

Poverty Estimates Using Alternative Units of Analysis

John Iceland, University Of Maryland^{*}

November 14, 2003

^{*} Direct all correspondence to John Iceland, 2112 Art/Sociology Building, Sociology Department, University of Maryland, College Park, MD 20742-1315, jiceland@umd.edu, 301-405-6430, fax: 301-314-6892.

Poverty Estimates Using Alternative Units of Analysis

Abstract

The unit of analysis used in poverty estimation continues to receive critical scrutiny. The debate revolves around what is the most appropriate unit-- the family, the household, or some other entity. This analysis discusses the existing options and also offers a more refined alternative that assumes income pooling among family members, including cohabiting couples, but not among non-relatives, and takes into account the benefits from economies of scale for all household members. Poverty rates are estimated using alternative definitions. Overall, empirical results show modestly lower poverty rates when household-level economies of scale are taken into account. The difference is largest for persons living in nontraditional household arrangements, such as cohabitators and non-family members.

Poverty Estimates Using Alternative Units of Analysis

Introduction

The unit of measurement used to estimate poverty continues to receive critical scrutiny. The debate revolves around what is the most appropriate unit-- the family, the household, or some other grouping. While “families” are composed of persons related to one another by birth, marriage, or adoption, “households” consist of all people-- related or unrelated (such as housemates)-- living in the same housing unit. The key questions in this debate are: should people should be classified as poor on the basis of their family’s income, which is then compared to a corresponding poverty threshold based on their family’s size and composition? Or is it more appropriate to pool incomes of all household members and use a poverty threshold based on the household’s size and composition?

Using the family as the basic unit, as in the official U.S. poverty measure, suffers from two substantive problems. First, unrelated individuals, such roommates, boarders, and lodgers, are treated as if they have the same economic needs as those living alone, despite their much lower housing costs. Second, cohabiting couples and any of their children are treated as if they did not pool resources at all.

The rapid growth in the number of cohabiting couples and people living in non-traditional housing arrangements (Casper and Bryson 1998; Casper and Cohen 2000) has magnified the effect of these problems. While there is a growing consensus that cohabitators should be treated more like other families in poverty measurement (Citro and Michael 1995), it is less clear whether other unrelated individuals in a household should be considered part of a single unit. There is relatively little evidence on the issue of whether such people actually pool their income and share resources. Yet even if unrelated people in a household do not share

resources, they still benefit from lower housing costs associated with living with others (i.e., economies of scale).

This analysis estimates poverty rates using alternative units of analysis and offers a method for addressing the weaknesses of using the official family definition, the cohabiting couple definition (which still ignores household economies of scale among unrelated individuals), and the household definition (which assumes extensive resource sharing among non-family members) by proposing a method (that I call the family/couple/household method here, or FCH for short) that assumes income pooling among family members, including cohabitators, but not among non-relatives, and takes into account the benefits from economies of scale for all household members. This unit of measurement can be implemented by using an experimental poverty measure recommended by a National Academy of Sciences (NAS) Panel on Poverty and Family Assistance (Citro and Michael 1995).

In addition to presenting an alternative unit, one avenue for research that is currently in progress but not yet complete for inclusion in this paper is an examination of the dynamics of poverty among different units of analysis. This involves computing both poverty and family status transitions using panel data. This will shed light on two related issues: 1) whether treating cohabiting couples as a unit is appropriate by examining the stability of such unions using monthly SIPP data, and 2) substantively, how do length of poverty spells and transitions into and out of poverty vary for different family types.

In short, this study uses data from the 1998 Current Population Survey (CPS) to look at poverty rates using four alternative units of measurement: the official family, the cohabiting couple, the household, and the FCH. While some studies have calculated poverty rates using the first and either the second and/or third units of measurement (Bauman 1999; Hernandez 1998;

Manning and Lichter 1996), this paper introduces the fourth. A second, forthcoming analysis will use data from the 1996 SIPP panel to look at the dynamics of poverty and among different family units over a four year period.

