

**Measuring Consumption and Consumption Poverty:
Possibilities and Issues**

Prepared for "Reconsidering the Federal Poverty Measure"

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One of the first notions of poverty occurs in Adam Smith's *Wealth of Nations* (1776), where he links the concept of economic poverty to the want of "necessaries." He claimed "By necessaries I understand, not only the commodities which are necessary for the support of life, but whatever the custom of the country renders it indecent for creditable people, even of the lowest order, to be without." Commonly, this concept is measured by determining an amount (or income) that is deemed adequate to obtain necessary goods and services (the "ability"). Alternatively, one could examine people's possessions (or consumption) to determine whether they had these "necessaries" (the "actual").²

Although the National Academy of Sciences (NAS) report³ recommends measuring poverty using income, not everyone agrees that this is the appropriate resource measure to use. Many researchers argue that it is preferable, for a combination of theoretical and empirical reasons, to look at what families actually consume or spend rather than at their income in order to determine their poverty status.⁴ A basic premise of this view is that families and individuals derive material well-being from the actual consumption of goods and services rather than from the receipt of income *per se*; hence, it is appropriate to estimate their consumption directly.

One argument that is often made in support of using consumption as the resource definition rather than income is that consumption is a better estimate of families' long-term or "permanent" income. Friedman's (1957) permanent income hypothesis suggests that current income is comprised of a permanent component and a transitory component.

As stated by the NAS report:

Families with low levels of current income are disproportionately comprised of families with temporary income reductions. If consumption is based on permanent income and not

2 Townsend, 1979, also discusses the possession of commodities.

3 See Citro and Michael, *Measuring Poverty*.

4 For example, Cutler and Katz, 1991; Jorgenson and Slesnick, 1987; Mayer and Jencks, 1993; Slesnick, 1993, 1994, 2001; Jorgenson, 1998.

on transitory income, families with negative “income shocks” will have consumption levels that are high relative to their income levels because they expect their long-term income to be higher, on average, than their current income. Consequently, they “dissave” in order to smooth consumption and thereby material well-being: for example, they may liquidate their savings accounts or borrow on their credit cards. Such families may be income-poor but able to maintain a constant standard of living through dissaving. The reverse will be true of high-income families, who will have consumption levels that are low relative to their income levels and positive savings. Modigliani and Brumberg’s (1954) closely related life-cycle model of behavior assumes that current consumption is equal to average lifetime resources. Thus, younger families, by borrowing, and older families, by spending down assets, tend to exhibit high consumption-to-income ratios, while middle-aged families with the highest earnings potential tend to exhibit relatively low consumption-to-income ratios. Again, it is supposed that families smooth consumption and well-being on the basis of wealth and on expected earnings by saving and dissaving at various points during their life cycles.⁵

However, current consumption may understate well-being and permanent income to the extent that non-life-cycle savings are present. Consider aged people who are saving to pay for unexpected health risks, which are not easy to insure against (e.g., hospitalization and long-term care). Consider also young families with children who may strategically save or deplete savings to pay for their children’s education (the latter, for example, to qualify for college financial aid).⁶ In these cases, current income may be a better measure of permanent income than actual consumption.

Much of the decision concerning whether income or consumption should be used to measure economic well-being depends on the quality and availability of data supporting these measures in surveys. If income is traditionally underreported on surveys, then consumption data may be a more accurate measure. Alternatively, if consumption is difficult to measure or many components of consumption are missing from the survey (or the reporting period is too short to obtain an accurate measure), income may be the preferred measure. As with any measurement issue, accuracy depends on the relative importance of the measurement errors and on the

⁵ Citro and Michael, p. 211.

⁶ Feldstein, 1995.

availability of data for the measures.⁷

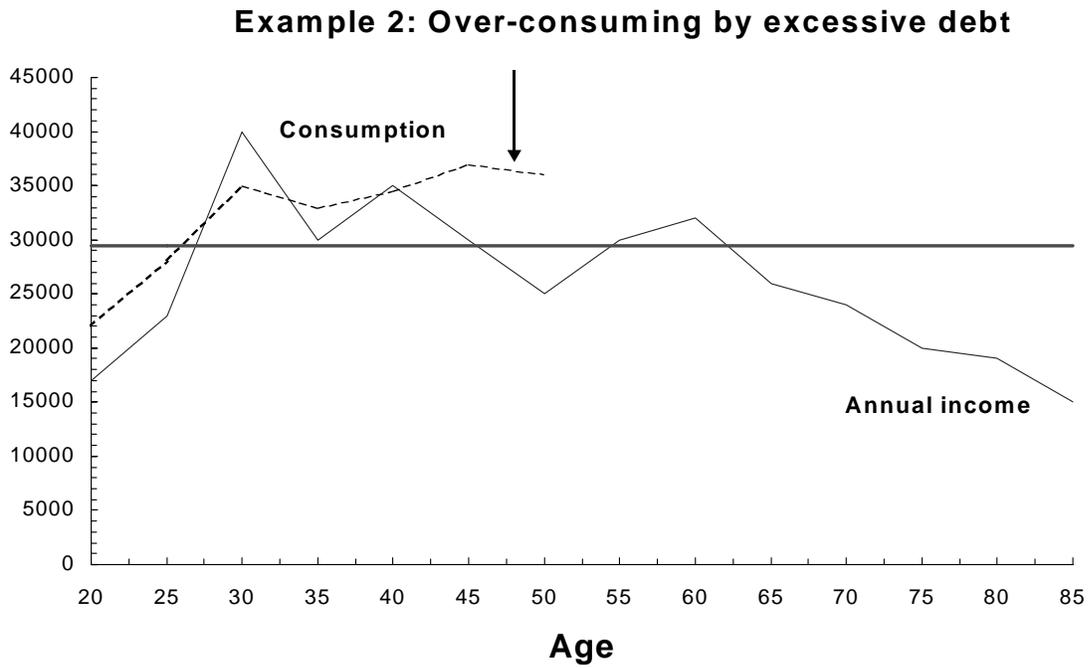
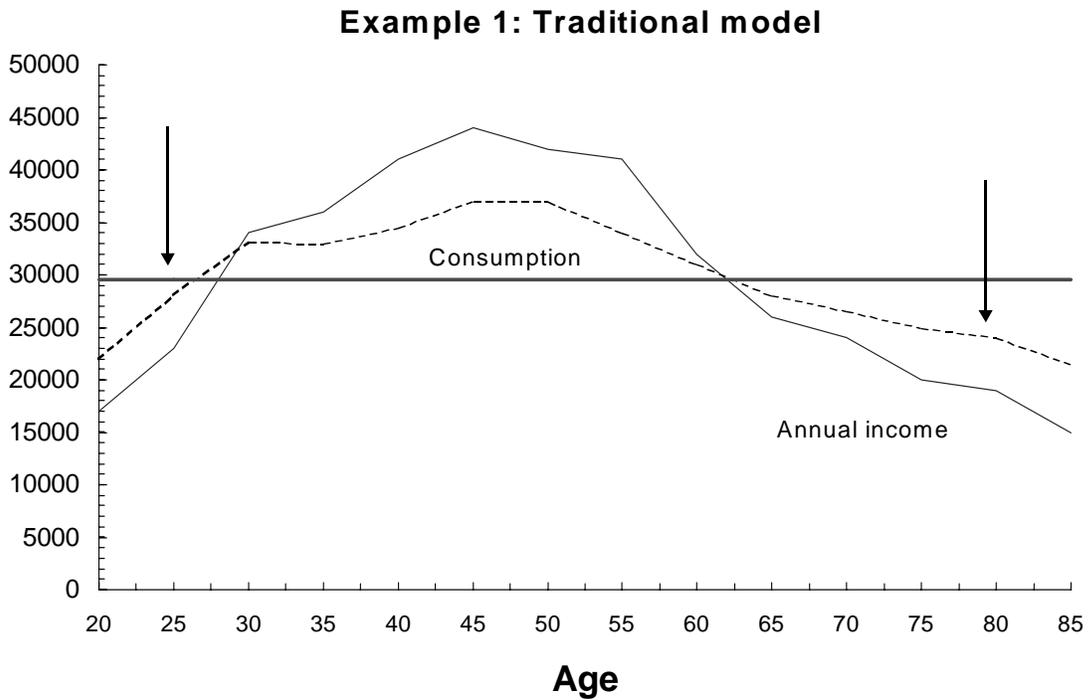
If there is no convincing argument that consumption is a better measure of well-being than income or vice-versa, then it may be desirable to use both income and consumption because both are useful. To see the complementary nature of these two measures of permanent income, consider the following four examples of households with equal life-time streams of income given by the bold horizontal line in Chart 1. In examples one, three and four, the households experience a traditional hill-shaped current income stream, while the household in example two experiences greater fluctuations in its current income. Assuming that the unobserved permanent income (the bold line) is simply the average lifetime income, we consider the different cases of observed income and consumption at a particular point in time (shown with the arrows and vertical lines). The first two examples illustrate the different impacts that household behavior may have on the choice of estimate, while the latter two examples illustrate the importance of the quality of the data.

