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ACCOUNTING FOR NET WORTH IN MEASURING POVERTY

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Introduction

Accounting for ownership of assets in measuring poverty has been a subject of debate almost as long as poverty has been measured. Under 19th century poor relief laws, any assets the poor did hold could be confiscated to offset the costs of providing relief—even assets such as the tools needed to pursue a trade. Today’s welfare laws in the United States are less harsh than this; recipients are allowed to keep their real property such as clothing and furniture, along with some small amount of financial assets—typically \$1000 under the Temporary Assistance to Needy Families (TANF) program, for example. Programs differ in their treatment of other assets. The Food Stamp Program (FSP) counts the value of cars above a certain amount in determining program eligibility, for example, while the Medicaid program puts a lien on recipients’ homes, which is counted against their estates unless the home is left to a resident spouse.

Unlike assistance programs, the Census Bureau’s official poverty measure does not take account of assets, per se, at all, although any income generated by those assets is counted in measuring poverty. This treatment could be seen as inconsistent with the way that our anti-poverty programs are implemented. Therefore, it may provide an inaccurate yardstick by which to gauge their success or failure.

Because assets can add to the resources that are used to meet basic needs, some analysts advocate counting them in some way in measuring poverty, just as they are counted in determining program eligibility. Others argue that because many assets are not very liquid, counting them would underestimate the degree of hardship faced by families in the short run. Further, counting them would run counter to the goals of programs such as the Individual Development Accounts (IDAs), which aim at encouraging the poor to

save and to invest in their own futures—essentially, to develop the tools of their own trades. Finally, some suggest that poor families have so few assets in any case that including them would not change poverty measures much.

The National Academy of Sciences report on revising the official poverty measure (Citro and Michael, 1995) takes a compromise position on this issue, advocating counting immediately available assets in a short-term poverty measure under a ‘crisis definition of resources’. This definition would include in resources those assets families have on hand that could be converted to cash to support current consumption. The NAS panel suggests that this ‘crisis definition’ is only relevant for a very short-term measure of poverty, because, in their words, ‘...assets can only ameliorate poverty temporarily.’¹ They suggest that it is important, however, to develop measures of the distribution of wealth and to examine the relationship between measures of asset ownership and poverty status. Furthermore, while spending down assets can enhance income to make ends meet, servicing debt can be a drain on family income that would otherwise be sufficient to purchase basic necessities, so the inclusion of measures of debt as well as assets is important in any accounting of total net worth.

This paper compares poverty rates in the United States in 1996 and 2001 under alternative methods of accounting for assets and debt. In addition to examining the impacts of alternative measures of assets on poverty under the official U.S. poverty definition, it also considers how the impacts of asset inclusion would differ under the various experimental measures of poverty proposed in the National Academy of Sciences study. The paper uses the 1996-97 assets and liabilities topical module in the 1996 panel of the Survey of Income and Program Participation (SIPP) and the 2001 assets and

liabilities topical module in the 2001 panel of the SIPP. It also uses experimental poverty measures developed in accordance with the recommendations of the National Academy of Sciences study, as discussed below, and considers four alternative approaches to including wealth (net worth) in measuring economic need. The paper shows that resulting poverty rates are sensitive to the method used to account for net worth.

Although poverty rates fell overall between 1996 and 2001, for example, the amount by which they fell varies substantially depending on how assets and liabilities are treated.

For each year, two sets of poverty measures have been calculated. First, assets and liability measures have been calculated using the official poverty measure as a base. These measures retain the official thresholds and income measures, changing only the treatment of assets and liabilities. These results allow us to test the assertion that it would change little to include net worth in the official measure because very few people who are income-poor on an annual basis have substantial financial or other assets.

Second, the paper also calculates these asset and liability measures based on an experimental poverty measure that revises both poverty thresholds and resource measures according to the recommendations of the NAS report. These experimental poverty measures identify different groups of people as being in poverty than are counted as such under the official measure. As a result, the relationship between poverty and net worth may differ under these measures from seen in the official poverty measure. Since the experimental measures identify more people who have accumulated assets, such as elderly and married couples, as poor than does the official measure, taking account of net worth may be more important in considering the experimental measures.

