

**WHO ARE THE POOR ELDERLY?
AN EXAMINATION USING ALTERNATIVE POVERTY MEASURES**

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CRR WP 2000-14
December 2000

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I. Introduction

According to most accounts the past decade has brought with it tremendous gains in reducing poverty among the elderly, i.e., those persons aged 65 or older. Although official poverty rate for children continues to be near the 20 percent level, the official poverty rate among the elderly fell to 10.5 percent in 1998. This rate is the lowest rate on record – less than half of the 1970 rate of 22.6 percent, and less than a third of the 33.1 percent rate found in 1959 (U.S. Census Bureau (1999), Table B-2). Health status and life expectancy among the elderly have increased over the past 40 years (Wolfe and Smeeding (1999)). Although pockets of poverty remain, for example, among older women living alone, and poverty rates of elderly in the United States exceed those in many other rich countries (Smeeding (1999a)), the overall picture is one of great progress. A continuation of these trends could imply that poverty among the elderly (as officially measured) might not be a major concern for policymakers as they consider Social Security reform. The official U.S. poverty rates for the elderly, however, have been severely criticized during the past few years because of the way poverty is measured and because of the implications for Social Security. These measurement issues might create different conclusions about the level and trend in elderly poverty.

Noncash Income and Taxes

Poverty rates among the elderly in U.S. are a bit misleading because they do not include the effects of such near-cash programs as food stamps or public housing, or imputed rent from owner occupied housing, nor do they adjust for direct taxes.¹ These factors would have reduced

¹ They do not adjust for work-related expenses such as child care, which are more important in measuring the

the elderly poverty rate to about 7.5 percent in 1997 (U.S. Bureau of the Census (1998) Table 5).

Needs and Equivalence Scales

Another consideration relevant to determining the elderly poverty rate is the measurement of the needs of a single person compared to the needs of a married couple. Poverty among the elderly can be quite sensitive to the assumed standard of need, or equivalence scale, for one person relative to two persons. The official poverty thresholds imply that a single elderly person needs 79 percent of what an elderly couple needs to be considered non-poor. A recent National Academy of Sciences (NAS) report on poverty (Citro and Michael (1995)) argues that the equivalence scale should be changed such that the ratio of the single to couple threshold would fall to between 59 and 64 percent. Lowering this ratio by 20 percent would mean that the poverty rates among the old would have fallen further during the past decade than they actually did. Alternatively, since the official poverty thresholds imply that a single elderly person needs 92 percent as much income as does a single non-elderly person to be non-poor, using the non-elderly thresholds for the elderly would cause elderly poverty rate to increase markedly.

Older women comprise roughly three quarters of elderly poor and their poverty rates rise with age, widowhood and divorcee status (Smeeding, Estes and Glasse, (1999)). These poor and older women are more likely to be living alone, and hence, their poverty rate is very sensitive to the ratio between the single and couple thresholds. Recently the Social Security Advisory Committee, the Clinton Administration and several other authors have suggested that the Social Security benefits paid to a surviving spouse be raised from 67 to 75 percent of the combined benefits received by the couple before the death of one of the spouses (Burkhauser and Smeeding

poverty for non-elderly families than for the elderly.

(1994) ; SSA (1997), NEC (1998)).

The Healthcare Issue

Not only should the poverty measure include most of the income amounts suggested above, it should also include the effects of healthcare spending (Citro and Michael (1995), Betson (1998), Betson and Warlick (1999)). Because most elderly spend large amounts of their income on healthcare, 19 percent on average (Gibson et al. (1999), and many receive more than a \$5,000 health care subsidy in the form of Medicare, healthcare expenses and subsidies must be incorporated into the measurement of poverty among the elderly.

Recent reports indicate that out-of-pocket healthcare expenses among the elderly are both high and rising (Moon (1999); Gibson et al. (1999)). The recent public policy debate regarding the addition of prescription drug coverage to Medicare signals policymakers' concern for this issue. One recent report (Gibson et al. (1999)) indicates that older beneficiaries, women living alone, and those disabled beneficiaries -- those who are most likely to be poor among the elderly in the first place -- have the highest out-of-pocket healthcare expenses. The near-poor, i.e., those who are most likely to fall into poverty if out-of-pocket expenses were subtracted from income, spend on average 24 percent of their income on healthcare (including 6 percent on prescription drugs). The NAS report argues that because healthcare expenses cannot be used for food, clothing or shelter, they are non-discretionary and, like work-related expenses, should be subtracted from income in measuring poverty among the elderly.

Many healthcare expenses are, however, arguably voluntary and may even improve the

quality of life and chances for longevity among the elderly.² Proponents of this viewpoint argue that healthcare expenses should not be subtracted from income, but rather, in measuring poverty among the elderly, the value of the Medicare and other healthcare subsidies, e.g., Medicaid, employer subsidies, Veterans benefits, etc., should be added to income (Smith (1997); Fuchs (1999)). Including these benefits (valued at government cost or market value) in the resource measure reduces the poverty rates among the elderly to even lower levels than those discussed above.³ The best solution to these contrasting viewpoints likely lies somewhere between the two extremes.

This paper attempts to assess the effects of the equivalence scales, non-cash benefits, taxes, and healthcare expenses on poverty among the elderly. By following the methods presented in Short et al. (1999), we address how to account for the impact of these benefits and examine the quantitative significance of many of these adjustments. This paper also presents data on the health status of the elderly and the effectiveness of Social Security in reducing poverty among the elderly.

These are important considerations as we begin to assess changes in Social Security and Medicare benefits, and Medicare contributions and coverage, in response to the forecast long-term deficits for each program. Both the baseline and forecast poverty rate for the elderly, in general, and for elderly women in particular, should play an important role in determining the changes made to the income security programs that will emerge from policy negotiations (Smeeding (1999b)). Hence, accurate measurement of poverty among the elderly should rank

² These include prescription drugs, joint replacement and other categories of health care expense.

³ Adding a \$5,000 Medicare subsidy plus, in some cases, a \$1,500 for non-long-term care Medicaid subsidy to

high on the list of policy relevant social indicators.

II. The measure of poverty

The most recent comprehensive examination of poverty measurement in the United States was conducted by the NAS Panel on Poverty and Family Assistance (Citro and Michael, 1995). In their report, the Panel recommended changing the definition of both the poverty thresholds and the resources that are used to measure poverty. Since their report, there have been many examinations of their recommendations.⁴ In this paper we examine recent attempts to implement the Panel's basic procedure. This paper uses the results of Short et al. (1999) and focuses on the sensitivity of elderly poverty estimates to various choices of thresholds and resources. The primary focus of this paper is to describe some of the effects of implementing the Panel's recommendations and discuss some of the issues raised in Short et al. (1999). This paper also reflects the considered opinions of a number of poverty analysts who met in April 1999 at the University of Wisconsin to discuss these same issues (Corbett (1999)).

Following Short et al. (1999), we begin with the experimental measure labeled DES-DCM2. This measure is calculated using the method prescribed in the NAS report, except that we use an alternative equivalence scale and an alternative method to impute child-care expenditures. More precisely this measure is constructed in the following way:

Thresholds and Equivalence Scales:

- Thresholds are determined using a percentage of the median expenditures on a budget for food, clothing, shelter, utilities (FCSU), and other needs for a particular reference unit.
- Thresholds are adjusted by geographic area using the differences in housing costs for a two bedroom rental unit. Geographic indexes are those listed in the panel report, normalized to

cash incomes could produce a near zero poverty rate.

⁴ See Short et al. (1999), Short et al. (1998a), Johnson et al. (1997) and other papers listed on the Census Poverty measurement website: <http://www.census.gov/www/hhes/povmeas.htm>.

sum to one in each sample.

- Thresholds are adjusted for other family types using a three-parameter equivalence scale.
- There are no differentially lower thresholds for the elderly.

Resources:

- The value of food assistance programs, the value of housing subsidies and the value of energy assistance (only heating assistance) are included.
- Computed taxes (net of EITC), as modeled in the CPS, are subtracted from resources.
- Imputed work related expenses and child-care (as modeled using the AFDC program allowances) are subtracted from resources.
- Medical out-of-pocket expenses (MOOP), which are modeled and calibrated to aggregate healthcare spending totals, are subtracted from resources.

