working nor looking for work.

[8]In the beginning of the ten-year RHS period, most of those who don't retire during a two-year interval are still working, while by the end of the period most who don't retire are already retired. The data in table 2 show that the probability of moving is about the same for both groups, judging from the percents in the 1969-1971 and 1977-1979 intervals for example--6.7 and 7.2 respectively.

of families who move in the next two-year interval, given that
they have not moved before that.   These calculations are shown
below, by survey year and by age.

### Hazard Rates for Homeowners

| Age | Year at the Beginning of the Interval | | | | | All |
| | 1969 | 1971 | 1973 | 1975 | 1977 | |
| --- | --- | --- | --- | --- | --- | --- |
| 58 | 7.2 | | | | | 7.2 |
| 59 | 7.4 | | | | | 7.4 |
| 60 | 9.3 | 7.9 | | | | 8.6 |
| 61 | 7.7 | 9.7 | | | | 8.6 |
| 62 | 7.9 | 7.9 | 7.8 | | | 7.9 |
| 63 | 8.1 | 9.0 | 7.4 | | | 8.2 |
| 64 | | 8.8 | 8 9 | 7.5 | | 8.4 |
| 65 | | 9.9 | 8.2 | 6.1 | | 8.3 |
| 66 | | | 7.0 | 6.4 | 7.6 | 7.0 |
| 67 | | | 6.5 | 6.5 | 4.7 | 6.0 |
| 68 | | | | 6.2 | 5.7 | 6.0 |
| 69 | | | | 6.3 | 4.5 | 5.4 |
| 70 | | | | | 7.0 | 7.0 |
| 71 | | | | | 6.3 | 6.3 |
| All | 7.9 | 8.8 | 7.7 | 6.6 | 6.0 | 7.6 |

For example, 7.2 percent of the homeowners who were 58 in 1969
moved in the next two years, by 1971.   Looking down the last
column, there appears to be a slight increase in the probability
of moving at the peak retirement years, 60 to 65, and possibly
some decline with age, although both effects are slight.   There
appear to be no important cohort effects, judging by the
similarity of the percents for people of the same age in different
years.   One might expect that not moving for several years would
tend to identify stayers versus movers.   If this selection effect
exists, it should be revealed by declining moving probabilities

along the diagonals, that pertain to the same cohort as it ages. Those who enter each successive calculation have not moved for longer and longer periods of time.  For all cohorts this effect is summarized in the bottom row.  Any such effect does not show up strongly in this tabulation, although possibly indicated by the decline from around 8 percent in 1971 to about 6 percent in 1979. Whatever this effect is, it may be indistinguishable from the effect of age.  Calculations below will help to make the distinction clearer, however.

Comparable data for renters are shown in the next tabulation.

## Hazard Rates for Renters

| Age | Year at the Beginning of the Interval | | | | | All |
|-----|------|------|------|------|------|-----|
|     | 1969 | 1971 | 1973 | 1975 | 1977 | All |
| 58  | 24.1 |      |      |      |      | 24.1 |
| 59  | 29.1 |      |      |      |      | 29.1 |
| 60  | 31.5 | 24.8 |      |      |      | 28.5 |
| 61  | 28.8 | 26.0 |      |      |      | 27.7 |
| 62  | 29.8 | 23.0 | 14.1 |      |      | 24.7 |
| 63  | 32.0 | 24.9 | 15.6 |      |      | 26.1 |
| 64  |      | 19.0 | 24.6 | 20.9 |      | 20.9 |
| 65  |      | 26.0 | 23.8 | 12.5 |      | 21.8 |
| 66  |      |      | 19.3 | 18.5 | 17.8 | 18.7 |
| 67  |      |      | 20.6 | 14.7 | 15.8 | 17.3 |
| 68  |      |      |      | 22.0 | 11.6 | 19.8 |
| 69  |      |      |      | 14.4 | 13.9 | 19.1 |
| 70  |      |      |      |      | 16.5 | 16.5 |
| 71  |      |      |      |      | 25.4 | 25.4 |
| All | 29.1 | 23.8 | 19.4 | 17.5 | 16.7 | 23.7 |

The data for renters suggest a rather strong selection of stayers in the sample, after successive periods without moving.  There is on average a substantial decline in the probability of moving as the number of years without moving increases, summarized in the

bottom row.[9]  On the other hand, there seems to be little effect
of age, judged by looking down the columns.

B.    Parameterization of Hazard Rates

Finally, these hazard rates are parameterized as simple
functions of age, retirement, marital status, health status, and
income-housing equity quartiles.  Given that a person has not yet
moved at the time of a survey, the probability of moving by the
next survey is estimated as a function of these variables, using a
probit functional form.  Those who move in a given interval are
deleted from the calculations for subsequent intervals.  The use
of the probit form for the interval probability of moving is
consistent with a Brownian motion formulation of a continuous time
hazard model.[10]

The Brownian motion version of a hazard model may be
described briefly.  Suppose that at age t there is a gain G(t)
that could be obtained by moving.  It may be thought of as

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[9]To the extent that this progressive selection of stayers
versus movers is important, more formal analysis should account
for it.  It must also recognize that persons are observed in mid
tenure at the beginning of the survey, some have moved recently
while others have been in the same dwelling for many years,
sometimes referred to as left censoring.  From these data,
however, we know how long homeowners have been living in the
current residence and that will be accounted of in subsequent
analysis.

[10]Strictly speaking, this is only true if a move is "non-
absorbing".  In our case it is absorbing.  The probit estimates,
however, provide accurate descriptions of the hazard rates over
the two-year intervals.  See for example Hausman and Wise [1985].

$G(t) = M(t) - S(t)$, where $M(t)$ is the utility associated with moving to the best available alternative housing and $S(t)$ is the utility associated with staying in the present location. The probability of moving is given by $Pr[G(t) = M(t) - S(t) > 0]$.

That $G(t)$ follows a Brownian motion (Weiner) process with drift u means that:

- Every increment $G(t+d) - G(t)$ is normally distributed with mean ud and variance $c^2d$; and

- The increments for every pair of disjoint time intervals are independent.

Because the increments are assumed to be independent, given $G(t)$, $G(t+d)$ is a function only of $G(t)$ and the drift u.

If moving is not an absorbing state, meaning that a person could move and then move back again -- not a realistic possibility in our case -- the probability that a person who has not moved by age t will move by age t + d is given by

(1)     $Pr[G(t+d) > 0 \mid G(t) = g(t)] = F[\{g(t)+ud\}/cd^{1/2}]$,

where F is a cumulative normal distribution function. This is an interval hazard rate with a simple probit functional form.

If moving is an absorbing state, a family could not be in the same house at the beginning and at the end of the period but have moved during the interval. In this case, the interval hazard becomes[11]

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[11]See Cox and Miller [1965].

(2)     $Pr[G(t+d) > 0 \mid G(t) = g(t)] = F[\{g(t)+ud\}/cd^{1/2}]$

$+ \exp[2ug(t)/c^2] \cdot F[\{g(t)-ud\}/cd^{1/2}]$

In our case, d is two years and the starting point g(t) must be estimated. We parameterize u as a function of age; housing equity and current income; and changes in retirement, marital, and health status. If the interval d is defined to be 1 and c is set to 1, equation (1) is in the form of a standard probit specification. (The variance c is not identified if there is no variation in d.) The results for the absorbing state version of the hazard tell the same story as those using the simple model and are not presented.

An advantage of estimating the interval hazards period by period is that the effect of each variable is allowed to vary freely as persons age. The results for the simple probit are reported in tables 4a and 4b. Table 4a is based on all intervals combined, while table 4b presents estimates for selected intervals separately. The last column of the tables shows the change in the probability of moving due to each of the attributes. The change is evaluated at the mean of all of the other attributes. For example, if the sixteen variables describing home equity and income in table 4a are set to zero -- identifying a family with high income and high housing equity -- and all of the others are set at their means, the probability of moving is .084. If instead of high housing and high income, the family had low housing equity

and high income, the probability of moving would be .084 + .047 = .131, or .047 higher.

The estimates support several conclusions. First, as indicated in the summary tables above, moving is often related to retirement and is often precipitated by the death of a spouse or by other changes in marital status. For example, based on the estimates for all intervals combined, in table 4a, the probability that a homeowner moves increases from .046 to .101 (.046 + .055) if the head retires. The probability that the typical married couple moves is .066. If the husband dies during the interval, the probability is .118. Other changes in marital status, like divorce or marriage, are much more likely to be associated with a move. In these cases, the probability of a move is .426 (.066 + .360).[12]

The estimated coefficients on the income-housing equity indicators in table 4a show that the probability of moving is greatest for families with the greatest apparent imbalance in income versus housing equity. The estimated hazard rates for the three home equity and income levels distinguished in the probit specification, assuming other attributes at their sample means are:

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[12]Other studies also report substantial increases in mobility associated with these demographic shocks. See Feinstein and McFadden [1987] in this volume, who report the effects of both retirement and changes in family composition; and Merrill [1984], who reports the effects of retirement, also based on the RHS.

### Estimated Hazard Rates
### by Income and Home Equity, Homeowners

|  | Housing Equity | | | |
| Income | low | 2nd | 3rd | 4th |
| low | 6.6 | 5.2 | 6.6 | 9.7 |
| 2nd | 7.7 | 6.4 | 5.9 | 6.9 |
| 3rd | 7.9 | 5.5 | 5.5 | 7.2 |
| 4th | 13.1 | 7.1 | 7.7 | 8.4 |

The average hazard rate is 7.6 percent. Holding other attributes constant, the hazard rate for families with high income and low housing equity is 13.1 percent. Those with low income and high housing equity are somewhat less likely to move, although they are more likely than the average. These estimates provide no evidence that homeowners typically use housing wealth to increase current consumption. The results in this section together with those below suggest that persons with high incomes and low housing equity are likely to move to increase housing expenditure, while those with low income and high housing equity tend to reduce housing equity when they move. Data in the next section show that movers in general do not reduce housing equity.

Change in health status has little effect on the probability of moving, according to our measures. An improvement in health is associated with a .019 increase in the probability of moving, from .067 to .086. A worsening of health status is associated with a .001 decline in the probability of moving.

The parameter estimates show no effect of age on moving. That is, age at the beginning of a two year period is unrelated to the probability of moving. Note that these variables indicate ages that are two years greater with each successive interval, beginning with 58 at the beginning of the 1969-1971 interval. The year effects, indicated by the first year of each of the two year intervals, are small but declining consistently. They reflect the increasing selection of stayers as the number of years without a move increases. The estimates indicate that those who have not moved before 1977, are .024 less likely to move in the subsequent two-year interval than the typical person in the sample in 1969 is to move by 1971, .078.

