Earnings Instability and Response of Means-Tested Transfers

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Preliminary Draft: Please ask before citing.
December 27, 2002

I. Introduction

Several recent papers have documented changes in the instability of earnings and income over time. Gottschalk and Moffitt (1994), Haider(1999), Dynarski and Gruber(1997)) suggest that earnings are becoming more variable, particularly for the less educated. Temporary earnings instability might be thought not to be a major problem because households can smooth consumption by borrowing and saving. But this is not the case for the poor who are likely to be liquidity constrained (Cutler and Katz, 1991,1992 or Slesnick 1993). They depend more on transfer programs to smooth consumption. The insurance-like smoothing aspects of transfer programs have been investigated by Engen and Gruber (1998), Dynarski and Gruber(1997), among others. More recently Blundell and Pistaferri(2002) and Gunderson and Ziliak(2002) look at the role of food stamps in smoothing consumption.

In this paper, I investigate the timing of the response of cash means-tested transfers to earnings fluctuations. Responses to an event such as job loss take time. Transfers must be applied for and then received. Spouses or other family members may seek jobs. The person who lost the job may seek other work. In the absence of liquidity, the household may suffer a significant short term consumption drop while adjustments are made. The more responsive transfers are to earnings fluctuations, the more valuable they are as insurance. This paper uses monthly data from the Survey of Income and Program Participation to observe the response of means-tested transfers and food stamps to shocks in earnings. The use of monthly data allows us to observe the time pattern of the response. For example, in the months following a job loss, how much of the earnings drop is replaced by transfers. These responses are tracked over the panels of SIPP to see whether there have been changes over

time. Response changes over time might occur for several reasons: households may delay take-up of transfers for which they are eligible, programs may change eligibility or payment rules, or administrative delay may vary. For example, the 1996 welfare reform established a five year lifetime limit on receipt of TANF funds by a recipient. This may discourage families from using welfare to cushion short term losses because they want to "bank" their benefits for the future (e.g. Grogger).

The paper begins by looking at income volatility over time. Using analysis similar to that of Ziliak and Gunderson, I explore how transitory fluctuations income and earnings have changed over the 1980s and 1990s. The second part of the analysis looks at the response timing of transfers to a significant earnings drop, a job loss of the household head. We can observe the size of the earnings drop and the consequent size of the transfer response. I also note changes over time in the transfer response. Finally, I estimate participation in transfer programs around the time of job loss where the participation decision is allowed to depend on permanent and transitory earnings.

II. Income and Earnings Decomposition

There is now a considerable literature on earnings volatility. To produce results comparable to that literature, I decompose earnings and income into their permanent and transitory components along the lines of Gottschalk and Moffit (1994) and subsequent related articles (Dynarski and Gruber(1997), Blundell and Pistaferri(2002) and Gunderson and Ziliak(2002)).

The decomposition will be described for income, but the same method will be used for earnings. For household i, income at time t is described as

(1) $$y_{it} = \mu_i + \beta' x_{it}\, t + \lambda_t + \eta_{it}$$

where y_{it} is log household income, μ_i is a time invariant household specific term, $\beta' x_{it} t$ allows for different trend coefficients that depends on demographic characteristics of the household, d_t allows for calendar time specific effects, and η_{it} is an income shock. The income shock is defined as a random walk: $\eta_{it} = \eta_{it-1} + v_{it}$ where v_{it} is a serially uncorrelated transitory disturbance. This allows for persistence in the shock, as used by previous authors. Following Gunderson and Ziliak (2002) we will take the variance of v as a measure of income volatility; the variance is estimated as: $\sigma_v^2(t) = 1/N \sum_{i=1}^{N} v_{it}^2$. A similar decomposition is used for earnings, sometimes in logs and sometimes not as is explained.

To estimate the components, I work with the first differences

(2) $$\Delta y_{it} = \beta' x_{it} + \delta_t + v_{it}.$$

This eliminates the fixed components and the η_{it} terms, leaving only v_{it} as a residual.

III. Data

SIPP offers several advantages for measuring income and earnings instability. First, SIPP provides high quality earnings, income and public assistance data on a monthly basis. As stated earlier, this allows us to focus on timing. Second, SIPP offers highly disaggregated job data that allows us to pinpoint the timing of job losses. SIPP collects separate monthly information on up to two jobs. Third, SIPP offers relatively large samples (compared to say, PSID) which will help precision for disaggregations by demographic

groups, particularly the low-education group. For many tables, I use low education to indicate groups that would be more likely to be eligible for transfers.

SIPP provides monthly longitudinal data on individuals in 15000-35000 households per panel. It covers demographic information, labor information and detailed income and program participation information. Panel members are interviewed every four months and asked about the previous four months(called a wave in SIPP terminology); thus it has a shorter recall than annual data. The panels begin in 1984 and a new SIPP panel is initiated each year, so that there are overlapping panels (at least through 1996). This project uses six panels of SIPP, the 1984, 86, 88, 90, 92 and 96 panels, spanning Sept 1983 December 2000[1]. These time frames will allow the tracking of trends over time from the mid 80's through the 90's.

