

A Research Note on:

*RESEARCH ON HYPOTHESIZED 60-40 DISTRIBUTIONS IN HOUSING
EXPENDITURES AND IN HOUSING TO INCOME*

Flora Williams

ABSTRACT

Three hypotheses relating to housing expenditures are developed and tested with analysis of a pilot study, a local survey, and national household data. The results reveal distributions of housing expenditures and percentage of income spent for housing that suggest relationships or new "rules" for this era. Research in these distributions of expenditures is needed for measuring consumer/family economic well-being, for providing information for decisions about resource allocations, and for developing consumption theories. Directions for future research are suggested.

INTRODUCTION

Several research questions arise as income and expenditures are examined for measuring consumer/family economic well-being. Rules of thumb applied in housing decisions two decades ago may no longer be appropriate. This paper raises questions concerning the distribution of housing expenditures and percentage of income, including that of the second earner, used for total housing expenditures. Three hypotheses are developed. The results of three surveys are presented and future research directions are suggested.

METHODS

A hypothesized distribution of housing expenditures was developed to observe and record expenditures of clients in a financial advising service and to prepare lists of expenditures for educational purposes (Williams, 1982). Based on three pilot case studies, an approximate 60-40 distribution between mortgage payments (principal and interest) and other housing expenditures was identified. The distribution breakdown was as follows: 60 percent of the housing cost was the mortgage (principal plus interest) for home owners with a mortgage, while 40 percent of the total housing cost went toward property taxes, insurance, utilities and housing maintenance.

Housing experts and laymen were informally quizzed about a ratio between mortgage payments and total housing costs. While they reported none, they were surprised to observe that their own housing costs were distributed in a roughly

Flora Williams is Associate Professor, Department of Consumer Sciences and Retailing, Purdue University, West Lafayette, Indiana. This research was conducted under the auspices of Agricultural Experiment Station Project IN-01809, Family Economic Problems and Resource Management. Technical assistance was provided by Rachel Albers Diamond.

60-40 ratio. A small local survey of families was conducted to examine distributions for testing the hypothesis. Data from the nationwide Survey of Consumer Expenditures were analyzed to answer the research questions and test the hypotheses.

Another hypothesis was developed concerning the 60-40 ratio for housing expenditures as a percentage of wife's income and of total income. It was hypothesized that at least 60 percent of a second earner's income would be spent on housing. Further, it was hypothesized that 40 percent of total family income would be spent for housing. Because the wife's income is about 40 percent of total family income, in many families more than 40 percent of the second earner's income would be used for housing.

The assumptions used in developing the hypotheses were based on data from the United States Department of Labor (1981). Approximately 40 percent of family income was contributed by the wife's earnings in the Department of Labor surveys. For all families, the wife contributed 38 percent of the total family income. For families with incomes under \$10,000, the wife's contribution to total family income was 64 percent; for families with incomes of \$10,000-\$14,999, the wife's contribution was 50 percent. For families with incomes of \$15,000-\$19,999, the wife's contribution was 42 percent of the total income, while those families in the \$20,000-\$24,999 bracket had second earners contributing 39 percent of the total income. For families with incomes of \$25,000 and above, the wife's contribution to total family income was 33 percent. In black families, the wife contributed 41 percent of the total family income.

RESULTS

The hypothesized 60-40 approximation is illustrated in the distribution of expenditures in the pilot study cases shown in Table 1. In Case A, of the housing costs (\$9,690), 60 percent is for principal and interest (\$5,710). In Case B, of the housing costs (\$12,860), 62 percent is for principal and interest (\$8,000) with the remaining amount used for utilities, household operations, insurance, upkeep and taxes. Irregular, but major, repairs, are prorated to arrive at a yearly cost. More expensive houses are assumed to have a similar percentage distribution among housing costs. In Case C, 64 percent of the housing costs of a \$185,000 house is for principal and interest (\$13,284). Case C is a new house in which landscaping in the first few years contributes to the high cost of upkeep. Improvements and repairs are assumed to contribute to similar annual costs over the coming years.

Case studies of housing expenditures in a local survey of families (N=21) in the greater Lafayette, Indiana area show an average of a 45-55 percent ratio of mortgage payment (principal and interest) to other housing expenditures (see Table 2). Twenty percent of the survey households approach the hypothesized 60-40 "rule", with an average (mean) of 61-39 percent for mortgage payment and other housing expenditures. Therefore, the hypothesized distribution can only be partially supported. Taxes as a percentage of total housing costs in this local survey are seven percent. Comparison of the mean dollars found in this local survey and the local realtors' figures for taxes confirms the survey's accuracy. (Taxes vary with area of the country). Repairs and improvements constitute 14 percent of total housing costs. Utilities, household operations, and insurance make up 34 percent of total housing costs, with gas and electricity composing 19 percent of the total cost.