Example 1: This could reflect the situation of either an elderly household who is depleting savings or a young (student) borrower. The left arrow indicates the position of a young borrower such that consumption is greater than permanent income, which is greater than annual income. Here, the life-cycle/permanent-income model suggests that consumption is a better proxy for unobserved permanent income. A similar situation might occur in old age where again consumption is closer to permanent income than current income. Here, at the right-most arrow, although both consumption and current income are below permanent income, consumption still yields a better measure of permanent income.

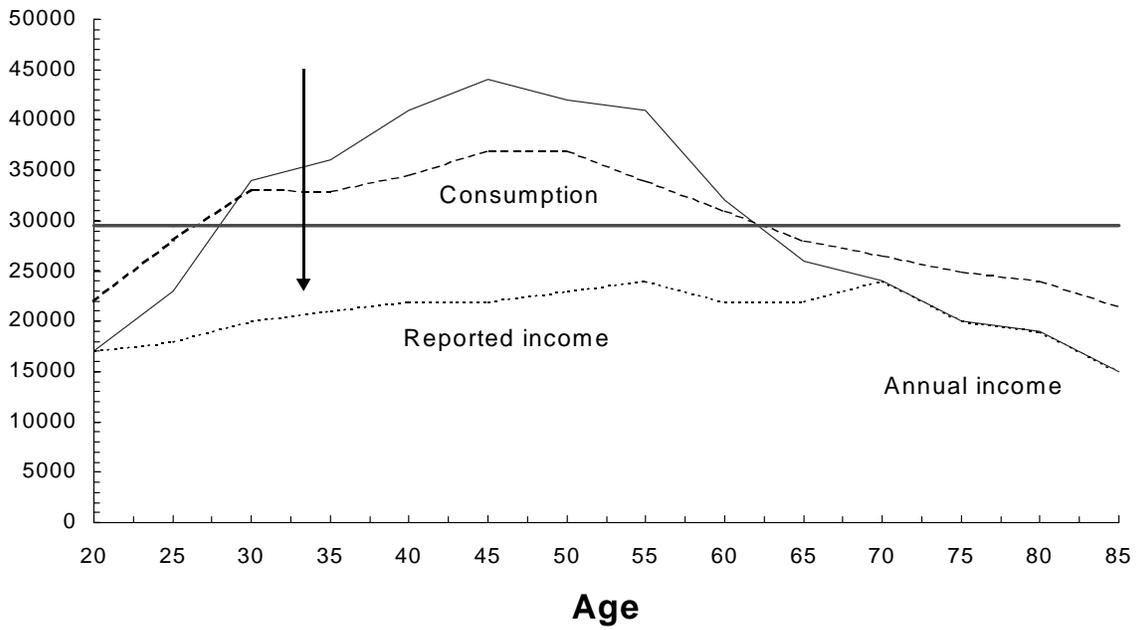
⁷ Sabelhaus and Groen, 2000; Johnson and Smeeding, 1998.

Chart 1: Examples of Estimates of Unobserved Permanent Income

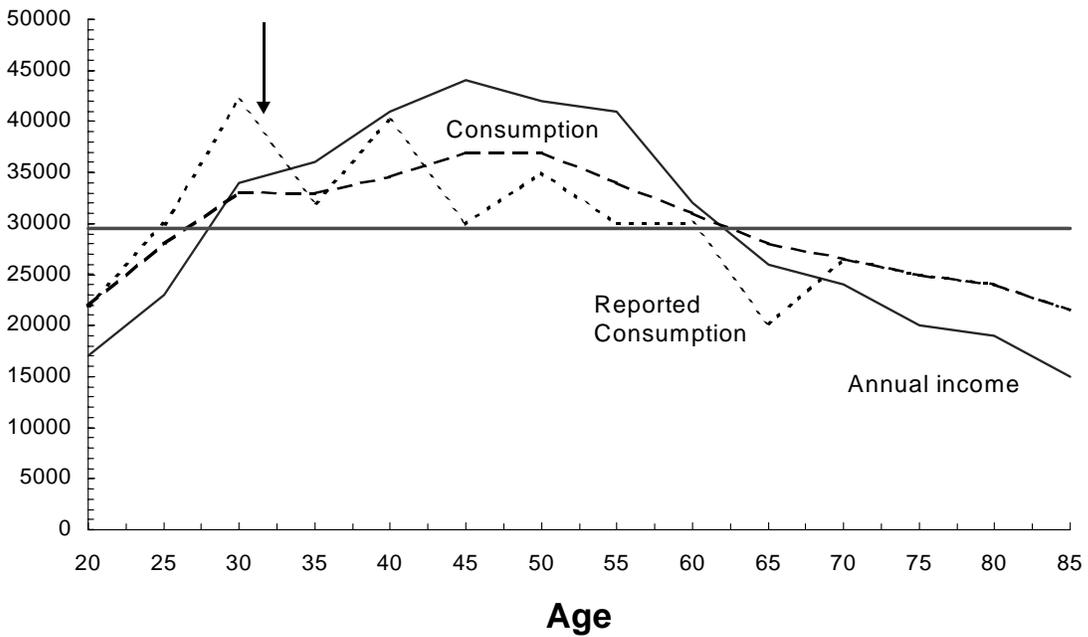
(Consumption – dashed, Income – solid, Permanent Income – solid bold)



