Changes in the Consumption, Income, and Well-Being of Single Mother Headed Families*

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ABSTRACT

This paper investigates how well-being has changed over time for those at the bottom of the distributions of income and consumption. We focus on single mother headed families, a group that has been the target of recent changes in tax and welfare policy. We summarize the evidence that measured income changes sharply differ from consumption changes for single mothers in the bottom deciles. We then further investigate changes in well-being by examining disaggregated consumption, time use, and health insurance coverage. Increases in spending on housing account for much of the increase in consumption in the bottom quintile, while increases in transportation spending account for much of the rise in the second quintile. Two datasets indicate modest improvement in housing quality, but the evidence is less strong at the very bottom. Although expenditures on food away from home and child care also rise, these categories are small, on average. The consumption of non-market time for those in the bottom half of the consumption distribution falls sharply indicating a loss in utility for those families if non-market time is valued above $3/hour. Evidence from time-use surveys suggests that the lost non-market time reflects a shift away from shopping, food production, and housework.

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I. Introduction

There is a long-standing debate over how the material well-being of the disadvantaged has changed over time in the U.S. This debate has intensified in light of notable increases in income inequality in the 1970s and 1980s and, during the 1990s, dramatic changes in welfare and tax policies that target poor families, including expansions in the Earned Income Tax Credit (EITC), welfare waivers, and the passage of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA). While some championed these changes as catalysts for self-sufficiency, others predicted that reforms would lead to severe deprivation.[1] A large body of research has shown that these changes were associated with a dramatic fall in welfare receipt and increases in work and earnings.[2] However, there is little consensus on how the material well-being of these families has changed during this period, particularly for the most disadvantaged families such as those at the bottom of the income or consumption distribution.

This paper analyzes changes in material well-being between 1993 and 2003 for single mother headed families, a group that has been the target of these recent changes in tax and welfare policy. For these families, we analyze changes in income and total consumption, as well as changes in disaggregated consumption, time use, and health insurance coverage. The emphasis of this paper will be on determining the underlying trends in well-being for disadvantaged families during this dynamic period, rather than attempting to separate out the causal effects of individual policies or macroeconomic conditions.

We begin by briefly documenting the recent trends in income and consumption for these

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[1]For example, Daniel Patrick Moynihan predicted that welfare reform would lead to "children sleeping on grates, picked up in the morning frozen..." (Los Angeles Times, October 31, 1995).
[2]See Blank (2002) and Grogger and Karoly (2005) for reviews of this literature. See Moffitt (2003) or Moffitt and Ver Ploeg (2001) for background and methods.

families. For income, the trends differ remarkably for different deciles of single mothers. For example, between 1993-1995 and 1997-2000, reported income in the bottom decile falls by about 14 percent, while reported income rises by more than 15 percent in the fourth and fifth deciles. The trends for reported consumption, on the other hand, tell a very different story; these data show neither the sharp decline at low percentiles nor the large increases at the remaining percentiles in the bottom half of the distribution of single mothers. Rather, we find a modest (about 7 to 12 percent) rise in consumption throughout the entire distribution. While we do not examine the reasons for the sharp differences in income and consumption changes in this paper, we do argue that consumption is a better measure of material well-being for those at the bottom of the distribution.

We then further analyze how well-being has changed in recent years by looking at components of consumption, time use, and health insurance coverage, showing that an analysis of changes in total consumption alone may result in misleading conclusions about changes in well-being. Patterns for components of consumption indicate that increases in spending on housing account for much of the increase in consumption in the bottom quintile, while increases in transportation spending account for much the rise in the second quintile. Although spending on food away from home and child care also rise, these categories are too small, on average, to have an important effect on changes in total consumption. We present evidence that increases in housing consumption are associated with modestly improved housing conditions. The consumption of non-market time for those near the bottom of the consumption distribution falls as time spent at market work grows significantly. Evidence from time use surveys suggests that this change reflects a shift from shopping, food production and house work to market work. The

significant drop in non-market time suggests that utility has fallen for those in the bottom half of the consumption distribution if this non-market time is valued at more than $3/hour. Data on health insurance shows that private coverage increases, but a decline in public health insurance results in an increase in the fraction uninsured for those in the bottom three deciles of the consumption distribution.

In this study we emphasize the importance of examining change in well-being at different parts of the distributions of income and consumption, particularly the very bottom. Trends in mean outcomes may miss important differences across parts of the distribution, and policy changes are likely to have very different effects at different points in the distribution. While it is well known that welfare and tax reform were associated with increased work and decreased receipt of welfare, it is less known that these changes are most pronounced at the bottom of the income and consumption distribution.[3] For example, during the 1990s, reported receipt of cash welfare or Food Stamps drops by more than 20 percentage points in four of the bottom five deciles of the income distribution for single mothers, while hours worked more than doubles for three of these five deciles. Changes in welfare receipt and hours worked are much less evident in the top half of the income and consumption distributions (Meyer and Sullivan, 2006a) .

The paper is organized as follows. Section II discusses income, consumption, and other measures of well-being. In Section III we describe the data and samples used in the analyses. Section IV presents the basic trends for both income and consumption for different deciles of

[3]Bitler, Gelbach, and Hoynes (2006) show, using experimental data, that mean impacts miss much of the effect of welfare reforms, even for narrowly defined groups of single mothers.

single mother families. In Section V we examine changes in the components of consumption and measures of non-market time and time use. We also examine health insurance coverage to provide further evidence on changes in well-being. In Section VI we discuss the robustness of our results to alternative samples and variable definitions, and in Section VII we conclude.

II. Income and Consumption as Measures of Well-Being

Studies of material well-being in the U.S. often focus on income or, to a lesser extent, consumption. We summarize here some earlier research that has evaluated the merits of income and consumption as measures of well-being for those with few resources (Meyer and Sullivan, 2003). This research has shown that other measures of material hardship or adverse family outcomes are more severe for those with low consumption than for those with low income, indicating that consumption does a better job of capturing well-being for disadvantaged families (Meyer and Sullivan, 2003).[4] In addition, conceptual arguments as to whether income or consumption is a better measure of the material well-being of the poor almost always favor consumption. For example, consumption captures permanent income, reflects the insurance value of government programs and credit markets, better accommodates illegal activity and price changes, and is more likely to reflect private and government transfers.

Reporting arguments are more evenly split. Income data are easier to collect and therefore are often collected for larger samples. For most people, income is easier to report given administrative reporting and a small number of sources of income. However, for analyses of families with few resources these arguments are less valid. These families tend to have many

[4]For further discussion see Cutler and Katz (1991), Slesnick (1993), or Poterba (1991).

income sources (such as transfers from family, friends, fathers of children, and boyfriends, multiple jobs, and multiple government transfer programs; Edin and Lein 1997), but a substantial fraction of their consumption spending is on food and housing. Income appears to be substantially under-reported, especially for categories of income important for those with few resources. Weighted micro-data from commonly used household surveys, when compared to administrative aggregates, show that government transfers and other income components are severely understated (Roemer, 2000), and this understating has increased in recent years (Meyer, Mok, and Sullivan, 2006). While faulty weighting could be partly responsible, comparisons of survey micro-data to administrative micro-data for the same individuals also indicate severe under-reporting of government transfers in survey data (Marquis and Moore, 1990). Over the past decade, the fraction of single mothers in national surveys that report having no earnings and no cash welfare has increased noticeably. This puzzling trend may indicate increased deprivation, greater dependence on other income sources, and/or increased under-reporting of transfer income. In either of the latter two cases, consumption may provide a more consistent measure of well-being than income.

There is also some under-reporting of expenditure data from the CE Survey that is used to calculate consumption (Garner et al. 2006). However, reported expenditures exceed reported income at low percentiles, a fact which suggests that the under-reporting at the bottom is less severe for expenditures than income (Meyer and Sullivan 2003). Attanasio et al. (2006), Deaton (2005) and others have emphasized that the discrepancy between aggregates from CE Integrated data (Diary and Interview) and Personal Consumption Expenditure (PCE) data from the National Income and Product Accounts (NIPA) has grown in recent years. However, the PCE numbers

cover a different population than we examine, are defined differently from the CE, and are the product of a great deal of estimation and imputation that is subject to error. Moreover, Meyer and Sullivan (2006b) show that ratios to PCE aggregates of components of consumption that are particularly important for those with few resources, such as food at home and rent, are much closer to one and do not decline nearly as much over time as do the ratios for other components.

