Session: **Supplemental Poverty Measure: A Preliminary Assessment**

Chair: Sheldon Danziger (University of Michigan)
Discussants: Doug Besharov (University of Maryland) and Mark Levitan (City of New York)
Time: **Friday, November 5, 2010, 1:00 P.M.**

*Paper Prepared for the 32nd Annual Research Conference of*
*The Association for Public Policy Analysis and Management*
*Boston, MA, November 4-6, 2010*

# Supplemental Poverty Measure: Preliminary Estimates for 2008

by

Kathleen S. Short and Trudi J. Renwick

October 21, 2010

Kathleen S. Short
U.S. Census Bureau
Housing and Household Economic Statistics Division
U.S. Census Bureau
Washington DC, 20233
U.S.A.
Email address: Kathleen.s.short@census.gov

This paper is posted on the following website: http://www.appam.....

---

*Acknowledgements and Disclaimer*

Thanks are extended to the many individuals who assisted us as we conducted research on developing the first supplemental poverty measure for the U.S. Special thanks go to Thesia Garner of BLS for providing preliminary poverty thresholds for SPM research, to Brett O'Hara, Chuck Nelson, Charles Hokayem, Paul Johnson and David Hornick of the Census Bureau for helpful comments and suggestions.

The views expressed in this research, including those related to statistical, methodological, technical, or operational issues, are solely those of the authors and do not necessarily reflect the official positions or policies of the Census Bureau, or the views of other staff members. The authors accept responsibility for all errors. This paper is released to inform interested parties of ongoing research and to encourage discussion of work in progress.

**Supplemental Poverty Measure Research: 2008**

## Introduction

In the fall of 2009 the Office of Management and Budget's Chief Statistician formed an Interagency Technical Working Group (ITWG) on Developing a Supplemental Poverty Measure. That group included representatives from the U.S. Census Bureau, Bureau of Labor Statistics, Economics and Statistics Administration, Council of Economic Advisers, U.S. Department of Health and Human Services, and Office of Management and Budget. They issued a series of suggestions to the Census Bureau and BLS on how to develop a new Supplemental Poverty Measure (see Observations from the Interagency Technical Working Group on Developing a Supplemental Poverty Measure, 2010). Their suggestions drew on the recommendations of a 1995 National Academy of Sciences report and the extensive research on poverty measurement conducted over the past 15 years, at the Census Bureau and elsewhere. The new thresholds are not intended to assess eligibility for government programs and will not replace the official poverty thresholds. If the President's budget initiative is approved, the Census Bureau will publish the first set of poverty estimates using the new approach in September 2011.

Based on practices from the 1960s, the current official poverty statistics compare before-tax cash income of families to poverty thresholds intended to approximate the cost of basic necessities at that time, updated for inflation since then. Poverty rates published each year by the Census Bureau (DeNavas et al., 2010) represent the proportion of individuals whose family incomes are below these official poverty thresholds.

In 1995 the National Academy of Sciences (NAS) Panel on Poverty and Family Assistance released a report (Citro and Michael, 1995) that evaluated the current method of poverty measurement in the United States and recommended change. The NAS panel recommended changing the definition of both the poverty thresholds and the family resources that are compared with those thresholds to determine poverty status. One of the goals of the NAS panel was to produce a measure of poverty that explicitly accounted for government spending aimed at alleviating the hardship of low-income families. Thus, taking account of tax and transfer policies, such as the food stamp program and the earned income tax credit (EITC), the measure can show the effects of these policies on various targeted subgroups, for example, families with children. The current official measure, which does not explicitly take account of these benefits, yields poverty statistics that are unchanged regardless of policy changes.

In 1999 and in 2001, the Census Bureau released reports that presented a set of experimental poverty measures based on recommendations of the 1995 NAS panel report (Short et al. 1999, Short, 2001). Some additional variations on that measure were included in order to shed light and generate discussion on the various dimensions included in the proposed revision. The reports also examined the effects of each part of the recommendations, plus reasonable alternatives. Comparisons were also made across various demographic subgroups in order to illustrate how their poverty rates were affected by the different measures. That work suggested that with these new measures a somewhat different population would be identified as poor. This new group of poor would consist of a larger proportion of elderly people, working families, and married-couple

families than are identified by the official poverty measure. These measures have been updated regularly and are available at http://www.census.gov/hhes/www/povmeas/tables.html .

The 2010 Interagency Technical Working Group was charged with developing a set of initial starting points to permit the U.S. Census Bureau, in cooperation with the Bureau of Labor Statistics (BLS), to produce a Supplemental Poverty Measure (SPM). Some of their suggestions include:

Poverty Thresholds The ITWG suggested that the poverty thresholds should represent a dollar amount for a basic set of goods that includes food, clothing, shelter and utilities (FCSU), and a small additional amount to allow for other needs (e.g., household supplies, personal care, non-work-related transportation). This threshold should be developed by the Bureau of Labor Statistics with expenditure data for families with exactly two children using Consumer Expenditure Survey data, and it should be adjusted (using a specified equivalence scale) to reflect the needs of different family types and geographic differences in housing costs. Adjustments to thresholds should be made over time to reflect real growth in expenditures on this basic bundle of goods at the 33rd percentile of the expenditure distribution.

Family Resources The ITWG suggested that family resources should be defined as the value of money income from all sources, plus the value of near-money benefits that are available to buy the basic bundle of goods, minus necessary expenses for critical goods and services not included in the thresholds. Near-money benefits include nutritional assistance, subsidized housing, and home energy assistance. Necessary expenses that must be subtracted include income taxes, Social Security payroll taxes, childcare and other work-related expenses, child support payments to another household, and contributions toward the cost of medical care and health insurance premiums, or medical out-of-pocket costs (MOOP).

The measure presented in this study moves the calculations of an alternative measure from those presented in the two Census Bureau reports toward that described by the ITWG. This measure uses CPS 2009 ASEC income information for calendar year 2008, adds the value of non-cash benefits and subtracts necessary expenses, such as taxes, child care expenses, and medical out-of-pocket expenses that are based on models. The CPS 2010 ASEC included direct questions to respondents about most of these important expenditures. Those data are currently being analyzed for suitability for use in future SPM measures. Due to these differences, the measure presented here will be referred to as the *research SPM*.

The percent of the population that was poor using the official poverty measure for 2008 was 13.2 percent. The research SPM measure calculated here measures the percent of people below the SPM thresholds to be 15.4 percent for 2008. While poverty thresholds are slightly higher using the SPM methods, other parts of the measure also contribute to an increase in estimated poverty prevalence. To understand these changes, we examine the construction of the SPM measure in more detail.[1]

[1] The data in this report are from the Annual Social and Economic Supplement (ASEC) to the 2009 Current Population Survey (CPS). The estimates in this paper (which may be shown in text, figures, and tables) are based on responses from a sample of the population and may differ from actual values because of sampling variability or other factors. As a result, apparent differences between the estimates for two or more groups may not be statistically significant. All comparative statements have undergone

**The New Measure**

The measure presented in this paper draws upon the considerable research and discussion that followed publication of the 1995 NAS report. A series of papers (available at http://www.census.gov/hhes/www/povmeas/nas.html ) have discussed other methods for computing the various dimensions of the poverty measure, including changing the unit of analysis, determining the value of housing subsidies that is added to income as a non-cash transfer, modeling of medical out-of-pocket and child care spending, and the development of adjustments for geographic cost-of-living differences in the threshold. The main new element in this paper concerns a different method used for the valuation of housing subsidies for addition to resources. These elements, and others that make up the poverty measure, are addressed individually in this section.

Poverty Thresholds

The SPM threshold used in this study is based on out-of-pocket spending on food, clothing, shelter, and utilities (FCSU) and a multiplier of 1.2 to account for additional basic needs. Five years of Consumer Expenditure Survey (CE) data are used to produce thresholds for 2008.[2] The estimation sample to determine the 33rd percentile of FCSU expenditures is composed of all consumer units that include exactly two children, related to the family or not. Unmarried partners and those who share expenses with others in the consumer unit are also included. FCSU expenditures are converted to adult equivalent values before the 33rd percentile, based on the average of expenditures in the 30th to the 36th percentile range, is estimated. A three-parameter equivalence scale (See: Betson 1996, Johnson et al. 1995, Short et al., 1999, Short 2001) is applied to the 33rd percentile value, times 1.2, to produce an overall FCSU threshold for a unit composed of two adults and two children.