Example 3: Under-reported Income



Example 4: Over-estimated consumption



Example 2: In this example, although the household's income fluctuates, the household becomes accustomed to a certain consumption level. At the particular point in time (shown by the arrow), this household could be a creditor borrowing heavily from his/her credit cards (or other unsecured debt). Here, consumption is greater than annual income, which is maybe greater than (or less than or equal to) permanent income. Hence, here consumption is not a good measure of unobserved permanent income and . Hence, here annual income, although not always perfect, is a better measure.

Example 3: This example illustrates the common problem of income being under-reported in household surveys. Many suggest that income for the self-employed is poorly reported on most households surveys and that using annual reported income may not fully reflect the economic well-being of these households. In this example, at the arrow, consumption is greater than permanent income, which is greater than reported income. As a result, current consumption, rather than reported income, might be a better measure of permanent income. This example could also reflect the situation of someone with underground income or unreported transfers, such as a welfare recipient trying to make ends meet (Edin and Lein (1997)).

Example 4: This example illustrates a problem with consumption data. Because most surveys collect only data on expenditures and not consumption, the estimate of consumption may fluctuate from year to year. In surveys that measure consumption via purchase commitment, reported consumption may exceed actual "true" consumption. Here, consumption is greater than annual income, which is greater than permanent income, and the reported consumption estimate overstates current income and permanent income. In addition, many studies of expenditures use a period shorter than a year (e.g., quarterly data in the CE survey), which is more volatile and may greatly exceed actual consumption in some periods. As a result, income may be a more

accurate measure of the household's well-being.

These examples show the importance of income and consumption in measuring economic well-being. These examples indicate that the choice of income or consumption as a proxy for permanent income depends both on the circumstances of the household *and* on the quality of the survey data. A problem with using cross-sectional data is that the data do not reflect the life-time pattern of either income or consumption, but reflect instead an annual snapshot of either (or both). The data may not indicate which example applies and, hence, using both income and consumption and examining their relative order may provide a simple method of obtaining a better measure of permanent income.

The Bureau of Labor Statistics (BLS) and the Measurement of Expenditures

The Bureau of Labor Statistics (BLS) has extensive experience in measuring the expenditures of households and families. BLS studies of family living conditions rank among its oldest data-collecting functions, going back to the first consumer expenditure survey in 1888-1891. "The objectives of the survey remain the same: To provide the basis for revising the weights and associated pricing samples for the CPI and to meet the need for timely and detailed information on the spending patterns of different types of families."⁸ The CE surveys have always been designed to allow for a variety of uses and definitions of expenditures. The BLS publishes annual reports on consumers' expenditures and conducts frequent studies on spending patterns.

Over the years, a variety of expenditure measures based on the CE survey have been constructed for use in publications or in research published by BLS staff members. Three definitions of expenditures are constructed by the CE office within the BLS: total expenditures, current consumption expenditures, and total outlays.

⁸ BLS Handbook of Methods, p. 161.

Total expenditures is the current definition of expenditures used in the estimates published by the BLS. This measure includes expenditures on goods and services for current consumption plus other expenditures that are used for future consumption (e.g., pensions) or transferred to organizations and people in other households (e.g., cash contributions and gifts). Expenditures with food stamps are included, but only out-of-pocket expenditures for housing and health care are included for people who receive noncash transfers (school meals, benefits from the Special Supplemental Program for Women, Infants, and Children (WIC), Medicaid, State Children’s Health Insurance Program (SCHIP) benefits, health clinic services, Veterans’ health care, and Medicare). Total expenditures consist of the transaction costs, including excise and sales taxes, of goods and services acquired during the interview or recordkeeping period. These expenditure estimates include expenditures for gifts of goods and services, but exclude purchases or portions of purchases directly assignable to business purposes. Also excluded are periodic credit or installment payments on goods or services already acquired. The full cost of each purchase is recorded even though full payment may not have been made at the date of purchase (except for owned housing, where mortgage interest, insurance premiums and property taxes are used instead of the purchase price).

The expenditure concept used in earlier BLS publications, based on 1960-1961 and 1972-1973 survey data, was current consumption expenditures. Current consumption expenditures “refers to the transaction costs, including excise and sales taxes, of goods and services acquired during the interview period for consumption within the consumer unit. These estimates exclude personal insurance premiums, retirement and pension contributions, as well as gifts and contributions to others.”⁹ As noted by the BLS, this measure was “not a measure of consumption

9 BLS, 1978, p. 128.

in the true economic sense...because no attempt was made to measure the flows of services provided by durables.”¹⁰

The last measure, total outlays, represents the out-of-pocket expenditure outlays of consumers. This measure is similar to total expenditures, but with these modifications: the net purchase price of financed vehicles is excluded, payments on principal loan amounts on all financed vehicles are included, and payments to reduce the borrowed principal on home (primary residence and vacation) mortgages are included.

In examining the outlays measure, Rogers and Gray (1994) state that “Because consumers’ expenditures or outlays may be a better indicator of their economic well-being than income is, classifying the data by quintiles of expenditures provides a useful way of examining consumers’ expenditure patterns according to their level of well-being.”¹¹ For example, there are many households that have low income and relatively high consumption. Results from the CE Survey have typically shown that when consumer units are classified by income, the outlay-to-income ratio is quite high for the lowest income group. When consumer units are classified by income quintiles and by expenditure quintiles, Rogers and Gray (1994) find that about 14 percent of the consumer units ranked in the lowest income quintile are ranked in the top three expenditure outlay quintiles. While this could be due to large asset holdings, it more likely reflects a measurement problem. Also, there are households with high income and little consumption. Rogers and Gray (1994) find that 8 percent of those households ranked in the highest income quintile are ranked in the lowest three outlay quintiles.