Estimates of the effect of individual attributes on the hazard rates of renters are shown in table 5 for all survey intervals combined. As with homeowners, retirement and changes in marital status have substantial effects on probability of moving. There is no age effect. Unlike homeowners, however, there are substantial year effects on the probability that renters move, indicating substantial and increasing selection of stayers as the number of years without a move increases. The hazard rate declines from .294 in the 1969-1971 interval to .151 in the 1977-1979 interval. As shown in the tabulation below, low income families are somewhat more likely to move, but there is no relationship between rent and the likelihood of moving.

### Estimated Hazard Rates
### by Income and Rent Quartile,Renters

| Income | Rent | | | |
|--------|------|-----|-----|-----|
|        | low  | 2nd | 3rd | 4th |
| low    | 25.2 | 27.8 | 24.5 | 25.5 |
| 2nd    | 26.1 | 22.5 | 22.7 | 23.3 |
| 3rd    | 21.0 | 21.1 | 22.0 | 24.6 |
| 4th    | 21.1 | 15.1 | 24.2 | 21.2 |

## III. Moving, Housing Value, and User Cost

It has been shown that only about 8 or 9 percent of homeowners move in any two-year period and that only about 25 percent moved over the entire ten-year period. Renters are much more likely to move; about a quarter move in any two-year period and almost 65 percent of initial renters had moved at least once by 1979. Retirement and death of a spouse are strong precipitating factors associated with moving.

In this section we consider how housing equity and user cost change with moving. In particular, we analyze the extent to which wealth is withdrawn from housing at the time of moving. The market value of housing and housing equity are the principle measures that are analyzed for homeowners.

In addition, we consider the change in non-housing bequeathable wealth. If wealth is withdrawn from housing at the time of a move, it should show up as an increase in non-housing bequeathable wealth. This provides a check on the housing equity

data. For example, persons may undervalue their houses, especially during a period of increasing housing prices. When the person moves and a new house is bought, its actual market value is revealed. The difference between this value and the estimated value of the previous house could exaggerate the increase in housing value when at the time of a move. The change in non-housing bequeathable wealth would not be subject to this potential bias, however.[13] If the elderly typically have more wealth in housing than they would like, we would expect to see a fall in housing equity, and an increase in non-housing bequeathable wealth, among those who move.

Change in rent is determined for renters. In addition, we follow the change in the user cost of housing for both homeowners and renters. This provides a measure that is comparable for both groups. It also is a direct indicator of the extent to which the elderly move to reduce such expenditure. We find that the typical move is just as likely to be associated with an increase as a decrease in housing equity and that user cost is also just as likely to increase as to decrease.

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[13]In addition, housing value and other wealth measures have been imputed when they are missing. To the extent that this introduces error in the measurements used here, the error should be less for bequeathable wealth, which is composed of several individually reported categories. We also calculated the change in the housing equity and housing value of movers based only on the reported values of those who responded to the relevant questions. The results were virtually the same as those obtained using imputations for the missing values. We are indebted to Michael Hurd for putting together a very complete and detailed asset tape from the RHS original data.

A.  Housing Value, Equity, and Non-Housing Bequeathable
    Wealth

Two types of analysis are discussed.  The first is based on
changes between adjacent survey years.  In this case, the sample
includes all homeowners in the sample in each of the two survey
periods.  The second is based only on respondents who remained in
the sample over the entire period of the RHS.  This has the
advantage of providing data on families both before and after a
move.  On the other hand, effects of attrition may have a more
substantial effect on the calculations when only those who remain
in the survey for ten years are included in the analysis.
Attrition is unlikely to have an important effect on the
calculations based on two-year intervals.[14]

Table 6 shows the change in the market value of housing,
housing equity, and non-housing bequeathable wealth for movers and
stayers over each two-year interval of the RHS.  The comparison
with stayers provides a control for economy wide changes during
each interval.  In two of the six intervals, the change in housing
value for movers is greater than for stayers.  In four of the five
intervals more than half of the changes for movers were positive.
The equity value of housing was also as likely to increase as to
decrease when a move occurred.  The median change in equity value
was usually somewhat less for movers than for stayers, however, on

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[14]Merrill [1984] used only families in the sample in both
1969 and 1977.

the order of $1,500 or $2,000. In four of the five periods, the
_fall_ in non-housing bequeathable wealth was greater for movers
than for stayers. This may be the clearest evidence that wealth
is not typically withdrawn from housing at the time of a move.
The percent with a fall in non-housing bequeathable wealth was
typically almost the same for movers as for stayers.

An alternative description of these measures is presented in
appendix table 2. It shows housing value, housing equity, and
non-housing bequeathable wealth for those who were homeowners
during the entire period of the RHS. The data distinguish
families by whether they moved or stayed during a particular two-
year interval, and show the values in each of the other years of
the survey as well. Illustrative findings are graphed in figures
1a, 1b, and 1c. The first of each pair of graphs distinguishes
those who moved between 1969 and 1971 from those who didn't.
Persons in either of these move or stay groups may have moved _or_
stayed in subsequent years. The second of each pair distinguishes
movers and stayers in the 1975-1977 interval. Median home value
increased over the RHS period for both movers and stayers. Movers
typically had greater housing value than stayers. The median home
value of movers always increased at the time of the move. The
median equity value of housing always declines somewhat at the
time of the move, but increases thereafter. Movers have more
housing equity than stayers, based on these data for those who

remained in the survey for its duration.[15]  And the difference is typically about as large at the end of the RHS period as at the beginning.

Median non-housing bequeathable wealth declines continuously for both movers and stayers, and at approximately the same rate. At the time of the move it is as likely to decrease as to increase.  (It decreases in both of the graphs that are shown.) Again, the typical elderly mover appears to withdraw little if any housing equity at the time of the move.[16]

Finally, we have estimated by linear regression the relationship between family attributes and the change in home equity when the family moves (to another owner-occupied dwelling). (See table 7.)  The variables are the same as those used to estimate the interval hazard rates above.  We emphasize the relationship between the change in housing equity on the one hand and initial income versus housing equity on the other.

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[15]The analysis based on adjacent survey years indicates the opposite.

[16]An apparent anomoly in the data is that among the few homeowners who are reported to move to rental housing, there is no appreciable increase in non-housing bequeathable wealth, although the medians are positive.  Indeed, the sum of the change in housing wealth and the change in non-housing bequeathable wealth is negative, at the median, for this group.  In part, the moves are associated with the death of the husband and we know from Hurd and Wise [1987] in this volume that substantial wealth is lost at the death of the husband.  In addition, some wealth may be transfered to children.  Symmetrically, there is an increase in the reported sum of the changes in these two categories among families who move from renting to owning.  We have been unable to find a complete explanation.

Because of reporting errors, there is a tendency for those who report an unusually high level of income or home equity in one survey year to report a lower level in the next. In other words, errors in variables create a regression toward the mean. To correct for this, we estimate the change in housing equity for all homeowners, identifying separately those who move. Thus, for example, the estimated reduction in home equity for families who move and who report low income and high home equity in the first year of a two-year interval is the difference between the reduction for movers and the reduction for stayers; the regression toward the mean is netted out. The mean change in home equity for movers is shown below:

### Mean Change in Home Equity for Movers by Income and Home Equity

| Income | Housing Equity Quartile | | | |
| | Low | 2nd | 3rd | 4th |
|---|---|---|---|---|
| Low | $4,683 | $3,007 | $2,114 | -$16,377 |
| 2nd | 5,219 | 2,683 | 1,916 | -13,790 |
| 3rd | 5,393 | 1,381 | -4,236 | -9,479 |
| 4th | 8,396 | 9,375 | 4,218 | -4,503 |

Families with low income and high housing wealth reduce housing equity when they move. On the other hand, families with high income and low housing wealth, increase equity substantially at the time of the move. Overall, movers are as likely to increase as to decrease housing equity.

Homeowners apparently do not typically move to withdraw wealth from housing. They do not, in general, move to relieve a liquidity constraint, although some apparently do. Indeed, there is a somewhat greater tendency for moves to be associated with high income elderly who want to spend more on housing than with low income families with high housing wealth who want to withdraw wealth from housing.

Like the housing equity of stayers, the equity of movers tends to increase from year to year before and after the move. Of course, the increase in home value in the absence of a move reflects the economy-wide trend in housing prices over the period of the RHS, not necessarily a conscious decision to increase saving through housing equity. The change at the time of a move presumably does reflect conscious intention. Non-housing bequeathable wealth fell over time and usually more for movers than for stayers. In considering lifecycle theories of saving, housing equity is usually thought of jointly with, and like, other forms of saving, presumably to be consumed in old age. These data suggest that this view is not correct for housing. Non-housing bequeathable wealth is observed to fall with age. Most housing will apparently be left as a bequest, judging by the behavior of the RHS respondents through age 73.

This does not necessarily suggest that to leave a bequest is the reason that housing equity is not consumed. Indeed the change in housing equity at the time of a sale by elderly persons without children is about the same as the change for those with children.

Housing equity increases for about half of movers in each group. The same is true for the market value of housing. There is some evidence that non-housing bequeathable wealth falls less for movers with than without children. The differences are not substantial, however. This suggests that the elderly may well be attached to their homes for reasons other than or in addition to the bequest motive.[17]

### B. Moving and Rent

The rent of stayers typically declines over time, as shown in table 8. On the other hand, the median rent of movers usually increases. The initial rent of movers and stayers is about the same. An alternative description of the data is presented in appendix table 3. Like comparable tables for owners, it distinguishes movers and stayers in each two year interval, but also shows rents in each of the other years of the RHS as well. The respondents used in this table rented in each of the years. Typical rents are graphed in figure 2. Those who don't move have declining rents. Thus there appears to be a substantial benefit to remaining in the same rental unit. Rent increases of stayers do not keep up with the rate of inflation. Indeed this apparent rent advantage to continuing renters may provide an incentive not to move.

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[17] See similar evidence in Hurd [1986], that pertains to non-housing bequeathable wealth.

The rent of movers increases at the time of the move, but typically declines in other years, reflecting the lower price faced by sitting tenants. For example, the rents of those who moved between 1971 and 1973 declined somewhat between 1969 and 1971, then increased sharply at the time of the move, and declined thereafter. Of course, both the movers and stayers in the 1969-1971 period could have moved in subsequent or in earlier years.