**Two Adult, Two Child Poverty Thresholds: 2008**

| | |
|---|---|
| Official | $21,834 |
| Research Supplemental Poverty Measure | |
| Not accounting for housing status | $24,869 |
| Owners with a mortgage | $25,522 |
| Owners without a mortgage | $20,426 |
| Renters | $24,880 |

Source: Garner (October 27, 2010).

statistical testing and are significant at the 90 percent confidence level unless otherwise noted. Standard errors were calculated using replicate weights. Further information about the source and accuracy of the estimates is available at <www.census.gov/hhes/www/p60_236sa.pdf>.

[2] CE Interview Survey: 2004Q2-2009Q1. For information on confidentiality protection, sampling error, nonsampling error, and definitions, http://www.bls.gov/cex/csxstnderror.htm.

To account for differences in housing costs, a base threshold for all consumer units with two children was calculated, and then the overall shelter and utilities portion was replaced by what consumer units with different housing statuses spend on shelter and utilities, holding other expenditures constant. Three housing status groups were determined and their expenditures on shelter and utilities produced within the 30-36$^{th}$ percentiles of FCSU expenditures. The three groups are: owners with mortgages, owners without mortgages, and renters.

For consistency in measurement with the resource measure, the thresholds include the value of non cash benefits. The Census Bureau has a long history and experience in collecting and imputing in-kind benefits to add to income (U.S. Bureau of the Census, 1982). However, this is not the case for the BLS and the Consumer Expenditure Survey. Previous NAS-based thresholds only included the value of food stamps as they are implicitly collected in food expenditures. The value of other in-kind programs of interest to the Interagency Technical Working Group, like school lunch, WIC, rent subsidies, and energy assistance are not available in the CE. Whether a consumer unit lives in subsidized housing or participates in another government program that results in reduced rent is collected in the CE. Values for all but energy assistance are imputed in the thresholds used in this study.

The 2 adult-2 child threshold is $24,869 with housing status not accounted for. The SPM guidelines call for adjustments to the base threshold, to take account of the fact that owners with and without mortgages and renters have different spending needs. The threshold for owners with a mortgage is $25,522, owners without a mortgage $20,426, and for renters $24,880 (Garner, October 2010).

The unit of analysis The NAS panel recommended that the definition of "family" should be broadened for the purposes of poverty measurement to include cohabiting couples and their children, and that research should be conducted on the extent of resource sharing among roommates and other household and family members to determine if the unit of analysis should be modified further. The panel noted that while cohabiting couples, roommates, and other household members benefit from economies of scale, the current measure overstates the poverty rate for such people. The panel also noted that cohabiting couples typically pool resources, and many exhibit considerable stability in their living arrangements, so that it makes sense to treat them like married-couple families for purposes of poverty measurement. A subsequent report pursued the panel's recommendations regarding the family definition used to measure poverty by examining four different units of analysis (see Short et al., 1999).

The ITWG suggested that the "family unit" include all related individuals who live at the same address, any co-resident unrelated children who are cared for by the family (such as foster children), and any cohabitors and their children. Similar units were developed and analyzed showing that a broadening of the unit definition generally resulted in lower poverty rates (Short, 2009). This definition corresponds broadly with the unit of data collection (the consumer unit) that is employed for the CE data that are used to calculate poverty thresholds. These units are used here and will be used for the proposed SPM measures. They will be referred to as *SPM families*.

Geographic indexes for thresholds
The American Community Survey (ACS) is used to adjust the FCSU thresholds for differences in

prices across geographic areas. ACS data has been used to create a simple geographic cost of living index based on 2007 gross rental costs (Bishaw, 2009). In this work, Bishaw assigns each household one of 99 locations based on the state and whether or not the household is in a metropolitan area. (The District of Columbia, New Jersey and Rhode Island have all their population in metropolitan areas.) The geographic cost index for each location is the median gross rent for that location divided by the national median gross rent. This index is then normalized to set the national average at 1.00 and applied to the percent of the threshold which represents shelter and utility costs.

Renwick (2009) notes several concerns with the ACS-based index. First, the median gross rent represents the midpoint of the rental distribution regardless of the size of the unit. The median rent in one geographic location might represent the rent for a studio or one bedroom apartment while the median rent in another geographic location may represent the rent for a two or three bedroom unit. Second, the ACS index does not control for differences in housing quality. The ACS indexes developed by Bishaw include all rental units, regardless of quality. Since housing quality varies by geographic area, for geographic areas with a higher incidence of substandard rental units, the ACS methodology may underestimate the cost of decent housing. If substandard units were excluded from the distribution, the median rent would be higher. Third the ACS-based indices proposed by Bishaw use a single index number for all metropolitan areas in each state. Housing costs vary significantly across metropolitan areas in some states. Using a single average overstates the housing costs in the lower cost areas and understates the housing costs in the higher cost areas.

In this paper, the geographic adjustments to the thresholds are based on three-year ACS estimates of median gross rents for two-bedroom apartments with complete kitchen and plumbing facilities. Separate medians were estimated for each of the 309 metropolitan statistical areas (MSAs) large enough to be identified on the public use version of the CPS ASEC file. This increases the number of adjustment factors from the 99 used by Bishaw to 401. For each state, a median is estimated for all non-metro areas (48), for each MSA with a population above the CPS ASEC limit (309), and for a combination of all other metro areas within a state (44). The plan is to use five years of ACS data for indexes when that becomes available.

**Resource Estimates**

**SPM Resources = Money Income from All Sources**

| **Plus:** | **Minus:** |
|---|---|
| Supplemental Nutritional Assistance (SNAP) | Taxes |
| Free and reduced price school lunches | Expenses Related to Work |
| Supplementary Nutrition Program for Women Infants and Children (WIC) | Child Care Expenses* |
| Housing subsidies | Medical Out-of-pocket Expenses (MOOP)* |
| Low-Income Home Energy Assistance | Child Support Paid* |

*Items for which data from new CPS ASEC questions may be used in the 2009 SPM estimates. Amounts subtracted for child care expenses and MOOP in this paper are imputed using a statistical match to SIPP data. Child support paid is not subtracted.

Resources: Additions

*Supplemental Nutrition Assistance Programs (SNAP)*
SNAP benefits (formerly known as food stamps) are designed to allow eligible low-income households to afford a nutritionally adequate diet. Households who participate in the SNAP program are assumed to devote 30 percent of their countable monthly cash income to the purchase of food, and SNAP benefits make up the remaining cost of an adequate low-cost diet. This amount is set at the level of the U.S. Department of Agriculture's Thrifty Food Plan.

In the CPS, respondents report if they ever received SNAP benefits in the previous calendar year and if so, how much. The calculation of SNAP benefits is straightforward, using the reported face value amounts that are added directly to income. In the CPS calculation, the method adds an annual figure to family income, prorated from a reported household amount. Table 1 shows that 7.4 percent of SPM families received SNAP benefits in 2008 and that, on average, they received $2,465 for the year.

*School meals*
These programs offer children free discounted meals if family income is below 130 percent of Federal poverty guidelines, reduced-price meals if family income is between 130 and 185 percent of the federal poverty guidelines, and a subsidized meal for all other children. In the 2008 school year per-lunch subsidies ranged from $2.73 and $2.33 for free and reduced-price lunches, respectively.

In the CPS the reference person is asked how many children 'usually' ate a complete lunch, and if it was a free or reduced priced school lunch. Since we have no further information, the value of school meals is based on the assumption that the children received the lunches every day during the last school year. Note that this method may overestimate the benefits received by each family. Further, in this calculation we only include the value of free and reduced price lunches. No subsidy for regular school lunches are added (see Renwick, 2010.)

To value benefits we obtain amounts on the cost per lunch from the Department of Agriculture Food and Nutrition Service that administers the school lunch program.[3] Table 1 shows that 6.7 percent of SPM families received school lunch benefits in 2008 and that, on average, they received $797 for the year. Nothing is collected in the CPS for school breakfasts and no values are assigned.

