

## Economic inequality through the prisms of income and consumption

*Between 1981 and 2001, economic inequality among groups in the general population has increased in the United States; two measures of income and consumption are used to gauge relative well-being*

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Alan Greenspan recently stated, “There is a *surprising difference* between the trends in the dispersion of holdings of claims to goods and services (income and wealth) and trends in the dispersion of actual consumption, which is, of course, the ultimate determinant of material or economic well-being.”<sup>1</sup> The “surprising difference” between income and consumption distribution trends is the subject of this article.

Between 1981 and 2001, economic inequality has increased substantially in the United States. This increase occurs regardless of which data or formulas are used to measure it. And inequality increases regardless of whether the resource measured is income or consumption.<sup>2</sup>

Most studies of poverty and inequality are based on income measurements for practical reasons. But conceptual limitations of income have led to an increasing number of studies using consumption measures, even if they are not as complete as the income measures that we have available. We think that income and consumption are two different prisms through which to view well-being. Their spectrums overlap, but it is their differences that this article addresses.

This article begins with a brief discussion of the strengths and weaknesses of both income and consumption measures. It then uses both measures to show how the trends in inequality differ by household type and for the individuals in each of those households. It illustrates how the two resource measures produce different individuals at the top and bottom of the general population’s

distribution. The article concludes with an examination of the group that looks the most disadvantaged regardless of the prism used—children and the adults they live with.

### Hypotheses, data, and definitions

The life-cycle hypothesis suggests that income will increase through working ages and then decline after retirement.<sup>3</sup> Because of this predictable pattern, most people will save in their higher income years and dissave in their lower income years to smooth their consumption over time. The permanent income hypothesis suggests that current income has both permanent and transitory components and that consumer units base their long-term consumption patterns on their permanent income. “The transitory components of income show up primarily in changes in the consumer units’ assets and liabilities, that is, in [its] measured savings.”<sup>4</sup> The combination of these two hypotheses suggests that individual income levels will generally vary more than consumption levels, and consumption will be higher than incomes at both younger and older ages. This implies that levels of relative poverty and measures of inequality tend to be lower using consumption rather than income.<sup>5</sup>

*Which measure of well-being?* Most studies of well-being and its inequality are still based on annual income data.<sup>6</sup> This is partly because of history and also partly because of habit. Income

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data are accessible, comparable over time, and of high quality. They are also readily understandable as a means by which well-being can be achieved. Moreover, international standards for household income distribution comparability have been established,<sup>7</sup> whereas those for consumption or expenditure inequality have not. But income is often underreported in surveys. And because it varies by age over the life cycle, an estimate of income inequality at any point in time may be an overestimate of longer period income inequality.<sup>8</sup> Income inequality also increases within cohorts over time. Therefore, aggregate inequality will depend, in part, on the national population age structure and also on the pattern of intergenerational transfers. Also, Gottschalk and Moffitt found that one-third to one-half of the increase in income inequality during the 1980s was accounted for by transitory income changes and not from changes in permanent income.<sup>9</sup> This may be good news because permanent income is a better measure of long-term well-being than transitory income. But it may be bad news if researchers have interpreted transitory changes as permanent changes.

Because of the limitations of income as a resource measure of well-being and its inequality, many researchers have suggested that consumption may be a more appropriate resource to measure economic well-being.<sup>10</sup> They argue that consumption is a more appropriate indicator because utility is derived from the consumption of goods and services rather than the receipt of income. Also, consumption is a better measure of permanent income, which is closer in concept to a measure of well-being than is measured income. However, consumption expenditures do not capture all of the dimensions of well-being, such as leisure or household production. And adjustments have to be made to convert the consumption of durable goods to the value of their services over time. Measuring “actual” consumption rather than expenditures is exceedingly difficult, especially when durables are involved.<sup>11</sup>

*Using both measures.* Income and consumption measures have different strengths and weaknesses. Rather than choose between them, Borooah and McGregor suggest that consumption should be used as a measure of the standard of living and that income should be used as a measure of the level of resources.<sup>12</sup> Although permanent income would be the preferred measure of economic well-being, obtaining an estimate of permanent income using cross-sectional survey data is difficult. The National Academy of Sciences committee report on poverty measurement also argued:

“Conceptually, an income definition is more appropriate to the view that what matters is a family’s ability to attain a living standard above the poverty level by means of its own resources....In contrast to an income definition, an

expenditure (or consumption) definition is more appropriate to the view that what matters is someone’s actual standard of living, regardless of how it is attained. In practice the availability of high-quality data is often a prime determinant of whether an income- or expenditure-based family resource definition is used.”<sup>13</sup>

For these reasons, Johnson and Smeeding suggested using measures of both income and consumption for each household to evaluate their well-being and the resulting distribution of resources.<sup>14</sup> They suggest that our understanding of economic well-being is improved when both measures are used.

High quality data are not only important to determine which resource definition to use, but they are also important to the comparisons between the two resources. Therefore, this article compares income and consumption data from the same survey. This ensures that the comparison of measures of inequality is as comparable as possible because the sampling frame, time periods, and definitions of households and individuals are identical.<sup>15</sup>

*The methodology.* We use the only data set in the United States that contains both income and consumption information—the Consumer Expenditure (CE) Interview Survey data.<sup>16</sup> The CE survey has been a continuing quarterly survey since 1980. Data are collected from consumer units five times over a 13-month period.<sup>17</sup> Also collected in this survey is the inventory of certain durable goods, for example, homes, real estate, vehicles and major appliances, and income. (See appendix for a complete description of the data.)

We use the CE data to develop four resource measures:

1. Income (equivalent to pre-tax/post-cash transfer money income as used in the Current Population Survey)
2. Disposable income (income post direct tax, including the Earned Income Tax Credit (EITC), plus the value of food stamps)
3. Consumption—expenditures (the total spending for current consumption)
4. Consumption, which is closer to a measure of real “consumption.”

This final measure of consumption is consumption-expenditures less the costs of home ownership and the purchase price of vehicles plus the rental equivalence of owned home and the service flows from vehicles. Table 1 shows the actual calculation of these four measures averaged over all consumer units in the CE survey. (See data appendix.) Not surprisingly, disposable income is lower than income in every year, consumption is higher than consumption expenditures, and disposable income is always higher than consumption.

**Table 1. Mean resources and components of consumption by household, selected years**

[In current dollars]

Component	1981	1990	1994	2001
Income .....	\$20,409	\$36,471	\$38,498	\$48,085
Taxes (net of transfers) .....	3,322	5,468	5,968	5,875
Disposable income .....	17,157	31,117	32,679	42,157
Total consumption .....	15,135	24,801	27,368	32,479
Consumption-expenditures .....	13,958	23,759	25,921	29,975
Shelter:				
Expenditure measure .....	2,308	4,494	5,121	6,621
Consumption measure .....	3,895	6,444	7,502	10,166
Vehicles:				
Expenditure measure .....	1,178	2,586	2,868	3,457
Consumption measure .....	769	1,678	1,935	2,417
Medical care expenditures .....	731	1,485	1,736	1,812

SOURCE: Authors' calculations from the Consumer Expenditure microdata.

