



National Poverty Center Working Paper Series

#06-29

August, 2006

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How Well Can We Measure the Well-Being of the Poor Using Food Expenditure?*

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Abstract: How well does data on expenditure measure consumption? Because time is an important input into consumption that is typically not priced, spending data may not reflect true consumption. This problem may be particularly pronounced when using food spending because households' food consumption is a combination of home production (cooking at home) and market production (eating out). We find using both the Consumer Expenditure Diary Survey and the Consumer Expenditure Interview Survey that food away from home made up an increasingly large share of poor households' food budgets between 1992 and 2000. Total food spending may have increased even if food consumed did not, and analyses of well-being that rely on total food spending may reach erroneous conclusions as a result. We also find that the share of poor households' income that is from work also increased over this period. The incentives that increase work would also be expected to cause a shift from home production to market production. For this reason, the very economic and policy changes that researchers seek to evaluate may introduce bias into the data used to evaluate them. Our results suggest that caution is in order when using total food spending as a summary measure of how the well-being of the poor has changed over time.

* An earlier version of this paper was presented at the May 2006 National Poverty Center Conference, "Consumption, Income, and the Well-Being of Families and Children" held in Washington, D.C. We thank Sandy Korenman and other conference participants for helpful comments. Please send any correspondence to either Helen Levy (hlevy@umich.edu) or Thomas DeLeire (deleire@msu.edu). The views presented in this paper are those of the authors and should not be interpreted as those of the Congressional Budget Office.

1. Introduction

How has the well-being of the poor changed over time? There is an ongoing debate about the best way to answer this question empirically. Consumption is arguably a better measure of well-being among poor households than is income (see, for example, Meyer and Sullivan 2003). But how well does spending – the data most frequently used as a proxy – measure consumption? Because time is an important input into consumption that is typically not priced, spending may not reflect true consumption (Lazear and Michael 1980; Aguiar and Hurst 2005). This problem may be particularly pronounced for food spending versus food consumption, since nearly all households engage in a combination of home production (cooking at home) and market production (eating out). If spending does not measure consumption well, its usefulness as a measure of the well-being of poor households is questionable, particularly if the degree of mismeasurement has changed over time.

This problem is exacerbated by the fact that during the 1990s, the work incentives facing low-income families changed dramatically. The expansions of the EITC, welfare reform, and the booming economy of the 1990s resulted in large increases in labor force participation among individuals at the lower end of the skill distribution (see for example, Meyer and Rosenbaum 2001 or Grogger 2003). Increases in work may have coincided with declines in the amount of time available for home production, including cooking, resulting in more reliance on prepared food or restaurant food and driving an ever-larger wedge over time between consumption and spending.¹ That is, the increasing substitution of food away from home for food at home over

¹ A related question is how evaluations of the well-being of the poor should account for the value of their leisure, particularly when increases in labor supply are at least partly the result of policies that mandate work in exchange for benefits. See Greenberg (1997) for a discussion of this issue in the context of cost-benefit analysis of employment and training programs.

time biases total food spending as a proxy for food consumption so that it becomes an unreliable measure of well-being over time.

DeLeire and Levy (2005) document that the share of the total food budget that low-skilled single mothers spend on food away from home has been increasing over time both in absolute terms and relative to other low-skilled women. This increase suggests that using total food spending as a measure of well-being for single-mother households is problematic for the reasons described above. In this paper, we investigate the magnitude of the same problem for poor households relative to non-poor households.

We use two datasets to analyze trends in the share of the food budget spent on food away from home (eating in restaurants or takeout): the Consumer Expenditure Survey Interview Component (CE-Interview) and the Consumer Expenditure Survey Diary Component (CE-Diary).² Our first finding is that these two components of the CE yield quite different numbers for the food spending of the poor at a point in time. Relative to the Diary Survey, the Interview Survey overstates total food spending by about ten percent for poor households. Moreover, this difference in total food spending masks even larger differences between the two surveys in sub-categories of food spending. The Interview yields estimates of spending on food at home that are about 20 percent higher than what the Diary suggests; but the Interview also yields estimates of spending on food away from home that are about 20 percent *lower* than what the Diary suggests.

Although they give different answers about the level of food spending at a point in time, both surveys show that the share of the food budget that the average poor household devotes to food away from home increased between 1992 and 2000. This is true in absolute terms and also

² The unit of observation in both the CE-Interview and in the CE-Diary is a “Consumer Unit.” Even though there can be multiple consumer units per household, for ease of exposition we refer to these units as households in this paper.

relative to the increases observed for higher income groups. Data from the Interview Survey show that this share increased by almost half, from 13 percent to 19 percent, while the Diary Survey suggests an increase of 22 percent. Both increases are statistically significant and persist after adjustment for household demographic characteristics including female headship and Hispanic origin. This suggests that using total food expenditure, and perhaps more generally using total expenditure, as a measure of well-being for poor families may be problematic because the relationship between expenditures and consumption is likely to be changing over time.

We also analyze the share of household income that is from earnings as a summary measure of the importance of work among poor households. Both the Interview and the Diary components of the CE confirm that in addition to spending more of their food budgets on food away, the poor are getting more of their income from earnings. Neither the Interview nor the Diary survey shows any change in the share of household income that is from earnings for non-poor households. So both in absolute terms and relative to higher income households, work has become more important for poor households. This reinforces our concern that the shift to spending on food away from home among poor households may have been at least partially driven by the very programs whose impact on the well-being of the poor we would like to evaluate.

Our results suggest that food spending may be an unreliable proxy for the food consumption of the poor. Even if consumption is deemed to be a better theoretical measure of well-being among the poor than is income, in practice our ability to measure consumption may be limited. This finding reinforces the point made by Meyer and Sullivan (2004) that a definitive analysis of changes in well-being of the poor requires a much more comprehensive analysis and data on leisure, health, and other outcome measures. We suggest that researchers should be

cautious when using food spending as a proxy for consumption and should explore the possibility that the composition of food spending is changing over time in a way that affects the interpretation of trends in spending.

2. Background

The impact of changes in tax and transfer programs during the 1990s on households who were likely users of these programs has been studied extensively.³ Most evaluations using national data and credible research designs have necessarily relied on a very limited number of outcomes such as hours of work, earnings, and income. There are very few studies that look at other outcomes which are alternative measures of well-being.