[3] In the SIPP respondents report the number of breakfasts eaten by the children per week, similar to the report of school lunches. Calculating a value for this subsidy in the same way as was done for the school lunch program, yielded an amount of approximately $2.8 billion for all families in the SIPP for the year 2004. For information on confidentiality protection, sampling error, nonsampling error, and definitions, for the 2004 Survey of Income and Program Participation see http://www.census.gov/apsd/techdoc/sipp/sipp.html.

*Supplementary Nutrition Program for Women Infants and Children (WIC)*
This program is designed to provide food assistance and nutritional screening to low-income pregnant and postpartum women and their infants, and to low-income children up to age 5. Incomes must be at or below 185 percent of the poverty guidelines and must be nutritionally at-risk (having abnormal nutritional conditions, nutrition-related medical conditions, or dietary deficiencies). Benefits include supplemental foods in the form of food items or vouchers for purchases of specific food items.

There are questions on current receipt of WIC in the CPS. Lacking additional information, we assume 12 months of participation and value the benefit using program information obtained from the Department of Agriculture. In 2008, the average cost of a WIC food package was $43.41 per month. As with school lunch above, this method may overestimate the value of WIC benefits received by a given SPM family. Table 1 reports that 2.8 percent of SPM families participated in WIC and they received an average of $528 per year in the form of benefits.

*Housing subsidies*
Households can receive housing assistance from a plethora of federal, state and local programs. Federal housing assistance consists of a number of programs administered primarily by the Department of Housing and Urban Development (HUD). These programs traditionally take the form of rental subsidies and mortgage-interest subsidies, targeted to very-low-income renters and are either project-based (public housing) or tenant-based (vouchers).

The value of housing subsidies is estimated as the difference between the "market rent" for the housing unit and the total tenant payment. The "market rent" for the household is estimated using a statistical match with United States Housing and Urban Development (HUD) administrative data from the Public and Indian Housing Information Center (PIC) and the Tenant Rental Assistance Certification System (TRACS). For each household, an attempt was made to match on state, CBSA, and household size.[4]

The total tenant payment is estimated using the total income reported by the household on the CPS ASEC and HUD program rules. Generally, participants in either public housing or tenant-based subsidy programs administered by HUD are expected to contribute towards housing costs the greater of one third of their "adjusted" income or 10 percent of their gross income.[5]

[4] HUD operates two major housing assistance programs: public housing and tenant-based or voucher programs. Since the HUD administrative data only include estimates of gross or contract rent for tenant-based housing assistance programs, the contract rents assigned to CPS ASEC households living in public housing are adjusted by a factor of 767/971. This adjustment factor was derived from data published in the "Picture of Subsidized Households:2008" which estimates the average tenant payment and the average subsidy by type of assistance. The average contract rent would be the sum of these two estimates, $324+647=971 for tenant-based and $255+512=767 for public housing. http://www.huduser.org/portal/picture2008/index.html

[5] HUD regulations define "adjusted household income" as cash income excluding income from certain sources minus numerous deductions. Three of the income exclusions can be identified from the CPS ASEC: income from the employment of children, student financial assistance, and earnings in excess of $480 for each full-time student 18 years or older. Deductions which can be modeled from the CPS ASEC include: $480 for each dependent, $400 for any elderly or disabled family, child care and medical expenses.

Initially subsidies are estimated at the household level. If there is more than one SPM family in a household, then the value of the subsidy is prorated based on the number of people in the SPM family relative to the total number of people in the household.

Housing subsidies help families pay their rent and as such are added to income for the SPM measure. However, there is general agreement that, while the value of a housing subsidy can free up a family's income to purchase food and other basic items, it will only do so to the extent that it meets the need for shelter. Thus, the values for housing subsidies included as income are limited to the proportion of the threshold that is allocated to housing costs. From estimates based on 2008 threshold calculations from the CE, this limit is set at 49.3 percent of the calculated experimental threshold for each family. The subsidy is capped at the housing portion of the appropriate threshold MINUS the total tenant payment. Table 1 shows that 3.4 percent of SPM families reported receipt of housing subsidies and, on average, those subsidies, capped at 49.3 percent of the geographically-adjusted threshold, were valued at $4,388 per year.[6]

*Low-Income Home Energy Assistance Program (LIHEAP)*

This program provides three types of energy assistance. Under this program, states may help pay heating or cooling bills, provide allotments for low-cost weatherization, or provide assistance during energy-related emergencies. States determine eligibility and can provide assistance in various ways, including cash payment, vendor payment, two-party checks, vouchers/coupons, and payments directly to landlords.

The CPS asks if, since October 1 of the previous year, the reference person received help with heating costs and, if yes, the amount received.[7] Many households receive both a "regular" benefit and one or more crisis or emergency benefits. Additionally, since LIHEAP payments are often made directly to a utility company or fuel oil vendor, many households may have difficulty reporting the precise amount of the LIHEAP payment made on their behalf. The CPS does not capture assistance for cooling paid in the summer months nor emergency benefits paid after the February/March/April survey date. Table 1 shows that 2.9 percent of SPM families reported receiving help with utility bills. On average they received $399 per year.

Resources: Subtractions

*Taxes*

The panel recommended that the calculation of family resources for poverty measurement should subtract necessary expenses that must be paid by the family. The measure subtracts federal, state, and local income taxes, and Social Security payroll taxes (FICA) before assessing the ability of a family to obtain basic necessities such as food, clothing, and shelter. Taking account of taxes allows us to account for receipt of an earned income credit (EITC) and other tax credits. The EITC is a refundable tax credit available to low-income working taxpayers. For 2008, the value of the economic stimulus payments is also added to income.

[6] A more detailed assessment of the new approach to estimating the value of housing subsidies will be provided in a forthcoming Census Bureau working paper.

[7] Beginning in ASEC 2011, the question on energy assistance will ask for information about the entire year.

The CPS does not collect information on taxes paid but relies on a tax model to simulate taxes paid. These simulations include federal and state income taxes, and social security taxes. For 2008, the value of the economic stimulus payments was also modeled. These simulations are based on a tax calculator and statistical matches to the American Housing Survey (AHS) and Statistics of Income (SOI) microdata file of tax returns. Table 1 shows that 71.7 percent of SPM families incur an income tax liability before credits. The average amount owed was $10,854 for 2008. About 13.9 percent of SPM families were eligible for the EITC, and they received $1,837 on average for 2008. Modeled payroll taxes show that 78.0 percent of families paid an average of $4,973 per year in FICA taxes.

*Expenses Related to Work*

Going to work and earning a wage often entails incurring expenses, such as travel to work and purchase of uniforms or tools. For work-related expenses (other than child care) the NAS panel recommended subtracting a fixed amount, $750 for 52-week work-year per earner 18 years of age or older (or about $14.42 per week worked) in 1992. Their calculation was based on 1987 Survey of Income and Program Participation (SIPP) data that collected information on work expenses in a set of supplementary questions. Then they calculated 85% of median weekly expenses -- $14.42 per week worked for anyone over 18 in the family in 1992. Total expenses were obtained by multiplying this fixed amount by the number of weeks respondents reported working in the year. The panel argued that, since many families make other sacrifices to minimize work expenses (e.g., move near work, work opposing shifts) and these other costs would not be reflected in reported expenses, it would be better to use a fixed dollar amount.

Since the 1996 panel of SIPP, this work-related expenses topical module has been repeated every year[8]. Each person in the SIPP reports their own expenditures on work-related items in a given week. For each person we then sum the number of hours reported worked by the number of weeks worked in each month. The number of weeks worked is multiplied by the weekly work-related expenses, and these are summed over the calendar year for each person. These amounts are then summed across family members as of December of a given year. For 2008, a weekly amount of $27.80 was assigned per worker in the SPM family.[9] About 78.1 percent of SPM families incurred work expenses. On average, each SPM family spent $2,041 for the year 2008.

*Child Care Expenses*

Another important part of work-related expenses is paying someone to care for children while parents work. These expenses have become important for families with young children in which both the parents (or single parent) work. To account for child care expenses while parents worked in the CPS, parents are asked whether or not they pay for childcare. An amount paid is then modeled using data from the SIPP 2004 panel topical module on child care expenses.

