

# Report on Experimental Poverty Measures: 1990 to 1997

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## I. Overview

In July of this year the Census Bureau released the report entitled *Experimental Poverty Measures 1990 to 1997*. This report responded to criticisms of the current official measure and to recommendations of the National Academy of Sciences Panel on Poverty and Family Assistance.

This Census Bureau report presents a series of experimental poverty measures that serve to illustrate the effect on the perception of who is poor if the official measure were revised.

The experimental measures presented in the Census Bureau report are based on the work of a National Academy of Sciences (NAS) panel contained in their report which was published in 1995, *Measuring Poverty: A New Approach* (see Citro and Michael, 1995). The NAS panel identified several major weaknesses of the current poverty measure, including the definitions of both thresholds and incomes (or resources), that have become more apparent and problematic during the past three decades.

- *The current income measure does not reflect the effects of key government policies that alter the disposable income available to families and, hence, their poverty status.* Examples include payroll taxes, which reduce disposable income, and in-kind public-benefit programs, such as the food stamps program, which free up resources to spend on nonfood items.
- *The current poverty thresholds do not adjust for rising income levels and standards of living that have occurred since 1965,* despite evidence suggesting that the trend in the income level commonly thought necessary to lift a family out of poverty follows the trend in overall consumption expenditures.
- *The current measure does not take into account variation in expenses that are necessary to hold a job and to earn income--expenses that reduce disposable income.* These expenses include transportation costs pertaining to work, and, perhaps more

importantly, the increasing costs of child care for working families resulting from the increased labor force participation of mothers.

- *The current measure does not take into account variation in medical costs across population groups, which are a function of differences in health status and insurance coverage.*
- *The current poverty thresholds use family size adjustments that are anomalous and do not take into account important changes in family situations,* including payments made for child support and increasing cohabitation among unmarried couples.
- *The current poverty thresholds do not adjust for geographic differences in the cost of living across the nation,* although there are significant variations in prices across geographic areas.

There have been many attempts to revise the current official poverty measure in the past. Some of those are listed below.

- 1969-- Revision of poverty thresholds
- 1971-72 -- Technical Committee on Poverty Statistics  
Interagency Subcommittees on Cash Income, on Non-Cash Income, and on updating the Poverty Threshold
- 1976 -- Poverty Studies Task Force under HEW
- 1980 -- Expanded content of CPS to include in-kind benefits
- 1981 -- Revision of poverty thresholds
- 1982 -- Census Bureau published first experimental poverty measures
- 1992 -- Congressional funding of National Academy of Sciences (NAS) Panel on Poverty and Family Assistance

Most relevant for our work here are the last two in the list. Much of the work in the latest report is based on work originally published by the Census Bureau in 1982. These experimental measures have been published annually with the

official poverty measure since that time. But these measures differ from those in the current report in that they use the official thresholds with varying definitions of income. The result in many cases being that the measures are not consistently defined in terms of comparing a measure of need against a measure of resources available to meet those needs.

The last item in the list, the 1992 funding of the National Academy of Sciences work resulted in the report we refer to here and represents the impetus behind the research described in our report.

The experimental measures presented in the Census Bureau report are based on the work of a National Academy of Sciences (NAS) panel. Their recommendations fall into four general categories:

1. Threshold recommendations. The panel recommended that the thresholds should represent a dollar amount for food, clothing, shelter (including utilities), and a small additional amount to allow for other common, everyday needs (e.g., household supplies, personal care, and non-work-related transportation). One threshold should be developed for a reference family type using Consumer Expenditure Survey (CE) data, and the reference family threshold should be adjusted to reflect the needs of different family types and geographic differences in the cost of living. The reference family should consist of two adults and two children. Adjustments to thresholds should be made over time to reflect changes in real growth in basic consumption expenditures.

2. Family resource recommendations. The panel recommended that family resources should be defined as the value of money income from all sources, plus the value of near-money benefits that are available to buy goods and services covered by the new thresholds, minus expenses that divert money that can no longer be used to buy these critical goods and services. Near-money benefits include non-medical in-kind benefits, such as food stamps, subsidized housing, school lunches, and home energy assistance. Expenses to be subtracted include income taxes, Social Security payroll taxes, childcare and other work-related expenses, child support payments to another household, and household contributions toward the costs of medical care and health insurance premiums (i.e., medical out-of-pocket costs or MOOP).