Below, we briefly discuss the above components of the experimental measure. Since many of the effects on elderly poverty are caused by the changes in the equivalence scale and the exclusion of MOOP from resources, we discuss these changes in more detail below. Most of the technical details can be found in Short et al. (1999).

Defining the threshold and equivalence scales

The NAS Panel recommended that the reference threshold should be based on the reference family's actual expenditures on food, clothing, shelter, utilities (FCSU), and other needs (e.g., household supplies, personal care, and non-work related expenses).⁵ The NAS Panel also recommended that the thresholds be adjusted to reflect geographic differences in costs. In addition, the Panel recommended that an equivalence scale be used to adjust the reference units' threshold to produce thresholds for household units with different characteristics from those of the reference unit.

⁵ We follow Short et al. (1999) and compute the reference thresholds using a percentage of median expenditures on FCSU for a family of four and a multiplier that accounts for expenses on other needs (using the CE survey data for a three-year period). We use the average of the upper and lower values for both the percentages and multipliers (i.e., $\text{Threshold} = 0.5 \cdot (1.15 \cdot .78 + 1.25 \cdot .83) \cdot \text{median}$), with the result being that the threshold equals $0.96725 \cdot \text{median}$

The Panel recommended using a two-parameter equivalence scale given by $(A+PC)^F$, where A and C represent the number of adults and children, P represents the adult-equivalent of one child and F represents the scale economy factor. While many argue that the choice of equivalence scale is arbitrary, some argue that using an arbitrary mathematical formula is the best option (see Deaton (1999)). The Panel's choice of a two-parameter scale was an attempt to use a simple formula and to be consistent with the cost-of-children literature. This scale, however, may not be appropriate for childless families, in general, or for the elderly, in particular.

The three-parameter scale proposed by Betson (1996) attempts to reconcile the differences between singles and childless couples, between single-parent families and two-parent families, and to reflect the cost-of-children literature. We use a three-parameter scale that restricts the relationship between two-adult and one-adult families such that the scale for the two-adult family is 41 percent higher than the scale for the single adult family.⁶ This results in a ratio of singles to couples of 0.71. Since 85 percent of the elderly live in one or two-person families, elderly poverty is extremely sensitive to the ratio of the thresholds between singles and couples. The official poverty thresholds have a ratio of 0.78, while the Panel's lower bound ($P=.7$, $F=0.65$) yields a ratio of .64 and the Panel's upper bound ($P=0.7$, $F=0.75$) yields a ratio of 0.59. Alternatively, the three-parameter scale yields a ratio of 0.71. In addition, the single parameter equivalence scale with a family size elasticity of 0.5 (i.e., $P=1$ and $F=0.5$), which is commonly used in the international poverty measurement literature, also yields a ratio of 0.71.

expenditures for the basic bundle.

⁶ Betson's three-parameter scale is given by 1.41 for two-adult households, $(A + c + P(K-1))^F$ for single parent households and $(A + PK)^F$ for other households, where $P=.5$, $F=.7$ and $c=.8$.

Table 1 provides the results of some recent attempts at estimating this ratio. Merz et al. (1996) use a Barten-Gorman scale and find that the ratio between one and two-person households is 0.67.⁷ In contrast, Danziger et al. (1982) found that the ratios differed for the elderly and the non-elderly, but that the ratios were still lower than those implied by the official poverty thresholds.

In estimating constant elasticity scales and two-parameter scales, Johnson (1998) obtains an elasticity of 0.38 using an ELES Barten-Gorman scale, implying a ratio of .77.⁸ Using a more general ELES model, we extend Johnson (1996) and obtain commodity specific scales for food, shelter (including utilities) and clothing for all adults and for the elderly. These scales yield similar estimates of a ratio of 0.69. Since many of the estimates yield ratios close to 0.70, we feel that the three-parameter scales are more relevant for smaller families than those produced from the two-parameter scales suggested by the Panel.⁹

Table 1: Alternative equivalence scales

Family Type	Equivalence scale estimates (single/couple ratios in parentheses)				
	Official	Merz et al. (1996)	Danziger et al. (1982)	Johnson (1998)	Johnson (1996)
Single adult	--	1.00	--	1.00	1.00
Two adults	--	1.49 (0.67)	--	1.30 (0.77)	1.45 (0.69)
Non-elderly adult	1.00	1.00	0.58	--	--
Non-elderly couple	1.29 (0.78)	1.73 (0.58)	0.80 (0.73)	--	--
Elderly adult	0.92	0.80	0.42	--	1.00
Elderly couple	1.16 (0.79)	1.43 (0.56)	0.64 (0.66)	--	1.44 (0.69)

⁷ Using the commodity specific scales for food, shelter (including utilities) and clothing obtained in Merz et al. (1996), we obtain an overall scale using these three commodities of 1.40 (yielding a ratio of 0.71).

⁸ The range for the elasticity estimates, however, goes from .35 to .91. See Johnson (1998).

⁹ Vaughn (1999) argues that many estimates of this ratio are closer to 0.75. Many of the estimates that he uses in his comparison use a subjective measure to estimate the scales, which frequently suggest higher economies of scale (Deaton (1999)).

Table 2 shows the official thresholds and the thresholds for the experimental measures examined in this paper. As mentioned above, the official elderly thresholds are lower than the official thresholds for the non-elderly, which has a dramatic effect on elderly poverty, as shown in Figure 2. The NAS Panel recommended that the thresholds for the elderly be the same as for the non-elderly, as shown in column three of Table 2. We use the same thresholds for the elderly and non-elderly, as shown in the last column of Table 2. Given the lower reference threshold and the values of the equivalence scales, these thresholds will decrease poverty of the single elderly and increase poverty of the married elderly relative to the official thresholds.¹⁰

Table 2: 1997 Thresholds for single adult and two adult families

	Official Thresholds		Experimental Thresholds	
	Official non-elderly	Official Elderly	NAS Two-parameter scale F=0.65; P=0.7	Three-parameter scale
Single adult	8350	7698	7221	7414
Two adults	10748	9701	11331	10454
Ratio	0.78	0.79	0.64	0.71
Reference 4 person family	16276	16276	15998	15998

Defining Resources

Following the Panel's recommendation and Short et al. (1999), we begin with the current official income measure that includes cash income before taxes. We then subtract a computed amount for taxes and add computed amounts for in-kind benefits, such as food stamps, housing subsidies, and energy assistance and for the earned income tax credit. While the in-kind benefits are more important for the non-elderly than for the elderly, a substantial proportion of the elderly

¹⁰ Alternatively, we could have set the level of the thresholds at the same level as the original thresholds, e.g., for the single elderly, and the equivalence scale could have been used to determine the threshold for couples. We chose,

receive these benefits; 19 percent of the poor elderly receive food stamps and 16 percent receive housing subsidies.

From this computed income, we then subtract expenses that the Panel suggested are necessary for a family to earn a living and which, therefore, are not available to purchase the items covered in our thresholds, i.e., food, clothing, shelter, and utilities. These expenses include an amount to cover direct work expenses and an additional amount for child-care costs, and are much smaller for the elderly than for the non-elderly. Only 10 percent of the poor elderly have work related or child-care expenses.

Finally, we subtract an imputed value for the out-of-pocket medical expenditures (including private premium payments), which is a major expenditure for the elderly (12.5 percent using Consumer Expenditure (CE) Survey data (U.S. BLS (1999))¹¹. We use the imputations presented in Short et al. (1999), which uses a modification of the method described in the Panel's report. (See the appendix for a discussion of these imputations). We randomly select the share (99 percent) of elderly families that have positive medical expenses and randomly assign each family's medical expenses. The random distributions used both times are consistent with the distributions of medical expenditures reported in the NMES.

The results of these imputations are shown in Table 3 for each of the different types of elderly families used in the imputation procedure. We compare these imputations to actual

however, to use the methodology in Short et al. (1999) and base our thresholds on a reference four-person family.