Family Structure and the Sharing of Resources

Most people would agree that official statistics should take into account the realities of changes in society. A growing number of people have lived in cohabiting relationships (Bumpass and Raley 1995; Bumpass and Sweet 1989; Smock 2000). The percentage of marriages preceded by cohabitation rose from about 11 percent of those marrying between 1965 and 1974, to 56 percent of those marrying between 1990 and 1994 (Bumpass and Lu 2000; Bumpass and Sweet 1989). Furthermore, an increasing proportion of children are born into and raised by cohabiting couples. As of 2002, about 16 percent of children under 15 live in households with a parent residing with an unmarried partner (Fields 2003), and nearly 40 percent of children will spend part of their childhood in cohabiting unions (Bumpass and Lu 2000).

Also, many people continue to live in households with non-family members, such as housemates (Casper and Bryson 1998). Consequently, some argue that these cohabiting couple families and/or households should be considered a single unit because persons living in them benefit from economies of scale, and many also share resources (Citro and Michael 1995). For example, an unmarried partner's income may allow one to engage full-time in child care rather than market work (Manning and Lichter 1996). Treating unrelated individuals who are living with others like those who are living alone (as is implicitly done in the official poverty measure) involves making a judgement that every unmarried/unpartnered person is entitled to live alone.

Perhaps if they had more money, some of them would, but setting such residential privacy at the same level as a basic need for food, clothing, and shelter seems unwarranted.

Assuming there is some agreement that unmarried partners and/or unrelated individuals in a household should not be treated as if they lived alone, some issues remain unresolved. First, most would agree that there should be some stability in arrangements for a group of persons to be considered a unit. Cohabiting couple unions are certainly less stable than married-couple unions, and their instability may be increasing (Bumpass and Lu 2000). Nevertheless, it appears that about 55 percent of cohabiting couples marry; 40 percent end the relationship within five years of the beginning of the cohabitation (Bumpass and Lu 2000; Smock 2000). Given that the accounting period for most poverty estimates are one year, treating cohabiting couples as a unit makes most sense if these unions last for over half a year, if not more, and the research above indicates that they do. Other research also indirectly suggests that a majority of cohabiting couple arrangements last for over half a year (Bauman 1999; Hernandez 1998). Nevertheless, more research on the stability of such unions would be useful.

A second issue that remains unclear is the extent to which people share resources in various types of units (Citro and Michael 1995), even in conventional family units (Findlay and Wright 1992). There has been relatively little research which directly examines the extent of resource sharing within households. At the very least, people in larger households benefit from economies of scale, and this argues for adopting a more inclusive unit of measurement. Regarding the sharing of resources and expenses among cohabiting couples, Kenney (2003) finds that partners in such couples where there are children present tend to split household expenses. Her findings suggest that while there may not be as much mixing of income as in married-couple families-- as each person's income in a cohabiting couple is more likely to be

earmarked for particular expenses—there nevertheless seems to be a set of common expenses that both incomes are used to meet. Oropesa et al. (2003), in a study of mainland Puerto Ricans, find that only about 40 percent of cohabiting fathers pool their incomes with the mothers or pay for all expenses, indicating some limits to resource sharing. The authors believe more research on irregular contributions and “allowances” would be helpful in order to determine whether cohabiting couples should be considered a unit for the purposes of poverty measurement.

Bauman (1999) examines resource sharing among unrelated individuals in households more generally by looking at reports of hardship across different family units in a household. His findings suggest that while there is some resource sharing, non-family members, as traditionally defined, share less.

In summary, evidence on resource sharing is mixed, and more research is clearly warranted. Evidence tends to indicate that cohabiting couples should be considered as a family unit. There is little evidence one way or the other on resource sharing between other unrelated individuals in households. Barring other research that indicates *extensive* resource sharing among non-family members within households, these findings indicate the need for adopting a unit of measurement that at least takes into account the benefits of economies of scale families receive when living in larger households (e.g., cheaper rent), but not one which assumes that the income earned by one family or individual in the household is at the disposal of another. Before describing the details of constructing the alternative unit of measurement, I briefly discuss relevant poverty measurement issues, focusing on the NAS recommendations for measuring poverty which permits the use of the FCH unit of measurement in poverty measurement.