¹ Citro and Michael, pp. 214-218.

Experimental Poverty Measures

The experimental poverty measures discussed in this paper are inspired by the work of the National Academy of Sciences panel on poverty measurement. In 1995, the NAS released a report recommending changes to the official poverty measure. Their report listed a series of recommendations that included calculating poverty thresholds using Consumer Expenditure Survey data, subtracting necessary expenses such as taxes and work-related expenses from income, and adding noncash benefits to income. The only reference to including assets in resources, however, was in the following recommendation about supplemental poverty measures over shorter periods of time.

Recommendation 6.1. The official poverty measure should continue to be derived on an annual basis. Appropriate agencies should develop poverty measures for periods that are shorter and longer than a year, with data from SIPP and the Panel Study of Income Dynamics, for such purposes as program evaluation. Such measures may require the inclusion of asset values in the family resources definition.²

Table 1 summarizes the differences between the official and NAS proposed poverty measures. The experimental measure used in this paper is based on the NAS measure, and subtracts taxes and necessary expenses such as childcare and medical out-of-pocket expenses from net income, while adding in the value of relatively fungible noncash benefits such as food stamps and housing subsidies. The measure uses experimental poverty thresholds with geographic cost-of-living adjustments.³

² Citro and Michael, p. 13.

³ See Short 2001 for details on this and other experimental measures. In that report, the measure shown here is referred to as the MSI measure. It follows the recommendation of the NAS to treat medical out-of-pocket (MOOP) costs as a subtraction from income, thus MOOP Subtracted from Income, or MSI. The presentation of this measure does not imply it is the one most preferred alternative, but is shown here as the one closest to the original NAS proposals.

Table 1: Elements of the Official and NAS Proposed Poverty Measures ¹

Element	Official Measure	Proposed Measure
<u>Threshold Concept</u>	Food times a large multiplier for all other expenses	Food, clothing, and shelter, plus a little bit more
1992 level (two-adult/two-child family)	\$14,228	Suggested within range of \$13,700-\$15,900
Updating method	Update 1963 level each year for price changes	Update each year by change in spending on food, clothing, and shelter over previous 3 years by two-adult/two-child families
<u>Threshold Adjustments</u>		
By family type	Separately developed thresholds by family type; lower thresholds for elderly singles and couples	Reference family threshold adjusted by use of equivalence scale, which assumes children need less than adults and economies of scale for larger families
By geographic area	No adjustments	Adjusted for housing cost by states and metropolitan status
<u>Family Resource Definition (to compare with threshold to determine poverty status)</u>	Gross (before-tax) money income from all sources	Gross money income, plus value of near-money in-kind benefits (e.g. food stamps), minus income and payroll taxes and other nondiscretionary expenses (e.g., child care and other work-related expenses; child support payments to another household; out-of-pocket medical care expenses, including health insurance premiums)
<u>Data Source (for estimating income)</u>	March Current Population Survey	Survey of Income and Program Participation
<u>Time Period of Measurement</u>	Annual	Annual, supplemented by shorter term and longer term measures
<u>Economic Unit of Analysis</u>	Families and unrelated individuals	Families and unrelated individuals (cohabitators recommended but not included)

¹ Table based on Table 1-1, page 41: Constance F. Citro and Robert T. Michael (eds.), *Measuring Poverty: A New Approach*, Washington, D. C.: National Academy Press, 1995

As has been seen in earlier work, the experimental poverty measures describe a slightly different poverty population than does the current official measure, identifying a group that looks more like the total population in terms of demographic and socioeconomic characteristics. The subtraction of work expenses from net income means that a higher proportion of working people and married couples are counted as being in poverty, while the allowance for medical expenses increases the proportion of elderly counted. Conversely, the experimental measure shows lower percentages of children, Blacks, and people in families with a female householder (no spouse present) as being in poverty than are shown under the official measure. The experimental measure that accounts for geographic differences in the cost of housing counts higher proportions of people in the Northeast and the West and also of those residing in suburban areas as living in poverty than are counted under the official measure. Individuals with a high school diploma or higher level of education are slightly more likely to be in poverty under the experimental measures than under the official measure.