Unlike income, consumption data can be disaggregated into components that are informative about changes in material well-being that might be missed by changes in the aggregate.[5] For example, changes in transportation and child care spending can shed light on the degree to which total consumption changes are the result of increased work expenses. Similarly, a shift from food at home to food away from home may result in greater food spending even if food consumption does not increase. A closer look at housing consumption can provide information on whether increases in rent are associated with increases in housing quality. The well-documented shift towards increased employment for single mothers may have other important effects on well-being for this group. For example, this shift resulted in significant decreases in non-market time. Also, while employment may provide greater access to private health insurance, increased earnings may result in a loss of eligibility for public health insurance. Analyses of consumption components, time-use, and health insurance will provide evidence on whether recent increases in consumption among single mothers reflect improved well-being.[6]

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[5]Another advantage of looking at the components of consumption is that we can discern, in part, whether changes in total consumption reflect changes in the relative prices of different components. See Section VI.

[6] Other studies of changes in the well-being of the poor have looked at different outcomes including material hardship (Sullivan, Turner, and Danziger 2006, Jencks et. al., 2004), health insurance coverage (Kaestner and Kaushal, 2003; Bitler et. al., 2005), food pantry use (Winship and Jencks 2004), or crime (Jencks et. al., 2004).

III. Data

Our analyses of trends in well-being for the disadvantaged draw on income and consumption data from the Consumer Expenditure (CE) Interview Survey from 1993 to 2003. In addition, we will present recent trends for housing characteristics from both the CE Survey and the American Housing Survey (AHS), and data on time use from the 1992-1994 National Time Use Survey (NTUS) and the 2003 American Time Use Survey (ATUS). For more information on these surveys see the Data Appendix.

Although we examine trends for a number of different samples, the results that follow focus on single mother families for the period between 1993 and 2003. We concentrate on this sample for several reasons. First, selecting the sample based on demographic characteristics is preferable to restricting attention to families that report limited resources, because the latter approach will cause the sample to depend too much on the specific way income and/or consumption is measured in each dataset. In addition, it is easier to adjust for differences in family size within a demographic group. In fact, equivalence scale adjustments have little impact on our results for single mothers. Second, this restriction allows us to concentrate on families with children that are particularly disadvantaged. Single mother families account for about 60 percent of all families with children living in poverty in the U.S. Third, this group was the primary target of tax and welfare reforms during the 1990s.

Our main sample consists of families (consumer units (CU) in the CE Survey) headed by a single woman between the ages of 18 and 54 who lives with her own children only and at least one of these children is under the age of 18. This excludes single mothers living with other related or unrelated adults unless the adult is a child of the female head. We also restrict our

sample to include only complete income reporters—excluding those with missing data for primary sources of income (about 17 percent of lone single mothers). We use sample weights from each survey so that all results reported in the following section are representative of the U.S. population of primary families headed by single mothers. We discuss changes in the composition of the single mother population and alternative definitions of single mothers in Section VI.

To simplify the analysis of changes in well-being, we group the data into three separate periods: 1993-1995, 1997-2000, and 2001-2003. The first period begins after the end of the recession in the early 1990s, and ends prior to the passage of PRWORA legislation in 1996. The second period starts after PRWORA was implemented in most states. The final period includes data for two years after the recession of 2001.[7] Changes between the first two periods are informative about the immediate effects of welfare reform, and are less likely to be influenced by any changes in the characteristics of the pool of single mothers, which changes slowly over time. Changes between the first and third periods are informative about medium term effects, but are more likely to be influenced by any changes in the pool of single mothers. Stacking the quarterly surveys yields 3,098 family-quarter observations in the first period, 4,483 in the second period, and 4,137 in the third period. Because we have multiple observations for the same family, we correct all standard errors for within household dependence.

We measure income as after-tax money income plus Food Stamps for all members of the family. See the Data Appendix for more details. To construct a consumption measure, we

[7]Originally, we selected these periods to facilitate comparisons with previous research. Our analyses are not sensitive to the precise specification of these periods.

subtract from total expenditures spending on individuals or entities outside the family, such as charitable contributions and spending on gifts to non-family members. Also, consumption does not include spending that is better interpreted as an investment such as spending on education and health care and outlays for retirement including pensions and social security. Finally, reported expenditures on durables tend to be lumpy because the entire cost of new durable goods is included in current expenditures. To smooth these lumpy durable expenditures, we convert reported housing and vehicle spending to service flow equivalents. As explained in the Data Appendix, vehicle and housing flows are calculated using values imputed by regression for some observations (when vehicle purchase price is missing and when public or subsidized housing is received). To these imputed values, we randomly add residuals in order to fit the distribution of consumption better than would be the case with just the regression predicted mean. Rather than using a single draw from the residual distribution which would add additional randomness and be more difficult to reproduce, we take 100 draws from the distribution, replicating the sample accordingly. We then adjust the standard errors.

All income and consumption measures discussed below are expressed in 2005 dollars using the CPI-U. In addition, all measures of income, consumption, and number of rooms reported below are adjusted for differences in family size using the equivalence scale recommended by Citro and Michael (1995): (number of adults + number of children*0.7)$^{0.7}$. We standardize this scale to a family with one adult and two children by multiplying by 1.8456.

IV. Changes in Income and Total Consumption

A few recent studies examine patterns for income or consumption during the 1990s for

single mothers. Using data from the CPS, both Murray and Primus (2005) and Blank and Schoeni (2003) show that income falls sharply at the very bottom during the latter part of the 1990s. Blank and Schoeni state that income at the very bottom may be reported with substantial error and they are wary of conclusions based on observed movements in the bottom few percentiles of the distribution. Rather, they emphasize changes in pre-tax money income for the remaining part of the bottom half of the distribution of single mothers, noting that "strikingly, many poor families have increases in their income of around 30 percent." Meyer and Sullivan (2004) find that the level of total consumption for single mothers increases in real terms during the 1990s. However, because that earlier study does not examine consumption below the 15th percentile, the results do not provide information on single mothers at the very bottom of the consumption distribution.

In this section we extend this literature by exploring changes in consumption throughout the distribution, and highlighting how these changes differ from those for income. Table 1 shows how average income and consumption have changed for each decile of the distribution. For those in the bottom consumption decile (Column 1), average consumption increases by 7.4 percent between 1993-1995 and 1997-2000, and we can reject the hypothesis that consumption falls for this group. By contrast, average income in the bottom income decile falls by 13.8 percent (Column 4). The difference between these changes–21.3 percentage points (Column 7)–is statistically significant. At higher deciles, increases in income exceed increases in consumption, and we can reject that the income and consumption changes are the same in the fourth, fifth, and sixth deciles.

It is important to note that the trends in Columns 1 and 4, reflect changes in various

deciles when the observations are sorted by the material well-being measure in question. Thus, for example, a family at the 10th percentile of income is not necessarily the same family at the 10th percentile of consumption. To verify that the differences at the bottom are not due to some peculiar sorting of individuals over time we also examine the trends for average income by decile of consumption (Column 2) and vice versa (Column 3). These results indicate that reported income and consumption move in opposite directions for those in the bottom decile between 1993-1995 and 1997-2000. The difference in the changes for average income and average consumption in the bottom consumption decile is 12.1 percentage points, while the difference for those in the bottom income decile is 17.9 percentage points, but neither of these is statistically significant. By contrast, no matter how the observations are sorted, there is little evidence that the trends for income and consumption differ significantly in the top four deciles between 1993-1995 and 1997-2000. Differences between the trends for income and consumption are also evident for the period from 1993-1995 to 2001-2003 (Panel B). Over this longer period we again see that consumption increases while income falls in the bottom deciles of the respective distributions. Also, at higher deciles increases in income exceed increases in consumption.

In Meyer and Sullivan (2006a) we confirm that income changes since 1993 for single mother headed families in the Current Population Survey (CPS) are remarkably similar to those from the CE Survey. Both show the drop in the bottom decile and substantial increases centered around the fourth decile. We should also note that the sharp differences between recent trends for income and consumption are unique to single mothers. We do not see this pattern in samples that exclude single mothers. See Section VI for discussion of income and consumption changes

for other samples and methods.

Although we do not address the reasons for the differences between income and consumption in this paper, we explore some potential explanations in Meyer and Sullivan (2006a). We find that in both the CE and CPS changing demographics can explain much of the rise in income in the CE and CPS centered around the 4th decile. However, the fall in income at the bottom is unaffected by demographic controls as is the consumption pattern. The sharp differences between income and consumption patterns at the bottom remains a puzzle. Saving and borrowing is one potential explanation for the different pattern at the very bottom, but these disadvantaged families tend to have very few assets and debts (Sullivan, 2006). Changes in under-reporting is another potential explanation for these differences. As discussed in Section II, there is evidence that under-reporting of government transfers has increased in major household surveys in recent years. These and other potential explanations are topics for future research.