Measuring Poverty

The current official poverty measure, originally adopted in 1965, consists of a set of thresholds for families of different sizes and composition which are compared to a family resource measure to determine a family's poverty status. Basically, the thresholds represent the cost of a minimum diet multiplied by three to allow for expenditures on other goods and services. Family resources are defined as gross cash income.

There is growing consensus that the way poverty is currently measured in the United States is outdated and could use further refinement (e.g., Citro and Michael 1995; Ruggles 1990). The poverty measures presented here are based on the work of the 1995 National Academy of Sciences (NAS) panel on Poverty and Family Assistance, which published a report with a series of recommendations for improving the official poverty measure (Citro and Michael 1995).

The NAS panel pointed out that the official measure suffers from a variety of problems, including: a) the definition of money income used is flawed—gross cash income inadequately captures the amount of money people have at their disposal to meet economic needs; b) the thresholds need to be refined and updated,¹ and also do not take geographic differences in the costs of living; and c) other criticisms, such as the unit of measurement used for official poverty statistics.

The panel recommended several specific changes to address these weaknesses. Under the experimental poverty measure, a family's resources are defined not just in terms of gross cash income, but rather as the value of cash income plus the value of near-money benefits that are available to buy the goods and services that are covered by the new thresholds, minus non-

¹ Poverty thresholds were originally constructed based on the cost of a food budget (as priced by the Department of Agriculture) and then multiplied by three-- because food comprised one third of people expenditures according to data from the 1955 Household Food Consumption Survey. More recent data indicates that food comprises closer to one sixth of people's expenses.

discretionary expenses. Near-money benefits include the following: food stamps, housing subsidies, school lunch subsidies, home energy assistance, and the Earned Income Tax Credit. Expenses subtracted include: income and payroll taxes (including capital gains/losses estimates), child care and other work-related expenses, and medical out-of-pocket costs.

Some of the NAS Panel's recommendations are not implemented here because necessary data (or model estimates) are not available. In particular, the CPS contains no data on child support payments made by the payer, or the value of benefits received under the Woman, Infants, and Children nutritional supplement (WIC) program and the school breakfast program. These elements have only a small effect on estimated poverty rates (Iceland et al. 2001).

Poverty thresholds under the experimental poverty measure are represented by a dollar amount for food, clothing, shelter, and utilities, as well as a small amount to allow for other needs (e.g., household supplies, personal care). A threshold is developed for a reference family type consisting of two adults and two children using Consumer Expenditure Survey data. The thresholds used here are set at the midpoint of the ranges recommended by the NAS panel. In 1997 this threshold was \$15,998. The reference family threshold is then adjusted, using an equivalence scale, to reflect the needs of different family sizes and types. Further adjustments to the thresholds are made to reflect geographic differences in housing costs (Short et al. 1999).

The panel's recommendations on thresholds, and in particular "equivalence scales," are of special relevance to the issue of the unit of measurement. The equivalence scale recommended by the NAS panel has two parameters. One parameter reflects that children consume less on average than adults—roughly 70 percent as much on average, according to the panel. The other parameter reflects economies of scale available to larger families by adding a decreasing amount to the poverty threshold for each additional family member. The thinking behind this is that a

four-person family typically does not need twice as much for money for housing, food, and transportation as a two-person family.

One problem with the current official poverty measure is that it contains only an implicit equivalence scale, as thresholds for families of different sizes and types were originally constructed simply based on some rough empirical observations of what families of different sizes and types consumed (using data collected in the mid-1950s). In short, having an explicit equivalence scale which takes into account household size and composition, as in the experimental poverty measure, is a key element in constructing the FCH unit of measurement, as described in detail in the following section.

Defining Alternative Units of Measurement

Four alternative units of measurement are discussed here: the official family, the cohabiting couple family, the household, and the proposed FCH. The first three units represent viable alternatives discussed in the NAS panel's report (Citro and Michael 1995) and the fourth addresses conceptual weaknesses inherent in the first three.

The official family currently used in poverty measurement basically consists of persons related to one another by birth, marriage, or adoption. This definition includes siblings and other kin. According to this definition, there may be multiple families within a household. It should be noted that while a "family" in Census Bureau publications refers specifically to a unit with two or more people related by blood, adoption, or marriage, a "family" with regard to the family poverty unit of measurement can also consist of a single unrelated individual. That is, even though these individuals are not a "family," per se, they are counted as a separate unit for the purposes of poverty measurement.