¹¹ This share rises to over 20 percent for low-income elderly. The health care share can be different depending on the data set (CE, NMES, MEPS) and method used. The 12.5 percent reported here is based on the average MOOP divided by the average income for elderly families. The 19 percent from the AARP report (Gibson et al. (1999)) is based on the average of the shares for the elderly (i.e., the average of MOOP/income for each person). The share reported in Moon (1999) is based on the per-capita MOOP (using another data set) divided by the median income for elderly families.

medical care expenditures reported in the CE Survey for 1997. While the actual expenditures reported in the CE survey are lower than the imputed values, most of the differences are due to the frequency of very large imputed values included in the Current Population Survey (CPS) file used in this paper. Given the large values for these expenditures, the poverty rate is very sensitive to the imputation of MOOP. In fact, some of the MOOP imputations are so large that almost 20 percent of the poor elderly have MOOP in excess of their money income.¹² The appendix provides more details on these alternative imputation methods.

Table 3: Alternative values of MOOP for elderly families.

Age	Family size	Income	Mean MOOP	Mean MOOP using CE	MOOP/Income share (using CPS) ¹³	MOOP/Threshold (using CE)
Under 75	1 person	Low income	1957	1445	26.3%	19.5%
		Not low income	2636	2139	8.5%	--
	2 or more	Low income	3905	2349	33.9%	22.5%
		Not low income	3882	3478	7.5%	--
75 or over	1 person	Low income	2593	1937	33.5%	26.1%
		Not low income	2960	2706	11.5%	--
	2 or more	Low income	4462	3127	38.2%	29.9%
		Not low income	4626	3987	10.3%	--

Other measures: The IRP conference

The Institute for Research on Poverty (IRP) sponsored a conference to examine the current poverty measure and alternatives. At the end of the conference, the participants voted on particular changes in the poverty measure that were proposed by the NRC panel. The results of this informal vote are presented in Corbett (1999). The conference participants generally agreed that an experimental measure should be as follows:

¹² Short et al. (1998b) also find that the number of families with negative resources increases with this experimental measure.

- The resource base should be expanded to include near-cash, in-kind benefits, e.g., food and housing, but not medical care benefits.
- The resource measures should be an after-tax and transfer measure.
- Non-discretionary expenses for work and work-related child care expenses should be subtracted from the resource measure.
- The thresholds should use updated equivalence scales.

There was less agreement on the subtraction of MOOP from the resource base, the inclusion of the value of home equity in the resource base, the adjustment for geographic differences in the thresholds, and the method of updating the thresholds over time. In this paper, we present a poverty measure that reflects the IRP conference vote, which we call the IRP measure.

The IRP measure is basically the experimental measure without the geographic adjustment and without subtracting MOOP from resources. It treats medical care expenses as discretionary, non-necessary expenses that are not subtracted from income nor included in the poverty thresholds. If the NAS Panel's procedure to determine the thresholds were followed for FCSU and medical care expenses, then the thresholds would be larger than those obtained using the IRP measure; the reference threshold (for the four-person family) would be about 11 percent higher.¹⁴ As shown in Table 3, the poverty thresholds for elderly singles and couples would be 20 to 30 percent higher. In addition, the equivalence scales would need to be adjusted to incorporate the differences in medical care expenditures by family type. Our three-parameter scale implies that the two-person family needs 41 percent more than a single person; however, the imputed MOOP in Table 3 shows that MOOP expenditures for two-person elderly families

¹³ Using the CE, the percentage shares are 17.5, 8.8, 16.4, 7.1, 22.7, 10.8, 26.7 and 11.4, respectively.

¹⁴ See calculations in Short et al. (1999).

are 70 to 100 percent higher than those for single elderly persons (and only 63 percent higher using the CE MOOP values). Adding the average MOOP values from the CE in Table 3 to the experimental thresholds presented in Table 2 results in a ratio of about 0.69.¹⁵

III. Results

We use the Experimental Poverty Measures Research Data file from the March 1998 CPS. We examine the poverty rates for the elderly by marital status, age and gender. We also examine the income distribution, health status and effectiveness of Social Security for the elderly under these alternative poverty measures.

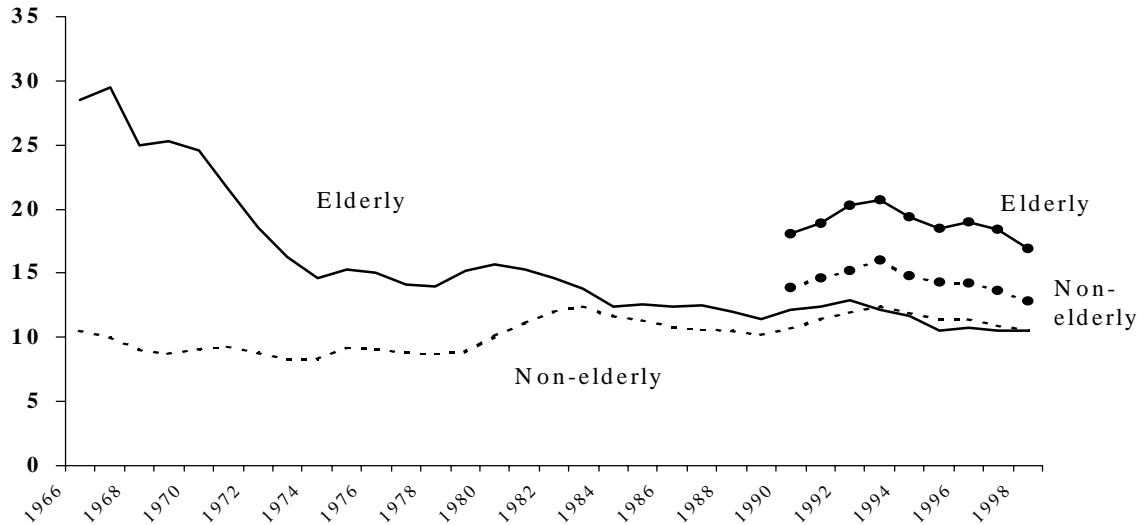
The official poverty rate for the elderly has fallen dramatically since 1966, and is now lower than the poverty rate for non-elderly adults, as shown in Figure 1. Figure 1 also shows the effects of using the experimental poverty measure, DES-DCM2.¹⁶ The experimental measure is 50 percent higher than the official rate. Under the experimental measure, the elderly are much more likely than the non-elderly adults to live below the poverty line. Hence, the level of the poverty rates for the elderly relative to the non-elderly is very different using this measure rather

¹⁵ The issue of including MOOP in the thresholds was addressed in Bavier (1998) and in earlier drafts of the Census report and internal tables have been produced that examine these thresholds.

¹⁶ See Short et al. (1999) and U.S. Census Bureau (1998) for the data.

than the official measure.¹⁷

Figure 1: Official and Experimental Poverty rates for Non-elderly and Elderly Adults (dots designate experimental poverty rates)



Marginal Effects

Figure 2 shows the marginal changes in the elderly poverty rate for different components of the experimental measure. These changes were made one at a time, using the official measure as a base. These changes include using the non-elderly thresholds for elderly singles and couples, using the geographic adjustment (and official thresholds), using a two-parameter equivalence scale $(A + 0.7K)^{0.65}$, using a three-parameter equivalence scale, using after-tax and transfer income, subtracting work-related expenses from money income, and subtracting MOOP from money income.

This figure shows that the largest effect on the poverty of the elderly is the subtraction of MOOP from the resource measure, which almost doubles the poverty rates of both elderly men

¹⁷ The trends are similar using either measure.

and women. The other large effect is caused by the use of after-tax and transfer income including non-cash income, which causes the poverty rate to fall. The two-parameter scale (implicit ratio of 0.64) decreases the poverty rate, while the three-parameter scale (implicit ratio of 0.71) increases the poverty rate, indicating the sensitivity to the choice of equivalence scale.

