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Consumption Among Low-Income Families: Policy Concerns **

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I. Introduction

Social policy in general (and anti-poverty policy in particular) is in need of a number of useful markers or indicators which reflect policy changes and their effects on low-income families and consumer units. Among those who care deeply about anti-poverty policies, there is widespread concern about a poverty measure that is insensitive to policy changes designed to benefit low-income households, including such policies as: in-kind assistance; refundable tax credits; taxes paid; effects of welfare reform; and the changes in living and economic circumstances of poor adults and children, including shared living arrangements and finally increased market work among low-earning women which may lead to increased child care outlays and other work related costs (see also Blank 2004).

While most of these changes are not reflected in Census money income, they may well be reflected in consumption and expenditure patterns and in changed living arrangements. The purpose of this short paper is to consider the ways in which consumption data, from the United States Consumer Expenditure Survey (CEX), and possibly also from the Health and Retirement Survey (HRS) or Panel Study of Income Dynamics (PSID), can supplement and complement household income data to paint a more clear picture of the well-being for different low-income populations, and to better reflect the effects of policy changes on low income populations.¹

While the CEX has been used somewhat for tracing the effects of income tax changes on taxpayers (Souleles 1999); Johnson, Parker, and Souleles 2004) and on low-income taxpayers via the EITC (Earned Income Tax Credit, e.g., Barrow and McGranahan 2000), not enough use has been made of this data source for low-income

policy related purposes. There has also been CEX based work on childcare expenses, though not nearly enough (e.g., Ribar 2001). It would be useful for ASPE to review the set of policy related uses of the CEX in one place. At the same time, I am not ignorant of the fact that the CEX is primarily used to set weights for the Consumer Price Index, not to measure consumption per se. I am also aware of the relative shortcomings of CEX income measures and asset-borrowing measures. But I also want to suggest its great promise in several areas of policy related measurement for low-income units, especially families with children.

This paper proceeds by considering three interrelated uses of the CEX for low-income policy purposes: measuring consumption poverty; tracing changes in living arrangements and their impact on consumption levels; and finally by adding measures of hardship. It concludes with a few caveats about consumption based measures of well being for children.

II. Poverty

One way of summarizing trends in the relative distribution of income and consumption is to look at the outcomes of the consumption distributions in terms of relative poverty rates defined by Census income or by consumption for consumer units. A consumer unit comprises members of a household who are related or share at least two out of three major expenditures – housing, food, and other living expenses. A person living alone is a single consumer unit.²

Consumption includes consumption-expenditures less the costs of homeownership, major appliances, and the purchase price of vehicles plus the rental

equivalence of owned home and the service flows from vehicles, and is more completely defined in the appendix. Poverty is defined as consumption units with income or consumption below 50 percent of the median adjusted income or consumption level of all units (see Figure 1 taken from Johnson, Smeeding, and Torrey 2004). The equivalence scale used to adjust for needs is the square root of unit size (see appendix).³

The levels of relative poverty in Figure 1 are higher for income than for consumption for adults, elderly and children alike because consumption is more equally distributed and is better measured than is income in the CEX. The income poverty picture is somewhat familiar. Adults, most of who are working, have less relative income poverty than do children, whose poverty rates are higher. This pattern of income gains for families with kids is somewhat consistent with those reported recently by Blank and Schoeni (2004) for the late 1990s using the Current Population Survey (CPS). The elder income poverty figures are, however, somewhat different. The Census elder poverty rates fall more or less consistently from 1981 through the late 1990s using an absolute poverty threshold. The CEX relative poverty rates shown in Figure 1 veer up after 1994 are lower than those computed from CEX income reflecting both differences in income reporting amongst the elders in each survey and our use of a relative poverty threshold.

In contrast, consumption based relative poverty measures in Figure 1 suggest that adults and the elderly have the lowest consumption based poverty rates and children alone, the highest. Certainly the trends in well being observed in Johnson, Smeeding, and Torrey (2004a) suggest that there has been rapid consumption improvement for the elderly (especially single elders) and somewhat of a decline for the children of single parents, even after the income gains of the latter 1990s for the later group (see appendix

Tables A-1 and A-2) . Given that relative income poverty rates of single parents (roughly 50 percent) are higher than for single elders (about 25 percent), the difference in levels of consumption based poverty in Figure 1 are consistent for these specific groups. But the consumption differences are so large (comparing elders to kids) that children, in general, have poverty rates that are roughly twice as high as are elder poverty rates by the end of the 1990s. Hence, children's consumption is of concern, at least on a relative basis.