In the “cohabiting couple” unit of measurement, families in households where no person is identified as an unmarried partner are defined in the same way as in the official family measure. However, in households where a person is identified as an unmarried partner, the householder’s family and the unmarried partner’s family are combined into a single unit. The incomes of the two families are combined, and a new threshold is devised based on the size and composition of the combined unit.

The third unit of measurement-- households-- consists of all persons who occupy a housing unit. A housing unit is defined as a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied as separate living quarters. Separate units are those in which the occupants live separately from any other people in the building and which have direct access from the outside of the building or through a common hall. So in addition to family members and cohabiting couples, the household unit includes all housemates, roommates, boarders, and foster children who share the housing unit.

When using any of the three units of measurement described above, poverty is calculated by comparing the unit’s aggregate income to the unit’s poverty threshold. The dollar amount of the poverty threshold used depends on the number of adults and children in the unit, which in turn varies by which unit definition (i.e., family, cohabiting-couple, household) is used. Again, the NAS poverty threshold for a unit of two adults and two children was \$15,998 in 1997.

The fourth unit of measurement—the FCH-- basically involves using the poverty threshold corresponding to the household’s size and composition, and multiplying it by the ratio

of each family's (including cohabitators) size to the household's size.² To calculate poverty status, one would then compare a family's income—family as defined in the cohabiting couple unit-- to this threshold. In other words, the procedure basically uses a threshold which takes account of household economies of scale (by using information about household size and composition), but then takes the family's share of that overall threshold and compares it to the family's income to determine poverty status.

Below is a mathematical description of the equivalence scale. The NAS two-parameter scale is defined as:

$$(a + p*c)^F$$

where $p=.7$, and $F=.7$, a =number of adults in family, and c =number of children in family.

In contrast, the NAS FCH unit two-parameter scale can be stated as:

$$(ha + p*hc)^F * ((a+p*c)/(ha + p*hc))$$

where $P=.7$, and $F=.7$, a =number of adults in family including cohabitators, c =number of children in family, including in the combined cohabiting unit, ha =number of adults in household, and hc =number of children in household.³

² As will be described shortly, the FCH two-parameter equivalence scale is actually only applied to the housing and utilities portion of the threshold, because this is the portion which people benefit from economies of scale; the standard NAS equivalence scale is applied to the rest of the threshold.

³ The FCH unit of measurement can also be used with other equivalence scales. For example, the three-parameter scale described by Betson (1996) and implemented in the U.S. Census Bureau report (Short et al. 1999) is defined as:

two-adult only: 1.41

for single-parent families: $(a + .8 + p*(c-1))^F$

for other families: $(a+p*c)^F$

where $p=.5$, and $F=.7$, a =number of adults in family, and c =number of children in family.

Following is an example which illustrates both the implementation and the implications of using alternative units of measurement. It shows the application of the two-parameter scale, and resulting poverty thresholds and poverty statuses, using the four units of measurement (see Table 1).

(Table 1 here)

The table shows a simulation of a household containing four people: Individual 1 (observation 1) is the householder, who cohabits with another person (observation 2), who has a child (observation 3); observation 4 is a boarder. Under the current official measure of poverty, there are three units in this household (observation 1 alone, observations 2 and 3, and finally observation 4). Under the cohabiting unit of measurement, there are two units (observations 1-3, and observation 4). Under the household unit of measurement there is just one unit.

According to the family unit of measurement, the dollar amount of the unit threshold is estimated by applying the two-parameter equivalence scale to units of one, two, and one individuals, respectively to the reference family (i.e., two adults and two children) threshold of \$15,998. Under the cohabiting unit of measurement, poverty thresholds are estimated by applying the two-parameter scale to two units—one containing two adults (the householder and the cohabitor) and one child, and the other unit containing just one adult. The poverty threshold

The FCH three-parameter scale can thus be defined as:

two-adult only: $1.41 * (a/ha)$

for single-parent families: $((ha + .8 + p*(hc-1))^F) * (((a+.8+p*(c-1)) / (ha+.8+p*(hc-1)))$

for other families: $((ha+p*hc)^F) * (((a+p*c)/(ha+p*hc)))$

where $p=.5$, and $F=.7$, a =number of adults in family, c =number of children in family, ha =number of adults in household, and hc =number of children in household.

for the household unit of measurement is calculated by applying the two-parameter equivalence scale to a unit containing three adults and one child.

