HOUSING ASSISTANCE SUPPLY EXPERIMENT

A RAND NOTE

This Note was prepared for the Office of Policy Development and Research, U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, under Contract No. H-1789. Its views and conclusions do not necessarily reflect the opinions or policies of the sponsoring agency.

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EQUITY AND HOUSING OBJECTIVES IN HOMEOWNER ASSISTANCE

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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 reports Rand's views on two program standards that have been proposed for homeowner assistance in the Housing Assistance Supply Experiment. One is a dollar ceiling on the amount of assets that may be held by a program participant. The other limits a participant's allowance payment to the amount of "actual housing expenses."

This note was prepared pursuant to HUD Contract H-1789 as amended to 1 April 1974. It relates directly to Task 3.2.2 of that contract, and was prepared at the request of the Acting Director of the Housing Assistance Research Division.

Barbara M. Woodfill researched some of the issues discussed in this note and reviewed the entire note in draft. Charlotte Cox edited the typescript and supervised production of final copy.

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INTRODUCTION

Most of the thinking about housing allowances as a tool of federal housing policy for low-income households has explicitly or implicitly assumed that the main target for such assistance would be those who rent their homes. As we have shown elsewhere, this is an inappropriate assumption in a nation two-thirds of whose households are homeowners. Examination of the need for assistance, as defined by income and household size, clearly indicates that it is possible to own a home and still lack the resources necessary to maintain it decently. Indeed, using the standards of need proposed for renters, we have found that in the experimental sites selected for the Housing Assistance Supply Experiment, over half the eligible households are homeowners, most of them elderly single persons or couples.*

As we have worked with HUD to develop the terms and conditions of homeowner assistance, a number of issues have arisen concerning the appropriateness, when applied to homeowners, of program standards of need and the associated formula for allowance entitlement which have been approved for renters. The issues arise because homeowners typically differ from renters with respect to their patterns of asset-holding and with respect to their current cash outlays for housing expenses. Elderly homeowners also differ from elderly renters with respect to the amounts of housing they consume. Typically, a single-family house owned by an elderly couple or single person is larger than a rented apartment occupied by similar households, because the home in the former case was acquired at an earlier stage in the family cycle when the household was larger.

Here, we try to put these issues in perspective. It is our contention that the standards of eligibility and allowance entitlement that have been accepted by HUD for renters are equally fair and reasonable when applied to homeowners.

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*Ira S. Lowry, *Funding Homeowner Assistance in the Supply Experiment: Problems and Prospects*, The Rand Corporation, WN-8489-HUD, November 1973.

STANDARDS OF NEED FOR ASSISTANCE

Under the rent-assistance program approved by HUD for the Supply Experiment, *housing need* is measured by the local standard cost (including utilities) of a well-maintained housing unit whose size is appropriate for the number of persons in the household to be assisted. In concept, this standard cost is intended to measure the full cost of supplying such housing services to the market over the long run, including the opportunity cost of the capital represented by the current market value of the property.*

As the experiment progresses, we expect to obtain survey data that will enable direct calculation of the costs of such housing services. In the meantime, we have proposed estimating standard costs from the central tendency of market rents for housing that is certifiable under program standards. We think the same standard-cost figure should apply to rental housing and to owner-occupied housing. In the former case, nearly all factor-inputs are supplied through explicit market transactions and are therefore explicitly priced. In the latter case, there is often a significant component of self-supplied capital (home equity) and labor services (maintenance, repairs, improvements) to which prices must be imputed; but these inputs are no less real and no less necessary to produce the flow of housing services consumed by the occupant. The values of these self-supplied inputs are, we think, reasonably approximated by their costs to a landlord.**

Under program rules for renters, *need for housing assistance* is calculated as the difference between 25 percent of the household's adjusted gross income and the standard cost of adequate housing. The definition of adjusted gross income follows the prescriptions of the U.S. Housing Act of 1937, as amended--the legislative authority for the Sec. 23 program--but departs from usual Sec. 23 practice in one

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*David B. Lewis and Ira S. Lowry, *Estimating the Standard Cost of Adequate Housing*, The Rand Corporation, WN-8105-HUD, March 1973.

**There are possible qualifications to this equivalence. They entail fairly arcane arguments about the opportunity cost of resources supplied by an owner-occupant, the alternative uses of which are practically more limited than for resources supplied by a professional investor in real estate.

very important respect: gross income is defined to include an imputed return to assets which do not yield a cash return.

We have argued at great length with HUD about the need for a more sophisticated definition of the need for assistance, one which accounts more accurately for income that is really available for consumption and also for differences in the nonhousing needs of households of different sizes and incomes. Neither the statutory exclusions and deductions used to calculate adjusted gross income nor the fixed apportionment of 25 percent of household income to housing expenses are, in our view, equitable or optimal in guiding the allocation of federal housing assistance.* However, our greatest concern about income accounting was met by HUD's acceptance of the principle of including imputed income from assets whose return to the owner is services in kind rather than cash.

As a general principle, this provision equalizes the treatment of program participants who hold assets of equivalent value in different forms. In practice, its main effect is to equalize treatment of renters and homeowners. For example, a renter may hold his savings of $10,000 in a savings account that yields a cash flow that is counted as part of his gross income. A homeowner with a $10,000 equity in his home does not receive a cash return on his savings; instead, he receives a flow of housing services that are not ordinarily counted as income. Either by selling his home or by taking out a second mortgage, he could convert his equity to cash held in an interest-bearing account. With no change in his net worth, his cash income would then increase. Under the income-imputation provisions of the Supply Experiment, there is no advantage to holding assets in one form rather than another.**

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*See Ira S. Lowry, Mack Ott, and Charles Noland, *Housing Allowances and Household Behavior*, The Rand Corporation, WN-8028-HUD, January 1973.

**This statement is strictly true only if the imputation rate is equivalent to the current market rate of interest on investments of corresponding risk and liquidity. As a practical matter, the imputation rate has been set at a conservative 5 percent, below the current market rate on one-year certificates of deposit.

To summarize, allowance entitlement in the Supply Experiment is calculated identically for renters and homeowners. For a household of n persons, a simplified version of the formula* is

$$A_n = R_n^* - .25 \quad \text{, where}$$
$$Y_a = Y_g + .05K - D \quad ,$$

with terms defined as follows:

A_n = allowance entitlement for a household of n persons;
R_n^* = standard cost of adequate housing for n persons;
Y_a = adjusted gross income for program purposes;
Y_g = gross cash income from earnings, transfer payments, and assets;
K = net value of assets not yielding cash income; and
D = deductions and exclusions mandated under Sec. 23.

ASSET AND PAYMENT CEILINGS

The formula for allowance entitlement presented above provides an automatic ceiling on the incomes of program participants. As either Y_g or K increases, allowance entitlement declines, reaching zero when adjusted gross income is equal to $4R_n^*$.

HUD, however, has insisted on two additional constraints on eligibility and allowance payments. One is an overall ceiling on asset holdings; the other is a ceiling on allowance payments equal to "actual housing expenses." Although our case would be stronger if the allowance formula proposed by Rand had been adopted, even with the present formula we do not believe that these additional constraints are necessary or appropriate. Unable to defend them, we can only attempt to explain them.

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*We suppress details that are irrelevant to the general argument. These include specification of deductions and exclusions as functions of age, income, and household size, and an asset allowance of up to $3,000 in the form of personal property to which no income is imputed.