Given the characteristics of those in poverty under the experimental measure we expect to find that assets and debts play a greater role for this group than for those in poverty as defined under the official measure. For example, the elderly, married couples, and those living where housing costs are high, all of whom are more likely to be in poverty under the experimental measure, report greater net worth than do others in the low-income population.

Data and Methods

The paper presents two poverty measures, the official measure and an experimental measure, both based on one calendar year of income information collected

in the 1996 or 2001 panels of the SIPP.⁴ The core set of income and program information is supplemented with data from the assets and liabilities topical modules administered in wave 3 of the 1996 panel (December 1996 – March 1997) and in Wave 3 [?] of the 2001 panel.

The quality of the data on assets and liabilities in the SIPP has recently been reviewed by John Czajka and colleagues at Mathematica Policy Research. (Czajka, Jacobson, and Cody, 2003). That study noted some important limitations of the SIPP data on net worth. First, the SIPP estimates of the wealth holdings of the wealthiest families are weak. Wealthy families are under-represented in the SIPP sample and the questionnaire does not capture the complexity of wealth holdings of this group. In addition, there are a number of components of wealth that are commonly held that the SIPP does not measure. SIPP does not collect the cash value of life insurance, which is an asset held by 30 percent of families. SIPP does not measure non-financial assets other than home or cars, such as jewelry or art collections. SIPP also does not measure the value of defined contribution pension accounts from either current or previous jobs. And, while SIPP collects data on vehicles, it requests information on at most three vehicles per household.

Finally, some assets suffer substantial measurement error. In particular, the SIPP data on businesses miss most of the value captured in other surveys. Vehicles more than seven years old are assigned a single value by model year, resulting in large measurement error, and their mean value appears to be underestimated as well.

⁴ Note that up to two months of income are imputed to this file for those households that were interviewed later than usual in 1996.

Noting these possible limitations, this paper calculates total household assets and total household debt. These shortcomings suggest that our calculations will underestimate, to some degree, the total net worth of low-income families. The largest effect at the low end of the income distribution will probably be from the underestimate of the value of older vehicles, since most of the other assets found to be under-reported are rarely held by low-income families in any case. While information in this module is collected for households, the poverty measures use the family as the unit of analysis. Therefore, the household value of each asset or liability reported is prorated to families by multiplying the reported values by ratio of family size to household size.

The specific assets and liabilities counted in this paper are listed in the Appendix. The calculations distinguish between assets and liabilities overall, and between financial and non-financial assets and liabilities.⁵

How should assets and liabilities be counted in measuring poverty? Simply adding them to income is likely to be misleading; not all assets are available to fund immediate consumption, and not all debts must be paid immediately. Further, assets consumed today are not available to ameliorate poverty tomorrow, so at a minimum some calculation must be made as to how long existing assets might last if used to stretch a family's resources. This paper explores three different approaches to counting assets and liabilities in a poverty measure. These alternatives range from a very short-term approach aimed at dealing with the immediate crisis of poverty to a much longer-term

⁵ The equity variables (home, vehicles, business, other) included in household wealth may be negative and therefore reduce the amount of total assets that the family owns. In some cases, the negative equity exceeds total assets. In that case this calculation results in subtracting that value from income rather than adding an annuity income value. To avoid this, the minimum value of total assets (excluding liabilities) is set to zero. Total net worth has been calculated as in Orzechowski and Sepielli (2003).

approach aimed at stretching available resources over the longest time period possible.

These approaches are:

1. Filling the gap – This method calculates the poverty gap for each poor family and individual using the official and experimental measures for each year. Then, if the level of financial assets equals or exceeds the gap, it is assumed that these assets can be used to bring this family out of poverty, and they are no longer counted among the poor for that year. Non-liquid assets and debt are ignored under this measure, although property income is subtracted. This method assumes that families only have access to relatively liquid assets in the short run, and that they can postpone paying off the principal of any debt they owe. It is similar to the method used in Ruggles and Williams (1989), although the gap to be filled is calculated on an annual rather than monthly basis.
2. Resource deficiency – This method, like the one above, counts only financial assets. Rather than comparing assets to the annual poverty gap, it compares them to one-fourth of the family's poverty threshold, following the approach used by Oliver and Shapiro (1997). This essentially checks whether a family considered to be in poverty based on its income could support itself with relatively liquid assets for three months at the poverty line. Families with enough liquid assets to do so are considered non-poor regardless of income. Unlike the measure above, this measure does not depend on the size of the family's poverty gap (as long as it is above zero), but only on its financial assets and overall poverty threshold.
3. Annuitized net worth – This method uses all available assets, both financial and non-financial assets such as home equity, and assumes that the family can earn