Greater elder consumption of housing and health care over the past 20 years seems to be the major reasons why elders are better off (Johnson, Smeeding, and Torrey 2004). But why are children so much worse off?

For both children and elders, it is of great policy interest to know how consumption is financed: income, borrowing, assets, and intra-consumer unit transfers are all likely to affect low consumers. We need to know which of these is driving these results. One interesting twist that underlies these patterns of child poverty especially are the surprising changes in households living arrangements of children over the past 20 years.

III. Living Arrangements

The CEX suggests an interesting pattern of change in consumption units over the past 20 odd years (Table 1). Why are the consumption distribution and poverty rates for children worse than their relative income distribution (a condition that is unique among family types in the United States according to Johnson, Smeeding, and Torrey 2004; 2004a)? When we disaggregate children's relative distribution of consumption by family type, it becomes clear why child consumption distributions are aberrant. It is not because

of consumption changes among children living in married two-parent families, as their situation has remained relatively unchanged (except for some growth in both the bottom and top quintile share since 1981; see Johnson, Smeeding and Torrey 2004). The relative deterioration in children's consumption distribution has occurred mainly because of different levels of consumption for children in single-mother families and especially for those living in 'other' non-married families, whose relative importance has changed since 1981. Married couples with children, who had a modestly improving consumption distributions since 1981, decreased from 51 to 43 percent of all family types in Table 1. Both the share of total population and the unequal consumption distribution of single-mother families living alone did not change much during this period. However, 'other families with children' almost doubled from 4.7 to 8.4 percent of all units in Table 1. And the consumption distribution worsened for this family type.⁴

Indeed, children living with their mother and another adult are included in the 'other families with children' category. In 1981, 12.7 percent of all children lived in single-mother families and 7.6 percent lived in other families. By 2001, the percent of children living in single-mother families remained at 13 percent, while twice as many children—14.5 percent—lived in other families. This massive increase reflects changes in those living with grandparents and cohabitation amongst unmarried adults.

Who these children and parents are and how they share consumption with other members of the unit is of prime policy interest. Here we assume equal sharing of all consumption among household members simply because we have no evidence to the contrary. Do children share equally in consumption?

In terms of who lives with whom equally, little is known. Are low-income unmarried single mothers who do not receive enough TANF or public housing to afford their own housing units driven to such living arrangements? Do these arrangements provide a helpful substitute for purchased child care? Or do these changes reflect the fact that dwellings are becoming ever larger in the United States and economies of scale make shared living arrangements optimal for those with temporarily low incomes regardless of child care or other needs? One thing that is abundantly clear from these calculations is that even in shared living arrangements; overall consumption among ‘other’ families is both low and falling in relative terms. Another possible explanation and topic of interest along these same lines is the effect of immigrant populations on patterns of living arrangements. To what extent are the ‘other units’ with and without children in Table 1 driven by newly arrived persons?

In summary, it behooves us to further explore and understand patterns of child consumption and also child living arrangements. Panel data drawn from samples that are several decades old (like the original PSID) or those focused on the elderly (HRS) are not liable to bring greater understanding to these issues. And progress using the CEX is hampered by its primary price related usage and its already heavy respondent burden. Rather, well focused studies of how and why living arrangements change for low-income units seems to be the best hope of understanding these dynamics. Longitudinal studies such as the Fragile Families project , combined with Kathy Edin-like analyses of how and why consumption decisions are made is the best hope of finding out why and how children’s relative consumption patterns have changed , and who makes these decisions.