To model the amount paid for childcare, SIPP data for 2005 are used. These data were collected in wave 4 of the 2004 panel, administered between February 2005 and May 2005. The SIPP asks about childcare arrangements and expenses for children in a household where the designated parent or guardian is working, owns a business, or is going to school, or a combination of all three.

[8] The 2004 panel wave 9 topical modules were not collected due to budget considerations.

[9] The amount was estimated from the 6th wave, 2004 panel of the SIPP.

We use these data, based at the level of reporting parents, to estimate a model of weekly childcare expenses. Then the predicted values in both the SIPP and the ASEC are matched using a predictive mean statistical match, and assigning the actual reported expenses once the match is made. Appendix Table 1 shows descriptive statistics of the variables used in the child care expenditure model, Appendix Table 2 includes the model estimates (Short, 2009).

The amount paid for any type of child care, while parents are at work or attending school, are summed over all children. Weekly reported costs are then multiplied by the number of weeks worked by the parent or guardian. In addition to modeling childcare amounts, the NAS report recommended capping the amount subtracted from income, when combined with other work related expenses, so that these do not exceed reported earnings of the lowest earner in the family. The ITWG also made this recommendation. This capping procedure is applied before determining poverty status.[10] For 2008, Table 1 shows that 6.0 percent of SPM families report paying for childcare while working. They paid an average of $6,418 per year.

The 2010 CPS ASEC asked about amounts paid for childcare along with the questions about whether or not parents paid for care. We are currently evaluating the quality of these data. If these data are of sufficient quality, these direct responses will be used to calculate childcare expenses paid. The method employed here shows what we might expect from the new CPS questions by replicating, as closely as possible, the reported distribution of childcare expenses from the SIPP.

*Medical out-of-pocket expenses (MOOP)*

The ITWG recommended subtracting medical out-of-pocket expenses from income, following the NAS panel. The NAS panel was aware that expenditures for health care are a significant portion of a family budget and have become an increasingly larger budget item since the 1960s. The panel considered including health care in the thresholds with food, clothing, and shelter needs, but decided against it. They argued that medical care needs differ from the need for food or housing in that not every family requires medical care in a given year, but when they do, the associated costs may be extraordinarily large. They concluded that it would be impossible to capture the actual variation of medical needs by variations in the thresholds and that this could lead to what the panel termed "erroneous poverty classification." Instead, they developed a method that was intended to represent "actual" MOOP spending. These expenses include the payment of health insurance premiums plus other medically necessary items such as prescription drugs and doctor co-payments that are not paid for by insurance. Subtracting these "actual" amounts from income, like taxes and work expenses, leaves the amount of income that the family had available to purchase the basic bundle of goods (food, clothing, shelter, and utilities (FCSU) and a "little bit more").

While many individuals and families have health insurance that covers most of the very large expenses, there are the costs of health insurance premiums and other small fees that the typical family pays out of pocket. Further, there are some who are not covered by medical insurance. Expenditures on health care have increased and become a more significant portion of a family's budgets and spending for health care should be accounted for as an important expense. Questions

[10] Some analysts have suggested that this cap may be inappropriate in certain cases, such as if the parent is in school, looking for work, or receiving types of compensation other than earnings.

ascertaining medical out of pocket expenditures have also been included in the 2010 CPS ASEC.

A similar exercise for medical expenses as that described above for child care expenses shows what we might expect from new CPS questions. Following O'Donnell and Beard (2009) we model medical out of pocket expenses using the SIPP 2004 panel data on utilization of health care, again performing a predicted mean match to assign medical expenses to the ASEC. Appendix Tables 3 and 4 show descriptive statistics and the estimated models used in the match. In these calculations it is assumed that the responses to questions in the SIPP about expenditures on health insurance premiums do not include reporting of Medicare Part B premiums. Given this assumption, we add the standard premium amounts, $96.40 per month in 2008 to the MOOP of elderly individuals who are not covered by Medicaid (Short, 2010, Garner and Short, 2010). Table 1 shows that, using these methods, 81.1 percent of SPM families had out-of-pocket medical expenses of, on average, $3,702 for the year 2008.

*Child Support Paid*

In the 1996 panel of the SIPP, respondents reported this information in supplementary questions in a topical module on child support that is very comprehensive but not asked every year. There are also very brief summary questions included once every calendar year. These questions attempt only to ascertain the amounts paid. Some comparisons have been made of the short set of questions in the SIPP to the complete battery of questions from the topical module on support of non-household members.[11] There are some discrepancies in the reporting of child support paid. Across those responding to the short questions a total of $18.5 million is reported. New questions ascertaining amounts paid in child support have been included in the 2010 CPS ASEC, though no attempt has been made to include a value for this item in the estimates presented here.

**Additions and Subtractions to/from Resources for All and the Poor**

Table 1 shows estimates of the percent of families with each addition and subtraction and the mean amount of each addition or subtraction for all SPM families and those who are categorized as in poverty using the official measures. The table summarizes the aggregate amounts of each addition and subtraction for all SPM families, those categorized as officially poor and and those who are *near poor*. Poor refers to SPM families whose head was classified as poor using the current official poverty measure, and the *near poor* are those SPM families whose head had family income between 100 and 125 percent of the official poverty threshold. Aggregate amounts represent the amount of benefits added to cash income or expenses subtracted from cash income to move from the official poverty measure of resources to the SPM measure. As with most of the survey information on income, both cash and non-cash, there is generally evidence of significant underreporting of transfer receipts in survey data when compared with administrative data.

The table shows that $22.7 billion were included as income from SNAP benefits for 7.4 percent of SPM families in the SPM poverty measure. Total SNAP expenditures, as reported by the USDA,

[11] There are slightly fewer respondents who report paying child support with the short set of questions, 1,214, compared with 1,341 who reported amounts in the complete topical module. A total of 738 (61 %) of those reporting paying child support in wave 3 also reported amounts in wave 5. Of those who responded to the short questions, on average they reported $4,738 per year (with a median amount $3,600).

were $34.6 billion for 2008.[12] Our estimate of average benefits was $2,465. For the 32.3 percent of those families classified as poor under the official measure and who received SNAP benefits, a total amount of $15.6 billion was added to income.

Program data show that, in 2007, approximately 17.9 million children in the U.S. received free or reduced price school lunches with an estimated federal cost of $8.7 billion.[13] While 18.4 percent of SPM families in the CPS reported participation in the school meal program, only 6.7 percent were assigned free or reduced price lunch. Regular school lunches are not included in these calculations (see Renwick, 2010.) School lunch aggregate benefits for the CPS are $6.6 billion for free and reduced price lunches only. As noted earlier, our assumption that all children received school lunch all year, overestimates the total benefits received. The average school lunch benefit is valued to be about $797 per SPM family in the CPS for 2008.

For 2008, the national aggregate expenditure for WIC benefits was $4.5 billion with an average annual benefit per person of $521 and 8.7 million beneficiaries.[14] In fiscal year 2008, the national average Federal cost of a WIC food package was $43.41 per month. Using this amount to value benefits in the CPS yielded an aggregate amount of $1.8 billion for 2008.

Using 2008 household population statistics and data from the U.S. Department of Housing and Urban Development (HUD), less than 3.0 percent of all households received rental subsidies from the two major programs (vouchers and public housing). The average benefit for those participating in the program was $7,208, and the aggregate expenditure was $24.3 billion.[15] Our estimates show an average benefit of $4,388 (capped) and an aggregate amount of $18.4 billion. Housing subsidy values reported in Table 1 are capped by the proportion of the threshold that represents housing needs.

The aggregate of energy assistance reported in the CPS for 2008 is $1.4 billion. In 2007, total heating assistance was $1.7 billion, assisting approximately 5.3 million households.[16]

SPM families, classified as poor under the official measure, are also shown in Table 1. On average they have higher percent participating for SNAP or food stamps, school lunch, WIC, energy assistance, rental housing subsidies, and earned income tax credits (EITC) than the population as a whole. Of the poor, 32.3 percent participated in SNAP, 21.1 percent in school lunches, 9.9 percent in WIC, 10.7 percent had energy assistance, and 15.7 percent had housing subsidies (the percent receiving WIC and energy assistance are not statistically different).

