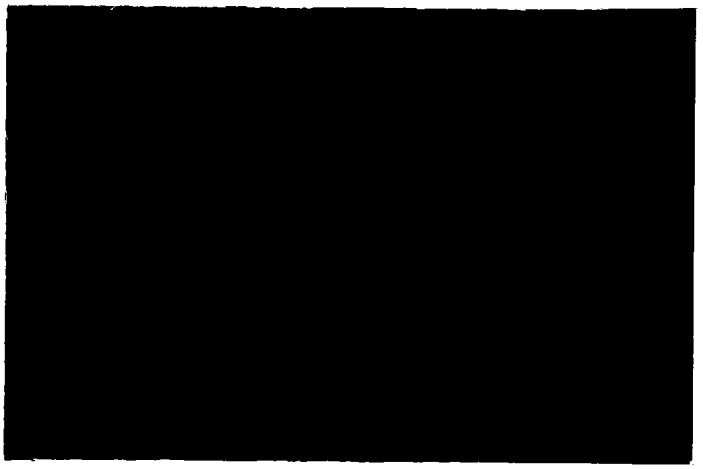

HOUSING ASSISTANCE SUPPLY EXPERIMENT

A WORKING NOTE

This Note was prepared for the DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, under Contract No. H-1789. It is intended to facilitate communication of preliminary research results. Views or conclusions expressed herein may be tentative and do not represent the official opinion of the sponsoring agency.

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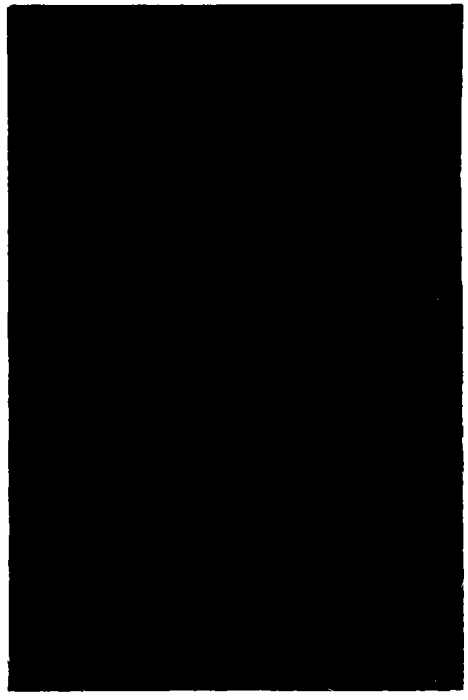

WN-9029-HUD

HOUSING CHOICES AND RESIDENTIAL MOBILITY IN SITE I AT BASELINE

Kevin F. McCarthy

August 1976

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PREFACE

This working note was prepared for the Office of Policy Development and Research, U.S. Department of Housing and Urban Development. It is one of a series that reports findings from the baseline surveys in Site I (Brown County, Wisconsin) of the Housing Assistance Supply Experiment.

This study focuses on the relationship between household characteristics and housing choices among Brown County households in 1974. Classifying households jointly by marital status and ages of household heads, the presence of children in the household, and the age of the youngest child, it sorts them into mutually exclusive life-cycle stages. Life-cycle stage and household income are used to explore and explain housing choices, as reflected in tenure, type and size of unit, housing expenditures, and residential mobility.

The data used in this analysis are from the baseline survey of 3,722 tenants and homeowners that was conducted in Brown County from December 1973 through April 1974 as part of the Supply Experiment.* The analytical framework for this study was devised by the author, who also supervised the data processing. C. Lance Barnett, Lawrence Helbers, Ira S. Lowry, and Daniel Relles reviewed the draft report, which was revised according to their suggestions. Joan Black and Wade Harrell prepared the necessary computer programs. Doris Dong designed the graphics. Belle Mosst, Donna Horn, and Linda Ellsworth typed the draft. Linda Colbert edited the text and supervised production of the final copy.

This working note was prepared pursuant to Modification No. 22 of HUD Contract H-1789 and partially fulfills the requirements of Task 2.10(2).

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*For a complete description of the data, see HASE Survey Group, *Codebook for the Survey of Tenants and Homeowners, Site I, Baseline*, The Rand Corporation, WN-8809-HUD, December 1975.

SUMMARY

This working note examines the relationships between household characteristics and housing choices among households in Brown County, Wisconsin, in 1974. A description of the general characteristics of households is based on a life-cycle classification that groups households according to the marital status and ages of household heads, the presence of children in the household, and the age of the youngest child. A variety of household characteristics, including size, labor force participation, and income, are shown to vary with life-cycle stage in patterns indicating that housing needs, as well as the household's financial ability to meet these needs, vary systematically over the life cycle. The remainder of the study shows how these patterns are reflected in housing choices: tenure, type and size of unit, housing expenditures, and residential mobility.

This analysis describes the structure of housing choices in Brown County before the onset of the housing allowance program and is therefore preliminary to building a general model of the determinants of the kinds of housing choices open to program participants.

RENTER HOUSEHOLDS AND THEIR HOUSING

Renter households are concentrated in the early and late life-cycle stages, consistent with the relatively greater demographic and economic instability of younger households and the declining space requirements and incomes of older households. Among renters, however, the types and sizes of units occupied and the amounts of housing expenditures vary with life-cycle stage and income.

Renter households in the early and late life-cycle stages generally choose apartments in multiple dwellings, whereas those in the middle of the life-cycle prefer single-family houses. This life-cycle pattern of choices concentrates certain types of tenants in certain types of dwellings. Over 60 percent of the occupants of apartments in large buildings are either young or old single persons without children, and over 60

percent of the occupants of rural rental units are couples with young children. Although almost 15 percent of all rental units are furnished, most of them are occupied by young single persons without children.

The average sizes of rental units occupied by households in different life-cycle stages range from 3.69 to 5.81 rooms. Overall, fewer than 4 percent of all renter households exceed the commonly accepted overcrowding standard of one person per room. Households choose larger units as household size increases in stages 1 to 5, thus avoiding overcrowding; and then move to smaller units as household size shrinks in stages 6 and 7. Nonetheless, persons-per-room ratios are highest for life-cycle stages in which families are largest. It is interesting to note that the pattern of space adjustment over the life cycle is unaffected by household income. Persons-per-room ratios are nearly the same for low- and high-income households in each stage.

Almost 93 percent of all renter households in Brown County pay the full market rents for their units. Among renters receiving a rent reduction or paying no rent at all, the majority also work for the landlord. The average monthly gross rent for households paying full market rents is $140. Gross rents vary, however, by both life-cycle stage and income. The variation by life-cycle stage primarily reflects the space consumption patterns described above; households in the middle of the life cycle usually choose larger dwellings with higher rents. Within each stage, however, gross rents consistently increase with income, but not proportionally. Averaging over all stages, those with incomes under $5,000 spend 46 percent of their incomes for housing; the proportion drops to 23 percent for those with incomes between $5,000 and $10,000, and to 14 percent for those with incomes of $10,000 or more.

In summary, both life-cycle stage and household income affect consumption patterns among renters in Brown County. Life-cycle stage is more important in explaining differences in the types and sizes of the dwellings they occupy; income, on the other hand, is more important in explaining how much they spend for housing.

HOMEOWNERS AND THEIR HOUSING

Nearly 70 percent of all Brown County households own their homes. Unlike renters, homeowners are concentrated in the middle stages of the

life cycle where household composition and income are more stable. Although homeowners' housing choices differ by life-cycle stage and income, such differences are less pronounced than they are among renters. One reason is that homeowners are less mobile, so that a home purchased at one life-cycle stage must often serve in subsequent stages. Less than half of all renter households have been in their current residences for as long as one year, but over two-thirds of all owners have been in their units for more than five years.

Virtually all homeowners in Brown County live in single-family houses; cooperatives and condominiums are extremely rare. We judge that the most salient difference between types of owner-occupied units is their urban or rural location, which crudely reflects neighborhood density. Owners in the middle of the life cycle resemble renters in choosing rural locations more often than those at the beginning or end of the life cycle.

Changes in household size over the life cycle are nearly the same for renters and owners, but owner-occupied homes are larger (6.02 compared with 4.19 rooms) and vary less in size over the life cycle than do renter-occupied dwellings. Although owners, like renters, tend to choose increasingly larger units as their households grow, the adaptation is much less precise. At the extremes of the life cycle, single homeowners characteristically occupy four-room dwellings; in the middle of the cycle, families of five or six persons characteristically occupy homes with six or seven rooms. As with renters, space consumption by homeowners is independent of income.

Estimating housing expenditures for homeowners is considerably more difficult than it is for renters, and we have not yet resolved all of the accounting problems involved in their calculation. Consequently, we use the owners' estimates of the market values of their homes rather than their annual housing expenditures to compare homeowners housing costs. Using either measure, one would expect less correlation between housing costs, life-cycle stage, and income among owners than renters, because most bought their homes during earlier life-cycle stages when their incomes were higher or lower than at the time of our survey. Furthermore, almost a third of all homeowners own their homes free and clear and this proportion rises sharply with progression through the life cycle.

Nonetheless, we find a consistent tendency for current market values to increase with current income and for the ratio of market value to income to decline with income level. Within income groups, life-cycle stage does not appear to affect this pattern.

TENURE CHOICE

Nearly all households begin as renters, but, by the middle of the life cycle, over 95 percent are homeowners. Many of these later give up their homes for rented dwellings. These tenure shifts seem explicable in light of household changes over the life cycle.

Although housing tenure varies systematically over the life cycle, there is no stage at which all households are either renters or homeowners. Differences between renters and owners within each life-cycle stage become important in explaining the timing of their tenure choices.

The principal differences between renters and owners at each life-cycle stage are in age, employment, and income. In the early stages, renters are younger than owners; in the later stages, they are older. As a result, owners in each stage are typically closer to their peak earning years than renters. This pattern is reflected in the employment and income profiles of these households. Owner household heads are more likely to be employed and to have higher incomes than renters at virtually every life-cycle stage.

Since renter and owner households within each stage are similar in size, they face similar pressures for living space; those with higher incomes and better financial prospects are more likely to relieve these pressures by buying a home. They can sooner accumulate the downpayments needed for home purchases and are less impelled to economize by moving to smaller homes late in the life cycle, when their children have left home and income drops, owing to retirement.

RESIDENTIAL MOBILITY

This examination of current housing consumption patterns provides a useful benchmark for future comparisons. It also suggests that consumption patterns are adjusted in the course of the natural progression of a household through its life cycle. Local mobility patterns among

Brown County households further clarify these consumption adjustments, since most local moves occur as households attempt to adjust their housing consumption to their changing demographic and economic circumstances.

About 20 percent of all Brown County households move each year. However, this percentage varies considerably by both life-cycle stage and tenure. Whereas over 60 percent of all households in the first two life-cycle stages moved in the year preceding the baseline interview, this percentage decreases sharply thereafter, reaching a low of 2 percent in the middle stages; then it rises again to 9 percent in the final stage.

Just as striking as the differences in mobility over the life cycle are the differences between renters and owners. At every stage, renters are much more likely to move than owners. This difference in mobility reflects both the lesser stability of renters' circumstances and the stabilizing effects of homeownership.

The types of moves households make also vary by life-cycle stage. Seventy percent of the moves among young single persons are between rental units, and another 20 percent are to form new households in rental units. As the household's composition and resources are better defined in the succeeding life-cycle stages, the number of moves into owner-occupied homes increases. Eighty percent of all moves among older couples with older children are into owner-occupied units. As household size and income decrease in older childless households, the number of moves from owned to rental units and between rental units increases.

This pattern suggests that the reasons for moving also vary over the life cycle; our data confirm this expectation. Almost half of the local moves among young singles and young childless couples were motivated by changes in family circumstances. Among young households with children, the majority of moves were motivated by an explicit desire to change housing circumstances, either to change tenure or to obtain better quality or more space. Among older couples, concerns about location or neighborhood characteristics dominated the decision to move. Among households affected by the death of one spouse or divorce, family

factors and involuntary moves predominated. These changing motivations reflect the altered circumstances of households at each stage.

The household and economic characteristics of young singles and young childless couples are subject to considerable flux, and these changes dominate their housing decisions. With increasing family sizes and stabilizing employment, young couples with children seek to adjust their changing housing requirements to their increasing resource levels. Older couples with and without children are mostly owners who have lived in their current units for over five years. Their children have already left or will do so shortly and they, as a result, think more of their own convenience in choosing a new unit. Access to community services and neighborhood characteristics plays an important role in their decisions. The death of a spouse or the dissolution of a marriage often leaves the remaining spouse with a lower income. Moves by households in these stages are frequently motivated by changes in family circumstances or are involuntary.

Analysis of individual household mobility histories confirms the findings from the cross-sectional analysis of current consumption. In particular, both analyses emphasize the importance of household characteristics to current and future housing consumption. Our comparison of mobility expectations with actual behavior in Brown County suggests that households anticipate changes in consumption rather well. Few owners expect to move in a given year and few actually do. Although more renters adjust their housing consumption, most renters plan to make those adjustments. The primary exceptions to this pattern are renters in the early and late life-cycle stages. These households, whose moves are primarily motivated by unexpected changes in family circumstances, significantly underestimate their likelihood of moving.

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I. INTRODUCTION

The Housing Assistance Supply Experiment (HASE) is testing the effects on local housing markets of a full-scale program of housing allowances for low-income households. The test is important because, unlike most housing assistance programs, this one is administered largely by its beneficiaries, operating through normal market channels.

Within limits, a program participant is free to choose the type and quality of housing and the form of tenure that suits his preferences and his allowance-augmented budget. The administering agency assists with a monthly payment whose amount does not depend on these decisions, requiring of the recipient only that he occupy housing that meets minimum standards of space and habitability.

To understand how the allowance payments and related program rules affect participants' housing choices, one must first understand the structure of those choices in the absence of an allowance program. This note summarizes what we have learned so far from preprogram interviews with homeowners and renters in Brown County, Wisconsin, the first of our two experimental sites.

SCOPE AND METHOD OF ANALYSIS

The analysis reported here is preliminary to building an integrated and, we hope, fairly general model of the determinants of the kinds of housing choices open to program participants: tenure, type and quality of housing, housing expenditures, and location of residence. We first organize the data on households and their housing choices primarily in terms of household structure and income, seeking strong patterns in the data to guide later, more complex, model specification. The results are interesting because the patterns that emerge are both strong and intuitively reasonable.

Economists regard income as the main determinant of housing consumption decisions, and it is indeed an important constraint. They have not adequately considered the personal or household characteristics that guide decisions within the household's budgetary constraint. The

major hypothesis of this note is that housing choices are powerfully conditioned by the demographic configuration of the household, as measured jointly by the marital status and ages of the household heads, the presence of children in the household, and the age of the youngest child. These configurations are denoted here as stages in the household life cycle. This note shows how housing characteristics and changes of residence in Brown County, Wisconsin, vary with life-cycle stage, controlling for income differences where appropriate and possible.

The life-cycle approach to the study of housing consumption and its adjustments over time is not new. Lansing and Kish [1], Lansing and Morgan [2], and David [3] have demonstrated the variability of consumption patterns over the household life cycle, whereas Speare [4], Chevan [5], Guest [6], and Pickvance [7] have traced the relationship of the life cycle to housing consumption and local mobility. Most analyses of housing consumption patterns that do not explicitly include a life-cycle variable (Kain and Quigley [8]; Struyk and Marshall [9]) use some of its component measures as separate explanatory factors. The approach used here differs from these studies partly in emphasis and partly in the amount of detail afforded by our data base.