Meyer and Sullivan (2003) argue persuasively on both theoretical and practical grounds that consumption is a better measure of well-being than is income. In general, we agree with this. But data on consumption are scarce and researchers typically use expenditure data instead.⁴ It is not clear how well expenditures proxy for consumption. Some differences between expenditures and consumption have been well-documented and can be addressed using available data; two examples are that work-related expenditures may be only partially consumption and that expenditures on durables do not reflect the flow of consumption from these items. To address these concerns, authors often try to exclude work-related expenses and impute service flows for durables when developing a consumption measure from expenditure data (e.g., Meyer and Sullivan 2004). But there are other discrepancies between expenditures and consumption that

³ For a discussion of how relevant programs (the EITC, cash welfare, Medicaid and Supplemental Security Income) changed during this period, please see Meyer and Sullivan (2003), pp. 3 – 4.

⁴ Examples of studies that use food expenditures as a proxy for consumption include Lawrance (1991), Gruber (2000), Daponte (2001), Blundell and Pistaferri (2002), and Xu (2003). In addition, a large literature in macroeconomics has used food expenditure as a proxy for total consumption in order to test models of excess sensitivity of consumption to changes in permanent income. These papers are reviewed by Ziliak (1998) who notes that food consumption may be a poor proxy for total consumption.

these measures do not fix. In particular, changes in expenditure may overstate changes in consumption when there are shifts from home production to market production. Data on food expenditures typically include the cost of ingredients for food prepared at home but not the value of the time spent cooking, while data on expenditures for food away from home (either restaurant meals or takeout food) include the cost of ingredients plus the cost of preparation. Thus a shift to food away from home will show up in the data as an increase in expenditure even if the actual food consumed has not changed.

Several previous studies have noted that total food expenditures do not necessarily reflect what is being consumed. Michael and Lazear (1980) show using data from the 1972 – 1973 CE that two-earner families have about the same total food spending as one-earner families, but that this “masks the shift from grocery to restaurant expenditure seen in the detailed data” (p. 206). Similarly, Aguiar and Hurst (2005) document that for unemployed or retired individuals compared with workers, food expenditures are lower and time spent preparing food is higher, yet nutrient intake is essentially the same. Other research has shown that among low-income individuals, actual intake of food is less elastic to various shocks than are food expenditures. Fraker (1990) surveys the literature of the effects of food stamps on food expenditure and nutrient intake: most studies find large and positive associations between food stamps and food expenditure but only small positive or no associations between food stamps and nutrient intake. Bhattacharya et al. (2003), using data from the CE-Interview and the National Health and Nutrition Examination Survey, find that while food expenditure decreases for poor families as a result of unusually cold weather, nutrient intake responds to a much smaller degree. Wilde and Ranney (2000) use the CE-Diary and the Continuing Survey of Food Intake by Individuals to show that while food expenditure is substantially higher in the first three days after a household

receives food stamps, food intake is much smoother (and is flat for frequent shoppers) over the month for households receiving food stamps. The conclusion we draw from these studies is that food expenditures may be only a weak proxy for food consumption.

We are particularly concerned about the possibility of this kind of bias in evaluations of the well-being of the poor because the changes to tax and transfer programs that occurred during the 1990s were overwhelmingly work-oriented; that is, they strongly increased incentives for individuals to spend more time working. This increase in the price of leisure would be expected to cause a shift away from home production of meals and toward higher-priced prepared meals. As a result, food expenditures might increase even if actual food consumption had not changed, in exactly the way described above. Thus, the policies whose impact on the poor we would like to evaluate may themselves have introduced measurement error into the data that mimics a positive impact of the policies. The goal of this paper, therefore, is to explore whether there is any evidence of this kind of bias.

3. Data Sources and a Preliminary Comparison of the CE-Interview and CE-Diary

We use data from the 1992 through 2000 years of the CE-Interview and CE-Diary surveys. The CE, which is conducted by the U.S. Census Bureau for the Bureau of Labor Statistics, is a nationally representative survey of U.S. households and is widely regarded as the best source of data on the spending habits of American households (Bureau of Labor Statistics, 2006). It contains information on the characteristics of household members including their marital status, income, and demographics, as well as detailed family-level information on expenditures. The CE-Interview collects retrospective quarterly data on expenditures. Each household is interviewed up to four times at three-month intervals in the CE-Interview, though

many households drop out during the short panel. The first and fourth interviews also collect annual income data. We restrict our sample to complete income reporters in the first quarterly interview. All of the statistics and analyses we present have been weighted using the sampling weights provided with the data.

The CE-Diary also collects information on the spending habits of the nation's households, but the Diary Survey respondents are asked to keep track of all purchases made each day for two consecutive weeks. These data are especially valuable for analyzing frequently purchased items such as food and beverages as these purchases are less likely to be recalled accurately over a longer period of time. We use both weeks of data for households in the Diary Survey, though in our regression based analyses we control for sample week in case reliability varies with the week of the survey.⁵ All of the statistics and analyses we present have been weighted using the sampling weights provided with the data.

Our samples consist of 41,642 households from the CE-Interview and 43,623 households from the CE-Diary. Table 1 reports the distribution of households by poverty level in each sample. We define four groups based on U.S. Department of Health and Human Services poverty guidelines: 100% of poverty or less, between 100% and 200% of poverty, between 200% and 300% of poverty, and 300% of poverty or more. Roughly 15 percent of households are poor in both the CE-Interview and CE-Diary samples. Roughly 22 percent are between 100% and 200% of poverty and roughly 17 percent are between 200% and 300% of poverty.

In Table 2, we provide a comparison of food spending data in the CE-Interview and CE-Diary. All dollar figures in our analysis have been inflated to 2005 levels using the CPI-U-RS. Estimates of weekly spending from the CE-Diary have been multiplied by 13 to yield quarterly estimates for purposes of comparison with the CE-Interview. Among poor households in the CE-

⁵ Roughly 92% of households complete both weeks of the survey.

Diary, average quarterly total food expenditures were \$891, while the estimate from the CE-Interview is substantially higher: \$993. Looking at the different types of food spending, we see that the CE-Interview yields a much higher estimate of average spending on food at home for the poor than the CE-Diary: \$829 versus \$682. In contrast, the CE-Interview yields a much *lower* estimate of average spending on food away from home for the poor than the CE-Diary: \$164 versus \$209. On average, then, the CE-Interview compared to the CE-Diary overstates total food spending, overstates spending on food at home, and understates spending on food away from home for poor households.