Asset Ceilings

Program rules for the Supply Experiment now include ceilings on total net assets held by allowance recipients. Those whose holdings exceed these ceilings are categorically ineligible, even though our general standards of housing need and need for assistance, as expressed in the allowance formula, indicate a positive allowance entitlement.

For households whose head(s) is (are both) under 62 years of age, the asset ceiling is set at $20,000. For households headed by elderly persons, the ceiling is $32,500. These ceilings do not vary with size of household.

Clearly, these ceilings do not reflect a reasonable limitation on current income--first, because they do not vary with household size, a factor which powerfully affects the need for assistance; and second, because the current income equivalent of these assets is taken into account in the allowance formula. Taking the simple case of a household with no source of income other than its assets, the current yield of $20,000 in five-year certificates of deposit at 7.0 percent is $1,400; a similar investment of $32,500 would yield $2,275. Under the program standards adopted in Site I, the allowance formula does not yield a zero entitlement for a single person until adjusted gross income reaches $4,800, or for a couple until adjusted gross income reaches $6,000.

The only equity argument that has been advanced by HUD in support of the asset ceiling is that those who have accumulated assets should in fairness be expected to live on their capital rather than passing their assets intact to their heirs. There is a case here, but the argument is inconsistent with the scheduled difference between the asset ceilings for the young and for the old. The appropriate measure of the current budget resources embodied in a consumable asset is its single-life or double-life annuity value. On the current market, a double-life annuity purchased for $20,000 by a husband and wife, both 40 years of age, would pay about $1,240 annually. A similar annuity purchased for $32,500 by a couple both 62 years of age would pay

about $2,585 annually.* These figures suggest the extent of the "horizontal" inequity embodied in these ceilings as between younger and older candidates for assistance. They also show that even allowing for capital consumption during the lifetimes of the household heads does not equate the asset limit to the income limit embodied in the allowance formula.

In practice, the asset ceiling will seldom be binding on renters who are income eligible; low-income renter households rarely hold large amounts of assets in any form. It will, however, affect some elderly homeowners who have retired most or all of their mortgages but whose current incomes consist solely of transfer payments and modest savings accounts. Regrettably, our perceptions of wealth have not kept pace with the cost of living; an elderly couple with a home equity valued at $20,000 plus $15,000 in savings invested at 7.0 percent plus social security entitlement of $3,200 annually would have, by our calculations, an adjusted gross income** of

$$
\begin{aligned}
Y_a &= Y_g + .05K - D \\
&= [\$3,200 + (.07)(\$15,000) + (.05)(\$20,000)][.9] \\
&= \$4,725 \quad ,
\end{aligned}
$$

and under our program standards for Site I should receive a housing allowance of $318.75 annually ($26.56 monthly). However, the asset ceiling of $32,500 would render them ineligible.

If this same couple were to sell their home for $20,000, combining this amount with their other savings of $15,000 to purchase an annuity,

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*These estimates are for the most popular form of joint annuity, paying the indicated amount annually until one member of the couple dies, then paying two-thirds of that amount to the survivor for the remainder of his or her life. The values shown were calculated from tables prepared by the Teachers Insurance and Annuity Association.

**The adjustment for an elderly couple, neither employed, consists of an exclusion of 10 percent of gross income. Thus, the variable D in the equation below is represented by a factor of .9 in the numerical example.

the annuity would pay about $2,780.* Then, their adjusted gross income would be

$$Y_a = (\$3,200 + \$2,780)(.9)$$
$$= \$5,382 \quad ,$$

and under our program standards for Site I, they would be entitled to a housing allowance of $154.50 annually or $12.88 monthly. No longer holding assets, they would now be eligible for assistance.**

We do not argue that the household in this example is badly off, however it holds its assets. What troubles us is that the asset limit is imposed without regard for the overall financial position of the household. It would still apply, for instance, if the household had no income except that derived from its assets.

Because we do not expect the asset limit to be a binding constraint on many income-eligible households, we have accepted the responsibility for administering it as a program standard. But we do not believe that it is equitable or that it serves a useful program purpose. If anything, it sets in motion perverse incentives for income-eligible households to dispose of assets by gift. This is not uncommon practice among the elderly as a means of establishing eligibility for federal public housing programs, where asset limits are considerably lower; and the practice there often has tacit support from local housing authorities, who recognize the illogic of the asset limit.

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*This calculation assumes that both husband and wife are 62 years of age when the annuity is purchased. After the death of one partner, the annuity payment would drop to $1,853.

**Present program rules count the cash value of life insurance policies as assets, but do not count current cash value of vested pension rights. We assume that a purchased annuity would be treated the same as a vested pension right--i.e., not counted as an asset.

Payment Ceilings

HUD has also imposed a ceiling on allowance payments to any participating household equal to "actual housing expenses," even though allowance entitlement under the formula is greater. The logic offered in support of this proposition is that housing subsidies should not be used for nonhousing purposes.

The first thing to note about this rule is that it violates one of the fundamental principles of direct cash assistance as a method of subsidizing housing for low-income families. The basic idea is that program administration can be shifted to the recipient, placing on him the burden of selecting his own housing and of negotiating his own terms with its suppliers--provided that the assistance formula contains incentives that impel him to seek the best bargain available.

The allowance formula accomplishes this purpose by detaching allowance entitlement from actual expenditures for housing. In effect, the marginal dollar of housing expenditures always comes out of the participant's pocket. If he finds a housing bargain, he has more available for nonhousing consumption; if he is extravagant in his housing consumption, the rest of his budget suffers.

Under the HUD-imposed payment ceiling, the intended principle operates only so long as allowance entitlement is less than the cost of the housing that the program participant would have chosen in the absence of such a constraint. *Above that level, each additional dollar of housing expenditure up to the amount of allowance entitlement is costless to the participant.* He is therefore encouraged to seek better housing than he would choose in the absence of the payment ceiling, or than is required to meet program standards of housing quality.

The only good feature that we can see in this payment ceiling is that, like the asset ceiling, it will not ordinarily be a binding constraint. Because of the way "actual housing expenses" are now defined, the payment ceiling will principally affect (a) renters whose current incomes are close to zero and who have found a genuine housing bargain, and (b) homeowners with very low incomes and no mortgage indebtedness. We do not expect either case to be frequent.

The definition of "actual housing expenses" currently embodied in program standards for Site I does not derive from any general principle. Rather, it is the sum of a list of items specified ad hoc. For renters, the following are included:

- Contract rent; and
- A standard allowance for utilities not included in contract rent, the amount for each utility varying with the number of rooms in the unit.

For homeowners, the list is longer:

- Monthly mortgage payments (principle and interest);
- A standard allowance for property insurance varying with location and value of property;
- Real estate taxes;
- A standard allowance for maintenance and repairs; and
- A standard allowance for utilities, the amount for each utility varying with the number of rooms in the unit.

Thus, for easily ascertainable items that are stable over time, actual cash outlays are counted. To avoid overwhelming administrative complications, standard schedules have been substituted for outlays that are irregular or that fluctuate from month to month. As it stands, the payment ceiling reflects an approximation to "average monthly cash outlay for housing." As nearly as we can interpret HUD's intention, *the payment ceiling deliberately does not reflect the full cost of the housing to its occupant*. Divergence between cash outlay and actual cost will be rare for renters but common for homeowners.

Thus, our screening survey in Site I indicated that about 5 percent of all renters pay less than "the amount the landlord usually charges." Sometimes, their discounts reflect a special relationship to the landlord, such as that of relatives or friends. More often, they reflect an agreement with the landlord for them to provide services to the property as managers or handymen, or were granted in consideration of improvements that the renters had made on the property.