For the panels prior to 96, I used the longitudinal research files to construct the data. I used the longitudinal item imputations available on these files. The data from the 1996 panel was constructed from the 12 wave files because the longitudinal file was not available at the time. The 96 data is thus not longitudinally imputed and this could make the 96 data have more frequent missing data than the other waves.

The longitudinal files also include a Census computed panel weight which weights for both attrition and for the over-sampling of disadvantaged groups in some of the SIPP panels. The panel weights were obtained for the 96 panel as well as prior panels. The panel weight only gives positive weight to households who complete all waves of the panel. Unless noted, all means and all models were weighted by the panel weights. These were

[1] The 1984 panel spans June 1983-April 86, the 1986 panel spans October 85-March 88, the 1988 panel spans October 87-December 89, the 1990 panel spans October 89-August 92, the 1992 panel spans October 91-March 95, and the 1996 panel spans October 95 to December 2000.

normalized to have mean one in each panel so that the weighted sample size is the same as the unweighted.

The unit of observation in this study is the family. I used the family of the head of the household.[2] Subfamilies were not considered separately. For much of the analysis, I disaggregate households into two types: families with a married head, and families with an unmarried female head. The latter face higher poverty rates and are thus of particular concern to policymakers. Most of the analysis also disaggregates by the education level of the head: less than high school completion (low education), high school graduate (12 years), and more than high school (high education). The income and transfer program amounts refer to the family. Earnings are separately recorded for the head and for others in the family (non-head earnings). All dollar amounts were deflated to 1996 dollars using the GDP personal consumption deflator. Race, age, and other demographic characteristics refer to the head.

The sample was restricted to households with heads who were age 25-59, and months were excluded when the head was in school, in the armed forces, or self-employed. For the later difference models, the sample excludes differences where months are not consecutive due to sample cuts.

In later work, I consider two transfers: Food stamps, and an aggregate called Means-tested cash transfers that includes: AFDC/TANF, general assistance, SSI and state SSI, veterans pensions, refugee relief, foster child payments and other cash welfare.

[2] On some graph labels the term household appears, but the unit the family of the household head.

IV. Income and Earnings Decomposition

To begin, I estimated the transitory variances for income over time based on the differences equation 2. Since the method is similar to that of Gunderson and Ziliak, estimates of variance trends from SIPP can be compared to their trends which are based on the PSID. The covariates on the trend were education indicators, black, age and age squared, number of children, whether family had a child under age six. For time dummies, I included calendar year dummies as well as seasonal dummies, and an indicator for whether the month was a seam month between two SIPP interviews.[3] Figures 1A and 1B show the estimates of variance of v computed by calendar year, disaggregated by head type and education. One caveat is that the samples in year 1995 and in 2000 are only about one fourth the size as the other years owing to the staggered nature of SIPP interviewing. So those years, which appear to be off trend, should be viewed with caution.

Figure 1A for Married Heads appears to show declining variance from the mid 80s to the mid 90s, with an increase in the late 90s.[4] The trends are similar across the three education groups. The results for female heads show the uptick in variance in the 96 panel, but more heterogeneity across the education groups. The more educated show higher relative variance. Since we are working in logs, this is not a simple artifact of the higher earnings of the more educated, but rather reflects a proportionately higher variance.

For comparison, the graphs in Gunderson and Ziliak show a significant rise in transitory income variances in 1993, then a drop then rise from 1995 to 1998. So both sets of results suggest a recent rise in variance, although there is less consistency, and less of a

[3] As noted in the SIPP User Guide, transitions and income changes are more frequent at the seams between interviews than within the waves.

[4] Unfortunately, there is little overlap of my SIPP panels, so calendar time differences can reflect moves from one panel (one sample) to another.

pattern, in earlier years. If one were to compare the most general features of their graphs and mine, one would say they are broadly consistent.

Since we focus on earnings, I also look at earnings variance trends. Figure 2 shows variance graphs for earnings for those with positive earnings. Again discounting the smaller sample 1995 and 2000 results, the pattern for married heads shows fairly stable variances until 1996, then a substantial rise, then a fall in 1998. Female heads show more variability, particularly for the less educated, but stable or falling variances until 96 then a rise. From the pictures it is difficult to assess the degree to which earnings variance drives income variance, but in the most general terms the patterns suggest a correlation.

V. Job Loss and Response of Transfers

Monthly data from SIPP permit us to look at short term consequences of job loss. We can observe the profile of earnings, means tested transfers, and non-head earnings around the time of the job loss. Job loss is defined by the family head moving from a month with (non-self) employment to a month with no employment. Only the first job loss observed in the panel is used. This section first presents some descriptive evidence, then a regression model with greater control for characteristics and macro conditions.