These patterns – an over-reporting of food at home in the CE-Interview relative to the CE-Diary and an under-reporting of food away from home in the CE-Interview relative to the CE-Diary – also hold for the non-poor. Figure 1 displays the percentage difference in reported food expenditures between the CE-Interview and CE-Diary by poverty level. Reported quarterly expenditures on food at home are roughly 20 percent higher in the CE-Interview than in the CE-Diary across all groups of households defined by poverty level. By contrast, reported quarterly expenditures on food away from home are roughly 20 percent lower in the CE-Interview. These differences should be troubling for researchers who use the CE-Interview to examine poor households (for whom food expenditure represents a large share of total expenditure). The BLS uses the Diary as the authoritative source of data for some items and the Interview for others. For nearly all categories of food spending, the BLS uses CE-Diary rather than CE-Interview (US Bureau of Labor Statistics 2006).⁶ The CE is not used by poverty researchers as widely as datasets like the Current Population Survey or the Survey of Income and Program Participation, but to the extent that it is used at all, the CE-Interview is more widely used than the CE-Diary.

⁶ The only categories of food spending for which BLS uses CE-Interview as the source are: Food on out-of-town trips; board; catered affairs; school lunches; and meals as pay. See BLS (2006), pp. 301 – 307, for details.

Our analysis suggests that researchers interested in food spending should analyze both data sets to make sure that they paint roughly the same picture. In the analysis that follows, we present results using both CE-Interview and CE-Diary.

4. Empirical Method

Our empirical approach is to estimate trends in the share of household food budgets dedicated to food away from home by poverty status. To highlight why we are concerned that changes in the time use of the poor may have caused the substitution from food at home to food away from home, we examine trends in the share of household income that comes from labor market earnings. This share is meant to serve as a summary measure of the importance of work for poor households and increases as more family members work, as members increase their hours of work, as hourly wages increase, and/or as other income decreases.

We also present regression-based analyses of these trends to control for the potentially changing demographic characteristics of poor and non-poor households over time. In particular, we estimate:

$$s_i = X_i B + \delta_1(100\% - 200\%)_i + \delta_2(200\% - 300\%)_i + \delta_3(300\% +)_i + \gamma_0 T_i + \gamma_1 T_i * (100\% - 200\%)_i + \gamma_2 T_i * (200\% - 300\%)_i + \gamma_3 T_i * (300\% +)_i + \varepsilon_i \quad (1)$$

where:

s_i is the ratio of expenditure on food away to total expenditure on food by household i ;

X_{it} is a set of demographic (race/ethnicity, age, gender, and marital status of the household head, family size, and number of children) region, and month (and week of interview when using the CE-Diary) controls;

(100% - 200%), (200% - 300%), and (300%+) are dummy variables indicating whether a household's income falls within 100% and 200%, 200% and 300% or is above 300% of

the HHS poverty guideline (the omitted category is below 100% of the poverty guideline); and

T is a linear time trend.

In order to determine whether the share of the food budget that poor households dedicate to food away from home has been increasing relative to that for non-poor households, one simply tests whether the coefficients on the interactions between the linear time trend and the poverty level dummy variables (γ_1 , γ_2 , and γ_3) are statistically significant.

Please note that the dependent variable in these models is the ratio of expenditure at the household level. Therefore, estimates from this model yield trends in the average of the ratio of spending on food away to total food by poverty status. The descriptive trends that we also present, by contrast, are based on the ratio of the average spending on food away to average total food spending.

In order to examine trends in the importance of earnings for poor and non-poor households, we estimate:

$$e_i = X_i B + \delta_1(100\% - 200\%)_i + \delta_2(200\% - 300\%)_i + \delta_3(300\% +)_i + \gamma_0 T_i + \gamma_1 T_i * (100\% - 200\%)_i + \gamma_2 T * (200\% - 300\%)_i + \gamma_3 T * (300\% +)_i + \varepsilon_i \quad (2)$$

where:

e_i is the ratio of household annual earnings to annual income for household i .

In all of these models, we calculate Huber-White robust standard errors.

5. Results

A. Results on food spending

Figures 2 and 3 display our primary results on the trends in spending on food away from

home.⁷ In Figure 2, we report results from the CE – Interview on the growth in the share of total food spending that is food away from home between 1992 and 2000 for four groups of households defined by their poverty level. Between 1994 and 1997, poor households’ share of food expenditure that is food away grew rapidly and substantially. Increases in the share of food away from home for higher-income groups are very small in the CE-Interview data, so that the share spent on food away from home by poor households increased not just in absolute terms but relative to higher-income households as well.

Figure 3 shows comparable estimates from the CE-Diary. As in the CE-Interview, poor households’ share of food expenditure that is food away grew rapidly and substantially but this increase occurred a bit later. In contrast to the CE-Interview, the CE-Diary data show that non-poor households also increased their share of food spending devoted to food away from home, though the size of this percentage increase was much smaller than the increases for poor households. Thus the CE-Diary data also show that the share of food spending on food away from home increased for poor households in both absolute and relative terms.

The regression results generally confirm these findings and are reported in Table 3. Columns 1 and 2 of table 3 report estimates of equation (1) with and without demographic, region and month controls using our sample from the CE-Interview. In the model without additional controls, we find that there was an upward trend in the ratio of food away to total food expenditure among poor households in our CE-Interview sample. We estimate that there was a 0.8 percentage point increase each year from 1992 to 2000 in the average share of poor households’ food budgets dedicated to food away from home. This estimate is statistically significant at the 1-percent level. By contrast, there was no increase in this ratio among

⁷ The average levels of total food spending and spending on food away from home from the CE-Interview and CE-Diary underlying Figures 2 and 3 are reported in Appendix Tables A1 and A2.

households between 100% and 200% of the poverty line and among households above 300% of the poverty line. There was a slight 0.2 percentage point ($= [0.008 - 0.006] * 100$) increase per year in the share households between 200% and 300% of the poverty line spend on food away from home. This slight trend was substantially (and statistically significantly) lower than the trend among poor households.

When we add demographic, region, and month controls, the upward trend in the ratio of spending on food away to total food among poor households is estimated to be 0.7 percentage points per year (column 2 of Table 3). Households between 100% and 200% of the poverty line and households above 300% of the poverty line continue not exhibit a trend in the ratio of spending on food away from home that is statistically different from zero. Households between 200% and 300% of poverty, by contrast, had a 0.3 percentage point per year upward trend in the ratio of spending on food away, but the trend is, once again, significantly smaller than the trend among poor households.

Columns 3 and 4 of Table 3 report the corresponding results using our sample from the CE-Diary. Based on the CE-Diary sample, the ratio of spending on food away to total food spending increased by 1 percentage point per year between 1992 and 2000 among poor households. In contrast to the estimates using the CE-Interview, this ratio also increased among non-poor households though by a smaller amount than for poor households. Among households between 100% and 200% of poverty, the ratio of spending on food away to total food spending increased by 0.9 percentage points per year which was not statistically different from the trend among poor households. Among those between 200% and 300% and 300% or more of the poverty line, this ratio increased by 0.8 and 0.5 percentage points per year respectively, both of which were statistically significantly smaller trends than that for the poor.