Subtractions from resources include work-related, including child care, and medical expenditures. Work expenses are valued following the NAS methods described above. Taxes, child care expense, MOOP are not directly reported in the CPS. The model estimates for all units and those who are categorized as poor using the official measure are in Table 1. The estimates also show

[12] http://www.fns.usda.gov/pd/SNAPsummary.htm

[13] Background Material and Data on the Programs within the Jurisdiction of the Committee on Ways and Means, 2008, available at http://waysandmeans.house.gov/media/pdf/111/15school.pdf .

[14] http://www.fns.usda.gov/pd/wisummary.htm

[15] http://www.huduser.org/portal/picture2008/form_7TOTB4.odb

[16] http://www.acf.hhs.gov/programs/ocs/liheap/publications/notebook2007.pdf, pp. 30-31.

percentages of families with federal income tax liabilities, EITC, and Social Security payroll (FICA) taxes. It is clear from Table 1 that more is subtracted than added to family income when moving from the resource measure used in the official poverty estimates to the SPM resource measure. This is particularly true for taxes. Medical out-of-pocket expenses also are quite large regardless of the method applied. In-kind transfers, on the other hand, are very small when viewed across all families.

More interesting is to examine what happens to the incomes or resources of those people who are classified as poor using the official measure. The additions and subtractions for those who are classified as poor show a more balanced picture, with additions exceeding subtractions. The major subtraction for the poor is for MOOP.

Finally, a closer look at the "near poor", who are most likely to become poor by the changes to income calculations, is provided in the last column of Table 1. These calculations are for people with household income just above the official poverty line; household income is between 100 and 125 percent of the poverty line. The table shows more subtractions than additions and therefore suggests that more "near-poor" people will be classified as poor under this new measure, and it will often be caused by the deduction of medical out of pocket expenses from income.

**Poverty Estimates 2008**

This paper described in some detail all of the calculations performed in two surveys to arrive at a measure of family resources similar to that recommended by the NAS panel and the ITWG to calculate an improved measure of poverty. Table 2 shows poverty rates for two different measures for a number of different groups. The measures are the official poverty measure and the research SPM. The poverty rates for the "official measure" do not match the published official poverty rates because the estimates in this table use an expanded poverty universe which includes unrelated individuals under the age of 15. Adding these 442,000 children to the poverty universe increased the overall "official" poverty rate from 13.2 percent (the poverty rate published as the official poverty rate) to 13.4 percent. The research SPM incorporates new thresholds, the new unit of analysis, and uses three thresholds based on housing status as described above. In this measure, subsidized renters are assigned the same threshold as renters and the subsidy that helps them meet that rent is added to income, but capped at the housing expense in the threshold. Amounts subtracted from income for medical out-of-pocket expenses and child care expenses are imputed using a statistical match to SIPP data.

In general, poverty rates are higher with the new method that uses CE-based thresholds, subtracts amounts from income for MOOP and for work expenses that include childcare and add in noncash benefits. Differences for subgroups include lower poverty rates for children, individuals included in new family units, those reporting living rent free or living in non metropolitan areas, those living in the Midwest, and those in families covered by public health insurance. Most other groups have higher poverty rates using the new measure, particularly the elderly, the foreign born, Hispanics, and those living in central cities, suburbs, and the Northeast, South, and West regions.

Table 3 compares the distribution of people in the total population to the distribution of people

classified as in poverty using the official poverty measure and the research SPM. Generally, using the SPM poverty measure results in a population classified as poor that has characteristics more similar to the total population. The elderly as a share of the people in poverty increases when the SPM measure is used. Use of the SPM measure also increases the share of the people in poverty living in married couple families while the share of people in poverty living in cohabiting units is reduced by almost half. The share of the people in poverty living outside metropolitan areas is smaller using the SPM than using the official measure while the share of people in poverty living in suburban areas increases. Regionally, using the SPM poverty measure increases the share of the poor living in the Northeast and the West while the share living in the Midwest and the South fell.

**Summary**

This paper laid groundwork for preparing estimates of a Supplemental Poverty Measure for the U.S. at the Census Bureau. Estimates presented here are based on the CPS 2009 ASEC and refer to calendar year 2008. These estimates differ primarily from earlier estimates (Garner and Short, 2010) by employing a new method for valuing housing subsidies that are added to resources. The new method was described and summary statistics were discussed.

Beginning in 2010, new questions were included in the CPS ASEC to collect information about child care and medical out-of-pocket expenditures, child support paid to other households, and whether or not a homeowner had a mortgage. Questions about energy assistance will be expanded to include the entire year, rather than just heating assistance in the winter. In this paper, most of the values for these items are obtained by statistical matching techniques (child care and medical out-of-pocket expenditures, presence of a mortgage) or ignored (child support paid and cooling assistance in summer months.)

Results showed poverty rates for the official poverty measure and the research SPM measure. The research SPM measure resulted in slightly higher poverty rates for most groups. In addition, the distribution of people in the total population to the distribution of people classified as in poverty using the official poverty measure and the research SPM were examined. It was found that, generally, using the SPM poverty measure results in a population classified as poor that has characteristics more similar to the total population than that using the official measure, with some notable exceptions. These findings are similar to those reported in earlier work using a variety of experimental poverty measures that followed recommendations of the NAS poverty panel.

## References

(Many of the unpublished working papers and presentations listed here are available at: http://www.census.gov/hhes/www/povmeas/papers.html

Banthin, Jessica, Thesia I. Garner, and Kathleen Short, "Medical Care Needs in Poverty Thresholds: Problems Posed by the Uninsured." Agency for Healthcare Research and Quality, paper presented at the Annual Meeting of the Allied Social Science Associations (ASSA, January 2001.

Betson, David, "Is Everything Relative? The Role of Equivalence Scales in Poverty Measurement," University of Notre Dame, Poverty Measurement Working Paper, Census Bureau, 1996.

Betson, David M., Constance F. Citro, and Robert T. Michael, "Recent Developments for Poverty Measurement in U.S. Official Statistics," Journal of Official Statistics, Vol.16, No. 2, 2000.

Bishaw, Alemayehu, "Adjusting Poverty Thresholds Based on Differences in Housing Costs: Applications in the American Community Survey," poster presentation prepared for the Population Association of America Annual Conference, April 2009.

Citro, Constance F., and Robert T. Michael (eds.), Measuring Poverty: A New Approach, Washington, D.C.: National Academy Press, 1995.

Gabe, Thomas, Poverty Measurement in the United States: History, Current Practice, and Proposed Changes, Congressional Research Services (CRS) Report for Congress, 7-5700, R41187, April 12, 2010, available at http://assets.opencrs.com/rpts/RL33069_20100421.pdf

Garner, Thesia I., "Developing Poverty Thresholds 1993-2003," 2005 Proceedings of the American Statistical Association, Social Statistics Section [CD-ROM], Alexandria, VA: American Statistical Association: pp-pp. Presented at the conference in Minneapolis, Minnesota, August 10, 2005. (revised September 18, 2006)

Garner, Thesia I., "National Academy of Sciences--Based Poverty Thresholds: The Details of Alternatives and Choices in Specification," presented at the Joint Statistical Meetings, American Statistical Association, Social Statistics Section, Washington, DC, (August) 2009a.

Garner, Thesia I., "Note on Standard Errors and Other Relevant Statistics of Experimental Poverty Thresholds Produced at the Bureau of Labor Statistics: 2006 to 2008," Bureau of Labor Statistics (BLS) Working Paper 436, March, 2010.

Garner, Thesia I., "Poverty Thresholds Alternatives/ Choices," presented at the Brookings Institution/ Census Bureau Conference on Improved Poverty Measurement, Washington, DC, (October) 2009b.

Garner, Thesia I. and David Betson, "Housing and Poverty Thresholds: Different Potions for Different Notions," paper prepared for presentations at the Midwestern Economics Association Meetings, Chicago, IL, March 20, 2010. (An earlier version of this paper is available as BLS Working Paper 435: "Setting and Updating Modern Poverty Thresholds," http://stats.bls.gov/osmr/abstract/ec/ec100030.htm , and was also presented at the Annual Meeting of the Allied Social Science Associations (ASSA) in Atlanta, Georgia, January 3, 2010 during the Society of Government Economists Session (SGE).

