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Abstract

A combination of welfare reform, expansions of the Earned Income Tax Credit, and other policy changes led to increases in the labor supply of single mothers in the 1990s and a decline in their participation in cash welfare programs. Whether the material well-being of single mothers and their families has improved is less clear. Meyer and Sullivan (2004) report that single mothers' food expenditure increased during the 1990s and conclude that their well-being either improved or remained the same, relative to single childless women or married women with children. Our reading of the data suggests that a more cautious interpretation is in order. In particular, we note that increases in food spending do not necessarily reflect increases in well-being. Total food spending may change even though the actual food consumed did not if there is a shift from home-prepared food to commercially prepared or restaurant food. We examine trends in spending on food at home and food away from home using data from the Consumer Expenditure Diary Survey and find that they are consistent with such a shift. We find that the entire increase in food expenditure can be explained by a shift from food at home to food away from home.

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1. Introduction

During the 1990s, tax and welfare policies changed to encourage single mothers to work, increase their earnings, and reduce their reliance on public welfare programs. The generosity of the Earned Income Tax Credit (EITC) increased dramatically, welfare programs increased both incentives and requirements for paid work, and eligibility for public health insurance was decoupled from the receipt of welfare, enabling individuals to earn more without losing insurance coverage. The culmination of these work-oriented policy changes occurred in 1996 with the passage of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA). These policy changes, combined with a robust economy, reduced participation in cash welfare and in-kind public assistance and increased the labor supply and earnings of single mothers (Meyer and Rosenbaum 2000, 2001; Eissa and Liebman 1996; Ziliak et al 2000; Schoeni and Blank 2000, Blank 2002).

Whether the material well-being of single mothers improved during this period is a different question. For example, there is no consensus that welfare reform is associated with an increase in income of single mothers (Moffitt 1999; Grogger 2001; Schoeni and Blank 2000; Bitler et al 2003). Moreover, Meyer and Sullivan (2003) argue persuasively that, for both conceptual and measurement reasons, consumption provides a better measure of material well-being than income does. In a separate paper, Meyer and Sullivan (2004) use data from the Interview Component of the Consumer Expenditure Survey (CE-Interview) and the Panel Study of Income Dynamics (PSID) to show that both total expenditure and food expenditure of single mothers increased – or at least did not decrease – in both absolute terms and relative to single

women and to married mothers. The authors conclude that welfare and tax policy changes improved the material well-being of most single mothers in the 1990s.[1]

We agree with Meyer and Sullivan that consumption is a better measure of well being than is income. The question that remains is whether expenditures are a good measure of consumption. In particular, changes in expenditures may overstate changes in consumption when there are shifts from cheaper but less convenient to expensive but more convenient goods. These concerns may be especially important when examining changes in food expenditure; increases in food spending do not necessarily reflect increases in well-being for several reasons. First, total food spending may change even though the actual food consumed did not, if there is a shift from home-prepared food to commercially prepared or restaurant food. We find that the trends in spending on food at home and food away from home are consistent with such a shift. Second, even if there are increases in food consumption, these do not necessarily translate into better nutrition if, for example, there is a shift from homemade food to less nutritious and/or more caloric restaurant foods. Given high rates of obesity, more food is not necessarily a good thing. Finally, overall well-being includes not just nutritional well-being and the utility derived from eating, but also the utility derived from leisure and home production. The observed changes in food spending may have been driven, at least in part, by changes in the incentives to work that women face: in particular, work requirements because of welfare reform and changes in wage rates because of EITC expansions. Therefore, our reading of the Meyer and Sullivan (2004) results suggests that a more cautious interpretation is in order. Single mothers' relative food spending may have increased, but evaluating whether their overall well-being increased

[1] One other study that has examined the effect of welfare reform on material well-being is Winship and Jencks (2004). They examine the effect of welfare reform on food security and that food problems (a combination of worries about household food supply, perceived dietary inadequacy, reduced food intake, and/or hunger) decreased among single mother families between 1995 and 2000 and increased slightly between 2000 and 2002.

would require that we measure changes in their use of time and their consumption of food and other goods, not just their spending on food.

In this paper, we provide evidence on the first of these possible reasons why changes in expenditure may not reflect changes in well-being. That is, we examine whether there was a substitution from home-produced meals towards market-produced meals. We expect that as earnings of single mothers increase, they should reduce expenditure on inputs into home produced goods while increasing expenditures on market produced goods.

The paper proceeds as follows. First, we present trends in total food expenditure and in the components of food expenditure of single mothers and of other women using data from the Consumer Expenditure Diary (CE-Diary) Survey. Use of the CE-Diary is helpful because it may yield a more accurate measure of food expenditure than the CE-Interview, which relies on respondents recalling their expenditure over a three month period. Second, we replicate a set of results reported by Meyer and Sullivan (2004) from the PSID and the CEX-Interview using data from the CEX-Diary but now looking separately at expenditures on groceries and expenditures on food away from home. In both analyses, we find evidence that relative food expenditure of single mothers increased in the 1990s. However, we find that this entire increase is the result of increases in spending on food away from home, suggesting that there was substitution from home production to market expenditure.

Our results suggest that the food consumption of single mothers may not have changed as much as it appears based on patterns of food spending. This finding reinforces the point made by Meyer and Sullivan (2004) that a definitive analysis of changes in well-being requires a much more comprehensive analysis and data on leisure, health, and other outcome measures.

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.[2] 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 likely to be better measures of well-being. Some studies focusing on what happens to individuals who leave welfare have examined health outcomes, but these studies are subject to a number of well known problems. Bitler, Hoynes and Gelbach (2004) use national data and variation in the timing of welfare waivers to identify the effects of welfare reform on medical care utilization and health; they find reductions in the use of some types of medical care and no significant effects on self-reported health. It is not clear what these findings suggest about the impact of welfare reform on overall 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 two qualifications are in order. First, but it is not clear that expenditures are a good measure of consumption. Some of the discrepancies between expenditures and consumption have been well-documented and can be addressed using available data. For example, Meyer and Sullivan discuss the fact that work-related expenditures may be only partially consumption, and the fact that expenditures on durables do not reflect the flow of consumption from these items. To address these concerns, Meyer and Sullivan exclude transportation, child care, domestic services, and apparel expenditures from their measure of consumption and impute service flows for housing and vehicles.

[2] 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.