THE DATA BASE AND STATISTICAL ISSUES

The data used for this analysis were produced by the survey of tenants and homeowners conducted in Brown County from December 1973 through April 1974. This survey was conducted on a multistage stratified cluster sample of 3,722 households, the records of which were then weighted to represent approximately 42,600 comparable households in the county's population. The population represented by our sample excludes roughly 12 percent of all Brown County households.* The largest excluded

*A household is a person living alone or a group of people who share a housing unit--i.e., share a room or group of rooms intended for occupancy as separate living quarters with complete kitchen facilities and direct access to the unit either through the outside of the unit or through a common hall. Usually, but not necessarily, members of a household are related by blood or marriage. The related members of a household constitute a family. Persons not living in households consist of transients, those living in group quarters such as student dormitories, and inmates of institutions such as hospitals or prisons.

group consists of about 3,200 households containing landlords (or their agents); persons to be interviewed as landlords were deliberately skipped in the survey of tenants and homeowners. Another excluded group consists of some 1,300 occupants of federally subsidized units, also omitted from the survey; the majority are homeowners receiving mortgage assistance. Finally, residents of mobile homes and lodgers in rooming houses and private homes, although interviewed, presented special data processing problems and were excluded from the data base used here; they represent about 1,300 households. Although these excluded households may differ in some respects from the population covered by our sample, for simplicity of exposition we will assume the sampled population fully represents Brown County.

In conducting our analysis, we were confronted with the problem of missing data, particularly on income and expense items. Consequently, the results reported here pertain to three different sets of records. For general descriptions of households and their housing, the full set of 3,722 records (877 owners and 2,835 renters) was used. In examining the income characteristics of households, only the 3,223 records containing complete income information were used (733 owners and 2,490 renters). In investigating the relationship between housing expenses and income, only the 701 owner and 2,326 renter records containing both income and expense data were used. In each case, population weights were recalculated for respondents in each of 16 sampling strata, to compensate for nonresponse in that stratum. An audit of within-stratum nonresponse patterns did not reveal any biases serious enough to affect interpretation of the findings reported here.

Most of the data are presented as cross-tabulations. The entries are population estimates from sample data and are thus subject to sampling error in addition to the sampling exclusions and possible nonresponse biases noted above.

Because our data are drawn from a stratified cluster sample, calculating accurate variances for population estimates is extremely complex. Within strata, residential properties were sampled randomly. On multi-unit properties, housing units were also sampled randomly; units in each

property thus form a cluster within the larger sample.* In a cluster sample, the standard error of the sample estimate is a function of the degree of homogeneity, measured by the intraclass correlation, of the elements within a cluster.** The appropriate estimate of the variance, in this case the variance of a stratified sample, must be adjusted by the intraclass correlation for each cluster. Since the software necessary to calculate these intraclass correlations is still being developed, we are as yet unable to test reliability for statistical differences between estimated population parameters.***

To enable the reader to make independent judgments, we present variances estimated using the formula for stratified samples.**** We also report the number of observations on which entries are based, and all estimates based on fewer than ten observations are flagged. Finally, we rely on conservative interpretations of the evidence in the discussion of results.

ORGANIZATION OF THE WORKING NOTE

The remainder of this report is divided into six sections. Section II classifies households in Brown County by life-cycle stage, and shows how certain consumption-related household characteristics vary by stage. Secion III focuses on renter households and examines three dimensions of their housing consumption: unit type and size, and housing expenditures. Section IV provides a parallel examination of housing consumption among homeowners. Section V analyzes the determinants of tenure

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* See Corcoran [10].

** For a discussion of the problems involved in making statistical inferences with cluster samples, see Kish [11] and [12], especially Chaps. 5 and 6 of the latter reference.

*** Given that this preliminary analysis is designed primarily to guide subsequent model specification by revealing strong patterns in the data, significance testing at this stage is not crucial to our purposes.

**** This procedure is equivalent to assuming an intraclass correlation of zero. These estimates are, of course, unbiased for owners and single-family renters, where the cluster size is one. They are lower-bound estimates for renters on multiple-unit parcels.

choice. Section VI examines the local mobility of Brown County households. The last section summarizes our principal findings and explains the planned directions of future research.

II. HOUSEHOLDS IN BROWN COUNTY

Between April 1, 1970, and the end of April 1974, the date on which the baseline survey of tenants and homeowners was completed, the number of households living in nonspecialized housing units in Brown County* increased from 42,950 to an estimated 45,803, a gain of 6.6 percent. An estimated 3,215 of these households were ineligible for the survey, for reasons given in the introduction, so are excluded from our analysis.

Demographically, households in Brown County differ in several respects from households in the nation as a whole.** For example, households in Brown County are almost 15 percent larger than those nationwide (3.39 persons versus 2.97).*** Similarly, a larger proportion of Brown County households are headed by married couples (73.1 percent to 67.0 percent), and a smaller percentage are headed by a single male (7.1 percent to 10.1 percent) or female (19.8 percent to 21.9 percent). In addition, the median age of household heads in Brown County is almost five years younger than the median for all U.S. household heads (42.7 years versus 47.3 years).****

Another important difference between households in Brown County and in the nation is their racial and ethnic distributions. Race and ethnicity are frequently important differentiating factors within a local population, and therefore may influence the operations of the local housing market. However, neither race nor ethnicity is important in Brown County because the population there is racially and ethnically homogeneous.

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*Nonspecialized housing units include those designed for year-round occupancy, except mobile homes and federally subsidized units.

**Indeed, Brown County was selected for the experiment because it represented one type of metropolitan population. We expect St. Joseph County, Indiana, our second experimental site, to differ markedly.

***The 1974 data on households in the United States are taken from U.S. Bureau of the Census, "Households and Families by Type: March 1974," *Current Population Reports* [13].

****In defining the head of household for married couples, we have followed the Census convention of using the male head.

Over 98 percent of all household heads in Brown County are white.* The only conspicuous minority group consists of American Indians (about 1.5 percent of the county's population), most of whom live on tribal lands in the rural part of the county.

Although there is more ethnic than racial variation among Brown County households, 75 percent of the household heads identify themselves as having European origins. Furthermore, over half of that 75 percent identify with three ethnically similar nations--Germany (28 percent), Belgium (8 percent), and the Netherlands (6 percent). The other major cultural stocks named by 5 percent or more of the households are Poland (10 percent) and Ireland (5 percent). The lack of ethnic contrasts in Brown County may explain the relative unimportance of ethnic identity to households there. Table 1 shows that only a fourth of those household heads who identify themselves as being members of a specific ethnic group consider this identity at all important. Only ethnic groups that form small fractions of the population identify strongly with their groups.

THE HOUSEHOLD LIFE CYCLE IN BROWN COUNTY

Differences among households within Brown County are, of course, considerably more important to local consumption patterns than are differences between local and national averages. To identify households with similar housing preferences, we have sorted them into mutually exclusive life-cycle stages based jointly on the marital status and ages of household heads, the presence of children in the household, and the age of the youngest child. The rationale for using a life-cycle classification to differentiate households with similar preferences is threefold. First, the importance of the demographic characteristics used in defining life-cycle stages has been consistently documented in the literature on housing demand. Second, many traditional social and economic determinants of demand vary systematically over the life cycle. Third, the variables that define successive stages of the life cycle do not increase or decrease monotonically over these stages and appear to

*Nationwide, over 11 percent of all household heads are nonwhite (U.S. Bureau of the Census [13]).

Table 1

STRENGTH OF ETHNIC IDENTIFICATION BY ETHNIC ORIGIN OF HOUSEHOLD HEADS: BROWN COUNTY, WISCONSIN, 1974

Ethnic Origin	Percent of Household Heads by Ethnic Origin	Percentage Distribution within Each Group by Importance of Ethnic Identity to Respondent				
		Very Important	Somewhat Important	Not Important	Other Response	Total
Northern European	42.6	7.1	11.8	74.0	7.1	100.0
Eastern European	12.9	13.3	17.7	64.0	5.0	100.0
Irish, English, Scottish, Welsh	8.8	9.9	18.9	68.6	2.6	100.0
Scandinavian	5.4	12.3	23.7	58.2	5.8	100.0
Southern European	5.2	17.9	20.2	53.9	8.0	100.0
Canadian	3.1	6.1	9.3	79.7	4.9	100.0
American Indian	.9	55.6	15.9	24.9	3.6	100.0
Other	2.5	11.9	13.8	68.1	6.2	100.0
Miscellaneous[a]	18.7	--	--	--	--	--
Total	100.0	10.0	14.9	69.0	6.1	100.0

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 2,835 renter and 887 owner households. The data base excludes about 12 percent of all households living in Brown County in 1974; see Sec. I for an explanation of exclusions. Distributions may not add exactly to totals because of rounding.

[a]"American," "white," "more than one," or "don't know."

interact in ways that are not reflected in simple linear combinations of their separate values. Table 2 lists and defines the life-cycle stages.

The choice of these particular stages is based on the premise that the passage from stage to stage corresponds to significant changes in household circumstances that should affect housing needs and preferences. In defining specific stages, changes in marital status and the presence or absence of children are included as marking significant compositional changes for the household. Differentiating stages according to the age of the youngest child reflects the different consumption requirements that children of different ages impose on the household. The ages six and eighteen are selected as cutoff points because they generally correspond to the ages at which children enter school and at which they complete high school, respectively. For household heads, the choice of 46 and 60 years as boundaries for life-cycle stages is more arbitrary, but they do seem to approximate ages of change in

Table 2

LIFE-CYCLE CLASSIFICATION OF HOUSEHOLDS

Stage in Life Cycle	Definition
1. Young single head, no children	Household headed by single adult (man or woman) under 46, no members under 18.
2. Young couple, no children	Household headed by married couple, husband under 46, no other members under 18.
3. Young couple, young children	Household headed by married couple, husband under 46, at least one other member under 6.
4. Young couple, older children	Household headed by married couple, husband under 46, at least one other member between 6 and 18.
5. Older couple, older children	Household headed by married couple, husband at least 46, at least one other member under 18.
6. Older couple, no children	Household headed by married couple, husband at least 46, no other members under 18.
7. Older single head, no children	Household headed by single person (man or woman) at least 46, no other members under 18.
8. Single head with children	Household headed by single person (man or woman) under 60, at least one other member under 18.
9. All other	Residual category; most are households headed by single persons over 60 who live with married children and grandchildren.

SOURCE: Classification scheme devised by HASE staff for analysis of data from the survey of tenants and homeowners.

NOTE: Household heads are designated by survey respondents. A married couple consists of a cohabiting man and woman. A single household head may have never been married; or may have been married but was separated, divorced, or widowed at the time of the interview. Other household members need not be but usually are related to the household head(s); those under 18 are usually children of the head(s).

life style and have been used by others (Lansing and Kish [1], Lansing and Morgan [2], David [3]).

Although this classification scheme does not incorporate all possible demographic differences among households, it does define a manageably small set of mutually exclusive classes that account for all but a small number of households; and, with one exception, the classes can be arrayed in a temporal sequence that most households follow.

The particular timing of this progression may vary, but the characteristic pattern may be described as follows. Typically, a person lives from birth to late adolescence in his parent's home. At some point, often coinciding with the end of formal education or entrance into the labor market, he or she leaves the parental home and establishes a new household, living alone or with other young singles (stage 1). Most marry during their twenties,* forming a two-person household (stage 2). The first child is born sometime during the first five years of marriage (stage 3).** Entrance into the next three stages is marked by the growth of children. Stage 4, which might be termed the full-nest stage, begins when the last child enters school, around age six. Stage 5 starts when the children are grown; stage 6 begins when the last child has left home. When one household head dies, the household enters stage 7.

Not all households follow this "normal" life-cycle pattern. Some persons who establish separate households never marry, going directly from stage 1 to stage 7. More commonly, the pattern is followed through stage 3, then is sometimes broken by divorce, separation, or death of one spouse.*** We classify as stage 8 the results of these events--a single adult head with children under 18.

Although the timing of this progression through the life cycle varies individually and may gradually change, the sequence itself is nearly universal in the United States. The Census Bureau estimates that nearly 94 percent of all males and 95 percent of all females marry by

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*The Census Bureau estimates that the national median age at first marriage in 1974 was 23.1 years for males and 21.1 years for females. Recent studies indicate that, after a long decline, age at first marriage is rising. See U.S. Bureau of the Census, "Marital Status and Living Arrangements: March, 1974," *Current Population Reports* [14].

**Although the number of children born per ever-married woman has decreased since the mid-sixties, the vast majority of married women continue to bear at least one child. The 1970 Census reports that only 7 percent of the married women aged 35 to 39 in 1970 had not had at least one child. See U.S. Bureau of the Census, "Population of the United States Trends and Prospects: 1950-1970," *Current Population Reports* [15].

***Recent Census data indeed indicate a sharp increase in the rate of marital disruptions through divorce and separation [14].

age 35,* and between 90 and 95 percent of all married women bear at least one child. Thus, at least 85 percent of all persons reach stage 3, from which they move through the next several stages as a matter of course.

Table 3 shows the distribution of Brown County households by life-cycle stage and the demographic characteristics of households in each stage. The data presented in this and later tables represent the characteristics of all households in each life-cycle stage *at a given time*, not the progression through stages of a given set of households. Although such cross-sectional differences may not be matched exactly by longitudinal differences due to changing family patterns in successive generations, the cross-sectional data can support a number of qualified longitudinal inferences.

Over 40 percent of all households in Brown County are in the first three stages, a local manifestation of the nationwide increase in the population of persons 20 to 30 years old due to the post-war "baby boom." An additional factor contributing to the large proportion of young couples with young children (stage 3) is that this stage is long for most households. It lasts from the birth of the first child to six years after the birth of the last child.

The definition of stages accounts in large part for the ascending sequence of average ages and the accordian pattern of household sizes--expanding up to stage 5, then contracting first as the children mature and leave home, then as one of the spouses dies.

The demographic changes marking the life-cycle progression are accompanied by changes in the households' social and economic circumstances that also affect housing choices.

Ordinarily, a household becomes more firmly integrated into its community as children enter school, husbands and wives settle into careers, and close relationships are formed with neighbors. These ties reduce the household's willingness to move. Perhaps the most important changes accompanying the life-cycle progression occur in labor-force participation by household members and in household income. Several

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*These percentages have recently risen despite a slight increase in the age of marriage [14].

Table 3

DISTRIBUTION OF HOUSEHOLDS AND SELECTED HOUSEHOLD CHARACTERISTICS BY LIFE-CYCLE STAGE: BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Distribution of Households		Average Age of Male or Only Head		Average Number of Members					
					All Members		Other than Heads			
							Under 18		18 or Over	
	Number	Percent	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error
1. Young single head, no children	3,656	8.6	25.4	.24	1.65	.03	--	--	.65	.03
2. Young couple, no children	3,093	7.3	26.4	.44	2.01	.01	--	--	.01	.01
3. Young couple, young children	11,073	26.0	31.5	.43	4.53	.09	2.47	.08	.06	.03
4. Young couple, older children	4,332	10.2	38.9	.65	5.16	.21	2.78	.15	.38	.09
5. Older couple, older children	5,007	11.8	51.8	.42	5.46	.22	2.41	.17	1.05	.12
6. Older couple, no children	7,649	18.0	62.8	.75	2.27	.05	--	--	.27	.05
7. Older single head, no children	5,548	13.0	67.1	.80	1.23	.04	--	--	.23	.04
8. Single head with children	2,164	5.1	37.2	.23	3.60	.16	2.17	.16	.43	.07
All stages	42,587[a]	100.0	44.3	.23	3.39	.04	1.32[b]	--	.33	.02

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 3,722 households. The data base excludes about 12 percent of all households living in Brown County in 1974; see Sec. I for an explanation of exclusions. Distributions may not add exactly to totals because of rounding.

[a] All households living in unsubsidized regular housing units except resident landlords. Totals include an estimated 66 households not classified by life-cycle stage.

[b] Average for all households with children is 2.48.

factors contribute to these changes. Foremost is the general correspondence between the life cycle and the career development of the male head of the household.