income on a regular basis from these assets. On the other hand, it is also assumed that families must continue to pay off their debts. Assets are divided into financial assets, which are assumed to pay an annual interest of two percent and to be fully consumable within one year, and equity in real property, which is annuitized over the lifetime of the household head. The annuity amount is based on the age of the family head – older individuals receive higher amounts than younger ones. A real interest rate of two percent is assumed. The formula used is

$$A = N (r / (1 - (1 + r)^{-t}))$$

where A is annuity income, N is value of all non-financial assets, r is the selected interest rate, and t is life expectancy, as in Crystal and Shea (1990). Radner (1990) and Ruggles (1990) criticize this method as applied to younger families, since a long future life span reduces the calculated income from assets and may distort comparisons of the relative economic well-being of the old and the young. Property income is subtracted from total income for this calculation to avoid double counting.

The treatment of debt under this measure parallels the treatment of assets. It is assumed that families will pay interest on their short-term, unsecured debt such as installment and credit card debt at an annual rate of 10 percent, and will pay off the debt within one year. Secured debts such as mortgages are assumed to be paid off over the lifetime of the household head, at an annual interest rate of 6 percent. These are relatively low interest rates for debt by historic standards, but they reflect the current low interest rates in the United States.

Results

Table 2 shows median amounts of assets and debt for the poverty population under the official measure and under the experimental measure. Although financial assets are low under all of the measures, all values except for the poverty gap are higher under the experimental measure -- the experimental poverty population generally has more assets and more debt than those counted as poor under the official measure. This suggests that, as expected, the experimental poverty measure may be more sensitive to the treatment of assets and liabilities than the official measure, particularly when non-financial assets and long-term debt are considered.

As Table 2 demonstrates, population subgroups such as the elderly are especially likely to be affected by the inclusion of assets and liabilities. In particular, the elderly—especially those defined as poor under the experimental measure--have much higher levels of non-financial assets than do the non-elderly. Calculated annuity incomes for the elderly reflect these higher asset values, as well as the relatively short expected remaining lifetimes of the elderly. Non-elderly married couples with below-poverty level incomes, on the other hand, are likely to have relatively high levels of debt. This group is more likely than others with below-poverty incomes to include homeowners with substantial mortgages. They are also the group most likely to have earned income, which may qualify them for credit cards and installment loans unavailable to others in the poverty population.

Table 2: Median Values of Assets, Liabilities, and Poverty Gaps 1996 and 2001

	Female householders			Married couples	
	All families	Non-elderly	Elderly	Non-elderly	Elderly
Official poverty population 1996	Median values (\$)				
Financial assets	0	0	6	0	50
Assets	2,017	732	15,500	5,847	28,850
Liabilities	0	0	0	1,328	0
Poverty gap	3,350	4,745	1,632	4,000	1,425
Annuity income	81	25	1,419	204	2,563
Debt service	0	0	0	98	0
Experimental poverty population 1996					
Financial assets	100	0	464	350	2,000
Assets	5,825	1,844	40,000	13,575	71,450
Liabilities	200	467	0	5,400	0
Poverty gap	3,112	3,318	2,093	4,087	2,803
Annuity income	205	62	4,083	524	6,697
Debt service	15	32	0	360	0

Official poverty population 2001

Experimental poverty population 2001

Source: 1996 and 2001 Panels of the SIPP.