But there are other discrepancies between expenditure and consumption that cannot be addressed by excluding durables and work-related expenses. In particular, changes in expenditure may overstate changes in consumption when there are shifts from home production to market production. For example, expenditures on food may include the cost of labor used to prepare foods that are purchased as meals (either in restaurants or as takeout). 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 their raw inputs and toward purchasing higher-priced prepared meals. As a result, food expenditures would increase even though actual food consumption did not change.[3]

[3] This idea can be formally shown using a model based on Becker (1965) in which families combine time and expenditure to produce consumption. A family's utility can be modeled as a function of two goods, home cooked meals (produced with time and groceriers), *f*, and restaurant meals, *r*. The relationships between home cooked meals, f, time spent cooking, and quantity of groceries purchased are given by: $T_f = t_f f$, and $X_f = b_f f$ where T_f is time spent cooking, t_f if the input of time needed per home cooked meal, X_f is the quantity of groceries purchased, and b_f is the input of groceries needed per home cooked meal (following Becker's (1965) notation). If restaurant meals are purchased solely in the market, then there is no time input into *r*. Since the price of restaurant meals is simply the market price of these meals, p_r, and the full the price of home cooked meals is given by $(p_f b_f + w t_f)$, where p_f is the market price of groceries and w is the wage rate, the Hicksian demand for groceries will be downward sloping in the wage rate, w, and the Hicksian demand for restaurant meals will be upward sloping in the wage rate, w. Thus, an increase in the wage should lead to a substitution from groceries to restaurant meals (holding utility constant). Similarly, if a family were mandated to spend a certain number of hours at work, Becker's model would predict the exact same effects as for an increase in the wage rate as the mandate will increase the shadow price-wage above the market wage.

Several other authors 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 (2003) 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. Jensen and Miller (2003), in a sample of Russian households, find that wealth shocks lead to much larger reductions in food expenditure than in caloric intake as households substitute to lower quality foods. The conclusion we draw from these studies is that food expenditures may be only a weak proxy for food consumption.

The second qualification is that even if increases in food expenditure reflect increases in food consumption, it is not obvious that these represent an improvement in well-being. Already,

65 percent of adults and 15 percent of children and adolescents are overweight (National Center for Health Statistics 2002). While welfare reform has been generally considered a success by encouraging poor women to find employment, there is reason to be concerned about the potential impact of this move on their children's nutritional well-being. Anderson, Butcher and Levine (2003) find that a child is more likely to be overweight if his/her mother worked more hours per week over the child's life. It is easy to imagine that women working in the formal labor market or paid childcare providers would rely more heavily on processed and prepared foods than stay-at-home moms, and that these tradeoffs might contribute to the growing problem of obesity among children.

While we cannot use CE data to examine patterns of actual consumption, we can look to disaggregated data for an indication of whether our concerns about the distinction between expenditures and consumption are well-founded. In particular, we can separately examine trends in expenditures on food at home and food away from home. If the increase in total food spending is driven by an increase in spending on food away from home, then there is reason for concern that these changes in expenditures may not reflect increases either in consumption or in well-being.

4. Data

We use data from the CE-Diary from 1986-2001. The CE-Diary is conducted by the Bureau of Labor Statistics and collects information on the purchasing habits of the nation's households and families. In the CE-Diary, respondents 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.

Our sample consists of 62,434 weeks of observations from 33,231 households that completed one or both weeks of the CE-Diary survey between 1986 and 2001.[4] Of these households, 5,018 are single mother households; 7,681 are single female households without children; and 20,532 are married households with children. We exclude from our analysis all single male and single father households who completed the CE-Diary survey during this period.

5. Descriptive statistics

Table 1 reports summary statistics separately for single mother households, single female households without children, and married households with children. The top panel reports statistics for households of all education levels while the bottom panel reports statistics for households with a high school education or less. Single mother households of all education levels spend less on food each week than married mother households – $94 versus $147 – and more than single female households without children who spend $77 (in 2001 dollars). Single mother households spend less on food at home than married households – $69 versus $100 – and more than single female households who spend $48. Single mother households spend $25 per week on food consumed away from home – roughly the same as single female households ($29) and less than married households with children ($47). The differences between single mother households and single female households go away when we control for family size and the number and genders of children of different ages; by contrast, the differences between single mother households and married households persist when we control for family size and composition.

[4] Roughly 92% of households complete both weeks of the survey.

Single mother households with a high school education or less also spend less on food in total each week than married mother households, but more than single female households without children. The same pattern holds for expenditures on food at home: low-educated single mothers spend less than married mothers but more than single childless women. Looking at food away from home, however, low-educated single mother households spend less than the other two groups: $20 per week compared with $23 for single female households and $38 for married households with children.

Figure 1 shows single mother households' log expenditures on total food relative to those of married households and single female households from 1988 to 2001.[5] That is, the dashed line shows how much higher, in proportional terms, food spending was in each year for single mother households compared to single female households: about fifteen percent higher in 1986 and more than twenty percent higher in 2001. The solid line shows how much lower, in proportional terms, food spending was for single mother households compared to married couple households: about sixty percent lower in 1986 and only forty percent lower in 2001. Figure 2 shows the same trends for the sample of women with a high school education or less. Figures 3 and 4 show relative trends in log expenditure on food at home and Figures 5 and 6 show relative trends in log expenditure on food away from home.

Figure 1 shows that relative to either married households or single female households, total food expenditure of single mother households increased slightly from 1988 to 2001.[6] This increase is even more noticeable when we restrict the sample to women with a high school education or less (figure 2). However, relative to married households, single mother households display a decline in expenditures on food at home for women overall and for women with a high

[5] Households with zero expenditure for the week were included by adding $1 to all households' expenditures.
[6] In absolute terms, total food spending declined slightly for married households, while it increased for single mother and childless single female households over this period.

school education or less (figures 3 and 4). This decline is particularly noticeable after 1992. Compared with single female households, single mother households' spending on food at home is flat.[7]

The entire increase in total food expenditures, therefore, seems to be coming from increases in expenditures on food away from home. This can also be seen in Figures 5 and 6. Relative to either married households or single female households, spending on food away from home by single mother households increased substantially beginning in 1996.[8]

6. Multivariate analysis

Of course, it is possible that these trends were actually driven by changes in other characteristics of single-mother households that affect food expenditures, such as household size or composition. To see whether the patterns observed in figures 1 – 6 persist when we account for these other factors, we estimate the following multivariate model:

$$\ln y = \sum \gamma_j \text{Single Mother} * \text{period}_j + \sum \theta_j \text{period}_j + X\beta + \varepsilon \qquad (1)$$

where $\ln y$ is the natural logarithm of real weekly expenditure on food and, alternatively, the components of food – food at home and food away from home. *Single Mother* is a dummy variable indicating whether the observation comes from a single mother household; *period* is set of indicator variables for the four periods: 1986 - 1989, 1990 - 1993, 1994 - 1995, and 1996 - 2001 (with 1986-1989 excluded); X is a set of control variables including a set of month dummy variables, a cubic in age of the household head, race, education, and a very flexible set of

[7] In absolute terms, spending on food at home declined slightly for married households, while it increased for single mother and childless single female households over this period (just like the patterns for total food spending).