V. Disaggregated Consumption and Non-market Time

As explained in Section II, changes in total consumption may mask important changes in the components of consumption. By examining these components and related data we can determine the degree to which total consumption changes are the result of increased work expenses, or the extent to which increases in rent are accompanied by increases in housing quality. In addition, data on changes in work hours and time use together with changes in consumption can provide evidence on whether recent increases in consumption among single mothers reflect improved well-being.

Table 2 decomposes consumption, showing the overall change in consumption for each

decile, as well as the contribution to the overall change from various components of consumption. This decomposition weights the percentage change in a given consumption category by its average share over the two periods. We see that food falls in the bottom decile, but total consumption does not fall because housing goes up sharply. Overall, housing pulls total consumption up sharply in the bottom two deciles, while increases in transportation account for much of the increase in total consumption for deciles three and four, and to a lesser extent for higher deciles. Many of the changes for these components are consistent with the trend toward increased work for single mothers during this time. Food at home falls while transportation spending increases for every decile of the consumption distribution.[8] Over this same period, food away from home and child expenses also increase, but these components account for only a small fraction of total consumption.[9] In the bottom five deciles, spending on food away from home averages about 2.7 percent of consumption and child care averages about 1.6 percent of consumption. Thus, even substantial percentage increases in these categories of spending do not have a very important effect on changes in total consumption.

This decomposition demonstrates that an analysis of changes in total consumption alone may result in misleading conclusions about changes in well-being. For example, for the bottom

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[8]Food spending also falls at the bottom for other groups in the CE Survey, so spending on food at home for single mothers does not fall in relative terms. Similarly, studies using CE Diary data (DeLeire and Levy, 2005) have shown that food consumption for low-educated single mothers does not fall relative to comparison groups during this period. Other data sets such as the PSID show that food consumption changes very little during this period at all points in the distribution (Meyer and Sullivan, 2006a).

[9]DeLeire and Levy (2005) also report a shift from food at home to food away from home among single mothers during the 1990s. One of the reasons child care expenses do not account for a large share of the level or changes in consumption is that child care is often provided informally or received as an in-kind transfer either from friends and family, through PRWORA or through other government subsidies or provision.

five deciles, transportation accounts for about 45 percent (3.6 percentage points) of the change in total consumption, but this increase may not reflect improvements in material well-being if a substantial share of this increase in transportation spending is work related. The difference in average transportation shares between those with substantial work hours (more than 500 hours/year) and those with lower hours or who do not work at all is about 3.6 percentage points for the bottom five deciles. Given that the fraction with substantial work hours increased by about 25 percentage points in the bottom half of the consumption distribution after welfare reform, about 0.9 percentage points, or 11 percent, of the average change in total consumption for the bottom five deciles may be due to increased work.[10]

This decomposition also indicates the importance of increases in housing consumption, the largest category of consumption for single mothers, accounting for about half of total consumption (Table 2). To analyze changes in housing consumption more closely we examine a number of characteristics of housing spending from the CE Survey (Table 3). A large share of single mothers live in public or subsidized housing, and this fraction has increased in recent years, particularly at the bottom of the consumption distribution, as can been seen in Panel A. The increase in housing consumption in the bottom two deciles is not driven by increases in home ownership. Rates of home ownership are very low at the bottom, though they have risen over time as reported in Panel B. As shown in Panels C and D, much of the increase in housing consumption in the bottom two deciles reflects higher rent. The rental equivalent value for those

[10]The change in total consumption that results from increased work is slightly larger because there are other work expenses included in categories such as clothing, child care, and food away from home. However, these components are much smaller than transportation or change little, as shown in Table 2.

in public or subsidized housing increased by 14.7 percent in the bottom decile and by 22.1 percent in the second decile between 1993-1995 and 1997-2000 (Panel C). Because we examine an imputed rental value based on the characteristics of the living unit (see Data Appendix) rather than reported out of pocket rent for these families, this increase does not result from a decrease in rent subsidies that may occur as earnings increase. For those in private housing (Panel D) there is a significant increase in out of pocket rent in the bottom two consumption deciles.

Increases in housing spending may not indicate improved living conditions if greater out-of-pocket spending on housing is not accompanied by increases in housing quality. To discern whether this increase in rents reflects improved living quarters we turn to data on housing characteristics from two datasets. The CE Survey provides data on the number of rooms, the number of bedrooms, air conditioning, and the presence of major appliances. The trends for these characteristics are presented separately by decile of the consumption distribution in Table 4. Between 1993-1995 and 1997-2000 the number of rooms and number of bedrooms (adjusted for family size) fall somewhat for those in the bottom decile, and then rises slightly after 2000. However, none of these changes are significant. For the bottom decile, between the first two periods we see modest but insignificant increases in the number of bathrooms as well as the likelihood of having air conditioning, a washing machine, or a dryer. We do find significant improvements between 1993-1995 and 2000-2003 in the bottom decile for the likelihood of having air conditioning and a dryer. Overall, the evidence from the CE Survey suggests that the quality of housing for those in the bottom half of the consumption distribution has improved modestly.

Additional evidence on housing quality is available in the American Housing Survey (AHS), which also has the advantage of a larger sample size than the CE Survey. Although we cannot examine housing conditions in the AHS at different points of the consumption distribution, we can examine these characteristics for the worst off single mothers by looking at those without a high school degree. These low-educated single mothers are over-represented in the bottom of the consumption distribution in the CE Survey; more than three-quarters are located in the bottom half of the distribution. The trends from the AHS are summarized in Table 5. As with those from the CE Survey, the point estimates suggest a slight improvement in housing conditions, although many of the changes are not statistically significant. Between 1993-1995 and 1997-1999, we see significant increases in the fraction of units with a clothes dryer or air conditioning. Looking at outcomes that we expect to affect disproportionately the worst off among this already disadvantaged group of single mothers, we see declines in the frequency of inoperative toilets and external leaks, and the latter decrease is significant. Improvements are somewhat more noticeable when comparing the 1993-1995 and 2001-2003 periods. Thus, while housing spending does rise, it appears that single mothers with low consumption are receiving more or better housing on average for their money. Overall, the evidence from disaggregated consumption, particularly transportation and housing, suggests that the increases in well-being are only slightly smaller than that suggested by aggregate consumption.[11]

[11] Research that considers different outcome measures suggests that material well-being among the disadvantaged has changed little or improved slightly in recent years. Sullivan, Turner, and Danziger (2006) show that the prevalence of material hardships falls insignificantly between 1997 and 2003 for a sample of single mothers originally on welfare. Jencks et. al. (2004) find evidence of improved well-being during the 1990s for children in the bottom income quintile

While the trends discussed above indicate that consumption rises somewhat for single mothers during the 1990s, non-market time falls sharply for this group, especially for those in the low deciles of the distributions of income and consumption. How one evaluates this loss of non-market time is crucial to any utility-based analysis of the effects of welfare reform on material well-being. To evaluate recent changes in well-being for single mothers, we calculate the ratio of changes in mean annual consumption to changes in average hours worked per year. While well-being reflects disaggregated consumption and time use, as well as other indicators, for simplicity let utility of single mothers be U(C,L), where C is consumption of goods and L is non-market time. A representative single mother's consumption bundle goes from (C_0, L_0) before welfare reform to (C_1, L_1) after, with $C_1 > C_0$, but $L_1 < L_0$. We calculate $w^* = (C_1 - C_0)/(L_0 - L_1)$. Then w^* is the per hour valuation of the loss in non-market time needed to make the representative single mother indifferent about the consumption bundle change. If the mother values non-market time greater than w^* she is worse off after welfare reform.[12]

These non-market time values are reported in Table 6 for each of the bottom five deciles of the consumption and income distributions. These results indicate that if single mothers value non-market time on the margin at a substantial fraction of the market wage, those in the bottom

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based on outcomes such as housing conditions, crowded housing, crime, and doctor visits. Rates of food pantry use and gifts of food from others reported in Winship and Jencks (2004) do not suggest that there has been increased hardship among the poor. However, without data on any changes in the supply of assistance, this evidence is not conclusive.