A simple comparison of earnings for job keepers and losers does not control for the well known selection bias that those who have a job loss may differ in unobserved ways from those who do not (Mincer 1986). To avoid this problem, I follow Jacobson, Lalonde and Sullivan (1993) et al. and use a fixed effect model that effectively lets each person act as their own control when computing earnings changes.

As before, let earnings be divided into a permanent and transitory component. We want to compare E[Earnings$_{it}$ | separation at time s] with E[Earnings$_{it}$ | no separation]. If the separation decision is made based only on the permanent component of earnings, then conditioning on the permanent component produces the correct comparison.

As pointed out by Jacobson et al (1993), earnings change before and after the actual date of job loss. Thus a one month change picks up only part of the effect. Jacobson et al. look at how job loss affects earnings using an extended panel of quarterly earnings records from Pennsylvania administrative data and investigate the time pattern of earnings loss. They use calendar time dummies using those who do not lose their jobs to serve as a base for sorting out macro influences.

First consider simply looking at mean earnings in the months prior to and following a job loss for a sample of families whose heads lost a job. In Figures 3A and 3B we see the patterns of earnings, food stamps, means tested cash transfers, and non-head earnings. In the picture, time zero is the time of job loss. Consistent with Jacobson et al, we observe a significant drop in earnings at job loss. For married heads (Figure 3A) there is not a very significant rise in transfers. That is, the relative size of transfers grows only a little after job loss. For unmarried female heads, transfers are a much bigger part of income and appear to rise somewhat more. But we do not see a pronounced rise in these transfers at job loss.

These figures have the deficiency of not controlling for individual specific effects and not controlling for macro fluctuations. To accomplish this, I use a variation of the statistical model suggested by Jacobson et al. Workers earnings are assumed a function of a personal permanent component, calendar time dummies to pick up macro fluctuations, and relative

time dummies to measure the shift in earnings at the time of job change.[5] The model include a dummy for the 4 months prior to job loss (Dprior), the four months commencing at job loss (D1), months 5 to 12 following the loss (D2), and months 13 or more after the loss (D3). The coefficients on these dummies will measure the shift in average wages measured over months prior to change relative to months after. I refer to these as the "drop" dummies below because they measure the earnings drop.

To eliminate permanent individual specific effects, the model is run on differences:

(3) $\Delta y_{it} = \alpha_0 Dprior + \alpha_1 D1 + \alpha_2 D2 + \alpha_3 D3 + \beta' x_{it} + \delta_t + v_{it}$

The model is estimated for earnings, including zeros (thus not logged), as well as food stamps and means tested transfers. Models are estimated separately for married heads and unmarried female heads. The sample is restricted to the group most likely to be eligible for transfers, the low education group. As before the independent variables include race, age, age squared, number of children and child age less than 6, as well as the full set of calendar year dummies, seasonal dummies, and the seam dummy. The results for the time from job loss dummies are shown in Table 1.

In the table 1A, the third column shows earnings drops and the first two the transfer responses. For Married Heads with less than 12 years of education, the coefficient on time at job loss (D1) shows an average monthly drop of $108 for each of the 4 months, a total of $432. The coefficients for months 5-12 show a slight rise and the months 13 and on show no significant effect. There is also a large drop in the 4 months prior to job loss. This is

[5] Jacobson et al use a more general model that uses dummies for each quarter relative to time of separation with time splines for periods before, during and after job loss used in interactions with covariates.

consistent with Lalonde who noted a marked earnings dip prior to job loss as hours are reduced.

Our interest is in the transfer response. Column one shows that means-tested cash transfers rose by about $10 per month in the 4 months starting at job loss for a total of $40. This $40 rise is approximately ten percent of the $400 earning drop in the period. The sizeable dip prior to job loss induces no transfer response. This may be the period before the household applies for transfers or before the transfers begin payment. Food stamps show a $4 a month response, for a 4 month total of $16. Interestingly, the food stamp transfer drops back down in the next 8 months.

For unmarried women with low education, table 1B shows a monthly earnings drop at job loss of $32 per month, for a total of $128 over the four months. Again a sizeable dip of $36 per month occurs prior to job loss. The means-tested transfer response if $6 per month for a total of $24. This is a much higher response amounting to 19 percent of the earnings drop. Food stamps provide only an additional $.66 but that coefficient is not statistically different from zero.

The next step was to try to determine if there was a trend over the years in the size of the response. To investigate, I interacted the dip and drop dummies with dummies for the SIPP panel, shown in Appendix Table 1 A and B. No pattern is apparent in the many coefficients and the coefficients on the interactions are rarely statistically different from zero at conventional significance levels. Thus there is no trend, or, at least, the data are too weak to sort out the trend.