[8] In absolute terms, spending on food away from home first declined during this period for all three groups, then rebounded starting around 1994. For married households and single female households, the rebound returned spending to its 1986 levels by 2001; for single mother households, the level of spending on food away from home in 2001 is considerably higher than it was in 1986.

controls for family composition (number of additional adults, number of boys of each age from 1 to 17, number of girls of each age from 1 to 17), an indicator for whether the observation comes from the first or second week of the diary interview, and a set of state dummy variables.[9] This specification is very similar to that used by Meyer and Sullivan (2004) and differs mainly in that we include more flexible controls for household composition and state fixed effects.

Also, following Meyer and Sullivan (2004), we employ two different comparison groups: single female households without children and married households with children. We estimate equation 1 using OLS and quantile regression at the 25th percentiles.[10] Finally, we estimate these models using both the full sample and a restricted sample of households where the head has a high school education or less. We use CE provided sampling weights in all analyses and correct standard errors for multiple observations per household.

7. Results

Regression models controlling for other characteristics of single mother households compared with married and single female households confirm the basic patterns observed in the figures. Tables 2 through 4 present OLS and quantile regression estimates of equation 1 for the outcomes total food spending, spending on food at home and spending on food away from home. On average, single mothers' total food expenditures increased by roughly 7 to 8 percent relative to single female households and married households between the 1986 – 1989 and 1996 - 2001 periods (table 2). This increase is also evident when we restrict our sample to less educated women or when we look at the 25th percentile of expenditures. Total food expenditures also

[9] Excluding state dummies (as in Meyer and Sullivan 2004) does not substantially change the results.
[10] Meyer and Sullivan also estimate quantile regressions at the 15th percentile. We do not since the 15th percentile of expenditure on food away from home is zero.

increased between the 1994 – 1995 and 1996 – 2001 periods, but these increases are smaller and are not statistically significant.

Table 3 reports changes in expenditures on food at home for single mother households relative to single female and to married households. In contrast to the results for total food expenditure, single mother households reduced their spending on food at home between the 1994 – 1995 and 1996 – 2001 periods relative to either single female households and or married households. Both on average and at the 25th percentile, these changes are substantial, though these declines are statistically significant only at the 25th percentile and not on average. Compared with single female households, single mother households reduced their spending on food at home by approximately 9 percent at the mean and by 19 percent at the 25th percentile. Compared with married households, single mother households reduced their spending on food at home by roughly 6 percent at the mean and by 12 percent at the 25th percentile.

Table 4 reports the results for expenditures on food away from home. For the full sample of single mother households and for less educated single mother households, spending on food away from home increased substantially between the 1994 – 1995 and 1996 – 2001 periods at the mean. These increases were roughly 30 percent relative to single female households and roughly 20 percent relative to married households. At the 25th percentile, the increases are similar. These results confirm that the increases in relative total food spending for single mothers are driven by increase in spending on food away from home.

8. Discussion

How economically significant are these changes, and is it plausible that they might be driven by increases in the relative incomes of single mother households? Since the incomes of

single mother households did increase relative to those of single female or married households (as reported in Table 5), one might argue that the relative movement from expenditure on food at home toward food away from home simply reflects income affecting a shift from necessities to luxuries.

To help address this issue, we first estimate elasticities of expenditure with respect to income for the three food expenditure categories (total, food at home, and food away from home; details available from the authors upon request). As expected, food is a necessity with expenditure on total food having an income elasticity of 0.237. Food at home is more of a necessity (elasticity = 0.165) than is food away from home (elasticity = 0.576). We then use these elasticities to predict how much each of the categories of expenditure would have changed as a result of changing income. We present these calculations in Table 6.

Between the 1986–1989 period and the 1996-2001 period, the natural log of real household income for single mother households increased by about 0.311 relative to single female households (based on estimates reported in Table 5). Since the income elasticity of total food expenditure is 0.237, we would predict total food expenditure to have increased by 0.074 (in log points) over this period. This prediction is quite close to what we observe – the estimated change in total food expenditure from the 1986-1989 period to the 1996-2001 period is 0.084 (based on estimated reported in Table 2). Similarly, compared with married households, the natural log of income increased by 0.179 over this period. Thus, the predicted change in single mothers' total food expenditure relative to married households is 0.042 log points – again close to the actual change of 0.068 (based on estimates reported in Table 2). Thus, over the entire period, changes income do quite well in explaining changes in total food expenditure.

By contrast, income cannot explain the trends in expenditure on food at home or food away from home during the 1986-1989 to 1996-2001 period. Nor can it explain the changes in total food, food at home, or food away from home from the 1994-1995 period to the 1996-2001 period. Relative to single female households, change in income are predicted to lead to a 0.051 log point increase in expenditure on food at home from the 1986-1989 to 1996-2001 period. The observed change, however, was -0.055 log points (see Table 3). Likewise, the predicted change in expenditure on food away from home based on changes in income is 0.179 log points while the actual change is much larger – 0.295 log points (see Table 4). Changes in relative incomes alone, therefore, are insufficient to explain the shift that we observe from food at home to food away, lending further support to the idea that the substitution effect associated with a change in the price of leisure is responsible for this shift.[11]

How large are the observed shifts and are they plausible? The mean weekly spending on food away from home for single mother households is about $25. So an increase of 0.30 log points (roughly 35 percent) is about $8.75 per week, or the cost of lunch at the cafeteria at work once or twice per week or the cost of a weekly trip to a fast food restaurant for dinner.