Among homeowners, divergence between current cash outlays and actual costs is virtually universal. Repayment of a mortgage principal is not a current cost; rather, it is the acquisition of an asset in the form of increased equity in the home. The mortgage interest payment, on the other hand, is the current charge for the use of the lender's capital. However, the homeowner also has an equity in the property--one that increases as the mortgage is amortized. The opportunity cost of the homeowner's capital is not an allowable cost under the rules specified above, even though it is a real cost to him. At one extreme, with a mortgage covering the full purchase price, all capital costs are allowed. At the other extreme, when a property is held free and clear by its occupant, no capital costs are allowed.

We have already commented on the perverse incentives created by the existence of a payment ceiling. Others are created by the way in which that ceiling is computed. For renters, there is an incentive to avoid exchanges in kind with their landlords; all transactions involving exchange of service for rent reductions serve to reduce the payment ceiling. For homeowners, the course that recommends itself is to mortgage the property to the hilt in order to raise the payment ceiling at least to the level of allowance entitlement.

We cannot guess how quickly and how generally these ways of "working" the system will be noticed. But if they are not, the result will be a considerable inequity of treatment among those whose economic circumstances and housing needs are comparable.

We strongly recommend that the concept of a payment ceiling reflecting "actual housing expenses," however defined, be abandoned. We are unable to discover that it serves program purposes in any way, and are convinced both that it is inequitable and that it creates incentives for uneconomical housing choices and bizarre financial arrangements by program participants. Finally, its adverse effects will fall most frequently on those who have been named as high-priority targets for assistance--elderly homeowners.

FURTHER ANALYSIS OF PAYMENT CEILINGS

This paper was prompted by two specific inquiries from HUD, both relating to payment ceilings for homeowners:

1. Given that principal payments on a mortgage reflect transfer of an asset to the homeowners, is it reasonable to count them as part of the "actual housing expenses" in calculating payment ceilings?
2. If the payment ceiling is set equal to actual housing expenses rather than standard costs for minimum adequate housing, doesn't this encourage overconsumption of housing by allowance recipients?

We find it difficult to answer these questions directly because they assume that a payment ceiling calculated on some different basis than need for assistance is an appropriate feature of the allowance program. We think that the questions reflect fundamental difficulties with the concept of a payment ceiling rather than with the way it is now calculated.

In the preceding pages, we laid out a general framework within which these specific questions should be considered. Here, we deal with the questions themselves, supporting the analysis with illustrative calculations.

Amortization as a Housing Expense

HUD is correct in noting that mortgage principal repayment generally reflects transfer of an asset to the homeowner rather than representing a current cost to him of housing services. There is a special case in which the contrary is true: If the schedule of mortgage amortization is designed to match the rate of value-depreciation on the property, the homeowner's equity would not increase over time; he would simply be paying the lender for the asset as it is consumed.

Approximations to this special case are at best rare. Even in the absence of general inflation, the market value of a residential property rarely declines to zero over the term of a mortgage that

initially covered the full value of the property. Studies that Rand has performed on other housing data suggest that real physical depreciation of a building is a negative exponential function of time.* Changes in market value reflect many other factors--neighborhood decline or improvement, maintenance history of the building, changes in public taste for features of building design, etc. On average, homeowners do accumulate a substantial equity in their property as the mortgage balance declines, even though the mortgage may run for 30 or 40 years.

It may also be noted that the usual mortgage on an owner-occupied home provides for a level schedule of monthly payments over the term of the mortgage, combining shifting proportions of principal and interest. This means that in the early years of the mortgage, nearly all the payment is interest; towards the end of the term, nearly all the payment is principal. Leaving aside windfall gains due to general or local inflation in property values, equity accumulation probably does not usually begin until about a third of such a mortgage has been amortized.

The general case, therefore, is that a homeowner's equity increases over the term of a mortgage loan, but not necessarily in a regular pattern and not necessarily at the rate at which the loan is retired. To estimate the owner's annual equity accumulation would require a market-value appraisal each year, from which the outstanding mortgage balance would be deducted. The difference would not usually equal the amount of principal amortized during the year. Since we doubt that such a method of distinguishing equity accumulation from current costs has much appeal to HUD (it certainly doesn't appeal to us!), we shall not pursue it further. Rather, we will address a more important confusion embodied in HUD's question.

Whether principal repayment should be an allowable element of the proposed ceiling on allowance payments ought to depend on the purpose of that ceiling. Our initial understanding, when HUD proposed the ceiling, was that its purpose was to prevent allowance payments

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*See Ira S. Lowry (ed.), *General Design Report: First Draft*, The Rand Corporation, WN-8198-HUD, May 1973, Appendix A, and citations given there.

from exceeding current cash outlays for housing. If so, principal repayment is clearly a current cash outlay and should be an element of the ceiling. However, the question now posed by HUD suggests that the purpose of the ceiling is to prevent allowance payments from exceeding the current true cost to the homeowner of his housing. In this case, mortgage amortization is neither a current cost nor a suitable proxy for any actual current cost; but other important elements of housing cost have been rejected by HUD in specifying how the ceiling should be calculated.

One of these is capital consumption, reflected in a rising annual bill for maintenance and repairs if the property is kept at a fixed level of quality, or in physical deterioration if maintenance expenditures are held constant. Much more important quantitatively, however, is the opportunity cost of the homeowner's investment in his property. As his equity accumulates, an increasing share of the capital embodied in the property is supplied by the owner rather than the lender, but the present computation of "actual housing expenses" does not include any imputed interest on the owner's equity. When he owns the property free and clear, interest charges vanish entirely from the computation. In effect, those who supply their own capital are heavily penalized in computing the payment ceiling.

Under a level-payment mortgage schedule, however, the true cost of capital to the homeowner is often approximated by the combined monthly payment of principal and interest, at least for that portion of property value covered by the original loan. For example, when the market rate of interest is 8 percent, the opportunity cost of $10,000 in residential capital is $800 annually. This amount is the real cost of that capital, however the investment is divided between a homeowner and a mortgage lender. On a 30-year loan of $10,000 at 8 percent, the borrower's level annual payment to the lender, covering both principal and interest, comes to $880. In other words, the current cash outlay exceeds the full annual cost by only 10 percent. The difference would be larger on a loan of shorter term and smaller on a loan of longer term.

Taking into account that the homeowner usually makes some down-payment, so that the mortgage loan covers less than the full value of the property, current cash outlay is even closer to full annual cost than the example above indicates. In that example, the two amounts would be identical for a down payment of $1,000 on a property whose purchase price was $11,000.

In summary, the items included in our present calculation of the payment ceiling are a good approximation of current cash outlay for housing whatever the equity position of the owner. For mortgaged properties, the same items are a fair approximation to full current cost if (a) the mortgage follows a level-payment plan, (b) the amount of the loan is in the vicinity of 90 percent of the current market value of the property, (c) the term of the loan is 20 to 40 years, and (d) the interest rate on the loan is about the same as the current market rate. For properties owned free and clear, the payment ceiling as now computed falls short of full cost by about 50 percent.

Excluding principal repayment from allowable expenses in calculating the payment ceiling would result in a ceiling that was generally below current cash outlay and also generally below full housing cost. We find no arguments based on equity or on program purpose that support such an exclusion. We think that HUD's uneasiness about allowable costs in fact reflects the incoherence of the whole concept of a payment ceiling other than the one that is built into the allowance formula itself.