C.    Underline User Cost

User cost provides a measure that is comparable for both owners and renters. It includes rent, mortgage payments, heat, electricity, gas, water, and trash removal. The change  in user cost by tenure and move type is shown in table 9.[18]  The median change in the user cost of movers who own in both years is typically small and close to the change for non-movers. Consistent with the rent data in the previous section, the change in user cost for renters who move is usually positive and is always greater than the change for stayers. The median increase in user cost for those who move from owner-occupied to rental housing is in the neighborhood of $800 per year. Between 60 and 70 percent of the increases are positive for this group. The median change for those who move from rental to owner-occupied

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[18]Because of a change in the wording of some of the survey questions used to calculate user cost, the 1969 data are inconsistent with data for subsequent years. For this reason 1969 figures are deleted from the graphs.

housing is negative in each interval, but much smaller than the increase for those who make the reverse move. Positive changes are almost as likely as negative ones.

User cost in each year of the survey is shown in figure 3, by move status in selected two-year intervals. It is easy to see that median user cost increases at the time of the move. In most other years user cost declined for both movers and stayers. Again, it is important to keep in mind that members of either group could have moved or stayed in intervals other than the one used for classification.

## IV. Summary and Conclusions

We have described the relationship between family attributes and moving, and between moving and change in housing wealth. Moving is often associated with retirement and with precipitating shocks like the death of a spouse or by other changes in marital status. Median housing wealth increases as the elderly age. Even when the elderly move, housing equity is as likely to increase as to decrease. (Although the RHS only follows persons through age 73, Garber [1987] in this volume reports no decline (in fact an increase) from age 70 through age 95 for non-institutionalized households, based on the National Long-Term Care Survey.) The user cost of housing typically increases for both homeowners and renters when they move. Holding other attributes constant, families with high income and low housing wealth are as likely to

move as those with low incomes and high housing wealth. The
median housing equity of families in the first group increases
when they move and the median of the second group decreases. Thus
the typical mover is not liquidity constrained, although
apparently some are. High transaction cost associated with moving
is apparently not the cause of the increase in housing wealth as
the elderly age. Apparently, the absence of a well developed
market for reverse mortgages may be explained by a lack of demand
for these financial instruments. The evidence suggests that the
typical elderly family does not wish to reduce housing wealth to
increase current consumption. For whatever reason, there is
apparently a considerable attachment among homeowners to their
habitual housing.

While our analysis is based on quantitative data, the
conclusions are also consistent with qualitative information from
the KHS. When asked why they moved, only 9 to 14 percent of
homeowners and 15 to 17 percent of renters indicated that the
reason for moving was "to save money". Only 11 percent of
homeowners and 12 percent of renters gave as a reason for wanting
to move that they would like to "reduce cost and work of upkeep".
Observed choices when moves were made confirm these stated
preferences; indeed, saving money was not pervasive.

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Table 1a.   Income by Tenure, 1969 and 1979.[a]

| Category | Owners Mean | Owners Median | Renters Mean | Renters Median | Other Mean | Other Median |
|---|---|---|---|---|---|---|
| | | | **1969** | | | |
| Capital Income | $ 1008 | $   59 | $  558 | $    0 | $  467 | $    0 |
| Social Security | 432 | 0 | 418 | 0 | 475 | 0 |
| Pension | 653 | 0 | 444 | 0 | 422 | 0 |
| Wages | 14951 | 13210 | 10203 | 8448 | 5269 | 2166 |
| Other | 986 | 119 | 632 | 67 | 541 | 55 |
| TOTAL | 18030 | 14810 | 12254 | 9484 | 7173 | 4049 |
| N | 6616 | | 2426 | | 792 | |
| | | | **1979** | | | |
| Capital Income | 1741 | 223 | 895 | 0 | 426 | 0 |
| Social Security | 3829 | 3700 | 3064 | 3011 | 2543 | 2436 |
| Pension | 1980 | 0 | 1375 | 0 | 640 | 0 |
| Wages | 2389 | 0 | 1232 | 0 | 973 | 0 |
| Other | 954 | 120 | 572 | 45 | 487 | 36 |
| TOTAL | 13476 | 10756 | 8276 | 6114 | 6052 | 4628 |
| N | 5228 | | 1526 | | 569 | |

a.  All figures are in 1979 dollars.

Table 1b.  Wealth by Tenure, 1969 and 1979.[a]

| Category | Owners | | Renters | | Other | |
|---|---|---|---|---|---|---|
| | Mean | Median | Mean | Median | Mean | Median |
| **1969** | | | | | | |
| Non-Housing Bequeathable | $ 69008 | $ 25912 | $ 32265 | $ 8690 | $ 16238 | $ 4221 |
| Housing | 31026 | 25739 | 0 | 0 | 0 | 0 |
| Social Security | 39274 | 44535 | 30087 | 29705 | 21130 | 19499 |
| Pension | 16222 | 0 | 16776 | 0 | 14949 | 0 |
| Other | 6274 | 0 | 3118 | 0 | 5520 | 0 |
| TOTAL | 161806 | 110454 | 82248 | 52762 | 57837 | 37732 |
| N | 6616 | | 2426 | | 792 | |
| **1979** | | | | | | |
| Non-Housing Bequeathable | 46262 | 17476 | 21480 | 4710 | 13919 | 3116 |
| Housing | 41735 | 33000 | 0 | 0 | 0 | 0 |
| Social Security | 45078 | 44528 | 31319 | 29556 | 24779 | 23464 |
| Pension | 7220 | 0 | 5564 | 0 | 2629 | 0 |
| Other | 12468 | 0 | 4518 | 0 | 5774 | 0 |
| TOTAL | 176544 | 138461 | 80184 | 58816 | 62905 | 48548 |
| N | 5228 | | 1526 | | 569 | |

a.  All figures are in 1979 dollars.

Table 2.   Percent That Moves, by Retirement, Tenure, and Year.

|                              | All  | Owners[a] | Renters[a] |
|------------------------------|------|-----------|------------|
| Retired: 1969-1971           | 21.5 | 12.9      | 38.5       |
| Did not retire: 1969-1971    | 12.7 | 6.7       | 26.5       |
| Retired: 1971-1973           | 18.4 | 12.6      | 35.1       |
| Did not retire: 1971-1973    | 14.5 | 8.8       | 28.5       |
| Retired: 1973-1975           | 18.3 | 12.4      | 33.8       |
| Did not retire: 1973-1975    | 13.0 | 8.3       | 24.1       |
| Retired: 1975-1977           | 16.1 | 9.2       | 33.8       |
| Did not retire: 1975-1977    | 12.2 | 7.6       | 25.0       |
| Retired: 1977-1979           | 14.7 | 11.1      | 26.3       |
| Did not retire: 1977-1979    | 10.9 | 7.2       | 20.5       |

a.   In base year.

Table 3.  Percent That Move, by Death of Spouse, Tenure, and Year.

|                                              | All  | Owners[a] | Renters[a] |
|----------------------------------------------|------|-----------|------------|
| Death of original respondent, 1969-1971      | 22.5 | 16.4      | 42.0       |
| No death, 1969-1971                          | 14.3 | 7.7       | 28.8       |
| Death of original respondent, 1971-1973      | 23.0 | 17.4      | 43.5       |
| No death, 1971-1973                          | 15.1 | 9.5       | 29.6       |
| Death of original respondent, 1973-1975      | 20.8 | 12.2      | 50.0       |
| No death, 1973-1975                          | 13.7 | 9.0       | 25.2       |
| Death of original respondent, 1975-1977      | 18.5 | 11.9      | 50.0       |
| No death, 1975-1977                          | 12.5 | 7.6       | 25.5       |
| Death of original respondent, 1977-1979      | 15.8 | 13.2      | 29.3       |
| No death, 1977-1979                          | 11.0 | 7.3       | 20.7       |

a.  In base year.

Table 4a.  Probit Estimates of Interval Hazards for Homeowners,
          All Intervals Combined[a]

| Variable | Coefficient | Asymptotic Standard Error | Δ Probability |
|---|---|---|---|
| **Age at Beginning of Period** | | | |
| 58 | 0.0 | -- | 0.075 [b] |
| 59 | 0.018 | 0.085 | 0.003 |
| 60 | 0.015 | 0.074 | 0.002 |
| 61 | 0.016 | 0.075 | 0.002 |
| 62 | -0.035 | 0.074 | -0.005 |
| 63 | -0.069 | 0.074 | -0.009 |
| 64 | -0.030 | 0.083 | -0.004 |
| 65 | -0.030 | 0.084 | -0.004 |
| 66 | -0.050 | 0.093 | -0.007 |
| 67 | -0.129 | 0.095 | -0.017 |
| 68 | -0.095 | 0.107 | -0.013 |
| 69 | -0.154 | 0.110 | -0.020 |
| 70 | 0.017 | 0.131 | 0.002 |
| 71 | -0.040 | 0.135 | -0.005 |
| **Year at Beginning of Period** | | | |
| 1969 | 0.0 | -- | 0.078 [b] |
| 1971 | 0.008 | 0.041 | 0.001 |
| 1973 | -0.069 | 0.051 | -0.010 |
| 1975 | -0.141 | 0.065 | -0.019 |
| 1977 | -0.187 | 0.080 | -0.024 |
| **Home Equity-Income Quartile** | | | |
| low-low | -0.124 | 0.056 | -0.018 |
| low-2nd | -0.049 | 0.059 | -0.007 |
| low-3rd | -0.034 | 0.067 | -0.005 |
| low-4th | 0.255 | 0.081 | 0.047 |
| 2nd-low | -0.242 | 0.066 | -0.031 |
| 2nd-2nd | -0.142 | 0.062 | -0.020 |
| 2nd-3rd | -0.222 | 0.064 | -0.029 |
| 2nd-4th | -0.090 | 0.071 | -0.013 |
| 3rd-low | -0.128 | 0.070 | -0.018 |
| 3rd-2nd | -0.183 | 0.064 | -0.025 |
| 3rd-3rd | -0.219 | 0.060 | -0.029 |
| 3rd-4th | -0.049 | 0.059 | -0.007 |
| 4th-low | 0.079 | 0.073 | 0.013 |
| 4th-2nd | -0.103 | 0.068 | -0.015 |
| 4th-3rd | -0.081 | 0.061 | -0.012 |
| 4th-4th | 0.0 | -- | 0.084 [b] |