The CE survey collects data for consumer units, which will be referred to as household units in this article. But a shortcoming of a household or consumer unit of measurement is that it does not take into account differences in household size. Therefore, in this article, we disaggregate household information by age of each individual within the household so that we can examine the inequality of individuals by age group. Using individuals as the unit of analysis is consistent with the welfare theory underlying inequality and poverty measures.<sup>18</sup>

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 provides us with a population of individuals whose resources are given by the equivalent resources of their consumer unit.<sup>19</sup> We use the single-parameter, constant elasticity equivalence scales reviewed by Buhmann and others<sup>20</sup> and Ruggles,<sup>21</sup> which are used most often in international comparisons of inequality.<sup>22</sup> 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 an 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.

## Trends and sensitivities in the measurements

Mean equivalent disposable income increased 35 percent in real terms between 1981 and 2001, while consumption increased 17 percent (table 2). During this period, inequality has increased in the United States, regardless of whether income or consumption is measured or whether Current Population Survey or Consumer Expenditure Survey data are used. The inequality of equivalent income based on CE data increased 16 percent, while the inequality of equivalent consumption increased 9 percent (table 3). The level of equivalent consumption inequality is about 70 percent of the level of disposable income inequality; the percentage increase in equivalent consumption inequality is 55 percent of the increase in inequality of disposable income.

Both the time period selected and the business cycle appear to be important for trends of income and consumption levels and their distribution. Most of the increases in inequality occurred between 1981 and 1990, whereas the trend during the 1990s indicated a much smaller increase in income inequality and a decrease in consumption inequality. Johnson and Shipp showed that income and consumption-expenditure inequality respond similarly to these business cycles<sup>23</sup>; during the 1980s, neither measure appears to fall with growth, however, in the 1990s, both measures appear to be more procyclical.

The measurement of inequality is, of course, sensitive to the resource measured, data source, and unit of analysis. Table 3 includes consumption expenditure measures of the previous table plus inequality estimates using Current Population Survey data from 1981 to 2001. The levels of measured inequality among the two different data sources are quite different, but the trends are similar. Inequality in all measures increased between 1981 and 1990. The income measure increases more modestly between 1990 and 2001, while the

**Table 2.** Mean real equivalent resources, selected years

[Adjusted to 2001 dollars using CPI-U-RS]

Year	Income <sup>1</sup>	Disposable income <sup>2</sup>	Consumption expenditures <sup>3</sup>	Consumption <sup>4</sup>
1981	\$24,171	\$20,327	\$16,536	\$17,859
1986	26,496	22,919	18,435	18,064
1990	30,338	25,901	19,818	20,538
1994	29,188	24,739	19,635	20,557
1999	30,088	24,914	19,345	20,879
2001	31,255	27,440	19,454	20,861
Percent change: 1981–2001	29.3	35.0	17.6	16.8

NOTES: The mean real equivalent resources are obtained by using square root equivalence scale. See text for more information. Also, see text and appendix for information on definitions of each term.

<sup>1</sup> Equivalent to pretax/postcash transfer money income as used in the Current Population Survey.  
<sup>2</sup> Income post direct tax, including the Earned Income Tax Credit (EITC),

plus the value of food stamps.

<sup>3</sup> The total spending for current compensation.

<sup>4</sup> Consumption, which is closer to a measure of real "consumption."

SOURCE: Authors' calculations from the Consumer Expenditure microdata.

**Table 3.** Sensitivity of inequality measurement using different resource definitions, units of analysis, and inequality measures, selected years

Resource measure	1981	1986	1990	1994	1999	2001	Percentage change 1981–2001
Gini coefficient:							
Official census figures							
Household income	.406	.425	.428	.456	.458	.466	14.8
Household income after taxes and Transfers (definition 14)	.358	.409	.386	.400	.408	.412	15.1
Family income	.369	.392	.396	.426	.428	.435	17.9
Consumer Expenditure data:							
Equivalent disposable income	.342	.394	.403	.396	.406	.400	16.3
Equivalent consumption-expenditures	.273	.316	.314	.313	.305	.307	12.0
Equivalent consumption	.256	.283	.293	.294	.281	.280	8.9
Equivalent nondurable expenditures	.254	.283	.286	.287	.275	.274	7.5

SOURCE: Authors' calculations from Census, and Consumer Expenditure microdata.

consumption measures decrease slightly over this period.

Both CPS and CE data yield similar trends in inequality of income for households over the entire period. The increases in the inequality of after-tax income and in the inequality of before-tax income are similar in both data sources. This suggests that although taxes may affect the level of inequality, they do not change the rate of increase in inequality based on these data.<sup>24</sup> However, the noticeable differences in the distribution of resources begin to emerge when the inequality trends are disaggregated by household type.

### Trends by households and age cohorts

The average levels of real income and consumption by household type provide a useful comparison of the prisms of income and consumption. Six quarters of CE data are combined to provide reliable estimates of disposable income and consumption for eight different household types (as listed in table 4). To examine the distribution of income and consumption

for age cohorts, we use the age of each member of the household, and weight by the household unit size. We assume that each family member shares equally in the distribution of resources within the household. Hence, the equivalent resource for the household is used as a measure for each member's well-being.

In general, consumption is lower than disposable income for most households as predicted by the permanent income hypotheses and empirically verified by many researchers. But two household types stand out. Single elderly and single mothers have the lowest level of adjusted income and consumption of any households examined. (See tables 5 and 6.) They are also the only two family types that have higher consumption than income in all years. But those are the only characteristics these two disadvantaged households share. The single elderly had the largest percentage improvements of any of the other family types in the 1981–2001 period. Single mothers began and ended this period with the lowest average levels of both consumption and income. Between 1981 and 1994, single mothers saw their average real equivalent income and consumption increase only slightly (8 percent for average real income and 4

**Table 4.** Distribution of persons in family types for selected years

Family type	Distribution of persons				
	1981	1990	1994	1999	2001
Single nonelderly .....	5.1	5.2	6.1	7.2	7.1
Single elderly .....	3.0	3.1	3.6	3.6	4.1
Nonelderly couples .....	16.6	19.1	17.8	16.8	16.5
Elderly couples .....	7.2	8.4	7.5	7.9	6.6
Married couples with children .....	51.3	44.7	43.6	43.6	43.0
Single-mother families .....	6.4	5.9	7.3	5.9	6.0
Other families with children .....	4.7	7.1	7.0	8.0	8.4
Other families .....	5.6	6.5	7.1	7.1	8.5

percent for consumption); however, between 1994 and 2001, their real resources increased substantially (18 percent rise in consumption and a 20-percent increase in income), albeit from a low base. This foreshadows a more detailed analysis of relative resource inequality by age groups in the following sections.