Garner, Thesia I., Stephanie Shipp, Geoffrey Paulin, Kathleen Short, and Charles Nelson, "Poverty Measurement in the 1990s," Monthly Labor Review, March 1998, pp. 39-61.

Garner, Thesia I. and Kathleen S. Short, "Creating a Consistent Poverty Measure Over Time Using NAS Procedures: 1996-2005,"Review of Income and Wealth, Series 56, Number 2, June 2010.

Garner, Thesia I. and Kathleen S. Short, "Combining Surveys for Poverty Measurement," paper presented at the 31st Conference of the International Association for Research on Income and Wealth," August 2010.

Institute for Research on Poverty, "Revising the Poverty Measure," Focus, Volume 19, Number 2, Spring 1998.

Observations from the Interagency Technical Working Group on Developing a Supplemental Poverty Measure (Interagency), March 2010, available at http://www.census.gov/hhes/www/poverty/SPM_TWGObservations.pdf

Johnson, David, Stephanie Shipp, and Thesia I. Garner, "Developing Poverty Thresholds Using Expenditure Data," in Proceedings of the Government and Social Statistics Section. Alexandria, VA: American Statistical Association, August 1997, pp. 28-37.

The Measuring of American Poverty Act of 2009, MAP Act, H.R. 2909, bill introduced in the 111th U.S. Congress by Representative McDermott and a companion bill introduced by Senator Dodd (S. 1625).

O'Donnell, Sharon, and Rodney Beard, "Imputing Medical Out-of-Pocket Expenditures Using SIPP and MEPS," presented during the American Statistical Association Annual Meetings, Washington, DC. August 2009, http://www.census.gov/hhes/www/povmeas/papers.html

Renwick, Trudi, "Alternative Geographic Adjustments of U.S. Poverty Thresholds: Impact on State Poverty Rates," presented during the American Statistical Association Annual Meetings, Washington, DC. August 2009 , http://www.census.gov/hhes/www/povmeas/papers.html

Renwick, Trudi, "Experimental Poverty Measures: Geographic Adjustments from the American Community Survey and BEA Price Parities," 2009 Proceedings of the American Statistical Association, Social Statistics Section [CD-ROM], Alexandria, VA: American Statistical Association: pp.-pp. Presented at the conference in Washington, DC, August 2009.

Renwick, Trudi, "Improving the Measurement of Family Resources in a Modernized Poverty Measure," paper prepared for presentations at the Allied Social Sciences Associations (ASSA) meetings, Society of Government Economists (SGE) session, Atlanta, GA, January 3, 2010, http://www.census.gov/hhes/www/povmeas/papers.html

Ruggles, Patricia, Drawing the Line--Alternative Poverty Measures and Their Implications for Public Policy, Washington, D.C.: Urban Institute Press, 1990.

Short, Kathleen, "Cohabitation and Child Care in a Poverty Measure," 2009 Proceedings of the American Statistical Association, Social Statistics Section [CD-ROM], Alexandria, VA: American Statistical Association: pp.-pp. Presented at the conference in Washington, DC, August 2009.

Short, Kathleen, "Experimental Modern Poverty Measures 2007," presented in a session sponsored by the Society of Government Economists at the Allied Social Science Association Meetings, Atlanta, Georgia.

January 3, 2010, http://www.census.gov/hhes/www/povmeas/papers.html

Short, Kathleen, "Experimental Poverty Measures: 1999", U.S. Census Bureau, Current Population Reports, Consumer Income, P60-216, U.S. Government Printing Office, Washington, DC, 2001.

Short, Kathleen, "Estimating Resources for Poverty Measurement: 1993-2003," 2005 Proceedings of the American Statistical Association, Social Statistics Section [CD-ROM], Alexandria, VA: American Statistical Association: pp.-pp. Presented at the conference in Minneapolis, Minnesota, August 10, 2005.

Short, Kathleen and Garner, Thesia I. "Experimental Poverty Measures Under Alternate Treatments of Medical Out-of-Pocket Expenditures." Monthly Labor Review, August 2002, pp. 3-13.

Short, Kathleen, Thesia Garner, David Johnson, and Patricia Doyle, Experimental Poverty Measures: 1990 to 1997, U.S. Census Bureau, Current Population Reports, Consumer Income, P60-205, U.S. Government Printing Office, Washington, DC, 1999.

Short, Kathleen, Martina Shea, David Johnson, and Thesia I. Garner, "Poverty-Measurement Research Using the Consumer Expenditure Survey and the Survey of Income and Program Participation," American Economic Review, Vol. 88, No. 2, May 1998, pp. 352-356.

U.S. Bureau of the Census, Technical Paper No. 50, Alternative methods for Valuing Selected In-Kind Transfer Benefits and Measuring Their Effect on Poverty, U.S. Government Printing Office, Washington, DC, 1982.

Ziliak, James P., Alternative Poverty Measures and the Geographic Distribution of Poverty in the United States, a draft report prepared for the Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, available from the author at jziliak@uky.edu, 2010.

## Table 1: Noncash Benefits and Necessary Expenses of Family Units in the CPS: 2008

| | % paid/received | | | | Mean amount ($) | | | | Aggregate amount (bil$) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All | se | Poor* | se | All | se | Poor* | se | All | se | Poor* | se | Near Poor* | se |
| **Noncash benefits** | | | | | | | | | | | | | | |
| **SNAP** | 7.4 | 0.1 | 32.3 | 0.5 | 2,465 | 35.6 | 2,838 | 46.5 | 22.7 | 0.50 | 15.6 | 0.41 | 2.4 | 0.13 |
| **School lunch** | 6.7 | 0.1 | 21.1 | 0.4 | 797 | 3.6 | 872 | 10.2 | 6.6 | 0.10 | 3.1 | 0.07 | 0.9 | 0.04 |
| **WIC** | 2.8 | 0.1 | 9.9 | 0.4 | 528 | 1.4 | 528 | 2.3 | 1.8 | 0.05 | 0.9 | 0.03 | 0.2 | 0.02 |
| **Housing subsidy/cap** | 3.4 | 0.1 | 15.9 | 0.5 | 4,388 | 86.6 | 5,218 | 105.8 | 18.4 | 0.70 | 14.1 | 0.61 | 2.3 | 0.17 |
| **Energy Asst.** | 2.9 | 0.1 | 10.7 | 0.4 | 399 | 8.4 | 391 | 10.6 | 1.4 | 0.05 | 0.7 | 0.03 | 0.2 | 0.01 |
| **Necessary Expenses** | | | | | | | | | | | | | | |
| **Taxes before credits** | 71.7 | 0.2 | 12.5 | 0.3 | 10,854 | 123.6 | 2,386 | 313.2 | 961.9 | 11.72 | 4.6 | 0.62 | 1.4 | 0.13 |
| **EITC** | 13.9 | 0.1 | 36.1 | 0.5 | 1,837 | 17.1 | 2,104 | 34.0 | 31.5 | 0.40 | 12.7 | 0.27 | 5.6 | 0.19 |
| **FICA** | 78.0 | 0.2 | 48.6 | 0.5 | 4,973 | 20.3 | 1,032 | 17.8 | 480.0 | 2.12 | 8.3 | 0.17 | 5.3 | 0.14 |
| **Work expenses** | 78.1 | 0.2 | 48.8 | 0.5 | 2,041 | 4.8 | 1,242 | 11.2 | 197.0 | 0.56 | 10.0 | 0.16 | 5.3 | 0.13 |
| **Childcare model** | 6.0 | 0.1 | 3.4 | 0.2 | 6,418 | 99.8 | 4,089 | 240.3 | 47.4 | 1.00 | 2.3 | 0.17 | 1.5 | 0.18 |
| **MOOP** | 81.1 | 0.2 | 62.2 | 0.5 | 3,702 | 56.0 | 1,988 | 86.4 | 377.4 | 5.96 | 21.6 | 0.97 | 10.8 | 0.58 |

* Poverty status of SPM family head based on official measure

Source: U.S. Census Bureau, Current Population Survey, 2009 Annual Social and Economic Supplement.