Table 3 shows the impacts of the three methods of counting assets and liabilities discussed above on measured poverty rates in 1996 and 2001, under both the official and

experimental measures of poverty. Overall, poverty rates fell slightly between 1996 and 2001 across both the official and experimental measures and across the three different ways of incorporating assets and liabilities, although the declines under the experimental measures were generally small. However, poverty rates for the elderly actually rose, particularly under the experimental measures. In part this reflects rising out-of-pocket medical expenditures over this period.

Table 3: Poverty Rates Accounting for Assets and Liabilities, using Official and Experimental Poverty Measures, 1996 and 2001

<u>Basis of Measure</u>	<u>All Families</u>	<u>Female Householders</u>		<u>Married Couples</u>	
		Non-elderly	Elderly	Non-Elderly	Elderly
Official 1996					
Income Only	13.3	27.8	20.3	5.5	3.4
Filling Gap	11.3	25.0	14.6	4.6	2.5
Deficient Res.	11.4	24.4	15.4	4.7	2.5
Annuitized	14.9	30.3	10.4	9.1	2.5
Experimental 1996					
Income Only	13.0	23.3	19.7	6.0	8.4
Filling Gap	10.0	19.9	12.4	4.4	4.4
Deficient Res.	9.8	19.6	12.0	4.3	4.4
Annuitized	15.9	28.5	8.0	11.7	3.9
Official 2001					
Income Only	11.9	24.9	18.5	4.3	3.8
Filling Gap	9.8	21.6	13.9	3.4	2.4
Deficient Res.	9.9	21.6	15.0	3.5	2.5
Annuitized	14.0	28.1	10.9	8.4	3.7
Experimental 2001					
Income Only	12.5	22.1	24.0	4.7	9.8
Filling Gap	9.6	18.6	16.0	3.5	5.6
Deficient Resources	9.7	18.7	16.5	3.7	5.5
Annuitized	15.3	27.6	11.1	10.1	6.6

Source: Calculated from the 1996 and 2001 panels of SIPP. See text for definitions of measures.

Chart 1 shows relative poverty rates under the income-only definition and each of the three alternative treatments of assets and liabilities for the population as whole in 1996 and 2001. Poverty rates under the annuitized method of calculation are consistently higher than under any of the others. Because the filling the gap and deficient resources methods only add assets, without subtracting any liabilities, they lower poverty rates relative to an income-only definition. The higher poverty rates seen under the annuitized method, however, imply that for the population as a whole the costs of the liabilities added under this calculation outweigh the value of the assets added. Overall, the definitions based on the experimental measure also appear more sensitive to the inclusion of assets and liabilities than do those based on the official measure.

Chart 1: Poverty rates incorporating assets in different ways under two poverty measures in 1996 and 2001