To get a better understanding of the dispersion of income and consumption within the United States, we focus on the three major age groups—children, adults, and the elderly.<sup>25</sup> The subsequent analysis compares the distribution of the three major age groups relative to the distribution of the total population. We examine how adults, the elderly and children have fared relative to the total population by looking at the quintile distribution of each group relative to quintiles for the total population.

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

For each age group, the quintile break points are the same as those for the entire population. Because overall inequality has increased since 1981, the quintile break points are farther apart in 2001 than in 1981.<sup>26</sup> With increasing inequality over time, a change indicating more dispersion within an age group (for example, more children living in households at the bottom and top quintiles) suggests that there has been a greater increase in inequality within the group. But the reverse is not necessarily true. Because overall inequality has increased, a change in the quintile composition of one group, indicating less dispersion, does not necessarily mean that inequality within that group has fallen.<sup>27</sup>

*Adults.* This is the largest age group in the population; they are also the largest group in the labor force and the largest consumer group. In terms of disposable income and con-

sumption, adults are relatively better off than the general population. Historically, income and consumption provide a similar picture of the well-being of adults.<sup>28</sup> Therefore, they are overrepresented in the higher quintiles and underrepresented in the lower quintiles (chart 1). However, by 2001, the relative income advantage of adults remains, while they have lost some of their relative advantage as measured by consumption. The distribution of adults without children present in the household, however, indicates that these childless adults are faring much better than other adults. (See chart 2.) For instance, chart 2 shows that 30 percent of childless adults are in the top quintile for both income and consumption, but again, the fraction in the top quintile declines over the 20-year period.

*Elders.* The relative position of the elderly, compared with the general population is the reverse of the childless adults. The elderly are overrepresented in the lowest disposable income quintiles (especially in the second quintile), and underrepresented in the top quintiles, as would be expected because many are retired. But when we switch to consumption, they are underrepresented in the lowest quintiles and modestly overrepresented in the upper quintiles. As can be seen in chart 3, their relative distribution of consumption has improved much more than has their relative distribution of disposable income since 1981. The increase in elderly home ownership, along with the increase in value of home ownership, is most likely the largest contributor to the relative improvement in consumption relative to income; in 2001, 82 percent of elderly persons lived in an owned home, up from 76 percent in 1981.<sup>29</sup> They also may be able to smooth their consumption in ways not available to families with children or younger adults, such as spending from accumulated assets. This suggests that accumulated wealth (financial, as well as housing wealth) may be an important determinant of elderly consumption.

The relative consumption of the elderly by household type provides another perspective on their well-being. Married elder couples—more likely to be the “younger” elderly—have a

**Table 5. Means of real equivalent disposable income and consumption by household type, selected years**

[In 2001 dollars 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 nonelderly .....	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
Nonelderly 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: Authors' calculations from the Consumer Expenditure microdata. See appendix for definition of consumption.

**Table 6. Means of real equivalent consumption expenditures and consumption less shelter, vehicles, and medical care by household type, selected years**

[In 2001 dollars using CPI-U-RS]

Family type	1981		1990		1994		2001		Percent change 1981-2001	
	Consumption expenditure	Less shelter, vehicle and medical care	Consumption expenditure	Less shelter, vehicle and medical care	Consumption expenditure	Less shelter, vehicle and medical care	Consumption expenditure	Less shelter, vehicle and medical care	Consumption expenditure	Less shelter, vehicle and medical care
Single nonelderly .....	18,601	12,130	22,339	13,632	21,051	12,357	20,759	12,098	11.6	-0.3
Single elderly .....	10,664	6,977	14,522	8,861	15,262	8,894	15,208	8,841	42.6	26.7
Nonelderly couples .....	21,243	15,083	25,683	16,710	25,866	16,237	24,232	14,673	14.1	-2.7
Elderly couples .....	15,380	10,690	19,268	12,317	20,513	12,579	18,642	11,174	21.2	4.5
All couples with children .....	16,460	11,698	19,857	12,638	19,669	12,461	19,959	12,148	21.3	3.8
Single-mother families .....	10,906	7,661	11,810	7,865	11,749	7,709	13,635	8,520	25.0	11.2
Other families with children .....	12,726	9,282	12,912	8,898	12,958	8,615	13,949	8,863	9.6	-4.5
Other families .....	15,687	10,822	18,308	11,852	18,557	12,013	18,716	11,332	19.3	4.7

NOTE: Consumption less shelter, vehicles, and medical care is equal to consumption-expenditures less shelter, vehicles, and medical care. See appendix for definition of consumption.

SOURCE: Authors' calculations from the Consumer Expenditure microdata.

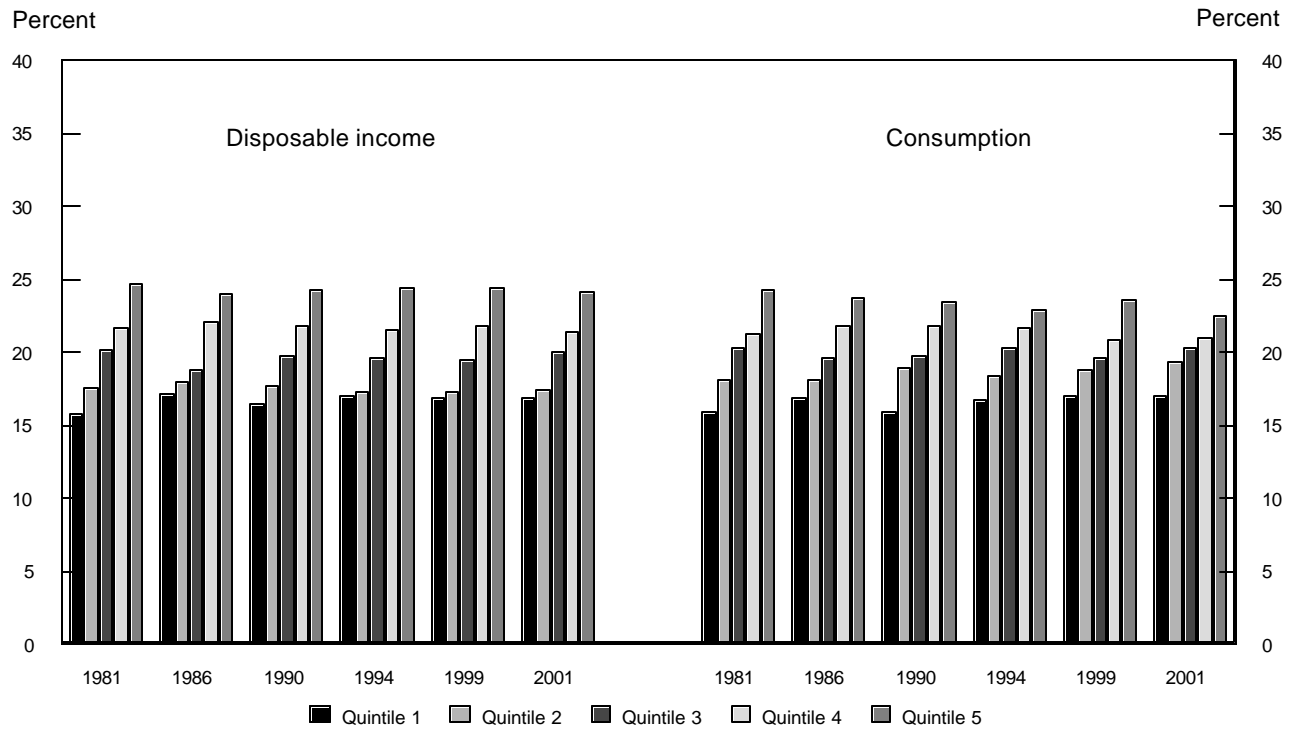
relative consumption distribution which has improved even more than for the elderly in general. (See chart 4.) By 2001, they are now underrepresented in the bottom two consumption quintiles relative to the general population and the elderly in general and overrepresented in the three top quintiles. The relative consumption distribution of married elder couples is now similar to that of the adult distribution.