Just as stage 1 marks the individual's formation of a new household, it also usually marks his economic independence and the beginning of regular full-time employment. Although his earnings are usually low in this stage, they typically increase as he develops occupational skills and acquires seniority. When he eventually retires from the labor force because of age or disability, household income usually drops sharply and suddenly.

The male head's employment history is, of course, not the only element in a household's employment and income profile. Labor-force participation by wives and adolescent children is common and contributes substantial earnings.

Table 4 shows the relationship between life-cycle stage and the employment of household heads in Brown County. Eighty-four percent of the young single household heads (stage 1) are employed although nearly a fourth are still in school. Among married couples, the male heads are nearly all employed until stage 6, when many reach the normal age of retirement. The employment of married women follows a different pattern. In stage 2, two-thirds are employed, but that proportion drops sharply with the arrival of the first child. Many married women subsequently reenter the labor force when their children reach school age. Employment among older children appears in stages 4 and 5, where the average number of workers exceeds the sum of employed husbands and wives.

The variation in household income over the life cycle reported in Table 5 reflects these employment patterns. Income first peaks in stage 2, when both husbands and wives are usually employed. It drops when the wives leave the labor force to care for their young children, then rises as mothers return to the labor force and both husbands and wives acquire skills and seniority in their jobs. Household income reaches its highest peak in stage 5 when the number of workers in the household is also greatest, often including the husband, the wife, and one or more of the older children. As the children leave home and the heads retire from the labor force (stages 6 and 7), household income drops sharply.

Table 4

EMPLOYMENT CHARACTERISTICS OF HOUSEHOLDS BY LIFE-CYCLE STAGE:
BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Percentage of Households with:								
	Male or Only Head[a]				Wife Employed		No Members Employed[d]	Average Number of Workers	
	In School		Employed						
	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error		Mean	Standard Error
1. Young single head, no children	23.3	1.7	83.7	1.6	(b)	(b)	7.1	1.40	.03
2. Young couple, no children	11.6	3.6	90.9	3.0	67.2	4.4	1.8	1.59	.05
3. Young couple, young children	4.5	1.2	95.6	1.2	30.6	3.5	2.4	1.30	.04
4. Young couple, older children	1.3	.7	97.9	1.0	48.6	6.3	1.1	1.74	.08
5. Older couple, older children	.9	.6	92.3	2.8	34.2	5.3	1.2	2.15	.12
6. Older couple, no children	--	--	61.2	3.8	27.1	3.5	29.6	1.07	.07
7. Older single head, no children	--	--	35.3	3.8	(b)	(b)	57.5	.51	.05
8. Single head with children	8.4	2.7	56.4	5.8	(b)	(b)	35.6	.75	.08
All stages	4.7	.5	77.9	1.0	(b)	36.5[c]	16.3	1.30	.03

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Employment entries are estimates based on a stratified probability sample of 3,722 households; income entries are based on a smaller sample of 3,223 households reporting complete income information. The data base excludes about 12 percent of all households living in Brown County in 1974; see Sec. I for an explanation of exclusions.

[a] Household heads in school may also be employed.

[b] Not applicable.

[c] Base for percentage includes only households headed by a married couple.

[d] By oversight, standard errors were not computed for this variable.

Table 5

INCOME CHARACTERISTICS OF HOUSEHOLDS BY LIFE-CYCLE STAGE:
BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Median Income ($) in 1973	Percentage of Total Income Received from:							
		Wages and Salaries		Pensions and Social Security		Public Assistance		All Other Sources	
		Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error
1. Young single head, no children	7,564	88.8	.9	2.5	.3	.4	.2	7.9	.8
2. Young couple, no children	13,433	94.2	1.3	.5	.6	.1	.3	5.2	1.1
3. Young couple, young children	12,656	95.6	.7	.2	.1	.7	.2	3.5	.7
4. Young couple, older children	14,593	96.5	1.0	.8	.2	.2	.2	2.4	1.0
5. Older couple, older children	17,549	92.2	1.9	2.1	.5	1.2	.6	4.5	1.6
6. Older couple, no children	10,965	59.1	3.6	30.7	3.3	.7	.5	9.6	1.1
7. Older single head, no children	4,697	34.0	3.6	46.8	3.4	2.7	1.3	16.4	1.8
8. Single head with children	5,704	42.1	4.2	9.3	2.0	29.7	4.4	18.9	3.1
All stages	11,988	79.8	.8	10.9	.6	2.2	.3	7.1	.4

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 3,223 households reporting complete income information. The data base excludes about 12 percent of all households living in Brown County in 1974; see Sec. I for an explanation of exclusions.

In addition to comparing median incomes, Table 5 also shows the distribution of household income by source for each life-cycle stage. This distribution is included to indicate the types of income constraints under which different types of households operate. The generally high average proportion of earnings to total household income in the first five life-cycle stages, 89 to 96 percent, reflects the importance of the employment profiles described above. Conversely, the generally low earnings/income ratios among older and disrupted households, for whom earnings from social security, pensions, and public assistance are more important, suggest an important constraint under which these households must operate.

LIFE-CYCLE STAGES AND HOUSING CONSUMPTION

These data suggest a strong relationship between housing consumption and progression through the life cycle. This progression brings characteristic changes in the size and composition of households and, consequently, in their housing requirements. The concomitant changes in the household's social and economic characteristics, particularly income, affect the household's ability to adjust its consumption accordingly. Both directly and indirectly, therefore, the life-cycle progression should affect the household's taste for and ability to purchase housing.

These two kinds of changes do not always complement each other, however. Between stages 2 and 3, for example, average household size increases by 2.5 persons but income decreases. The increased space requirements of these larger households, along with their increased requirements for food and clothing, must often be met from the same or smaller budgets, forcing many households to compromise in their housing choices.

In later stages, household consumption needs and the means to satisfy them are better balanced. Peak household size occurs in stage 5, which is also the stage of greatest household income. When income drops sharply (stages 6 and 7), the number of persons to be supported by that income also decreases sharply.

TENURE AND TYPE OF HOUSING UNIT

Although most single-family houses are owner-occupied and most apartments in multiple dwellings are renter-occupied, it is important to distinguish tenure and type of housing as separate dimensions of housing choice. As households move through the life cycle, they characteristically shift from rental tenure to ownership and back to rental. Although owners nearly always live in single-family houses, renters usually choose particular types of housing at different stages of the life cycle.

Table 6 and Fig. 1 display the main features of these two choices in relation to life-cycle stages. Fewer than 7 percent of all young single household heads are homeowners; the vast majority rent their homes, and 90 percent of these renters live in apartments. The incidence of homeownership rises sharply thereafter, reaching 95 percent in stage 5. Nearly all of these homeowners occupy single-family houses. Among renters in the middle of the life cycle, there is also a decided shift from apartments to single-family houses; by stage 5, nearly 60 percent of the renters and 98 percent of all households live in single-family houses.

In the later stages of the life cycle, when the children have left home and finally when one spouse dies, the incidence both of ownership and of renters in single-family houses declines. In stage 7, only 45 percent of all households own their homes and only 10 percent of all renters live in single-family houses.

This pattern of tenure choice by life-cycle stage is predictable given the variations in household characteristics from stage to stage. Young singles and young couples, consistent with their relatively small space requirements, their relatively low resource levels, and their considerable mobility, start out as renters. As couples bear children and become more settled in both careers and the community, their increased space requirements, stability, and incomes produce an increased propensity to purchase homes. When their children leave home and finally when one spouse dies, many households adjust their consumption to their decreased need for space and declining incomes by reducing their levels of consumption. In many cases, such an adjustment entails a return to rental units

Table 6

DISTRIBUTION OF HOUSEHOLDS BY HOUSING TENURE, TYPE OF UNIT, AND LIFE-CYCLE STAGE: BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Percentage Distribution of All Households by Housing Tenure				Percentage Distribution of Renter Households by Type of Unit			
	Renters	Owners	Total	Standard Error[a]	House	Apartment	Total	Standard Error[a]
1. Young single head, no children	93.5	6.5	100.0	.02	9.5	90.5	100.0	.6
2. Young couple, no children	65.5	34.5	100.0	1.1	15.8	84.2	100.0	5.2
3. Young couple, young children	22.5	77.5	100.0	2.6	23.9	76.1	100.0	2.9
4. Young couple, older children	8.7	91.3	100.0	.9	42.0	58.0	100.0	4.5
5. Older couple, older children	4.6	95.4	100.0	.6	57.4	42.6	100.0	4.0
6. Older couple, no children	11.1	88.9	100.0	.7	23.7	76.3	100.0	7.0
7. Older single head, no children	38.8	61.2	100.0	2.1	10.7	89.3	100.0	1.3
8. Single head with children	55.8	44.2	100.0	4.0	24.0	76.0	100.0	4.5
All stages	30.0	70.0	100.0	.2	17.5	82.5	100.0	.4

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

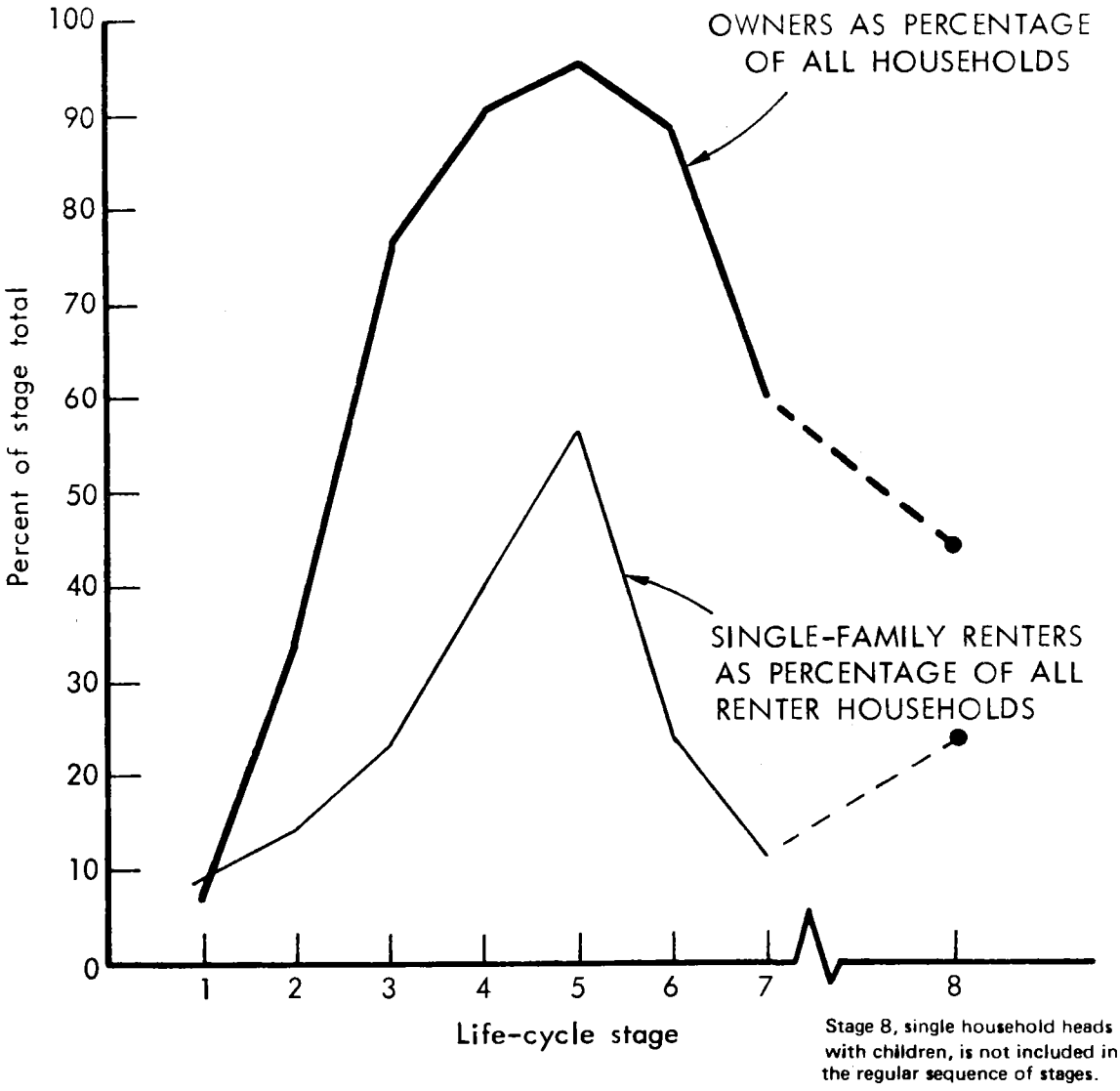
NOTE: Entries are estimates based on a stratified probability sample of 2,835 renter and 887 owner households. The data base excludes about 12 percent of all households living in Brown County in 1974; see Sec. I for an explanation of exclusions. Distributions may not add exactly to totals because of rounding.

[a]Since the distribution is dichotomous, the components have the same standard error.

because owner-occupied units tend to be a significantly larger than rental units.* Offsetting this tendency may be a reluctance on the part of some older households, especially those who own their homes free and clear, to sell their homes and move to rented quarters. Finally, single-headed households with children confront both the space requirements of larger households and the income constraints of the younger and older single households. This predicament is resolved by a greater-than-average propensity to rent.

These same factors explain the differences in the unit-type preferences of renters over the life cycle. Young singles who need only

*Section V documents this pattern.



SOURCE: Survey of tenants and homeowners, Site I, baseline.

Fig. 1—Distribution of households by housing tenure, type of unit, and life-cycle stage: Brown County, Wisconsin, 1974

small units and are willing to pay someone else to care for them, choose apartments. As household size increases, more space is needed both within and around the unit, so renter households with children move to single-family houses that are usually larger than apartments. In so doing, they usually assume responsibility for maintaining the property, trading their own time for the dollar cost of paying the landlord to provide these services. Older households who rent, on the other hand, are smaller, need less space, and may be unable to care for their homes; consequently, they often choose apartments.

When the patterns shown in the figure are considered in conjunction with the data on household characteristics by life-cycle stage, two important ideas emerge. First, although nearly everyone in Brown County lives in a single-family house during the peak years of household size and income, few spend all their adult years in such a residence.* Second, renters and homeowners in the same life-cycle stages appear to be less distinguished by different housing preferences than by different resources for satisfying those preferences. Thus, many renters in the middle of the life cycle probably prefer single-family homes to apartments but cannot afford them.

Such a preference undoubtedly reflects the importance of indoor and outdoor space to households with children. The role of income as a constraint on this preference is less straightforward because it tends to vary over life-cycle stages in parallel with the number of children in the household. However, variation in income among households within a given stage is likely to affect the choice of both housing type and tenure.

Section V returns to the issue of tenure choice in a more appropriate multivariate framework.

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*This pattern does not apply equally to all local housing markets. Both the size of the market (Carliner [16]) and the racial composition of the population are likely to affect life-cycle patterns of homeownership.

III. RENTER HOUSEHOLDS AND THEIR HOUSING

The results presented in the previous section demonstrate the importance of life-cycle stage to the tenure and type of unit chosen by Brown County households. Housing is, however, a complex commodity, and differences in tenure and type of unit by no means encompass the household's range of choices. Other factors such as unit size and cost strongly influence decisions on tenure and unit type. This section examines more closely the housing consumption of renter households, to identify the specific characteristics of these households underlying differences in their consumption patterns.

Three dimensions of renters' housing consumption are compared here: the types and locations of units occupied; the sizes of those units; and the amounts of renters' housing expenditures. Renter households are distinguished by the variables life-cycle stage and income. Life-cycle stage captures important differences in housing requirements, whereas income controls the household's ability to meet them.