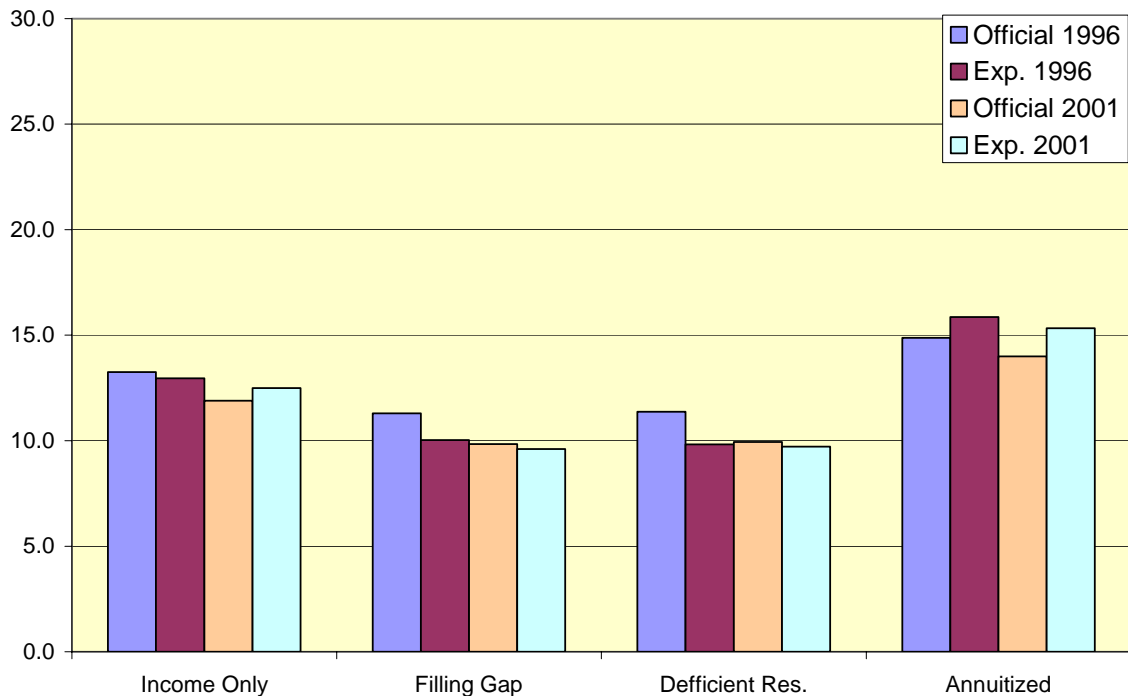


Chart 2: Poverty rates for different groups using different