[12]More precisely, $U(C_1, L_1)$ must be less than $U(C_0, L_0)$ if $(\partial U/\partial L)/(\partial U/\partial C)$ evaluated at (C_0, L_0) is greater than w^*. This condition is sufficient, but not necessary for a single mother to be worse off after welfare reform. Since the marginal rate of substitution rises as L declines, even if $(\partial U/\partial L)/(\partial U/\partial C)$ is slightly below w^* at (C_0, L_0) the discrete change may make the single mother worse off. Similarly, $(\partial U/\partial L)/(\partial U/\partial C)$ evaluated at (C_1, L_1) being greater than w^* is a necessary condition for a representative single mother to be worse off after welfare reform.

half of the distribution are likely to be worse off after welfare reform than before. For example, a single mother in the bottom decile of the consumption distribution would have to value her non-market time at $1.82 per hour in order to be indifferent between her bundle of consumption and non-market time in 1993-1995 as compared to her bundle of consumption and non-market time in 1997-2000. The interpretation of these results depends on how one values non-market time. On the one hand, if this time is valued near the market wage then these results suggest many single mothers are worse off. On the other hand, if little value is assigned to the non-market time of single mothers (as implicitly was the case in some political debates over welfare reform which emphasized the importance of work; see Moffitt 2006), recent consumption trends suggest that single mothers are better off.

To explore further the nature of the reduction in non-market time among single mothers, we examine data on time use from two national surveys. The patterns for hours per week spent in market work, non-market work, and non-work time for single mothers and comparison groups (single women without children, married mothers) are presented in Table 7.[13] These data indicate that the increase in time spent in market work has been associated with declines in non-market work rather than declines in non-work time. There is evidence of less time spent in food preparation, housework, and shopping. The drop in time spent shopping and obtaining goods and services is statistically significant both in absolute terms and relative to married women or single childless women. This decline in shopping time raises the question as to whether

[13]The 1992-1994 NTUS does not include income or consumption data, so we cannot examine time use patterns for those at the bottom of the distribution. Also, because of small sample sizes, we do not restrict the sample to low educated single mothers. Our time use categories follow Aguiar and Hurst (forthcoming).

increases in expenditures overstate changes in true consumption, because, for example, single mothers spend less time shopping for bargains. Recent research has shown that market expenditures can be a poor proxy for consumption if individuals substitute market expenditures for time (Aguiar and Hurst, 2005).

The increase in market work for single mothers has also increased their access to private health insurance. As we see in Table 8, the fraction of individuals in single mother families who are covered by private health insurance increases by between 7 and 13 percentage points for those in the bottom four consumption deciles from 1993-1995 to 1997-2000. However, the decline in Medicaid coverage is even greater for these families. Consequently, the fraction of individuals in these families that are uninsured increases after 1995, particularly for those in the bottom three consumption deciles.[14] These findings are consistent with other studies (Kaestner and Kaushal, 2003; Bitler et. al., 2005), but our results emphasize that the decreases in health insurance coverage are concentrated in the bottom three consumption deciles. Table 8 also shows that health expenditures, which includes both out of pocket health related spending as well as spending on health insurance, rises noticeably for those in the bottom four consumption deciles. However, this spending on health, which is excluded from our measure of total consumption, is small relative to total consumption–about 7 percent for the bottom three deciles of the consumption distribution.

[14]The fraction of individuals that are uninsured in the CE Survey is likely to be overstated because we are not able to distinguish between individuals without insurance and individuals who do not respond to the insurance questions. Although the fraction uninsured in the CE Survey is about four percentage points higher than that of the CPS, changes in uninsured rates between 1993 and 2003 are quite similar across these surveys.

VI. Robustness of the Results

The results presented above are for a sample of families headed by a single mother living with her own children only. It is important to note that changes in the characteristics of this group might bias these comparisons over time. Data for a sample of all women between the ages of 18 and 54 in the CPS indicate that the fraction of these women that are single mothers does not change noticeably between 1993 and 2003. As reported in Meyer and Sullivan (2006a), the fraction of women that are lone single mothers—those living with their own children only—falls by 1.5 percentage points between 1993 and 2001, and then rises somewhat after 2001. This pattern is similar to that for the broader sample of all single mothers including other adults, which experiences a fall of 1.1 percentage points, and then rises somewhat after 2001. The fraction of women that are married with children also falls slightly in the late 1990s, indicating a more general trend of falling fertility during this period. Similarly, data from the CE Survey show a small decline in single mother and married parent families relative to other family types. There is some evidence that the fraction of people living in single mother families that include other adults increased between 1993 an 2000, but this group is small relative to lone single mother families.[15]

We verify that the trends reported in Sections IV and V are not sensitive to the precise definition of our sample of single mothers. For example, we find that the patterns that we report above hold for the larger population of single parents that includes those who live with other

[15]Results reported in Meyer and Sullvan (2006a) show that controlling for a large number of observable characteristics of single mothers has little effect on the patterns for changes in consumption, providing additional evidence that our results are not sensitive to the changing pool of single mothers.

adults, cohabiting parents, single fathers, and families that include a single mother subfamily. There is some evidence that consumption falls in the bottom decile for the narrow sample of single mother headed families living with a cohabiting partner. However, this group is small relative to our main sample, so including these families does not alter the trends for single mothers significantly.

We also verify that the results reported above are not sensitive to our restriction to complete income reporters in the CE Survey. Changes in consumption and housing characteristics are similar for a sample of single mothers that includes incomplete income reporters. Consumption patterns are also quite similar for annual measures of consumption that are constructed by linking quarterly observations across four consecutive waves of the CE Survey. The patterns for other spending measures, such as total expenditures, are very similar to those reported for consumption. Also, adjusting major components of consumption by their respective CPI does not affect our consumption trends. The results also are very similar for alternative equivalence scale adjustments such as that embodied in the official poverty line.

VII. Conclusions

Trends in income and consumption tell very different stories about what has happened to the well-being of disadvantaged families in recent years. On the one hand, income data suggest a noticeable fall for a subgroup of single mothers with incomes well below the poverty line, while income increases sharply for single mothers at higher points in the distribution. On the other hand, consumption data suggest that the material circumstances of single mother families improved modestly between 1993 and 2003 for most parts of the distribution. We argue that

consumption data better reflect recent changes in well-being. Explaining the difference in the trends for income and consumption is an interesting question for future research.

Our analysis of the components of consumption suggests a complicated picture of changes for low-resource single mothers. Aggregate consumption is an insufficient summary of their circumstances. Increased spending on housing accounts for much of the increase in consumption in the bottom quintile, and we present evidence that housing conditions do improve modestly for this group. Some of the increases in consumption are potentially the result of the increased market work by single mothers during the 1990s; expenditures on transportation, food away from home, and child care all rise, although the latter two categories are, on average, too small to have an important effect on changes in total consumption. Overall, the evidence from disaggregated consumption, particularly transportation and housing, suggests that the increases in well-being are slightly smaller than that suggested by aggregate consumption. In addition, changes in aggregate consumption do not fully capture other factors such as health insurance coverage, which declines for those at the bottom of the consumption distribution during this period. Moreover, even though changes in consumption indicate that material well-being has improved for single mothers, it is important to note that the level of consumption is quite low–in 2003 average annual consumption in the bottom decile for single mothers with two children was just over $9,000.

The consumption of non-market time for those near the bottom of the consumption distribution falls sharply; time spent at market work more than doubles for those in the bottom consumption quartile between 1993 and 2003. Evidence from time-use surveys suggests that this change reflects a shift from shopping, food preparation and other housework to market work.

If single mothers value this lost non-market time at more than $3 per hour, most of those in the bottom half of the consumption or income distribution are worse off after 1996 than they were before welfare reform. It is important to note that this drop in utility does not arise from increases in material deprivation as some observers had predicted and some analysts have concluded. Rather, this drop results from the fact that increases in consumption do not sufficiently offset reductions in non-market time.

This study emphasizes the importance of examining the entire distributions of income and consumption, rather than focusing on summary measures, in studies of the well-being of disadvantaged families. We have also shown how the use of disaggregated measures, health insurance coverage, non-market time, and time use may better capture well-being when work and consumption bundles change.