As this discussion suggests, a key issue in determining a measure of consumption is distinguishing between expenditures and consumption. Webster’s dictionary defines expenditure

¹⁰ Rogers and Gray, p. 33.

¹¹ Ibid., p. 37.

as “the act of expending (or paying out) something, especially funds,” while the definition of consumption is “the using up of goods and services having an exchangeable value.” Hence, expenditure is the outlay of funds to purchase a good or service, while the consumption is the using up of the good or service.

Measuring Consumption

Many economists view consumption as the difference between income and the change in net worth (using the Haig-Simons definitions of income). As discussed in reviews of the current poverty measure, the key is determining what is included in income, with the additional issue of what to include in the change in net worth.¹² For example, consider the purchase of a new car, for which the consumer pays cash. This purchase will decrease the net worth of the consumer (and increase consumption), yet by how much? The next year, the consumer could resell the car (obviously marked down due to depreciation) and increase the consumer’s income. Since this is possible, many suggest that the change in net worth is not the price of the car, but the difference between the price paid and the resale price. This analysis could be completed for most goods: even food products could have a resale value in a short period. Viewed in the strict economic sense, consumption represents the characteristics of the goods and services that are used during the period to increase the well-being of the individual. As the above car example suggests, determining the amount of durable goods that are “used” during the period may be difficult.

The World Bank staff designed a module for their Living Standard Measurement Study to collect data in order to measure consumption, because “For measuring welfare, *consumption* is ultimately a more useful measure than *expenditures* (purchases).”¹³ The document, however,

12 Citro and Michael, 1995 and IRP, 1998.

13 Grosh and Glewwe, p. 91 and Deaton and Grosh, p. 103.

continues by stating that one of the most critical and difficult measurement issues in consumption is the treatment of durable goods:

For most, although not all, non-durable goods, it is safe to assume that a person's or household's consumption is closely tied to their purchases. However, in the case of major durable goods, expenditures and consumption are not closely related in the short run and household *expenditures* on durable goods will be a poor guide to their *consumption* of durable goods. For major durable goods (and in some cases for stocks of grain or of fuel), consumption should be linked to stocks not purchases, so that the sub-module that deals with durable goods needs to collect data on a list of durable goods possessed by the household. From these, some sort of consumption flow needs to be imputed.¹⁴

There is not a consensus on the correct measure of consumption to use. As stated by Deaton and Grosh, "...there is not a clearly 'right' or 'wrong' way to resolve many of the issues about how to measure consumption."¹⁵ The System of National Accounts also recognizes this problem: "The term 'consumption' on its own can be ambiguous and misleading. Sometimes it is used by economists to refer to consumption expenditures, sometimes to acquisitions of consumption goods and services and sometimes to the physical use of the goods and services for the direct satisfaction of human needs or wants."¹⁶ Finally, a recent International Labour Organization (ILO) report on household expenditure statistics describes a variety of conceptual approaches to the measurement of consumption.¹⁷

Many researchers have used the CE survey to measure expenditures and consumption.¹⁸ Some have labeled these measures as consumption, consumption expenditures, or simply expenditures. As stated by Slesnick: "Overall spending, however, is an inaccurate estimate of total consumption because some goods are consumed without a transaction."¹⁹ These "goods"

14 Ibid., p. 103.

15 Ibid., p. 102.

16 Paragraph 9.74 in *System of National Accounts 1993*.

17 ILO, 2003.

18 Cutler and Katz, 1991; Slesnick, 1993; Johnson and Shipp, 1997; Krueger and Perri, 2002; Garner et al., 2003.

19 Slesnick, 2001, p. 42

include leisure, public goods, barter, in-kind transfers, and owner-occupied housing.

Recent literature has used a variety of measures to represent consumption: expenditures on non-durable goods, consumption expenditures, and total expenditures.²⁰ As illustrated in the Definitions box, the CE survey data can measure expenditures, but not consumption. In addition to accounting for the service flows from durable goods, a measure of consumption must also account for in-kind transfers from government, other households, and non-profit organizations; the value of home production; and the goods and services received through barter transactions (see the highlighted items in the box, which include a “yes” in the consumption column, but a “no” in the columns for the current measures). Many analysts attempt to measure consumption by using the total expenditures on non-durable goods and services, and then imputing a value for the service flows of durable goods.²¹ However, as mentioned in Deaton and Grosh, “Great care must also be taken to avoid erroneous interpretations of the results in cases where such imputations have an important effect on the total consumption measure or on the welfare rankings of households.”²²

20 Cutler and Katz, 1991; Slesnick, 2001; Fernandez-Villaverde and Krueger, 2002; and Sierminska and Garner, 2002.

21 This is the approach taken by Cutler and Katz, 1991; Danziger, 1983; Slesnick, 1993, 2001; Luo, 2003.

22 Deaton and Grosh, p. 103.

Definitions of Expenditures - What's Included: A Conceptual Framework for the Consumer Expenditure Surveys

ITEM	Total CE Expenditures	Total CE Outlays	Consumption
Total acquisition cost of non-durable and service items	Yes	Yes	Yes
Mortgage principal payments	No	Yes	No
Mortgage interest payments	Yes ¹	Yes	No
Service flow from housing services	No	No ¹	Yes
Purchase price of vehicles	Yes	Only those not financed	No
Purchase price of other durables	Yes	Yes	No
Vehicle loan principal payments	No	Yes	No
Vehicle loan interest payments	Yes	Yes	No
Interest payments on other debt ²	Yes	Yes	No
Service flow from vehicles	No	No	Yes
Service flow from other durable goods	No	No	Yes
Business purchases	No	No	No
Occupational expenses	Yes	Yes	No
Gifts given outside household	Yes	Yes	No
Cash contributions	Yes	Yes	No
Financial services ²	Yes	Yes	Yes
Life insurance and other personal insurance	Yes	Yes	No
Annuities	Yes	Yes	No
Pension and retirement contributions	Yes	Yes	No
Home production	No	No	Yes
Barter (goods)	No	No	Yes
In-kind receipts	No ³	No ³	Yes

1 The service flow from housing services is currently used in the System of National Accounts as a measure of the expenditures on housing services (instead of the actual purchase price). These are considered distinct from other types of household production. The current measure of Total CE Expenditures uses the mortgage interest payments, property taxes and maintenance and repairs as a measure of the expenditures on housing services. In addition, Rental Equivalence is required to produce the market basket for the CPI.

2. The CE includes the cost over and above interest.

3. "Rent as Pay" and "Meals as pay" are included.