Figure 2: Poverty rates for the elderly for each separate component of the experimental measure, 1997

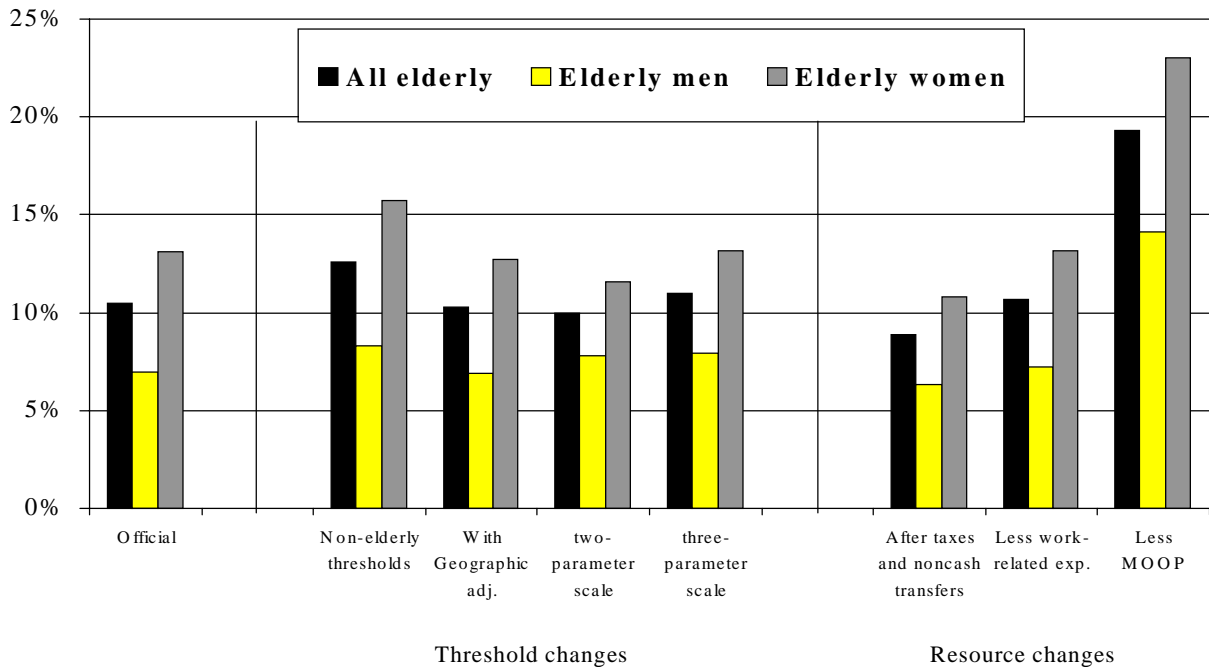


Figure 2 also shows that the geographic adjustment decreases the poverty of elderly women. This is especially true for older elderly women (see Appendix Table A1¹⁸). This is mainly because many of these women live in the south and in non-metropolitan areas and because the adjusted thresholds in these areas are 10 to 15 percent lower than the thresholds

¹⁸ Table A1 shows the cumulative effects of each successive change in the poverty measure by gender, age, and

outside the south and in other metropolitan areas. Short et al. (1999) also show that the geographic adjustment decreases the poverty rate more for older people than for younger people.

Composition of the Poor

The experimental measure changes the composition of the entire poor population (see Short et al. (1998a)), especially the elderly poor. Table 4 shows that the experimental poor population is less female than the official poor population (67 percent compared to 72 percent). There are also more married elderly poor using the experimental measure, largely because of the higher threshold. Finally, the most vulnerable elderly – women living alone – comprise a smaller proportion of the experimental poor than the official poor. Under the official measure, half of all poor are women living alone, while under the experimental measure only 38 percent of the poor are women living alone.

Table 4: Composition of the Poor

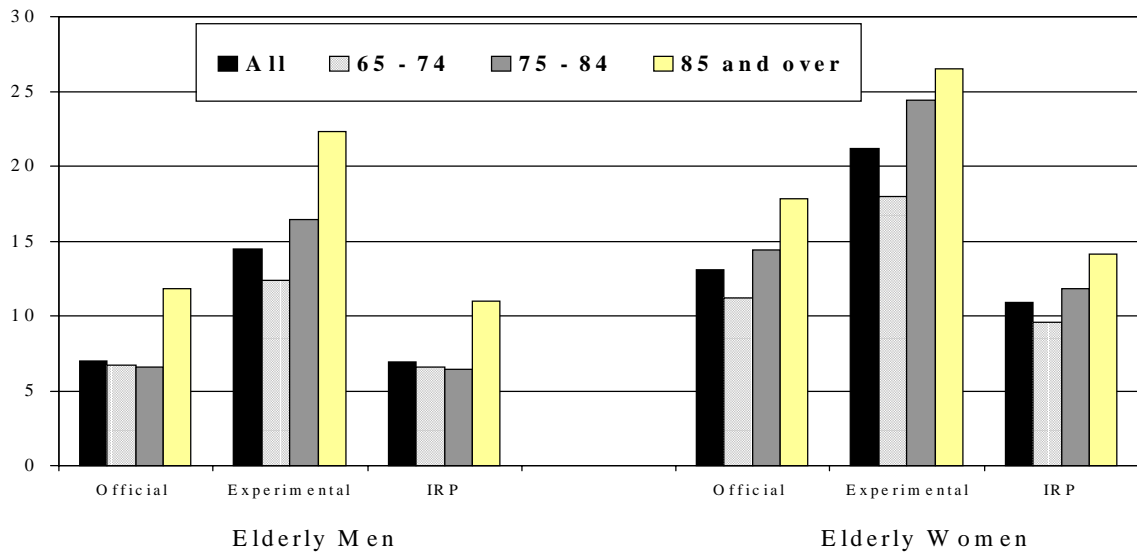
	Official	Experimental
Elderly men	28.1	33.3
Married	13.6	21.5
Living alone	9.7	7.7
Widows	4.5	3.5
Other	5.0	4.1
Elderly women	72.1	66.6
Married	10.2	17.1
Living alone	50.3	38.3
Widows	36.3	29.5
Other	11.3	11.3

marital status.

Differences by Age and Gender and Marital Status

Figure 3 shows the poverty rates of elderly men and women by age for the three measures examined here – the official, experimental and IRP measure. The poverty rate for the experimental measure is almost twice that of the official measure. Almost all (90 percent) of these new poor elderly are poor because of their medical care expenditures. Many of the remaining 10 percent are poor because of the change in the equivalence scale and threshold. In addition, only 12 percent of the officially poor are no longer poor under the experimental measure.

Figure 3: Poverty rates by gender and age: Official, experimental and IRP measure



While the experimental poverty measure increases the elderly poverty rate by 75 percent, the measure increases the poverty rate for elderly men more than for women, 107 percent compared to 62 percent. In addition, the IRP measure, which does not exclude MOOP from resources, actually decreases the poverty rate for women. This is mainly due to the different

equivalence scale and the use of after-tax and transfer income, as shown in column five of Table A1) and because elderly women are twice as likely as men to receive in-kind transfers.

Similar to Olsen (1999), the experimental measure increases the poverty rate for the elderly between 75 and 84 years of age more than for the elderly under 75 or the elderly 85 and older. Figure 3 shows that this is mainly due to the poverty of men in this age group, and in particular, the large imputed values of MOOP for married couple families and their higher poverty thresholds.

Figure 4: Alternative poverty rates for married and widowed elderly, 1997

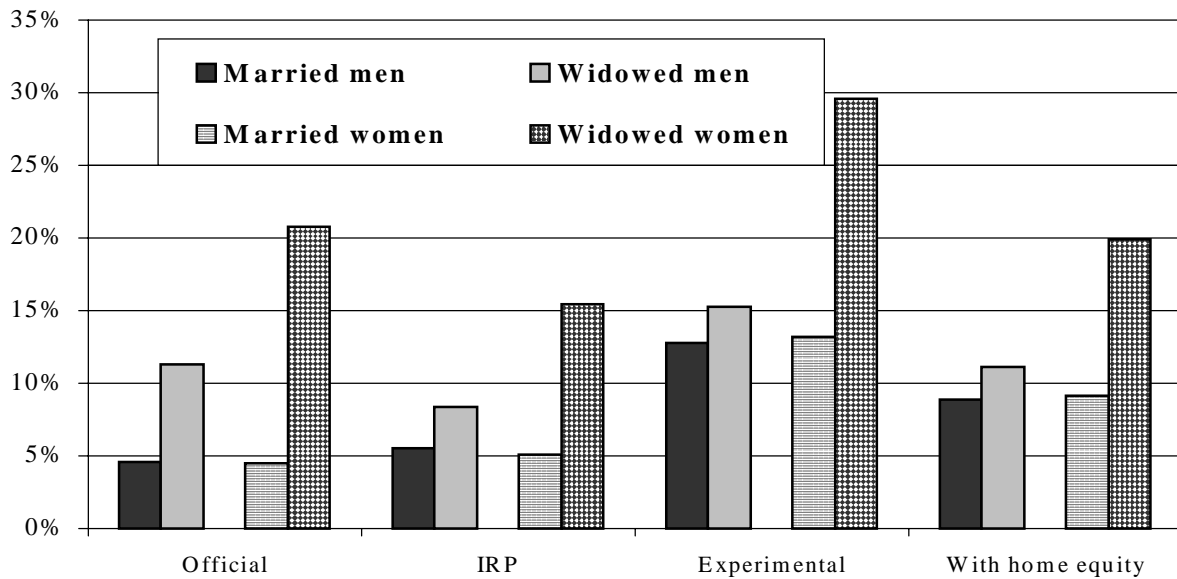


Figure 4 shows the three poverty measures for married men and women, and widowed men and women living alone. As the chart illustrates, while the poverty rates for all groups increase under the experimental measure, the poverty rate for married elderly increases

dramatically. The poverty rate for widowed women even approaches 30 percent. By comparing the experimental measure to the IRP measure, which does not exclude MOOP, Figure 4 shows that most of the difference between the official and experimental rate is due to the exclusion of MOOP from the resource base.