Finally, under the FCH unit of measurement, the dollar amount of the poverty threshold for the two units under this definition (one containing two adults and one child and the other containing one adult) is calculated by applying the FCH two-parameter equivalence scale to units of three people and one individual, respectively, to the housing and utilities portion of the reference family threshold of \$15,998. The FCH equivalence scale is applied only to the housing and utilities portion of the complete food, clothing, shelter, and utilities (FSCU) threshold because these are the main elements which people in households benefit from economies of scale. The share of the FSCU threshold allocated to housing and utilities is 44 percent [14, pg. C-1], or \$7,039. The standard NAS two-parameter equivalence scale is applied to the other 56 percent of the threshold for each of the two units.⁴

Unit incomes are calculated by simply summing the income over the members of each unit, and poverty is then calculated by comparing the unit income to the unit poverty threshold. If the unit's income is less than the dollar amount of the unit's poverty threshold, then all the people in the unit are considered poor. Otherwise, they are considered not poor.

Note that observations 2 and 3, who are the cohabitor and her child, are poor under the official family definition, but not under the cohabiting family definition (and other definitions),

⁴ For example, the poverty threshold for the unit of one person (observation 4) in the FCH unit of measurement is computed in the following way: FCH threshold = $((0.44 * \$15,998 * ((3 + 0.7 * 1)^{0.7}) / ((3.4)^{0.7})) * ((1 + 0.7 * 0) / (3 + 0.7 * 1))) + (0.56 * \$15,998 * ((1 + 0.7 * 0)^{0.7}) / ((3.4)^{0.7})) = \$5,882$. Note that the denominator $(3.4)^{0.7}$ refers to the reference family size, with two adults equaling one unit each and the children equivalent to 0.7 units each. Thus, the equivalence scale is applied by multiplying the reference family threshold by the ratio of the unit size to the reference family size (as defined by the equivalence scale).

that is when their resources are pooled with those of the householder. Also note that while observation 4 (the boarder) is poor under the family or cohabiting family definition, she is no longer poor in the FCH unit of measurement because her threshold is lower. Her poverty threshold is lower because we assume, under this unit of measurement, that although she may not share her income with others or receive money from them, she still benefits from the economies of scale of living with other people (e.g., her rent is probably lower than if she were living alone).

The question still remains: how much does using different units of measurement really matter? Using SAS software (SAS Institute Inc., 1990), I analyze 1998 CPS data (which contains information on income for the 1997 calendar year) to estimate poverty rates with different units of measurement. The NAS panel recommended that the Survey of Income and Program Participation (SIPP) should eventually become the basis of official U.S. income and poverty statistics. While the SIPP asks more relevant questions and obtains income data of higher quality, more research and development is needed on the SIPP before it can become the official source of poverty statistics. Much of this research is currently underway, thus allowing comprehensive experimental poverty rates using SIPP data to be released in the near future (Short et al. 1999).

Poverty Rate by Unit of Measurement

Table 2 shows 1997 poverty rates by units of measurement using the NAS poverty measure described above. The NAS poverty rate using the official family unit of measurement was 15.4 percent in 1997. As expected, the more inclusive the unit of measurement, the lower the poverty rate. The poverty rate when using the FCH unit, at 14.7 percent, falls between the cohabiting couple unit (14.9 percent) and the household unit (14.0 percent).

(Table 2 here)

Figure 1 provides more detail of the effect of moving to more inclusive units of measurement by family type. Doing so has virtually no effect on married couples, most of whose household situations do not change when the units are defined differently. Estimated poverty rates for single-parent male-householder families go down slightly, from 15.2 percent to 15.0 percent when the FCH unit of measurement is adopted, indicating that people in male-householder families slightly benefit from economies of scale when living in larger units. Among female-householder units, poverty rates decline slightly from 34.1 percent under the official unit to 33.9 percent under the FCH unit, indicating a modest change by taking further economies of scale into account.