Source: "A Conceptual Framework for the Consumer Expenditure Surveys," (2000) Report to Management, Bureau of Labor Statistics, Washington, DC.

The who, what, where, when, why and how of a measure of consumption poverty

To determine which poverty measure to use, we need to decide whose poverty we are measuring and how we are going to measure it and update it over time. The following questions must be answered:

- What: What resource measure is going to be used?
- Who: Whose standard of living is being measured?
- When: What time period is used?
- Where: Do the measures differ by geographic location?
- Why: What is the purpose of these measures?
- How: Which measure and thresholds are used?

Even after a resource measure is chosen to measure poverty -- cash income, disposable income or some variant as in the NAS report, or consumption -- other decisions on how to the measure poverty must be made. These decisions include choosing the unit of analysis, the equivalence scale, and a method for updating the thresholds, deciding whether geographic adjustments will be made, and selecting the data set to be used in calculating the measures.

Most researchers, however, do not use actual consumption as their measure. In practice, estimating consumption does not usually mean inspecting people's clothes or what they actually eat, but estimating what they spend on such items. Many researchers have defined consumption as a subset of families' total expenditures, excluding taxes, contributions to pension funds (which represent savings), and, often, gifts, and including expenditures made with assistance from in-kind benefit programs, such as food stamps.

As discussed in Jencks, Mayer and Swingle (2004) and the NAS report, the official poverty measure uses family resources as the resource measure and adjusts resources by an

equivalence scale to obtain “equivalent” family resources. Adjusting resources in this manner yields equivalent resources per person. This method assumes that all members of the family (or household) have the same level of resources.

Because of the variability in the estimates of equivalence scales, the NAS panel recommended an arbitrary, but transparent formula. The panel recommended that the thresholds for household types, other than the reference type, be determined by using an equivalence scale that adjusts for the number of adults and children in the household. This two-parameter scale is given by $(A + PK)^F$, where A represents the number of adults and K represents the number of children. The Panel recommended that the scale economy factor, F , be set at either 0.65 or 0.75 and that the parameter P be set at 0.7.

The choice of the equivalence scale has a dramatic effect on the relative standard of living of different families. A lower equivalence scale implies that the family’s resources will be adjusted upward, and hence, increasing their equivalent resources. For example, using the NAS two-parameter scale lowers the scales for single adults, which causes their poverty rate to be lower than the official poverty rate. In addition, Slesnick (2001) uses scales that are much lower for singles and single-mother households, which produce a higher standard of living for single parents. In fact, the Slesnick scales imply that there are economies of scale through divorce.²³

Earlier research has shown that the choice of equivalence scale can have dramatic effects on the level of and trend in poverty, as well as the composition of the poor.²⁴ Short, et al. (1999) show that the poverty rates for the elderly increased by 0.7 percentage points using one of the NAS report’s recommended two-parameter scales, while decreasing 1.9 percentage points using

23 The Slesnick scale for the reference married couple with two children is 1.00. If this couple divorces and the women retains custody of the children, the scale for this sub-family is .471 and the scale for the single man is .32. This yields a total scale of only .791, which implies that these two divorced families jointly require less than the original intact family.

24 see Triest (1998), Coulter et al. (1992), Johnson et al. (1998), and USDL (1995).

the other scale. Similarly, for people in female headed families the respective poverty rates increased by 1% (using the lower NAS parameter) and decreased by 3% (using the upper NAS parameter).

The choice of the unit of measurement also affects the poverty rate and its composition. Jencks, et al. (2004) show that using the household, instead of the family, as the unit of measurement decreases poverty by 1.4 percentage points over a 30 year period.

Finally, the method for updating the thresholds over time has a significant impact of the trend in poverty. As Jencks, et al. (2004) demonstrated, different price indexes (or cost-of-living adjustments) lead to a variety of changes in well-being and poverty. They show that using the CPI-U-RS (coupled with the CPI-U-X1) decreases the poverty rate by almost 3 percentage points between 1969 and 1999 (and decreasing the rate only 1.4 percentage points between 1979 and 1999).

However, the NAS report suggests that using a price index to adjust the poverty thresholds is not the only method for updating the thresholds. The NAS report suggests using the change in median expenditures to update the thresholds - a quasi-relative approach. Using a relative updating method, such as the change in median family income, would cause the poverty rate to increase more than the official rate (by almost 3.5 percentage points between 1967 and 1997).²⁵

What difference a measure makes

Many studies have examined the difference between using income and consumption to measure economic well-being. These studies have examined the effect of using consumption for measuring poverty, inequality, and the effects on the well-being of various demographic

²⁵ See Johnson, Short and Garner (1999)

groups.²⁶ As many studies have shown, the levels of poverty and inequality tend to decrease using consumption-based measures, in comparison with income-based measures. Another common finding is that the well-being of the elderly tends to increase relative to other groups when using consumption-based measures. The results for the elderly are mainly due to the inclusion of a value for owner-occupied housing in the measure of consumption.²⁷

Consumption and income definitions of resources in a poverty measure have somewhat different implications for who is counted as poor. A consumption resource definition will include in the poverty count people who are income-rich but consumption-poor, that is, people who choose to spend at levels below the poverty threshold when they actually have incomes that would support consumption above that level. In contrast, an income resource definition will exclude people from the poverty count who have adequate income during the measurement period, whether they spend it or not. Not surprisingly, a consumption resource definition will exclude from the poverty count people who are income-poor (e.g., because they lost a job), but who sustain their consumption at a level above the poverty threshold by such means as spending from savings, borrowing from relatives, or charging to the limit on their credit cards.

Most researchers, however, do not use actual consumption as their measure. In practice, estimating consumption does not usually mean inspecting people's clothes or what they actually eat, but estimating what they spend on such items. Many researchers have used the CE survey and define consumption as a subset of families' total expenditures, excluding taxes, contributions to pension funds (which represent savings), and, gifts, and including expenditures made with assistance from in-kind benefit programs, such as food stamps. These researchers then estimate a service flow for the services of owning a home (given by the reported rental equivalence

26 The comparison between measures of income and consumption has also been conducted by researchers in other countries (see Bradshaw, 2001; Garner et al., 2003; McGregor and Barooah, 1992).

27 Danziger et al., 1983 and Sabelhaus and Schneider, 1997.

value²⁸) and use a user cost of capital approach to compute a service flow for vehicles (and sometimes other durable goods, such as appliances) (see Slesnick 2001).