Imputed Rent

Figure 4 also shows that accounting for the marginal effect of implicit income derived from owning a house can dramatically decrease the poverty rate. Since 80 percent of the elderly own their own home, their shelter costs may be less than the shelter costs of renters, which means that the elderly have more income available for other necessities, e.g., food, clothing, utilities, and medical care. The Census Bureau provides a crude estimate of the value of home ownership by calculating the implicit rent based on the value of the house and a fixed interest rate and net of the estimated property taxes. As Figure 4 shows, this home equity value decreases the poverty rate for the married elderly, and dramatically decreases the poverty rate for widowed women, below their official poverty rate, but still with poverty rates of 20 percent after MOOP and imputed rent.¹⁹ Johnson and Smeeding (1998) also find that including a different value of home ownership (and medical expenses) in the resource measure increases the well-being of elderly single women. By using the reported rental equivalence of home ownership (and actual health care expenditures) in a measure of consumption, they find that the percentage of elderly single women in the bottom quintile of the consumption distribution falls substantially.²⁰

¹⁹ Betson and Warlick (1999) suggest that the value of home equity be capped at 30 percent of the poverty threshold. Using this measure decreases the change in poverty; 14.6 percent compared to 13.2 percent without the cap. The poverty rate for elderly women living alone (22.7 percent compared to 21.0 percent) is still only slightly higher than the official rate.

²⁰ Their method uses the reported rental equivalence value obtained from the consumer unit. Consumer units who own

Equivalence Scales

We also examine the explicit effects of the equivalence scale. Because the main impact on the poverty rate is caused by the ratio between the one-person and two-person threshold, we examine the poverty rate as a function of this ratio. Figures 5a and 5b show how changing this ratio affects the poverty rates for the single elderly (Figure 5a) and the married elderly (Figure 5b). As the ratio increases, the poverty rate for singles increases while the poverty rate for couples decreases. Because many more singles have incomes closer to the poverty thresholds, the effects of changing this ratio are more dramatic. In addition, elderly single women are much more likely to be living near the poverty thresholds. The results are clearly sensitive to the choice of equivalence scale. For instance, Figure 5a shows that changing this ratio from .78 (the official ratio) to .71 (the ratio used in the three-parameter scale) causes the poverty rate for single elderly women to fall by four and one half percentage points, compared to two and one-half percentage points for single elderly men. Using the ratio of 0.64 implied by the NAS scale implies that the poverty rate for elderly women would fall by another five percentage points. Changing the ratio does not have a dramatic impact on the poverty rate for elderly couples and causes similar effects for married elderly men as for women because the resource measure is for the family.

their home are asked, “If someone were to rent your home today, how much do you think it would rent for monthly, unfurnished and without utilities.” Differences between these methods should be examined in future research.

Figure 5a: Poverty rate for Elderly Singles by ratio of thresholds for singles to couples (keeping couple poverty constant)

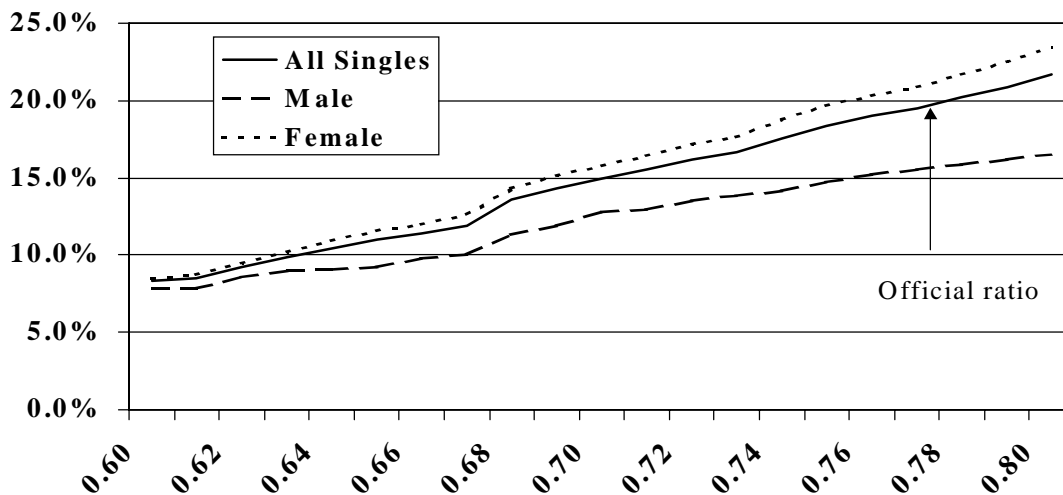
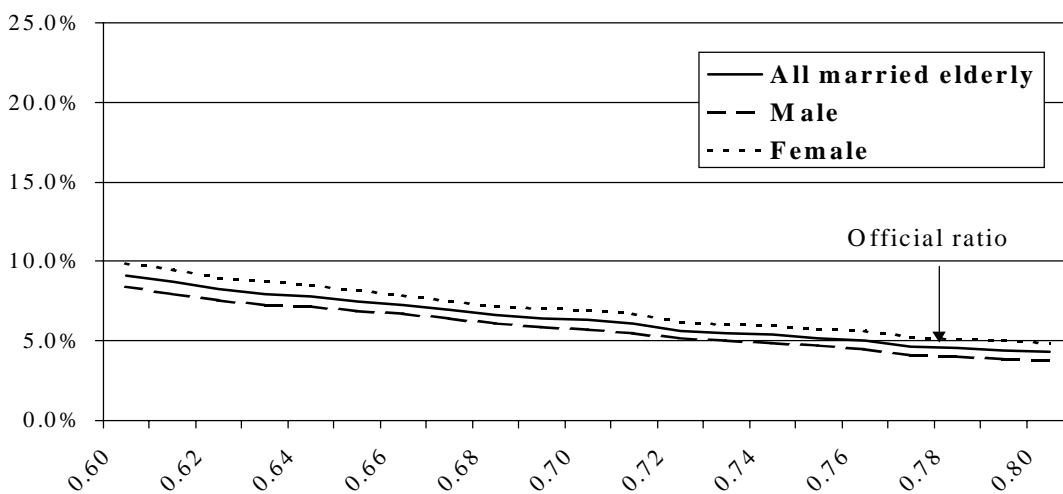


Figure 5b: Poverty rate for Married Elderly by ratio of thresholds for singles to couples (keeping single poverty constant)



Extreme poor and near poor

The experimental measure not only changes the level of poverty, but also changes the depth of poverty. Figure 6 (and appendix table A2) shows the percentage of elderly living below 50 percent of the poverty line (the extreme poor), between 50 percent and 100 percent (the poor), and between 100 and 200 percent of the poverty line (the near poor). The experimental measure increases the percentage of the poor who are living in extreme poverty, which is mostly due to the frequency of very large MOOP imputations. Betson and Warlick (1999) similarly show that the depth of poverty (as measured by a Sen index) is greater using the experimental measure.