Relative distributions for both disposable income and consumption for single elderly women have also improved since 1981 (chart 5). This group used to be overrepresented in the bottom of both income and consumption distribution. With respect to relative income, single elderly women are still overrepresented at the bottom, but not by as much as those are in 1981. Their consumption distribution relative to the general population is almost equal in 2001 and much better than is their income distribution.

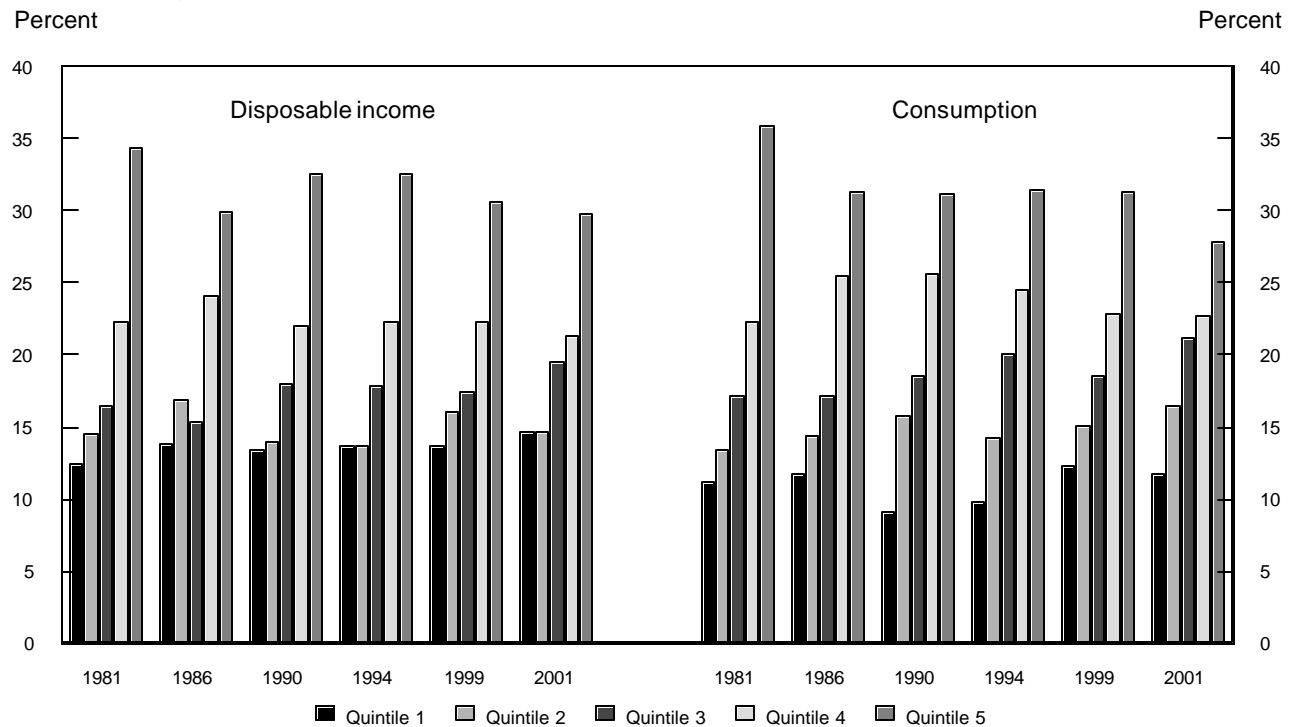
Although both the elderly married couples and elderly single women have improved their relative income and consumption distribution since 1981, it is the consumption status of the single older women that has improved most dramatically. Much of this added consumption takes the form of medical spending and housing, both of which are likely to improve their overall well-being.<sup>30</sup> Both national and cross-national analyses of income poverty suggest that single elderly women are among the poorest in society.<sup>31</sup> However, if we look at consumption levels for this group, and if we treat medical consumption in the same vein as all other consumption, this is no longer the case. If we are to form a more complete picture of the well-being of the elderly, especially older women, we need to examine both income and consumption. We also need to consider health status and medical care spending and their effect on well-being.

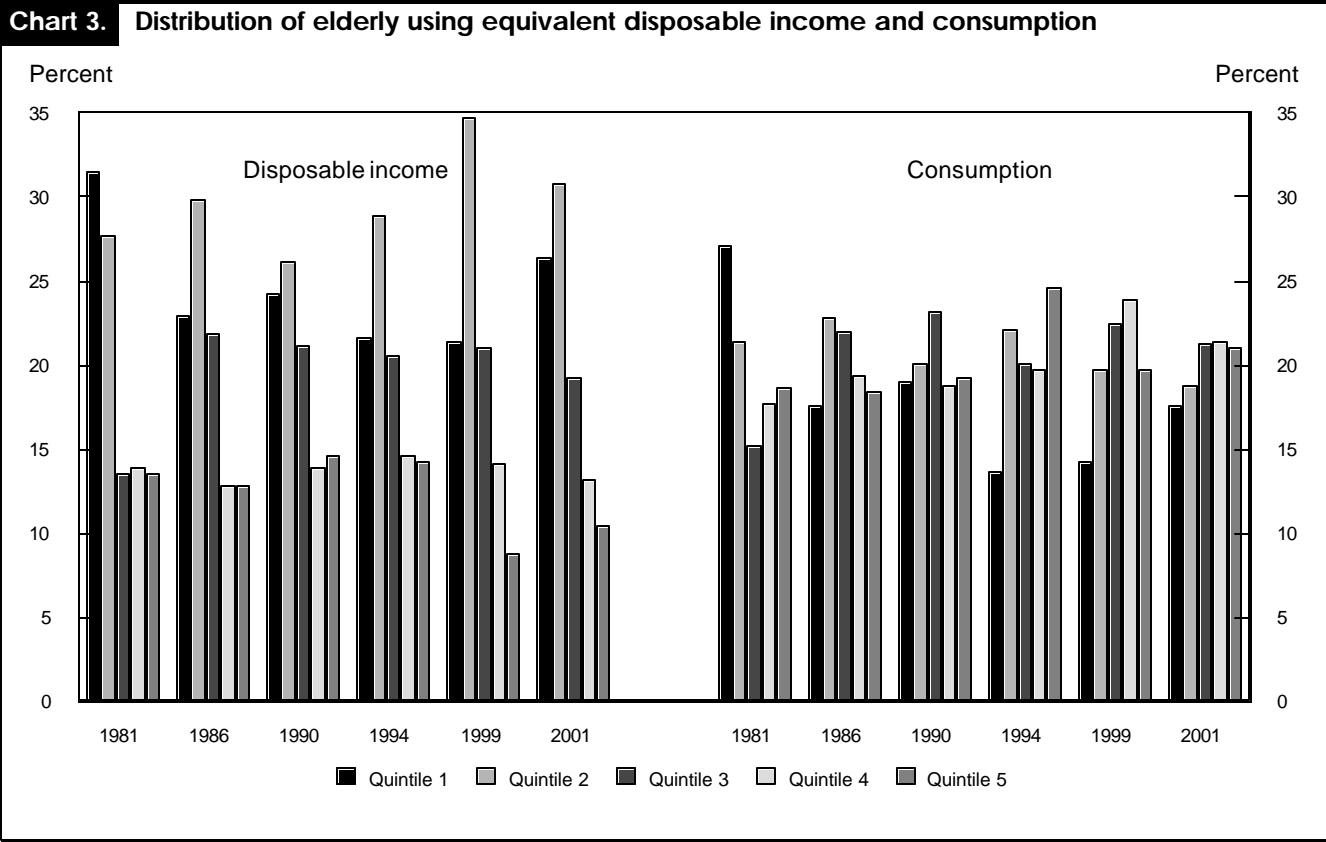
In general, consumption is lower than disposable income