measures 1996

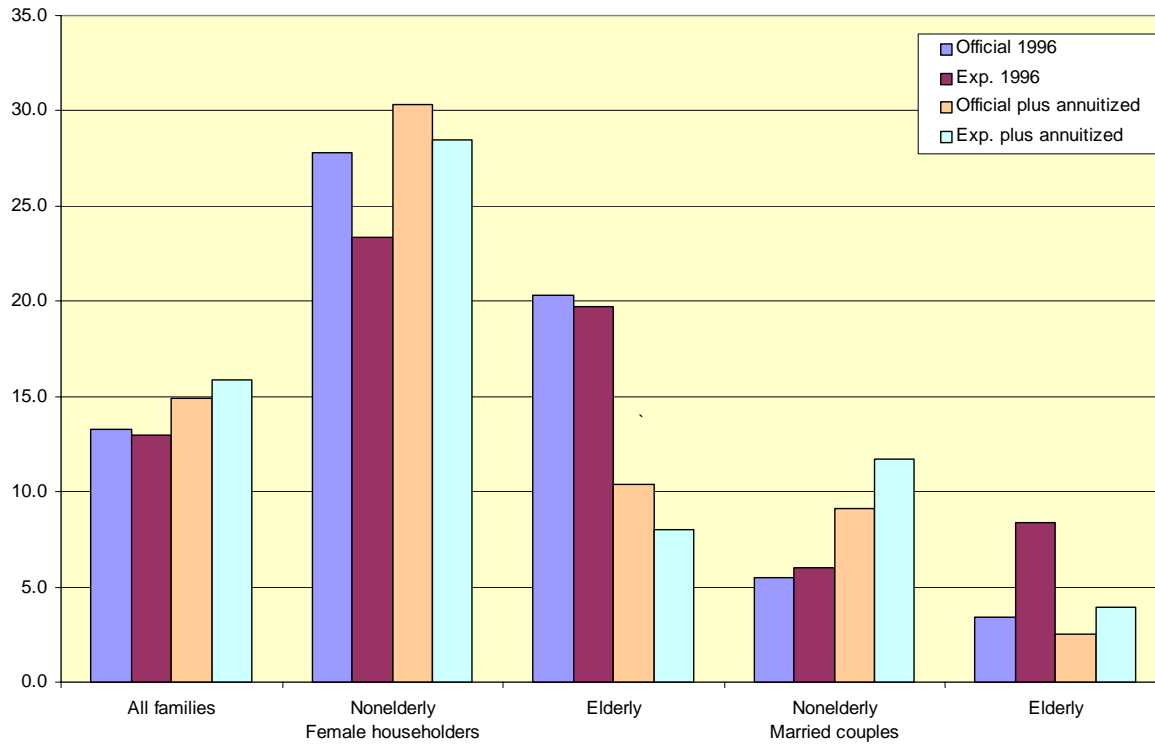
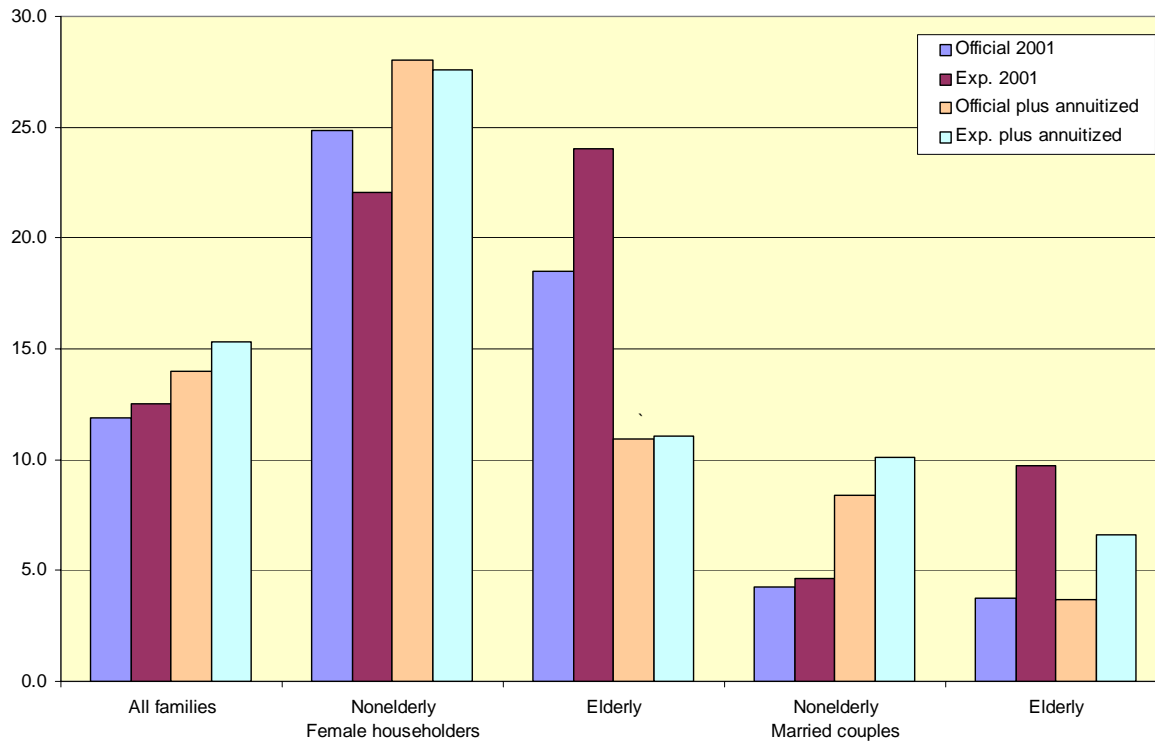