Discouraging Overconsumption

The conclusion above is reinforced by consideration of HUD's second question: If the payment ceiling is set equal to actual housing expenses rather than standard costs for minimum adequate housing, doesn't this encourage overconsumption of housing by allowance recipients?

The paradigm offered in support of this line of reasoning is the common one of a couple who, during the years of their peak income, acquire a large home to accommodate themselves and their children. When the children depart and the parents retire from the labor force,

we find an elderly person or couple struggling to meet the upkeep on a house with several empty bedrooms. Their housing needs could be adequately served by a smaller place--a cottage or an apartment--the expenses for which would be lower. In the absence of a housing allowance, budgetary stringency might force such a move; but the allowance enables them to stay in the family homestead at public expense. Moreover, the old homestead is needed by a new generation of large families who cannot afford new homes of equal size.

The economics of housing allowances aside, there is an issue of social policy here that is oddly neglected by an agency that has promoted housing allowances, especially as a tool to help the elderly. Some old people--by no means all of them--are powerfully attached to the family homestead and are willing to make great sacrifices to continue living there. A more efficient use of the housing stock is automatically achieved when they die or their health fails; is that too long for the rest of us to wait?

Taking the narrow view, however, we think that HUD's question reflects a misapprehension of the incentive structure that is built into the formula for allowance entitlement. Although that formula intentionally does not prohibit an allowance recipient from "overconsuming" housing, it offers him no rewards for so doing. Imposing a payment ceiling (as presently calculated) does in certain cases provide rewards for overconsumption. But modifying the payment ceiling along the lines suggested by HUD's question logically implies abolition of the ceiling as a program element.

As explained early in this paper, the housing-gap allowance formula bases allowance entitlement on a standard of housing need (R^*, the standard cost of adequate housing for a given size of household) and a measure of ability to pay for housing (one-fourth of Y_a, adjusted gross income). Inspection of the allowance formula,

$$A = R^* - .25Y_a \quad ,$$

makes it clear that program participants who "overconsume," spending more than R^* for their housing, do not thereby receive any additional

allowance benefits. The marginal dollar of their housing expenditures always comes out of the amount available for their nonhousing consumption. If they value spacious or high-quality housing or expensive neighborhoods enough to skimp on groceries, program rules permit such a budget allocation but do not assist it.

Under the formula, the maximum allowance entitlement is equal to R^* and occurs when adjusted gross income is zero. A separate payment ceiling that is equal to or greater than R^* would never affect the amount of payment. For such a ceiling to ever be binding, it must be less than R^*. Since R^* is intended to reflect the normal cost of adequate housing, a payment ceiling below R^* must reflect some other principle.

We do not understand what HUD thinks this other principle should or might be. If the point of a payment ceiling is to avoid allowance payments that exceed actual cash outlay, clearly actual cash outlay cannot be measured by standard costs; it depends only on what the program participant actually spends for whatever level of housing consumption he in fact enjoys. If the ceiling is intended to avoid allowance payments in excess of full or "true" housing costs, the amount may be larger or smaller than R^*, but in either case would be based on actual housing consumption. If the payment ceiling is intended to avoid allowance payments in excess of the necessary cost of minimum standard housing, the amount should be equal to R^* and the ceiling is redundant.

What HUD seems to be suggesting as a payment ceiling is the hypothetical cash outlay associated with a minimum adequate standard of housing consumption, the amount to be determined by somehow rescaling the participant's actual cash outlay to the standard level of consumption. Aside from the formidable administrative problems that such a calculation would entail, it seems to us an entirely arbitrary limit, unrelated to the real economic circumstances of the participant, to his housing needs, or to program purposes. In the light of HUD's other question about payment ceilings (discussed above), which rejects actual cash outlay as an appropriate standard, we are doubly baffled.

To summarize, a payment ceiling is a binding constraint only if it is less than R^*, the standard cost of adequate housing. If such a ceiling moves with actual cash outlay, it encourages participants to arrange home financing so as to maximize the cash component of total housing costs. If the ceiling moves with full housing costs, it encourages participants to increase their housing costs (and presumably their housing consumption).

With no payment ceiling at all, the incentive structure of the allowance formula allows the participant to choose his level of housing consumption under a resource constraint that is fixed independently of that choice. Each additional dollar of housing cost--whether paid in cash or not--reduces by one dollar the amount available in his budget for nonhousing consumption. We strongly urge this as the appropriate principle for a housing allowance program.

WHO WILL BE AFFECTED BY PAYMENT CEILINGS?

As matters now stand, Rand has agreed to the inclusion of a payment ceiling as a separate constraint on allowance payments to which a program participant would otherwise be entitled; and we thought that HUD had agreed that the payment ceiling would be calculated as the sum of a specific list of housing expenses approximating the participant's current cash outlay for housing. HUD has now questioned that list as it applies to homeowners, proposing alternatives whose general effect would be to lower the ceilings that now apply to those with mortgages outstanding and those living in homes that are expensive relative to program standards.

In the following pages, we present a series of tables in which payment ceilings and allowance entitlements are compared for households in various circumstances. We do this for several reasons:

1. Following through the computations for households in different circumstances gives a much better sense of the amounts of money involved than does general discussion.
2. From the tables, it is possible to judge what kinds of households in what circumstances are likely to be affected

either by the ceilings as now computed or as HUD has suggested they might be computed.

3. By comparing results for households whose basic financial resources and whose housing needs are the same, but who differ as to tenure or as to the form in which they hold assets, judgments can be made about the horizontal equity of the payment formula and payment ceiling.

However, we should note that in constructing such tables, there is a persistent tension between the desire to make different cases comparable in all but one respect and the empirical fact that one difference in household circumstances usually implies others. We have tried to avoid comparisons with implausible cases, but some at least stretch the imagination.

In general, the tables reflect current data for Site I of the Supply Experiment (Brown County, Wisconsin). Specifically, we have used all pertinent program standards adopted for that site and typical Brown County values for taxes, insurance, maintenance, repairs, and utilities. Our basic calculations were for a $20,000 five-room, single-family home. Most of the factors in the table scale readily from this reference point, either with property value or with size of unit.

Since it is clear a priori that payment ceilings will never affect households whose allowance entitlements are small, we focus on those whose incomes are low. Our paradigm is an elderly couple, retired from the labor force, whose current income consists mainly of social security payments ($3,200 annually). We vary their total assets and the form in which these assets are held.