9. Conclusion

Our results show that a substantial amount of the increase in food spending for single mothers relative to other women during the late 1990s was due to substitution away from home production to market expenditure on food. This substitution occurred against a backdrop of work-oriented policy changes which encouraged single mothers to enter the workforce. Whether overall material well-being of single mother households improved as a result of these policy

[11] Data on time use are not available but would allow us to examine directly whether single mothers' time spent on food preparation has decreased.

changes is a much more difficult question to answer. As noted by Meyer and Sullivan (2004), assessing well-being requires much more information on the use of time and the consumption of other goods. These items are not readily available in existing datasets and so a more complete assessment of changes in well-being awaits further analysis. In the meantime, our results suggest that caution is in order before interpreting increases in total expenditure on food as an improvement in the material or nutritional well-being of single mother households during the 1990s.

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Table 1: Summary Statistics
CE-Diary Survey, 1986 - 2001

	Women of All Education Levels					
	Single Mothers		Single Women		Married mothers	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Age of Household Head	35.05	8.04	35.81	11.06	37.38	7.40
Household Head is White	0.63	0.48	0.80	0.40	0.86	0.34
Less Than H.S. Education	0.22	0.41	0.09	0.29	0.13	0.33
H.S. Graduate	0.37	0.23	0.25	0.19	0.31	0.22
Some College Education	0.28	0.45	0.34	0.48	0.26	0.44
College Graduate	0.13	0.33	0.31	0.46	0.30	0.46
Number of Additional Adults in HH	0.37	0.68	0.41	0.72	1.21	0.56
Real Weekly Food Expenditure	$ 93.80	92.08	$ 77.40	83.72	$147.28	118.04
Food to be Consumed at Home	$ 68.83	80.73	$ 48.46	66.23	$100.25	82.56
Food Away from Home	$ 24.97	34.56	$ 28.94	41.75	$ 47.03	65.85
No. of Observations	10,252		15,336		40,967	
No. of Households	5,737		8,751		22,210	

	Women with a high school education or less					
	Single Mothers		Single Women		Married mothers	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Age of Household Head	34.09	8.26	38.58	11.35	36.21	7.77
Household Head is White	0.60	0.49	0.74	0.44	0.87	0.34
Less Than H.S. Education	0.37	0.48	0.28	0.45	0.30	0.46
H.S. Graduate	0.63	0.23	0.72	0.20	0.70	0.21
Some College Education	0.00	0.00	0.00	0.00	0.00	0.00
College Graduate	0.00	0.00	0.00	0.00	0.00	0.00
Number of Additional Adults in HH	0.42	0.74	0.60	0.89	1.26	0.63
Real Weekly Food Expenditure	$ 88.79	95.12	$ 74.04	75.32	$130.80	94.75
Food to be Consumed at Home	$ 68.62	85.75	$ 51.19	63.03	$ 92.92	76.03
Food Away from Home	$ 20.17	31.00	$ 22.86	33.11	$ 37.88	44.33
No. of Observations	5,865		5,029		17,097	
No. of Households	3,312		2,878		9,313	

Note: Weekly expenditures are in 2001 dollars

Table 2: OLS and Quantile Regression Models of Total Food Expenditure

	OLS				Quantile (25th Percentile)			
	All Women		Women with a H.S. Education or less		All Women		Women with a H.S. Education or less	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Comparison group:	Single childless	Married mothers	Single childless	Married mothers	Single childless	Married mothers	Single childless	Married mothers
Single Mother * 1986-1989	0.082	-0.372	0.001	-0.380	0.086	-0.484	0.026	-0.533
	(0.042)*	(0.030)**	(0.059)	(0.040)**	(0.039)*	(0.029)**	(0.053)	(0.042)**
Single Mother * 1990-1993	0.195	-0.317	0.155	-0.349	0.264	-0.403	0.237	-0.490
	(0.043)**	(0.031)**	(0.065)*	(0.043)**	(0.039)**	(0.029)**	(0.054)**	(0.043)**
Single Mother * 1994-1995	0.154	-0.330	0.142	-0.331	0.228	-0.444	0.309	-0.470
	(0.058)**	(0.043)**	(0.087)	(0.061)**	(0.052)**	(0.041)**	(0.076)**	(0.063)**
Single Mother * 1996-2001	0.166	-0.304	0.190	-0.277	0.255	-0.376	0.299	-0.317
	(0.036)**	(0.025)**	(0.053)**	(0.037)**	(0.031)**	(0.022)**	(0.045)**	(0.034)**
1990-1993	-0.130	-0.065	-0.190	-0.065	-0.176	-0.080	-0.241	-0.096
	(0.030)**	(0.015)**	(0.052)**	(0.023)**	(0.029)**	(0.017)**	(0.047)**	(0.028)**
1994-1995	-0.175	-0.141	-0.237	-0.147	-0.231	-0.145	-0.396	-0.146
	(0.039)**	(0.020)**	(0.068)**	(0.032)**	(0.036)**	(0.022)**	(0.062)**	(0.038)**
1996-2001	-0.147	-0.126	-0.235	-0.149	-0.216	-0.134	-0.282	-0.187
	(0.027)**	(0.013)**	(0.046)**	(0.022)**	(0.025)**	(0.015)**	(0.042)**	(0.025)**
Observations	25,588	51,219	10,894	22,962	25,588	51,219	10,894	22,962
Are the changes in spending from one period to the next significant? P-values on hypothesis tests:								
H_0: SM*1990-1993 - SM*1986-1989 = 0	0.02	0.18	0.04	0.58	0.00	0.04	0.00	0.45
H_0: SM*1994-1995 - SM*1986-1989 = 0	0.24	0.41	0.13	0.49	0.01	0.41	0.00	0.39
H_0: SM*1996-2001 - SM*1986-1989 = 0	0.05	0.06	0.00	0.04	0.00	0.00	0.00	0.00
H_0: SM*1994-1995 - SM*1990-1993 = 0	0.51	0.80	0.89	0.80	0.52	0.40	0.38	0.78
H_0: SM*1996-2001 - SM*1990-1993 = 0	0.50	0.73	0.61	0.17	0.81	0.41	0.28	0.00
H_0: SM*1996-2001 - SM*1994-1995 = 0	0.84	0.59	0.59	0.43	0.60	0.13	0.90	0.03

Notes: Cluster corrected (by household) standard errors in parentheses
* significant at 5%; ** significant at 1%
Additional controls include a cubic in age of the household head, race, education, and a very flexible set of controls for family composition (number of additional adults, number of boys of each age from 1 to 18, number of girls of each age from 1 to 18), a set of month dummy variables, and a set of state dummy variables.