IV. Hardship Measures

One major potential use of the CEX is to develop measures of hardship. While these can be problematic, there is still promise if carefully done. One must be cautioned that single categories of well-being are just that—and that other categories can show different and compensating changes. For instance, housing conditions measures show improvements over the past several decades, while expenditure measures show increasing housing problems for low-income renters (Table 2).⁵

The problem is simply that looking at a set of single items captures only measure one dimension of economic well-being and not others. While home ownership may be a sign of upward economic mobility, it can also signal undue income burdens and inability to pay property taxes. Renting without subsidy for low-income families with children is usually a sign of high housing costs and of instability. On the other hand, public housing limits rental burdens, but may signal poor and dangerous living conditions. This is why we need a comprehensive measure of overall consumption to gauge economic well-being and why the benefits and costs of housing arrangements may be so hard to determine.

Still there is room for new and added measures of well-being which can complement other income or consumption based measures:

1. **Excessive medical expenses.** A series of measure of persons or non-elderly units spending greater than 15-20 percent of income on medical care and the source of funds covering these expenses
2. **Car ownership.** For those living in other than Manhattan, car ownership is vital to job search, child care and other needs for working families I would assert that non ownership of a car, or the value of an owned car less than \$5000 (the Food Stamp qualification limit in many states) is a sign of hardship for non-elderly working families.

3. **Child care expenses.** The burden of child care can be heavy for non-subsidized households. How many units pay more than 15 percent of earned income for child care?
4. **Hunger.** The fraction of units who have hunger issues (use soup kitchens, food stamps, or do not have enough money to buy food at the end of the pay period) may all be useful measures of food hardship.

At the same time, I would eschew other measure of 'affluence' such as color TV or DVD-VCR ownership. Because these items can be purchased at your local WalMart for less than the cost of a Washington business lunch, they are useless as measure of well being or affluence.

V. Conclusion

One caveat to the presentation above is that children are more likely to live in households with adults who are younger than the general adult population and are not yet in their highest income years. Over the life cycle these households should improve their income and consumption positions. And, in fact, children in single-mother households have absolute levels of consumption that are higher than income in both 1981 and 2001, even if both are at relatively low levels in each period (see tables A-1 and A-2, and also Johnson, Smeeding, and Torrey 2004). If children's relative consumption inequality is deteriorating, but the mobility of children among consumption quintiles is high, then children may be relatively consumption-poor for only a short period. Unfortunately, estimates of the mobility of children among consumption quintiles do not provide much support for such a hypothesis. Like the rest of the population, mobility is least at the first and the top quintiles for both income and consumption. And mobility among the other

quintiles is modest. Therefore, mobility patterns can not ameliorate the deteriorating relative consumption of children.⁶

Because of the life-cycle pattern of both income and consumption, children may not necessarily be worse off for their entire lifetime. The trends over the last 20 years, however, suggest that successive cohorts of children are moving down the relative consumption distribution of the general population. The zero sum game of relative comparisons no longer feels like a game when only the children lose even if the overall average well-being of children has begun to improve slightly in the later 1990s in real terms. Data not shown here suggests that we are finding increases in the relative numbers of children in *both* the bottom *and* top quintiles, suggesting that despite the overall average increase in children's well-being, this increase is being unequally shared. If so, this is a concern for policies aimed at equality of opportunity in consumption, schooling and health care.

In short, policy makers have much to learn about low-income families from consumption data and from coordinated efforts to understand emerging patterns.