To summarize our results on food spending, both the CE-Interview and the CE-Diary show significant increases over time in the share of the average poor household's total food budget that is devoted to food away from home. The two datasets give slightly different results from one another about whether this share increased for non-poor households as well. In both datasets, the increases for the poor were significantly larger than any increases for the non-poor. These results are evident in the descriptive statistics and persist when we regression-adjust for demographic characteristics.

B. Results on earnings as a share of income

Both the CE-Interview and the CE-Diary show that the share of poor households' income coming from labor earnings increased dramatically between 1992 and 2000 (figures 4 and 5), whereas both surveys show no change in this share over time for non-poor households. Regression-adjusted results confirm this general picture. Column 1 of Table 4 presents trends estimated using CE-Interview in the ratio of household earnings to total household income without additional controls while column 2 estimates these trends controlling for demographic characteristics, region, and month. We estimate that there was a rapid, upward trend among poor households in the importance of labor market earnings to household income. Between 1992 and 2000, we estimate that the ratio of household earnings to household income increased by 2 percentage points per year. By contrast, the share of household income from labor market earnings did not increase among households between 100% and 200% the poverty line or among households between 200% and 300% during this period. This share increased a small amount – 0.4 percentage points per year – among households above 300% of the poverty line, but this increase is significantly smaller than that among poor households.

In our CE-Diary sample, the ratio of earnings to household income increased by 1.3 percentage points per year among poor households. It also increased, though by a smaller amount, among non-poor households. Among households between 200% and 300% of the poverty line and among households above 300% of the poverty line, the ratio of earnings to household income increased by 0.3 percentage points per year. Among households between 100% and 200% of the poverty line, the share of household income coming from earnings increased 0.7 percentage points per year.

To summarize our results on earnings as a share of income, in both datasets we observe significant increases over time for poor households in the share of income that is from work. We also see some increases for higher income households, but where these exist they are significantly smaller than those for poor households. In short, our results on earnings are similar to those for food. This suggests that caution is in order when using food spending as a proxy for consumption. This is particularly true when the goal of the analysis is to evaluate how the well-being of the poor may have changed in response to programs and policies that altered work incentives.

6. Conclusion

We find using both the CE-Diary and the CE-Interview that food away from home made up an increasingly large share of poor households' food budgets between 1992 and 2000. Because expenditure data on food away from home include the value of food preparation, while expenditures on food at home do not, this shift to food away from home drives a wedge between food consumption and total food spending that is getting larger over time for the poor. Total food spending may have increased even if food consumed did not, and analyses of well-being

that rely on total food spending may reach erroneous conclusions as a result. Our concern on this score is exacerbated by the large increases we observe in both datasets over the same period in the share of poor households' income that is from work. The same incentives that increase work would be expected to cause a shift from home production to market production. For this reason, the very economic and policy changes that researchers seek to evaluate may introduce bias into the data used to evaluate them. Our results suggest that caution is in order when using total food spending as a summary measure of how the well-being of the poor has changed over time.

7. References

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Figure 1
Percent difference in reported food expenditures between CE-Interview and CE-Diary by poverty level