Table 3: OLS and Quantile Regression Models of Expenditure on Food at Home

	OLS				Quantile (25th Percentile)			
	All Women		Women with a H.S. Education or less		All Women		Women with a H.S. Education or less	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Single	Married	Single	Married	Single	Married	Single	Married
Single Mother * 1986-1989	0.203	-0.300	0.152	-0.299	0.250	-0.459	0.292	-0.481
	(0.051)**	(0.035)**	(0.072)*	(0.047)**	(0.071)**	(0.042)**	(0.079)**	(0.047)**
Single Mother * 1990-1993	0.327	-0.232	0.304	-0.234	0.417	-0.378	0.424	-0.421
	(0.050)**	(0.035)**	(0.073)**	(0.048)**	(0.071)**	(0.041)**	(0.082)**	(0.048)**
Single Mother * 1994-1995	0.243	-0.245	0.227	-0.229	0.429	-0.307	0.402	-0.382
	(0.070)**	(0.052)**	(0.108)*	(0.074)**	(0.097)**	(0.059)**	(0.115)**	(0.070)**
Single Mother * 1996-2001	0.148	-0.307	0.123	-0.299	0.233	-0.433	0.185	-0.483
	(0.045)**	(0.031)**	(0.066)	(0.046)**	(0.058)**	(0.031)**	(0.068)**	(0.038)**
1990-1993	-0.086	-0.022	-0.121	-0.038	-0.075	-0.019	-0.082	-0.071
	(0.038)*	(0.018)	(0.065)	(0.027)	(0.052)	(0.024)	(0.071)	(0.031)*
1994-1995	-0.084	-0.091	-0.100	-0.099	-0.126	-0.075	-0.092	-0.075
	(0.050)	(0.024)**	(0.087)	(0.039)*	(0.067)	(0.032)*	(0.093)	(0.042)
1996-2001	-0.099	-0.142	-0.147	-0.183	-0.122	-0.155	-0.095	-0.220
	(0.034)**	(0.017)**	(0.058)*	(0.027)**	(0.045)**	(0.022)**	(0.062)	(0.028)**
Observations	25588	51219	10894	22962	25588	51219	10894	22962
Are the changes in spending from one period to the next significant? P-values on hypothesis tests:								
SM*1990-1993 - SM*1986-1989 = 0	0.03	0.14	0.08	0.30	0.04	0.14	0.17	0.34
SM*1994-1995 - SM*1986-1989 = 0	0.59	0.36	0.52	0.40	0.08	0.03	0.37	0.22
SM*1996-2001 - SM*1986-1989 = 0	0.30	0.87	0.71	1.00	0.82	0.60	0.21	0.97
SM*1994-1995 - SM*1990-1993 = 0	0.26	0.82	0.51	0.95	0.91	0.31	0.86	0.63
SM*1996-2001 - SM*1990-1993 = 0	0.00	0.09	0.03	0.30	0.01	0.25	0.01	0.28
SM*1996-2001 - SM*1994-1995 = 0	0.18	0.29	0.35	0.40	0.04	0.05	0.06	0.18

Cluster corrected (by household) standard errors in parentheses

* significant at 5%; ** significant at 1%

Additional controls include a cubic in age of the household head, race, education, and a very flexible set of controls for family composition (number of additional adults, number of boys of each age from 1 to 18, number of girls of each age from 1 to 18), a set of month dummy variables, and a set of state dummy variables.

Table 4: OLS and Quantile Regression Models of Expenditure on Food Away from Home

	OLS				Quantile (25th Percentile)			
	All Women		Women with a H.S. Education or less		All Women		Women with a H.S. Education or less	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Single	Married	Single	Married	Single	Married	Single	Married
Single Mother * 1986-1989	0.059	-0.631	-0.108	-0.683	-0.153	-0.917	-1.064	-1.157
	(0.066)	(0.051)**	(0.095)	(0.070)**	(0.083)	(0.072)**	(0.020)**	(0.103)**
Single Mother * 1990-1993	0.105	-0.600	0.025	-0.674	-0.008	-0.833	-0.059	-0.911
	(0.069)	(0.053)**	(0.101)	(0.071)**	(0.084)	(0.070)**	(0.021)**	(0.104)**
Single Mother * 1994-1995	0.033	-0.676	-0.003	-0.763	0.018	-0.900	-0.032	-0.831
	(0.095)	(0.078)**	(0.139)	(0.109)**	(0.114)	(0.104)**	(0.030)	(0.157)**
Single Mother * 1996-2001	0.354	-0.454	0.419	-0.419	0.392	-0.695	0.143	-0.651
	(0.056)**	(0.041)**	(0.084)**	(0.059)**	(0.068)**	(0.054)**	(0.017)**	(0.084)**
1990-1993	-0.246	-0.224	-0.357	-0.214	-0.407	-0.361	-1.110	-0.432
	(0.047)**	(0.030)**	(0.086)**	(0.045)**	(0.063)**	(0.041)**	(0.018)**	(0.068)**
1994-1995	-0.426	-0.408	-0.631	-0.442	-0.686	-0.758	-1.306	-0.981
	(0.062)**	(0.040)**	(0.112)**	(0.064)**	(0.080)**	(0.053)**	(0.024)**	(0.090)**
1996-2001	-0.315	-0.198	-0.456	-0.197	-0.544	-0.340	-1.218	-0.491
	(0.042)**	(0.026)**	(0.077)**	(0.042)**	(0.055)**	(0.037)**	(0.016)**	(0.061)**
Observations	25588	51219	10894	22962	25588	51219	10894	22962
Are the changes in spending from one period to the next significant? P-values on hypothesis tests:								
SM*1990-1993 - SM*1986-1989 = 0	0.56	0.65	0.26	0.92	0.14	0.37	0.00	0.07
SM*1994-1995 - SM*1986-1989 = 0	0.79	0.62	0.49	0.52	0.17	0.89	0.00	0.07
SM*1996-2001 - SM*1986-1989 = 0	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
SM*1994-1995 - SM*1990-1993 = 0	0.48	0.40	0.86	0.47	0.83	0.58	0.40	0.66
SM*1996-2001 - SM*1990-1993 = 0	0.00	0.02	0.00	0.00	0.00	0.09	0.00	0.04
SM*1996-2001 - SM*1994-1995 = 0	0.00	0.01	0.00	0.00	0.00	0.07	0.00	0.29

Cluster corrected (by household) standard errors in parentheses

* significant at 5%; ** significant at 1%

Additional controls include a cubic in age of the household head, race, education, and a very flexible set of controls for family composition (number of additional adults, number of boys of each age from 1 to 18, number of girls of each age from 1 to 18), a set of month dummy variables, and a set of state dummy variables.