For information on confidentiality protection, sampling error, nonsampling error, and definitions,

see www.census.gov/apsd/techdoc/cps/cpsmar09.pdf [PDF].

## Table 2: Percent of People in Poverty by Different Poverty Measures: 2008

| | Number* (in thousands) | Official* | se | Research SPM* (percent below threshold) | se |
|---|---|---|---|---|---|
| **People** | 301,483 | 13.4 | 0.2 | 15.4 | 0.2 |
| **Children** | 74,510 | 19.5 | 0.3 | 18.8 | 0.3 |
| **Nonelderly Adults** | 189,185 | 11.7 | 0.1 | 14.1 | 0.2 |
| **Elderly** | 37,788 | 9.7 | 0.3 | 14.8 | 0.3 |
| **In married couple family** | 188,489 | 6.7 | 0.1 | 9.8 | 0.2 |
| **In female householder family** | 60,809 | 26.7 | 0.4 | 28.5 | 0.4 |
| **In new SPM family groups** | 20,821 | 30.0 | 0.7 | 18.6 | 0.7 |
| **White, not Hispanic** | 197,159 | 8.8 | 0.2 | 10.0 | 0.2 |
| **Black, not Hispanic** | 36,614 | 24.5 | 0.6 | 25.0 | 0.6 |
| **Other** | 22,555 | 15.5 | 0.6 | 18.1 | 0.5 |
| **Hispanic Origin** | 47,175 | 23.3 | 0.5 | 30.0 | 0.6 |
| **Nativity** | | | | | |
| **Native born** | 264,733 | 12.8 | 0.2 | 13.8 | 0.2 |
| **Foreign born** | 36,749 | 18.0 | 0.5 | 26.9 | 0.5 |
| **Naturalized citizen** | 15,475 | 10.3 | 0.4 | 18.0 | 0.6 |
| **Not a citizen** | 21,274 | 23.5 | 0.7 | 33.4 | 0.7 |
| **Tenure** | | | | | |
| **Owner** | 209,239 | 7.0 | 0.1 | 9.1 | 0.2 |
| **Renter** | 88,547 | 27.7 | 0.4 | 29.9 | 0.4 |
| **Rent free** | 3,698 | 27.9 | 1.5 | 21.0 | 1.6 |
| **Renter/Mortgage** | 231,911 | 13.9 | 0.2 | 17.0 | 0.2 |
| **Owner/No mortgage/rent free** | 69,572 | 11.6 | 0.3 | 10.0 | 0.3 |
| **Residence** | | | | | |
| **Central city** | 97,364 | 17.8 | 0.3 | 21.5 | 0.4 |
| **Suburb** | 156,036 | 10.0 | 0.2 | 12.6 | 0.2 |
| **Not metro** | 48,084 | 15.3 | 0.5 | 12.0 | 0.4 |
| **Region** | | | | | |
| **Northeast** | 54,191 | 11.7 | 0.3 | 14.5 | 0.4 |
| **Midwest** | 65,672 | 12.5 | 0.3 | 12.1 | 0.4 |
| **South** | 110,845 | 14.5 | 0.3 | 16.0 | 0.3 |
| **West** | 70,774 | 13.7 | 0.4 | 18.1 | 0.4 |
| **Health** | | | | | |
| **Family in good or excellent health** | 234,999 | 11.3 | 0.2 | 13.0 | 0.2 |
| **Member not in good or excellent health** | 66,484 | 21.3 | 0.4 | 23.8 | 0.4 |
| **Health Insurance coverage** | | | | | |
| **Member with private insurance** | 200,992 | 4.2 | 0.1 | 7.3 | 0.1 |
| **With public, no private insurance** | 54,151 | 35.4 | 0.6 | 31.7 | 0.5 |
| **Not insured** | 46,340 | 26.1 | 0.7 | 31.3 | 0.5 |

**Source:** U.S. Census Bureau, Current Population Survey, 2009 Annual Social and Economic Supplement. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/apsd/techdoc/cps/cpsmar09.pdf [PDF].
* Includes unrelated individuals under 15 years of age.

## Table 3: Distribution of People in Total and Poverty Population: 2008

| | Total Pop* | se | Official* | se | Research SPM* | se |
|---|---|---|---|---|---|---|
| **People ( in thousands)** | 301,483 | | 40,577 | 475.0 | 46,370 | 488.0 |
| | | | (percent of column total) | | | |
| **Children** | 24.7 | 0.03 | 35.8 | 0.3 | 30.3 | 0.3 |
| **Nonelderly Adults** | 62.8 | 0.03 | 55.2 | 0.3 | 57.7 | 0.3 |
| **Elderly** | 12.5 | 0.01 | 9.0 | 0.2 | 12.0 | 0.2 |
| **In married couple family** | 62.4 | 0.23 | 30.8 | 0.6 | 39.9 | 0.6 |
| **In female householder family** | 20.1 | 0.17 | 39.6 | 0.6 | 37.3 | 0.6 |
| **In new SPM family groups** | 7.2 | 0.12 | 17.1 | 0.4 | 8.7 | 0.4 |
| **White, not Hispanic** | 65.4 | 0.03 | 42.9 | 0.6 | 42.4 | 0.5 |
| **Black, not Hispanic** | 13.2 | 0.01 | 22.6 | 0.5 | 19.7 | 0.4 |
| **Other** | 7.5 | 0.03 | 8.6 | 0.3 | 8.8 | 0.2 |
| **Hispanic Origin** | 15.8 | 0.00 | 27.4 | 0.5 | 30.7 | 0.5 |
| **Nativity** | | | | | | |
| **Native born** | 87.8 | 0.11 | 83.7 | 0.4 | 78.7 | 0.4 |
| **Foreign born** | 12.2 | 0.11 | 16.3 | 0.4 | 21.3 | 0.4 |
| **Naturalized citizen** | 5.1 | 0.07 | 3.9 | 0.2 | 6.0 | 0.2 |
| **Not a citizen** | 7.1 | 0.10 | 12.3 | 0.4 | 15.3 | 0.4 |
| **Tenure** | | | | | | |
| **Owner** | 69.4 | 0.26 | 36.7 | 0.7 | 41.2 | 0.6 |
| **Renter** | 29.3 | 0.25 | 60.7 | 0.7 | 57.2 | 0.6 |
| **Rent free** | 1.2 | 0.07 | 2.6 | 0.2 | 1.7 | 0.2 |
| **Renter/Mortgage** | 78.1 | 0.17 | 82.3 | 0.5 | 85.0 | 0.4 |
| **Owner/No mortgage/rentfree** | 21.9 | 0.17 | 17.7 | 0.5 | 15.0 | 0.4 |
| **Residence** | | | | | | |
| **Central city** | 32.3 | 0.36 | 43.0 | 0.8 | 45.1 | 0.8 |
| **Suburb** | 51.8 | 0.48 | 38.7 | 0.8 | 42.5 | 0.7 |
| **Not metro** | 16.0 | 0.50 | 18.3 | 0.8 | 12.4 | 0.6 |
| **Region** | | | | | | |
| **Northeast** | 18.0 | 0.04 | 15.8 | 0.4 | 16.9 | 0.4 |
| **Midwest** | 21.8 | 0.04 | 20.4 | 0.5 | 17.1 | 0.5 |
| **South** | 36.8 | 0.05 | 39.8 | 0.6 | 38.3 | 0.6 |
| **West** | 23.5 | 0.04 | 24.0 | 0.6 | 27.7 | 0.5 |
| **Health** | | | | | | |
| **Family in good or excellent health** | 77.9 | 0.11 | 65.2 | 0.6 | 65.9 | 0.5 |
| **Member not in good or excellent health** | 22.1 | 0.11 | 34.8 | 0.6 | 34.1 | 0.5 |
| **Health Insurance coverage** | | | | | | |
| **Member with private insurance** | 66.7 | 0.21 | 21.5 | 0.5 | 31.7 | 0.5 |
| **With public, no private insurance** | 18.0 | 0.18 | 48.2 | 0.5 | 37.0 | 0.5 |
| **Not insured** | 15.4 | 0.11 | 30.4 | 0.4 | 31.3 | 0.5 |

**Source:** U.S. Census Bureau, Current Population Survey, 2009 Annual Social and Economic Supplement.
For information on confidentiality protection, sampling error, nonsampling error, and definitions,
see www.census.gov/apsd/techdoc/cps/cpsmar09.pdf [PDF].
* Includes unrelated individuals under 15 years of age.