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Data Appendix

Consumer Expenditure (CE) Interview Survey Data

The CE Interview Survey is a rotating panel survey of approximately 7,500 families each quarter (5,000 prior to 1999). Each family in the survey reports information on both income and expenditures from a number of different sources for up to four consecutive quarters. The survey also reports some information on the characteristics of the housing unit as well as detailed data on demographic characteristics and employment for each member older than 14 in the consumer unit (CU) or family. The unit of observation in the CE Survey, a CU, includes all related family members or two or more persons living together who use their income to make joint expenditure decisions. For a subset of individuals within a dwelling to be considered a separate consumer unit, these individuals must share expenses for at least two of the three major expense categories—housing, food, and other living expenses. Expenditure data are reported at the CU level only. The reference period for expenditures in the CE Interview Survey is the previous three months and for income it is the previous twelve months. Thus, for example, for the 1993-1995 period we include data from the second quarter of 1993 survey through the first quarter of 1996 survey. Respondents in the CE Survey generally report income only in the second and fifth interviews. Income reported at the second interview is carried over to the third and fourth interviews unless a member over 13 is new to the CU, or a member of the CU that was not working at the time of the second interview is working in a subsequent interview. In these cases new values for family income are reported. For more information on the CE see Bureau of Labor Statistics (1997).

Family Income: Income is measured as after-tax money income plus Food Stamps for all members of the CU. This measure is constructed using reported pre-tax money income for the 12 months prior to the survey for each CU designated as a complete income reporter. This includes all money income as defined by the U.S. Census Bureau, including: wages, salary, and self-employment income; Social Security; Supplemental Security Income; public assistance or welfare payments; investment income, income from estates or trusts, and net rental income; veterans' payments; unemployment insurance; workers' compensation; pension income; alimony or child support; regular contributions from persons not living in the household; and other periodic income. We then add to pre-tax money income the face value of Food Stamps and other money receipts such as lump sum payments and money received from the sale of personal items. We count Food Stamps at face value (as suggested by past work, Smeeding 1982, Moffitt 1989, and Whitmore 2002). Taxes are calculated as explained below.

Taxes: State and federal income tax liabilities and credits and FICA taxes are calculated using TAXSIM (Feenberg and Coutts, 1993). Dependent status for each member of the CU is based on federal tax laws for each year using information on the relationship to the head, age, employment or student status, and individual income. For 16 percent of the observations in our sample, the true state of residence is either suppressed or recoded. For each observation with a suppressed (recoded) state, we use TAXSIM to calculate the CU's state tax for all states that have some suppressed (recoded) observations. The state tax value is then calculated as the state-

population weighted average value across all states with some suppressed (recoded) observations. Comparisons of reported taxes in the CE Survey and taxes calculated using TAXSIM indicate that taxes and credits are significantly under-reported in the CE Survey. This has a substantial effect on estimates of changes in after-tax income over time, but only for the bottom three deciles of the income distribution. For example, average income in the bottom income decile falls by 13.8 percent (Table 1), but if respondent reported taxes are used, the drop is closer to 30 percent.

Total Family Consumption: Consumption includes all spending by all CU members (total expenditures) less spending on health care, education, pension plans, and cash contributions to others. In addition, housing and vehicle expenditures are converted to service flows as explained below.

Housing Flows: For homeowners the rental equivalent of owned dwellings is used instead of spending on mortgage interest, property taxes, and maintenance, repairs, and insurance. For renters that do not reside in public or subsidized housing, reported out of pocket rent is used. For those that do reside in public or subsidized housing we predict a rental value as follows. For a sample of renters who are not living in public or subsidized housing and have positive rent we regress log rent on year dummies, characteristics of the living unit including those listed in Table 4, location characteristics including region, urbanicity, MSA status, and indicators for living in each of the 8 largest states, and characteristics of the CU including a quadratic in expenditures (less spending on rent and health), family size, and the age and education of the head. The estimates from this regression are used to calculate predicted values of the full market rent for subsidized or public housing units. To each of these out of sample predicted values we add a randomly assigned residual from the regression. Rather than using a single draw from the residual distribution which would add additional randomness and be more difficult to replicate, we take 100 draws from the distribution, copying the sample accordingly. We adjust the standard errors. We compute a market rent for those in public or subsidized housing equal to the maximum of 85 percent of this predicted value plus residual or reported out of pocket rent. The 85 percent of the mean figure corresponds in our data to the 40th percentile that is used in fair market rent calculations. As a check on this adjustment, we compared the reported rental equivalent of public or subsidized housing in the Panel Study of Income Dynamics to the mean predicted value for these units using parameters estimated from those outside public or subsidized housing and found a ratio just under 80 percent. Using predicted rental values for those in public or subsidized housing increases the level of housing consumption for those at the bottom of the consumption distribution, but it does not affect changes in consumption over time noticeably.

Vehicle Flows: For each vehicle *i* owned by the CU we calculate a service flow (S_i) based on the value of the vehicle (V_i) assuming a constant geometric vehicle depreciation rate (δ) of 5 percent per quarter for a vehicle that has been owned for t quarters: $S_i = V_i*\delta(1-\delta)^t$. If the purchase price of the vehicle is not observed (just over half of all vehicles), we impute a value as follows. For a sample of new and used cars purchased within 12 months of the survey date, we regress purchase price on survey year dummies, characteristics of the CU including a quadratic in total

expenditures (less spending on vehicle purchases and health), family size, number of cars owned by the CU, and age and education of the head, as well as an indicator for whether the car was purchased used. We also include interactions of all of these variables with the indicator for used cars. The estimates from this regression are used to calculate a predicted value for vehicles where purchase price is missing. As with housing, we add randomly assigned residuals from the regression to these predicted values. Again, we take 100 draws from the distribution, copying the sample accordingly. The predicted values reflect the predicted price that the CU would pay for a new or used car. We then use the amount of time the vehicle has been owned by the CU to calculate a service flow assuming a constant geometric vehicle depreciation rate of 5 percent per quarter. Converting vehicle spending to flows does not affect changes in consumption over time noticeably.

American Housing Survey Data (AHS)

AHS gathers data through personal interviews of occupants of apartments, single-family homes and mobile homes. Questions concerning housing quality, available appliances and facilities, building quality, neighborhood quality, and housing costs are included. We use the data from the surveys from 1993 through 2003. Household members are also asked about personal characteristics such as age, gender, race, marital status, education, and income. A national sample of roughly 60,000 housing units is conducted biennially. The AHS changed from a paper questionnaire to computer assisted interviewing between 1995 and 1997. At the same time the questionnaire changed slightly. We verify that this change does not affect the trends we report for our subsamples by examining the full sample for evidence of trend breaks around the survey change.

Time-Use Survey Data

Our time use data come from two nationally representative surveys. The NTUS is a single cross-sectional survey that was conducted for the Environmental Protection Agency by the Survey Research Center at the University of Maryland between 1992 and 1994. Survey respondents report all activities, and where they were during those activities, for the previous day. The NTUS includes 9,386 completed surveys–7,514 adult interviews and 1,872 child interviews. The NTUS also includes a limited number of demographic variables. We do not observe the marital status of the respondent, but we do know the number of adults living in the household. The ATUS is a random sample drawn from households that have completed their final interview for the CPS. One individual is randomly chosen from each selected household, and this respondent is interviewed once about how she spent her time on the previous day. The ATUS also collects information on where the respondent was during each activity and whom she was with. More than 20,000 respondents completed the ATUS survey in 2003.

Table 1
Changes in Mean Consumption and Income by Deciles of Consumption and Income, Single Mothers, Consumer Expenditure Survey, 1993-2003