Table 5: OLS Regression Models of Total Family Income

	All Women		Women with a H.S. Education or less	
	(1)	(2)	(3)	(4)
	Single	Married	Single	Married
Single Mother * 1986-1989	-0.017	-0.457	0.006	-0.469
	(0.127)	(0.101)**	(0.173)	(0.126)**
Single Mother * 1990-1993	0.295	-0.226	0.289	-0.047
	(0.125)*	(0.094)*	(0.170)	(0.117)
Single Mother * 1994-1995	0.194	-0.284	0.301	-0.456
	(0.176)	(0.140)*	(0.272)	(0.196)*
Single Mother * 1996-2001	0.294	-0.278	0.311	-0.206
	(0.114)**	(0.086)**	(0.161)	(0.114)
1990-1993	-0.056	0.059	0.112	-0.058
	(0.099)	(0.065)	(0.159)	(0.090)
1994-1995	-0.300	-0.239	-0.500	-0.248
	(0.131)*	(0.088)**	(0.233)*	(0.131)
1996-2001	-0.293	-0.224	-0.237	-0.349
	(0.113)**	(0.082)**	(0.182)	(0.118)**
Observations	26706	51975	11371	23417
Are the changes in spending from one period to the next significant? P-values on hypothesis tests:				
SM*1990-1993 - SM*1986-1989 = 0	0.03	0.07	0.17	0.01
SM*1994-1995 - SM*1986-1989 = 0	0.26	0.29	0.32	0.96
SM*1996-2001 - SM*1986-1989 = 0	0.59	0.72	0.97	0.06
SM*1994-1995 - SM*1990-1993 = 0	0.02	0.14	0.13	0.09
SM*1996-2001 - SM*1990-1993 = 0	1.00	0.65	0.91	0.29
SM*1996-2001 - SM*1994-1995 = 0	0.58	0.97	0.97	0.25

Cluster corrected (by household) standard errors in parentheses
* significant at 5%; ** significant at 1%
Additional controls include a cubic in age of the household head, race, education, and a very flexible set of controls for family composition (number of additional adults, number of boys of each age from 1 to 18, number of girls of each age from 1 to 18), a set of month dummy variables, and a set of state dummy variables.

Table 6: Can Changes in Income Explain Changing Food Expenditure?

	Single Mother Households Versus Single Female Households					
	Estimated Change in Income (1986-1989 to 1996 to 2001) from Table 5	*	Elasticity of Expenditure with respect to Income	=	Predicted Change in Expenditure Due to Changes in Income	Estimated Change in Expenditure (1986-1989 to 1996-2001) from Tables 2 through 4
Total Food Expenditure		*	0.237	=	0.074	0.084
Expenditure on Food at Home	0.311	*	0.165	=	0.051	-0.055
Expenditure on Food Away		*	0.576	=	0.179	0.295
	Estimated Change in Income (1994-1995 to 1996 to 2001) from Table 5	*	Elasticity of Expenditure with respect to Income	=	Predicted Change in Expenditure Due to Changes in Income	Estimated Change in Expenditure (1994-1995 to 1996-2001) from Tables 2 through 4
Total Food Expenditure		*	0.237	=	0.024	0.012
Expenditure on Food at Home	0.100	*	0.165	=	0.017	-0.095
Expenditure on Food Away		*	0.576	=	0.058	0.321

	Single Mother Households Versus Married Households					
	Estimated Change in Income (1986-1989 to 1996 to 2001) from Table 5	*	Elasticity of Expenditure with respect to Income	=	Predicted Change in Expenditure Due to Changes in Income	Estimated Change in Expenditure (1986-1989 to 1996-2001) from Tables 2 through 4
Total Food Expenditure		*	0.237	=	0.042	0.068
Expenditure on Food at Home	0.179	*	0.165	=	0.030	-0.007
Expenditure on Food Away		*	0.576	=	0.103	0.177
	Estimated Change in Income (1994-1995 to 1996 to 2001) from Table 5	*	Elasticity of Expenditure with respect to Income	=	Predicted Change in Expenditure Due to Changes in Income	Estimated Change in Expenditure (1994-1995 to 1996-2001) from Tables 2 through 4
Total Food Expenditure		*	0.237	=	0.001	0.026
Expenditure on Food at Home	0.006	*	0.165	=	0.001	-0.062
Expenditure on Food Away		*	0.576	=	0.003	0.222

Note: Elasticities of expenditure with respect to income calculated by authors. Details of this calculation are available upon request.

Figure 1: Single Mother's Relative Total Food Expenditure (Log Scale)