Variations in Homeowner Equity

Tables 1, 2, and 3 each compare payment ceilings with allowance entitlements for such a couple at various stages in the acquisition of a home. Table 1 assumes that the property is a three-room cottage valued at $10,000; Table 2 assumes a five-room house valued at $20,000; and Table 3 assumes a seven-room house valued at $30,000. The

Table 1

COMPARISON OF HOMEOWNER PAYMENT CEILINGS AND ALLOWANCE ENTITLEMENT BY EQUITY STATUS: ELDERLY COUPLE WITH THREE-ROOM, $10,000 HOME

Item	Annual Amount ($), by Equity/Value Ratio				
	No Equity	25%	50%	75%	100%
Housing Expenses					
Mortgage amortization[a]	83	276	482	664	--
Mortgage interest[a]	797	604	398	216	--
Real estate taxes[b]	236	236	236	236	236
Insurance[b]	32	32	32	32	32
Maintenance and repairs[b]	120	120	120	120	120
Utilities[b]	356	356	356	356	356
Alternative Payment Ceilings					
A. Full housing cost[c]	1,544	1,544	1,544	1,544	1,544
B. Current cash outlay[d]	1,624	1,624	1,624	1,624	744
C. Cash outlay excl. amortization[e]	1,541	1,348	1,142	960	744
Income					
Social security payments[f]	3,200	3,200	3,200	3,200	3,200
Cash income from savings[g]	300	300	300	300	300
Imputed return on home equity[h]	--	125	250	375	500
Gross income for program[i]	3,500	3,625	3,750	3,875	4,000
Adjusted gross income[j]	3,150	3,262	3,375	3,488	3,600
Allowance Entitlement					
Standard cost of adequate housing[k]	1,500	1,500	1,500	1,500	1,500
Participant's contribution[l]	788	816	844	872	900
Allowance entitlement[m]	712	684	656	628	600
Payment ceilings that are binding	None	None	None	None	None
Gross Income Below Which Ceiling Would Be Binding					
A. Full housing cost	None	None	None	None	None
B. Current cash outlay	None	None	None	None	3,360
C. Cash outlay excl. amortization	None	675	1,591	2,400	3,360

SOURCE: Computations by HASE staff from program standards and housing cost data for Site I.

NOTE: Notes for Tables 1, 2, and 3 follow Table 3.

Table 2

COMPARISON OF HOMEOWNER PAYMENT CEILINGS AND ALLOWANCE ENTITLEMENT BY EQUITY STATUS: ELDERLY COUPLE WITH FIVE-ROOM, $20,000 HOME

Item	Annual Amount ($), by Equity/Value Ratio				
	No Equity	25%	50%	75%	100%
Housing Expenses					
Mortgage amortization[a]	167	552	965	1,328	--
Mortgage interest[a]	1,594	1,209	796	433	--
Real estate taxes[b]	471	471	471	471	471
Insurance[b]	64	64	64	64	64
Maintenance and repairs[b]	120	120	120	120	120
Utilities[b]	437	437	437	437	437
Alternative Payment Ceilings					
A. Full housing cost[c]	2,692	2,692	2,692	2,692	2,692
B. Current cash outlay[d]	2,853	2,853	2,853	2,853	1,092
C. Cash outlay excl. amortization[e]	2,686	2,301	1,888	1,525	1,092
Income					
Social security payments[f]	3,200	3,200	3,200	3,200	3,200
Cash income from savings[g]	300	300	300	300	300
Imputed return on home equity[h]	--	250	500	750	1,000
Gross income for program[i]	3,500	3,750	4,000	4,250	4,500
Adjusted gross income[j]	3,150	3,375	3,600	3,825	4,050
Allowance Entitlement					
Standard cost of adequate housing[k]	1,500	1,500	1,500	1,500	1,500
Participant's contribution[l]	788	844	900	956	1,012
Allowance entitlement[m]	712	656	600	544	488
Payment ceilings that are binding	None	None	None	None	None
Gross Income Below Which Ceiling Would Be Binding					
A. Full housing cost	None	None	None	None	None
B. Current cash outlay	None	None	None	None	1,813
C. Cash outlay excl. amortization	None	None	None	None	1,813

SOURCE: Computations by HASE staff from program standards and housing cost data for Site I.

NOTE: Notes for Tables 1, 2, and 3 follow Table 3.

Table 3

COMPARISON OF HOMEOWNER PAYMENT CEILINGS AND ALLOWANCE ENTITLEMENT BY EQUITY STATUS: ELDERLY COUPLE WITH SEVEN-ROOM, $30,000 HOME

Item	Annual Amount ($), by Equity/Value Ratio				
	No Equity	25%	50%	75%	100%
Housing Expenses					
Mortgage amortization[a]	250	828	1,448	1,992	--
Mortgage interest[a]	2,391	1,814	1,194	650	--
Real estate taxes[b]	706	706	706	706	706
Insurance[b]	96	96	96	96	96
Maintenance and repairs[b]	120	120	120	120	120
Utilities[b]	518	518	518	518	518
Alternative Payment Ceilings					
A. Full housing cost[c]	3,840	3,840	3,840	3,840	3,840
B. Current cash outlay[d]	4,082	4,082	4,082	4,082	1,440
C. Cash outlay excl. amortization[e]	3,832	3,254	2,634	2,090	1,440
Income					
Social security payments[f]	3,200	3,200	3,200	3,200	3,200
Cash income from savings[g]	300	300	300	300	300
Imputed return on home equity[h]	--	375	750	1,125	1,500
Gross income for program[i]	3,500	3,875	4,250	4,625	5,000
Adjusted gross income[j]	3,150	3,488	3,825	4,162	4,500
Allowance Entitlement					
Standard cost of adequate housing[k]	1,500	1,500	1,500	1,500	1,500
Participant's contribution[l]	788	872	956	1,040	1,125
Allowance entitlement[m]	712	628	544	460	375
Payment ceilings that are binding	None	None	None	None	None
Gross Income Below Which Ceiling Would Be Binding					
A. Full housing cost	None	None	None	None	None
B. Current cash outlay	None	None	None	None	267
C. Cash outlay excl. amortization	None	None	None	None	267

SOURCE: Computations by HASE staff from program standards and housing cost data for Site I.

NOTE: Notes for Tables 1, 2, and 3 follow Table 3.

NOTES FOR TABLES 1, 2, AND 3

[a]Assumes mortgage loan at full market value, 30-year term, 8 percent interest, level monthly payment schedule with complete amortization.

[b]Based on single-family house whose size and market value is indicated in the table title, and on tax rates or factor prices current in Site I in 1974.

[c]Annual capital costs equal to 8 percent of market value, plus taxes, insurance, maintenance, repairs, and utilities.

[d]All items listed under "housing expenses."

[e]All items listed under "housing expenses" except mortgage amortization.

[f]National average in 1973 for two persons.

[g]Savings of $5,000 yielding 6 percent.

[h]Five percent of owner's equity.

[i]Cash income plus imputed income.

[j]After deducting 10 percent, as provided by law for elderly household heads.

[k]HUD-approved amount for two persons in Site I.

[l]Twenty-five percent of adjusted gross income.

[m]Standard cost less participant's contribution.

intermediate case is typical of elderly homeowners whose former earnings put them in the moderate-income range.

In each case, it is assumed that the property was acquired subject to a 30-year mortgage for the full purchase price, equal to current market value of the property. The mortgage interest rate is assumed to be 8 percent, and the amortization schedule is designed to result in level monthly payments (principal and interest) for the life of the loan, whereupon amortization is complete.

In addition to its social security income, each household is assumed to have a savings account of $5,000, which pays interest at 6 percent annually. The household's housing expenses and income position are shown at various stages of loan amortization, as its equity accumulates and the balance of the loan declines. Characteristically, elderly homeowners have nearly or completely amortized their mortgage, so the right-hand columns of the table are empirically the most relevant.

The stub of each table first lists all explicit housing expenses, then selects among them to calculate alternative payment ceilings as discussed earlier. "Full housing cost" consists of annualized capital cost (8 percent of market value) plus current charges for real estate taxes, insurance, maintenance, repairs, and utilities. "Current cash outlay" substitutes annual mortgage payments (principal and interest) for annualized capital cost. The third alternative is like the second, except that payments on mortgage principal are excluded. Our draft program handbook for Site I sets the payment ceiling equal to "current cash outlay."