	By Consumption Decile		By Income Decile		Consumption - Income		
	Consumption	Income	Consumption	Income	(1) - (2)	(3) - (4)	(1) - (4)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Ratio of Mean in 1997-2000 to Mean in 1993-1995							
Decile							
First	1.074	0.953	1.041	0.862	0.121	0.179	0.213
	(0.038)	(0.051)	(0.067)	(0.065)	(0.067)	(0.106)	(0.072)
Second	1.088	1.099	1.220	1.078	-0.011	0.142	0.009
	(0.031)	(0.087)	(0.097)	(0.045)	(0.076)	(0.098)	(0.045)
Third	1.084	1.151	1.042	1.147	-0.067	-0.104	-0.062
	(0.028)	(0.055)	(0.057)	(0.038)	(0.062)	(0.077)	(0.033)
Fourth	1.088	1.132	1.146	1.174	-0.044	-0.028	-0.087
	(0.029)	(0.085)	(0.099)	(0.036)	(0.074)	(0.075)	(0.029)
Fifth	1.072	1.105	1.158	1.152	-0.033	0.006	-0.080
	(0.030)	(0.081)	(0.085)	(0.038)	(0.075)	(0.070)	(0.028)
Sixth	1.080	1.114	1.097	1.136	-0.034	-0.038	-0.056
	(0.031)	(0.091)	(0.081)	(0.033)	(0.081)	(0.093)	(0.025)
Seventh	1.094	1.107	1.121	1.127	-0.013	-0.006	-0.033
	(0.027)	(0.056)	(0.104)	(0.031)	(0.057)	(0.088)	(0.023)
Eighth	1.114	1.232	1.003	1.098	-0.118	-0.095	0.016
	(0.031)	(0.132)	(0.044)	(0.035)	(0.124)	(0.049)	(0.028)
Ninth	1.119	1.140	1.113	1.100	-0.021	0.013	0.020
	(0.031)	(0.071)	(0.062)	(0.045)	(0.056)	(0.043)	(0.033)
Tenth	1.112	1.244	1.105	1.261	-0.132	-0.156	-0.149
	(0.042)	(0.113)	(0.054)	(0.118)	(0.103)	(0.114)	(0.107)
Panel B: Ratio of Mean in 2001-2003 to Mean in 1993-1995							
Decile							
First	1.126	1.101	1.071	0.870	0.025	0.201	0.256
	(0.041)	(0.060)	(0.064)	(0.072)	(0.072)	(0.112)	(0.082)
Second	1.124	1.178	1.215	1.123	-0.055	0.092	0.000
	(0.034)	(0.067)	(0.096)	(0.048)	(0.060)	(0.089)	(0.049)
Third	1.114	1.225	1.170	1.221	-0.111	-0.051	-0.108
	(0.031)	(0.064)	(0.070)	(0.041)	(0.068)	(0.088)	(0.037)
Fourth	1.119	1.250	1.128	1.244	-0.131	-0.116	-0.125
	(0.032)	(0.095)	(0.100)	(0.038)	(0.085)	(0.077)	(0.032)
Fifth	1.093	1.110	1.138	1.213	-0.017	-0.075	-0.120
	(0.030)	(0.083)	(0.075)	(0.041)	(0.076)	(0.071)	(0.032)
Sixth	1.075	1.071	1.069	1.191	0.004	-0.122	-0.116
	(0.031)	(0.088)	(0.098)	(0.033)	(0.078)	(0.101)	(0.026)
Seventh	1.069	1.116	1.016	1.178	-0.047	-0.162	-0.110
	(0.026)	(0.058)	(0.095)	(0.032)	(0.059)	(0.083)	(0.023)
Eighth	1.066	1.199	0.959	1.140	-0.133	-0.182	-0.074
	(0.030)	(0.070)	(0.041)	(0.037)	(0.061)	(0.051)	(0.029)
Ninth	1.056	1.201	1.075	1.170	-0.145	-0.095	-0.114
	(0.030)	(0.063)	(0.064)	(0.047)	(0.053)	(0.045)	(0.035)
Tenth	1.076	1.288	1.100	1.232	-0.212	-0.132	-0.156
	(0.042)	(0.100)	(0.059)	(0.086)	(0.075)	(0.074)	(0.065)

Notes: Income is after tax. See Data Appendix for definitions of income and consumption. The standard errors, which are corrected for within family dependence, are calculated by applying the delta method (see Meyer and Sullivan, 2006a) to bootstrapped standard errors for the means within decile. See Table 3, Panel A for the number of observations for each period.

Table 2
Decomposition of Total Consumption Change into its Components by Consumption Decile, 1993-1995 to 1997-2000, Single Mothers, Consumer Expenditure Survey

	Total Consumption			Food at Home		
	% Change	Mean Share	Contribution to Total Δ	% Change	Mean Share	Contribution to Total Δ
	(1)	(2)	(3) = (1)*(2)	(4)	(5)	(6) = (4)*(5)
Deciles						
First	0.074	1.000	0.074	-0.108	0.325	-0.035
Second	0.088	1.000	0.088	-0.061	0.269	-0.016
Third	0.084	1.000	0.084	-0.056	0.228	-0.013
Fourth	0.088	1.000	0.088	-0.023	0.205	-0.005
Fifth	0.072	1.000	0.072	-0.081	0.184	-0.015
Top Half	0.107	1.000	0.107	-0.036	0.143	-0.005
	Food Away from Home			Housing		
First	-0.044	0.020	-0.001	0.202	0.463	0.093
Second	0.195	0.024	0.005	0.128	0.494	0.063
Third	0.527	0.024	0.013	0.045	0.512	0.023
Fourth	0.336	0.031	0.010	0.049	0.502	0.024
Fifth	0.199	0.033	0.006	0.104	0.497	0.052
Top Half	0.127	0.040	0.005	0.136	0.474	0.064
	Transportation			Entertainment		
First	0.323	0.060	0.019	0.175	0.032	0.006
Second	0.357	0.081	0.029	0.098	0.035	0.003
Third	0.600	0.097	0.058	0.294	0.038	0.011
Fourth	0.489	0.113	0.055	0.366	0.041	0.015
Fifth	0.151	0.138	0.021	0.392	0.042	0.017
Top Half	0.209	0.166	0.035	0.070	0.058	0.004
	Child Care			Other		
First	0.726	0.006	0.004	-0.133	0.095	-0.013
Second	0.160	0.013	0.002	0.024	0.084	0.002
Third	1.230	0.014	0.018	-0.302	0.087	-0.026
Fourth	0.462	0.021	0.010	-0.260	0.086	-0.022
Fifth	0.504	0.026	0.013	-0.271	0.080	-0.022
Top Half	0.012	0.032	0.000	0.042	0.087	0.004

Notes: Columns 1 and 4 report the percentage change in spending for consumption categories between 1993-1995 and 1997-2000. Columns 2 and 5 report the average share for consumption categories over the two periods. Entertainment includes admission fees to movies, shows, etc. as well as expenditures on television, radio, and other entertainment equipment. Transportation includes a service flow from owned vehicles as well as other transportation expenses. Child Care includes spending on babysitting and child care services. See Data Appendix for definition of Housing. See Table 3, Panel A for the number of observations for each period.

Table 3
Trends in the Share of Single Mothers in Public or Subsidized Housing, Homeownership, and Rent by Consumption Decile, 1993-2003, Single Mothers, Consumer Expenditure Survey

	1993-1995	1997-2000	2001-2003	(2) - (1)	(3) - (1)	1993-1995	1997-2000	2001-2003	(7) - (6)	(8) - (6)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Panel A: Share in Public or Subsidized Housing, All Single Mothers					Panel B: Homeownership Rates, All Single Mothers				
Consumption Deciles										
First	0.436	0.459	0.513	0.023	0.078	0.028	0.046	0.038	0.018	0.010
Second	0.366	0.413	0.402	0.047	0.036	0.070	0.078	0.093	0.009	0.024
Third	0.351	0.367	0.367	0.016	0.016	0.124	0.161	0.136	0.038	0.012
Fourth	0.267	0.313	0.307	0.046	0.040	0.168	0.195	0.230	0.027	0.062
Fifth	0.229	0.225	0.245	-0.003	0.016	0.172	0.262	0.270	0.090	0.098
Top Half	0.086	0.093	0.114	0.007	0.028	0.471	0.536	0.541	0.066	0.070
N	3,098	4,483	4,137			3,098	4,483	4,137		
	Panel C: Imputed Rental Value, Non-Home Owning Single Mothers in Public or Subsidized Housing					Panel D: Out of Pocket Rent, Non-Home Owning Single Mothers Not in Public or Subsidized Housing				
	1993-1995	1997-2000	2001-2003	(2)/(1)	(3)/(1)	1993-1995	1997-2000	2001-2003	(7)/(6)	(8)/(6)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Consumption Deciles										
First	2,755	3,160	3,579	1.147	1.299	2,313	2,921	3,044	1.263	1.316
Second	3,803	4,643	4,719	1.221	1.241	3,695	4,369	4,339	1.183	1.175
Third	4,861	5,386	5,692	1.108	1.171	5,551	5,224	5,571	0.941	1.004
Fourth	6,070	6,032	6,486	0.994	1.069	5,805	6,005	6,537	1.034	1.126
Fifth	6,776	6,857	7,237	1.012	1.068	6,394	6,813	7,308	1.066	1.143
Top Half	8,457	9,387	9,710	1.110	1.148	8,704	9,757	9,867	1.121	1.134
N	592	959	890			1,606	1,965	1,750		

Notes: Panel A reports the fraction of all single mothers that report either living in public housing or receiving assistance from the government for housing costs. See Data Appendix for a description of how rental values are imputed in Panel C. Dollar figures are expressed in year 2005 dollars.