Chart 3: Poverty rates for different groups using different measures 2001



Charts 2 and 3 show poverty rates for different demographic groups under alternative measures in 1996 and 2001 respectively. For ease of presentation, the charts show the income-only and annuitized methods only; poverty rates under the other methods can be found in Table 3. The most striking thing about the two charts is how similar the patterns are in the two years, except for the elderly (and elderly female householders in particular.)

For most groups, poverty rates are slightly lower in 2001 than in 1996, but the patterns across measures are similar. The annuitized measures consistently produce higher poverty rates for the non-elderly than do the income-only measures, and lower poverty rates for the elderly. Married couples typically have higher poverty rates under the experimental measures, while non-elderly female-headed families have higher poverty rates under the official measures. However, elderly female heads, and to a lesser extent, elderly married couples, have substantially higher poverty rates under the experimental measures in 2001 relative to 1996.

These findings have several implications. First, while assets are clearly important at least for some sub-groups of the population, so are liabilities. Adding annuitized net assets (including liabilities) to income raises poverty rates for non-elderly individuals and families. In fact, including net assets in the poverty measure would actually increase poverty rates overall, at least under the methodology and interest rate assumptions used here.

Second, as expected, the elderly do have positive net assets, and their poverty rates would generally be lowered if annuitized net assets were added to income. However, other changes in poverty measurement recommended by the NAS would have

impacts that were as large or in some cases larger. Subtracting out-of-pocket medical expenditures from resources, in particular, raises poverty rates for the elderly substantially. The elderly in the United States typically pay for these out-of-pocket medical expenditures, especially nursing home stays, by depleting their assets. Therefore, counting assets without taking these expenditures into account may be misleading. Based on this small sample of years it would also appear that medical expenditure levels vary more from year to year than do the annuitized asset holdings of the elderly. As a result, counting medical expenditures may have a greater impact on year-to-year fluctuations in poverty rates.

Finally, while non-elderly married couple families show little variation in poverty rates across the two years, their poverty rates are also quite sensitive to the inclusion of debt. The experimental measures are generally higher for this group than the official measures, because these families have tax payments, child care expenses and other work expenses that are deducted from income under the experimental measures but not under the official measure. In both years, however, the inclusion of net assets raises poverty rates even more than does the shift to the experimental measure. Poverty rates for this group are more than twice as high under the experimental measure incorporating the annuitized value of net assets as they are under the official poverty definition.

Summary and Conclusion

This paper has explored different methods of taking account of assets and debts in a poverty measure. In doing so, the paper examined two poverty measures, the current official poverty measure and an experimental measure following recommendations of the

NAS expert panel. Because the two measures identify different poverty populations, it was hypothesized that incorporating assets would have different effects on the two measures.

Incorporating assets and debt into a poverty measure can be done in several ways. This paper examined three methods. Two of those used only financial assets to examine poverty rate changes, and the third treated net assets (including debt) as an annuity. Financial assets and unsecured debt were annuitized over one year, and fixed assets and secured debt were annuitized over the lifetime of the household head. Interest rates varied to reflect differences in rates across types of assets and debts.

Resulting poverty rate calculations suggest that income-alone poverty measures, either the official or experimental, are not much changed by taking account of assets, except for the elderly. For this group, large reductions in poverty rates result regardless of the method used to account for net worth. However, poverty rates for the elderly remain relatively high, especially in 2001, when experimental poverty measures that deduct out-of-pocket medical expenditures from income are used.

This study has treated homes as fixed assets rather than deducting the value of the flow of services from owned homes in income, as was done for example in Wolff (1990). This methodology would have produced lower poverty rates for the elderly and possibly for non-elderly married couples as well. However, many of the elderly own houses that provide more housing services than they need, and these services are not very fungible. Increasingly, however, homeowners in such circumstances are able to get home equity loans or reverse mortgages, providing an annuity-like flow of income. Under the

circumstances, an annuity method may be a more realistic approach to modeling the resources available to low-income homeowners based on their housing equity.

In sum, this paper demonstrates that assets and liabilities can both be important in measuring poverty. Consistent with the work of others, we have found that counting assets lowers poverty rates for the elderly. The effect varies from year to year and depends to some extent on other aspects of the poverty definition, however. More strikingly, we have also found that a measure that deducts liabilities from resources as well as adding assets—actually increases poverty rates for the non-elderly and for the population as a whole.

So far we have examined only a small number of possible combinations of interest rates, methods of annuitization, and alternative treatments for different types of assets and liabilities. A next step in this research will be the examination of some of these alternatives and their interactions with different poverty definitions.

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Appendix: Assets and Liabilities Included in Net Worth

I. Assets

Interest-earning assets held at financial institutions
Passbook savings account
Money market deposit accounts
Certificate of deposit
Interest-earning checking accounts
Other interest-earning assets
U.S. Government securities
Municipal or corporate bonds
Stocks and mutual fund shares
Rental property
Mortgages held for sale of real estate
Amount due from sale of business or property
Regular checking accounts
U.S. savings bonds
Home ownership
Vacation homes and other real estate
IRA and Keogh accounts
401K and thrift savings plans
Motor vehicles
Other financial assets

II. Liabilities

Secured liabilities
Margin and broker accounts
Mortgages on own home
Mortgages on rental property
Mortgages on other homes or real estate
Debt on business or profession
Vehicle loans
Unsecured liabilities
Credit card and store bills
Doctor, dentist, hospital, and nursing
home bills
Loans from individuals
Loans from financial institutions
Educational loans
Other unsecured liabilities