Endnotes

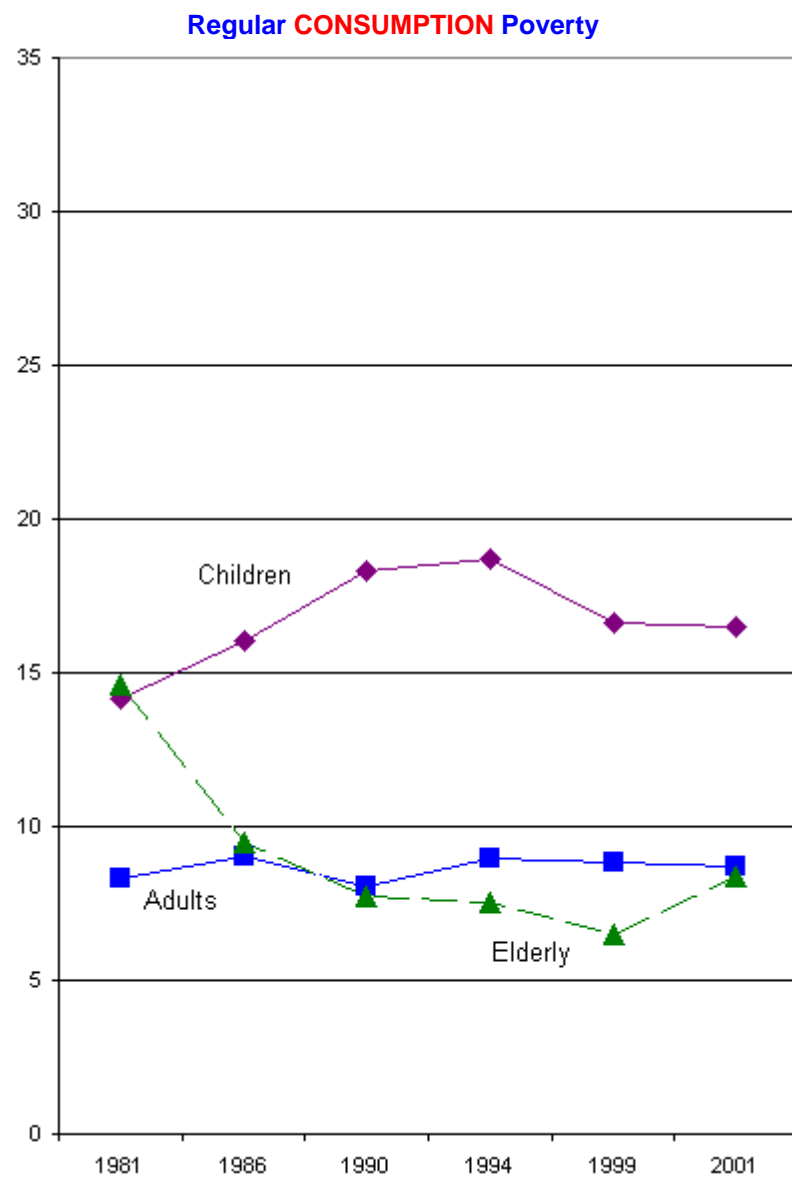
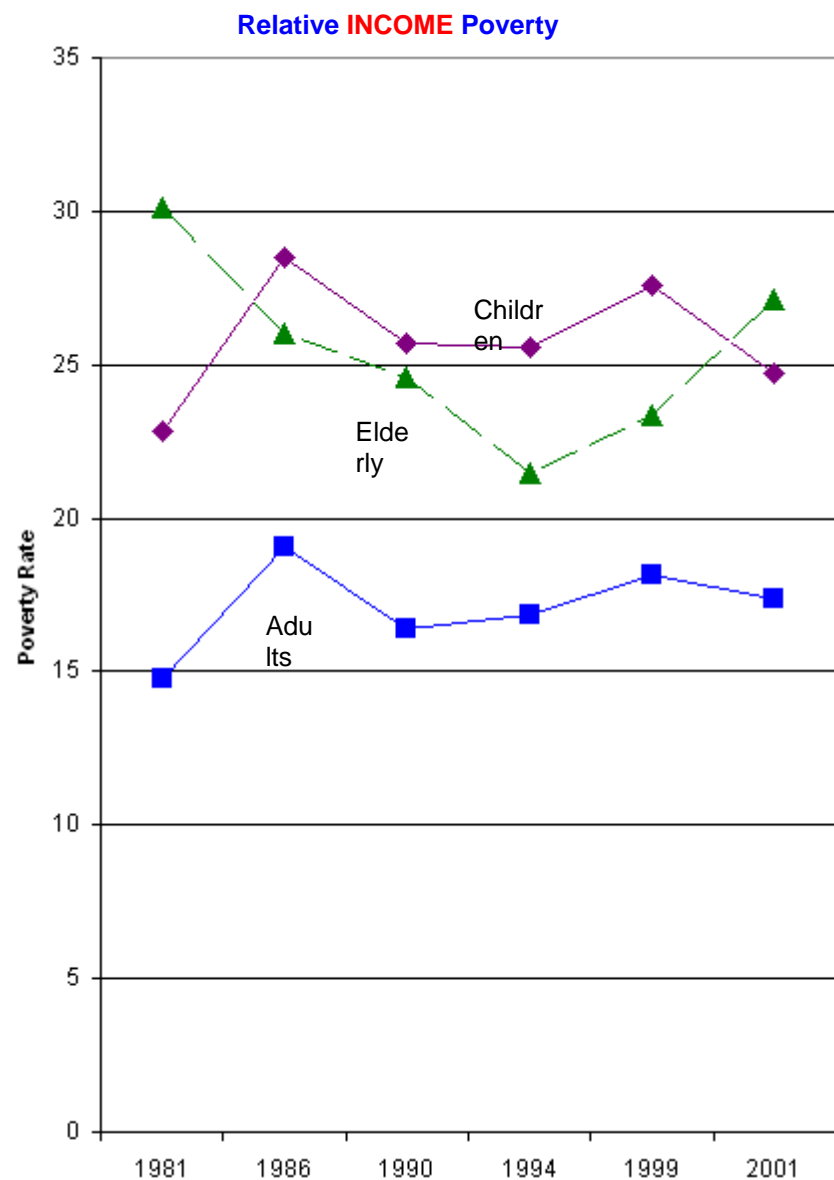
1. I have no experience with either PSID or HRS consumption measures. But I do have strong feelings that these measures must always be compared to those taken from explicit consumption surveys, such as the CEX, before they are used for most policy purposes.
2. While this paper uses the terms consumer unit and household interchangeably, they are not always identical. A few households consist of more than one consumer unit; therefore, there are approximately 3 percent more consumer units than households. These differences could be explored via future research.
3. While we use the simple square root equivalence scale, great care needs to be taken when using consumption base equivalence scales for poverty measurement. While some sets of scales yield aberrant measures (e.g., Slesnick 1994), much progress has been made by Betson (2004), Johnson (1998), and others in arriving at a durable, flexible and sensible set of equivalence scales which can be used by policy makers for measuring poverty using either income or consumption.
4. Defining consumption as consumption-expenditures (ignoring the service flows) reduces relative inequality among children by a small amount. Unlike the elderly, however, the relative distribution of consumption expenditures minus the expenditures on housing vehicles and health care does not make a major difference. The value of housing flows, vehicles and medical care are less important to the relative consumption distribution of children than for the elderly. No matter how consumption is defined, the relative consumption distribution of children is worse than any other group in the country (see Johnson, Smeeding, and Torrey 2004).
5. Table 2 is borrowed shamelessly from Blank 2004.
6. See Fisher and Johnson (2002), and Gottschalk and Danziger (2001).