UNIT TYPE

The previous section classified rental units as single-family and multiple-unit types. This section expands that division in terms of the number of units situated on a rental property, its location, and whether it is used exclusively for residential purposes. The resulting classification distinguishes six types of rental units: urban single-family houses, rural single-family houses, units on small urban rental properties (2 to 4 units), units on small rural rental properties (2 to 4 units), units on larger urban rental properties (5 or more units), and units on agricultural or mixed residential/commercial properties.

Although this classification scheme does not capture all of the significant differences between rental units, it does distinguish units along a number of important dimensions and thus suggest the types of considerations that affect housing choices. Units located in the urban area, for example, will provide more convenient access to a variety of facilities than will rural units. Average unit size also varies by

unit type, with single-family urban units containing an average of 5.14 rooms versus an average of 4.17 rooms in small urban apartment buildings, 3.44 in large urban apartment buildings, 5.72 in single-family rural units, and 4.28 in rural apartment buildings. Single-family units also have more private outdoor space than do apartment units.

Table 7 shows the distribution of renters by life-cycle stage and unit type. These data reveal two important differences in the consumption patterns of rental households. First, households in the middle of the life cycle, stages 4 and 5, display a market preference for single-family homes in contrast to households in the early and later life-cycle stages, who prefer apartment units. Second, older households (stages 6 and 7) and young single households (stage 1) more often prefer units located in the urban rather than the rural area than do households in the middle of the life cycle.

These findings suggest that Brown County rental households adjust their housing consumption to their changing circumstances. Young singles and young couples who are just setting up their households and whose space requirements are small, locate in small units in medium and large apartment buildings. These units are typically found in the urban area. As the requirements for space both in the narrow sense of number of rooms and in the broader sense of insulation from neighbors and access to private outdoor space increase in stages 4 and 5, households adjust their consumption accordingly by moving to single-family homes, many of which are found outside the urban area. In the later stages, when the household's demand for space is shrinking and when the problem of access to shopping, churches, and doctors' offices becomes more important, these households respond by moving to smaller units in the urban area. This pattern results in a concentration of certain types of tenants in certain types of units. Over 60 percent of the occupants of units on large multiple-unit properties are in stages 1 and 7; in contrast, over 60 percent of the occupants of rural rental units are in stages 2 and 3.

Another difference between units not incorporated in our unit-type classification is whether the unit is furnished. We would expect

Table 7

DISTRIBUTION OF RENTER HOUSEHOLDS BY TYPE AND LOCATION OF UNIT AND LIFE-CYCLE STAGE: BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Type of Rental Unit								
	Urban				Rural				
	Single-Family	2-4 Units	5+ Units	Sub-Total	Single-Family	2-4 Units	Sub-Total	Other[a] Rental	Total
1. Young single head, no children	8.3	51.2	36.7	96.2	1.4	2.0	3.4	.4	100.0
2. Young couple, no children	12.2	53.7	22.8	88.7	2.4	8.0	10.4	.9	100.0
3. Young couple, young children	17.4	60.3	11.2	88.9	5.2	4.3	9.5	1.6	100.0
4. Young couple, older children	33.4	50.7	2.1	86.2	5.8	7.2	13.0	.8	100.0
5. Older couple, older children	42.9	34.8	2.6	80.3	12.0	2.1	14.1	5.6	100.0
6. Older couple, no children	21.0	50.1	21.2	92.3	1.9	1.0	2.9	4.8	100.0
7. Older single head, no children	9.7	52.9	33.8	96.4	.9	2.0	2.9	.7	100.0
8. Single head with children	19.7	62.5	12.6	94.8	4.1	.5	4.6	.6	100.0
All stages	14.3	54.5	24.1	92.9	2.8	3.4	6.2	.9	100.0

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 2,835 renter households. The data base excludes about 7 percent of all renter households living in Brown County in 1974; see Sec. I for an explanation of exclusions. Distributions may not add exactly to totals because of rounding.

[a]Includes units on farms and in mixed residential/commercial buildings.

furnished units to be occupied predominantly by young singles who are just starting out in both the labor and housing markets and are, therefore, least likely to have acquired the possessions needed to furnish a home and most likely to desire the unhampered mobility permitted by furnished units. Our data confirm this expectation. About a third of the young single renter households occupy furnished units; in all other life-cycle stages, the proportion of renters in furnished units is under 10 percent.

UNIT SIZE

Movement between life-cycle stages as well as changes in household size within a particular stage prompt households to reassess the suitability of their current units. Table 8 lists the variations in average unit size and number of persons per room by life-cycle stage among renter households. These results clearly indicate that households tend to increase their space consumption as they grow (stages 1 to 5), then to reduce it as they diminish (stages 6 and 7). The range in average unit size over these life-cycle stages exceeds 2 rooms per unit (3.69 to 5.81). Since household size increases and decreases in this same pattern, it appears that changes in household size prompt adjustments in space consumption by renter households.

Even so, homes are most crowded in stages 4 and 5, when families are largest. The number of persons per room increases from about one-half in stage 1 to nearly one in stages 4 and 5, then drops to about one-third in stage 7. At no life-cycle stages does that ratio exceed the commonly accepted overcrowding standard of one person per room; overall, fewer than 4 percent of all Brown County rental households live at higher densities. By moving from one unit to another as household size changes, renter households avoid overcrowding.

Average unit size also varies by unit type. Since renter households prefer different unit types according to life-cycle stage, variations in average unit size by life-cycle stage may reflect this pattern. Table 9, which compares the average number of persons per room by unit type and life-cycle stage, examines this possibility. Despite some

Table 8

SIZE OF HOUSING UNIT AND NUMBER OF PERSONS PER ROOM BY LIFE-CYCLE STAGE: RENTER HOUSEHOLDS, BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Average Number of Rooms per Unit		Average Number of Persons per Room	
	Mean	Standard Error	Mean	Standard Error
1. Young single head, no children	3.69	.04	.46	.01
2. Young couple, no children	3.99	.04	.54	.01
3. Young couple, young children	4.66	.05	.83	.01
4. Young couple, older children	5.39	.17	.98	.04
5. Older couple, older children	5.81	.18	.96	.05
6. Older couple, no children	4.42	.10	.52	.01
7. Older single head, no children	3.81	.05	.32	.01
8. Single head with children	4.77	.07	.68	.02
All stages	4.19	.02	.57	.004

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 2,835 renter households. The data base excludes about 7 percent of all renter households living in Brown County in 1974; see Sec. I for an explanation of exclusions.

variation in average number of persons per room across unit types within life-cycle stages, the pattern of increasing space consumption through the middle of the life cycle followed by a decrease in the latter stages remains. Indeed, the range in the number of persons per room over life-cycle stages holding unit type constant is, on the average, three times

Table 9

NUMBER OF PERSONS PER ROOM BY LIFE-CYCLE STAGE AND TYPE OF UNIT: RENTER HOUSEHOLDS, BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Type of Rental Unit					Total
	Single-Family		2-4 Units		5+ Units	
	Urban	Rural	Urban	Rural		
1. Young single head, no children	.47	.52	.46	.40	.47	.46
2. Young couple, no children	.46	.36	.52	.49	.67	.54
3. Young couple, young children	.80	.78	.85	.86	.83	.83
4. Young couple, older children	.93	1.06	1.02	.90	.87	.98
5. Older couple, older children	.95	1.08	.88	1.00	.96	.96
6. Older couple, no children	.48	.47	.52	.53	.57	.52
7. Older single head, no children	.28	.39	.31	.35	.35	.32
8. Single head with children	.73	.79	.67	.83	.66	.68
All stages	.62	.69	.57	.59	.52	.57

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 2,835 renter households. The data base excludes about 7 percent of all renter households living in Brown County in 1974; see Sec. I for an explanation of exclusions.

greater than the corresponding range in that number over unit types holding life-cycle stage constant. This pattern indicates that, although households' space requirements vary across life-cycle stages, they are relatively constant within stages. Renters thus appear to satisfy their demands for space independently of their choice of unit type.

Because income also varies by life-cycle stage, we examine the space consumption of Brown County renter households by life-cycle stage

and income levels in Table 10 and Fig. 2. These data show the same pattern of space adjustments across life-cycle stages at each income level; within life-cycle stages, space consumption is essentially unaffected by income. As will be demonstrated, the more prosperous renters within each life-cycle stage do spend more for housing, but the desire for more space does not appear to be the motivating factor.

Table 10

NUMBER OF PERSONS PER ROOM BY INCOME AND LIFE-CYCLE STAGE: RENTER HOUSEHOLDS, BROWN COUNTY, WISCONSIN, 1974

	Persons/Room Ratio by Income ($) in 1973[a]					
	Under 5,000		5,000-9,999		10,000 or Over	
Stage in Life Cycle	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error
1. Young single head, no children	.44	.01	.42	.01	.48	.02
2. Young couple, no children	.57	.03	.57	.01	.51	.007
3. Young couple, young children	.83	.03	.83	.02	.83	.02
4. Young couple, older children	1.33	.17	.98	.07	.92	.05
5. Older couple, older children	.91	.15	.94	.11	.97	.07
6. Older couple, no children	.53	.02	.51	.02	.49	.02
7. Older single head, no children	.33	.01	.35	.01	.36	.02
8. Single head with children	.70	.02	.67	.04	.65	.07
All stages	.50	.01	.60	.01	.62	.08

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 2,490 renter households who provided full information on household income. The data base excludes about 7 percent of all renter households living in Brown County in 1974; see Sec. I for an explanation of exclusions.

[a]Household income includes cash income received during 1973 by all members of the household from all sources.

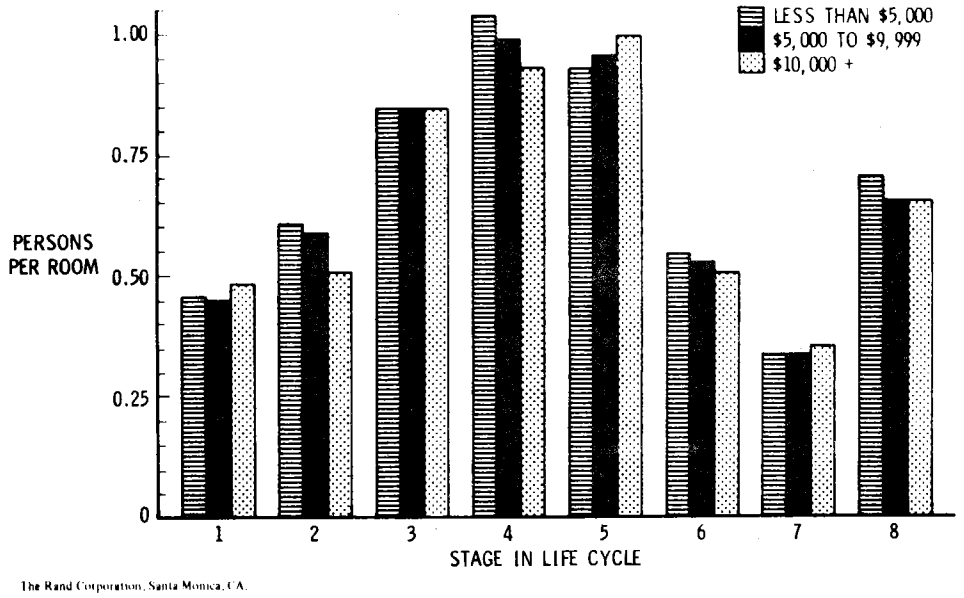

Fig. 2—Number of persons per room by income and life-cycle stage: renter households, Brown County, Wisconsin, 1974

HOUSING EXPENDITURES

A household's level of housing expenditures is, of course, determined by several factors. Income, for example, limits the amount the household has available to spend. The size of the household determines the minimum size of the unit it can comfortably occupy, and therefore affects expenditure levels. Indeed, the results reported above suggest that Brown County renter households are particularly sensitive to the balance between household and unit size in selecting their homes. Finally, a variety of other characteristics, such as the head's age and education, the household's composition as well as its occupational and mobility plans, may affect the household's housing expenditure levels.

One difficulty in comparing expenditure patterns among renters is that not all pay full market rents. Because the expenditure patterns of households paying full rents cannot be directly compared with those of households paying reduced rents or none at all, we compare expenditures of only those paying full market rents.

The principal difference between households paying full market rents and those paying reduced rents or none at all is their relationship to their landlords, as shown in Table 11. About 93 percent of all Brown County renters pay full market rents, and virtually all

Table 11

DISTRIBUTION OF RENTER HOUSEHOLDS BY RENT STATUS AND RELATIONSHIP TO LANDLORD: BROWN COUNTY, WISCONSIN, 1974

Relationship to Landlord	Percentage Distribution by Rent Status			
	Full Market Rent	Reduced Rent	None (Rent Free)	Total
Related to landlord only	60.4	26.5	13.1	100.0
Work for landlord only	15.5	74.5	10.0	100.0
Both related to and work for landlord	1.5	73.3	25.2	100.0
Neither related to nor work for landlord	99.7	.2	.1	100.0
Total	92.9	5.5	1.6	100.0

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 2,835 renter households. The data base excludes about 7 percent of all renter households living in Brown County in 1974; see Sec. I for an explanation of exclusions. Distributions may not add exactly to totals because of rounding.

tenants who neither work for nor are related to the landlord pay full market rents. In contrast, only 15 percent of the renters who regularly work for the landlords of the properties on which their units are located pay full rents, and only 2 percent of those who both work for and are related to the landlord pay full rents.* Although

*Renters who work for the landlord and still pay full rent are paid directly for their work rather than being reimbursed totally or in part by a reduction in rent.

relationship to the landlord affects the probability of receiving some type of rent reduction, the majority of related tenants still pay full market rent.

Relationship to the landlord and rent status vary by life-cycle stage (Table 12). Renter households in the middle of the life cycle, stages 3 to 6, are more likely than their counterparts in the early and late stages to be related to or employed by the landlord and to receive

Table 12

DISTRIBUTION OF RENTER HOUSEHOLDS BY RELATIONSHIP TO LANDLORD AND PERCENTAGE PAYING FULL RENT, BY LIFE-CYCLE STAGE: BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Distribution by Relationship to Landlord			Percentage Paying Full Market Rent
	Related to Landlord	Working for Landlord	Neither Working for nor Related to Landlord	
1. Young single head, no children	2.3	2.6	96.5	97.2
2. Young couple, no children	6.3	4.3	90.2	94.8
3. Young couple, young children	10.2	10.4	83.4	89.4
4. Young couple, older children	8.2	15.1	77.5	84.7
5. Older couple, older children	13.4	5.2	82.7	81.3
6. Older couple, no children	11.5	6.9	84.2	86.7
7. Older single head, no children	9.5	3.8	87.3	91.2
8. Single head with children	6.7	2.3	91.0	96.5
All stages	7.6	5.3	89.2	92.8

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 2,835 renter households. The data base excludes about 7 percent of all renter households living in Brown County in 1974; see Sec. I for an explanation of exclusions.

some type of rent reduction. The variation in the proportion of households working for the landlord by life-cycle stage suggests a preference among landlords for employees in the more "stable" life-cycle stages.* The probability of working for the landlord is lowest in what might be considered the two least stable stages, young singles and single heads with children, increases in the middle life-cycle stages, and declines among older households.

HOUSING EXPENDITURES, INCOME, AND LIFE-CYCLE STAGE

Table 13 reports the average monthly gross rent** for renter households paying full rents, grouping them by life-cycle stage and broad income bracket.*** For households in each income bracket, housing expenditures generally rise from stage 1 to stages 4 and 5, then decline. Single heads with children (stage 8) spend about as much as couples with children (stages 4 and 5). Regardless of life-cycle stage, expenditures generally increase with income.