**Chart 1. Distribution of all adults (ages 18–64) relative to the general population by quintile, using equivalent disposable income and consumption**



**Chart 2. Distribution of adults without children present relative to the general population by quintile, using equivalent disposable income**





for most households as predicted by the permanent income hypothesis and found by many researchers. This is true for every kind of family type except for the single mothers and single elderly. (See table 5.) The substantial increase in both consumption and income for the single elderly occurred largely between 1981 and 1990 and was spread across the entire elderly consumption distribution. Increases in both income and consumption for these households continued in the 1990s, but at more modest rates.

The measure of consumption in table 5 includes the value of the flow of services and durables such as housing, vehicles and medical care. If consumption is defined as only the actual expenditure of money (consumption expenditure in table 6) then the percentage increase in consumption is still the highest for the single elderly families, but it is reduced from 51.7 percent to 42.6 percent. That is still a substantial increase, and again, most of it occurred between 1981 and 1990.

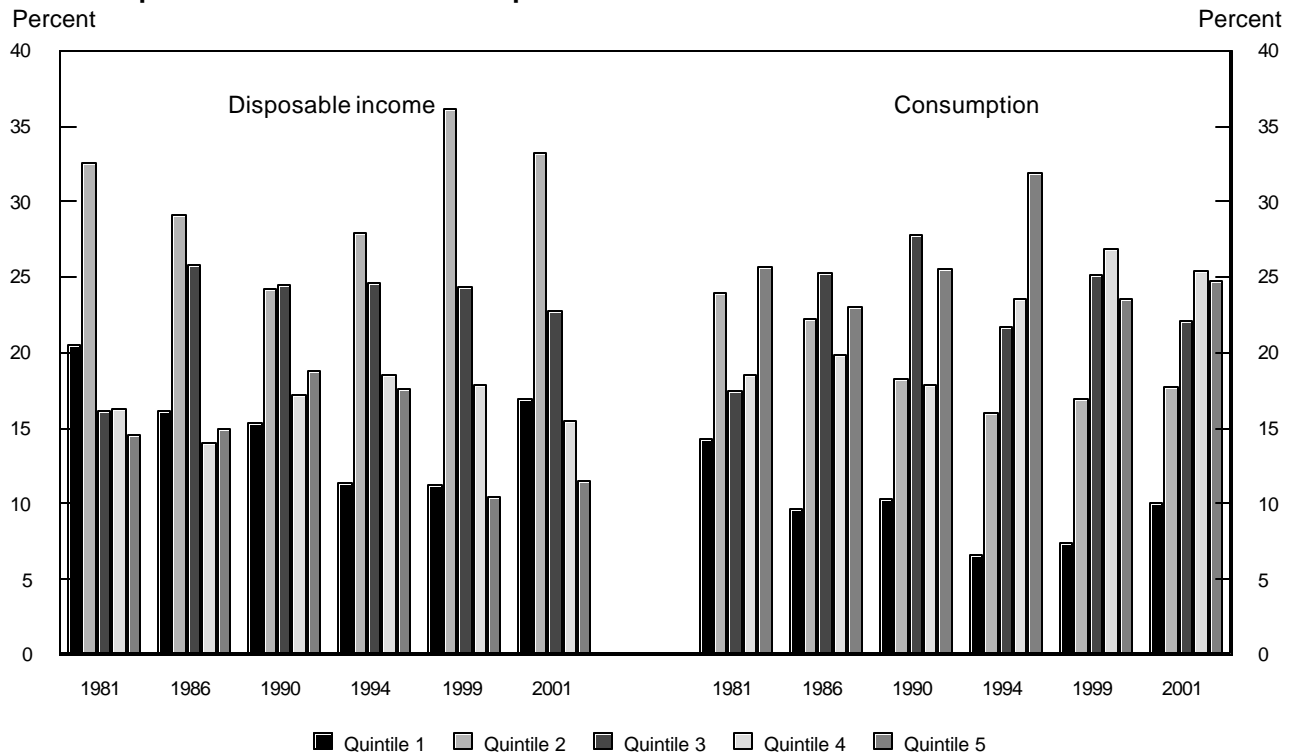
The increases in consumption (defined both as consumption with service flows and actual expenditures of money) between 1981 and 2001 were substantial for all households. But table 6 suggests that most of those increases are accounted for by the service flows and actual expenditures for three items: shelter, vehicles, and medical care. If these three items are left out of the

calculation of consumption expenditures, then the increase over 20 years for most family types varies from -5 percent to 5 percent. The only exceptions, again, are the single elderly families and single-mother families who enjoyed larger consumption increases even when expenditures do not include shelter, vehicles and medical care.