The lower half of the stub lists the components of household gross income as calculated for the housing allowance program. Where appropriate, this list includes an item--imputed income--equal to 5 percent of homeowner's equity. Gross income is reduced by 10 percent* to obtain adjusted gross income, the income measure for allowance computation.

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*A statutory requirement for elderly persons. For household heads both under 62 years, the deduction would be 5 percent.

The allowance computation follows. From the standard cost of adequate housing for two persons, we subtract the participant's contribution, 25 percent of his adjusted gross income. The difference is his allowance entitlement.

Elderly Couple with $10,000 Home

Looking specifically at Table 1, which covers the case of a low-income elderly couple living in a very modest cottage, we see that the full annual cost of their housing is $1,544, approximately equal to the Site I standard cost (R^*) of $1,500. Slightly over half ($800) of that full annual cost is capital cost; the rest ($744) is current charges for taxes, insurance, maintenance, repairs, and utilities.

Current cash outlay is slightly higher, $1,624 annually, including annual mortgage payments of $880 so long as any amount of principal is outstanding; when the mortgage is fully amortized, current cash outlay drops sharply to $744. If repayment of the loan is excluded from current cash outlay, the outlay drops gradually to the same figure as the annual interest payment declines.

In the income section of the table, we see that as equity accumulates, gross income rises from $3,500 to $4,000 due to inclusion of imputed return on that equity as an element of income. (Note that equity accumulation here is a net increase in asset holdings, not merely a change in the form in which assets are held.) With the 10-percent adjustment, each dollar of increase in gross income decreases allowance entitlement by 22 cents.

The table shows three alternative payment ceilings (A, B, C). However, no combination of circumstances shown in the table yields an allowance entitlement in excess of any applicable payment ceiling. In other words, the payment ceiling is not a binding constraint for these cases, whichever version is chosen.

Some of these ceilings would bind if household incomes were lower and allowance entitlement were therefore greater. At the bottom of the table, we see that Payment Ceilings B and C would bind on the couple who have paid off their mortgage if their income were below $3,360. Payment ceiling C would bind in other cases at still lower incomes.

Elderly Couple with $20,000 Home. The circumstances described in Table 2 are more typical of elderly couples. The main points to be noted are the following:

1. Full housing cost associated with a five-room, $20,000 home exceeds the standard cost for two persons by nearly 80 percent.
2. To afford such a residence, our couple would have to allot between 54 and 64 percent of their total annual income to housing expenditures.*
3. In terms of current cash outlay and current cash receipts, they would have to allot nearly 70 percent to housing so long as there was a mortgage balance outstanding. When the mortgage was extinguished, this picture would change radically, with only 27 percent of cash receipts going for current cash outlays on housing.**
4. Only versions B and C of the payment ceiling would ever bind, and these only for the owners in fee simple with gross incomes below $1,813. This circumstance is quite unlikely, inasmuch as the $20,000 home equity yields $1,000 in imputed income. For the ceiling to bind, cash income would have to be less than $813, far below Supplemental Security Income entitlement.

Elderly Couple with $30,000 Home. Table 3 reviews the case of a seven-room house occupied by the same elderly couple. Generally, it shows that they could not afford to live there unless they owned it in fee simple. In that case, their full housing costs would amount to about 71 percent of total annual income, and their annual cash outlay would amount to 37 percent of their annual cash income. Payment ceilings would be binding only for gross incomes below $267 annually, an impossibly low figure when imputed income is included.

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*Full housing cost ($2,692) divided by the sum of gross income and allowance entitlement.

**Current cash outlay divided by the sum of cash income items and allowance entitlement.

Assets Held in Different Forms

Above, we reviewed payment ceilings and allowance entitlement for households that were accumulating assets in the form of homeowner equities. In each case considered, as this equity increased, imputed return on the equity also increased, adding to gross income as calculated for program purposes; each increase in income leads in turn to a reduction in allowance entitlement. Payment Ceiling A, based on full housing cost, was unaffected by changing equity positions. Payment Ceiling B was affected only when the household acquired full title to the property, extinguishing the mortgage. Payment Ceiling C was lowered as the outstanding balance of the mortgage loan diminished.

Here, we consider a slightly different issue: How do payment ceilings and allowance entitlement relate when total asset holdings are constant but the form in which they are held changes? The relationships are illustrated in Tables 4, 5, and 6, which in most respects parallel Tables 1, 2, and 3, respectively.

In each table, it is assumed that our elderly couple holds assets whose total value is equal to the market value of their home plus $5,000. The first column of each table assumes that the entire amount is held in the form of a savings account yielding 6 percent annually, and that the couple has no equity in their home. In subsequent columns, the savings account is drawn down to make payments on the mortgage principal, so that the same total amount of assets is divided between a savings account that yields cash income and a home equity that does not. However, for program purposes, a return is imputed to the home equity at an annual rate of 5 percent on its current value, and this return is counted as part of gross income.

It is worth noting that our calculations involve three different interest rates: a mortgage rate of 8 percent, also used to calculate full housing cost; a yield on cash savings of 6 percent; and an imputed return of 5 percent on assets that do not yield cash income. The first two are approximations to current market rates on these types of investments, which differ in risk and liquidity. The third is a program standard, conservatively set to assure fair treatment of asset-holders. If the savings-account yield and the imputed rate of return on home

Table 4

COMPARISON OF HOMEOWNER PAYMENT CEILINGS AND ALLOWANCE ENTITLEMENT BY EQUITY STATUS, WITH TOTAL ASSETS HELD CONSTANT: ELDERLY COUPLE WITH THREE-ROOM, $10,000 HOME AND $15,000 IN ASSETS

Item	Annual Amount ($), by Equity/Value Ratio				
	No Equity	25%	50%	75%	100%
Housing Expenses					
Mortgage amortization[a]	83	276	482	664	--
Mortgage interest[a]	797	604	398	216	--
Real estate taxes[b]	236	236	236	236	236
Insurance[b]	32	32	32	32	32
Maintenance and repairs[b]	120	120	120	120	120
Utilities[b]	356	356	356	356	356
Alternative Payment Ceilings					
A. Full housing cost[c]	1,544	1,544	1,544	1,544	1,544
B. Current cash outlay[d]	1,624	1,624	1,624	1,624	744
C. Cash outlay excl. amortization[e]	1,541	1,348	1,142	960	744
Income					
Social security payments[f]	3,200	3,200	3,200	3,200	3,200
Cash income from savings[g]	900	750	600	450	300
Imputed return on home equity[h]	--	125	250	375	500
Gross income for program[i]	4,100	4,075	4,050	4,025	4,000
Adjusted gross income[j]	3,690	3,668	3,645	3,622	3,600
Allowance Entitlement					
Standard cost of adequate housing[k]	1,500	1,500	1,500	1,500	1,500
Participant's contribution[l]	922	917	911	906	900
Allowance entitlement[m]	578	583	589	594	600
Payment ceilings that are binding	None	None	None	None	None
Gross Income Below Which Ceiling Would Be Binding					
A. Full housing cost	None	None	None	None	None
B. Current cash outlay	None	None	None	None	3,360
C. Cash outlay excl. amortization	None	675	1,591	2,400	3,360

SOURCE: Computations by HASE staff from program standards and housing cost data for Site I.

NOTE: Notes for Tables 4, 5, and 6 follow Table 6.