Table 4a, continued.

| Variable | Coefficient | Asymptotic Standard Error | Δ Probability |
|---|---|---|---|
| **Retirement Status** | | | |
| no → no | 0.0 | -- | 0.046 [b] |
| yes → no | 0.341 | 0.074 | 0.044 |
| no → yes | 0.409 | 0.036 | 0.055 |
| yes → yes | 0.285 | 0.036 | 0.035 |
| **Family Status** | | | |
| single → single[c] | 0.0 | -- | 0.066 [b] |
| married → married | -0.004 | 0.033 | -0.000 |
| married → widowed | 0.322 | 0.056 | 0.052 |
| other change | 1.319 | 0.089 | 0.360 |
| **Health Status** | | | |
| same | 0.0 | -- | 0.067 [b] |
| better | 0.133 | 0.037 | 0.019 |
| worse | 0.006 | 0.030 | 0.001 |
| Intercept | -1.522 | 0.074 | 0.076 [b] |

Number of observations = 22914

Log-likelihood = -5864.32

a.  The standard errors have not been adjusted for repeated observations for the same person.

b.  The probability of moving in the base case.  It is calculated by evaluating all variables within the category (age, home equity and income, retirement status, family status, or health status) at zero and all other variables at their means.  The Δ probability for other attributes is the increase or decrease relative to this base.  For example, the probability that a move occurs if a person retires is 0.046 + 0.055.  The probability associated with the intercept is the probability of moving when all variables are set to their sample means.

c.  Includes single to single, divorced to divorced, and widowed to widowed.

## Table 4b. Probit Estimates of Interval Hazards for Homeowners, by Interval: 1969-1971, 1973-1975, 1977-1979.

### 1969-1971

| Variable | Coefficient | Asymptotic Standard Error | Δ Probability |
|---|---|---|---|
| **Age in 1969** | | | |
| 58 | 0.0 | -- | 0.071 [b] |
| 59 | 0.017 | 0.086 | 0.002 |
| 60 | 0.068 | 0.084 | 0.010 |
| 61 | -0.047 | 0.085 | -0.006 |
| 62 | -0.026 | 0.087 | -0.003 |
| 63 | -0.080 | 0.088 | -0.010 |
| **Home Equity-Income Quartile** | | | |
| low-low | -0.082 | 0.108 | -0.012 |
| low-2nd | -0.001 | 0.111 | -0.000 |
| low-3rd | 0.184 | 0.117 | 0.032 |
| low-4th | 0.306 | 0.148 | 0.058 |
| 2nd-low | -0.257 | 0.125 | -0.033 |
| 2nd-2nd | -0.173 | 0.127 | -0.024 |
| 2nd-3rd | -0.296 | 0.128 | -0.037 |
| 2nd-4th | 0.102 | 0.132 | 0.017 |
| 3rd-low | -0.162 | 0.141 | -0.022 |
| 3rd-2nd | -0.368 | 0.141 | -0.044 |
| 3rd-3rd | -0.242 | 0.125 | -0.032 |
| 3rd-4th | -0.200 | 0.125 | -0.027 |
| 4th-low | 0.145 | 0.135 | 0.025 |
| 4th-2nd | -0.342 | 0.152 | -0.042 |
| 4th-3rd | 0.003 | 0.116 | 0.001 |
| 4th-4th | 0.0 | -- | 0.085 [b] |
| **Retirement Status** | | | |
| no → no | 0.0 | -- | 0.054 [b] |
| yes → no | 0.280 | 0.168 | 0.038 |
| no → yes | 0.426 | 0.061 | 0.065 |
| yes → yes | 0.283 | 0.074 | 0.039 |
| **Family Status** | | | |
| single → single[c] | 0.0 | -- | 0.062 [b] |
| married → married | 0.029 | 0.068 | 0.004 |
| married → widowed | 0.505 | 0.118 | 0.089 |
| other change | 1.434 | 0.164 | 0.397 |
| **Health Status** | | | |
| same | 0.0 | -- | 0.064 [b] |
| better | 0.179 | 0.072 | 0.026 |
| worse | 0.078 | 0.058 | 0.010 |
| Intercept | -1.592 | 0.109 | 0.079 [b] |

Number of observations = 6121

Log-likelihood = -1581.52

Table 4b, continued.

## 1973-1975

| Variable | Coefficient | Asymptotic Standard Error | Δ Probability |
|---|---|---|---|
| **Age in 1969** | | | |
| 58 | 0.0 | -- | 0.079 [b] |
| 59 | -0.058 | 0.101 | -0.008 |
| 60 | -0.020 | 0.098 | -0.003 |
| 61 | -0.066 | 0.100 | -0.009 |
| 62 | -0.131 | 0.102 | -0.017 |
| 63 | -0.177 | 0.107 | -0.023 |
| **Home Equity-Income Quartile** | | | |
| low-low | -0.181 | 0.121 | -0.028 |
| low-2nd | -0.269 | 0.141 | -0.039 |
| low-3rd | -0.309 | 0.160 | -0.044 |
| low-4th | 0.103 | 0.193 | 0.019 |
| 2nd-low | -0.360 | 0.147 | -0.049 |
| 2nd-2nd | -0.165 | 0.133 | -0.026 |
| 2nd-3rd | -0.426 | 0.145 | -0.055 |
| 2nd-4th | -0.335 | 0.162 | -0.046 |
| 3rd-low | -0.049 | 0.160 | -0.008 |
| 3rd-2nd | -0.245 | 0.155 | -0.036 |
| 3rd-3rd | -0.364 | 0.160 | -0.049 |
| 3rd-4th | -0.046 | 0.146 | -0.008 |
| 4th-low | -0.100 | 0.159 | -0.016 |
| 4th-2nd | -0.221 | 0.140 | -0.033 |
| 4th-3rd | -0.104 | 0.126 | -0.017 |
| 4th-4th | 0.0 | -- | 0.099 [b] |
| **Retirement Status** | | | |
| no → no | 0.0 | -- | 0.036 [b] |
| yes → no | 0.538 | 0.162 | 0.068 |
| no → yes | 0.465 | 0.092 | 0.055 |
| yes → yes | 0.413 | 0.079 | 0.047 |
| **Family Status** | | | |
| single → single[c] | 0.0 | -- | 0.077 [b] |
| married → married | -0.109 | 0.072 | -0.015 |
| married → widowed | -0.138 | 0.146 | -0.018 |
| other change | 1.457 | 0.207 | 0.436 |
| **Health Status** | | | |
| same | 0.0 | -- | 0.069 [b] |
| better | 0.034 | 0.088 | 0.005 |
| worse | -0.028 | 0.069 | -0.004 |
| Intercept | -1.462 | 0.127 | 0.077 [b] |

Number of observations = 4461

Log-likelihood = -1141.51

Table 4b, continued.

**1977-1979**

| Variable | Coefficient | Asymptotic Standard Error | Δ Probability |
|---|---|---|---|
| **Age in 1969** | | | |
| 58 | 0.0 | -- | 0.064 [b] |
| 59 | -0.227 | 0.131 | -0.024 |
| 60 | -0.120 | 0.127 | -0.014 |
| 61 | -0.245 | 0.134 | -0.025 |
| 62 | -0.020 | 0.122 | -0.002 |
| 63 | -0.060 | 0.130 | -0.007 |
| **Home Equity-Income Quartile** | | | |
| low-low | -0.456 | 0.183 | -0.050 |
| low-2nd | -0.191 | 0.179 | -0.025 |
| low-3rd | -0.638 | 0.279 | -0.061 |
| low-4th | -0.129 | 0.290 | -0.018 |
| 2nd-low | -0.474 | 0.215 | -0.051 |
| 2nd-2nd | -0.281 | 0.183 | -0.035 |
| 2nd-3rd | -0.074 | 0.180 | -0.011 |
| 2nd-4th | -0.135 | 0.199 | -0.019 |
| 3rd-low | -0.482 | 0.224 | -0.052 |
| 3rd-2nd | -0.092 | 0.162 | -0.013 |
| 3rd-3rd | -0.278 | 0.155 | -0.035 |
| 3rd-4th | -0.086 | 0.158 | -0.012 |
| 4th-low | -0.310 | 0.253 | -0.038 |
| 4th-2nd | -0.036 | 0.192 | -0.005 |
| 4th-3rd | -0.442 | 0.201 | -0.049 |
| 4th-4th | 0.0 | -- | 0.083 [b] |
| **Retirement Status** | | | |
| no → no | 0.0 | -- | 0.022 [b] |
| yes → no | 0.467 | 0.212 | 0.039 |
| no → yes | 0.730 | 0.171 | 0.077 |
| yes → yes | 0.412 | 0.146 | 0.032 |
| **Family Status** | | | |
| single → single[c] | 0.0 | -- | 0.054 [b] |
| married → married | 0.098 | 0.099 | 0.010 |
| married → widowed | 0.394 | 0.145 | 0.058 |
| other change | 1.468 | 0.314 | 0.390 |
| **Health Status** | | | |
| same | 0.0 | -- | 0.049 [b] |
| better | 0.212 | 0.111 | 0.026 |
| worse | -0.025 | 0.093 | -0.003 |
| Intercept | -1.656 | 0.194 | 0.060 [b] |

Number of observations = 3266

Log-likelihood = -695.06

Notes, Table 4b.

a. The standard errors have not been adjusted for repeated observations for the same person.

b. The probability of moving in the base case. It is calculated by evaluating all variables within the category (age, home equity and income, retirement status, family status, or health status) at zero and all other variables at their means. The $\Delta$ probability for other attributes is the increase or decrease relative to this base. For example, the probability that a move occurs if a person retires in the 1977-1979 interval is 0.022 + 0.077. The probability associated with the intercept is the probability of moving when all variables are set to their sample means.

c. Includes single to single, divorced to divorced, and widowed to widowed.