Table 4
Trends in Housing Characteristics by Consumption Decile, 1993-2003, Single Mothers, Consumer Expenditure Survey

	1993-1995	1997-2000	2001-2003	(2) - (1)	(3) - (1)	1993-1995	1997-2000	2001-2003	(7) - (6)	(8) - (6)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Panel A: Number of Rooms					Panel B: Number of Bedrooms				
First Decile	4.379	4.156	4.203	-0.223	-0.177	2.240	2.078	2.133	-0.162	-0.107
	(0.138)	(0.101)	(0.089)	(0.170)	(0.164)	(0.084)	(0.046)	(0.050)	(0.096)	(0.098)
Second Decile	4.419	4.373	4.438	-0.045	0.019	2.214	2.203	2.232	-0.011	0.018
	(0.083)	(0.097)	(0.085)	(0.128)	(0.119)	(0.056)	(0.051)	(0.049)	(0.075)	(0.074)
Third Decile	4.579	4.723	4.637	0.145	0.058	2.225	2.306	2.335	0.081	0.110
	(0.091)	(0.099)	(0.097)	(0.135)	(0.133)	(0.054)	(0.054)	(0.056)	(0.077)	(0.078)
Fourth Decile	4.758	4.815	4.917	0.057	0.159	2.348	2.365	2.421	0.017	0.072
	(0.093)	(0.102)	(0.101)	(0.138)	(0.138)	(0.065)	(0.060)	(0.054)	(0.089)	(0.084)
Fifth Decile	5.068	5.064	5.274	-0.003	0.206	2.452	2.465	2.527	0.013	0.074
	(0.132)	(0.100)	(0.122)	(0.166)	(0.180)	(0.061)	(0.047)	(0.063)	(0.077)	(0.088)
Top Half	5.978	6.134	6.309	0.157	0.331	2.820	2.972	2.990	0.152	0.170
	(0.097)	(0.069)	(0.082)	(0.119)	(0.127)	(0.041)	(0.039)	(0.040)	(0.057)	(0.057)
	Panel C: Number of Bathrooms					Panel D: Air Conditioning				
First Decile	1.025	1.052	1.076	0.027	0.051	0.449	0.534	0.657	0.085	0.208
	(0.031)	(0.025)	(0.026)	(0.039)	(0.040)	(0.053)	(0.036)	(0.034)	(0.064)	(0.062)
Second Decile	1.085	1.115	1.144	0.031	0.059	0.478	0.557	0.608	0.079	0.130
	(0.034)	(0.024)	(0.031)	(0.041)	(0.046)	(0.051)	(0.032)	(0.030)	(0.061)	(0.060)
Third Decile	1.169	1.195	1.191	0.025	0.022	0.468	0.588	0.665	0.120	0.198
	(0.037)	(0.037)	(0.053)	(0.053)	(0.065)	(0.044)	(0.036)	(0.041)	(0.057)	(0.060)
Fourth Decile	1.220	1.215	1.302	-0.005	0.082	0.524	0.644	0.681	0.120	0.157
	(0.033)	(0.030)	(0.037)	(0.045)	(0.049)	(0.046)	(0.032)	(0.045)	(0.056)	(0.065)
Fifth Decile	1.310	1.314	1.371	0.004	0.061	0.563	0.673	0.724	0.110	0.162
	(0.046)	(0.036)	(0.050)	(0.058)	(0.068)	(0.050)	(0.030)	(0.049)	(0.058)	(0.070)
Top Half	1.635	1.742	1.788	0.107	0.153	0.661	0.723	0.790	0.063	0.129
	(0.033)	(0.027)	(0.029)	(0.042)	(0.044)	(0.020)	(0.018)	(0.015)	(0.027)	(0.025)
	Panel E: Central Air					Panel F: Dishwasher				
First Decile	0.220	0.268	0.390	0.048	0.170	0.133	0.113	0.161	-0.020	0.028
	(0.042)	(0.032)	(0.035)	(0.053)	(0.055)	(0.030)	(0.019)	(0.024)	(0.036)	(0.039)
Second Decile	0.228	0.329	0.347	0.101	0.119	0.139	0.190	0.201	0.050	0.062
	(0.044)	(0.027)	(0.035)	(0.051)	(0.056)	(0.027)	(0.027)	(0.025)	(0.038)	(0.037)
Third Decile	0.203	0.386	0.401	0.183	0.197	0.159	0.215	0.231	0.055	0.072
	(0.031)	(0.037)	(0.052)	(0.048)	(0.061)	(0.033)	(0.027)	(0.033)	(0.043)	(0.047)
Fourth Decile	0.288	0.419	0.472	0.131	0.184	0.193	0.234	0.342	0.041	0.149
	(0.043)	(0.034)	(0.047)	(0.055)	(0.064)	(0.036)	(0.035)	(0.031)	(0.051)	(0.048)
Fifth Decile	0.351	0.449	0.476	0.097	0.124	0.240	0.292	0.361	0.051	0.121
	(0.044)	(0.033)	(0.048)	(0.055)	(0.065)	(0.040)	(0.040)	(0.056)	(0.057)	(0.069)
Top Half	0.474	0.527	0.570	0.052	0.096	0.505	0.593	0.604	0.088	0.100
	(0.024)	(0.020)	(0.017)	(0.031)	(0.030)	(0.026)	(0.018)	(0.018)	(0.032)	(0.031)
	Panel G: Washing Machine					Panel H: Dryer				
First Decile	0.395	0.427	0.487	0.032	0.091	0.219	0.280	0.371	0.061	0.153
	(0.046)	(0.035)	(0.034)	(0.058)	(0.057)	(0.034)	(0.032)	(0.031)	(0.047)	(0.046)
Second Decile	0.544	0.540	0.560	-0.004	0.016	0.431	0.369	0.474	-0.062	0.042
	(0.042)	(0.040)	(0.032)	(0.058)	(0.053)	(0.046)	(0.034)	(0.032)	(0.058)	(0.056)
Third Decile	0.555	0.569	0.572	0.015	0.017	0.439	0.439	0.514	0.001	0.075
	(0.041)	(0.034)	(0.036)	(0.054)	(0.055)	(0.044)	(0.038)	(0.039)	(0.058)	(0.059)
Fourth Decile	0.556	0.570	0.644	0.014	0.088	0.472	0.479	0.571	0.007	0.099
	(0.055)	(0.038)	(0.031)	(0.067)	(0.063)	(0.053)	(0.035)	(0.036)	(0.064)	(0.064)
Fifth Decile	0.610	0.621	0.683	0.010	0.073	0.518	0.554	0.621	0.036	0.103
	(0.045)	(0.033)	(0.034)	(0.056)	(0.056)	(0.044)	(0.035)	(0.039)	(0.057)	(0.059)
Top Half	0.753	0.789	0.812	0.036	0.059	0.701	0.747	0.778	0.046	0.077
	(0.022)	(0.016)	(0.014)	(0.027)	(0.026)	(0.024)	(0.017)	(0.015)	(0.029)	(0.029)

Notes: Between 1 and 2 percent of the sample have missing values for the number of rooms, bedrooms, and bathrooms. Otherwise, sample sizes are the same as those reported in Panel A of Table 3. All measures of rooms are equivalence scale adjusted. Number of rooms excludes bathrooms. The bootstrapped standard errors in parentheses are corrected for within family dependence.

Table 5
Trends in Housing Characteristics, 1993-2003, Single Mothers without a High School Degree, American Housing Survey

	1993-1995	1997-1999	2001-2003	(2) - (1)	(3) - (1)
	(1)	(2)	(3)	(4)	(5)
Number of rooms	4.609	4.582	4.589	-0.026	-0.019
	(0.042)	(0.047)	(0.045)	(0.063)	(0.062)
Number of bathrooms	1.087	1.108	1.117	0.022	0.030
	(0.013)	(0.015)	(0.015)	(0.020)	(0.020)
Number of bedrooms	2.253	2.327	2.301	0.075	0.049
	(0.027)	(0.030)	(0.028)	(0.040)	(0.038)
Unit has a working stove or range	0.989	0.990	0.993	0.000	0.004
	(0.003)	(0.004)	(0.003)	(0.005)	(0.004)
Unit has a working dishwasher	0.140	0.153	0.187	0.013	0.047
	(0.011)	(0.012)	(0.015)	(0.016)	(0.018)
Unit has working washer	0.520	0.526	0.576	0.006	0.056
	(0.015)	(0.017)	(0.018)	(0.023)	(0.024)
Unit has working clothes dryer	0.309	0.366	0.420	0.057	0.111
	(0.014)	(0.017)	(0.018)	(0.022)	(0.023)
Unit has working garbage disposal	0.198	0.175	0.250	-0.023	0.051
	(0.012)	(0.013)	(0.016)	(0.018)	(0.020)
Unit has central air or room air	0.549	0.650	0.739	0.101	0.190
	(0.015)	(0.017)	(0.016)	(0.022)	(0.022)
All toilets not working at some point in last 3 months	0.110	0.091	0.070	-0.018	-0.040
	(0.009)	(0.010)	(0.010)	(0.014)	(0.013)
Water leak from inside in last 12 months	0.178	0.183	0.154	0.004	-0.024
	(0.012)	(0.013)	(0.013)	(0.018)	(0.018)
Water leak from outside in last 12 months	0.150	0.118	0.127	-0.032	-0.022
	(0.011)	(0.011)	(0.012)	(0.016)	(0.016)
N	1,086	833	718		

Notes: Data are from the 1993-2003 waves of the American Housing Survey, which is administered biennially. All measures of rooms are equivalence scale adjusted.