Slesnick conducted a frequently referenced study of consumption-based poverty. His recent book states that “consumption-based estimates of the standard of living show substantial growth, rather than stagnation, since 1970,” and that using income to measure it yields a misleading picture of the standard of living.²⁹ Using the consumption-based poverty rate as a measure of the standard of living, he shows that the commonly cited U-turn in poverty (i.e., between 1959 and 1973 poverty fell, and after 1973 poverty began to increase) disappears. However, others have shown that many of his results are due to his particular method of measuring consumption-based poverty.³⁰

A GAO report claims “While Dr. Slesnick’s research showed that a consumption-based measure of poverty generally produced a lower rate than the official poverty measure, his research also showed that using different sources of consumption data has affected the size of the difference between the two measures.”³¹ The GAO report continues: “Accordingly, to test the sensitivity of his poverty measure to differences in data sources, Dr. Slesnick used a per capita ratio of expenditures from the PCE and CE data sources.”³² Some have referred to this result to illustrate that consumption poverty has fallen dramatically since 1973.³³ However, “According to Dr. Slesnick, he did not intend that the outcome of the sensitivity analysis should be considered a poverty measure.”³⁴

28 Consumer units who own 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.”

29 Slesnick, 2001, p. 3.

30 Triest, 1998; Johnson, 2002; Luo, 2003; U.S. General Accounting Office, 1996.

31 U.S. General Accounting Office, 1996, p. 6.

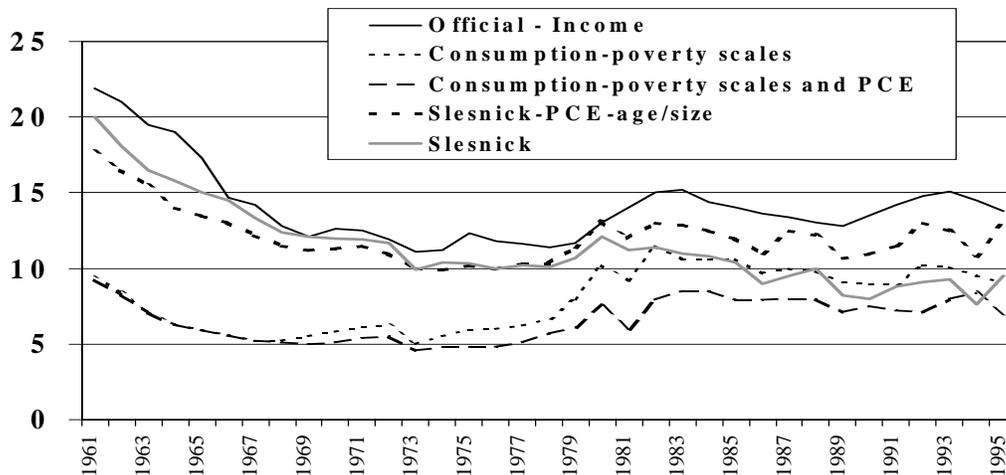
32 Ibid., p. 6. PCE stands for Personal Consumption Expenditures in the National Income and Product Accounts.

33 Jorgenson, 1998 and Eberstadt, 1996.

34 U.S. General Accounting Office, 1996, p. 6.

Figure 10³⁵ shows that the official poverty rate increased from 11.1 percent to 13.8 percent, while Slesnick's measure of consumption poverty remained almost unchanged (going from 9.9 percent to 9.5 percent). This figure shows the sensitivity of the poverty rate to the choice of resource measure (income or consumption), cost of living adjustment (CPI) and equivalence scale (poverty or Slesnick).³⁶

Figure 10: The differences between the Official poverty rate and Slesnick consumption poverty, 1961-95



Source: Slesnick (2001), figures 7.3, 7.8, 7.9

Replacing income with consumption in the Census poverty measure (and using the same equivalence scales and CPI adjustments) changes the poverty rates to 5.0 percent in 1973 and 9.1 percent in 1995. This suggests that using consumption instead of income lowers the level of poverty, as expected, but does not change the trend in poverty. Changing the price adjustment mechanism to one using the Personal Consumption Expenditures (PCE) price deflator decreases the poverty rates to 4.3 percent and 7.0 percent, for 1973 and 1995, respectively. Using Slesnick's preferred equivalence scale and cost-of-living adjustment yields the results of 9.9

35 From Johnson (2004)

36 Triest (1998) also finds that the Slesnick scales dramatically change the trend in poverty rates.

percent and 9.5 percent.³⁷ Slesnick (2001) illustrates the importance of the equivalence scales by using an alternative scale that only adjusts for the age of the household head and household size (and using the PCE deflator). Figure 10 shows that poverty rates using this alternative scale (PCE-age/size) are 10.0 percent and 13.1 percent for 1973 and 1995, respectively. The figure shows that these adjustments yield a poverty rate trend that pivots around the original Slesnick poverty rates in 1973. This shows that the disappearance of the U-turn in the poverty rates is mainly due to the particular equivalence scale and cost-of-living adjustments used.

Differences in the well-being by demographic group

In order to better understand the differences that using consumption or income has on the composition of the poor, I used results from Johnson, et al. (2004) to compare the distribution for the three major age groups – children, adults and the elderly. This analysis compares the distribution of the three major age groups relative to the distribution of the total population. I examined how adults, the elderly and children have fared relative to the total population by looking at the quintile distribution of each group relative to quintiles for the total population.³⁸

A comparison of one group with the total population is a zero-sum game. If one group does better than the general population, then another must do worse. If age and household type do not influence the household's relative economic position, then we would expect that 20 percent of each age group or family type would reside in each quintile. If, however, certain age groups have fewer resources than others, they will be over-represented in the bottom quintile and

³⁷ Using Slesnick's scale and the PCE deflator yields poverty rates of 9.9 percent and 10.6 percent

³⁸ Disposable income is (income post direct tax, including the Earned Income Tax Credit (EITC), plus the value of food stamps, as reported in the CE survey. Consumption is consumption-expenditures less the costs of homeownership, and the purchase price of vehicles plus the rental equivalence of owned home and the service flows from vehicles. This includes expenditures for food, housing, transportation, apparel, medical care, entertainment, and miscellaneous items for the consumer unit. Excluded are expenditures for pensions and social security, savings, life insurance, principal payments on mortgages, and gifts (of cash, goods and services) to organizations or persons outside the consumer unit. To obtain a measure of well being for individuals, disposable income and consumption of a consumer unit are adjusted by an equivalence scale given by the square root of family size.