**Appendix Table 1: Descriptive statistics for parents with children who paid for child care**

| | SIPP 2005 | | ASEC 2008 | |
|---|---|---|---|---|
| | **Mean** | **Std dev** | **Mean** | **Std dev** |
| Children 0-2 | 0.385 | 0.726 | 0.410 | 0.746 |
| Children 3-5 | 0.416 | 0.742 | 0.474 | 0.780 |
| Children 6-11 | 0.679 | 0.966 | 0.698 | 1.001 |
| Children 12-15 | 0.221 | 0.616 | 0.212 | 0.646 |
| ln family income | 8.437 | 1.320 | 9.750 | 1.092 |
| Mother's earnings share | 0.572 | 0.415 | 0.539 | 0.395 |
| Age | 34.953 | 10.250 | 36.360 | 11.184 |
| Age2 (/100) | 12.813 | 7.558 | 14.126 | 9.012 |
| Married | 0.674 | 0.622 | 0.672 | 0.616 |
| Avg. hours | 35.124 | 17.093 | 38.250 | 12.636 |
| Avg. hours2 (/100) | 13.996 | 9.582 | 15.568 | 9.792 |
| Urban residence | 0.855 | 0.468 | 0.862 | 0.451 |
| Suburb | 0.576 | 0.656 | 0.533 | 0.654 |
| Some college | 0.398 | 0.650 | 0.315 | 0.608 |
| College | 0.236 | 0.564 | 0.249 | 0.566 |
| Advanced degree | 0.116 | 0.426 | 0.044 | 0.269 |
| Subsidy | 0.054 | 0.299 | 0.045 | 0.272 |
| Extra adult | 0.158 | 0.484 | 0.123 | 0.431 |
| Midwest | 0.229 | 0.557 | 0.249 | 0.566 |
| South | 0.349 | 0.633 | 0.350 | 0.625 |
| West | 0.244 | 0.570 | 0.222 | 0.545 |
| Ln child care expenses | 4.143 | 1.494 | 4.273 | 0.742 |

The unit of anaylsis in the SIPP is designated parent. The unit used for the ASEC is poverty group unit. There may be more than one designated parent in a primary family or poverty group unit in ASEC. Standard deviations incorporate a sample design effect of 2.3 for the SIPP and 1.4 for the ASEC.

Source: 2004 Survey of Income and Program Participation, 4th wave.

For information on sampling and nonsampling error see <http://www.sipp.census.gov/sipp/source.html>.

**Appendix Table 2. Estimated Coefficients of Model of Family Expenditures on Childcare**

| | 2005 All Parents | | |
|---|---|---|---|
| | **Coefficient** | | **se** |
| Intercept | 1.67 | *** | 0.602 |
| Children 0-2 | 0.75 | *** | 0.044 |
| Children 3-5 | 0.58 | *** | 0.044 |
| Children 6-11 | 0.23 | *** | 0.035 |
| Children 12-15 | -0.02 | | 0.055 |
| Midwest | -0.15 | *** | 0.070 |
| South | -0.16 | *** | 0.740 |
| West | -0.05 | | 0.076 |
| ln family income | 0.20 | *** | 0.035 |
| Avg. hours | -0.02 | | 0.007 |
| Avg. hours2 (/100) | 0.04 | *** | 0.011 |
| Some college | 0.05 | | 0.052 |
| College | 0.20 | *** | 0.064 |
| Urban residence | 0.32 | *** | 0.066 |
| Suburb | 0.05 | | 0.043 |
| Age | 0.01 | | 0.031 |
| Age2 (/100) | -0.02 | | 0.042 |
| Advanced degree | 0.32 | *** | 0.073 |
| Mother's earnings share all income | -0.19 | | 0.188 |
| Extra adult | -0.21 | *** | 0.084 |
| Subsidy | -0.83 | *** | 0.153 |
| Interaction w/ married | | | |
| Avg. hours | 0.02 | ** | 0.009 |
| Avg. hours2 (/100) | -0.03 | * | 0.017 |
| Mother's earnings share all income | 0.50 | ** | 0.220 |
| Subsidy | 0.47 | * | 0.309 |
| Root MSE | 0.97 | | |
| R2 | 0.26 | | |
| Observations | 2810 | | |

Source: 2004 Survey of Income and Program Participation, 4th wave. For information on sampling and nonsampling error see <http://www.sipp.census.gov/sipp/source.html>.

Natural logarithms specification of dependent variable., estimated with Proc Surveyreg.

* Significant at .10 level.** Significant at .05 level. ***Significant at .01 level.

**Appendix Table 3: Descriptive statistics for families medical out of pocket spending**

| | SIPP 2005 | | ASEC 2008 | |
|---|---|---|---|---|
| | **Mean** | **Std dev** | **Mean** | **Std dev** |
| Private insurance | 0.775 | 0.718 | 0.707 | 0.671 |
| Public insurance | 0.128 | 0.574 | 0.176 | 0.561 |
| Elderly | 0.216 | 0.707 | 0.221 | 0.612 |
| Excellent health | 0.218 | 0.710 | 0.211 | 0.601 |
| Income lt 1.5 poverty | 0.244 | 0.738 | 0.245 | 0.634 |
| Single person | 0.384 | 0.836 | 0.394 | 0.721 |
| More than 3 in family | 0.214 | 0.705 | 0.197 | 0.586 |
| Midwest | 0.225 | 0.717 | 0.222 | 0.613 |
| South | 0.290 | 0.780 | 0.367 | 0.710 |
| West | 0.210 | 0.700 | 0.230 | 0.620 |
| Urban residence | 0.827 | 0.651 | 0.839 | 0.542 |
| ln family income | 9.472 | 3.620 | 9.590 | 2.733 |
| Own home | 0.654 | 0.818 | 0.644 | 0.705 |
| College | 0.171 | 0.647 | 0.188 | 0.577 |
| Advanced degree | 0.092 | 0.497 | 0.028 | 0.244 |
| Ln MOOP | 5.809 | 5.369 | 5.592 | 2.483 |

The unit of anaylsis in the SIPP is census family. The unit used for the CPS ASEC is poverty group unit that includes cohabitors and unrelated individuals under age 15. Totals for the unit are the sum across combined families and UIs. Standard deviations incorporate a sample design effect of 2.3 for the SIPP and 1.4 for the ASEC.

Source: 2004 Survey of Income and Program Participation, 4th wave.

For information on sampling and nonsampling error see <http://www.sipp.census.gov/sipp/source.html>.

**Appendix Table 4. Estimated Coefficients of OLS Model of Family Expenditures on MOOP**

| | Coefficient | | SE |
|---|---|---|---|
| Intercept | 5.84 | *** | 0.094 |
| Private insurance | 0.81 | *** | 0.049 |
| Public insurance | -0.42 | *** | 0.058 |
| Elderly | 0.38 | *** | 0.021 |
| Excellent health | 0.33 | *** | 0.024 |
| Income lt 1.5 poverty | -0.24 | *** | 0.027 |
| Single person | -0.55 | *** | 0.020 |
| More than 3 in family | 0.20 | *** | 0.022 |
| Midwest | 0.09 | ** | 0.028 |
| South | 0.14 | *** | 0.026 |
| West | -0.07 | ** | 0.024 |
| Urban residence | 0.01 | | 0.030 |
| ln family income | 0.04 | *** | 0.008 |
| Own home | 0.35 | *** | 0.020 |
| College | 0.18 | *** | 0.021 |
| Advanced degree | 0.19 | *** | 0.028 |
| | | | |
| Root MSE | 1.3287 | | |
| R2 | 0.2127 | | |
| Observations | 32877 | | |

Source: 2004 Survey of Income and Program Participation, 4th wave.

For information on sampling and nonsampling error see <http://www.sipp.census.gov/sipp/source.html>.

Natural logarithms specification of dependent variable., estimated with Proc Surveyreg in SAS.

* Significant at .10 level.** Significant at .05 level. ***Significant at .01 level.