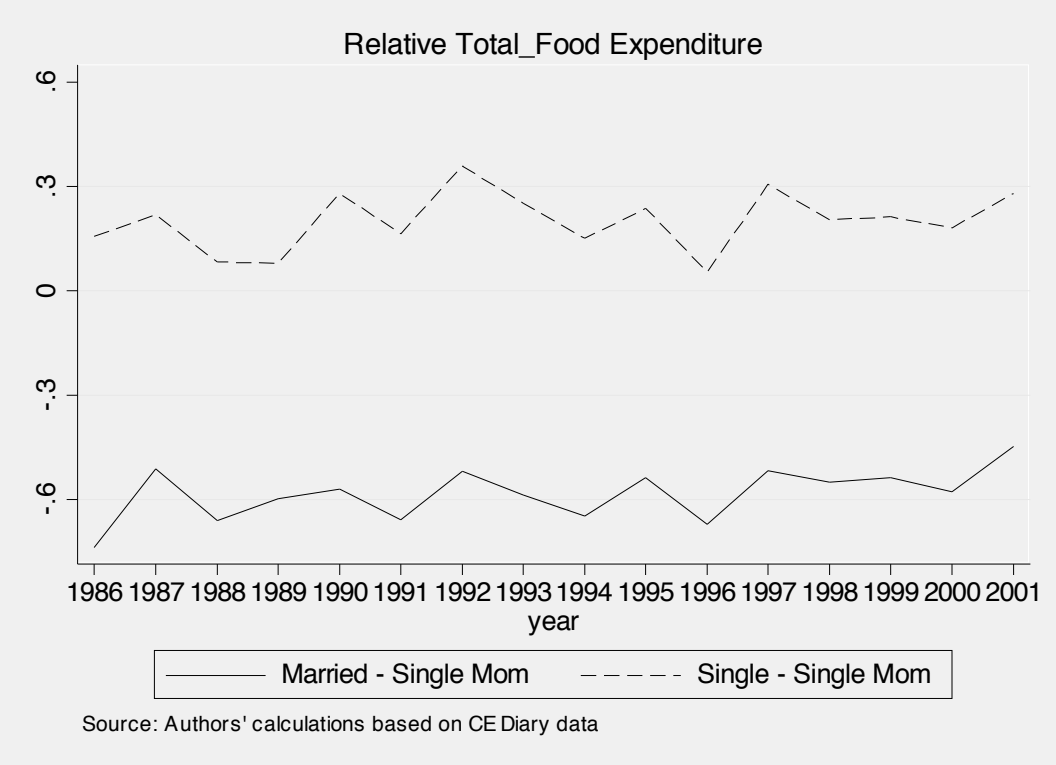

Figure 2: Low Educated Single Mother's Relative Total Food Expenditure (Log Scale)

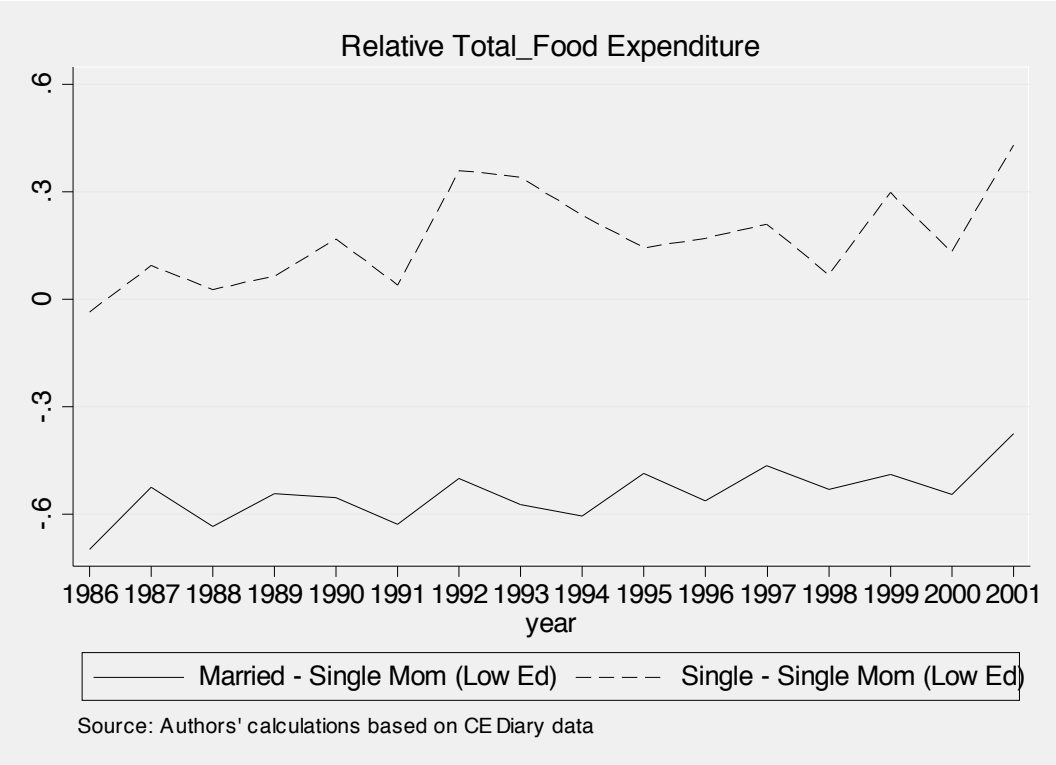

Figure 3: Single Mother's Relative Expenditure on Food at Home (Log Scale)

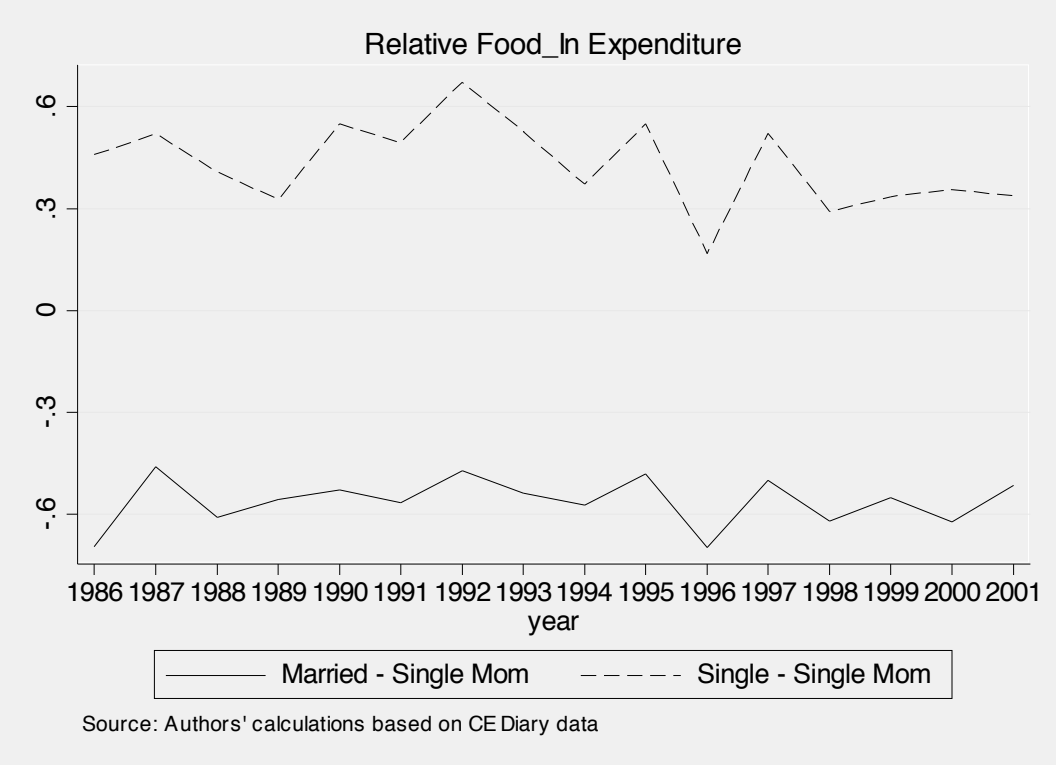

Figure 4: Low Educated Single Mother's Relative Expenditure on Food at Home (Log Scale)