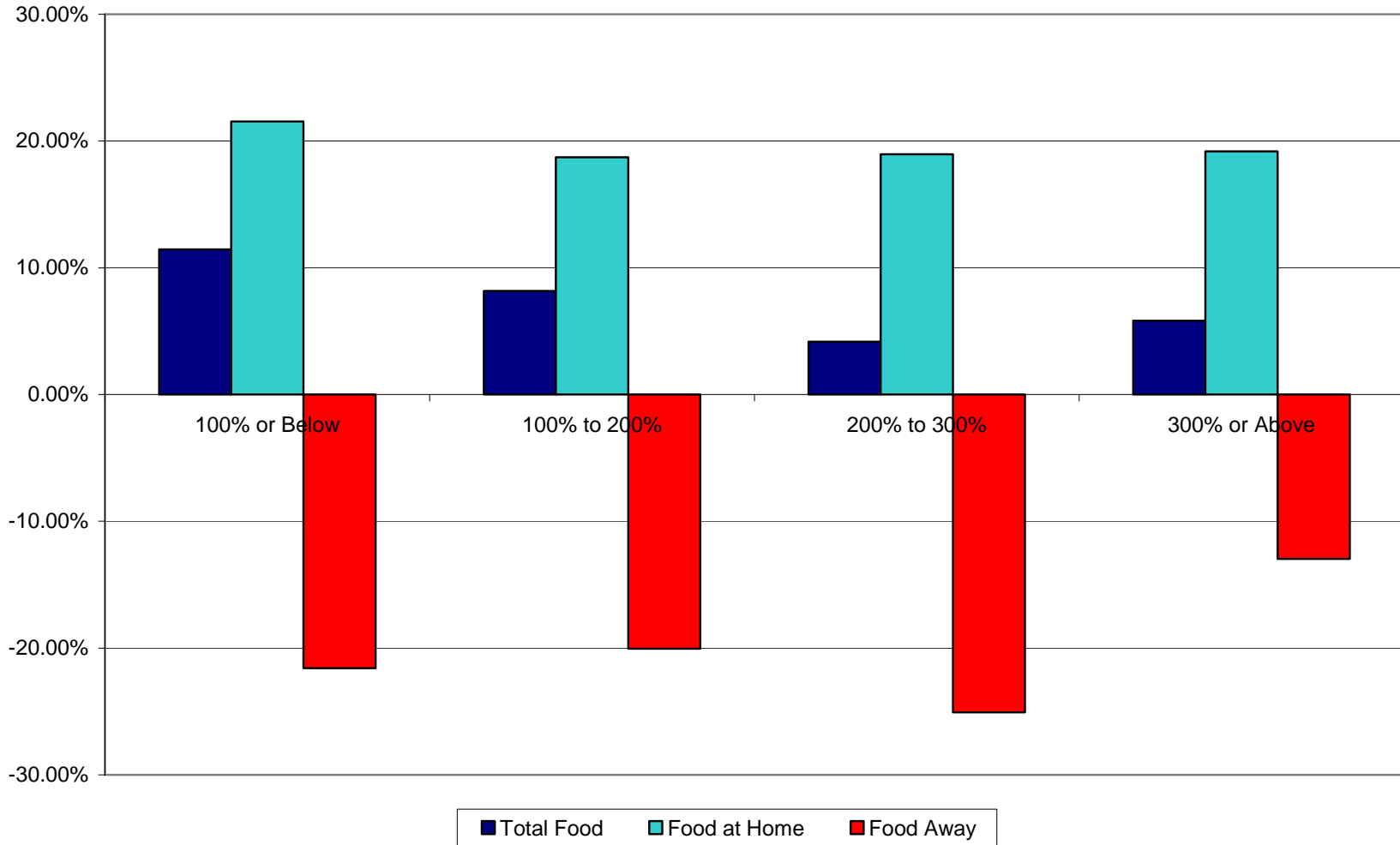
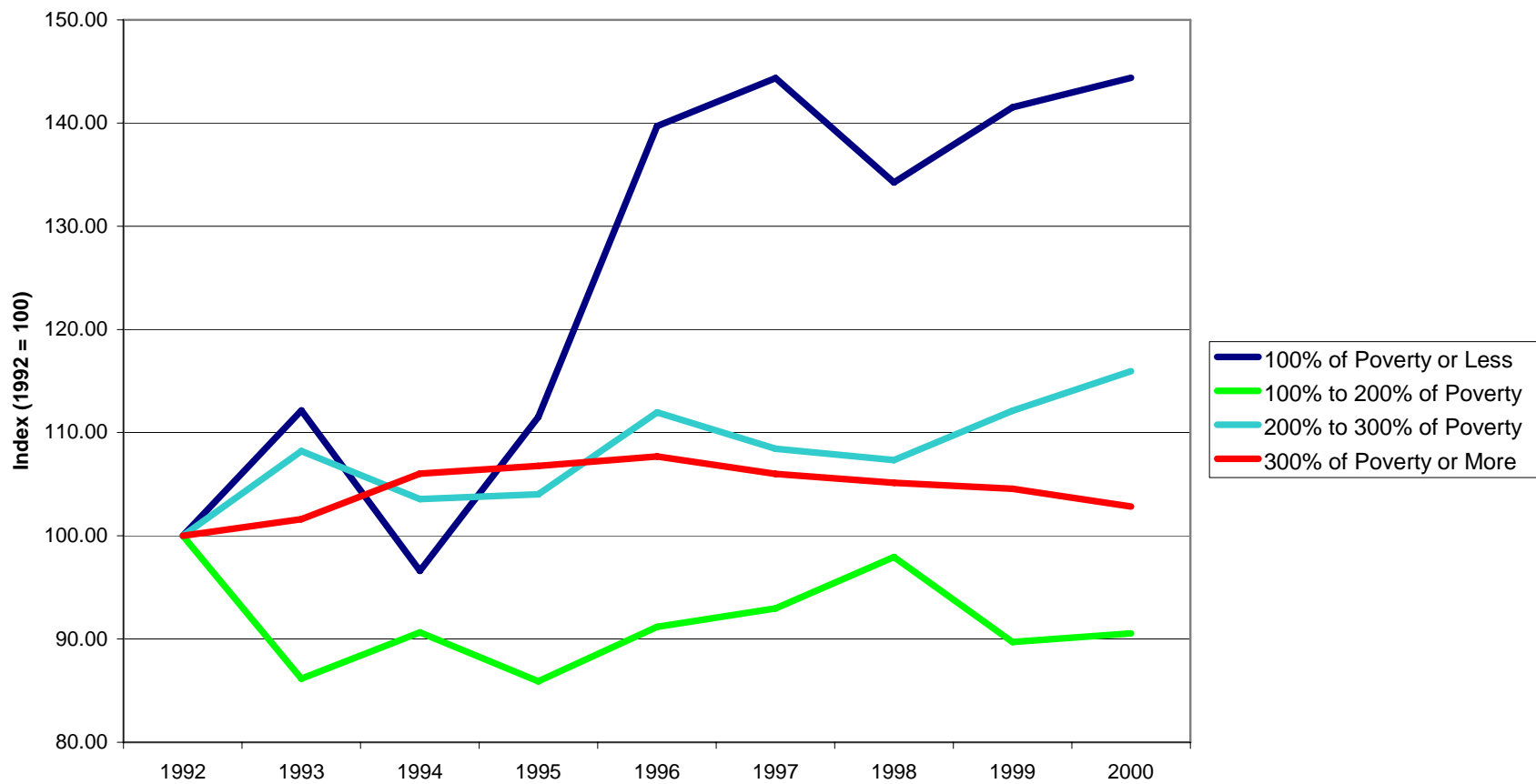


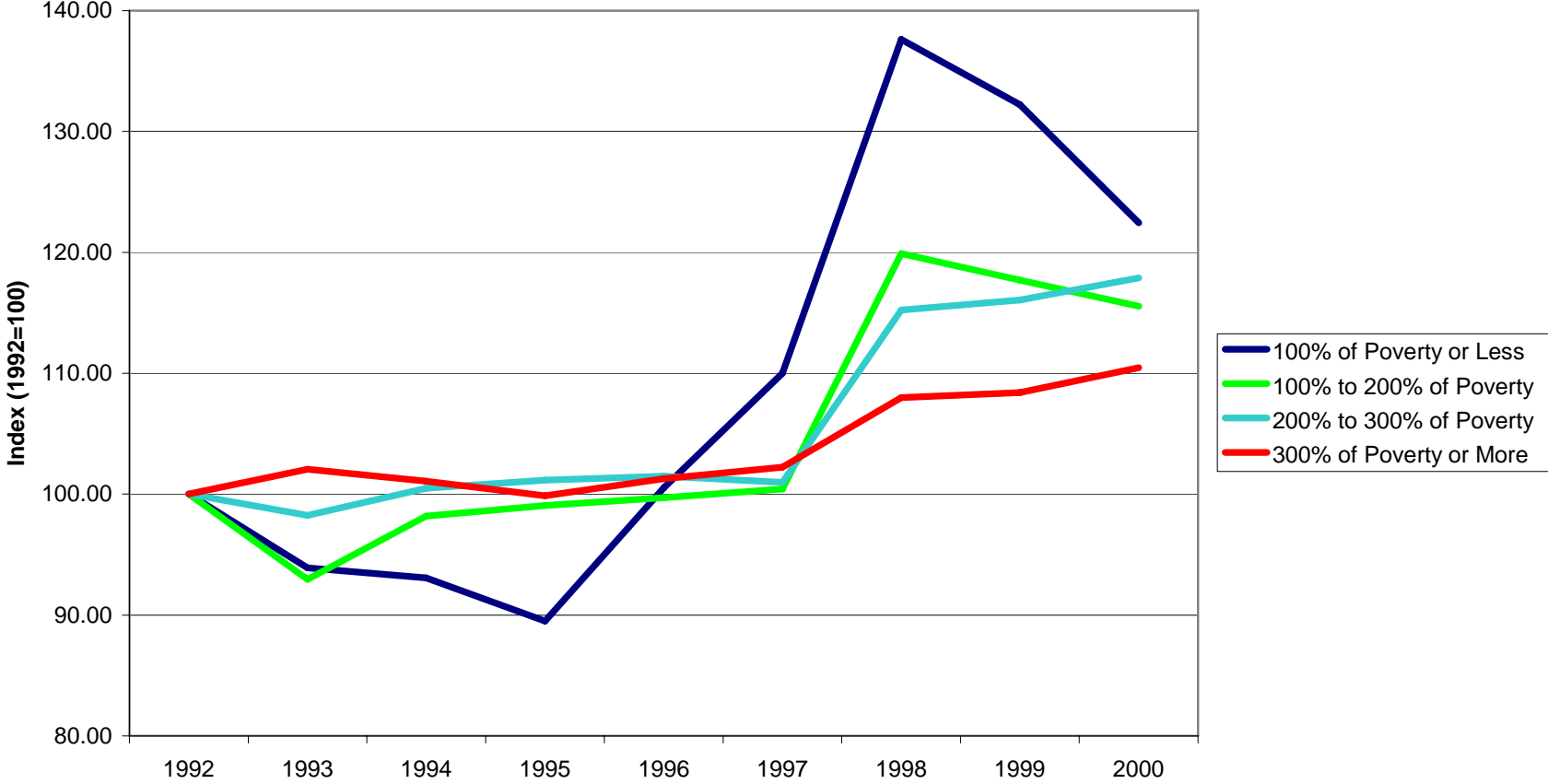
Figure 2
Growth in the share of food budget that is food away from home by poverty level
CE - Interview results