Analysis of the data from the Consumer Expenditure Survey reveals average costs and distributions across the United States for various types of households (see Table 3). Although shelter includes maintenance and repair, the results are remarkably similar to the pilot case studies and the small local survey. Shelter (mortgage or rent plus maintenance and repair) as a percentage of total housing costs ranges from 50-64 percent for the various types of households.

Table 1. Pilot Study of Housing Costs

Case A: \$50,000 house with \$10,000 down, \$40,000 principal; loan at 14 % interest rate for 25 years.

	Yearly	% of Total
Principal and Interest	\$5710	59
Utilities, Household Operations and Insurance	\$2700	28
Upkeep, Repair and Improvements	\$600	6
Taxes	\$680	7
Total	\$9690	100

Case B: \$70,000 house with \$20,000 down, \$50,000 principal; loan at 14 % for 25 years

	Yearly	% of Total
Principal and Interest	\$8000	62
Utilities, Household Operations and Insurance	\$3408	27
Upkeep, Repair and Improvements	\$749	6
Taxes	\$708	6
Total	\$12,860	100

Case C: \$185,000 with \$75,000 down, \$110,000 principal; loan at 12% for 30 years

	Yearly	% of Total
Principal and Interest	\$13,284	62
Utilities, Household Operations and Insurance	\$4708	23
Upkeep, Repair and Improvements	\$950	5
Taxes	\$1680	8
Total	\$20,622	100

According to the national survey results, shelter costs amount to 53 percent of total housing costs for consumers units in the Midwest. In comparison, the percentage is 59 in a local survey conducted in a Midwest locale. Fuel, utilities, and household operations comprise 32 percent of total income in the national survey of consumers in the Midwest, whereas those costs make up 34 percent of the total income in the local survey. All consumer units in the national survey show 30 percent for this expenditure (which is similar to Case A of the pilot

study, which shows 28 percent).

CONCLUSIONS

Several phenomena support the hypothesized approximation of the 60-40 distribution "rule" in housing: mortgage payment as a percentage of total housing cost, housing costs as a percentage of income, and percentage of second earner's income spent for housing. Mortgage payments as a percentage of total housing cost have been shown to be slightly less than 60 percent (56 percent nationally). Results confirm the need for more research and dissemination of information to consumers that mortgage payments are not the only consideration in decisions about housing expenditures.

Table 2. Survey Results of Housing Costs Per Month

	Mean Costs	Percentage of Total Housing Costs
Principal and Interest	\$289.45	45%
Utilities, Household		
Operations and Insurance	\$22.99	4
Gas	\$51.74	8
Electricity	\$71.61	11
Water and sewer	\$13.74	2
Cable television	\$10.94	2
Telephone	\$42.10	7
Repairs and Improvements	\$87.38	14
Taxes	\$42.79	7
Total	\$632.74	100

The fact that the percentage used on housing declines with income quintiles supports Morris and Winter's (1978) "congruence between ideal quality norms and actual quality. The relationship between housing expenditures and income supports Schwabe's Law--housing expenditures rise with income, but at a slower rate (Morris and Winter, 1978). Thus, some kind of standard in housing expenditures is reflected in the results of the national survey. Housing as a percentage of income is similar for various characteristics of households, except for income levels. The importance of research concerning housing expenditures is confirmed by the large expenditures spent for housing in the lower-income quintiles.

Results showing mortgage payments of slightly less than 60 percent of total housing costs, although not supporting an exact 60-40 ratio, do suggest a general "rule". The results suggest that: a) consumers are probably underestimating housing expenditures, and b) making decisions with inadequate information.

Although the national survey does not show an exact 60-40 ratio between debt and other housing costs, it does reinforce two important points. First, the mortgage payment remains a large portion of total housing expenditures, but not as large as most individuals appear to expect. Second, utilities constitute a larger portion of total housing expenditures than previously recognized, and probably are not considered in most housing decisions. The results suggest that rules applied in past eras in deciding how much house an individual can afford are inappropriate today.