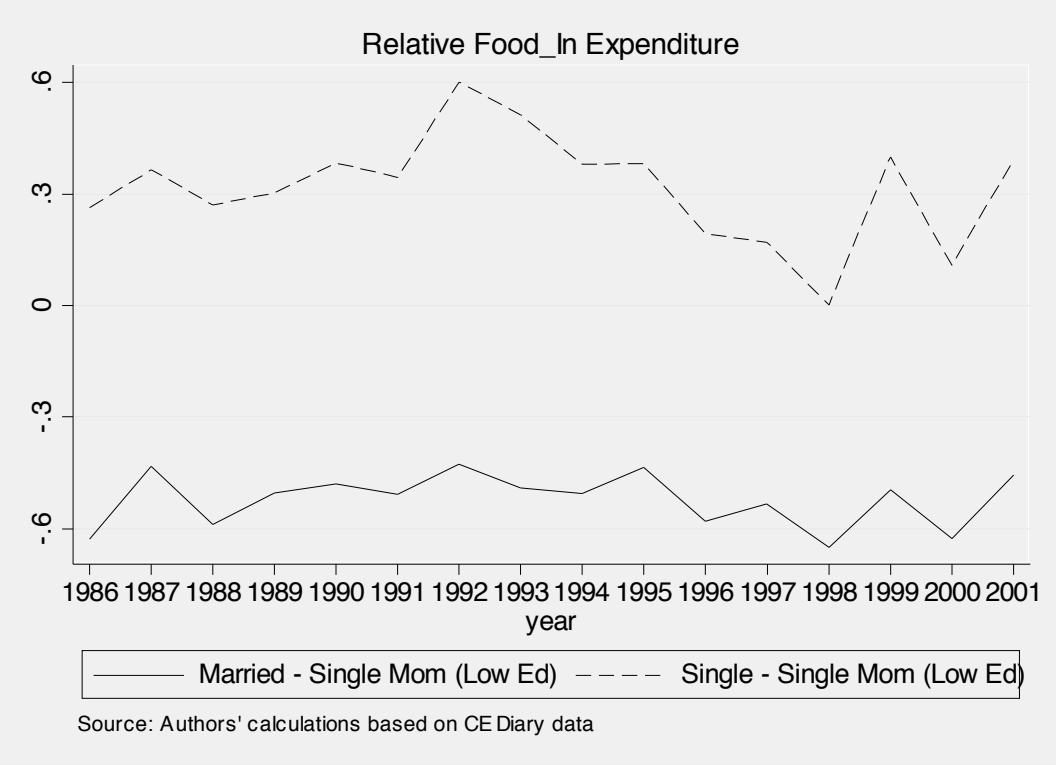

Figure 5: Single Mother's Relative Expenditure on Food Away from Home (Log Scale)

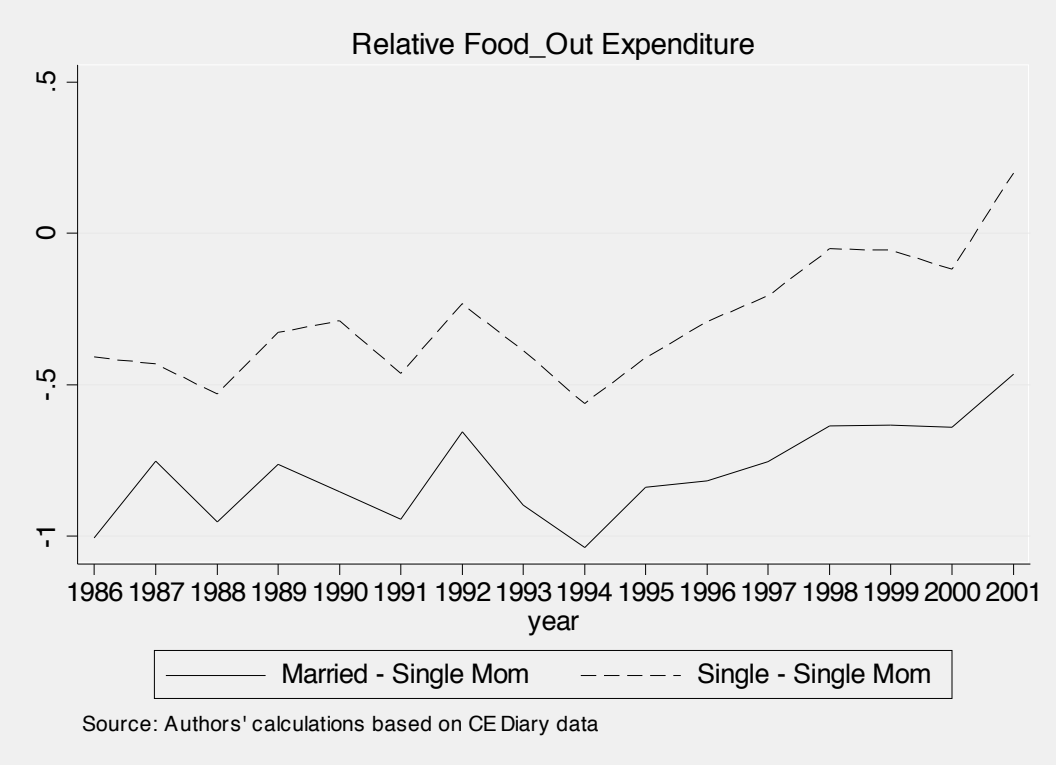

Figure 6: Low Educated Single Mother's Relative Expenditure on Food Away from Home (Log Scale)