Source: CE-Interview

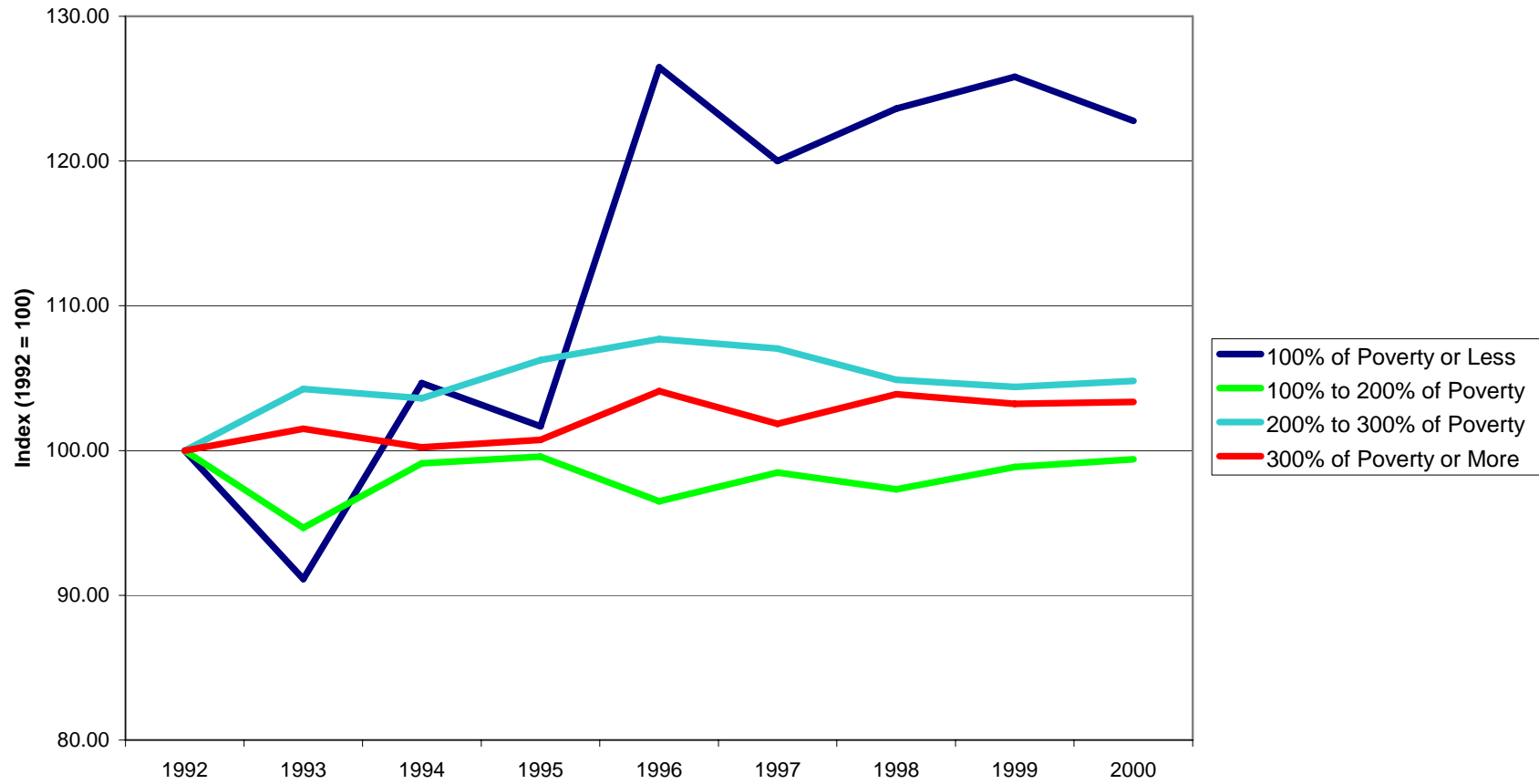
Note: Share is the ratio of average expenditure on food away to average expenditure on total food. Poverty defined using CU annual income relative to the HHS poverty guidelines.

Figure 3
Growth in the share of food budget that is food away from home by poverty level
CE - Diary results