(Figure 1 here)

Cohabiting couple families are obviously particularly affected by moving away from the official family unit of measurement. When using the official family unit, the NAS poverty rate for those in cohabiting couple families was 31.8 percent in 1997. Under the FCH unit of measurement, when the incomes of the unmarried partners are pooled, the poverty rate is nearly halved, to 16.7 percent. For children of cohabiting couples, the difference is even more dramatic. The poverty rate declines from 47.1 percent under the official unit of measurement definition to 24.7 percent using the FCH unit of measurement. These estimates under the FCH unit of measurement are similar to those under the cohabiting couple and household ones.

Finally, the poverty rate for unrelated individuals goes down under the FCH unit of measurement definition from 21.0 percent under the official family to 19.9 percent, indicating a modest effect of household economies of scale. This is higher than the 16.4 percent poverty rate under the household unit of measurement.

Another way to examine who is most affected by using different units of measurement is to look at the effect by a person's relationship to the householder. Table 3 indicates that the effect of using a more inclusive unit of measurement is smallest for persons who are identified as core household members—householders, spouses, children, and other relatives of the householder. Poverty rates for these persons tend to change little because they often live in households where they are part of the only family unit present. The poverty rate for the reference person is 14.7 percent when using the official family unit of measurement, slightly less at 14.2 percent when using the cohabiting couple unit, 14.1 percent with the FCH unit, and finally 13.8 percent when using the household unit.

(Table 3 here)

However, we observe, as expected, a substantial effect of using more inclusive units of measurement on persons identified as unmarried partners, non-relatives, housemates, roomers, and boarders. For example, the poverty rate for unmarried partners with families declines from 47.9 percent when using the official family unit of measurement to 15.9 percent when using the FCH unit. This is slightly lower than the 17.5 percent who are poor when using the cohabiting unit of measurement. While poverty rates for unmarried partners are considerably lower when using any of the more inclusive units of measurement, their poverty rates are still higher than the overall poverty rate, mainly because family resources among unmarried couples tend to fall short of family resources in married-couple families (Manning and Lichter 1996).

For people who are identified as housemates, roommates, or boarders, their poverty rate is 30.9 percent when using the official family definition. When using the FCH definition, the estimated poverty rate falls to 27.8 percent, indicating that such people clearly benefit from household economies of scale. Poverty estimates among housemates/roommates/boarders are

even lower under the household unit of measurement, 13.5 percent; again, this unit of measurement assumes that all people within households extensively share their resources.

Conclusion

This analysis compares poverty estimates using four alternative units of measurement: the official family, the cohabiting couple, the household, and finally a conceptually more refined method (called family/couple/household unit here) that assumes income pooling among family members, including cohabiting couples, but not among non-relatives, and takes into account the benefits from economies of scale for all household members.

Overall, estimated poverty rates are lower when using more inclusive units of measurement that assume greater pooling of resources and are more affected by economies of scale. The difference is largest for persons living in nontraditional household arrangements, such as cohabitators and non-family members. There is a particularly large effect on the rates for children of cohabiting couples.

More research on the degree of resource sharing would more definitively resolve the debate as to which unit of measurement should be chosen for measuring poverty. However, without further evidence indicating extensive resource sharing among non-family members such as housemates and boarders, the FCH unit of measurement is the conceptually most refined, and appropriate, unit for poverty measurement.