The variation in expenditures by life-cycle stage certainly reflects the pattern of space consumption described earlier, but it may also reflect some residual income differences between life-cycle stages within the broad income intervals into which households have been grouped. Within each life-cycle stage, the more prosperous households choose

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*The probability of working for the landlord also increases for relatives. For example, whereas almost 25 percent of all related tenants work for the landlord, fewer than 5 percent of unrelated tenants do. Nonetheless, nearly 70 percent of the tenants who work for the landlord are unrelated.

**Monthly gross rent includes contract rent plus the respondents' estimates of charges for fuel and utilities paid directly by tenants.

***Note that incomes were reported for calendar year 1973 but rents were reported as of the interview date. Interviews were spread over the first four months of 1974, so the rent/income relationship is lagged. Although this lag could affect our results, we do not believe it does since households are usually slow to revise their expenditures. Sharp changes in income can cause rapid adjustments in expenditures, but such changes are not likely to occur over this period even among young renter households.

Table 13

HOUSING EXPENSES BY INCOME AND LIFE-CYCLE STAGE: RENTER HOUSEHOLDS, BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Average Monthly Gross Rent[a] ($) by Income ($) in 1973							
	Under 5,000		5,000-9,999		10,000 or Over		All Incomes	
	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error
1. Young single head, no children	116	2.2	131	1.9	150	2.3	133	1.2
2. Young couple, no children	129	4.2	132	2.0	158	1.9	148	1.4
3. Young couple, young children	137	3.7	145	1.8	157	2.3	150	1.4
4. Young couple, older children	141	23.8	149	8.7	173	5.6	166	4.7
5. Older couple, older children	126[b]	15.0	150	11.7	150	7.8	145	6.0
6. Older couple, no children	130	5.6	124	4.9	193	5.5	154	3.2
7. Older single head, no children	100	1.9	113	2.4	144	3.5	111	1.4
8. Single head with children	147	2.3	150	3.4	174	7.3	151	1.9
All stages	121	1.1	135	1.0	158	1.1	140	.6

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 2,163 renter households who paid full market rents for their units and who provided full information on household income. The data base excludes occupants of mobile homes and lodgers, about 3 percent of all renter households living in Brown County in 1974. Standard errors are large for stages 4 to 6 because the samples of renters in these stages are small.

[a]Contract rent plus respondent's estimate of charges for fuel and utilities paid directly by the tenant.

[b]Estimate based on fewer than 10 observations.

better-quality housing but not more space, at least as measured by rooms per unit.*

Table 14 reports essentially the same data in a form that controls better for income differences within life-cycle stages. Here, each household's housing expenditures are expressed as a fraction of its income, and the households are classified as before by life-cycle stage and broad income interval.

*Table 10 shows that the number of persons per room is basically constant across income levels within the same life-cycle stage, as are the number of persons and the number of rooms.

Table 14

RENT/INCOME RATIOS BY INCOME AND LIFE-CYCLE STAGE: RENTER HOUSEHOLDS, BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Average Rent/Income Ratio[a] by Income ($) in 1973							
	Under 5,000		5,000-9,999		10,000 or Over		All Incomes	
	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error
1. Young single head, no children	43.6	5.1	22.3	1.2	12.8	1.9	25.0	1.8
2. Young couple, no children	43.5	1.8	22.8	.7	13.4	.6	18.0	.4
3. Young couple, young children	46.3	2.0	23.3	.8	14.5	.5	20.7	.5
4. Young couple, older children	37.3	3.5	25.1	1.3	14.9	.8	18.1	.7
5. Older couple, older children	38.1[b]	2.9	25.8	2.2	13.6	1.5	21.5	1.1
6. Older couple, no children	49.8	1.8	21.7	1.6	13.7	1.8	28.3	1.0
7. Older single head, no children	44.5	4.7	21.2	3.0	13.0	9.3	33.2	3.3
8. Single head with children	52.1	4.2	28.0	5.2	14.8	14.2	39.0	3.3
All stages	46.1	2.3	23.3	.8	13.7	.9	25.3	.8

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 2,158 renter households who paid full market rents for their units and who provided full information on household income. The data base excludes occupants of mobile homes and lodgers, about 3 percent of all renter households living in Brown County in 1974.

[a]For each household, the rent/income ratio = (12 times current monthly gross rent)/(gross income of all household members in 1973). Entries are averages of ratios for all households in each category, except for five cases in which current gross rent exceeded 1973 income.

[b]Estimate based on fewer than 10 observations.

For households in the lowest income bracket, the rent/income ratio averages .46 overall and is highest for couples just starting their families (stage 3), couples whose children have left home (stage 6), and single heads with children (stage 8).

For households in the middle bracket, the rent/income ratio is much lower, averaging .23 overall. It varies little over the life cycle, but is highest for households with several children (stages 4, 5, and 8).

For households whose incomes exceed $10,000, life-cycle stage has no discernible effect on the rent/income ratio, which is about .14 throughout.

The data reported in Table 14 are graphed in Fig. 3, providing an interesting contrast to Fig. 2. Whereas space consumption per household member varies sharply with life-cycle stage but only slightly with income (Fig. 2), the rent/income ratio varies sharply with income but only slightly with life-cycle stage (Fig. 3). Together, the figures suggest that, after the critical needs for space have been met, housing expenditures compete only weakly with alternative uses of income.

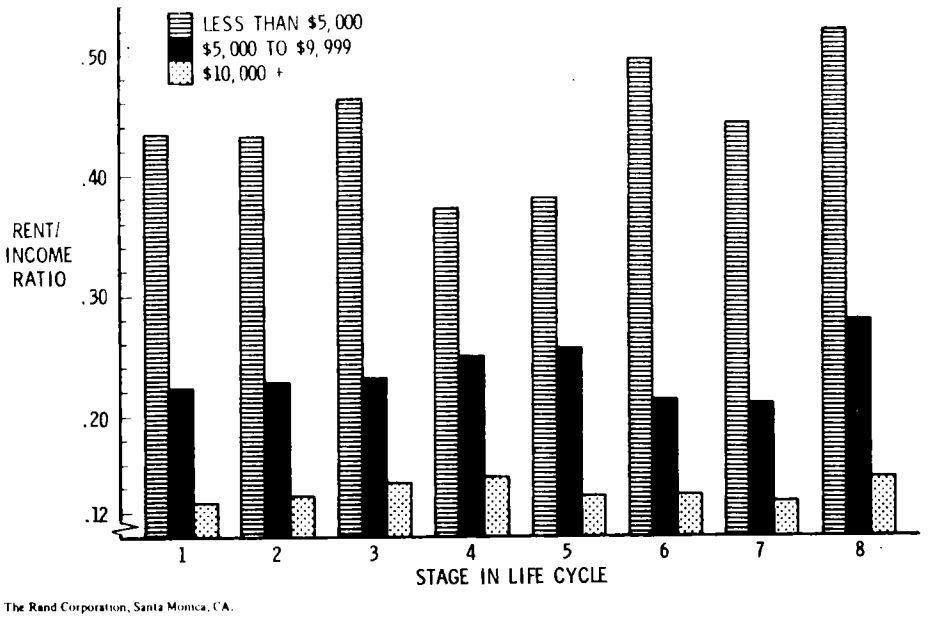

Fig. 3—Rent/income ratios by income and life-cycle stage: renter households, Brown County, Wisconsin, 1974

To explore this hypothesis further, we estimated a simple housing expenditure function by linear regression of expenditures on life-cycle stage, income, and a few additional household characteristics that we thought might condition household budget allocation.* The results appear in Table 15.

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*In estimating an expenditure function, we assume that all households face the same array of housing choices, each with a fixed market price. The model therefore excludes all variables describing what was chosen, focusing instead on the household's budget constraint and its characteristics that might influence the division of the budget between housing and other goods.

Table 15

REGRESSION OF MONTHLY HOUSING EXPENDITURES ON HOUSEHOLD CHARACTERISTICS: RENTER HOUSEHOLDS, BROWN COUNTY, WISCONSIN, 1974

Variables	Possible Values	Regression Statistics		
		Coefficient	Standard Error	Value of *t*
Dependent				
Monthly housing expenditures	Positive continuous ($)	--	--	--
Independent				
Stage in life cycle				
1. Young single head, no children	Yes = 1, no = 0	-5.11	2.71	1.88
3. Young couple, young children	Yes = 1, no = 0	1.09	2.94	.37
4. Young couple, older children	Yes = 1, no = 0	8.02	4.92	1.63
5. Older couple, older children	Yes = 1, no = 0	5.00	6.11	.82
6. Older couple, no children	Yes = 1, no = 0	4.71	3.92	1.20
7. Older single head, no children	Yes = 1, no = 0	-15.67	3.26	4.81[a]
8. Single head with children	Yes = 1, no = 0	10.99	3.72	2.95[a]
Other				
1. Male or only head employed	Yes = 1, no = 0	-4.36	1.83	2.38[a]
2. Wife of male head, employed	Yes = 1, no = 0	-4.17	2.28	1.82
3. Male or only head's years of schooling	Zero or positive integer	2.32	.30	7.64[a]
4. Number of children under 18 years old	Zero or positive integer	3.87	.87	4.44[a]
5. Plans to move within a year	Yes = 1, no = 0	1.02	1.66	.62
6. Annual income of household	Positive continuous ($000)	2.00	.15	13.34[a]
Regression constant	--	92.87	4.62	20.10[a]

SOURCE: Analysis by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Regression analysis was performed on records of 2,307 renter households who paid full market rents for their units and who provided full information on all the variables listed. $F = 46.61$ with 13 and 2,293 degrees of freedom. Adjusted $R^2 = .205$.

[a]Coefficient significantly different from zero at .95 level of confidence.

The household's position in the life cycle is identified by a series of dummy variables (scored 0 or 1) for each stage except stage 2, which is arbitrarily designated as the standard case. Dummy variables also identify the employment statuses of the household head and his spouse, if any; and whether or not the household planned to move in the year following the interview. Only the three remaining variables--head's years of schooling, number of children under 18, and household income in 1973--can have more than two values.

Perhaps because of the model's heavy reliance on crude binary measures of household characteristics, it explains only 20 percent of the variance in monthly housing expenditures. All three nonbinary variables have coefficients that are significantly different from zero, but only three of the ten binary variables have significant coefficients.

After controlling for the employment status of household heads, years of schooling, number of children, plans to move, and income, life-cycle stage does not consistently account for differences in renters' housing expenditures. However, older single heads spend significantly less than young childless couples whereas single heads with children spend more.

Among the remaining variables, income is most closely associated with differences in housing expenditures, but its independent effects are quite small. Monthly expenditures increase by only $2.00 per $1,000 of annual income. At the mean values of both variables, this coefficient is equivalent to an income elasticity of only .01, far below the usual estimates that range from .70 to 1.00 (de Leeuw [17]). This result suggests that the usual estimates may reflect differences in household characteristics that are associated positively with both income and housing expenditures, rather than differences in income alone.*

Examples of these characteristics are the household head's years of schooling and the number of children in the household, both positively correlated with current income and shown in Table 15 to be positively related to housing expenditures. The first may reflect the household's

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*This result, consistent with the pattern of rent/income ratios found in Table 14, indicates that the effect of income on expenditures is nonlinear. More affluent households spend a smaller proportion of their incomes on housing than do low-income households.

"permanent income"--its expectations over the longer run, given the skills already acquired by the head. The second clearly reflects demand for additional space to accommodate a larger family.

The negative coefficients associated with the employment of either household head are puzzling, since income differences have already been taken into account. Work-related expenses (social security taxes, transportation, child care) do reduce the disposable incomes of those who work and may thereby cause them to spend less for housing than others with equivalent incomes but no such expenses. But if we have correctly estimated the income effect on housing expenditures at $2.00 per $1,000, the negative coefficient of employment (over $4.00) implies work-related expenses of at least $2,000 per person.

Since the desire to change housing consumption motivates most local moves, the dummy variable for plans to move was included to capture the effect on housing expenditures of probable mismatches between current and desired housing consumption. Clearly, those planning to move are as likely to be spending more than they want on their current housing as they are to be spending less.

The main conclusion to be drawn from this regression analysis is that the factors influencing housing expenditures are subtle, either poorly captured by the binary variables used here or else interacting in ways that are missed by a single-equation linear model. However, the richness of our data on household characteristics should help us to develop a more complex model that more clearly explains variations in renters' housing expenditures.

IV. OWNER HOUSEHOLDS AND THEIR HOUSING

Nearly 70 percent of all Brown County households own their homes. Unlike renters, almost half of whom have lived in their current units less than one year, homeowners seldom move. Over two-thirds have occupied their current residences over five years. This residential stability partly reflects the concentration of owner households in the middle stages of the life cycle where household composition and income are relatively stable. It is reinforced by the transactions cost of selling one home in order to buy another. Since homeowners change residences less frequently than renters, their homes are less likely to fit their current needs and preferences. Our data for Brown County confirm this expectation.

UNIT TYPE

Structural characteristics vary less among owner-occupied homes than among rental units. Multiunit condominiums and cooperatives, common in larger metropolitan areas, were virtually absent from Brown County at baseline. Excluding resident landlords, over 99 percent of all owner households lived in detached single-family homes. We have classified owner-occupied homes as urban, rural nonfarm, and rural farm. These categories exclude the fewer than 100 owner-occupied units that are not single-family houses.

Table 16 shows the distribution of owner households by life-cycle stage and unit type. The majority of homeowners in all life-cycle stages live in urban single-family houses. However, couples with children are more likely to live in rural locations than are other households, especially those in stages 1 and 2. These differences reflect the pattern found among renter households--namely, young singles and young childless couples are willing to trade off yard space for convenience of access, whereas couples with children require more exterior space.

Table 16

DISTRIBUTION OF SINGLE-FAMILY OWNER HOUSEHOLDS BY LOCATION OF UNIT AND LIFE-CYCLE STAGE: BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Percentage Distribution by Location			Total
	Urban	Rural Nonfarm	Farm	
1. Young single head, no children	91.1	--	8.9	100.0
2. Young couple, no children	96.0	2.0	2.0	100.0
3. Young couple, young children	82.5	10.7	6.8	100.0
4. Young couple, older children	73.8	19.3	6.9	100.0
5. Older couple, older children	77.2	11.6	11.2	100.0
6. Older couple, no children	84.8	9.9	5.3	100.0
7. Older single head, no children	82.7	10.5	6.8	100.0
8. Single head with children	87.0	6.5	6.5	100.0
All stages	81.7	11.2	7.1	100.0

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 887 owner households. The data base excludes about 10 percent of all homeowners living in Brown County in 1974; see Sec. I for an explanation of exclusions. Distributions may not add exactly to totals because of rounding.

UNIT SIZE

The average owner household in Brown County contains 3.8 persons versus an average among renters of 2.4 persons. Corresponding to this difference in household sizes, the average owner-occupied house in Brown County is considerably larger than the average rented unit (6.02

versus 4.19 rooms). Moreover, owner-occupied homes vary less in size than do rented units--almost 75 percent of all owner-occupied units contain between five and seven rooms. It is not surprising, therefore, that the comparison of average unit sizes by life-cycle stage in Table 17 shows few significant differences in average unit sizes among owner households. Nonetheless, these data reveal a consistent tendency for homeowners to increase their space consumption

Table 17

SIZE OF HOUSING UNIT AND NUMBER OF PERSONS PER ROOM BY LIFE-CYCLE STAGE: OWNER HOUSEHOLDS, BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Average Number of Rooms per Unit		Average Number of Persons per Room	
	Mean	Standard Error	Mean	Standard Error
1. Young single head, no children	5.14	.29	.25	.06
2. Young couple, no children	5.65	.23	.37	.03
3. Young couple, young children	6.10	.12	.80	.02
4. Young couple, older children	6.52	.19	.82	.04
5. Older couple, older children	6.61	.16	.84	.03
6. Older couple, no children	5.57	.15	.43	.01
7. Older single head, no children	5.52	.15	.24	.02
8. Single head with children	5.79	.25	.70	.06
All stages	6.02	.06	.64	.01

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 887 owner households. The data base excludes about 10 percent of all homeowners living in Brown County in 1974; see Sec. I for an explanation of exclusions.

with household size (stages 1 to 5) and then to reduce it as the household shrinks in stages 6 and 7. When we control for differences in household size, significant differences appear in the space consumption of households early and late in the life cycle, on the one hand, and households in the middle (stages 3 through 5), on the other. This pattern in person-per-room ratios suggests that childless couples purchase homes larger than they currently need in anticipation of future growth in household size; and that older households resist moving to smaller homes after the departure of their children

In addition to the similar tendency between both owners and renters to adjust their space consumption to their household sizes, we find that homeowners' space consumption is also relatively independent of income. Thus, the data in Table 18 indicate that the relationship between space consumption, household size, and income holds for all Brown County households, independent of tenure.* However, this relationship appears stronger for renters than for homeowners, indicating that renter households can alter their space consumption more readily than can owner households.