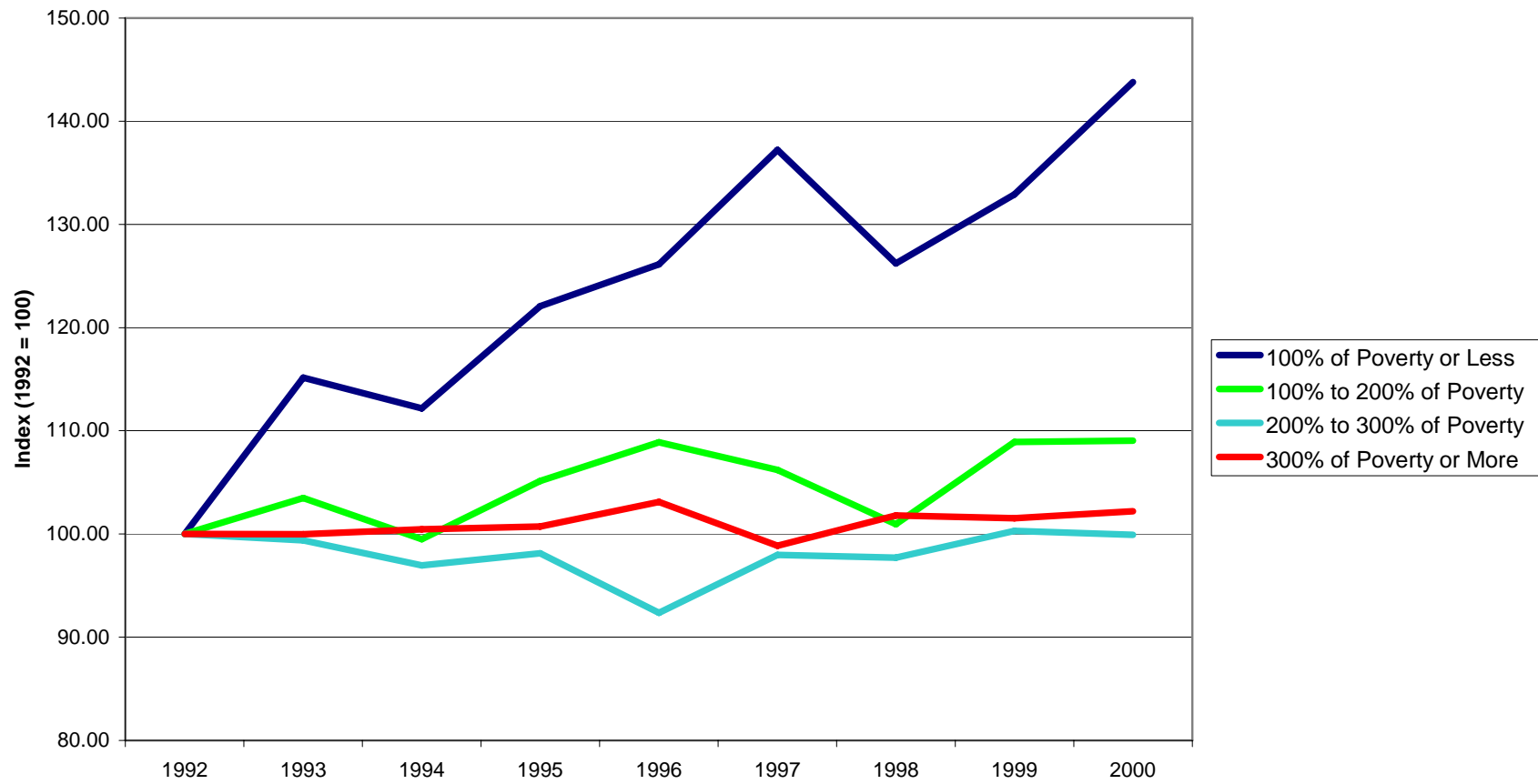
Note: Share is the ratio of average expenditure on food away to average expenditure on total food.

Figure 4
Growth in the share of household income from earnings by poverty level
CE - Interview results



Note: Share is the ratio of average expenditure on food away to average expenditure on total food.

Figure 5
Growth in the share of household income from earnings by poverty level
CE - Diary results



Note: Share is the ratio of annual household earnings to annual pre-tax household income.

Table 1.
Distribution of CE Households by Poverty Level

	CE-Interview		CE-Diary	
	Percent	N	Percent	N
100% or Below	15.88	6,612	14.30	6,238
100% to 200%	22.92	9,545	22.75	9,926
200% to 300%	17.18	7,155	17.70	7,720
300% or Above	44.02	18,330	45.25	19,739
Total	100	41,642	100.00	43,623

Source: CE-Interview and CE-Diary Surveys, 1992 – 2000

Note: Poverty defined using CU annual income relative to the HHS poverty guidelines.

Table 2

Comparison of Food Expenditure in CE-Interview and CE-Diary

Poverty Level		Total Food	Food at Home	Food Away
100% or Below	CE-Interview (Quarterly)	\$993.20	\$829.49	\$163.72
	CE-Diary (Weekly)	\$68.56	\$52.50	\$16.06
	CE-Diary x 13 (Quarterly)	\$891.25	\$682.48	\$208.77
	Percent Difference	11.44%	21.54%	-21.58%
100% to 200%	CE-Interview (Quarterly)	\$1,154.88	\$922.55	\$232.33
	CE-Diary (Weekly)	\$82.13	\$59.78	\$22.35
	CE-Diary x 13 (Quarterly)	\$1,067.73	\$777.16	\$290.58
	Percent Difference	8.16%	18.71%	-20.05%
200% to 300%	CE-Interview (Quarterly)	\$1,411.35	\$1,070.20	\$341.16
	CE-Diary (Weekly)	\$104.22	\$69.20	\$35.02
	CE-Diary x 13 (Quarterly)	\$1,354.89	\$899.62	\$455.28
	Percent Difference	4.17%	18.96%	-25.07%
300% or Above	CE-Interview (Quarterly)	\$1,818.98	\$1,197.69	\$621.29
	CE-Diary (Weekly)	\$132.21	\$77.30	\$54.92
	CE-Diary x 13 (Quarterly)	\$1,718.79	\$1,004.85	\$713.94
	Percent Difference	5.83%	19.19%	-12.98%

Source: CE-Interview and CE-Diary, 1992 to 2000

Note: Poverty defined using CU annual income relative to the HHS poverty guidelines.

All dollar figures are inflated to 2005 levels using the CPI-U-RS.

Table 3
 Regression results
 Dependent variable = Ratio of food away to total food expenditure

	(1)	(2)	(3)	(4)
Data source:	CE – Interview		CE - Diary	
Year	0.008 (0.001)	0.007 (0.001)	0.010 (0.001)	0.010 (0.001)
Year x (100%-200%)	-0.008 (0.001)	-0.006 (0.001)	-0.003 (0.001)	-0.001 (0.001)
Year x (200%-300%)	-0.006 (0.001)	-0.004 (0.001)	-0.004 (0.001)	-0.002 (0.001)
Year x (300% or more)	-0.007 (0.001)	-0.006 (0.001)	-0.006 (0.001)	-0.005 (0.001)
Demographic, region, Month Controls	No	Yes	No	Yes
p-value from test of:				
Year+Year x (100%-200%)=0	0.9816	0.3978	0.0000	0.0000
Year+Year x (200%-300%)=0	0.0501	0.0033	0.0000	0.0000
Year+Year x (300% or more)=0	0.6049	0.4728	0.0000	0.0000
Observations	41592	39725	83961	79671
Adjusted R-squared	0.0892	0.1587	0.0507	0.1339

Standard errors in parentheses

Note: Poverty defined using CU annual income relative to the HHS poverty guidelines. Controls include indicators for poverty status (100% to 200%, 200% to 300%, and 300% or more), dummy variables for race/ethnicity (white, black, Hispanic, other race (omitted)), age of head, gender of head, marital status of head, family size, number of children, region (Northeast, Midwest, South, West (omitted)), and month.