Table 5.  Probit Estimates of Interval Hazards for Renters,
All Intervals Combined[a]

| Variable | Coefficient | Asymptotic Standard Error | Δ Probability |
|---|---|---|---|
| **Age at Beginning of Period** | | | |
| 58 | 0.0 | -- | 0.195 [b] |
| 59 | 0.135 | 0.101 | 0.040 |
| 60 | 0.196 | 0.095 | 0.058 |
| 61 | 0.118 | 0.094 | 0.034 |
| 62 | 0.075 | 0.092 | 0.021 |
| 63 | 0.091 | 0.093 | 0.026 |
| 64 | 0.098 | 0.115 | 0.028 |
| 65 | 0.129 | 0.117 | 0.037 |
| 66 | 0.149 | 0.135 | 0.044 |
| 67 | 0.117 | 0.142 | 0.034 |
| 68 | 0.207 | 0.164 | 0.062 |
| 69 | 0.035 | 0.176 | 0.010 |
| 70 | 0.219 | 0.225 | 0.066 |
| 71 | 0.398 | 0.235 | 0.127 |
| **Year at Beginning of Period** | | | |
| 1969 | 0.0 | -- | 0.294 [b] |
| 1971 | -0.197 | 0.056 | -0.064 |
| 1973 | -0.345 | 0.080 | -0.106 |
| 1975 | -0.426 | 0.106 | -0.127 |
| 1977 | -0.492 | 0.132 | -0.143 |
| **Home Equity-Income Quartile** | | | |
| low-low | 0.131 | 0.077 | 0.040 |
| low-2nd | 0.157 | 0.080 | 0.048 |
| low-3rd | -0.009 | 0.111 | -0.003 |
| low-4th | -0.006 | 0.164 | -0.002 |
| 2nd-low | 0.209 | 0.090 | 0.066 |
| 2nd-2nd | 0.044 | 0.085 | 0.013 |
| 2nd-3rd | -0.006 | 0.089 | -0.002 |
| 2nd-4th | -0.236 | 0.122 | -0.062 |
| 3rd-low | 0.107 | 0.103 | 0.032 |
| 3rd-2nd | 0.049 | 0.096 | 0.015 |
| 3rd-3rd | 0.027 | 0.082 | 0.008 |
| 3rd-4th | 0.099 | 0.084 | 0.030 |
| 4th-low | 0.139 | 0.130 | 0.043 |
| 4th-2nd | 0.069 | 0.110 | 0.021 |
| 4th-3rd | 0.111 | 0.087 | 0.034 |
| 4th-4th | 0.0 | -- | 0.212 [b] |

Table 5, continued.

| Variable | Coefficient | Asymptotic Standard Error | Δ Probability |
|---|---|---|---|
| **Retirement Status** | | | |
| no → no | 0.0 | -- | 0.189 [b] |
| yes → no | 0.179 | 0.129 | 0.052 |
| no → yes | 0.378 | 0.051 | 0.118 |
| yes → yes | 0.160 | 0.053 | 0.046 |
| **Family Status** | | | |
| single → single[c] | 0.0 | -- | 0.209 [b] |
| married → married | 0.090 | 0.042 | 0.027 |
| married → widowed | 0.414 | 0.096 | 0.137 |
| other change | 1.187 | 0.138 | 0.438 |
| **Health Status** | | | |
| same | 0.0 | -- | 0.212 [b] |
| better | 0.200 | 0.056 | 0.062 |
| worse | 0.108 | 0.044 | 0.033 |
| Intercept | -0.982 | 0.087 | 0.237 |

Number of observations = 5637

Log-likelihood = -2954.0

a. The standard errors have not been adjusted for repeated observations for the same person.

b. The probability of moving in the base case. It is calculated by evaluating all variables within the category (age, home equity and income, retirement status, family status, or health status) at zero and all other variables at their means. The Δ probability for other attributes is the increase or decrease relative to this base. For example, the probability that a move occurs if a person retires is 0.189 + 0.118. The probability associated with the intercept is the probability of moving when all variables are set to their sample means.

c. Includes single to single, divorced to divorced, and widowed to widowed.

Table 6. Median Housing Value, Equity, and (Non-Housing) Bequeathable Wealth, by Stay versus Move and by Year, Homeowners[a]

| Year and Measure | Housing Value | | Housing Equity | | Bequeathable Wealth | |
|---|---|---|---|---|---|---|
| | Stay | Move | Stay | Move | Stay | Move |
| Median, 1969 | $ 29699 | $ 33659 | $ 25740 | $ 25740 | $ 25864 | $ 33826 |
| Median, 1971 | 28804 | 32261 | 26884 | 26884 | 25011 | 34039 |
| Median Change | -503 | 363 | 378 | 558 | -544 | -1376 |
| % Change > 0 | 0.46 | 0.53 | 0.54 | 0.54 | 0.45 | 0.45 |
| Median, 1971 | 30468 | 31364 | 26884 | 26884 | 23772 | 25085 |
| Median, 1973 | 32667 | 32667 | 29401 | 24500 | 21604 | 22620 |
| Median Change | 839 | 526 | 1405 | -139 | -632 | -739 |
| % Change > 0 | 0.61 | 0.55 | 0.63 | 0.50 | 0.31 | 0.28 |
| Median, 1973 | 32667 | 32667 | 28584 | 29401 | 22254 | 26210 |
| Median, 1975 | 31693 | 33716 | 26973 | 25900 | 19964 | 25995 |
| Median Change | -712 | -1758 | -217 | -2323 | -1135 | -1240 |
| % Change > 0 | 0.43 | 0.43 | 0.48 | 0.42 | 0.42 | 0.42 |
| Median, 1975 | 29670 | 33716 | 26973 | 31019 | 20230 | 28052 |
| Median, 1977 | 33538 | 35934 | 29945 | 29945 | 19644 | 28452 |
| Median Change | 1569 | 787 | 2078 | 585 | -391 | -2695 |
| % Change > 0 | 0.62 | 0.51 | 0.64 | 0.51 | 0.45 | 0.40 |
| Median, 1977 | 31143 | 35934 | 29945 | 35934 | 19173 | 31657 |
| Median, 1979 | 35000 | 39000 | 33900 | 32000 | 17191 | 34012 |
| Median Change | 1044 | 1464 | 1615 | -528 | -386 | 1322 |
| % Change > 0 | 0.63 | 0.55 | 0.65 | 0.49 | 0.45 | 0.56 |

a. All figures are in 1979 dollars.

Sample: All homeowners in the sample in adjacent years.

Table 7. OLS Estimates of Change in Housing Equity for
Homeowners, All Intervals Combined[a]

| Variable | All Homeowners | | Addition for Movers | |
|---|---|---|---|---|
| | Coefficient | Standard Error | Coefficient | Standard Error |
| **Age at Beginning of Period** | | | | |
| 58 | -- | -- | -- | -- |
| 59 | -491 | 833 | 187 | 3669 |
| 60 | 261 | 612 | 1773 | 2565 |
| 61 | -1 | 629 | -2772 | 2550 |
| 62 | -33 | 511 | 1123 | 2095 |
| 63 | -600 | 527 | 5841 | 2236 |
| 64 | 329 | 514 | 554 | 2088 |
| 65 | -601 | 533 | 161 | 2237 |
| 66 | -289 | 1093 | 4182 | 4912 |
| 67 | 1147 | 841 | -5060 | 4110 |
| 68 | 567 | 734 | -2509 | 3521 |
| 69 | 635 | 752 | 4954 | 3783 |
| 70 | 673 | 1065 | -1189 | 5240 |
| 71 | -1675 | 1092 | -2076 | 5467 |
| **Year at Beginning of Period** | | | | |
| 1969 | -- | -- | -- | -- |
| 1971 | 446 | 384 | 1698 | 1590 |
| 1973 | -1651 | 341 | -3534 | 1437 |
| 1975 | 1222 | 410 | 274 | 1838 |
| 1977 | 1365 | 552 | -440 | 2609 |
| **Home Equity-Income Quartile** | | | | |
| low-low | 966 | 491 | 4683 | 2299 |
| low-2nd | 1750 | 557 | 5219 | 2473 |
| low-3rd | 3593 | 692 | 5393 | 2872 |
| low-4th | 6182 | 1033 | 8396 | 3211 |
| 2nd-low | 5 | 598 | 3007 | 2781 |
| 2nd-2nd | 145 | 571 | 2683 | 2526 |
| 2nd-3rd | 1560 | 579 | 1381 | 2783 |
| 2nd-4th | 1384 | 718 | 9375 | 2821 |
| 3rd-low | -1087 | 671 | 2114 | 3154 |
| 3rd-2nd | -870 | 561 | 1916 | 2566 |
| 3rd-3rd | -396 | 516 | -4236 | 2360 |
| 3rd-4th | 1374 | 565 | 4218 | 2376 |
| 4th-low | -6005 | 813 | -16377 | 2885 |
| 4th-2nd | -3616 | 667 | -13790 | 3160 |
| 4th-3rd | -2742 | 604 | -949 | 2324 |
| 4th-4th | -- | -- | -- | -- |

Table 7, continued.

| Variable | All Homeowners | | Addition for Movers | |
|---|---|---|---|---|
| | Coefficient | Standard Error | Coefficient | Standard Error |
| **Retirement Status** | | | | |
| no → no | - - | - - | - - | - - |
| yes → no | 278 | 665 | -2535 | 2487 |
| no → yes | -257 | 370 | -425 | 1353 |
| yes → yes | -189 | 312 | 2084 | 1206 |
| **Family Status** | | | | |
| single → single[b] | - - | - - | - - | - - |
| married → married | 1834 | 334 | -1025 | 1149 |
| married → widowed | 1149 | 683 | -3577 | 2279 |
| other change | -4249 | 939 | 9251 | 2401 |
| **Health Status** | | | | |
| same | - - | - - | - - | - - |
| better | 18 | 301 | 1087 | 1184 |
| worse | -592 | 247 | -1005 | 1062 |
| **Children** | | | | |
| no | - - | - - | - - | - - |
| yes | 463 | 195 | -3172 | 855 |
| Intercept | - - | - - | - - | - - |

Number of observations = 21224

a.  The standard errors have not been adjusted for repeated observations for the same person.

b.  Includes single to single, divorced to divorced, and widowed to widowed.

Table 8.  Median Rent, by Stay versus Move and by Year,
          Adjacent Year Renters.[a]

| Year and Measure | Stay | Move |
|---|---|---|
| Median, 1969 | $ 140 | $ 132 |
| Median, 1971 | 134 | 134 |
| Median Change | -4.69 | 1.07 |
| % Change > 0 | 0.34 | 0.51 |
| Median, 1971 | 134 | 131 |
| Median, 1973 | 131 | 139 |
| Median Change | -6.36 | 5.89 |
| % Change > 0 | 0.34 | 0.58 |
| Median, 1973 | 131 | 136 |
| Median, 1975 | 121 | 135 |
| Median Change | -15.66 | -8.00 |
| % Change > 0 | 0.15 | 0.42 |
| Median, 1975 | 121 | 121 |
| Median, 1977 | 120 | 139 |
| Median Change | -4.66 | 4.77 |
| % Change > 0 | 0.35 | 0.56 |
| Median, 1977 | 132 | 132 |
| Median, 1979 | 120 | 125 |
| Median Change | -10.60 | -1.54 |
| % Change > 0 | 0.21 | 0.48 |

a.  All figures are in 1979 dollars.