INCOME AND HOUSING EXPENDITURES

Estimating housing expenditures for homeowners is considerably more difficult than for renters. Although gross rent is a relatively accurate measure of a renter's total housing expenditures, a comparable measure of homeowners' expenditures must include not only debt service, real estate taxes, insurance premiums, and utility expenditures, but also the imputed value of a homeowner's time spent on maintenance and repair as well as the opportunity costs entailed in buying a home rather than investing equivalent savings in some other way. Since we are still resolving these accounting problems, we cannot report on the current housing expenses of homeowners here.

However, we can, in Table 19, show how the values of owner-occupied homes vary by life-cycle stage and how they relate to incomes at each

*We use higher income brackets for homeowners than for renters because relatively few owners have incomes under $5,000 and relatively more have incomes above $15,000.

Table 18

NUMBER OF PERSONS PER ROOM BY INCOME AND LIFE-CYCLE STAGE: OWNER HOUSEHOLDS, BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Persons/Room Ratio by Income ($) in 1973[a]					
	Under 10,000		10,000-14,999		15,000 or Over	
	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error
1. Young single head, no children	.28[b]	.11	.24[b]	.10	.25[b]	.20
2. Young couple, no children	.39[b]	.05	.44[b]	.03	.35	.03
3. Young couple, young children	.82	.05	.82	.03	.75	.04
4. Young couple, older children	.99[b]	.10	.83	.06	.80	.06
5. Older couple, older children	.80	.07	.81	.05	.80	.05
6. Older couple, no children	.44	.01	.47	.02	.47	.03
7. Older single head, no children	.23	.01	.40[b]	.06	.26[b]	.06
8. Single head with children	.72	.07	.62[b]	.09	.96[b]	.13
All stages	.52	.01	.75	.02	.68	.02

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 701 owner households who provided full information on household income. The data base excludes about 10 percent of all homeowners living in Brown County in 1974; see Sec. I for an explanation of exclusions.

[a]Household income includes cash income received during 1973 by all members of the household from all sources.

[b]Estimates based on fewer than 10 observations.

Table 19

ESTIMATED MARKET VALUE OF OWNER-OCCUPIED HOMES BY LIFE-CYCLE STAGE AND INCOME LEVEL OF OWNER-OCCUPANTS: BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Estimated Market Value[a]		
	Income ($) in 1973		
	Under 15,000	15,000 and Over	Total
1. Young single head, no children	16,900[b]	5,000[b]	15,600
2. Young couple, no children	21,950	29,300	26,900
3. Young couple, young children	23,500	30,500	25,500
4. Young couple, older children	25,400	30,800	28,000
5. Older couple, older children	22,200	27,700	25,700
6. Older couple, no children	18,000	27,700	21,000
7. Older single head, no children	17,700	28,800[b]	19,100
8. Single head with children	16,600	15,500[b]	16,500
All stages	21,400	29,100	24,200

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 701 owner households who provided full information on household income and were able to estimate the market values of their homes. The data base excludes about 10 percent of all homeowners living in Brown County in 1974; see Sec. I for an explanation of exclusions.

[a]Respondents' estimates, averaged for all respondents in each category and rounded to the nearest $100.

[b]Estimates based on fewer than 10 sample cases.

stage.* Like renters' housing expenses, average home values tend to increase from stage 1 through stage 4, then to decrease through stage 7. Also similar to renters' expenses, higher income households within each life-cycle stage appear to spend more for their housing than do lower income households. Both exceptions to this pattern, stages 1 and 8, are based on small numbers of sample cases. The estimate of market value for stage 8 indicates one exception to the general similarity between renters' housing expenses and the market values of owner-occupied homes. Although disrupted renter households pay relatively high rents, disrupted owner households occupy relatively inexpensive housing.

Renters' housing expenses reflect both current household characteristics, as measured by life-cycle stage, and current household income. We cannot fully explain, however, why average home values should reflect either variable, since over two-thirds of all homeowners have occupied their present homes for at least five years. Many acquired their current homes during a different life-cycle stage, when their incomes were higher or lower than in 1973.

This issue is partially clarified by Table 20, which shows the ratio of average home value to average income for households in each life-cycle stage by income level.** Among lower income households, this ratio fluctuates within the relatively narrow range of 1.97 to 2.19, with one notable exception--older single-headed households (stage 7). Among higher income homeowners, the ratio varies more but is considerably lower at every life-cycle stage. The ratios for

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*The reader should keep two points in mind while reviewing these results. First, the cell sizes on which certain of these estimates are based are quite small, although the income limits used to group owner households have been collapsed. Second, although unbiased, respondent estimates of market value are subject to considerable error (Kish and Lansing [18]). As a consequence of these two problems, the estimates of market values in each cell have been rounded to the nearest hundred and the estimated standard errors of these estimates have been omitted. These results should be viewed as instructive rather than conclusive.

**Unlike the rent/income ratios reported in Table 15, these ratios were calculated by first averaging the individual observations on home values and on income, then dividing. Such a "ratio estimate" is more reliable for the small samples in some cells of Table 20. Also, the denominators are average household income, not the medians reported in earlier tables.

Table 20

RATIO OF ESTIMATED MARKET VALUE TO TOTAL HOUSEHOLD INCOME BY LIFE-CYCLE STAGE AND INCOME LEVEL: OWNER HOUSEHOLDS, BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Ratio of Market Value to Total Income[a]		
	Income ($) in 1973		
	Under 15,000	15,000 and Over	Total
1. Young single head, no children	1.97[b]	.33[b]	1.67
2. Young couple, no children	2.19	1.57	1.70
3. Young couple, young children	2.12	1.39	1.81
4. Young couple, older children	2.14	1.44	1.70
5. Older couple, older children	2.11	1.12	1.31
6. Older couple, no children	2.08	1.29	1.67
7. Older single head, no children	3.21	1.18[b]	2.37
8. Single head with children	2.06	.72[b]	1.84
All stages	2.19	1.30	1.67

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 701 owner households who provided full information on household income and were able to estimate the market values of their homes. The data base excludes about 10 percent of all homeowners living in Brown County in 1974; see Sec. I for an explanation of exclusions.

[a]Ratios calculated by first averaging the individual observations on home value and on income, then dividing.

[b]Estimates based on fewer than 10 sample cases.

households in stages 1 and 8 are strikingly low, but are based on only a few observations.

The explanation for the one definite outlier in this table, the ratio for lower income households in stage 7, is mentioned above. Most of these households purchased their homes many years earlier when their incomes were higher. Their incomes dropped when they retired, but they still live in the same houses. The higher income households in stage 7 presumably are those with members who still work, so their incomes and home values are more reasonably related.

Table 21 compares the presence of property encumbrances by life-cycle stage and income. Nearly every home is mortgaged in stages 2 and 3, but 70 percent are debt free by stage 6 and over 80 percent are debt free by stage 7. Among lower income homeowners in stage 7, almost 90 percent own their homes free and clear--explaining why these households are not catastrophically overburdened by the value/income ratio reported in Table 20. When the mortgage loan has been repaid, the value/income ratio loses much of its significance as an indication of housing expenses and becomes instead a measure of a household's asset position. From this perspective, the low-income elderly households appear considerably more comfortable.

These data also indicate that higher income households in each stage are more likely to have mortgages, especially in stages 5 and 6. Two factors could account for this difference. Since higher income households purchase more expensive houses, the mortgages they obtain when they purchase homes may have longer repayment times. Alternatively, higher income homeowners may simply have purchased their homes more recently. This second explanation might reflect a greater willingness among higher income owners to sell their first houses and purchase new homes when their housing needs change.

Table 21

PERCENTAGE OF HOMEOWNERS WITH MORTGAGES, BY LIFE-CYCLE STAGE AND OWNER'S INCOME: BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Percent of Homeowners with Mortgages,[a] by Owner's Income in 1973		
	Under $15,000	$15,000 and Over	All Incomes
1. Young single head, no children	86.6[b]	--	77.0
2. Young couple, no children	100.0	100.0	100.0
3. Young couple, young children	92.2	96.1	93.3
4. Young couple, older children	80.6	83.2	81.9
5. Older couple, older children	59.8	66.6	64.2
6. Older couple, no children	26.8	35.2	29.4
7. Older single head, no children	14.4	50.6[b]	19.0
8. Single head with children	69.3	50.0[b]	67.9
All stages	63.9	74.3	67.7

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 701 owner households who provided full information on household income and were able to estimate the market values of their homes. The data base excludes about 10 percent of all homeowners living in Brown County in 1974; see Sec. I for an explanation of exclusions.

[a]Includes homes encumbered by mortgages or being purchased under land contracts. The latter amount to about 3 percent of all encumbrances.

[b]Percentages for households in this income category based on fewer than 10 sample cases.

V. FACTORS AFFECTING TENURE CHOICE

Most households in Brown County begin the life cycle as renters, but nearly all become homeowners by the middle stages; later in the life cycle, many return to rental units. Although our cross-sectional data cannot trace this sequence for individual households, the distribution of households by tenure at successive life-cycle stages implies it* and the analysis of tenure changes among local movers confirms it.** The strength of this pattern indicates that the household characteristics defining life-cycle stages are closely related to those influencing the choice of tenure. However, since at no life-cycle stage do all households either own or rent, it is apparent that not all the determinants of tenure choice change in conjunction with life-cycle stage.

In this section, we identify additional determinants of tenure choice by comparing the characteristics of renters and owners at each life-cycle stage. These comparisons highlight the household changes that trigger home purchases by nearly all families early in the life cycle, and those which later cause many to sell their homes and return to rented quarters.

HOUSEHOLD CHARACTERISTICS OF RENTERS AND OWNERS

The first two columns of Table 22 show how renters and owners are distributed by life-cycle stage. Renters are disproportionately represented among households at both ends of the life cycle: 62 percent of all renters are in stages 1 to 3 and 17 percent are in stage 7. An additional 9 percent of all renters are single heads with children (stage 8). Owner households, on the other hand, are concentrated in the middle of the life cycle (stages 3 through 6) and nearly absent from stages 1, 2, and 8. Clearly, the timing of tenure choices is tied to the demographic and economic changes experienced over the life cycle.

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*See Table 6, p. 18.

**See Table 26, p. 61.

Table 22

HOUSEHOLD CHARACTERISTICS OF RENTER AND OWNER HOUSEHOLDS BY LIFE-CYCLE STAGE: BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Percentage Distribution by Life-Cycle Stage		Average Number of Members				Average Age of Male or Only Head			
			Renters		Owners		Renters		Owners	
	Renters	Owners	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error
1. Young single head, no children	26.8	.8	1.68	.03	1.26	.23	24.7	.23	35.3	1.75
2. Young couple, no children	15.9	3.6	2.01	.01	2.00	.02	24.9	.23	29.4	1.20
3. Young couple, young children	19.6	28.8	3.83	.06	4.73	.11	27.1	.26	32.8	.54
4. Young couple, older children	3.0	13.3	5.17	.25	5.16	.23	36.3	.71	39.2	.71
5. Older couple, older children	1.8	16.1	5.55	.30	5.46	.23	54.2	.73	51.7	.44
6. Older couple, no children	6.6	22.8	2.18	.04	2.28	.05	64.2	.89	62.7	.84
7. Older single head, no children	16.9	11.4	1.14	.02	1.29	.07	66.3	.54	67.6	1.26
8. Single head with children	9.4	3.2	3.26	.09	4.06	.34	31.7	.70	44.1	2.31
All stages	100.0	100.0	2.42	.02	3.81	.06	36.4	.16	47.7	.32

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 2,835 renter and 887 owner households. The data base excludes about 12 percent of all households living in Brown County in 1974; see Sec. I for an explanation of exclusions. Distributions may not add exactly to totals because of rounding.

The comparisons of household sizes and heads' ages in the remaining columns of this table identify two factors contributing to differences in the timing of tenure decisions within stages. Although renter and owner households in most life-cycle stages are about the same size and thus experience similar pressures for living space, households in stages 3 and 8 are exceptions. Since most households first purchase a home in stage 3, the difference of nearly one person in household size in this stage is particularly instructive. The births of couples' second and third children intensify the pressure to find larger homes with outdoor play space for these growing families. These pressures point to a single-family house--and apparently to its purchase, if possible.

Within almost every life-cycle stage, renters and owners differ greatly in age. In the early stages of the life cycle, household heads who are owners tend to be older than those who are renters; in the later stages, owners tend to be younger than renters. Thus, at each stage, owners are closer than renters to their peak lifetime earnings--another factor contributing to timing differences in the tenure choices of Brown County households.

The employment and income profiles of renters and owners are compared directly in Table 23. With the exception of stage 1, owner household heads are more likely to be employed than are renters. Owner households also tend to have more members employed than renter households. These differences are particularly instructive in stages 3 and 6--since in stage 3 most households first purchase a home; and in stage 6, with their children gone, most households reassess their space requirements.

These differences in employment are the principal factors accounting for the pattern of income disparities between renter and owner households at each life-cycle stage, shown in the last column of Table 23. Owners are apparently more prosperous than renters in all life-cycle stages, especially stages 2, 5, and 6. In the earlier stages, they are therefore better able to accumulate a downpayment on a house

Table 23

EMPLOYMENT AND INCOME CHARACTERISTICS OF RENTER AND OWNER HOUSEHOLDS BY LIFE-CYCLE STAGE: BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Percent of Heads Employed				Average Number of Workers				Median Income ($) in 1973	
	Renters		Owners		Renters		Owners			
	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Renters	Owners
1. Young single head, no children	83.7	1.5	73.8	10.7	1.40	.03	.91	.23	7,313	10,907
2. Young couple, no children	87.2	1.8	98.1	7.9	1.61	.03	1.55	.14	11,565	17,637
3. Young couple, young children	88.4	1.5	97.5	1.5	1.23	.03	1.32	.05	10,325	13,084
4. Young couple, older children	93.2	3.0	98.4	1.1	1.63	.10	1.75	.09	12,891	14,733
5. Older couple, older children	74.2	4.1	93.2	2.9	1.59	.15	2.17	.12	11,282	18,218
6. Older couple, no children	43.6	4.6	63.5	4.2	.82	.08	1.10	.08	7,500	11,360
7. Older single head, no children	37.0	2.6	37.0	6.0	.46	.03	.57	.08	3,948	5,077
8. Single head with children	47.1	3.7	66.4	12.3	.61	.05	.92	.17	4,669	9,004
All stages	71.3	.9	81.1	1.4	1.14	.02	1.37	.04	8,153	13,205

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 2,835 renter and 887 owner households. Estimates of household income are based on samples of 2,490 renter and 733 owner households who provided full information on household income. The data base excludes about 12 percent of all households living in Brown County in 1974; see Sec. I for an explanation of exclusions.

before the wife leaves the labor force to bear and raise children. In the later stages, the more prosperous homeowners are less often impelled to economize by moving to smaller homes after the children have left the household.