3. Data recommendations. Several of the panel's recommendations dealt with survey

methodology. Most significantly, the panel recommended that the Survey of Income and Program Participation (SIPP) should become the basis of official income and poverty statistics, replacing the March income supplement to the Current Population Survey (CPS). In this recommendation, the panel recognized that the SIPP asks more relevant questions than the March CPS and obtains income data of higher quality. The panel also encouraged a review of the Consumer Expenditure Survey (CE) to improve the quality and usefulness of the data for poverty measurement. Finally, they recommended that consideration should be given to the practical problems of implementing fully an improved measure of poverty when using other surveys that do not collect the detailed information that is needed.

4. Research recommendations. There are several elements in the proposed poverty measure for which the panel recommended additional research. Among them are improved estimation of the geographic cost-of-living differences, an assessment of the extent of resource sharing among non-family household members for the purpose of broadening the unit of analysis, development of methods to value the benefits of owning a home, and development of one or more medical care risk indexes (separate from the measure of economic poverty) that would measure the risk of having inadequate or no health insurance coverage.

In our report we constructed six basic experimental measures. The first measure we refer to as the NAS measure. We calculated it by closely following the methods outlined in the NAS panel's report. While there are a few minor differences from the measure the panel recommended, they are computational rather than conceptual in nature. In both the panel's report and here this measure is constructed in the following way<sup>1</sup>:

**Thresholds:**

- Thresholds are set at the midpoints of the ranges recommended by the NAS panel – averaged over the three most recent years – i.e., data for 1995, 1996, and 1997 are averaged for the 1997 threshold
- The equivalence scale is a two-parameter version
- Geographic indexes are those listed in the panel report

**Resources:**

- Include the value of food assistance programs
- Include the value of housing subsidies

- Include the value of energy assistance (only heating assistance)
- Subtract work-related and childcare expenses using the panel's childcare model
- Take account of taxes as modeled in the CPS
- Subtract medical out-of-pocket expenses (MOOP), modeled and calibrated to spending totals

The second and third experimental measures we report use a different method of valuing childcare expenses. These measures are referred to as DCM1 (Different Childcare Method 1) and DCM2 (Different Childcare Method 2). The DCM1 measure uses a percent of median childcare expenditures estimated from the SIPP, while DCM2, uses the amounts based on deductions for necessary childcare in the former Aid to Families with Dependent Children program (AFDC) and Food Stamp programs. DCM2 is similar to the panel's method in its effect on poverty estimates but is easier to implement.

The fourth experimental measure we refer to as the DES-DCM2 measure. This measure is constructed like the DCM2, but, in addition to changing the childcare computation, we also use a Different Equivalence Scale. For this measure we use the three-parameter equivalence scale and AFDC allowances to value childcare expenses. We include it here because it is arguably a more refined equivalence scale than the two-parameter one that the panel used.

Finally we show the NAS and the DES-DCM2 measures without a geographic adjustment. These measures are referred to as NGA and NGA-DES-DCM2, respectively. These two measures are calculated exactly as the NAS and the DES-DCM2 measures but the thresholds are not adjusted for differences in the cost of housing in different parts of the country. The geographic adjustment is excluded because, as the panel noted, this element requires more research and better data sources. These measures, then, adopt the assumption that the cost of meeting basic needs does not vary by geographic area.

The new experimental poverty measures that are presented in the report paint a different picture of the nation's poor. According to the new measures, people who receive more from certain types of government assistance programs have relatively lower poverty rates, while families with high work-related and medical expenses have relatively higher poverty rates. The experimental measures incorporate the effects of government policies aimed at the most needy families in the United States. They use an after-tax income

measure, and add the value of in-kind benefits such as food stamps to income. They also take into account variations in expenses that are necessary to hold a job or to obtain medical care.

#### Key findings:

X Due to the Earned Income Tax Credit, deducting taxes from income on balance reduces the percent of people who are viewed as being poor.

X Adding in-kind benefits to income reduces poverty rates, but the reductions from any single program are generally quite small.

X Under the experimental poverty measures, children, while still having higher poverty rates than other age groups, would make up a smaller proportion of the total poor than they do under the official poverty measure. The elderly would make up a larger proportion of the total poor under the new measures.