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Figure 1. Relative Income and Consumption Poverty (less than 50% of the median) for Children, All Adults and Elderly



Source: Johnson, Smeeding and Torrey 2004a.

**Table 1: Distribution of Persons in Consumer Unit Types
for Various Time Periods**

Unit Type	Distribution of Persons				
	1981	1990	1994	1999	2001
Single non-elderly units	5.1	5.2	6.1	7.2	7.1
Single elderly units	3	3.1	3.6	3.6	4.1
Non-elderly couple units	16.6	19.1	17.8	16.8	16.5
Elderly couple units	7.2	8.4	7.5	7.9	6.6
Married with children units	51.3	44.7	43.6	43.6	43
Single-mother alone units	6.4	5.9	7.3	5.9	6
'Other' units with children	4.7	7.1	7	8	8.4
'Other' units	5.6	6.5	7.1	7.1	8.5

Source: US Consumer Expenditure Survey; Johnson, Smeeding and Torrey 2004.

Note: Consumer Unit is comprised of members of a household who are related or share at least two out of three high expenditures – housing, food, or other living expenses.

Table 2. Percent of Households with Children having Selected Housing Problems

	1978	1993	2001	1978-2001 Change
<u>All</u> Households with Children				
Moderate or Severe Physical Problems	9	7	7	-2
Crowding	9	6	6	-3
Cost Burden Greater than 30%	15	26	28	+13
Cost Burden Greater than 50%	6	11	11	+5
<u>Renter</u> Households with Children and Very Low Income (below one-half of median income in a geographic area)				
Moderate or Severe Physical Problems	18	14	16	-2
Crowding	22	14	15	-7
Cost Burden Greater than 30%	59	67	70	+11
Cost Burden Greater than 50%	31	38	39	+8

Source: Blank (2004) and *Trends in the Well-being of America's Children and Youth* 2003, Department of Health and Human Services (from Table ES 4.1)

Table A1: Means of Real Equivalent Disposable income and Consumption by household type (in 2001 \$ using CPI-U-RS)

Family Type	1981		1990		1994		2001		Percent change 1981-2001	
	Consumption	Income	Consumption	Income	Consumption	Income	Consumption	Income	Consumption	Income
Single non-elderly	19,226	21,105	23,179	27,848	21,387	24,824	22,201	27,992	15.5%	32.6%
Single elderly	13,700	11,173	18,078	17,376	19,257	16,867	20,781	17,063	51.7%	52.7%
Non-elderly couples	23,384	28,888	26,741	37,290	27,388	36,496	26,279	39,286	12.4%	36.0%
Elderly couples	18,819	19,627	22,671	24,052	24,502	24,098	23,224	23,442	23.4%	19.4%
All couples with children	17,323	20,164	19,739	25,909	19,834	24,957	20,576	28,751	18.8%	42.6%
Single mother families	11,396	10,274	11,892	11,967	11,841	11,131	13,969	13,376	22.6%	30.2%
Other families with children	13,512	12,755	13,662	14,665	13,076	14,199	14,493	17,490	7.3%	37.1%
Other families	17,181	19,401	19,430	22,135	19,992	22,901	19,997	25,110	16.4%	29.4%

Source:
Author
s'

calculations from the CE microdata. See Appendix for definition of consumption.
See also Johnson, Smeeding, and Torrey 2004.

Table A2: Means of Real Equivalent Consumption-expenditures and consumption less shelter, vehicles and medical care* by household type (in 2001 \$ using CPI-U-RS)

Family Type	1981		1990		1994		2001		Percent change 1981-2001	
	Cons-exp	less shelter,veh and med	Cons-exp	less shelter,veh and med	Cons-exp	less shelter,veh and med	Cons-exp	less shelter,veh and med	Cons-exp	less shelter,veh and med
Single non-elderly	18601	12130	22339	13632	21051	12357	20759	12098	11.6%	-0.3%
Single elderly	10664	6977	14522	8861	15262	8894	15208	8841	42.6%	26.7%
Non-elderly couples	21243	15083	25683	16710	25866	16237	24232	14673	14.1%	-2.7%
Elderly couples	15380	10690	19268	12317	20513	12579	18642	11174	21.2%	4.5%
All couples with children	16460	11698	19857	12638	19669	12461	19959	12148	21.3%	3.8%
Single mother families	10906	7661	11810	7865	11749	7709	13635	8520	25.0%	11.2%
Other families with children	12726	9282	12912	8898	12958	8615	13949	8863	9.6%	-4.5%
Other families	15687	10822	18308	11852	18557	12013	18716	11332	19.3%	4.7%

* Which is equal to Consumption less shelter, vehicles, and medical care. Source: Authors' calculations from the CE microdata.
See Appendix for definition of consumption. See also Johnson, Smeeding, and Torrey 2004.

Data Appendix

Constructing Total Consumption

To get an adequate sample size for each year, we use the four quarters of data for each year plus data from the last quarter from the year before and the first quarter for the year after. For 1994, this means we use data from the fourth quarter of 1993 to the first quarter of 1995. This allows us to have more than 5,000 observations for each year (1981, 1986, 1990, 1994, 1999, and 2001).

The consumption measure includes the amount that the consumer unit actually spends for current consumption plus the estimated service flows from homeownership and vehicles. This includes expenditures for food, housing, transportation, apparel, medical care, entertainment, and miscellaneous items for the consumer unit. Excluded are expenditures for pensions and social security, savings, life insurance, principal payments on mortgages, and gifts (of cash, goods and services) to organizations or persons outside the consumer unit.