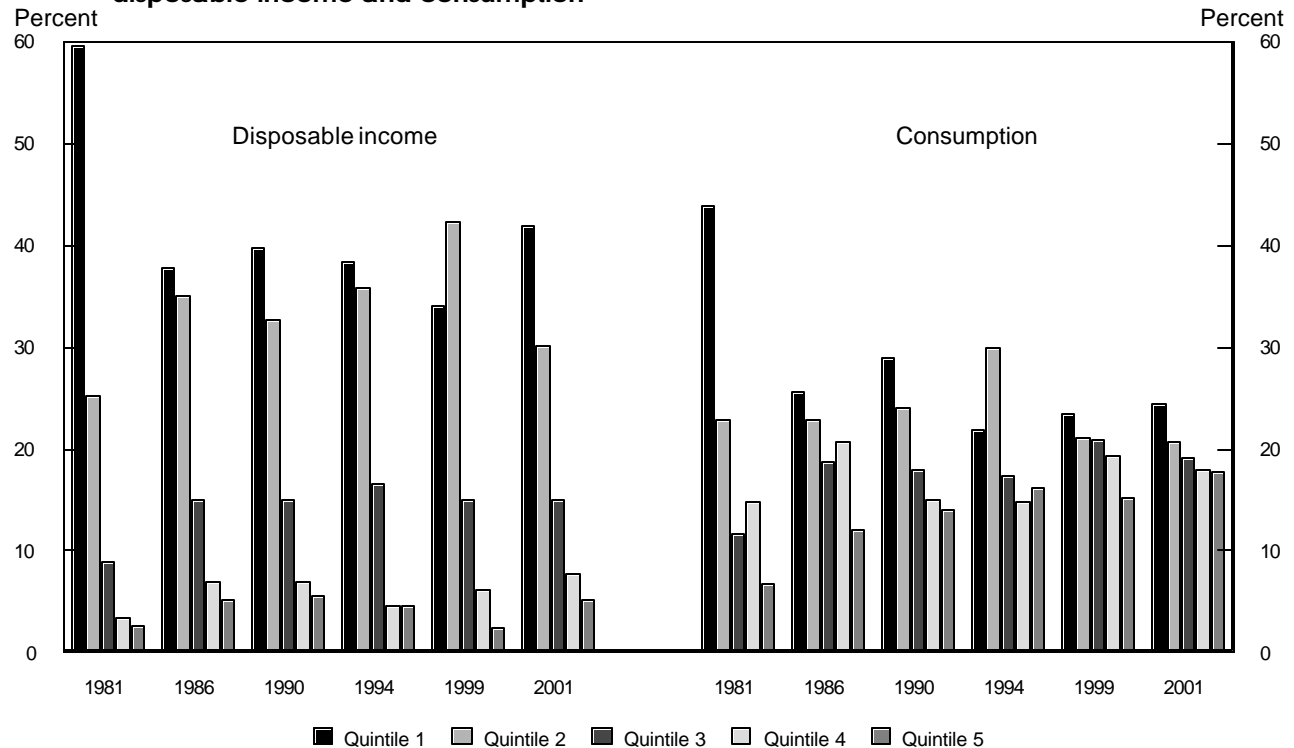
*Children.* Once again, we emphasize that the distributions we have created are zero-sum games. If one group improves its relative distribution over time, it is at the expense of another one. In this case, the improvements in the relative advantages adults have in their distribution of income, and the relative advantage the elderly have in consumption, has been at the expense of the third group, the children (chart 6). Not only is the distribution of income and consumption for the general population becoming more unequal since 1980 as shown in table 3, but the relative distribution of children's consumption is becoming even *more* unequal, as compared with the overall population. Children's overrepresentation in the bottom *income* quintile in 2001 is about the same as that in 1981 (and the other quintiles remained similar as well). But with respect to consumption, their overrepresentation at the bottom has grown (especially between 1981 and 1994), with some improvement from

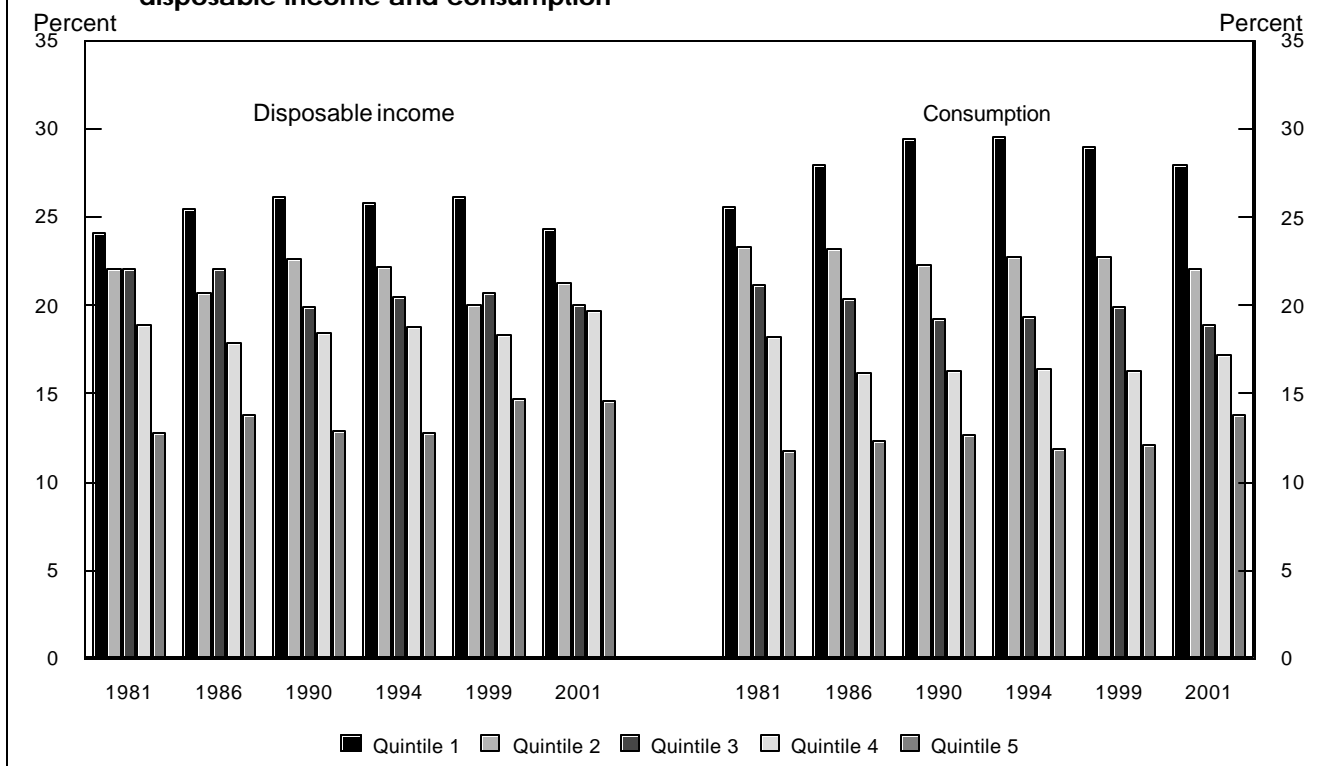


**Chart 4. Distribution of elderly married couples relative to the general population, using equivalent disposable income and consumption**



**Chart 5. Distribution of single elderly women relative to the general population, using equivalent disposable income and consumption**



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

1994 to 2001, while the share of children in the top quintile has grown (albeit more modestly). The fact that children are overrepresented in the bottom quintiles and under-represented in the top quintiles comes as no surprise. Other researchers have similar findings.<sup>32</sup> But the relative consumption changes we documented here are unprecedented. Unlike any other group in the general population, the relative deterioration of children's consumption distribution is larger than is the change in their income distribution over this 20-year period.<sup>33</sup>