Figure 6: The extreme poor, poor and near poor, 1997

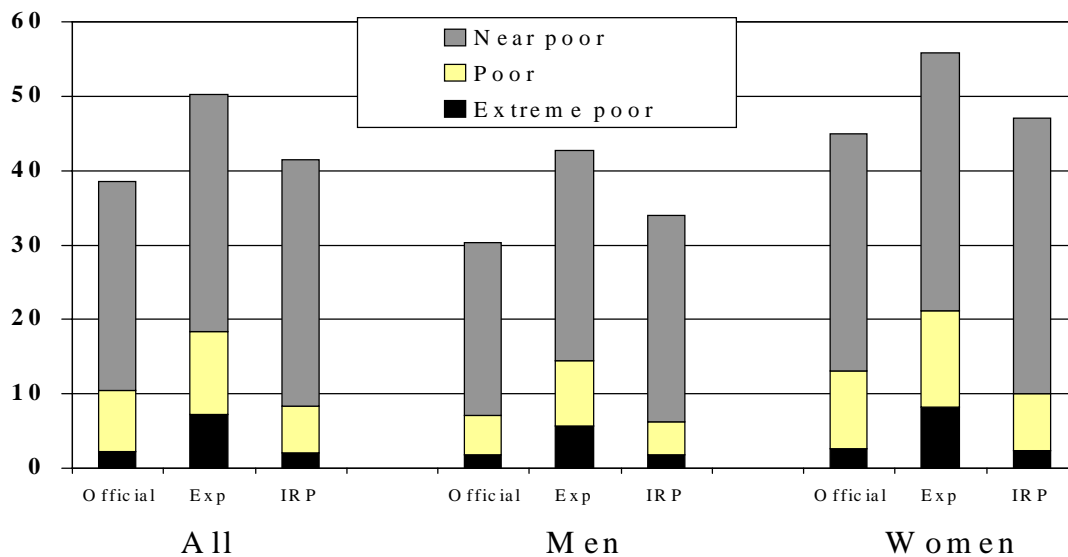


Figure 6 also illustrates that most of the difference in the poverty rate between the experimental and official measure is due to the large increase in the extreme poor. The percent of elderly living below 50 percent of the poverty thresholds increases from 2.2 percent to 7.2 percent, which accounts for two-thirds of the difference between the two measures.

Alternatively, the percent of near-poor under the experimental measure is only 14 percent higher than the percent of near-poor under the official measure.

Health Status

Many have shown that the poor elderly report that their health status is much worse than the reported health status of the non-poor (see Johnson (1999), Wolfe and Smeeding (1999) and NCHS (1998)). The health status of the poor, however, can depend on the measure of poverty. Table 5 shows that the percent of poor elderly, using the experimental measure, who report being in very good or excellent health is larger than the percent reporting very good or excellent health under the official measure. The largest improvement in health status is for the younger elderly. Since the experimental measure includes more working poor, some of this improvement is due to the increased employment work status of the experimental poor. The percent of poor elderly who are employed increases from 2.7 percent for the official measure to 4.7 percent for the experimental measure.

Even accounting for employment and disability status, the health status of the experimental poor is greater than that of the official poor.²¹ This is due to the exclusion of MOOP from the resource measure. Excluding MOOP from the resource measure causes the experimental poor to have more money cash income, which is the official income measure.²² Since health status improves with income, the health status of the experimental poor is better than that of the official poor. This raises the issue of whether MOOP increases or decreases the health status of the elderly, as discussed above and suggests that the imputation procedure could

²¹ The frequency of disability falls with the experimental measure; 36.5 percent of the official poor are disabled compared to 31.0 percent of the experimental poor.

be changed to depend on the health status of the elderly. If the MOOP imputation were to depend on the level of health status, then the exclusion of MOOP from resources would have a smaller effect on the poverty rate.

Table 5: Health Status of the elderly

	All		Official Poor		Experimental Poor	
	Very Good or Excellent health	Poor or Fair Health	Very Good or Excellent health	Poor or Fair Health	Very Good or Excellent health	Poor or Fair Health
All elderly	28.9%	36.5%	16.6%	54.3%	19.8%	48.0%
65-74 years old	33.2%	31.2%	17.9%	51.5%	20.6%	46.3%
75-84 years old	24.5%	41.1%	13.5%	57.0%	18.9%	48.0%
85 and over	19.9%	50.9%	20.5%	56.6%	19.9%	54.0%

The effectiveness of social security

Social Security is the single largest component of income for the elderly. Porter et al. (1999) find that 56 percent of the elderly obtain at least half of their income from Social Security, and Social Security makes up three-fourths of the income for 36 percent of the elderly. We find that on average Social Security makes up 75 percent of the money income of the poor elderly. Social Security is the main reason that the poverty rate among the elderly has fallen over time (Smeeding (1999) and Porter et al. (1999)).²³

Table 6 shows the effectiveness of Social Security in decreasing poverty using both the official and experimental measures. Without Social Security, the elderly poverty rate would rise to almost 47 percent. Stated differently, Social security lifts 78 percent of these elderly out of

²² 8 percent of the experimental poor have income that is twice the official poverty line.

²³ It would admittedly be best to view to effect of Social Security on the poverty rate by comparing the poverty rate with Social Security to the poverty rate without Social Security. However, without Social Security unpredictable

poverty. Social Security is not as effective in decreasing poverty using the experimental measure with only 67 percent of the elderly being lifted out of poverty. Betson and Warlick (1999) also show that the effectiveness of Social Security is diminished using the Panel's experimental measure. This diminished effectiveness is mainly due to the exclusion of MOOP from the resources and the fact that there are very large MOOP imputations with almost one-third of the official poor having MOOP in excess of their Social Security benefits. Of the poor who are lifted out of poverty using the official measure, 78 percent in Table 6, 21 percent would still be poor if MOOP were subtracted from the official resource measure. For those poor elderly under the experimental measure who were not lifted out of poverty by Social Security, the 18.4 percent who remain poor, more than half of these would not be poor if MOOP were not excluded from the resource measure.

Table 6: Poverty rates for the elderly before and after Social Security Benefits

	Using official measure			Using experimental measure		
	Official Poverty	Excluding Social Security Benefits	Percent lifted out of poverty	DES-DCM2	Excluding Social Security Benefits	Percent lifted out of poverty
All elderly	10.5%	46.9%	77.6%	18.4%	56.2%	67.3%
Elderly men	7.1	40.0	82.3%	14.5	50.2	71.1%
Married	4.6	37.3	87.7%	12.8	48.4	73.6%
Living alone	14.0	53.3	73.7%	19.3	60.4	68.0%
Widows	11.3	52.5	78.5%	15.3	61.0	74.9%
Other	17.8	36.9	51.8%	19.0	45.4	58.1%
Elderly women	13.1	51.9	74.8%	21.3	60.5	64.8%
Married	4.5	41.1	89.1%	13.2	52.7	75.0%
Living alone	22.4	70.2	68.1%	29.9	75.1	60.2%
Widows	20.8	71.3	70.8%	29.6	76.4	61.3%
Other	11.5	35.1	67.2%	20.1	45.5	55.8%

behavioral changes would occur, with the elderly changing their income and asset portfolios and living arrangements.

IV. Conclusion

This paper has systematically reviewed the recent literature on poverty measurement among the elderly by bringing together several related issues that bear upon measures of resources and needs for this important segment of the population. The NAS report, which began the recent poverty measurement debate, primarily focused on correctly measuring poverty among families with children, and hence, did not specifically examine the effects of their selected measures on the poverty status of the elderly. Subsequent research has focused more directly on the poverty of the elderly, both in terms of a resource measure and in terms of determining poverty thresholds and equivalence scales that accurately reflect the needs of the elderly as well as those of the non-elderly. This literature, however, has reached no definitive conclusion.

In this paper, we show that the choice of equivalence scale and treatment of imputed rent both have substantial effects on the level and composition of elderly poverty, with the treatment of health care having the largest effect of all. This means that the consensus poverty measurement changes, suggested by the IRP group, leave many important unanswered questions about poverty among the elderly.

Due to both rising health care costs (especially the costs of prescription drugs) and the recent trend in withdrawal of retiree health insurance benefits, the cost of health care among the elderly is a major and growing national policy issue. Depending on how medical benefits and medical expenses are valued, elderly poverty rates can be half of the official rate (using a modest value for Medicare and Medicaid in resources but not in needs) or twice the official rate (excluding MOOP from resources as in the experimental measure). These differences are

staggeringly large and require that the issue over how to treat health care for poverty measurement among the elderly must be given greater attention in future research.²⁴

The imputed value of home ownership also needs to be more precisely measured and valued (see Betson (1995)). The true rental equivalence value should reflect depreciation, maintenance and other costs of owning for homeowners. Finally, some of the issues not dealt with in this paper need to be addressed, e.g., the effect of other sources of financial and non-financial wealth on poverty status.