V. Participation and Permanent and Transitory Components of Earnings

In this section we investigate how transfer participation depends on the permanent and transitory components of earnings. In the literature, models of the decision to participate in a transfer program usually postulate that a potential recipient weighs the utility of participating against the utility of non-participating(e.g. Moffitt 198x). If one allows the model to become dynamic, the utilities include the expected future value of entering the next period conditional on the decision today (ie. the value function).Using a simplified framework, the unit participates if

$$U_t(Y_t+B_t)-S_t+EV(Partic_t) > U_t(Y_t) + EV(Not\ Partic_t)$$

where Y_t is current income, B_t is benefits of participation, S_t is the stigma cost of participating, EV(Partic) and EV(Not Partic) are the expected discounted values of future utility given that one enters the next period as a Participant or Non participant, respectively. For our purposes, the point is simply that EV depends on the expected distribution of future earnings. Thus we expect that the decision to participate today depends on current earnings as well as future expectations. I will proxy these expectations by using the average permanent earnings of the head and the heads transitory variance. Obviously, more complicated models could be devised.

As described by Moffitt(2002) in the context of women cycling on and off TANF, one expects transitory variance to have a larger impact on movements on and off for someone whose permanent income is near the eligibility standard. Persons with permanent income well below the standard and small variance are likely to be long term recipients, and persons with permanent income above the standard and small variance are not likely to be recipients. For those with permanent income near the standard, an increase in the variance of

transitory earnings will likely generate many short periods of eligibility over time. Thus we predict that those with higher variance may be more likely to participate, given permanent income, because the fixed costs of becoming a recipient will be spread over future occurrences. But, after 1996, those who anticipate repeated episodes may be less willing to participate if they want to bank their lifetime benefits for the future.

I compute the transitory variance for each family head as the mean over time of v squared where v is computed as in equation 1, but run separately for our two demographic groups. I compute permanent earnings P as the mean of permanent earnings = Earnings - v. This corresponds to the decomposition in equation 1. To avoid direct endogeneity, I compute permanent earnings and transitory variance only for months that the unit is not receiving means tested transfers or food stamps. Table 2 shows the averages across people of the individually computed permanent earnings P and transitory earnings standard deviations, σ_v. The transitory earnings standard deviation shows a somewhat different pattern than that of the less educated in Figure 2. There appears to be a rise in 1988 or 1990 panel, but then a reduction as we move to 1996. There are a number of differences from the earlier part that could explain the change: Table 3 shows earnings variances that include zeros and earnings are not logged. Second, the table 3 variances are only for months when the unit was not participating in transfer programs.

To observe how participation varies around job loss, I specify a probit for participation in a given month based on the latent propensity to participate, T*:

$$T_{it}^* = \alpha_0 Dprior + \alpha_1 D1 + \alpha_2 D2 + \alpha_3 D3 + \sigma_v(\alpha_1 D1 + \alpha_2 D2 + \alpha_3 D3) + P_i(\alpha_1 D1 + \alpha_2 D2 + \alpha_3 D3) + \beta' x_{it} + \delta_t + \varepsilon_{it}$$

and

$$T_{it} = 1 if T_{it}^* > 0, = 0 otherwise$$

The specification interacts permanent earnings and transitory variation with the job loss indicators, so that we can observe whether the transfer response to a job loss varies with transitory variation. That is, are families with highly variable earnings more likely to participate in transfers when the head suffers a job loss (conditional on permanent earnings)?

Table 4A displays results for married heads with low education. The table shows the change in probability of participation for a given change in the covariates, evaluated at the mean. In the four months commencing at job loss (D1), transitory earnings variation has a small negative effect on means tested cash transfers and food stamp participation. The negative effect remains in the following months. Oddly, among this group of low education heads, permanent income has a positive effect on participation in both types of transfers. This is a result without obvious explanation.

To assess the size of the transfer response, I computed the average response for four months following job loss using the coefficients on D1 and interactions, evaluating the interactions using the means for 1984 and 1996 from table 3. The computation reveals that participation in means tested cash transfers rose by about 5 percentage points following job loss (5.9 in 1984 and 4.8 in 1996). These are rises in the absolute percentage in participation, not a percentage change in caseload. Participation in food stamps rose by 8.6 percentage points following job loss in 1984 and 6.3 percent in 1996. So we see some reduction in response in 1996.

For unmarried female headed families, the responses are larger. Table 4B shows that transitory variance has a small negative effect on participation probabilities in the four months following job loss. In months 5-12 following job loss, transitory variation has a positive effect on means tested transfers, but a negative effect on food stamp participation.

Repeating the size of effect computations above for means tested transfers, we observe a 10.2 percentage point rise in participation probability using the 1984 means and a 9 percentage point rise using 1996 means. For food stamps, we see a 14.4 percentage point rise in participation at job loss in 1984 and a 12.3 percentage point rise in 1996. Again, there is some reduction in response in 1996.