When we disaggregate the relative distribution of consumption by type of family with children, it is clear why their consumption has deteriorated (chart 7). It is not attributed to children living in married two-parent families, because their situation has remained relatively unchanged (except for some growth in the top quintile share) since 1981. The deterioration in the distribution has occurred mainly to different levels of consumption for children in single-mother households (which have not changed very much) and children in "other" (nonmarried couple) families, and because of the increasing number of children in these "other" families. As chart 7 shows, the relative well-being of children in single-mother families deteriorated between 1981 and 1994, while the relative well-being of children in other families improved slightly. For both groups,

the distribution improved in the latter part of the 1990s. In addition, table 4 shows that the percent of persons living in these families increased during the 1981–2001 period, even though the percent of persons living in single-mother families has declined since 1994.<sup>34</sup> The share of married couples with children, who had modestly improving consumption distributions since 1981, decreased from 51 percent to 43 percent of all family types. Both the share 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 percent to 8.4 percent. And the consumption distribution worsened for this family type as well.

Defining consumption as consumption-expenditures (ignoring the service flows) reduces the relative inequality among children. Unlike the single-elderly family type, however, the relative distribution of consumption expenditures minus the expenditures on housing vehicles, and health care does not make a major difference. The value of housing flows, vehicles, and medical care are less important to the relative consumption distribution of households with children than for those of the elderly. No matter how consumption is defined, the relative consumption distribution of households with children is worse than any other group in the country.

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



## Discussion

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 shown in tables 5 and 6 that are higher than income in both 1981 and 2001, even if both are at relatively low levels in each period.

If relative consumption inequality is deteriorating for families with children, 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 cannot ameliorate the deteriorating relative consumption of households with children.<sup>35</sup>

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 1981–2001 period, however, suggest that successive cohorts of children are moving down the relative consumption distribution of the general population. Although the average well-being of children had begun to improve slightly in the later 1990s, chart 6 suggests that we are finding increases in the relative numbers of children in both the bottom and top quintiles, suggesting that this increase may be being unequally shared.

The distribution of home ownership is also contributing to the relative consumption positions of the old and the young. Housing has a large adjustment for the service flows, and a higher percentage of the elderly own their own homes than do families with children, especially single-parent families. In fact, consumption-expenditures for shelter, vehicles, and medical needs increased as a share of all consumption expenditure between 1981 and 2001 for every family type shown in table 5. In 1981, the share was 29 percent for couples with children and 35 percent for single elderly and nonelderly. By 2001, the share had increased to 39 percent for couples with children and 42 percent for single elderly and nonelderly. This suggests that the increasing consumption share of these three items may help explain the consumption patterns and trends described in this article.

INCOME AND CONSUMPTION are clearly different prisms with which to view well-being. In many cases, it does make a difference which prism is used. The prism of income makes adults look relatively more advantaged than the general population. The prism of consumption makes the elderly appear more advantaged than the general population. Therefore, the selection of a measure of well-being may have real consequences for how government policies are evaluated, especially for the elderly.

Most surprising, however, is that households with children are at a disadvantage, relative to the general population through both prisms. And households with children are the only group whose distribution of consumption was relatively more unequal than their distribution of disposable income throughout the 1981–2001 period studied. Comparison with the general population is a zero-sum game where households with children are relatively less well off, regardless of whether disposable income or consumption is used as the resource measure. □

## Notes

<sup>1</sup> A. Greenspan, “Job Insecurity and Technology,” in J.C. Fuhrer and J. Sneddon Little, eds., *Technology and Growth: Conference Series No. 40* (Federal Reserve Bank of Boston, 1996).

<sup>2</sup> D. Johnson, and T. M. Smeeding, “Measuring the Trends in Inequality of Individuals and Families: Income and Consumption,” manuscript (Bureau of Labor Statistics, 1998).

<sup>3</sup> F. Modigliani, and R. Brumberg, “Utility analysis and the consumption function: An interpretation of cross-section data,” in K. Kurihara, ed., *Post-Keynesian Economics* (New Brunswick, NJ, Rutgers University Press, 1954).

<sup>3</sup> M. Friedman, *A Theory of the Consumption Function* (Princeton, NJ, Princeton University Press, 1957).

<sup>4</sup> Johnson and Smeeding, “Measuring the Trends in Inequality of Individuals and Families, 1998; D. Cutler and L. Katz “Macroeconomic Performance and the Disadvantaged,” *Brookings Papers on Economic Activity* 2 (The Brookings Institution, Washington, DC, 1991); and *Supplemental Measures of Material Well-Being: Expenditures, Consumption, and Poverty, 1998 and 2001*, Series P-23, no. 201 (U.S. Census Bureau, September 2003).

<sup>5</sup> L. Karoly, “The Trend in Inequality Among Families, Individuals, and Workers in the United States: A Twenty Five Year Perspective,” in S. Danziger and P. Gottschalk, eds., *Uneven Tides Rising Inequality in America* (New York, Russell Sage Foundation, 1993); and P. Gottschalk and S. Danziger, “Income Mobility and Exits from Poverty of American Children,” in B. Bradbury, S. P. Jenkins, and J. Micklewright, eds., *The Dynamics of Child Poverty in Industrialised Countries* (Cambridge, MA, Cambridge University Press, 2001).

<sup>6</sup> Canberra Group, *Expert Group on Household Income Statistics, Final Report and Recommendations* (Ottawa, United Nations, 2001).

<sup>7</sup> D. Fullerton and D. L. Rogers, *Who Bears the Lifetime Tax Burden?* (Washington, DC, The Brookings Institution, 1993); and A. Deaton and C. Paxson, “Intertemporal Choice and Inequality,” *Journal of Political Economy*, 1994, vol. 102, no. 3, pp. 437–67.

<sup>8</sup> P. Gottschalk, and R. Moffitt, “The Growth of Earnings Instability in the U.S. Labor Market,” *Brookings Papers on Economic Activity*, 1994, vol. 2, pp. 217–72.

<sup>9</sup> D. Slesnick, “Consumption, Needs and Inequality,” *International Economic Review*, 1994, vol. 35, no. 3; Cutler and Katz, “Macroeconomic Performance and the Disadvantaged,” 1991; *Supplemental Measures of Material Well-Being: Expenditures, Consumption, and Poverty, 1998 and 2001*, Series P-23 no. 201 (U.S. Census Bureau, September 2003); J. Sabelhaus and U. Schneider, “Measuring the Distribution of Well-Being: Why Income and Consumption Give Different Answers?” *Applied Economics Quarterly (Konjunkturpolitik)*, vol. 2 (Berlin, Dunker and

Humbolt, 1997); D. Jorgenson, “Did We Lose the War on Poverty?” *Journal of Economic Perspectives* 1998, vol. 12, no.1, pp. 79–96; and D. Johnson and S. Shipp, “Trends in Inequality in the United States Using Consumption Expenditures: The U.S. from 1960–1993,” *Review of Income and Wealth*, 1997, vol. 43, no. 2.