Table 5

COMPARISON OF HOMEOWNER PAYMENT CEILINGS AND ALLOWANCE ENTITLEMENT BY EQUITY STATUS, WITH TOTAL ASSETS HELD CONSTANT: ELDERLY COUPLE WITH FIVE-ROOM, $20,000 HOME AND $25,000 IN ASSETS

Item	Annual Amount ($), by Equity/Value Ratio				
	No Equity	25%	50%	75%	100%
Housing Expenses					
Mortgage amortization[a]	167	552	965	1,328	--
Mortgage interest[a]	1,594	1,209	796	433	--
Real estate taxes[b]	471	471	471	471	471
Insurance[b]	64	64	64	64	64
Maintenance and repairs[b]	120	120	120	120	120
Utilities[b]	437	437	437	437	437
Alternative Payment Ceilings					
A. Full housing cost[c]	2,692	2,692	2,692	2,692	2,692
B. Current cash outlay[d]	2,853	2,853	2,853	2,853	1,092
C. Cash outlay excl. amortization[e]	2,686	2,301	1,888	1,525	1,092
Income					
Social security payments[f]	3,200	3,200	3,200	3,200	3,200
Cash income from savings[g]	1,500	1,200	900	600	300
Imputed return on home equity[h]	--	250	500	750	1,000
Gross income for program[i]	4,700	4,650	4,600	4,550	4,500
Adjusted gross income[j]	4,230	4,185	4,140	4,095	4,050
Allowance Entitlement					
Standard cost of adequate housing[k]	1,500	1,500	1,500	1,500	1,500
Participant's contribution[l]	1,058	1,046	1,035	1,024	1,012
Allowance entitlement[m]	442	454	465	476	488
Payment ceilings that are binding	None	None	None	None	None
Gross Income Below Which Ceiling Would Be Binding					
A. Full housing cost	None	None	None	None	None
B. Current cash outlay	None	None	None	None	1,813
C. Cash outlay excl. amortization	None	None	None	None	1,813

SOURCE: Computations by HASE staff from program standards and housing cost data for Site I.

NOTE: Notes for Tables 4, 5, and 6 follow Table 6.

Table 6

COMPARISON OF HOMEOWNER PAYMENT CEILINGS AND ALLOWANCE ENTITLEMENT BY EQUITY STATUS, WITH TOTAL ASSETS HELD CONSTANT: ELDERLY COUPLE WITH SEVEN-ROOM, $30,000 HOME AND $35,000 IN ASSETS

Item	Annual Amount ($), by Equity/Value Ratio				
	No Equity	25%	50%	75%	100%
Housing Expenses					
Mortgage amortization[a]	250	828	1,448	1,992	--
Mortgage interest[a]	2,391	1,814	1,194	650	--
Real estate taxes[b]	706	706	706	706	706
Insurance[b]	96	96	96	96	96
Maintenance and repairs[b]	120	120	120	120	120
Utilities[b]	518	518	518	518	518
Alternative Payment Ceilings					
A. Full housing cost[c]	3,840	3,840	3,840	3,840	3,840
B. Current cash outlay[d]	4,082	4,082	4,082	4,082	1,440
C. Cash outlay excl. amortization[e]	3,832	3,254	2,634	2,090	1,440
Income					
Social security payments[f]	3,200	3,200	3,200	3,200	3,200
Cash income from savings[g]	2,100	1,650	1,200	750	300
Imputed return on home equity[h]	--	375	750	1,125	1,500
Gross income for program[i]	5,300	5,225	5,150	5,075	5,000
Adjusted gross income[j]	4,770	4,702	4,635	4,568	4,500
Allowance Entitlement					
Standard cost of adequate housing[k]	1,500	1,500	1,500	1,500	1,500
Participant's contribution[l]	1,192	1,176	1,159	1,142	1,125
Allowance entitlement[m]	308	324	341	358	375
Payment ceilings that are binding	None	None	None	None	None
Gross Income Below Which Ceiling Would Be Binding					
A. Full housing cost	None	None	None	None	None
B. Current cash outlay	None	None	None	None	267
C. Cash outlay excl. amortization	None	None	None	None	267

SOURCE: Computations by HASE staff from program standards and housing cost data for Site I.

NOTE: Notes for Tables 4, 5, and 6 follow Table 6.

NOTES FOR TABLES 4, 5, AND 6

[a]Assumes mortgage loan at full market value, 30-year term, 8 percent interest, level monthly payment schedule with complete amortization.

[b]Based on single-family house whose size and market value is indicated in the table title, and on tax rates or factor prices current in Site I in 1974.

[c]Annual capital costs equal to 8 percent of market value, plus taxes, insurance, maintenance and repairs, and utilities.

[d]All items listed under "housing expenses."

[e]All items listed under "housing expenses" except mortgage amortization.

[f]National average in 1973 for two persons.

[g]Savings equal to the total asset amount indicated in the table title less the value of homeowner's equity, invested at 6 percent. The sum of savings and equity is a constant for all cases shown in any one table.

[h]Five percent of owner's equity.

[i]Cash income plus imputed income.

[j]After deducting 10 percent, as provided by law for elderly household heads.

[k]HUD-approved amount for two persons in Site I.

[l]Twenty-five percent of adjusted gross income.

[m]Standard cost less participant's contribution.

equity were the same, the computations in the bottom half of each table would lead to identical allowance entitlements for households whose assets were divided differently between the two forms of investment. Because these two rates differ, allowance entitlement increases slightly as assets are shifted from the savings account to home equity. (In Tables 1, 2, and 3, allowance entitlement *decreases* slightly in each successive column because total asset holdings are increasing.)

Changing our assumptions about total asset holdings has no effect on housing expenses or payment ceilings, since the new assumptions do not disturb the patterns of housing consumption and home finance postulated for Tables 1, 2, and 3. Because gross incomes for program purpose in Tables 4, 5, and 6 are equal to or higher than those in corresponding earlier tables, allowance entitlements are equal to or less than those shown in the earlier tables. All versions of the payment ceilings in all cases illustrated are, as before, greater than allowance entitlement, and payment ceilings are therefore nonbinding constraints. Income levels below which payment ceilings would bind are unchanged.

The main lesson to be learned from Tables 4, 5, and 6 is that the allowance formula itself, without assistance from a payment ceiling, provides very nearly the same benefits for households whose income and asset positions are comparable, regardless of the form in which assets are held. Our imputation procedures slightly favor those who hold real property rather than cash, a result that could be corrected by raising the imputation rate to match the yield on cash savings.

Table 6 is worth special examination because it casts light on a different problem. The table assumes that our elderly couple holds assets amounting to $35,000 altogether, slightly in excess of the asset ceiling of $32,500 imposed by HUD on such program participants. Whether these assets are held altogether in savings accounts or nearly all in the form of home equity, the allowance formula does indicate a need for housing assistance in amounts ranging from $308 to $375 annually. We see no reason to assume that the allowance formula is

wrong; excluding these households from the program seems to us inequitable relative to our treatment of those with fewer assets.*

Comparisons of Owners and Renters

Tables 1 through 6 can also be used to compare the allowance program's treatment of owners with its treatment of renters. The first column of each table presents a case in which our elderly couple has no equity in the home they occupy. In terms of their incomes and allowance entitlement, they are in the same situation as renters, whatever their asset holdings.

In terms of housing expenses and payment ceilings, there are some differences. A renter's housing expenses consist of gross rent--i.e., contract rent plus the cost of those utilities not covered by contract rent; these are also the items counted in the payment ceiling.

In our judgment, gross rent should be closely approximated by the table entry "full housing cost." This entry includes all current costs borne either by the landlord or by the tenant, plus an imputed return on the market value of the property that would enable a landlord to pay 8 percent on a mortgage loan covering part of that amount and also earn 8 percent on the balance--i.e., on his own equity in the property.