VI. Conclusion

We began by looking at transitory income variances. Based on data from SIPP, the transitory variance of log income and log earnings shows a mildly declining trend until 1996 and then a rise. When one looks at non-logged earnings the rise after 1996 is not apparent.

Our goal has been to investigate the role of means-tested transfers and food stamps in cushioning earnings fluctuations. Even though these programs are not primarily designed as unemployment insurance, they offer benefits following job loss that helps smooth income. We use monthly data from SIPP that allows us to observe short term responses of transfers to job loss. One contribution of the paper is its focus on these short term adjustments.

We restrict our attention to families whose head has less than 12 years of education since these families are more likely to be eligible for transfers. The paper focuses its attention on the response to job losses since these allow us to see response to what is more likely to be exogenous earnings variation. For families with married heads, we observe that means tested transfers and food stamps combine to offset, on average, about 13 percent of the earnings drop (14/108) due to job loss. For unmarried female headed families, the combined response is about 21 percent of the earnings drop. The responses vary by time since the job loss, but there does not appear to be a systematic trend over the years

A second analysis shows that participation in these transfer programs rises significantly following job loss. Families with higher transitory variation in earnings (when not receiving transfers) show a slightly reduced probability of participating.

The paper could be improved in a number of ways. One could consider joint impacts of means tested transfers and food stamps with Unemployment Insurance and non-head earnings. One could also improve on measures of permanent and transitory variation to reduce measurement error, or consider alternative earnings models. This might help explain some anomalies in the analysis of transfer participation probabilities.

References

Blundell, Richard, and Luigi Pistaferri. "Income Volatility and Household Consumption: the Impact of Food Assistance Programs." Presented at IRP/ERS Conference on Income Volatility and Implications for Food Assistance Programs, Washington DC, June 2002.*(*University College London and Institute for Fiscal Studies, June 2002).

Cutler, David M. and Lawrence Katz. "Macroeconomic Performance and the Disadvantaged." *Brookings Papers on Economic Activity* (2:1991)1-61.

Dynarksi, Susan, and Jonathon Gruber. "Can Families Smooth Variable Earnings?" *Brookings Papers on Economic Activity* (I:1997)

Engen and Gruber. "Unemployment Insurance and Precautionary Savings." NBER Working Paper No. 5252, 1995.

Gottschalk, Peter, and Robert Moffitt. "The Growth of Earnings Instability in the U.S. Labor Market." *Brookings Papers on Economic Activity* 2:1994 (1994): 217-72.

Gunderson, Craig, and James P. Ziliak. "The Role of Food Stamps in Consumption Stabilization." Presented at IRP/ERS Conference on Income Volatility and Implications for Food Assistance Programs, Washington DC, June 2002. (University of Kentucky, June 2002).

Haider, Steven J. "Earnings Instability and Earnings Inequality of Males in the US: 1967-1991." *Unpublished Manuscript* (university of Michigan, August 1998) (1998).

Jacobson, Louis S., Robert J. LaLonde, and Daniel G. Sullivan. "Earnings Losses of Displaced Workers." *American Economic Review* 83 (September 1993): 685-709.

Mincer, Jacob. "Wage Changes in Job Changes." *Research in Labor Economics* 8(A) (1986): 171-97.

Moffitt, Robert A. "Experienced-Based Measures of Heterogeneity in the Welfare Caseload." In *Studies of Welfare Populations: Data Collection and Research Issues* Ed. Michele Ver Ploeg, Robert A Moffitt, and Constance F Citro, pp. 473-499. (National Academy Press: Washington DC) 2002.

Figure 1A: Married Income Variances (1983 to 2000)