X People in families in which there are no workers are less likely to be classified as poor under the experimental measures than they are under the official measure. This is due to the greater likelihood of receiving in-kind benefits and incurring no work-related expenses.

X Experimental measures that account for geographic differences in the cost of housing show higher standardized poverty rates for people in the Northeast and the West as well as suburban areas than poverty rates based on the official measure.

One of the panel's recommendations is to make the Census Bureau's Survey of Income and Program Participation the official source for measuring income or resources in poverty statistics. The Current Population Survey is used in this report and for official poverty estimates published annually by the Census Bureau.

In the final section of the report we discuss additional research that should be done to refine improved poverty measures. Among the various items that require additional work are developing better geographic adjustments for the thresholds, improving the method for valuing medical out-of-pocket expenditures, taking account of the fact that some people live in housing that they own themselves and therefore have much lower housing costs than others, and finally, researching whether or not the family is the most appropriate unit of analysis for poverty measurement. These issues are described below in Sections II through IV of this paper. A different author as noted presents each section.

## II. Variation in need for shelter and medical out-of-pocket spending

Richard Bavier

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The NRC panel recommended that medical needs not be included in the poverty budget, and that medical out-of-pocket spending (or moop) be subtracted from income before poverty status is determined.<sup>ii</sup> The controversial nature of the panel's approach and the difficulty surveys will have in implementing it have left many people wishing for a variation on the panel's proposed poverty measure that would include something for medical out-of-pocket needs in the thresholds. However, those analysts who would like to see Census include a variation with moop-in-the-thresholds (or moopitt) in its experimental poverty series need to address the reasons that led the panel to reject such an approach.

The panel's principal argument against including anything in the poverty thresholds for medical needs is that such needs are, "...much more variable than needs for food and housing." (224). And, consequently, much "erroneous poverty classification" would result.

For the panel, a good indication of variation in medical needs, at least out-of-pocket medical needs, is variation in spending. For poverty measurement purposes, we should regard all moop as "nondiscretionary." (102, 235-6) So, to illustrate the variability of medical needs, the panel presented a table (Table 4-1) that showed the variability of medical out-of-pocket spending.

A 1994 paper by Eva Jacobs, David Johnson, and Stephanie Shipp<sup>iii</sup> showed that shelter spending contributed much more than health spending did to total inequality of expenditures. Their analysis included all households, not just low-income households. To minimize the effects of both resource constraints and discretionary income on expenditures for basic needs, I selected 1992-95 Consumer Expenditure Survey units with four quarters of expenditure data and total annual expenditures between 100 percent and 150 percent of their NRC poverty thresholds, with results as in Table 1.

The coefficient of variation of moop is much larger than for shelter spending. The tail of the moop distribution includes more extreme

values. By that measure, moop is much more variable.

Table 1.	moop	shelter + utilities
Median	987	3,727
Mean	1,399	4,001
Variance	2,203,048	7,094,186
Coefficient of variation	106	67

However, saying that moop is more variable than shelter spending is not the same as saying that moop varies too much to include in the poverty budget. To see this, consider a two-item poverty budget made up of needs for shelter and moop. If they were independent random variables each need would contribute exactly its variance to the variance of the total budget that combines the two needs.<sup>iv</sup>

$$\text{variance}_{\text{threshold}} = \text{variance}_{\text{shelter}} + \text{variance}_{\text{moop}}$$

Assuming for the moment that the variation in spending shown in Table 1 reflects differences in need, shelter plus utilities would account for around three-fourths of the variation in need in this two-item poverty budget.<sup>v</sup> Looked at this way, spending data don't seem to support the contention that moop varies too much to include in a poverty budget. It appears that including moop wouldn't introduce nearly as much variation into the poverty budget as including shelter does.

The panel's report offers two lines of counter-argument. The first acknowledges that there is a lot of variation in shelter needs, but that this variation can be captured by variations in the thresholds. The panel proposed 50 threshold variations to reflect differences in the costs of shelter by census division and metro size. However, when it comes to moop, even allowing for "... a large number of thresholds to reflect different levels of medical care need ...," the report observes:

*... the predictor variables used to develop the thresholds (e.g., age or self-reported health status) may not properly reflect an individual's medical care needs during any one year: some people in a generally sicker group may not be sick that year and vice versa for people in a generally healthier group. (224)*

In other words, within any class of families with a similar risk of incurring high medical costs, the actual incidence of those costs in

any year will have a practically random character that no threshold variations could capture.