References

- Bauman, Kurt J. 1999. "Shifting Family Definitions: The Effect of Cohabitation and Other Nonfamily Household Relationships on Measures of Poverty." *Demography* 36, 3 (August): 315-26.
- Betson, David. 1996. "Is Everything Relative? The Role of Equivalence Scales in Poverty Measurement." University of Notre Dame, unpublished manuscript.
- Bumpass, L. and H. Lu. 2000. "Trends in Cohabitation and Implications for Children's Family Contexts in the U.S." *Population Studies*, 54, 29-41.
- Bumpass, L. and K. Raley. 1995. "Single-Parent Families: Cohabitation and Changing Family Reality." *Demography*, 32: 425-436.
- Bumpass, L., and J. Sweet. 1989. "Children's Experience in Single-Parent Families: Implications of Cohabitation and Marital Transitions." *Family Planning Perspectives*, 21: 256-260.
- Casper, Lynne M. and Ken Bryson. 1998. *Household and Family Characteristics: March 1998 (Update)*. U.S. Census Bureau, Current Population Reports, Population Characteristics, P20-515, U.S. Government Printing Office, Washington, DC.
- Casper, Lynne M. and Philip N. Cohen. "How Does POSSLQ Measure Up? Historical Estimates of Cohabitation." *Demography* 37, 2 (May): 237-245.
- Citro, Constance F., and Robert T. Michael (eds.). 1995. *Measuring Poverty: A New Approach*, Washington, D.C.: National Academy Press.
- Fields, Jason. 2003. *Children's Living Arrangements and Characteristics: March 2002*. U.S. Census Bureau, Current Population Reports, Population Characteristics, P20-547, U.S. Government Printing Office, Washington, DC.

- Findlay, Jeanette and Robert Wright. 1992. "Gender, Poverty and Intra-Household Distribution of Resources." Luxembourg Income Study Working Paper Series, No. 83.
- Hernandez, Donald J. 1998. "Official Poverty in the U.S.: Re-conceiving the Unit of Analysis," unpublished manuscript.
- Iceland, John Kathleen Short, Thesia Garner, and David Johnson. 2001. "Are Children Worse Off? Evaluating Well-Being Using the New (and Improved) Measure of Poverty," *Journal of Human Resources* 36, 2, pp. 398-412.
- Kenney, Catherine. 2003. "Who Pays for Rent? Who Pays for the Kids? Dividing Expenses for the Household and the Child When the Couple Keeps Separate Purses." Paper presented at the annual meeting of the Population Association of America, Minneapolis, MN, May.
- Manning, Wendy D., and Daniel T. Lichter. 1996. "Parental Cohabitation and Children's Economic Well-Being." *Journal of Marriage and the Family*, 58 (November): 998-1010.
- Ruggles, Patricia. 1990. *Drawing the Line: Alternative Poverty Measures and Their Implications for Public Policy*. Washington, DC: The Urban Institute Press.
- SAS Institute Inc., 1990. *SAS Procedures Guide, Version 6, Third Edition*, Cary, NC: SAS Institute, Inc.
- Short, Kathleen, Thesia I. Garner, David Johnson, and Patricia Doyle. 1999. *Experimental Poverty Measures: 1990 to 1997*. U.S. Census Bureau, Current Population Report, Consumer Income, P60-205, U.S. Government Printing Office, Washington, DC.
- Smock, Pamela J. 2000. "Cohabitation in the United States: An Appraisal of Research Themes, Findings, and Implications." *Annual Review of Sociology*, 26: 1-20.

Table 1. Examples of Estimating Poverty Status Using Alternative Units of Measurement

					Unit size/composition						Unit threshold				Unit income			Unit poverty status			
HH ID	Cohab & FCH ID	Official family ID	Person ID	Age	# adults in HH unit	# of children in HH unit	# adults in cohab & FCH unit	# children in cohab and FCH unit	# adults in family unit	# children in family unit	HH unit threshold	FCH unit threshold	Cohab family unit threshold	Family unit threshold	HH unit income	Cohab and FCH unit income	Family unit Income	HH unit pov status	FCH unit pov status	Cohab family unit pov status	Family unit pov status
HH 1	Fam 1	Fam 1	obs 1	35	3	1	2	1	1	0	16,974	13,074	13,614	6,793	21,000	15,000	7,000	0	0	0	0
HH 1	Fam 1	Fam 2	obs 2	37	3	1	2	1	1	1	16,974	13,074	13,614	9,848	21,000	15,000	9,000	0	0	0	1
HH 1	Fam 1	Fam 2	obs 3	6	3	1	2	1	1	1	16,974	13,074	13,614	9,848	21,000	15,000	9,000	0	0	0	1
HH 1	Fam 2	Fam 3	obs 4	28	3	1	1	0	1	0	16,974	5,822	6,793	6,793	21,000	6,000	6,000	0	0	1	1