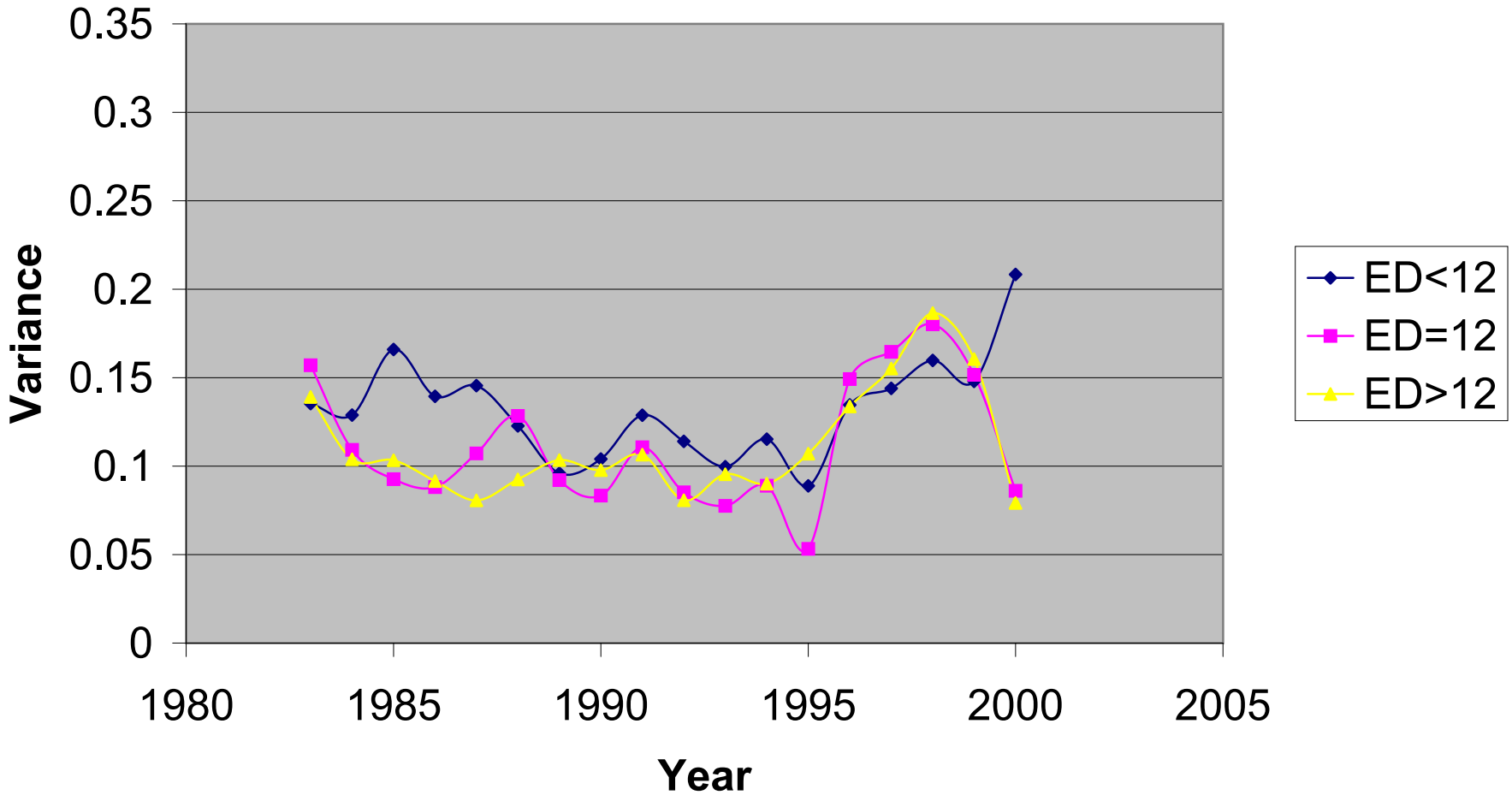


Figure 1B: Female Headed Income Variances (1983 to 2000)