This seems true. Next I'll mention a similar feature in the variation of shelter needs. But first a caution against confusing the statistical measure of poverty with the measure of poverty or need employed in means-tested assistance programs. For means-tested programs, "erroneous poverty classification" may mean that an eligible family is denied assistance, and real deprivation goes unalleviated. Consequently, variation of needs among individual families, including random variation of medical needs, is of first importance. Such programs seek to accommodate exceptional needs by allowing a range of deductions before income is tested against eligibility criteria that apply to all families of the same class. (For example, the Food Stamp Program and rental assistance programs like public housing allow some actual medical expenses to be deducted from income prior to determining assistance amounts.)

The statistical measure of poverty, however, is not concerned with meeting the needs of individual families. Rather, it is a measure of the economic status of groups, how they compare to other groups, and how they change over time. Failure to correctly order the prevalence and degree of low economic resources among relevant subgroups would be a serious flaw in a poverty threshold. By comparison, failure to identify those individual families that experience essentially random economic shocks is not a flaw in a statistical measure of poverty as long as the relative prevalence and degree of low economic resources among groups are represented accurately.

The second counter-argument to Table 1 starts with the panel's characterization of only moop, among all basic needs, as "nondiscretionary." The panel would argue that nearly all the variance of moop on Table 1 reflects differences in need, but not all the variance in shelter spending does. So, if we could measure need directly, as opposed to spending, we would find that, after controlling for family composition, region, and metro size, the remaining variance of need for medical out-of-pocket spending would be much greater than the remaining variance of shelter needs.

We don't have a direct empirical measure of need as opposed to spending, so we can't settle this once and for all. But even after controlling for family composition, region, and metro size, considerable variation in shelter spending by low-income families remains, and some of it clearly is not discretionary. A shortage of affordable

housing within a metro area can also drive the kind of variation in shelter spending by low-income families displayed on Table 1. Every year the Department of Housing and Urban Development reports that the supply of affordable housing for low-income families falls well short of need. For 1997, HUD reported that for every 100 families with gross incomes below half the area median, there are only 69 affordable units available. This ratio of affordable units varies from a low of 49 in the West to a high of 84 in the Midwest.<sup>vi</sup>

In light of the fact that the local supply of housing at poverty budget prices may fall short of demand, it is not a surprise that there appears to be significant variation in shelter spending near the bottom of the distribution, even controlling for region and metro size. In the 1993 American Housing Survey, among families not receiving rental subsidies who rented two-bedroom apartments in cities of one-million or more, the range of shelter costs in the bottom quartile was close to the median in the quartile in every Census region. The standard deviation in the bottom quartile was between \$800 and \$1,300 per year. (This compares to a standard deviation of \$1,484 for moop on Table 1 with no controls for medical risk group.)

The effects of a shortfall of affordable housing within a locality occur unpredictably among families with the same composition and needing the same number of rooms. (So do the effects of the availability of some housing at very low or no cost. Among households classified as poor and not receiving rental assistance, the 1993 American Housing Survey found 9 percent occupying their dwelling with no charge for shelter or utilities.) Like the incidence of illness or accident among families in the same medical risk group such variation in shelter spending due to intra-area supply factors cannot be fully captured beforehand in threshold variations.

So, in sum, there appears to be a lot more variation in shelter needs than the NRC thresholds do or could capture. And because shelter makes up a much larger share of basic needs than moop does, it is not evident that moop would introduce more variation into the poverty budget than shelter already does. On balance, the argument that moop is too variable to include in the poverty budget does not seem compelling.

One commenter noted that it would not be a good idea to have separate poverty thresholds for those who happened to be sick in a given year, a view with which the foregoing agrees. To the extent that a class of families with high medical needs due to the presence of members with chronic

conditions can be identified, threshold variations to capture such predictable differences in need could be considered. Unpredictable intra-group variation in medical needs, or other needs, is the proper concern of poverty programs rather than poverty statistics.