This paper has raised more questions than it has answered. With the current debate on Social Security and Medicare reform, these questions need to be addressed soon. Social Security and Medicare reform should address not only fiscal issues, but distributional issues as well. To the extent that the poverty rate is the most important distributional measure that we have for measuring the effects of reform, these effects will depend heavily upon the method chosen to measure poverty and resource insufficiency among the elderly. Policy analysts and policy makers need to come to some agreement about a how to measure poverty among the elderly that reflects true differences in needs and resource insufficiency. Without such agreement, the distributional aspects of Social Security and Medicare reform as reflected in the poverty rates will continue to play a minor role in the policy debates.

²⁴ These calculations also suggest that Medicare and Social Security reform need to simultaneously address the issue of health care costs amongst the elderly.

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Appendix: Measuring MOOP

These are imputed to the CPS based on data from the 1987 National Medical Expenditure Survey (NMES) updated to reflect the accounting period of the March 1992 CPS. We use the imputations presented in Short et al. (1999), which is a modification of the method described in the Panel's report²⁵. Short et al. (1999) use separate procedures for families headed by someone younger than 65 and those headed by someone 65 or older and a two-stage imputation model. The first stage stochastically assigns families to have medical expenses based on family characteristics. For families with a non-elderly head, assignment is based on health insurance status (private, public or none), family size (1, 2, 3, 4 or more), race of head (black or non-black), and income-to-poverty ratio (below 150% or not). For families with an elderly head, we use age of head (under 75 years, 75 years and over), low-income (income-to-poverty ratio less than 150%) or not, and whether the family is a single person or not. In our application, we randomly assign a fraction of the CPS families to have medical expenses to match the fractions in the NMES calculations. If a family is assigned to have positive expenses, actual amounts are imputed using a second random draw to be consistent with the distribution of NMES expenditures. Imputed amounts are bounded at \$1.00 on the low end and at the 99th percentile of reported expenses on the high end (\$10,572 for non-elderly and \$23,202 for elderly family heads in 1997.) Medicare Part B premiums are added to these expenses for each elderly householder who reported Medicare coverage (but not Medicaid) and his/her elderly spouse. These maximum values have a significant effect on the poverty rate. For example, if the maximum MOOP for the elderly is set at the non-elderly maximum then the elderly poverty rate drops by more than one percentage point. In addition, the assumed logistic distribution used to determine the random MOOP values increases the poverty rate (see Table A).

In the final step, we calibrate expenditures to match a benchmark total using 192 as the base year and updating to other years by the CPI for medical care. The target for medical out-of-pocket expenditures, excluding Medicare Part B premiums, for the elderly in 1997 is 60.7 billion. As a result, we adjust the MOOP estimates for the elderly by a factor of 0.8257 (see Short et al. (1999)).

To compare the MOOP imputations, we use the actual expenditures reported in the CE Survey for 1997. To obtain an annual measure of health care expenditures for 1997, we use consumer units who participate in the survey for all interviews (representing about 75-80 percent of all consumer units) for the six quarters between October 1996 and March 1998.

Health care expenditures are for out-of-pocket expenses for goods and services (including hospital room and services, dental care, care in retirement or convalescent home), drugs and other supplies and includes payments for medical care insurance. NOTE: These expenditures are net of reimbursements. Health insurance includes Medicare Part B. Non-prescription drugs are calculated from the Diary files by age and family size.

Figure A1 shows that the distribution of the imputed MOOP from the CPS is similar to the actual MOOP using the CE Survey. The main difference is in the number of very large MOOP values in the CPS. We also used the CE Survey and the model presented in Short et al.

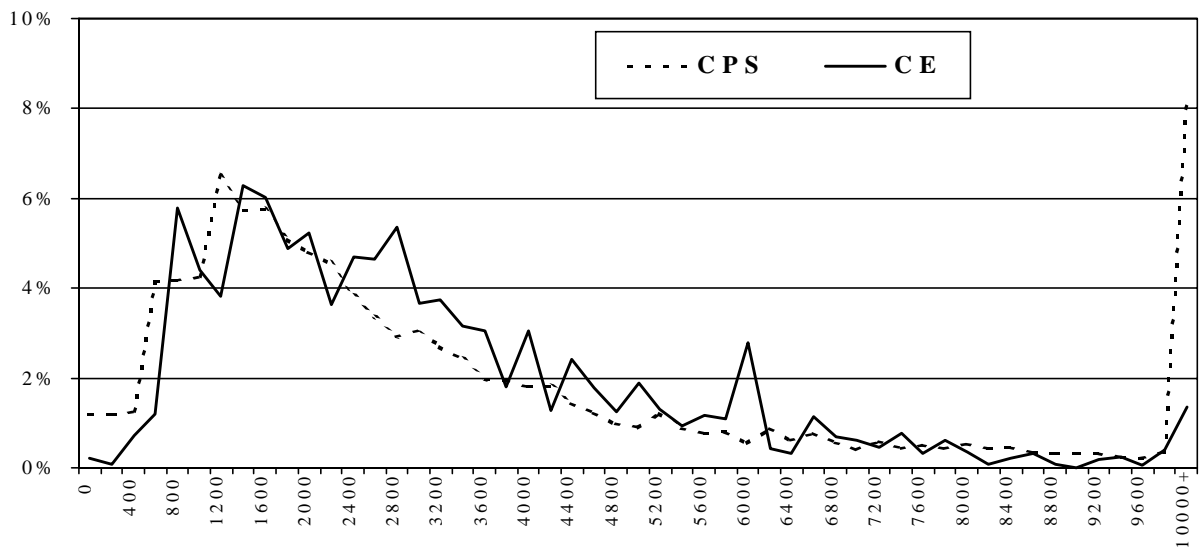
²⁵ See Betson, 1995, 1997 and Short et al. (1999) for a description of this method.

(1997) to impute MOOP to the CPS. Since the CE includes Medicare Part B payments, the distribution more closely resembles a lognormal distribution (see Figure A1).

Appendix Table A: Poverty rates using alternative measures of MOOP, 1997.

	Official	DES-DCM2	DES-DCM2 using non-benchmarked MOOP	DES-DCM2 using probability of positive MOOP and average MOOP by characteristic (non-random)	DES-DCM2 using MOOP imputation from CE data (logistic dist)	DES-DCM2 using MOOP imputation from CE data (lognormal dist)
Children	19.9	20.9	20.2	18.5	20.2	19.7
Adults	10.9	13.7	13.1	11.6	13.5	12.7
Elderly	10.5	18.4	19.3	13.5	15.3	19.7

Figure A1: Distribution of MOOP for the elderly: CE and CPS, 1997



Appendix Tables:

TABLE A1: Poverty rates for the elderly using alternative thresholds and resource measures