Table 4
 Regression results
 Dependent variable = Ratio of earnings to household income

	(1)	(2)	(3)	(4)
Data source:	CE – Interview		CE - Diary	
Year	0.019 (0.002)	0.020 (0.002)	0.010 (0.001)	0.013 (0.001)
Year x (100%-200%)	-0.019 (0.003)	-0.018 (0.002)	-0.006 (0.002)	-0.006 (0.001)
Year x (200%-300%)	-0.016 (0.003)	-0.017 (0.002)	-0.010 (0.002)	-0.010 (0.001)
Year x (300% or more)	-0.015 (0.002)	-0.016 (0.002)	-0.006 (0.002)	-0.010 (0.001)
Demographic, region, Month Controls	No	Yes	No	Yes
p-value from test of:				
Year+Year x (100%-200%)=0	0.8831	0.1349	0.0003	0.0000
Year+Year x (200%-300%)=0	0.1667	0.0653	0.8185	0.0001
Year+Year x (300% or more)=0	0.0014	0.0000	0.0000	0.0000
Observations	41642	39775	87465	83019
Adjusted R-squared	0.1659	0.4858	0.1817	0.5477

Standard errors in parentheses

Note: Poverty defined using CU annual income relative to the HHS poverty guidelines. Controls include indicators for poverty status (100% to 200%, 200% to 300%, and 300% or more), dummy variables for race/ethnicity (white, black, Hispanic, other race (omitted)), age of head, gender of head, marital status of head, family size, number of children, region (Northeast, Midwest, South, West (omitted)), month, and week of interview.

Appendix Table A1.

Average real household expenditure on food and food away from home

	1992	1993	1994	1995	1996	1997	1998	1999	2000
<i>100% of Poverty or Less</i>									
Total Food Expenditure	\$1,003.76	\$968.13	\$1,003.26	\$1,016.97	\$1,011.91	\$997.68	\$944.33	\$971.05	\$1,021.74
Expenditure on Food									
Away	\$132.48	\$143.31	\$127.91	\$149.67	\$186.57	\$190.09	\$167.32	\$181.38	\$194.72
Ratio	13.20%	14.80%	12.75%	14.72%	18.44%	19.05%	17.72%	18.68%	19.06%
<i>100% to 200% of Poverty</i>									
Total Food Expenditure	\$1,203.69	\$1,125.18	\$1,186.20	\$1,131.58	\$1,163.27	\$1,152.19	\$1,166.98	\$1,138.55	\$1,126.26
Expenditure on Food									
Away	\$263.92	\$212.55	\$235.73	\$213.16	\$232.53	\$234.87	\$250.65	\$223.95	\$223.58
Ratio	21.93%	18.89%	19.87%	18.84%	19.99%	20.39%	21.48%	19.67%	19.85%
<i>200% to 300% of Poverty</i>									
Total Food Expenditure	\$1,355.06	\$1,369.45	\$1,395.57	\$1,391.62	\$1,486.56	\$1,486.07	\$1,424.76	\$1,381.35	\$1,411.75
Expenditure on Food									
Away	\$303.23	\$331.60	\$323.47	\$323.92	\$372.46	\$360.63	\$342.22	\$346.56	\$366.31
Ratio	22.38%	24.21%	23.18%	23.28%	25.06%	24.27%	24.02%	25.09%	25.95%
<i>300% of Poverty or More</i>									
Total Food Expenditure	\$1,888.33	\$1,813.36	\$1,838.19	\$1,809.79	\$1,872.79	\$1,815.96	\$1,804.26	\$1,784.84	\$1,743.29
Expenditure on Food									
Away	\$617.12	\$602.13	\$636.90	\$631.56	\$659.15	\$629.01	\$620.03	\$609.85	\$585.88
Ratio	32.68%	33.21%	34.65%	34.90%	35.20%	34.64%	34.36%	34.17%	33.61%

Source: CE-Interview

Note: Poverty defined using CU annual income relative to the HHS poverty guidelines. All dollar figures are inflated to 2005 levels using the CPI-U-RS.

Appendix Table A2.

Average real household expenditure on food and food away from home from CE-Diary

	1992	1993	1994	1995	1996	1997	1998	1999	2000
	<i>100% of Poverty or Less</i>								
Total Food Expenditure	\$69.18	\$69.30	\$68.63	\$67.38	\$67.54	\$72.82	\$68.73	\$67.44	\$66.00
Expenditure on Food									
Away	\$14.90	\$14.02	\$13.76	\$12.99	\$14.63	\$17.25	\$20.37	\$19.21	\$17.41
Ratio	21.54%	20.22%	20.05%	19.28%	21.65%	23.69%	29.64%	28.48%	26.38%
	<i>100% to 200% of Poverty</i>								
Total Food Expenditure	\$81.62	\$81.74	\$82.64	\$85.60	\$85.90	\$80.58	\$76.37	\$81.87	\$82.88
Expenditure on Food									
Away	\$21.22	\$19.75	\$21.09	\$22.05	\$22.26	\$21.04	\$23.81	\$25.05	\$24.90
Ratio	26.00%	24.16%	25.52%	25.76%	25.92%	26.11%	31.17%	30.60%	30.04%
	<i>200% to 300% of Poverty</i>								
Total Food Expenditure	\$104.39	\$103.43	\$99.69	\$100.99	\$103.98	\$103.68	\$107.81	\$105.29	\$108.74
Expenditure on Food									
Away	\$33.13	\$32.25	\$31.79	\$32.42	\$33.49	\$33.22	\$39.42	\$38.78	\$40.68
Ratio	31.73%	31.18%	31.89%	32.11%	32.21%	32.04%	36.57%	36.83%	37.41%
	<i>300% of Poverty or More</i>								
Total Food Expenditure	\$130.47	\$132.67	\$128.44	\$129.79	\$132.28	\$128.06	\$131.53	\$137.93	\$138.76
Expenditure on Food									
Away	\$52.21	\$54.19	\$51.96	\$51.88	\$53.62	\$52.39	\$56.84	\$59.84	\$61.34
Ratio	40.02%	40.84%	40.45%	39.97%	40.54%	40.91%	43.22%	43.38%	44.21%

Source: CE-Diary

Note: Poverty defined using CU annual income relative to the HHS poverty guidelines. All dollar figures are inflated to 2005 levels using the CPI-U-RS.