Housing includes expenses associated with owning or renting a home or apartment, including rental payments, mortgage interest and charges, property taxes, maintenance, repairs, insurance, and utilities. Expenditures for other lodging and household operations are in the miscellaneous items category. Expenditures for principal payments for mortgages are excluded.

Transportation includes expenditures for the net purchase price of vehicles, finance charges, maintenance and repairs, insurance, rental, leases, licenses, gasoline and motor oil, and public transportation. Public transportation includes fares for mass transit, buses, airlines, taxis, school buses and boats.

Medical care expenditures are for out-of-pocket expenses including payments for medical care insurance.

Entertainment expenditures are for fees and admissions, televisions, radios, sound equipment, pets, toys, playground equipment, and other entertainment supplies, equipment and services.

Miscellaneous expenditures are for personal care services, reading, education, tobacco products and smoking supplies, alcoholic beverages, other lodging, and house furnishings and equipment.

To obtain our measure of consumption, we estimate the service flows of homeownership, and cars and trucks. For the value of homeownership, we use the reported rental equivalence value obtained from the consumer unit. Consumer units who own their home are asked, "If someone were to rent your home today, how much do you think it would rent for monthly, unfurnished and without utilities." The annualized value of this is then used for homeownership cost in place of the amount used in the definition of consumption-expenditures.

For cars and trucks, we follow a process similar to that used in Danziger et al. (1984) and Slesnick (1994) estimating the service flow of durable goods by the change in the value of the durable. Using the purchase price, P_0 , and the age, s , of the vehicle, the service flow, S , is given by:

$$S_t = (r + \delta) \cdot (1 - \delta)^s \cdot P_0,$$

where r is the interest rate and δ is the depreciation rate. We assume that $r = .05$ and $\delta = .1$. The CE Survey collects data on the ownership of vehicles, including the age and model type, which is classified into 800 categories. While the age and model type are asked of all consumer units, the purchase price is asked only of those households who are currently financing their automobile (or who recently purchased the vehicle). Since many of the consumer units have missing values for the purchase price, we imputed values based on the model type and year, whether the vehicle was purchased new or used and whether the vehicle had automatic transmission. Since most of the vehicles had their model type reported, we sorted the data by model type and whether the vehicle was new or used and obtained the mean value of the purchase price for each cell. If there were no observations for a particular cell or the type was missing, we then used the mean values by year, based on whether the vehicle was new or used, a car or a truck and automatic or manual transmission. If one of these values was missing, we simply used the mean purchase price for the particular Primary Sampling Unit.

Income and consumption were adjusted to 2001 dollars using the CPI-U-RS (see Stewart and Reed 1998 and updates at <http://www.bls.gov/cpi/cpiurstx.htm>) series for the four expenditure quarters for each consumer unit.

Appendix on Equivalence Scales:

To obtain a measure of well being for individuals, we adjust the income and consumption resources of a consumer unit by an equivalence scale, and use the consumer unit size (multiplied by the unit's sample weight) as a weight. Adjusting resources in this manner yields "equivalent resources per person," and we obtain a population of individuals whose resources are given by the equivalent resources of their consumer unit. This adjustment assumes that resources within the household are distributed equally. Johnson (2004) discusses the impact of changing this assumption. We use the single-parameter, constant elasticity equivalence scales reviewed by Buhmann et al. (1988) and Ruggles (1990), which are used most often in international comparisons of inequality (Atkinson, Rainwater, and Smeeding 1995). This particular scale is given by the square root of family size and indicates that the resources for a two person family must be 41 percent more than that of a single person family for the two families to have equivalent standard of living. In general, the constant elasticity scales are given by $(\text{family size})^e$, in which e is the scale elasticity. Notice that if the elasticity equals one, then the scale equals family size, there are no assumed economies of scale in living arrangements and the equivalent resources are simply the per capita resources. Alternatively, if the elasticity equals zero then there is no adjustment for family size, there are complete economies of scale in living and the marginal cost of another person is zero. Our chosen elasticity of 0.5 lies halfway between these two implausible extremes and results in "equivalent" consumer unit resources. For equivalence scales derived from the CEX see Slesnick (1994) and Betson (2004).