Another commenter speculated that, even allowing for the kinds of supply-driven differences in shelter costs adduced, a larger share of medical spending probably was nondiscretionary. The discussion above does not dispute this. But if only one-third of the variance of shelter spending on Table 1 were found to represent nondiscretionary variation, the argument that moop is too variable to include in the poverty budget still would not be supported by these data.

It also should be acknowledged that neither the NRC thresholds nor the moopitt thresholds I'm suggesting will tell us whether families can afford or have access to medical care, just as neither one can tell us whether families can afford the housing that is available when and where they need it. To answer questions about the availability, affordability, and consumption of health care, special measures, like the medical care risk index proposed by the panel, are needed. They would join an array of special measures already in use to assess affordability of housing, sufficiency of food consumption, and health insurance coverage. These measure living standards, and supplement the measure of minimally adequate economic resources represented by the poverty thresholds.

### **III. Measuring Poverty Using Alternative Units of Analysis**

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The unit of analysis used in poverty measurement continues to receive critical scrutiny. The debate revolves around how the "family" should be defined. The National Academy of Science Panel on Poverty and Family Assistance offered two recommendations concerning the current official unit of analysis (Citro and Michael, 1995). First, the "definition of 'family' should be broadened for the purposes of poverty measurement to include cohabiting couples" (Citro and Michael, 1995, p. 13). Second, research should be conducted "on the extent of resource sharing among roommates and other household and family members to determine if the definition of the unit of analysis should be modified in the future" (Citro and Michael, 1995, p. 13). The panel further recommended an assessment of the

effects of changing the unit of analysis on poverty rates.

The panel noted that insofar as cohabitators, roommates, and other household members share resources and benefit from economies of scale, the current measure likely overstates the poverty rate for such people. The panel also noted that cohabiting couples typically pool resources, and many exhibit considerable stability in their living arrangements, so that it makes sense to treat them like married-couple families for purposes of poverty measurement.

This analysis presents results on poverty rates using three alternative units of analysis: 1) the official family, 2) the cohabiting couple, and 3) the household. Specifically, we estimate 1997 poverty rates by both unit of analysis and poverty measure (official versus experimental), and examine who is most affected by using different units of analysis.

### **Issues**

Most people would agree that official statistics should take into account the realities of changes in society. Over the past few decades we have witnessed a growing number of persons living in cohabiting relationships. Also, more generally, many people continue to live in households with non-family members. Consequently, some argue that these cohabiting families and/or households should be considered a single unit because persons living in them benefit from economies of scale, and many also share resources.

Yet some issues remained unresolved. First, most would agree that there should be some stability in arrangements for a group a persons to be considered a unit. Some recent research on this issue by Bauman (1999) suggests that there is a modest degree of stability in the cohabiting and household units-- a majority of both types of arrangement last for over a year. This favors considering cohabiting persons or households as the appropriate unit in poverty measurement.

A second issue that remains unclear is the extent to which people share resources in various types of units. Most would agree that people in larger households benefit from economies of scale, and this argues for adopting a more inclusive unit of analysis. However, due to lack of good data, there is little research which directly examines the extent of resource sharing within households. Bauman's study (1999), which uses an indirect method, suggests that while there is some resource sharing, non-family members, as traditionally defined, unsurprisingly do seem to share less. Keeping in mind that more research on these issues is needed before making a definitive choice on

which unit of analysis to adopt, this analysis is an empirical examination of resulting poverty rates when using different units, as described below.

### Defining Alternative Units of Analysis

We use three alternative units of analysis here: the official family, the cohabiting couple, and the household. These three units represent viable alternatives, as discussed in the Panel's report.

The official family currently used in poverty measurement basically consists of persons related to one another by birth, marriage, or adoption. This definition includes siblings and other kin. According to this definition, there may be multiple families within a household.

In the cohabiting couple unit of analysis, families in households where no person is identified as an unmarried partner are defined as in the official family measure. However, in households where a person *is* identified as an unmarried partner, the householder's family and the unmarried partner's family are combined into a single unit with pooled resources and a different threshold based on the size and composition of the combined unit. Finally, the third unit of analysis--households-- consists of all persons who occupy a housing unit. So in addition to family members and cohabiting couples, this unit includes all housemates, roommates, boarders, and foster children who share the housing unit.