Sample:  All renters in adjacent surveys.

Table 9.  Annual User Cost by Tenure Change.[a]

| Year and Measure | Own to Own | | Rent to Rent | | Own to Rent Move | Rent to Own Move |
|---|---|---|---|---|---|---|
| | Stay | Move | Stay | Move | | |
| Median, 1969 | $ 931 | $ 1188 | $ 1663 | $ 1616 | $ 1544 | $ 1901 |
| Median, 1971 | 1577 | 1574 | 1936 | 1936 | 2217 | 1523 |
| Median Change | 655 | 551 | 284 | 351 | 872 | -167 |
| % Change > 0 | 0.81 | 0.63 | 0.77 | 0.68 | 0.68 | 0.46 |
| Median, 1971 | 1542 | 1642 | 1905 | 1799 | 1692 | 2194 |
| Median, 1973 | 1512 | 1397 | 1849 | 1862 | 2801 | 2107 |
| Median Change | -13 | -26 | -74 | 21 | 715 | -93 |
| % Change > 0 | 0.47 | 0.47 | 0.38 | 0.52 | 0.59 | 0.48 |
| Median, 1973 | 1506 | 1716 | 1882 | 1888 | 2042 | 1895 |
| Median, 1975 | 1485 | 1738 | 1780 | 1904 | 3149 | 1653 |
| Median Change | -73 | 3 | -152 | -53 | 949 | -39 |
| % Change > 0 | 0.42 | 0.50 | 0.29 | 0.47 | 0.66 | 0.48 |
| Median, 1975 | 1462 | 1605 | 1813 | 1767 | 1749 | 2239 |
| Median, 1977 | 1492 | 1738 | 1803 | 1869 | 2381 | 1885 |
| Median Change | 39 | 50 | -28 | 53 | 758 | -406 |
| % Change > 0 | 0.56 | 0.52 | 0.44 | 0.54 | 0.67 | 0.46 |
| Median, 1977 | 1484 | 1702 | 1869 | 1928 | 2060 | 2300 |
| Median, 1979 | 1400 | 1676 | 1764 | 1937 | 2492 | 2084 |
| Median Change | -98 | -55 | -129 | -32 | 550 | -321 |
| % Change > 0 | 0.39 | 0.45 | 0.28 | 0.46 | 0.64 | 0.40 |

a.  All figures are in 1979 dollars.

Sample:  Families in the sample in adjacent years.

Appendix Table 1.   Percent That Move, by Change in Family Size,
Tenure, and Interval.

|  | All | Owners[a] | Renters[a] |
|---|---|---|---|
| Δ in Household Size, 1969-1971 | 23.2 | 11.9 | 44.0 |
| No Δ in Household Size, 1969-1971 | 11.6 | 6.7 | 24.6 |
| Δ in Household Size, 1971-1973 | 22.8 | 13.2 | 46.2 |
| No Δ in Household Size, 1971-1973 | 13.1 | 8.7 | 25.4 |
| Δ in Household Size, 1973-1975 | 23.5 | 14.0 | 42.9 |
| No Δ in Household Size, 1973-1975 | 11.5 | 7.8 | 21.6 |
| Δ in Household Size, 1975-1977 | 21.5 | 12.1 | 44.2 |
| No Δ in Household Size, 1975-1977 | 10.6 | 6.8 | 22.1 |
| Δ in Household Size, 1977-1979 | 20.5 | 12.1 | 40.5 |
| No Δ in Household Size, 1977-1979 | 9.2 | 6.4 | 17.3 |

a.   In base year.

Appendix Table 2.  Median Housing Value, Equity, and Non-Housing Bequeathable Wealth, by Stay versus Move and by Year, Continuous Homeowners.[a]

| Year | Housing Value | | Housing Equity | | Bequeathable Wealth | |
|------|---------------|---|----------------|---|---------------------|---|
|      | Stay in * Years | Move in * Years | Stay in * Years | Move in * Years | Stay in * Years | Move in * Years |
| 1969* | $ 29699 | $ 35639 | $ 25740 | $ 29699 | $ 27349 | $ 44023 |
| 1971* | 29871 | 35845 | 26884 | 28676 | 26525 | 41138 |
| 1973  | 32667 | 40017 | 28094 | 32667 | 24097 | 40709 |
| 1975  | 31019 | 40459 | 26973 | 33716 | 22927 | 31009 |
| 1977  | 32939 | 38330 | 29945 | 35934 | 21261 | 31168 |
| 1979  | 35000 | 40000 | 35000 | 40000 | 19408 | 29230 |
| 1969  | 29699 | 31679 | 25740 | 25740 | 27920 | 30274 |
| 1971* | 30244 | 31364 | 26884 | 26884 | 26834 | 30729 |
| 1973* | 32667 | 32667 | 28584 | 26134 | 24488 | 27442 |
| 1975  | 32367 | 32367 | 27160 | 26973 | 23148 | 27647 |
| 1977  | 33538 | 33538 | 29945 | 29945 | 21422 | 24126 |
| 1979  | 35000 | 35000 | 35000 | 33000 | 19358 | 23684 |
| 1969  | 29699 | 31679 | 25740 | 25938 | 27349 | 36801 |
| 1971  | 29572 | 35845 | 26884 | 28497 | 26525 | 34607 |
| 1973* | 32667 | 32667 | 28584 | 28584 | 24052 | 31690 |
| 1975* | 32199 | 33716 | 26973 | 26973 | 22627 | 36303 |
| 1977  | 33538 | 35634 | 29945 | 29945 | 20898 | 29284 |
| 1979  | 35000 | 37500 | 35000 | 35000 | 19210 | 27309 |
| 1969  | 29699 | 30491 | 25740 | 27719 | 27502 | 38379 |
| 1971  | 29572 | 32261 | 26884 | 28676 | 26601 | 35439 |
| 1973  | 32667 | 36524 | 27767 | 31034 | 24147 | 32626 |
| 1975* | 31019 | 33716 | 26973 | 32367 | 22927 | 33716 |
| 1977* | 33538 | 35934 | 29945 | 29945 | 20898 | 32684 |
| 1979  | 35000 | 39418 | 35000 | 35000 | 19280 | 28937 |
| 1969  | 29699 | 33659 | 25740 | 27125 | 27309 | 45206 |
| 1971  | 29572 | 33157 | 26884 | 28676 | 26443 | 42949 |
| 1973  | 32667 | 32667 | 28003 | 30707 | 23948 | 38710 |
| 1975  | 31732 | 35065 | 26973 | 31019 | 22859 | 37897 |
| 1977* | 32939 | 35934 | 29945 | 35934 | 20898 | 36373 |
| 1979* | 35000 | 40000 | 35000 | 35000 | 19020 | 40090 |

a.  All figures are in 1979 dollars.

Appendix Table 3.   Median Rent, by Stay versus Move
and by Year, Continuous Renters.[a]

| Year | Stay in * Years | Move in * Years |
|------|-----------------|-----------------|
| 1969* | $ 139 | $ 129 |
| 1971* | 134 | 134 |
| 1973 | 139 | 131 |
| 1975 | 128 | 119 |
| 1977 | 131 | 113 |
| 1979 | 120 | 100 |
| | | |
| 1969 | 139 | 129 |
| 1971* | 134 | 128 |
| 1973* | 131 | 145 |
| 1975 | 124 | 128 |
| 1977 | 126 | 119 |
| 1979 | 120 | 100 |
| | | |
| 1969 | 139 | 137 |
| 1971 | 134 | 134 |
| 1973* | 131 | 146 |
| 1975* | 121 | 148 |
| 1977 | 120 | 134 |
| 1979 | 110 | 127 |
| | | |
| 1969 | 139 | 129 |
| 1971 | 134 | 134 |
| 1973 | 132 | 139 |
| 1975* | 123 | 135 |
| 1977* | 120 | 150 |
| 1979 | 116 | 125 |
| | | |
| 1969 | 139 | 139 |
| 1971 | 134 | 131 |
| 1973 | 136 | 131 |
| 1975 | 128 | 115 |
| 1977* | 126 | 120 |
| 1979* | 115 | 125 |

a.   All figures are in 1979 dollars.

Appendix Table 4.    Median User Cost by Stay versus
                     Move, by Classification
                     Interval, All Owners and Renters[a]

| Year | Stay in * Years | Move in * Years |
|------|------|------|
| 1969* | $ 1138 | $ 1663 |
| 1971* | 1678 | 2043 |
| 1973 | 1633 | 1960 |
| 1975 | 1558 | 1857 |
| 1977 | 1610 | 1739 |
| 1979 | 1530 | 1730 |
| | | |
| 1969 | 1129 | 1544 |
| 1971* | 1678 | 1828 |
| 1973* | 1633 | 1870 |
| 1975 | 1564 | 1780 |
| 1977 | 1607 | 1707 |
| 1979 | 1533 | 1682 |
| | | |
| 1969 | 1142 | 1544 |
| 1971 | 1667 | 1979 |
| 1973* | 1633 | 1960 |
| 1975* | 1544 | 2051 |
| 1977 | 1594 | 1847 |
| 1979 | 1529 | 1760 |
| | | |
| 1969 | 1152 | 1544 |
| 1971 | 1690 | 1828 |
| 1973 | 1633 | 1976 |
| 1975* | 1554 | 1941 |
| 1977* | 1588 | 2113 |
| 1979 | 1522 | 1892 |
| | | |
| 1969 | 1142 | 1782 |
| 1971 | 1678 | 2011 |
| 1973 | 1633 | 1960 |
| 1975 | 1562 | 1969 |
| 1977* | 1594 | 2016 |
| 1979* | 1513 | 2196 |

a.   All figures are in 1979 dollars.