HOUSING TENURE, LIFE-CYCLE STAGE, AND INCOME

Our data indicate that housing tenure varies systematically over life-cycle stages: 94 percent of all households in stage 1 are renters; but by stage 5, over 95 percent are owners; in later stages, the proportion of owners decreases nearly to 60 percent.

However, our tabulations also show that several variables that might affect a household's current tenure follow a similar pattern, first increasing, then decreasing over life-cycle stages. These factors include household size, number of employed persons, and household income. The life-cycle variable may act as a proxy for one or more of these other variables, with little or no independent power to distinguish renters from owners.

To test this hypothesis, we estimated the coefficients of a linear regression model in which the dependent variable is housing tenure, having a value of 1 for homeowners and 0 for renters. The independent variables in the model are the household's stage in the life cycle and certain other household characteristics. We used a two-stage generalized least squares (GLS) method to estimate the coefficients of the model; this method is more efficient than ordinary least squares (OLS) for estimating a linear probability function.*

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*We used a two-step GLS procedure. In the first step, we used OLS to estimate the probability that a household was a homeowner ($\hat{y}$), given the values of the independent variables for each observation. In the second step, we weighted both the dependent and independent variables of each observation by $[\hat{y}(1-\hat{y})]^{-.5}$, then reestimated the coefficients using OLS.

Goldberger [19] shows that this procedure corrects for the heteroscedasticity of the error terms that occurs when the dependent variable is binary. This procedure does not, however, guarantee that the estimated probabilities in the first step will fall in the closed interval [0,1]. We assigned the values .01 and .99 to the estimated probabilities that fell outside this interval. Smith [20] used Monte Carlo

The independent variables used to predict tenure in this model are also binary, with two exceptions. The binary variables include dummy variables identifying the household's life-cycle stage, with stage 2 as the standard case, which is therefore not explicitly included; the employment status of the household head; the employment status of the spouse in households headed by couples; and whether or not the household plans to move during the coming year. To supplement the life-cycle classification of households by the presence or absence of children in the household, we have included the number of children as a variable. Finally, household income in 1973 (the year preceding the survey) is included. Two variables describing the educational status of the household head--number of years of schooling and current enrollment status--are omitted here because preliminary results indicated that they were of little help in predicting tenure.

The results of this regression reported in Table 24 clearly indicate that the life-cycle variables reflect important differences in tenure preferences that are independent of other household characteristics, including income. Except for stage 8 (disrupted households), the coefficients for the life-cycle variables are all significantly different from zero and generally different from each other;* and their values are consistent with our earlier account of the changing pattern of tenure over the life cycle.

Not surprisingly, the male head's employment status has no effect on the probability that the household currently owns, because the effect of income is held constant. On the other hand, the coefficient for the

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methods to evaluate the effects of this assignment rule on the estimators and found them to be small and to diminish as sample size increases.

Note that the use of a nonlinear estimating procedure such as logit analysis can yield still more efficient estimators than those we present. However, the computational expense of a nonlinear method was not justifiable for this preliminary analysis.

*Although Table 24 shows the results of tests for coefficients that are significantly different from zero, it does not show the results of pairwise tests for significant differences between the values of the coefficients for different life-cycle stages. Standard tests indicated significant differences between all pairs (except stages 3 and 7, 5 and 6, and 1 and 8). Recall that the coefficient for stage 8 is also not significantly different from zero.

Table 24

REGRESSION OF HOUSING TENURE ON HOUSEHOLD CHARACTERISTICS: BROWN COUNTY, WISCONSIN, 1974

Variables	Possible Values	Regression Statistics		
		Coefficient	Standard Error	Value of t
Dependent				
Housing tenure	Owner = 1, renter = 0	--	--	--
Independent				
Stage in life cycle				
1. Young single head, no children	Yes = 1, no = 0	-.0207	.0071	2.92[a]
3. Young couple, young children	Yes = 1, no = 0	.0918	.0195	4.71[a]
4. Young couple, older children	Yes = 1, no = 0	.3186	.0399	7.99[a]
5. Older couple, older children	Yes = 1, no = 0	.5121	.0306	16.73[a]
6. Older couple, no children	Yes = 1, no = 0	.4652	.0298	15.58[a]
7. Older single head, no children	Yes = 1, no = 0	.0875	.0159	5.50[a]
8. Single head with children	Yes = 1, no = 0	-.0133	.0155	.86
Employment status				
1. Male or only head employed	Yes = 1, no = 0	.0042	.0752	.06
2. Wife of male head employed	Yes = 1, no = 0	-.0360	.0103	3.51[a]
Other variables				
1. Number of children under 18 years old	Zero or positive integer	.0257	.0052	4.97[a]
2. Plans to move within a year	Yes = 1, no = 0	-.0713	.0071	9.99[a]
3. Annual income of household members	Positive continuous ($000)	.0080	.0007	12.04[a]
Regression constant	--	.0927	.0385	2.41

SOURCE: Analysis by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Regression analysis was performed on records for 2,490 renter and 733 owner households that were complete in all variables listed. Coefficients were estimated by generalized least squares method, with each observation weighted by $[\hat{y}(1-\hat{y})]^{-.5}$ in the second stage.

[a]Coefficient significantly different from zero at .99 level of confidence. F = 121.36 with 12 and 3,206 degrees of freedom. Adjusted R^2 = .310.

wife's employment status is significant and negative. This coefficient may reflect a history of uncertain earnings by the husband that induces the wife to work in order to supplement household income. Such a couple would probably hesitate to obligate a fixed amount over time to mortgage payments and hence are more likely to rent. On the other hand, working couples may simply prefer the less onerous domestic duties of renters.

The coefficient for the number of minors in the household is positive and significant. A greater number of minors may increase the likelihood of homeownership for either of two reasons. First, a larger family requires more space, and would be more likely to seek a single-family home; and other studies indicate that single-family homes are cheaper to own than to rent, at least in terms of out-of-pocket costs. Second, this variable may act as a proxy for the age of the head. Older heads are likely to be more settled and thus to be homeowners; they are also likely to have larger families.

The negative coefficient for the variable representing the household's near-term mobility plans is difficult to interpret. The variable appears to be endogenous to the equation and therefore simultaneous equations bias may affect the value of the coefficient.* Renters are more likely to move than are homeowners because they have lower moving costs--they need not sell their current residences and pay the transaction costs. In its present form, the coefficient indicates only that renters are more likely to move, not that current mobility plans are a significant indicator of current tenure status.

The relationship between current household income and housing tenure is statistically significant but amazingly small. A family with an income of $15,000 is more likely to own its home than is a family earning $8,000, but the incremental probability is only .064. We would have been less surprised to find a larger coefficient with a larger standard error. Homeownership cannot readily be interpreted as affecting income, but neither is it clear that current income relates to the earlier

*In other words, the same factors that determine tenure also govern short-term mobility plans. Consequently, this variable may contribute no independent explanatory power to the equation.

decision to buy; at best, it indicates the household's ability to meet mortgage payments.

Because nearly all homeowners live in single-family houses, it is reasonable to wonder whether the regression model reported above is misspecified in its dependent variable. That is, we may be observing the factors that influence the probability that a household will occupy a single-family home, rather than its probability of homeownership.

One way to test for such a misspecification is to focus on the sample of renter households, most of whom live in multiple dwellings, but about 15 percent of whom live in single-family houses. Using records for renters only, we replaced tenure in the regression model with a binary variable for occupancy of a single-family house, then estimated the coefficients of the altered model. If the coefficients did not change much from those in Table 24, we would conclude that the misspecification was likely.

The two sets of coefficients were quite dissimilar. In the altered model, the only variables with significant coefficients were life-cycle stages 1, 4, 5, and 6; number of minors; and plans to move. Differences in household income had no apparent effect on the likelihood that a renter household would occupy a single-family house. We do not think that tenure is acting as a proxy for type of housing in the original model.

VI. RESIDENTIAL MOBILITY OVER THE LIFE CYCLE

An examination of current consumption patterns provides a benchmark for future comparisons. It also suggests that significant consumption adjustments accompany the natural progression of a household through its life cycle. A change in household composition compels a reassessment of the suitability of current housing. An increase in income enables a household to buy or rent better housing even if underlying preferences remain unchanged, whereas a decrease in income can force a household to adjust its housing expenditures downward. Prior research (Rossi [21]; Morgan, et al. [22]; Bureau of the Census [23]) indicates that local mobility provides a particularly good index of this adjustment because most local moves occur as households attempt to adjust their housing to their changing demographic and economic circumstances.

In this section, we examine the mobility patterns of Brown County households. This analysis complements the comparison of housing consumption reported above for two reasons. First, as Maisel [24] has pointed out, the appropriate population for an analysis of current housing choices is that making consumption adjustments rather than that whose current housing reflects past consumption decisions. Second, this examination of mobility patterns uses retrospective longitudinal data on individual mover households in contrast to the previous results, the interpretation of which was based on longitudinal inferences from cross-sectional data. The specific dimensions of mobility behavior discussed below include frequency, type, location, rationales, and future plans.

FREQUENCY OF MOVING

Although most moves result from the natural progression of households through the life cycle, we do not expect the frequency or type of mobility to be uniformly distributed over the stages in the life cycle. Since moving is a mechanism through which the household matches its housing consumption to its changing characteristics and resources,

the nature of household mobility will be conditioned by the types of changes the household undergoes. The results presented in Table 25 provide a useful index of these differences. The first six columns report the percentage of households who moved during the year preceding the baseline survey; the last six columns report the percentage of households who moved during the preceding five years.

These data indicate sharp differences in mobility by both life-cycle stage and tenure. Among both renters and owners, the percentage of mover households declines sharply from the early stages of the life cycle to stage 5, older couples with children. This pattern undoubtedly reflects the considerable instability during early stages of the life cycle of household size and composition on the one hand and of employment and income on the other hand. As childbearing is completed and career patterns become more definite, both the household's housing needs and the resources available to satisfy those needs stabilize. The slight increase in the mobility of renter households in stages 6 and 7 probably reflects an adjustment in consumption due to the declining household sizes and incomes common to these stages.

MOBILITY AND HOUSING TENURE

As striking as the differences in mobility over the life cycle are the differences between renters and owners. At every life-cycle stage, renters are significantly more likely to move than owners. Several factors contribute to this difference. First, owner-occupied homes are much larger than rented units, so that owner households can adapt more readily to changes in household size. Second, the decision to purchase a home is a manifestation of the household's stability. Buying a house is the single largest investment most households ever make. This decision is unlikely until the household's income is relatively stable and unless the household is committed to remaining in the residence for some time. Research by Shelton [25], for example, indicates that owning is less expensive than renting only if the period of ownership exceeds four years. Third, the circumstances of homeownership and the expenses associated with moving are likely to reinforce the household's stability so that opportunities that might have appealed to them as renters are foregone as homeowners.

Table 25

RESIDENTIAL MOBILITY BY HOUSING TENURE AND LIFE-CYCLE STAGE:
BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Percentage of Households Who Moved during Preceding Year[a]						Percentage of Households Who Moved during Preceding 5 Years[b]					
	Renters		Owners		Total		Renters		Owners		Total	
	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error
1. Young single head, no children	72.6	1.8	9.6	13.2	68.5	1.9	95.7	.9	65.1	6.1	93.7	.9
2. Young couple, no children	65.7	2.9	45.0	13.1	58.6	4.9	98.9	.6	78.7	4.9	91.9	1.7
3. Young couple, young children	43.6	2.5	14.2	3.2	20.8	2.6	91.5	1.5	62.6	4.6	61.9	3.6
4. Young couple, older children	32.9	4.7	8.3	4.3	10.4	4.0	72.6	6.1	28.0	6.4	31.9	5.8
5. Older couple, older children	18.5	3.2	.5	.4	1.3	.4	54.7	5.4	12.6	4.4	14.5	4.2
6. Older couple, no children	27.9	2.8	.6	.5	3.7	1.5	63.9	3.7	10.9	3.2	16.8	2.9
7. Older single head, no children	23.2	2.1	.7	3.5	9.4	2.3	55.5	2.2	13.2	4.9	29.6	3.1
8. Single head with children	45.4	3.8	8.9	11.5	29.3	5.5	87.4	2.2	21.4	9.1	58.2	4.2
All stages	49.8	1.0	7.4	1.3	20.1	1.0	84.3	.7	31.7	2.0	47.5	1.4

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site 1, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 2,835 renter and 887 owner households. The data base excludes about 12 percent of all households living in Brown County in 1974; see Sec. I for an explanation of exclusions.

[a] Year preceding the interview date.

[b] Five years preceding the interview data.

The household's satisfaction with its move and the probability of its moving again in the near future will depend on the type of move that it makes. Table 26 examines the characteristics of moves over life-cycle stages in terms of the tenure of the prior and current units. These data are limited to the 80 percent of all households who moved at least once in the five years preceding the survey and whose last prior residence was also in Brown County. Detailed data on prior residences were collected for only these local moves.

As the data indicate, the character of local moves varies with life-cycle stage. Almost 70 percent of stage 1 moves were between rental units and another 20 percent were to form new households in rental units. This apparent preference for renting is consistent with the transitional character of these households. Confronting the strong probability of future changes in household composition and resources, young singles limit their commitments and retain their flexibility by renting. As their circumstances become more definite in stages 2 and 3, the proportion of households moving between rental units or forming new households in rental units declines sharply and the proportion purchasing homes increases. By stage 3 (young couples with young children), 55 percent of all moves entail a change from renting to owning and over 70 percent of all moves are into owned homes. By stage 5, over 95 percent of all households own their homes (Table 5). Consequently, the frequency of moves from rented to owned units declines (in our data, to zero) and the proportion of moves between owned units is at its maximum. Since many of these households purchased their first homes earlier in the life cycle when the balance between their resources and their consumption requirements was tighter, many of these moves may be motivated by the later shift to a more favorable balance of these factors.

Adjustments to the customary decreases in income and household size in life-cycle stages 6 and 7 are reflected in a decline in the proportion of moves between owned units and an increase in those from owned to rented units or between rented units.

This pattern of moving results in characteristic tenure changes by life-cycle stage. Only in the first stage (trivially) and in the last two stages are homeowners more likely to move to a rented unit

Table 26

CHANGES IN HOUSING TENURE FOR LOCAL MOVERS BY LIFE-CYCLE STAGE: BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Percentage Distribution of Households by Former and Current Tenure							Number of Last Local Moves
	Former Owners by Current Tenure		Former Renters by Current Tenure		New Households[a] by Current Tenure		Total	
	Renters	Owners	Renters	Owners	Renters	Owners		
1. Young single head, no children	5.2	--	69.4	3.6	20.3	1.6	100.0	2,591
2. Young couple, no children	1.0	5.3	41.8	24.8	21.5	5.5	100.0	2,287
3. Young couple, young children	.6	14.1	24.3	55.0	4.2	1.8	100.0	6,129
4. Young couple, older children	1.9	39.2	21.5	36.5	.9	--	100.0	850
5. Older couple, older children	2.5	80.6	16.3	--	--	.5	100.0	589
6. Older couple, no children	9.1	58.1	24.6	6.1	--	2.1	100.0	1,085
7. Older single head, no children	27.9	23.9	41.4	4.8	2.0	--	100.0	1,412
8. Single head with children	9.6	3.8	66.7	12.3	7.6	--	100.0	1,136
All stages	5.1	17.6	38.1	28.7	8.7	1.9	100.0	16,079

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries compare housing tenure before and after the respondent's last local move. Entries are estimates based on a stratified probability sample of 2,039 households whose last move occurred during the five years preceding the interview and who moved within Brown County. The data base excludes about 12 percent of all households living in Brown County in 1974; see Sec. I for an explanation of exclusions. Distributions may not add exactly to totals because of rounding.