Reference family threshold = \$15,998 in these examples

NAS two-parameter scale: $(a + p \cdot c)^F$ where $P=.7$, and $F=.7$, a =# adults in family, and c =# children in family

Family/household unit 2 parameter scale: $(h_a + p \cdot h_c)^F \cdot ((a + p \cdot c)/(h_a + p \cdot h_c))$ where $P=.7$, and $F=.7$, a =# adults in cohab family unit, c =# children in cohab family unit, h_a = # adults in hh, and h_c =# children in hh

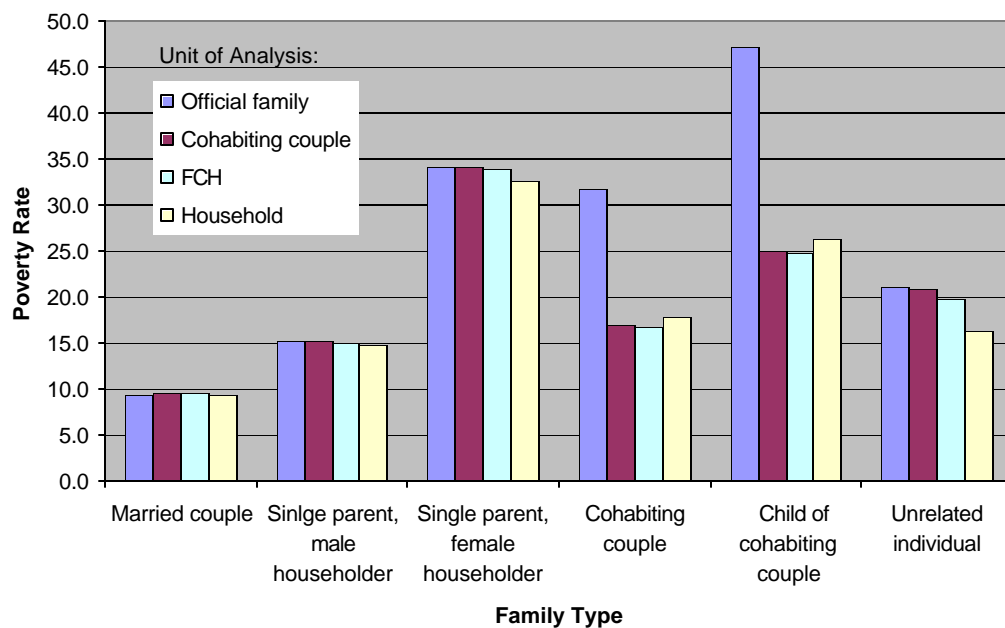
Table 2. Poverty Rates by Unit of Measurement, 1997

Unit of Measurement	Poverty Rate
Official family	15.4
Cohabiting couple	14.9
Family/Couple/Household (FCH)	14.7
Household	14.0

Note: poverty rates based on the National Academy of Sciences poverty measure.

Source: Tabulations of 1998 March Current Population Survey data.

Figure 1. Poverty Rates for People by Family Type and Unit of Measurement, 1997



Note: poverty rates based on the National Academy of Sciences poverty measure.

Source: tabulations of 1998 March Current Population Survey data.

Table 3. Poverty Rates by Unit of Measurement and Relationship to Householder, 1997

Relationship to Householder	Official Family	Cohabiting Couple	Family/ Couple/ Household (FCH)	Household
Overall	15.4	14.9	14.7	14.0
Reference person	14.7	14.2	14.1	13.8
Spouse	8.7	8.7	8.7	8.6
Child	17.1	16.8	16.8	16.4
Other relative	20.5	20.8	20.8	20.5
Non-relative with relatives	50.9	34.5	31.1	18.3
Non-relative without relatives	39.9	40.2	35.7	16.8
Unmarried partner with relatives	47.9	17.5	15.9	15.7
Unmarried partner without relatives	27.4	13.9	13.9	14.7
Housemate/roommate/boarder	30.9	31.3	27.8	13.5

Note: poverty rates based on the National Academy of Sciences poverty measure.

Source: tabulations of 1998 March Current Population Survey data.