## Med. Home Value,'69-71 Movers and Stayers
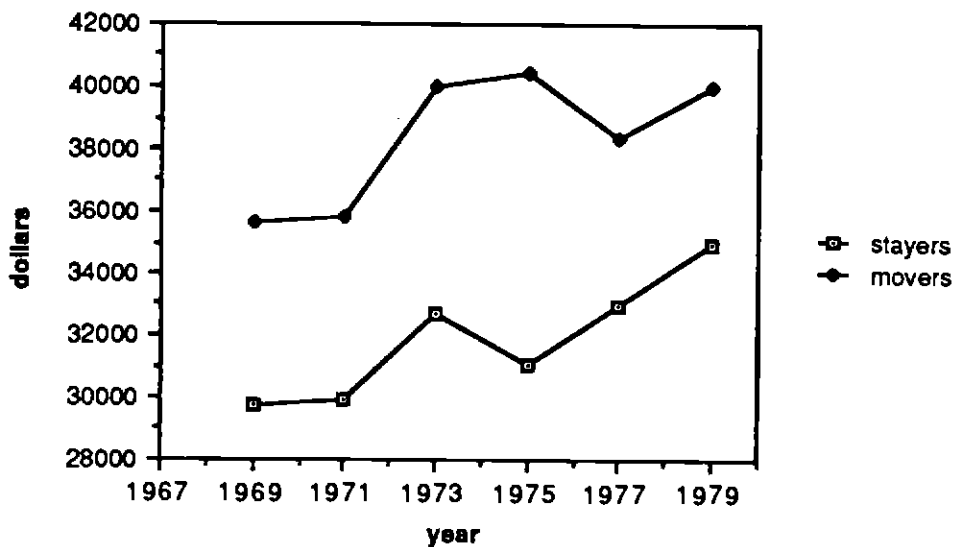


## Med. Home Value,'75-77 Movers and Stayers
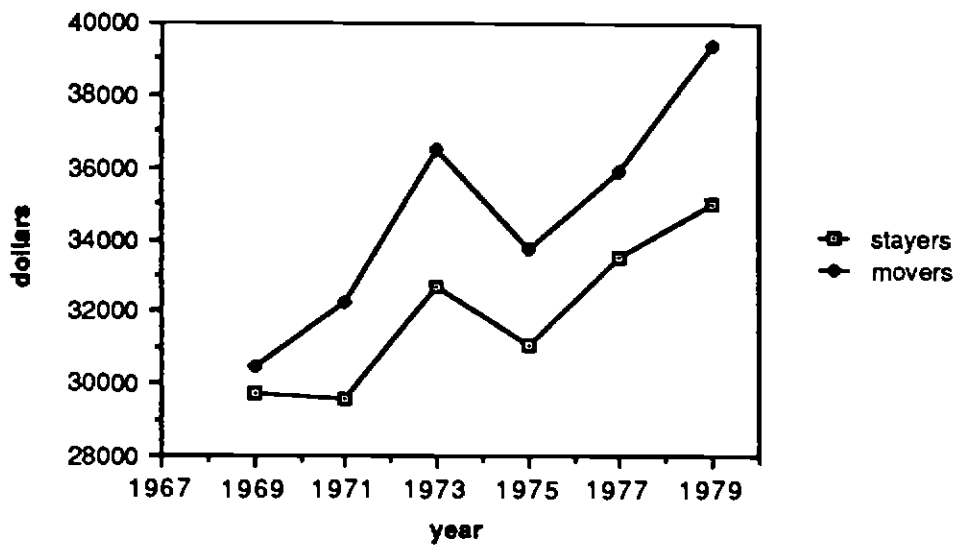
Figure 1b

## Med. Home Equity,'69-71 Movers and Stayers
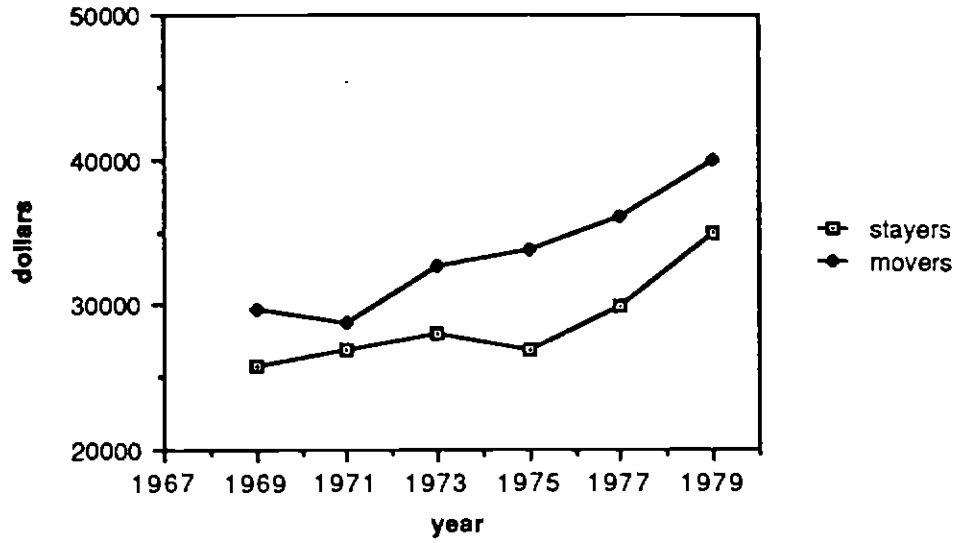


## Med. Home Equity,'75-77 Movers and Stayers
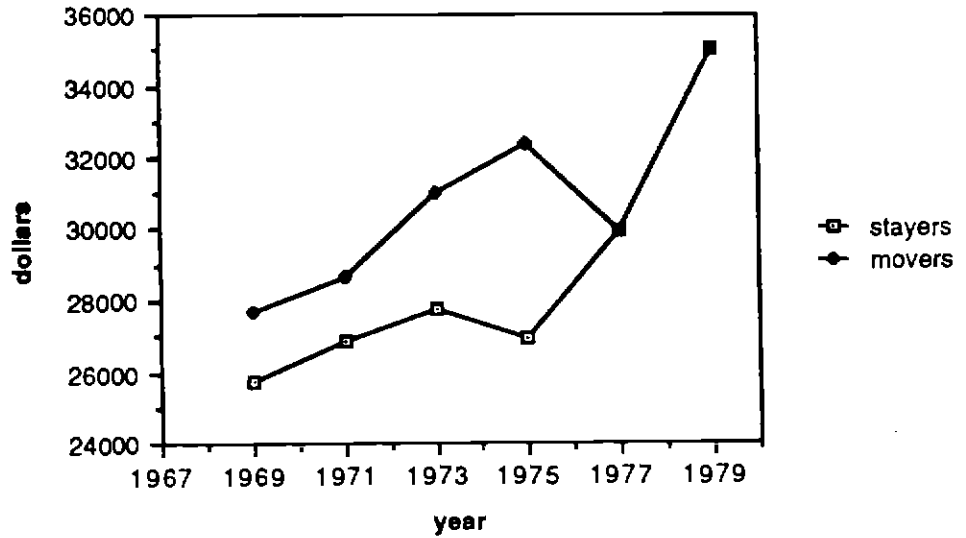
**Med. Beq. Wealth,'69-71 Movers and Stayers**
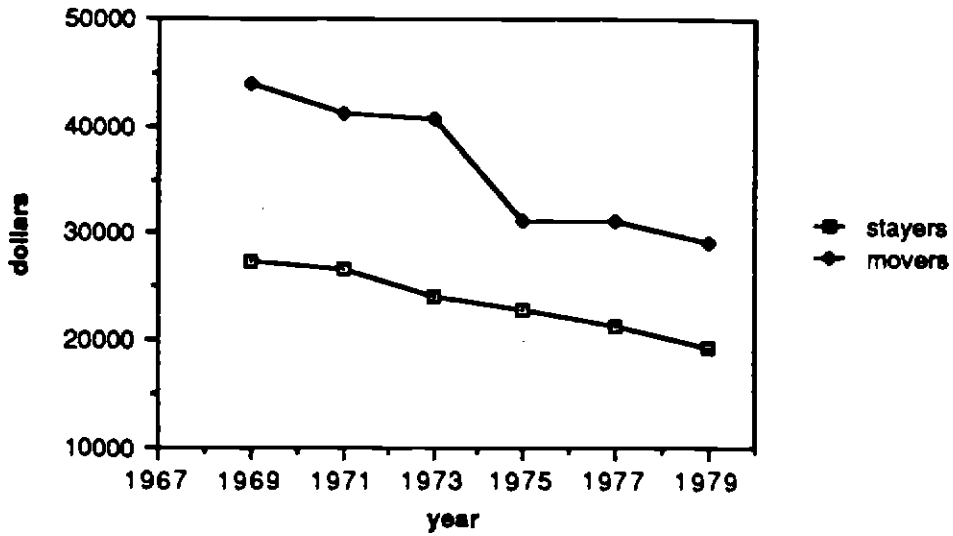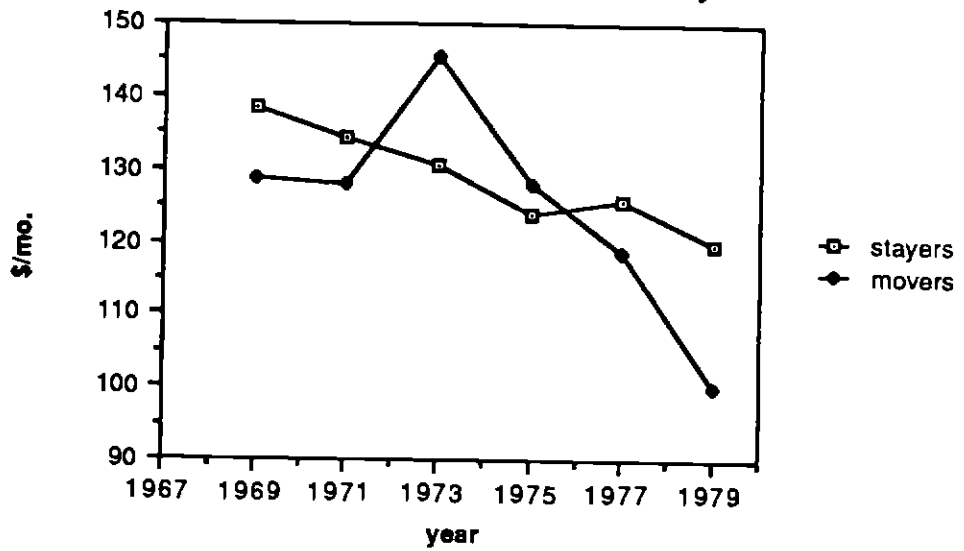