The approximate equivalence of market gross rent to "full housing cost" is supported by the figures in either Table 1 or Table 4, which cover the case of a three-room cottage with a market value of $10,000. Such a housing unit, if well maintained, would satisfy the allowance program's definition of minimum adequate housing for two persons, and our analysis of the Brown County housing market led us to conclude that well-maintained housing units of that size (usually apartments rather than single-family homes) were generally available at annual gross rents in the vicinity of $1,500. The

*See pp. 5-7 above, for a general discussion of this issue.

calculations in Tables 1 and 3 lead to an estimate of full housing cost amounting to $1,544 annually.*

If these approximations are acceptable to the reader, we can draw on Tables 1 and 4 to compare the financial positions of elderly couples living in modest but adequate housing either as renters or owners, holding constant their incomes from other sources and their total asset holdings. The comparisons are shown in Table 7, for asset holdings of $5,000 and $15,000.

The first two columns compare a renter couple with a homeowner couple, in both cases with assets of $5,000 in the form of a savings account yielding 6 percent. The homeowners have, in effect, just purchased their home subject to a 30-year mortgage. They have yet to accumulate any equity, unless one counts the first year's principal payment of $80. This payment raises their current cash outlay above the full housing cost of $1,544.

The cash income positions of the two households (prior to their allowance payments) are identical, consisting of $3,200 in social security, plus interest receipts on their savings accounts amounting to $300. Allowance entitlements are therefore also identical.

Budget allocation is nearly the same in the two cases, whether measured by cash flow or by comparison of full housing cost with total income. The amounts each has available for nonhousing consumption differ by $80, the sum spent by the owner couple to acquire an equity in their home.

The last two columns compare a renter couple with a homeowner couple, both with $15,000 in assets. The renter couple has invested this amount is in a savings account drawing 6 percent interest. The homeowners, having retired their mortgage, have an equity of $10,000 in their home and another $5,000 in a savings account.

---

*The other cases, one represented in Tables 2 and 5 and another in Tables 3 and 6, refer to homes that exceed program standards even for households of appropriate size. Our five-room $20,000 house carries an annual cost of $2,692, or 145 percent of the program standard for a two-bedroom unit ($1,860); our seven-room, $30,000 house carries an annual cost of $3,840, or 168 percent of the program standard for a four-bedroom unit ($2,280).

Table 7

COMPARISON OF FINANCIAL POSITIONS OF RENTERS AND HOMEOWNERS WITH EQUIVALENT INCOMES AND ASSETS, AFTER INCLUSION OF HOUSING ALLOWANCE BENEFITS

Item	Annual Amounts ($) or Ratios			
	Total Assets = $5,000		Total Assets = $15,000	
	Renter[a]	Owner[a]	Renter[a]	Owner[b]
Housing Expenses				
Current cash outlay	1,544	1,624	1,544	744
Full housing cost	1,544	1,544	1,544	1,544
Income				
Cash income	3,500	3,500	4,100	3,500
Imputed return on home equity	--	--	--	500
Allowance entitlement	712	712	578	600
Total	4,212	4,212	4,678	4,600
Budget Allocation				
Cash housing outlay/cash receipts[c]	.37	.38	.33	.18
Full housing cost/total income[d]	.37	.37	.33	.33
Cash available for other purposes[e]	2,668	2,588	3,134	3,356

SOURCE: Data from Tables 1 and 3 and computations by HASE staff.

NOTE: Housing expense and income items are defined in notes following Table 3.

[a] Assets held in a savings account yielding 6 percent annually.

[b] $5,000 in a savings account yielding 6 percent annually; $10,000 equity in a home owned in fee simple.

[c] Cash income and allowance entitlement.

[d] Cash income, imputed return on home equity, and allowance entitlement.

[e] Cash receipts less current cash outlay for housing.

Note that the homeowners' annual cash outlay of $744 is less than half that of the renters. This fact does not imply a difference in annual housing costs, only that the homeowners, in effect, pay part of that cost ($800) to themselves as equity holders. Because of our conservative imputation of return to assets, this internal transaction is reflected in the income section of the table by an item of only $500.

For the renters, an equivalent $10,000 invested in an interest-bearing account is assumed to return $600 in annual income. This, combined with social security and interest on another $5,000, brings their preallowance cash income to $4,100. The owners' cash income is only $3,500, but the imputed yield on their equity brings the total to $4,000, nearly the same amount as the renters receive. Allowance entitlements of the two households differ by only $22 annually.

The striking feature of the comparison pertains to the ratios of cash outlay to cash receipts for the two cases. The renters spend 38 percent of their cash receipts (including allowance payments) for housing; the homeowners spend only 18 percent of cash receipts--and those receipts are considerably smaller than the renters'.

This disparity in cash flow underlies HUD's uneasiness with the application of the allowance formula indifferently to renters and homeowners. It appears as though the homeowners, with much smaller current outlays, are less in need of assistance. However, the appearance is deceptive. It reflects only the fact that part of the homeowners' housing cost (and part of their income) is not monetized; no explicit transaction occurs.

One way to show this result is to ask what amount of cash the homeowners have available to cover their nonhousing needs. Combining their cash income of $3,500 with their housing allowance of $600, their total annual cash receipts amount to $4,100. Subtracting their housing outlays of $744, the cash remaining is $3,356, which is available for other purposes. A similar calculation for the renters leaves them with $3,134 for nonhousing expenditures.

These two amounts are not identical, but the difference between them amounts to only 7 percent of either figure. That there is any

difference at all reflects only different interest-rate assumptions for assets of differing risk and liquidity.

Given that the renters and owners are consuming exactly the same amount of housing services and nearly the same amount of other goods and that both are holding the same amount of assets, it seems to us highly inequitable to reduce or eliminate the homeowners' allowance benefits simply to remedy a superficial impression based on cash flow comparisons.

HASE WORKING NOTES REISSUED AS RAND NOTES

Most HASE publications that originally appeared as working notes (WN-series) are now being reissued as Rand notes (N-series) to make them available to a wider audience. Except as noted in the preface of each reissued document, its text and pagination are identical with the preceding WN. Rather than alter text citations of other reissued documents to reflect their current publication numbers, we provide the following list of corresponding numbers. Interested readers may order publications in the N-series from The Rand Corporation's Publications Department.

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WN-7883-HUD	N-1028-HUD
WN-7885-HUD	N-1029-HUD
WN-7888-HUD	N-1030-HUD
WN-7895-HUD	N-1031-HUD
WN-7901-HUD	N-1032-HUD
WN-7907-HUD	N-1033-HUD
WN-7953-HUD	N-1034-HUD
WN-7974-HUD	N-1035-HUD
WN-7980-HUD	N-1036-HUD
WN-7982-HUD	N-1037-HUD
WN-8025-HUD	N-1038-HUD
WN-8029-HUD	N-1040-HUD
WN-8034-HUD	N-1041-HUD
WN-8054-HUD	N-1042-HUD
WN-8101-HUD	N-1043-HUD
WN-8167-HUD	N-1044-HUD
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WN-8209-HUD	N-1048-HUD
WN-8218-HUD	N-1049-HUD
WN-8268-HUD	N-1050-HUD
WN-8350-HUD	N-1051-HUD
WN-8364-HUD	N-1052-HUD
WN-8396-HUD	N-1053-HUD
WN-8439-HUD	N-1054-HUD
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