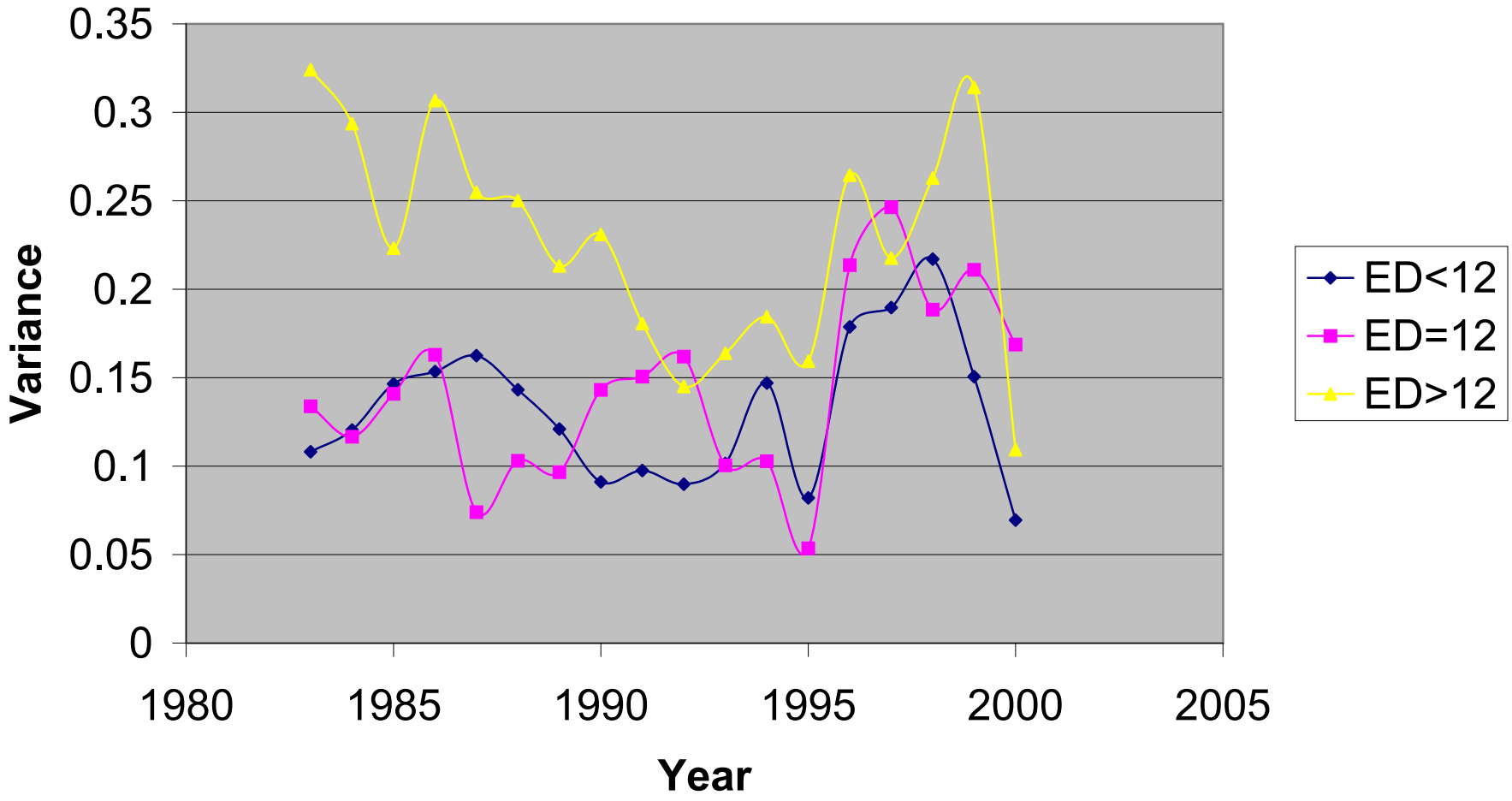


Figure 2A: Married Earnings Variances (1983 to 2000)