[a]Prior to last move, respondent was not a household head.

than to another owned unit. Conversely, only in stages 3 and 4, when most households are purchasing their first homes, are renters more likely to purchase a home than to move to another rented unit. These retrospective data on the behavior of individual households support the inferences about tenure changes by life-cycle stage that were drawn from the cross-sectional comparisons discussed earlier in this note.

REASONS FOR MOVING

The life-cycle differences in movers' housing choices undoubtedly reflect the different circumstances that prompt moves in each life-cycle stage. Tables 27 and 28 compare the primary reasons for moving reported by households in each stage, giving us additional insight into the factors at work.

Table 27 classifies recent movers' reported motivations into seven primary reasons for moving. Coding interview responses of this type is difficult, because different respondents may express essentially the same motivation quite differently. For example, following the birth of a couple's first child, they may decide that they need a home with a second bedroom; the respondent may describe the decision as prompted by changes in family circumstances or by a desire for more space. Our coding was guided by the respondent's own emphasis, and the results shown in Table 28 suggest that this was a valid criterion.

Overall, a fourth of all movers specified some change in family circumstances as their primary reason for moving (Table 27). Over 40 percent mentioned a desire for homeownership, a single-family house, more space, or better quality as the primary reason. It should not be surprising in a small metropolitan area with such a homogeneous population that few respondents cited location (5 percent) or neighborhood characteristics (10 percent) as the motives for their moves.* Involuntary moves accounted for about 9 percent of the total; and the explicit desire for cheaper housing, about 7 percent.

*However, several other studies, some of which were conducted in larger urban areas, also find that location and neighborhood characteristics are subordinate as reasons for moving to changes in family circumstances (Rossi [21]; Greenbie [26]; Gans [27]).

Table 27

CLASSIFICATION OF PRIMARY REASONS FOR LOCAL MOVES AND RESPONSE FREQUENCIES: BROWN COUNTY, WISCONSIN, 1974

Primary Reason for Moving	Characteristic Responses Included	Response Frequency	
		Number	Percent
• Change in family circumstances	• Change in marital status, change in family size, establish own household, family or health problem, new job, job search, attend school.	4,285	26.8
• Wanted cheaper housing	• Wanted lower rent, cheaper place to live.	1,033	6.5
• Wanted change in tenure or structure type	• Wanted to own, wanted to rent, wanted single-family house.	3,114	19.5
• Wanted change in space or quality	• Wanted larger or smaller unit, larger rooms, specific floorplan, nicer place, cleaner place, better quality.	3,784	23.6
• Wanted more convenient location	• Wanted to be closer to work, to schools, to retail stores.	756	4.7
• Wanted better neighborhood	• Wanted quieter neighbors, friendlier neighbors, more neighboring children, nicer neighborhood, safer area, more open space, more trees and yards.	1,538	9.6
• Had to leave former residence	• Residence no longer available, problems with landlord.	1,494	9.3
All reasons		16,004	100.0

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Population response frequencies are estimates from a stratified probability sample of 2,039 households whose last move occurred during the five years preceding the survey and who moved within Brown County. The data base excludes about 12 percent of all households living in Brown County in 1974; see Sec. I for an explanation of exclusions. Distributions may not add exactly to totals because of rounding.

Table 28

DISTRIBUTION OF PRIMARY REASONS FOR LAST LOCAL MOVE BY LIFE-CYCLE STAGE:
BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Percentage Distribution of Households by Primary Reasons for Moving[a]							
	Change in Family Circumstances	Wanted Cheaper Housing	Wanted Change in Tenure or Structure Type	Wanted Change in Space or Quality	Wanted More Convenient Location	Wanted Better Neighborhood	Had to Leave Former Residence	All Reasons
1. Young single head, no children	45.4	11.4	3.4	16.7	3.9	7.9	11.4	100.0
2. Young couple, no children	45.4	10.5	12.4	17.0	2.0	8.0	4.7	100.0
3. Young couple, young children	15.5	3.6	37.0	28.0	.6	10.3	4.9	100.0
4. Young couple, older children	10.8	3.2	32.5	32.7	2.5	10.7	7.7	100.0
5. Older couple, older children	13.4	1.0	10.5	6.1	41.4	18.0	9.5	100.0
6. Older couple, no children	22.1	5.6	4.0	23.3	22.8	12.8	9.4	100.0
7. Older single head, no children	32.3	3.7	5.0	21.3	2.2	8.6	26.8	100.0
8. Single head with children	24.3	11.8	2.6	34.4	2.9	6.3	17.6	100.0
All stages	26.8	6.4	19.5	23.6	4.7	9.6	9.3	100.0

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site 1, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 2,039 households whose last move was within Brown County. The data base excludes about 12 percent of all households living in Brown County in 1974; see Sec. I for an explanation of exclusions. Distributions may not add exactly to totals because of rounding.

[a]See Table 27 for characteristic responses included in each reason for moving.

The ordering of primary reasons in Table 27 was chosen because it corresponds fairly well to the shifts in emphasis over the household life cycle, as demonstrated in Table 28. Note there that the greatest emphasis on changes in family circumstances comes during the first two stages in the life cycle--those in which housing cost is most salient in decisions to move. During stages 3 and 4, the emphasis shifts to tenure, type of structure, space, and quality.

During stage 5, location suddenly emerges as the major consideration and neighborhood characteristics increase in importance. During stages 6 and 7, the variety of frequently cited reasons increases; they include changes in family circumstances, change in space or quality, location, and neighborhood characteristics. In stage 7, involuntary moves are prominent for the first time, accounting for over a fourth of the total.

For disrupted households (stage 8) outside the regular sequence of stages, the desire for change in space or quality is the leading reason for moving, but two other reasons--changes in family circumstances and involuntary moves--are also prominent.

It should not be surprising that changes in household circumstances are so frequently cited by households in stages 1 and 2 of the life cycle. These households were mostly formed by persons leaving their parental homes. Among young couples with children, family circumstances are less subject to drastic change, but the housing choice made in stage 2 is increasingly inadequate for the growing, child-centered family--thus the great emphasis on homeownership, single-family houses, more space, or better quality, which are cited as primary reasons for moving by nearly two-thirds of the households in stages 3 and 4.

The sudden emphasis on convenience of location and neighborhood quality that occurs in stage 5 probably reflects changes both in household characteristics and in the neighborhoods chosen at earlier stages. Ninety-five percent of the couples in stage 5 are homeowners (Table 6) and only 13 percent had moved in the five years preceding the survey (Table 25). Their children are older and are beginning to leave home; the parents may well begin to consider their own convenience. In a growing urban area, fringe development alters the relative positions of

older neighborhoods in the overall scheme of land use and traffic patterns. The characters of neighborhoods also change as their residents age or move and are replaced by new households.

These factors should continue to be important for households in stage 6, but added to them are the sharp decreases in both household size and income that are characteristic of this stage--thus the increased emphasis found here on changes in family circumstances and considerations of space and quality. Following the death of one spouse (stage 7), the survivor is likely to be either physically or financially unable to maintain a single-family home, so involuntary moves are often reported.

LOCATIONAL PREFERENCES OF MOVERS

Although neither convenience of location nor neighborhood characteristics are prominent in our respondents' articulated reasons for moving, it does not follow that we should expect spatially random movement within Brown County. First, the decision to move and the choice of a new residence are not necessarily determined by the same factors (Butler [28]). Indeed, Greenbie [26] indicates that although few households in his study cited neighborhood factors as their primary reasons for moving, a majority cited improved surroundings as the most important result of their moves. Second, in most communities, similar kinds of housing tend to cluster in neighborhoods, so that those who seek the same kinds of housing tend to look in the same places.

Neighborhood distinctions within Brown County are minimal. Although areas the size of census tracts can be distinguished by different central tendencies in either their housing characteristics or their population characteristics, the central tendencies themselves are, with some notable exceptions, weak. But the county does exhibit the common pattern of declining residential density and more recent residential development as one moves from the center of Green Bay outward.

To test for differences in locational preferences by life-cycle stage, we divided the county crudely into concentric rings, following the tradition of urban sociological analysis (Burgess [29]; Schnore [30]). We constructed the rings by geographic aggregation of the 108

small neighborhoods into which we have divided the county. The divisions correspond generally to the inner and outer portions of the city of Green Bay, a suburban belt, and the rural remainder of the county.

Table 29 shows how local movers have avoided or favored each ring in recent years. The entries in the table are ratios for each area of move-ins to move-outs among our sample of household heads who recently moved. Thus, an entry greater than unity indicates that on balance

Table 29

INDEX OF LOCATIONAL PREFERENCES OF LOCAL MOVERS BY LIFE-CYCLE STAGE: BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Ratio of Move-ins to Move-outs				Number of Last Local Moves
	Inner City	Outer City	Suburbs	Rural Area	
1. Young single head, no children	1.12	1.10	.66	.70	2,532
2. Young couple, no children	.86	1.31	1.02	1.05	2,273
3. Young couple, young children	.66	1.20	1.69	.86	6,068
4. Young couple, older children	.53	1.36	.88	2.24[a]	848
5. Older couple, older children	.52	4.07[a]	.64[a]	1.00[a]	588
6. Older couple, no children	.79	1.47	.87	3.39[a]	1,085
7. Older single head, no children	.99	1.38	.96	.31[a]	1,409
8. Single head with children	.96	1.64	.87	.93[a]	1,132
All stages	.83	1.32	1.12	1.03	15,994

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 2,039 households whose last move occurred during the five years preceding the survey and who moved within Brown County. The data base excludes about 12 percent of all households living in Brown County in 1974; see Sec. I for an explanation of exclusions.

[a]Either the numerator or the denominator or both are based on fewer than ten observations.

the area was attracting local movers; an entry less than unity indicates that the area was losing them. It is important to remember that the size of the ratio does not reflect the absolute numbers of in- or out-movers, only the relationship between the two flows. Moreover, each area may gain or lose population in ways not reflected in this table--i.e., by nonlocal moves or by births and deaths among those living there.

Overall, the process of local movement has been shifting population out of the inner city. The most attractive area is clearly the outer city, followed by the suburbs. The rural area of the county is close to a balance of local in-and-out movement.

There are notable differences in the pattern of local movement by life-cycle stage. Young single persons compose the one group that, on balance, is attracted to the inner city. Older single persons and disrupted households are neutral, but couples in stages 2 through 6 find the outer rings more attractive.

Unless some of the footnoted ratios based on small numbers of observations are truly significant, the outer-city ring is the most attractive residential environment to movers in nearly all life-cycle stages. The clearest exceptions are movers in stage 3 (young couples with young children), who prefer the suburban ring. The very large number of movers in this stage--38 percent of the total--makes them a potent element of population redistribution within the county and helps to explain how Green Bay's suburbs have grown in the face of the generally negative net flows among movers in the other stages of the life cycle.

We suspect that the patterns noted above are closely related to the kinds of housing that predominate in each ring, with neighborhood qualities and locational convenience in second and third place, respectively. As we saw earlier, nearly all households in stage 1 are renters, and nearly half of all the housing in the inner city consists of rental units. As couples marry and bear children, they seek single-family homes and are willing to undertake the long-term commitments implied by homeownership. The appropriate housing stock is located mostly in the outer ring of the city and in the suburbs. In the outer city, one is

more likely to find rental units, including single-family homes, than in the newly developed suburbs, so the suburbs are less appealing to homeowners in the later stages of the life cycle who want to shift back to rental tenure or to apartment living and still be close to retail stores, churches, and doctors' offices.

PLANS TO MOVE

These comparisons of mobility patterns verify the life-cycle progression as a major factor generating residential mobility in Brown County. They also document the household factors contributing to the differences in mobility rates between renters and owners. To round out the picture, we now examine the mobility plans of renter households in Brown County. This examination is limited to renters because only 2 percent of all owners plan to move in the next year, in contrast to 34 percent of all renters. Renters' plans are detailed in Table 30. Over 70 percent of the planned moves were to destinations within Brown County and 25 percent were to destinations outside the county. The planned long-distance moves, which are most often motivated by employment changes, follow the expected pattern of monotonic decrease from stage 1 through stage 7. On the other hand, local mobility plans follow a step-function, with little difference between the first four life-cycle stages, followed by sharp decreases in stage 5 and again in stage 7.

Comparing renters' plans with their performance (Table 25), it is evident that households in the early and late life-cycle stages significantly underestimate the likelihood of future moves. The high proportion of the moves motivated by family circumstances among these households (Table 28) suggests that they are unprepared for either the extent or the timing of the changes in family characteristics, employment, income, and housing needs to which they are subject. For those in the middle stages of the life cycle, for whom changes in household composition and housing needs are better articulated, the correspondence between mobility plans and actual moves is quite close; although moves are frequent, they do not appear to be unexpected.

Table 30

MOBILITY PLANS OF RENTER HOUSEHOLDS BY LIFE-CYCLE STAGE:
BROWN COUNTY, WISCONSIN, 1974

Stage in Life Cycle	Percentage Distribution of Households by Mobility Plans for Coming Year[a]						
	Plan to Move, by Expected Destination				Might Move, but Plans Uncertain	Do Not Plan to Move	Total
	Within Brown County	Outside Brown County	Destination Uncertain	Total			
1. Young single head, no children	30.4	16.1	1.4	47.9	9.3	42.8	100.0
2. Young couple, no children	30.0	9.7	2.4	42.1	9.1	48.8	100.0
3. Young couple, young children	29.5	8.6	.5	38.6	11.6	49.8	100.0
4. Young couple, older children	29.3	7.8	1.1	38.2	11.5	50.3	100.0
5. Older couple, older children	15.6	5.6	--	21.2	6.7	72.1	100.0
6. Older couple, no children	14.4	1.0	--	15.4	7.2	77.4	100.0
7. Older single head, no children	5.2	.9	.8	6.9	7.4	85.7	100.0
8. Single head with children	28.9	4.8	.9	34.6	6.8	58.6	100.0
All stages	24.4	8.6	1.1	34.1	9.0	56.9	100.0

SOURCE: Tabulations by HASE staff of records of the survey of tenants and homeowners, Site I, baseline.

NOTE: Entries are estimates based on a stratified probability sample of 2,835 renter households. The data base excludes about 7 percent of all renter households living in Brown County in 1974; see Sec. I for an explanation of exclusions. Distributions may not add exactly to totals because of rounding.

[a]Year following interview date.

VII. SUMMARY AND IMPLICATIONS FOR FUTURE RESEARCH

This description has focused on the life cycle and income as major determinants of the housing consumption and consumption adjustments in Brown County. Our data reveal a regular sequence in the tenure, type, and size of units occupied over the life cycle. Young single individuals typically set up their households in small rental units in large multiunit buildings. Households adjust their consumption as they progress to the middle of the life cycle--moving first to larger rental units (often single-family homes), and then buying a home. After peak household size is reached in the middle of the life cycle, households begin to reduce their housing consumption by moving to smaller single-family homes and back to smaller rental units. Household income affects the timing of this sequence of choices and the level of expenditures more than the size or type of unit occupied.

Although our information on current consumption is based on longitudinal inferences from cross-sectional data, retrospective data on the mobility behavior of individual households support these basic findings as to the frequency and type of moves and reasons for moving at different stages of the life cycle.

These results describe household consumption choices at baseline. They are, however, only the first step in analyzing the effects of the allowance program on consumption patterns. Several issues require further development.

First, differences in housing preferences within life-cycle stages are important and must be examined in considerably more detail. Second, tenure, unit type, and unit size by no means capture the range of variation in the housing stock of Brown County. Further work must be done in identifying specific housing attributes and their relative importance in consumer decisions. Third, local mobility and its role as a vehicle for consumption adjustment has only been skimmed in this note. A more detailed examination of where households move, the differences in their housing at origin and destination, and the role of search procedures is required. Finally, the effect of housing allowances on all of these issues remains to be analyzed.

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