**Med. Beq. Wealth,'75-77 Movers and Stayers**
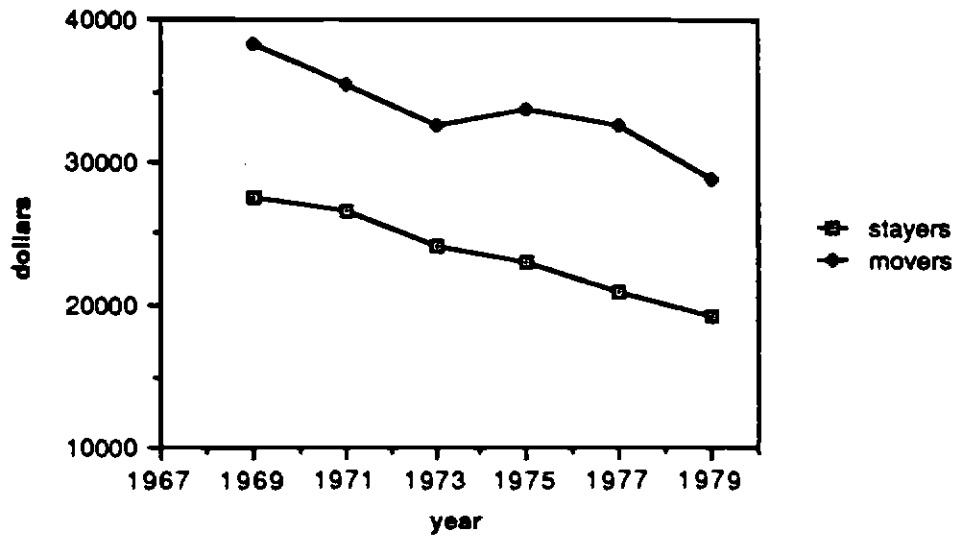
Figure 2

## Med. Rent, '69-71 Movers and Stayers
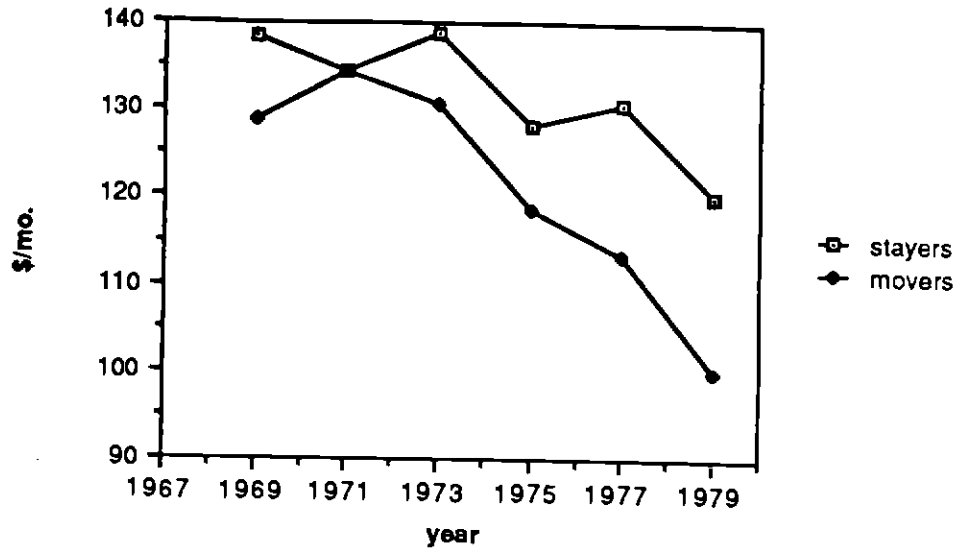


## Med. Rent,'71-73 Movers and Stayers
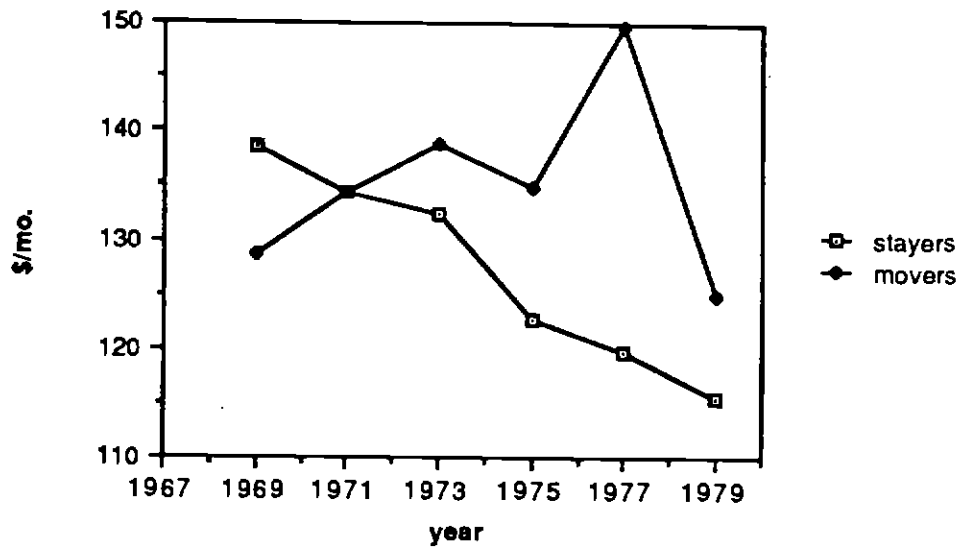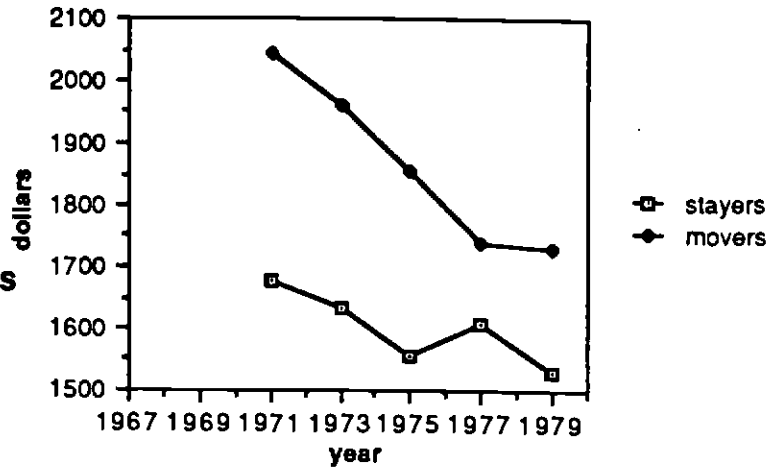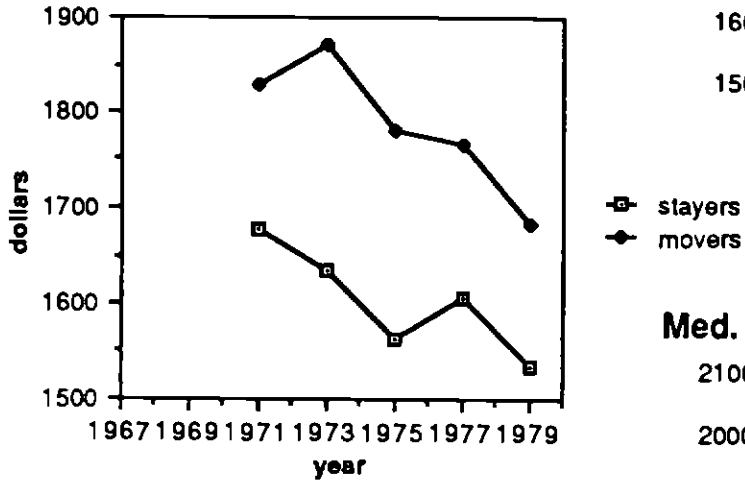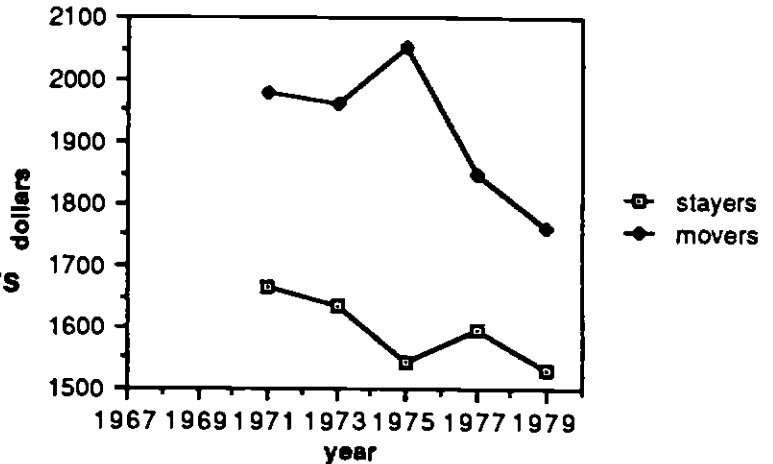


## Med. Rent,'75-77 Movers and Stayers

Figure 3

## Med. User Cost, '69-71 Movers and Stayers
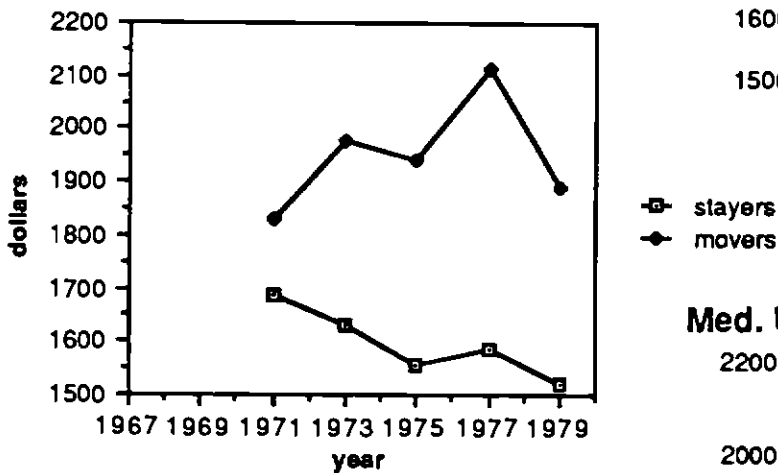


## Med. User Cost, '71-73 Movers and Stayers



## Med. User Cost, '73-75 Movers and Stayers



## Med. User Cost, '75-77 Movers and Stayers



## Med. User Cost, '77-79 Movers and Stayers