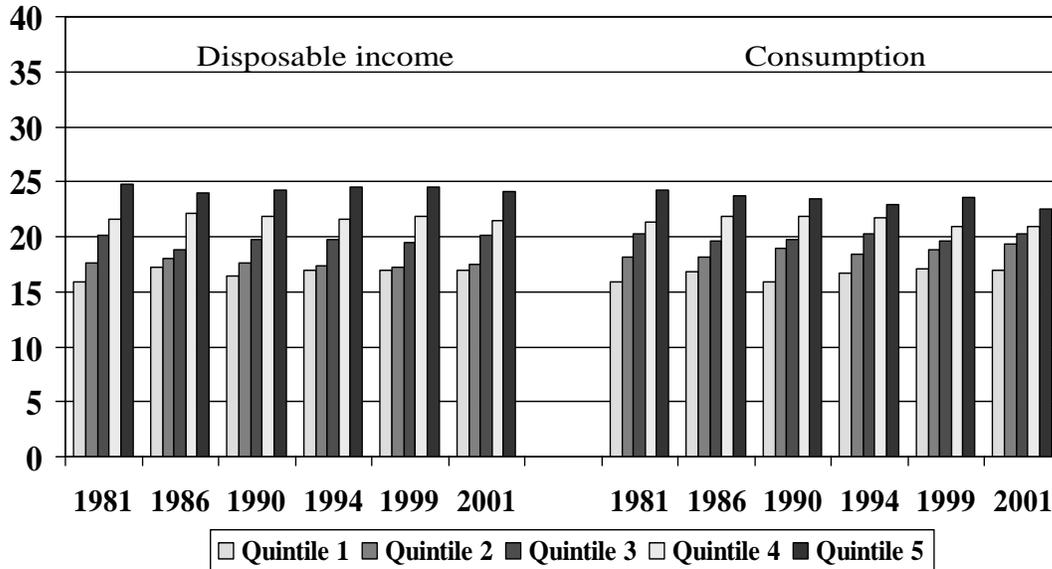
under-represented at the top. The composition of the poor can be examined by the percentage of each age group in the bottom quintiles.

Adults are the largest age group in the population; they are also the largest group in the labor force and the largest consumer group. In terms of disposable income and consumption, adults are relatively better off than the general population. Historically, income and consumption provide a similar picture of the well-being of adults. Therefore, they are over-represented in the higher quintiles and under-represented in the lower quintiles (Figure 1; from Johnson et al. (2004)). However, by 2001, the relative income advantage of adults remains, while they have lost some of their relative advantage as measured by consumption. The distribution of adults without children present in the household, however, indicates that these childless adults are faring much better than other adults.

The relative position of the elderly compared with the general population is the reverse of the childless adults. The elderly are over-represented in the lowest disposable income quintiles (especially in the second quintile), and under-represented in the top quintiles, as would be expected since many are retired. But when we switch to consumption, they are under-represented in the lowest quintiles and modestly over-represented in the upper quintiles. As can be seen in Figure 3 (from Johnson, et al. (2004)), their relative distribution of consumption has improved much more than has their relative distribution of disposable income since 1981. The increase in elderly home ownership, along with the increase in value of home ownership, is most likely the largest contributor to the relative improvement in consumption relative to income; in 2001 82 percent of elderly people lived in an owned home, up from 76 percent in 1981. The elderly also may be able to smooth their consumption in ways not available to families with children or younger adults, such as spending from accumulated assets. This suggests that accumulated

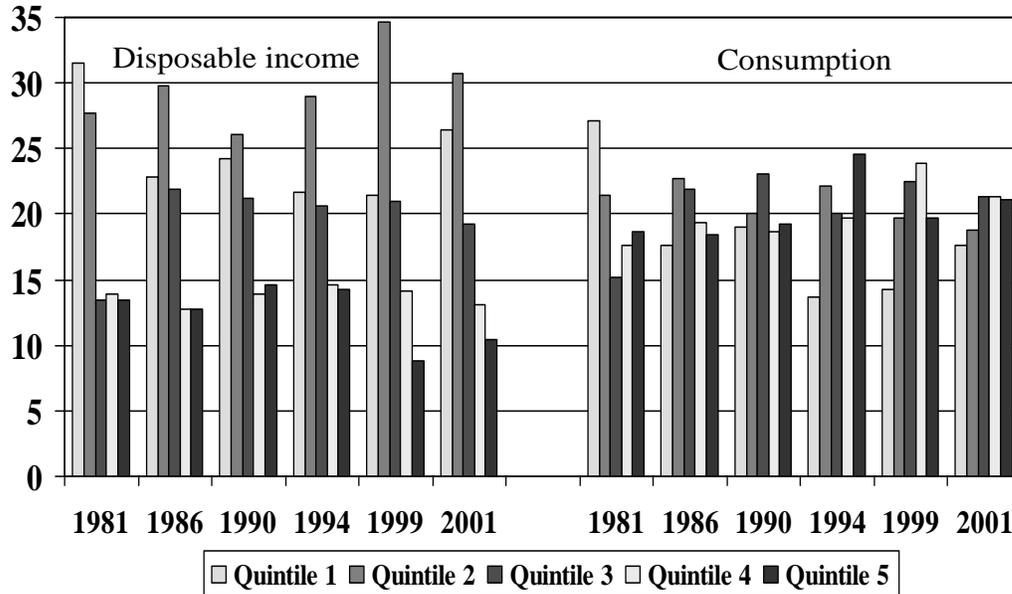
wealth (financial, as well as housing wealth) may be an important determinant of elderly consumption.

Figure 1: Distribution of all adults (ages 18-64) relative to the general population by quintile, using equivalent disposable income and consumption



In general, consumption is lower than disposable income for most households as predicted by the permanent income hypothesis and found by many researchers. This is true for every kind of family type except for the single mothers and single elderly. (see Table 4 in Johnson, et. al (2004)).

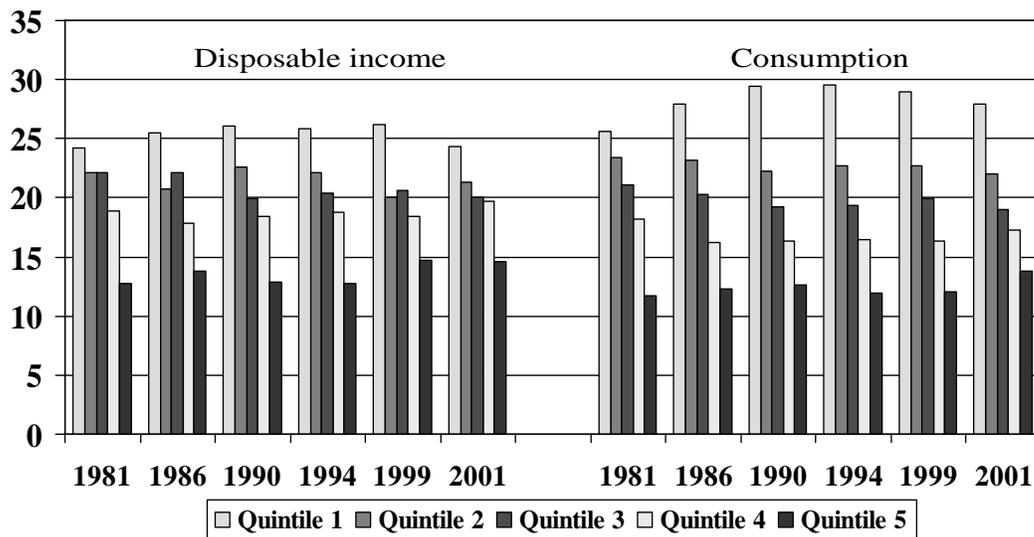
Figure 3: Distribution of elderly using equivalent disposable income and consumption