<sup>10</sup> See *Supplemental Measures of Material Well-Being* (U.S. Bureau of the Census, 2003).

<sup>11</sup> V. K. Barooh and P. McGregor, “Is Low Spending or Low Income a Better Indicator of Whether or Not a Household is Poor: Some Results From the 1985 Family Expenditure Survey,” *Journal of Social Policy*, 1992 vol. 21, no. 1, pp. 53–69.

<sup>12</sup> C. Citro and R. Michael, eds., *Measuring Poverty: A New Approach* (Washington, DC, National Academy Press, 1995).

<sup>13</sup> Johnson and Smeeding, “Measuring the Trends in Inequality of Individuals and Families, 1998.

<sup>14</sup> On the other hand, because the survey is designed to measure consumption, expenditures, and not income, the income data in consumption surveys may be of lower quality than the expenditure data. We, therefore, compare our CE income data to CPS income data (table 3).

<sup>15</sup> *Consumer Expenditure Survey Anthology*, Report 967 (Bureau of Labor Statistics, September 2003).

<sup>16</sup> A consumer unit comprises members of a household who are related or share at least 2 out of 3 major expenditures—housing, food, and other living expenses. A person living alone is a single consumer unit. This article uses the terms consumer unit and households interchangeably. However, 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.

<sup>17</sup> S. Danziger, and M. Taussig, “The Income Unit and the Anatomy of Income Distribution,” *Review of Income and Wealth*, 1979, vol. 25, no. 4, pp. 365–75.

<sup>18</sup> This adjustment assumes that resources within the household are distributed equally.

<sup>19</sup> B. Buhmann, L. Rainwater, G. Schmauss, and T. M. Smeeding, “Equivalence Scales, Well-being, Inequality, and Poverty: Sensitivity Estimates across Ten Countries Using the Luxembourg Income Study Database,” *Review of Income and Wealth*, 1998, vol. 34, pp. 115–42.

<sup>20</sup> P. Ruggles, *Drawing the Line* (Washington, DC, The Urban Institute Press, 1990).

<sup>21</sup> A. Atkinson, L. Rainwater, and T. M. Smeeding “Income Distribution in OECD Countries: Evidence from the Luxembourg Income Study (LIS),” *Social Policy Studies* vol. 18 (Paris, Organisation for Economic Co-operation and Development (OECD), October 1995).

<sup>22</sup> D. Johnson and S. Shipp, "Inequality and the Business Cycle: A Consumption Viewpoint," *Empirical Economics*, vol. 24, issue 1, 1999.

<sup>23</sup> This is similar to results in Edward Gramlich, Richard Kasten, and Frank Sammartino, *The American Economic Review*, Papers and Proceedings of the Hundred and First Annual Meeting of the American Economic Association (May, 1989), vol. 79, no. 2 (1993) pp. 315–19; and D. Krueger, and F. Perri, "Does Income Inequality Lead to Consumption Inequality? Evidence and Theory," NBER working paper no. 9202 (National Bureau of Economic Research, 2002).

<sup>24</sup> Adults include all nonelderly persons, those who were never parents, were once parents (but children have grown and left the house), and are parents (with children in residence).

<sup>25</sup> D. Johnson, and S. Shipp, "Trends in Inequality in the United States Using Consumption Expenditures," 1997.

<sup>26</sup> The equivalence scale used has a substantial effect on the relative distributions of children and the elderly within each year. However, the relationship between these two groups in 2001 and over time is not affected by the choice of scale.

<sup>27</sup> S. Danziger, J. van der Gaag, E. Smolensky, and M. Taussig, "Income Transfers and the Economic Status of the Elderly," *IRP Discussion Paper* 695–82 (University of Wisconsin, 1982).

<sup>28</sup> Calculated using the CE data sample in this article.

<sup>29</sup> On the net benefits of health spending, see T. M. Smeeding, and D. Freund, "The Future Costs of Health Care in an Aging Society: Is the Glass Half Full or Half Empty," unpublished manuscript (Center for Policy Research, Syracuse University, February 2002). The percent of older single women living in an owned home also increased

dramatically during these 20 years, from 55 percent in 1981 to 73 percent in 2001.

<sup>30</sup> T. M. Smeeding, "Income Maintenance in Old Age: Current Status and Future Prospects for Rich Countries," *Genus* LIX, vol. 1, April–June 2003, pp. 51–83.

<sup>31</sup> L. Rainwater and T. M. Smeeding, *Poor Kids in a Rich Country: America's Children in Comparative Perspective* (New York, Russell Sage Foundation, 2004).

<sup>32</sup> These distributions only demonstrate the relative position of children with respect to the overall population. They cannot be used to suggest that consumption inequality for children is higher than that using income. In fact, using the Gini coefficient for children, the Gini for income is still higher than the Gini using consumption. Still, chart 7 suggests that the fraction of children in both the bottom and the top quintiles of consumption are increasing over this period.

<sup>33</sup> Children living with their mother and another adult are included in the "other families with children" category. In 1981, 12.7 percent of children lived in single-mother families and 7.6 percent lived in other families. In 2001, the percent of children living in single-mother families remained at 13 percent, while 14.5 percent lived in other families.

<sup>34</sup> J. Fisher and D. Johnson, "Consumption Mobility in the United States: Evidence from Two Panel Data Sets," Paper presented at the Conference on "Economic Mobility in America and Other Advanced Countries" (Jerome Levy Economics Institute of Bard College, October 2002); and Gottschalk and Danziger, "Income Mobility and Exits from Poverty of American Children," 2001.

## 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 home ownership 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 home ownership, and cars and trucks. For the value of home ownership, 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 home ownership cost in place of the amount used in the definition of consumption-expenditures.

To estimate the service flows for cars and trucks, we follow a process similar to that used in the studies of Danziger and others and Slesnick, estimating the service flow of durable goods by the change in the value of the durable.<sup>1</sup> Using the purchase price,  $P_0$ , and the age,  $s$ , of the vehicle, the service flow,  $S_t$ , is given by:

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

where  $r$  = the interest rate

$d$  = the depreciation rate

and we assume that  $r = .05$  and  $d = .1$

The CE Survey collects data on the ownership of vehicles, including the age and model type, which is classified into 800 categories. Although 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). Because 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. Also, because 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 series for the four expenditure quarters for each consumer unit.<sup>2</sup>

## Notes to the Appendix

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<sup>1</sup> S. Danziger, J. van der Gaag, E. Smolensky, and M. Taussig, "Income Transfers and the Economic Status of the Elderly," *IRP Discussion Paper* 695-82 (University of Wisconsin, 1982).

<sup>2</sup> See Kenneth J. Stewart and Stephen B. Reed, "CPI research series using current methods, 1978-98," *Monthly Labor Review*, June 1999, pp. 29-38; and updates at: <http://www.bls.gov/cpi/cpiurstx.htm>.