### Results and Conclusion

We estimated 1997 poverty rates by unit of analysis and poverty measure, and examined who was most affected by using different units of analysis.

We find that when using either the official measure of poverty or the National Academy of Science Panel's recommended measure (here referred to as the NAS measure), poverty rates are moderately lower the more inclusive the housing unit (see Table 2). As expected, regardless of unit of analysis used, experimental poverty rates continue to be higher than official ones.

**Table 2. Poverty Rates by Unit of Analysis and Poverty Measure, 1997**

	Official family	Cohabiting couple	Household
Official measure	13.3	12.7	11.6
NAS measure	15.4	14.9	14.0

While the overall effect of moving to a more inclusive unit of analysis is moderate, the effect differs by a person's relationship to the householder. The effect of using a more inclusive unit of analysis is smallest for persons who are identified as core household members—householders, spouses, children, and other relatives of the householder. Poverty rates for these persons tend to change little because they often live in households where they are part of the only family unit present.

However, we observe, as expected, a substantial effect of using more inclusive units of analysis on persons identified as unmarried partners, non-relatives, housemates, roomers, boarders, and foster children. For example, the poverty rate for unmarried partners with families declines from 47.9 percent when using the official family unit of analysis to 17.5 percent when using the cohabiting unit of analysis, which pools the unmarried partner's resources with the householder's.

For persons who are identified as housemates, roommates, or boarders, the poverty rate declines from 30.9 percent when using the official family definition to 13.5 when using the household unit of analysis. Finally, among foster children, the poverty rate declines from 68.6 percent when using the official family definition to 20.9 percent when using the household unit of analysis. It is important to note that foster children under the age of 15 are not even in the official poverty universe. In contrast, all foster children are in the poverty universe in the household unit of analysis, with their resources pooled with other members in the household.

Overall, results show that people benefit from both pooling of resources and economies of scale, as assumed in the different unit of analysis definitions. As expected, the difference is largest for persons living in nontraditional household arrangements. These findings hold whether using the official measure of resources and thresholds or the experimental poverty measures.

### IV. Accounting for Owner Occupied Housing in Poverty: Focus on Thresholds

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The National Academy of Sciences Panel stated that the poverty thresholds should represent a budget for food, clothing, shelter (including utilities), and a small amount to allow for other needs (e.g., household supplies, personal care, non-

work-related transportation). To obtain this budget, the Panel used the U.S. Consumer Expenditure Survey (CE) data. Out-of-pocket expenditures were used. However, the updating mechanism to update the thresholds was to be based on changes in consumption. Out-of-pocket expenditures for food and utilities are likely to represent consumption. Such expenditures are less likely to represent the consumption of clothing, but may. The consumption of rental housing also is likely to be fairly well represented by rental expenditures.

Out-of-pocket expenditure for owner housing is not likely to be a good proxy for consumption. For example, if most housing were owner occupied and the owners had low or no mortgages, the expenditure approach would imply that these owners have no consumption of housing. If the Panel were attempting to provide a threshold based on the cost of the consumption, the out-of-pocket approach would not be a good model to follow. The Panel acknowledged this by stating that their approach was used for processing convenience only. The implicit cost of owned housing should be accounted for in the measure. If on the other hand, the purpose of the threshold were to provide an estimate of the expenditure that would be needed to meet the basic expenditures of the family, the out-of-pocket approach would be appropriate. In the Panel's report, expenditures, consumption, and needs are interchanged. However these are not the same. Until a decision is made concerning the focus of the thresholds (and corresponding resources) - expenditures, consumption, or needs - confusion will remain concerning the measure, especially with regard to the treatment of owner occupied housing.

In this presentation we present thresholds based on the out-of-pocket approach, a hedonic regression approach (estimated rental shelter costs were produced), and reported rental equivalence from consumer units participating in the CE. The thresholds are produced for the reference family of two adults with two children. First, to get an idea of the magnitude of the issue, we note that about 75 percent of all reference families are owners, and 64 percent of all reference families have mortgages. Owners without mortgages represent 10.4 percent and renters represent 25.3 percent of the reference families. The 1997 threshold for two adults and two children families based on out-of-pocket expenditures is about \$16,000. The threshold based on the hedonic approach is slightly less than \$16,000. The reported rental equivalence

approach results in a threshold that is \$2,000 higher, at \$18,000. Given the rental-owner occupied housing mix for the reference families, the out-of-pocket approach and the hedonic approach result in similar thresholds. However, if this mix were to change, the same may not result. Again, if the purpose of the threshold is to present the cost of consumption, conceptually, the hedonic approach is the most appropriate since it models the costs of housing consumed. Also, if consumption is the focus of the thresholds, then a consistent approach to valuing some implicit income from owner occupied housing would be desirable as an addition to the resources.