Once again, we note that the distributions created are zero-sum games. If one group improves its relative distribution over time, it is at the expense of another one. In this case the improvements in the relative advantages adults have in their distribution of income, and the relative advantage the elderly have in consumption, has been at the expense of the third group, the children (Figure 6; from Johnson, et al. (2004)). Not only is the distribution of income and consumption for the general population becoming more unequal since 1980, but the relative distribution of children’s consumption is becoming even *more* unequal, as compared to the overall population. Children’s over representation in the bottom *income* quintile in 2001 is about the same as in 1981 (and the other quintiles remained similar as well). But with respect to consumption, children’s over-representation at the bottom has grown (especially between 1981 and 1994), with some improvement from 1994 to 2001, while the share of children in the top quintile has grown (albeit more modestly). The fact that children are over-represented in the

bottom quintiles and under-represented in the top quintiles comes as no surprise. Others have made similar findings.³⁹ But the relative consumption changes documented here are unprecedented. Unlike any other group in the general population, the relative deterioration of children’s consumption distribution is larger than is the change in their incomes over this period.

Figure 6: Distribution of children (under age 18) relative to the general population, using equivalent disposable income and consumption

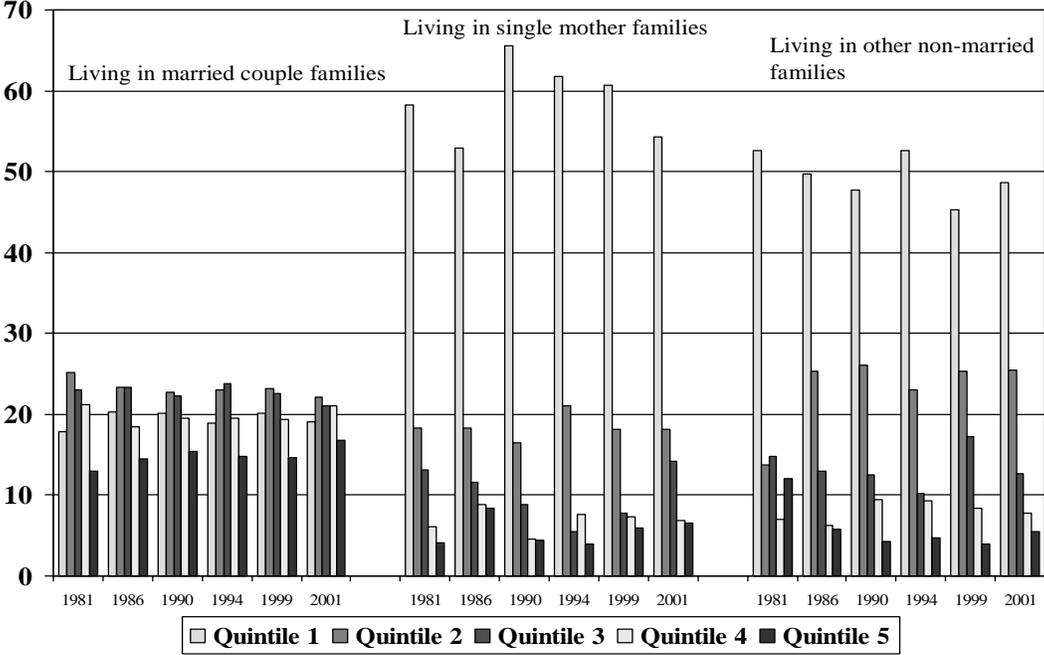


When we disaggregate the children’s relative distribution of consumption by their family type, it is clear why consumption has deteriorated (Figure 7; from Johnson, et al. (2004)). It is not because of children living in married two-parent families, because their situation has remained relatively unchanged (except for some growth in the top quintile share) since 1981. The deterioration in the distribution has occurred mainly because of different levels of consumption for children in single-mother households (which have not changed very much) and children in “other” (non-married couple) families, and because of the increasing number of

39 Rainwater, L., and T.M. Smeeding. *Poor Kids in a Rich Country: America's Children in Comparative Perspective*. New York: Russell Sage Foundation. 2004

children in these “other” families. As the figure 7 shows, the relative well-being of children in single-mother families deteriorated between 1981 and 1994, while the relative well-being of children in other families improved slightly.

Figure 7: Distribution of children (under age 18) by family type relative to the general population, using equivalent consumption



Defining consumption as consumption-expenditures (ignoring the service flows) reduces the relative inequality among children. Unlike the single elderly family type, however, the relative distribution of consumption expenditures minus the expenditures on housing vehicles and health care does not make a major difference. The value of housing flows, vehicles and medical care are less important to the relative consumption distribution of children than to the elderly.

Conclusion

As with the current official poverty measure, a consumption-based measure also has a

multitude of issues to address in determining the appropriate resource and threshold measures for poverty. As mentioned in the NAS report “...we note that if a consumption-based resource definition is adopted for the poverty measure at some future time, there will still be the need for consistency between the resource definition and the threshold concept. As an example, with the proposed threshold concept, the consistency principle would require that work expenses not be considered as part of families’ consumption, just as they are excluded from disposable income.”⁴⁰

The issues for the measurement of income poverty discussed in the NAS report are equally important for a measure of consumption poverty: how should medical expenses and work-related and child care expenditures be treated in the resource measure?⁴¹ How should in-kind transfers from the government be valued and included? Finally, the issues regarding the measurement of the thresholds are also relevant. How should the thresholds be adjusted for family size and composition, geographic location, and changes in prices over time? In addition, converting expenditures into consumption flows requires certain assumptions and calculations. Finally, the choice of resource measure (consumption or income) is not the only important variable in measuring well-being or poverty: the choice of updating the measure and of the equivalence scale can have equally substantial effects on measuring the standard of living. Both income and consumption may be complementary in the measurement of well-being and poverty. To fully examine the levels of and trends in poverty, as well as the composition of the poor, various measures should be considered.

40 Citro and Michael, p. 214

41 See Citro and Michael, Recommendation 1.2, p. 4.

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