Table 3. National survey of housing expenditures by selected characteristics¹

Characteristics	Income before taxes	Total Housing	Total Housing as % of Income ²	Shelter as % of Total Housing	Fuel, Utilities and Public Service	Household Operations	House Furnishings
All consumer units	\$22,702	\$5,784	25	\$3,262	\$1,489	\$271	\$762
Quintiles of income:							
Lowest 20 percent	4,097	2,980	73	1,720	901	124	225
Second 20 percent	10,611	3,994	38	2,203	1,223	154	414
Third 20 percent	18,129	5,032	28	2,832	1,388	197	616
Fourth 20 percent	28,231	6,466	23	3,635	1,662	292	877
Highest 20 percent	52,267	10,188	19	5,824	2,116	578	1,669
Age of householder:							
Under 25 years	11,537	3,410	30	2,151	668	115	445
25-34 years	23,835	6,409	27	3,915	1,305	359	831
35-44 years	29,718	7,494	25	4,411	1,789	327	968
45-54 years	31,198	6,870	22	3,658	1,969	226	1,016
55-64 years	24,450	5,374	22	2,697	1,701	208	767
65 years and over	13,583	4,123	30	2,073	1,342	267	440
Size of consumer unit							
One-person	13,361	3,827	29	2,428	859	135	405
Two-person	23,423	5,909	25	3,280	1,521	229	879
Three-person	26,970	6,490	24	3,538	1,737	390	826
Four-person	30,992	7,575	24	4,191	1,930	443	1,010
Five-person	29,803	7,365	25	3,953	2,026	349	1,037
Six-persons or more	26,086	6,628	25	3,375	2,143	296	814
Region of residence:							
Northeast	21,704	5,677	26	3,173	1,590	228	687
Midwest	22,318	5,731	26	3,053	1,598	260	820
South	22,472	5,479	24	2,952	1,487	289	751
West	24,655	6,484	26	4,162	1,224	306	792

¹Dollar expenditures are from U.S. Bureau of Labor Statistics, Consumer Expenditure Survey, Interview Survey, 1984-83, Bulletin 2246, 1986.

²Includes shelter, fuel, utilities, public service, household operations, and house furnishings.

³Includes other maintenance and repair expenses not shown separately in addition to rent and mortgage.

Housing debt and related costs help to explain why many women have entered the labor force in the past years, and why some families have had financial difficulties. The hypothesis of women's movement into the labor force due to increased housing costs is in contradiction to the hypothesis that changes in housing expenditures result from changes in income (Morris and Winter, 1978).

At first analysis, the 60-40 rule appears to be another rule of thumb, such as those used to determine how much mortgage a family can afford. However, rules are often substitutes for thinking. In this paper, the 60-40 rule is hypothesized to stimulate research and thinking.

Many families fail to go beyond the well-known avenues of home buying to more creative means. The implications of the 60-40 rule actually demand consideration of these creative avenues to home ownership. Housing costs can be reduced by decisions in type of house desired, type of construction such as self-built or factory-built, type of financing, type of energy-efficient features and appliances, self-repair and upkeep and lifestyle patterns after the dwelling is purchased. Housing costs can be reduced by determining what actions a family can take to reduce each component of housing costs.

The results of this study suggest the need for future research on cost components and distributions. Although methods in collecting data and categories of expenditures are not the same for the three surveys presented here, they suggest the considerations in designing future research.

Ratios of components to total housing expenditure should be examined for renters as well as home buyers, for different regions of the United States, for houses of different ages and structures, for different amounts of loans, for different interest rates, and for families with employed wives compared to families without employed wives. Finishing touches on new houses and repairs on other houses should be examined further for prorating annual costs. Taxes, as a percentage of total housing costs and as a percentage of market value of the house, need to be examined for consumers in other areas of the country.

Exact percentages of total income and of second earner's income used for housing should be examined for various family income levels using national data sets. Financial problems at various levels of income percentages spent for total housing should be identified. New considerations in the decision process can be tested by researchers and applied by consumers.

REFERENCES

- Morris, E. and Winter, M. (1978). *Housing, Family, and Society*. New York: John Wiley and Sons.
- Statistical Abstract of the United States:1985* (105th Edition). Washington, D.C.: U.S. Government Printing Office.
- U.S. Department of Labor (1981, January). Marital and family characteristics of the labor force, March 1979. *Special Labor Force Report 237*. Washington, D.C.: Bureau of Labor Statistics.
- Williams, F. (1982). *Guidelines to Financial Counseling*. West Lafayette, IN: Purdue University Research Foundation.