	Changing Thresholds					Changing resources				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(7a)	(8)	(9)
	Official	Using new reference threshold	With Geographic adjustment	With two-parameter scale	With three-parameter scale	After taxes and transfers	Subtracting work related expenses	(7) without geographic adjustment IRP conf	Subtracting MOOP DES-DCM2	Adding home equity
All elderly	10.5%	10.1%	9.9%	8.8%	9.9%	8.3%	8.4%	9.2%	18.4%	13.2%
Elderly men	7.0%	6.9%	6.7%	6.9%	7.1%	6.2%	6.3%	6.9%	14.5%	10.5%
65-74 years old	6.7%	6.6%	6.4%	6.3%	6.8%	5.9%	6.1%	6.6%	12.4%	9.2%
75-84 years old	6.6%	6.2%	6.3%	6.8%	6.7%	5.8%	5.8%	6.4%	16.4%	11.3%
85 and over	11.8%	11.8%	11.3%	11.8%	11.7%	9.8%	10.0%	11.0%	22.3%	17.2%
Married	4.6%	4.5%	4.4%	5.5%	5.1%	4.8%	4.9%	5.5%	12.8%	8.9%
65-74	4.8%	4.7%	4.5%	5.2%	5.1%	5.0%	5.2%	5.7%	11.0%	8.0%
75-84	4.2%	3.9%	4.0%	5.6%	4.8%	4.4%	4.4%	5.1%	15.1%	9.8%
85 +	4.9%	4.9%	5.0%	8.2%	6.5%	4.8%	4.8%	5.7%	20.7%	15.6%
Living alone	14.0%	13.6%	13.4%	10.1%	12.8%	9.3%	9.3%	9.7%	19.3%	14.4%
Widows	11.3%	11.0%	10.0	7.1	9.6	7.3	7.4	8.4	15.3	11.1
65-74	10.9%	10.6%	9.9%	6.7%	9.3%	7.5%	7.5%	8.0%	13.4%	10.9%
75-84	9.6%	9.0%	8.4%	5.9%	8.4%	6.2%	6.4%	7.1%	14.4%	10.4%
85 +	16.0%	16.0%	13.8%	10.3%	12.7%	9.4%	9.4%	12.0%	20.6%	12.7%
Other	13.3%	13.3%	12.5%	11.7%	12.4%	11.3%	11.7%	12.7%	19.0%	15.4%
Elderly women	13.1%	12.5%	12.2%	10.2%	12.0%	9.8%	9.9%	10.9%	21.2%	15.2%
65-74 years old	11.2%	10.7%	10.7%	9.4%	10.6%	8.8%	8.9%	9.6%	18.0%	13.0%
75-84 years old	14.4%	13.8%	13.7%	10.9%	13.1%	10.8%	11.0%	11.8%	24.4%	17.1%
85 and over	17.8%	17.4%	14.9%	11.8%	14.6%	11.5%	11.5%	14.1%	26.5%	19.8%
Married	4.5%	4.3%	4.2%	5.4%	4.9%	4.5%	4.6%	5.1%	13.2%	9.1%
65-74	4.3%	4.2%	3.8%	5.0%	4.6%	4.3%	4.3%	4.9%	11.4%	8.1%
75-84	4.5%	4.3%	4.9%	6.0%	5.3%	5.0%	5.2%	5.7%	17.2%	11.6%
85 +	6.5%	6.5%	6.3%	7.5%	6.3%	5.4%	5.4%	5.5%	14.2%	9.4%
Living alone	22.4%	21.4%	20.4%	14.3%	18.9%	14.5%	14.5%	16.1%	29.9%	21.0%
Widows	20.8	19.9	18.4	12.8	16.9	13.6	13.6	15.4	29.6	19.9
65-74	19.7%	18.7%	18.0%	12.3%	15.9%	13.2%	13.3%	14.9%	26.5%	16.9%
75-84	20.5%	19.4%	18.5%	13.0%	17.3%	13.6%	13.6%	14.9%	30.0%	20.3%
85 +	23.9%	23.7%	18.8%	13.3%	17.7%	14.0%	14.0%	17.9%	34.9%	25.0%
Other	11.5%	11.1%	11.8%	12.0%	12.4%	11.4%	11.7%	12.2%	20.1%	15.9%

Table A2: The extreme poor, poor and near poor using the official, experimental and IRP measures

		(1)		(8)			(7A)		
	Less than 50% of Official	Between 50 and 100% of Official	Between 100 and 200% of official	Less than 50% of experimental	Between 50 and 100 percent of experimental	Between 100 and 200 percent of experimental ¹	Less than 50% of IRP choice	Between 50 and 100 percent of IRP choice	Between 100 and 200 percent of IRP choice
All elderly	2.2%	8.3%	28.1%	7.2%	11.2%	31.9%	2.1%	7.1%	33.1%
Elderly men	1.8%	5.3%	23.2%	5.7%	8.8%	28.2%	1.8%	5.1%	27.6%
65-74 years old	1.9%	4.8%	19.7%	4.9%	7.5%	25.6%	2.1%	4.6%	24.2%
75-84 years old	1.3%	5.3%	26.4%	6.1%	10.3%	30.9%	1.3%	5.2%	30.6%
85 and over	2.6%	9.2%	36.9%	10.1%	12.2%	37.3%	2.0%	9.0%	40.4%
Married	1.4%	3.2%	20.9%	5.1%	7.6%	26.8%	1.6%	3.9%	25.5%
65-74	1.7%	3.1%	17.5%	4.6%	6.3%	23.9%	2.0%	3.7%	22.0%
75-84	1.0%	3.3%	25.1%	5.5%	9.6%	30.8%	0.9%	4.3%	29.8%
85 +	1.0%	3.9%	36.6%	9.4%	11.3%	37.2%	1.0%	4.7%	42.1%
Living alone	1.8%	12.2%	32.5%	6.0%	13.3%	33.4%	1.4%	8.3%	34.9%
Widows	1.2	10.1	31.2	5.3	10.0	34.1	1.2	7.2	38.0
65-74	2.3%	8.6%	25.3%	4.1%	9.3%	29.2%	2.2%	5.8%	26.9%
75-84	0.8%	8.9%	31.4%	5.4%	9.0%	34.9%	0.8%	6.4%	29.4%
85 +	0.7%	15.3%	40.8%	6.9%	13.7%	40.6%	0.7%	11.3%	41.5%
Other	4.4%	8.9%	24.2%	9.6%	9.4%	29.9%	4.2%	8.5%	30.2%
Elderly women	2.6%	10.5%	31.8%	8.2%	13.0%	34.6%	2.4%	8.5%	37.1%
65-74 years old	2.4%	8.8%	26.3%	6.9%	11.1%	31.3%	2.2%	7.4%	32.0%
75-84 years old	2.5%	12.0%	37.0%	9.7%	14.8%	37.6%	2.2%	9.6%	41.7%
85 and over	3.8%	14.0%	41.3%	10.0%	16.5%	41.2%	3.9%	10.2%	47.3%
Married	1.5%	3.0%	22.3%	5.4%	7.8%	28.9%	1.5%	3.6%	27.4%
65-74	1.5%	2.8%	19.7%	4.9%	6.5%	27.4%	1.5%	3.3%	25.1%
75-84	1.5%	3.1%	28.0%	6.6%	10.6%	31.8%	1.4%	4.3%	32.1%
85 +	1.4%	5.1%	25.9%	4.8%	9.4%	34.9%	1.4%	4.1%	34.4%
Living alone	3.4%	19.0%	43.6%	11.0%	18.9%	41.2%	3.1%	13.0%	48.4%
Widows	3.3	17.5	45.9	11.0	18.6	42.0	3.1	12.3	49.3
65-74	2.6%	17.0%	39.6%	9.0%	17.6%	37.5%	2.6%	12.3%	43.2%
75-84	3.3%	17.2%	48.9%	12.2%	17.8%	44.5%	2.8%	12.2%	52.1%
85 +	4.9%	19.0%	50.5%	11.7%	23.2%	44.3%	4.7%	13.3%	53.6%
Other	3.1%	8.4%	26.6%	8.3%	11.7%	32.9%	2.8%	9.4%	33.9%

Table A3: Health Status of the elderly

	All		Official Poor		Experimental Poor		IRP Poor	
	Very Good or Excellent health	Poor or Fair Health	Very Good or Excellent health	Poor or Fair Health	Very Good or Excellent health	Poor or Fair Health	Very Good or Excellent health	Poor or Fair Health
All elderly	28.9%	36.5%	16.6%	54.3%	19.8%	48.0%	17.8%	53.2%
Elderly men	30.3%	34.9%	18.1%	51.1%	20.6%	46.1%	19.8%	50.4%
65-74 years old	34.3%	30.1%	18.0%	47.5%	18.8%	43.7%	18.7%	46.8%
75-84 years old	25.3%	40.2%	13.6%	55.7%	22.8%	45.6%	16.4%	55.4%
85 and over	21.3%	49.2%	29.9%	56.2%	21.3%	58.1%	33.6%	54.4%
Elderly women	27.9%	37.6%	16.0%	55.5%	19.4%	48.9%	16.8%	54.5%
65-74 years old	32.4%	32.1%	17.9%	53.5%	21.6%	47.8%	20.0%	52.7%
75-84 years old	24.0%	41.6%	13.5%	57.4%	17.1%	49.2%	12.0%	56.8%
85 and over	19.2%	51.7%	17.3%	56.7%	19.3%	52.3%	20.1%	54.2%