Another alternative noted by the Panel but not produced by them was to produce separate thresholds for owners with mortgages, owners without mortgages, and renters. If this were done, no flow income amount would need to be added to resources. The highest thresholds result for owners with mortgages, first based on reported rental equivalence (over \$20,000), followed by out-of-pocket expenditures (over \$18,000), and then based on the hedonic model (about \$17,000). The thresholds for owners without mortgages also were highest when reported rental equivalence was used (about \$16,000).

However, in contrast to the owners with mortgages, those without mortgages had higher thresholds based on the hedonic approach (\$14,000) as compared to the out-of-pocket approach (slightly above \$11,000). The threshold for renters is about \$13,500.

We also asked whether the approach to valuing housing in the thresholds had an effect on poverty rates overall; we compared rates based on the different approaches to the overall poverty rate for all persons in 1997 using the official measure (thresholds were not geographically adjusted for any of the thresholds). The official poverty rate in 1997 was 13.3 percent. If we only changed the threshold from the official one to one based on out-of-pocket expenditures, the rate would fall to 12.4 percent. If we used the threshold based on the hedonic approach, the rate fell to 12.2 percent. Using an hedonic based threshold and a resource measure that accounted for the implicit income from owner occupied housing (i.e., current money income plus net return on home equity), the poverty rate dropped to 11.0 percent. Using this last poverty measure, the elderly would be quite affected; their poverty rate would drop from 10.5 percent using the official measure to 6.3 percent using this latter measure. If the net flow income to

the elderly were capped, the poverty rate for them would be higher however.

There are many questions that remain with regard to the treatment of owner occupied housing in a revised poverty measure. For example, should the focus of the poverty measure be based on the expenses that people face and the income that they have to meet those expenses? Or should the measure be based on the costs of consumption or some basic needs and the resources available to provide for that consumption or to meet those needs? Are the out-of-pocket expenditures that the Panel used too high due to the fact that there is no accounting for the deduction of mortgage interest when one estimates their income taxes? Would the thresholds based on the hedonic model be higher if the model better accounted for differences in amenities such as quality of neighborhoods and dwellings? If the cost of housing is included in the thresholds, what is the best approach to account for the flow of income on the resource side? For the elderly, who many say may be "over-housed," should the flow income implicit from owner occupied housing be capped? These and other issues will be examined in future research.

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<sup>i</sup> All measures use the family as the unit of analysis. See Short et al. (1999) for more details on the construction of these measures.

<sup>ii</sup> Citro, Constance F., and Robert T. Michael (eds.), *Measuring Poverty: A New Approach*, National Academy Press, Washington DC, 1995. Page references will appear parenthetically in the text.

<sup>iii</sup> Johnson, David, Stephanie Shipp, and Eva Jacobs, "Expenditure Trends and Measures of Inequality: 1960 to 1992," paper prepared for the 23<sup>rd</sup> General Conference of the International Association for Research on Income and Wealth, July 1994.

<sup>iv</sup> For sample units with spending between 100 and 150 percent of NRC poverty, the variance of the sum of moop and shelter equaled 99 percent of the sum of the variances of these spending classes.

<sup>v</sup> Shelter represents an even larger share when only unsubsidized renters are selected in order to reduce the confounding effects of home-buying expenditures. When only units with a member aged 65 or older are included, shelter plus utilities accounts for 60 percent of the variation.

<sup>vi</sup> Nelson, Kathryn P., et.al., "Rental Housing Assistance – The Crisis Continues, The 1997 Report to Congress on Worst Case Housing Needs," U.S. Department of Housing and Urban Development, <http://www.huduser.org/publications/affhsg/worstcase>, Last revised: 3/31/99, Tables A-4, A-14.