Table 6
The Value of a Representative Single Mother's Non-Market Time that Equates Utility Before and After Welfare Reform

Panel A: 1993-1995 to 1997-2000

	Consumption Deciles		
	Change in Mean Consumption	Hours Change	ΔC/ΔHours
	(1)	(2)	(3)
First	$ 640	351.21	$ 1.82
Second	$ 1,071	427.80	$ 2.50
Third	$ 1,245	477.31	$ 2.61
Fourth	$ 1,522	486.94	$ 3.13
Fifth	$ 1,463	360.72	$ 4.06
Top Half	$ 3,769	129.85	$ 29.02

Panel B: 1993-1995 to 2001-2003

	Consumption Deciles		
	Change in Mean Consumption	Hours Change	ΔC/ΔHours
	(1)	(2)	(3)
First	$ 1,089	574.80	$ 1.89
Second	$ 1,508	625.47	$ 2.41
Third	$ 1,685	525.40	$ 3.21
Fourth	$ 2,056	492.01	$ 4.18
Fifth	$ 1,894	313.37	$ 6.04
Top Half	$ 2,403	61.41	$ 39.13

Notes: Column 1 reports the real change (year 2005 $) in mean consumption between two periods for each decile in the top half of the consumption distribution. Column 2 reports the change in the average hours worked by single mothers during the 12 months prior to the survey for each decile.

Table 7
Hours per Week Spent in Market and Non-Market Work Among Women, 1993 and 2003

	Single Mothers			Single Women without Children			Married Mothers			Diff-in-Diff	
	1993	2003	(2) - (1)	1993	2003	(5) - (4)	1993	2003	(8) - (7)	(3) - (6)	(3) - (9)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Total Market Work	24.457	27.454	2.997	33.815	33.493	-0.322	23.467	23.095	-0.372	3.319	3.369
	(2.704)	(1.109)	(2.923)	(1.349)	(1.019)	(1.691)	(1.338)	(0.580)	(1.458)	(3.377)	(3.266)
Direct Market Work	21.775	25.339	3.564	30.916	31.022	0.106	20.998	21.366	0.368	3.458	3.196
	(2.448)	(1.034)	(2.657)	(1.246)	(0.959)	(1.573)	(1.200)	(0.539)	(1.316)	(3.088)	(2.965)
Total Non-Market Work	23.701	17.756	-5.945	15.898	15.178	-0.720	23.101	23.905	0.804	-5.225	-6.749
	(1.806)	(0.610)	(1.907)	(0.732)	(0.495)	(0.883)	(0.805)	(0.360)	(0.882)	(2.101)	(2.101)
Food Prep & Housework	13.665	11.384	-2.281	8.899	8.253	-0.646	15.520	16.104	0.583	-1.635	-2.864
	(1.335)	(0.476)	(1.417)	(0.518)	(0.344)	(0.622)	(0.633)	(0.306)	(0.703)	(1.548)	(1.582)
Shopping & Obtaining	9.272	5.780	-3.492	6.180	6.352	0.173	6.513	7.179	0.666	-3.664	-4.158
Goods & Services	(1.152)	(0.323)	(1.197)	(0.469)	(0.345)	(0.582)	(0.462)	(0.196)	(0.502)	(1.331)	(1.298)
Total Non-Work Time	119.8	122.8	2.948	118.3	119.3	1.042	121.4	121.0	-0.432	1.906	3.380
	(2.419)	(0.997)	(2.616)	(1.204)	(0.943)	(1.529)	(1.237)	(0.507)	(1.336)	(3.030)	(2.938)
Leisure	111.5	108.9	-2.664	113.0	113.6	0.654	112.7	107.2	-5.414	-3.318	2.750
	(2.484)	(0.992)	(2.675)	(1.190)	(0.931)	(1.511)	(1.242)	(0.505)	(1.341)	(3.072)	(2.992)
Child Care	5.189	9.434	4.246	1.781	0.799	-0.982	5.469	10.274	4.805	5.227	-0.559
	(0.696)	(0.432)	(0.819)	(0.250)	(0.159)	(0.296)	(0.379)	(0.234)	(0.446)	(0.871)	(0.933)
Education	0.964	1.481	0.516	1.603	1.099	-0.504	1.427	0.661	-0.766	1.020	1.282
	(0.639)	(0.292)	(0.702)	(0.344)	(0.203)	(0.400)	(0.332)	(0.089)	(0.343)	(0.808)	(0.782)
N	128	772		628	1,090		540	2,586			

Time use data come from the NTUS (1992-1994) and ATUS (2003). Samples include women between the ages of 18 and 65 inclusive who are not retired and are not full-time students. The single mother sample includes those without any other adults present (also excludes single mothers living with own children older than 17). Single women without children sample includes only those living alone. Total Market Work includes Direct Market Work (time working in main job) plus other work related activities and travel time related to work. Total Non-Market Work includes food preparation, both indoor and outdoor housework, shopping, and obtaining goods and services. Total Non-Work Time includes time spent in Leisure, Education, and Child Care as well as other activities such as job search while unemployed. Leisure includes leisure time as well as time spent on eating, sleeping, civic activities, religious activities, volunteering, pet care, gardening and personal care.

Table 8
Trends in Health Spending and Health Insurance Coverage by Consumption Decile, 1993-2003, Single Mother Families, Consumer Expenditure Survey

	1993-1995	1997-2000	2001-2003	(2) - (1)	(3) - (1)	1993-1995	1997-2000	2001-2003	(7) - (6)	(8) - (6)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Panel A: Fraction of Individuals Covered by Private Health Insurance					Panel B: Fraction of Individuals Covered by Medicaid				
Consumption Deciles										
First Decile	0.037	0.144	0.162	0.106	0.124	0.663	0.598	0.525	-0.065	-0.138
Second Decile	0.130	0.201	0.232	0.071	0.102	0.660	0.535	0.462	-0.125	-0.198
Third Decile	0.170	0.303	0.284	0.132	0.113	0.591	0.447	0.411	-0.144	-0.180
Fourth Decile	0.318	0.421	0.412	0.103	0.094	0.450	0.353	0.311	-0.097	-0.139
Fifth Decile	0.441	0.481	0.474	0.040	0.033	0.279	0.259	0.285	-0.020	0.006
Top Half	0.673	0.702	0.663	0.029	-0.011	0.127	0.089	0.122	-0.039	-0.006
N	3,098	4,483	4,137			3,098	4,483	4,137		
	Panel C: Fraction of Individuals that are Uninsured					Panel D: Health Expenditures				
	1993-	1997-	2001-	(2) - (1)	(3) - (1)	1993-	1997-	2001-	(7) / (6)	(8) / (6)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Consumption Deciles										
First Decile	0.220	0.275	0.279	0.055	0.059	96.4	157.7	219.1	1.636	2.273
Second Decile	0.165	0.263	0.277	0.098	0.112	159.5	307.9	478.0	1.930	2.997
Third Decile	0.202	0.269	0.282	0.067	0.080	207.7	492.9	501.6	2.373	2.414
Fourth Decile	0.238	0.256	0.264	0.018	0.026	493.5	706.0	698.8	1.431	1.416
Fifth Decile	0.278	0.288	0.243	0.010	-0.035	780.2	922.5	765.2	1.182	0.981
Top Half	0.199	0.213	0.220	0.014	0.020	1716.0	1808.2	1834.3	1.054	1.069
N	3,098	4,483	4,137			3,098	4,483	4,137		

Notes: Health Expenditures is an annual measure of out of pocket spending on health insurance, medical services, prescription drugs, and medical supplies. Insurance categories do not always sum to 1 because some individuals are insured through Medicare, CHAMPUS, military health care, or other programs. N reflects the number of family observations.