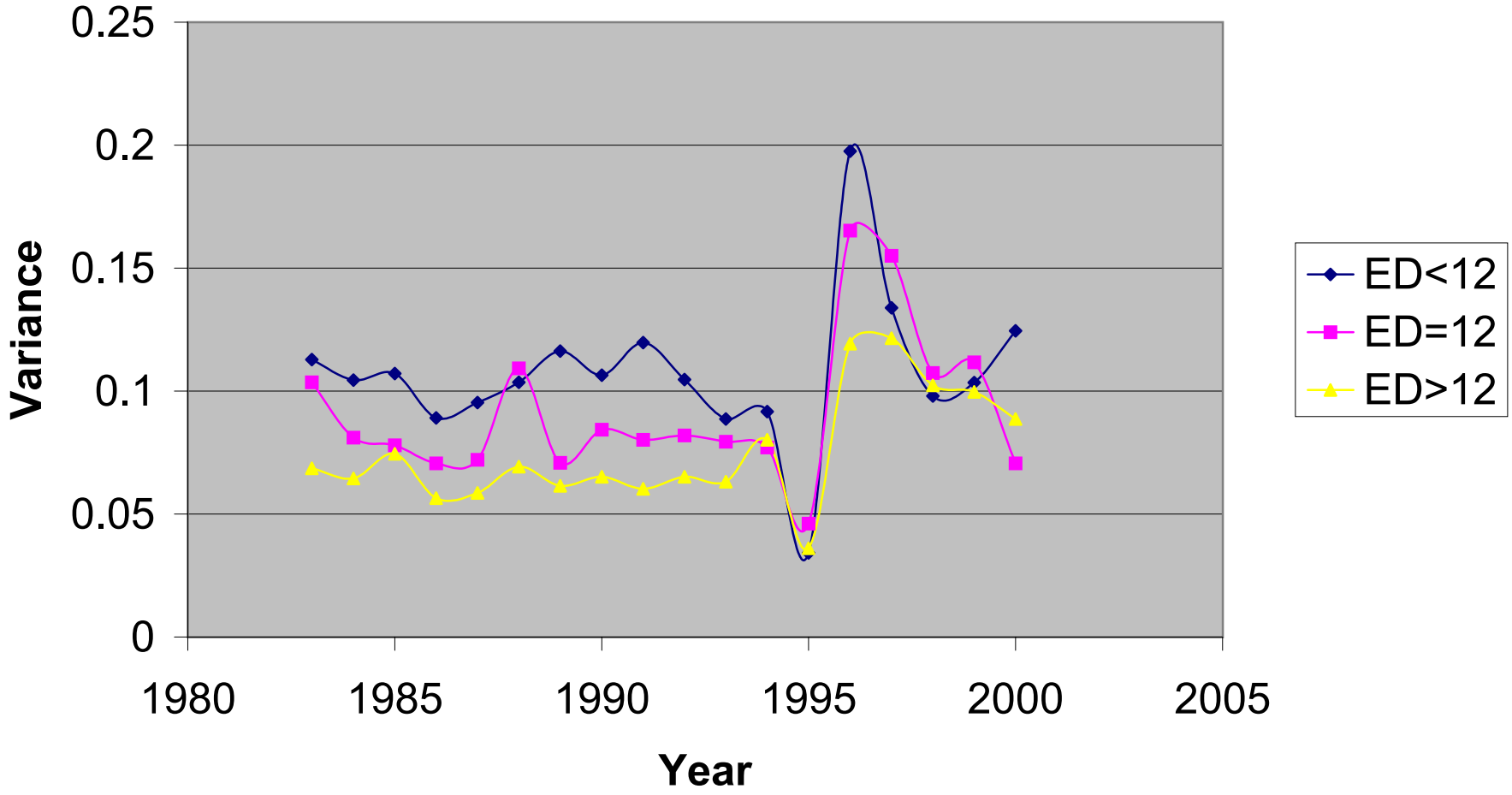
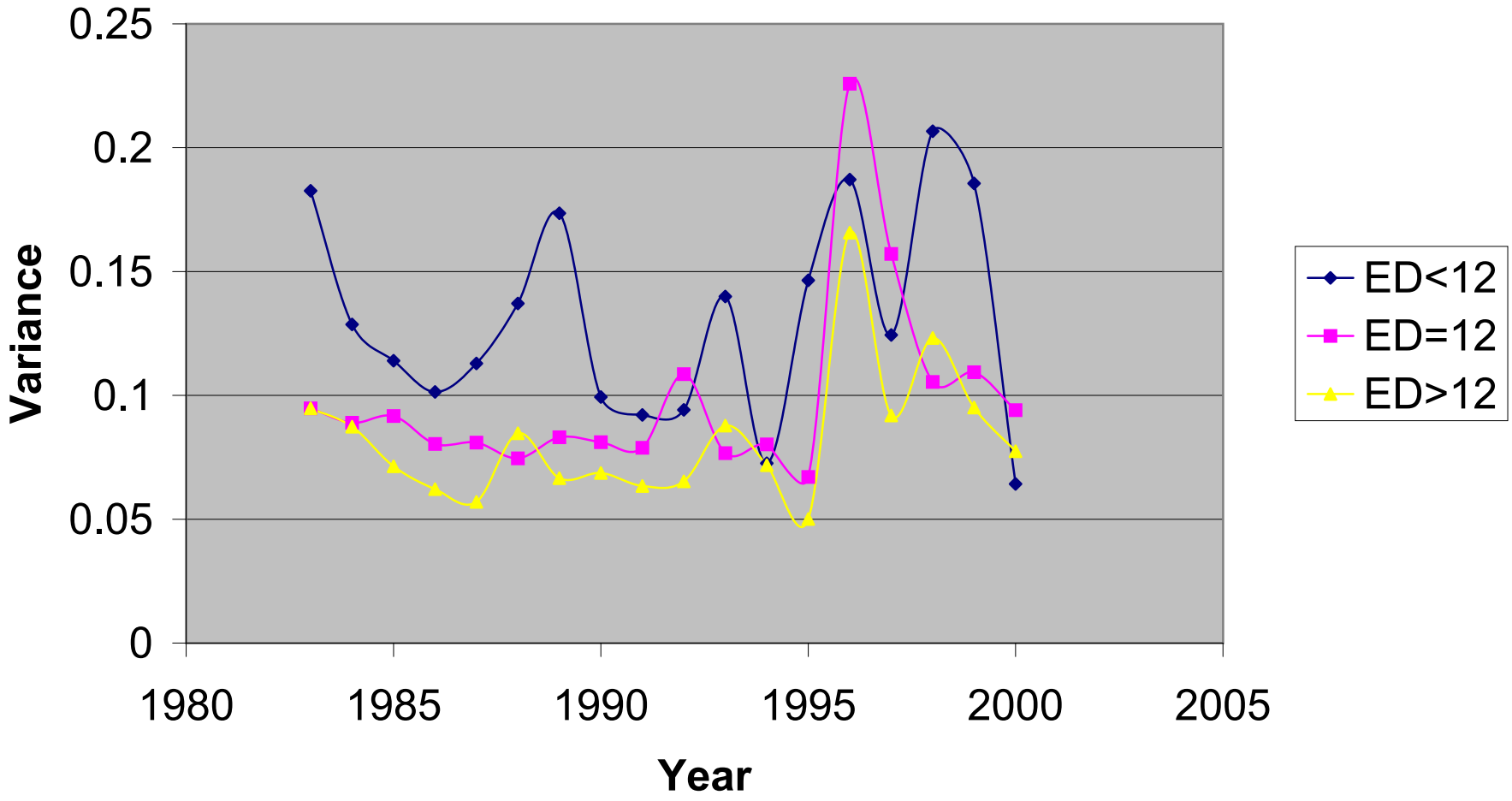


Figure 2B: Female Headed Earnings Variances (1983 to 2000)



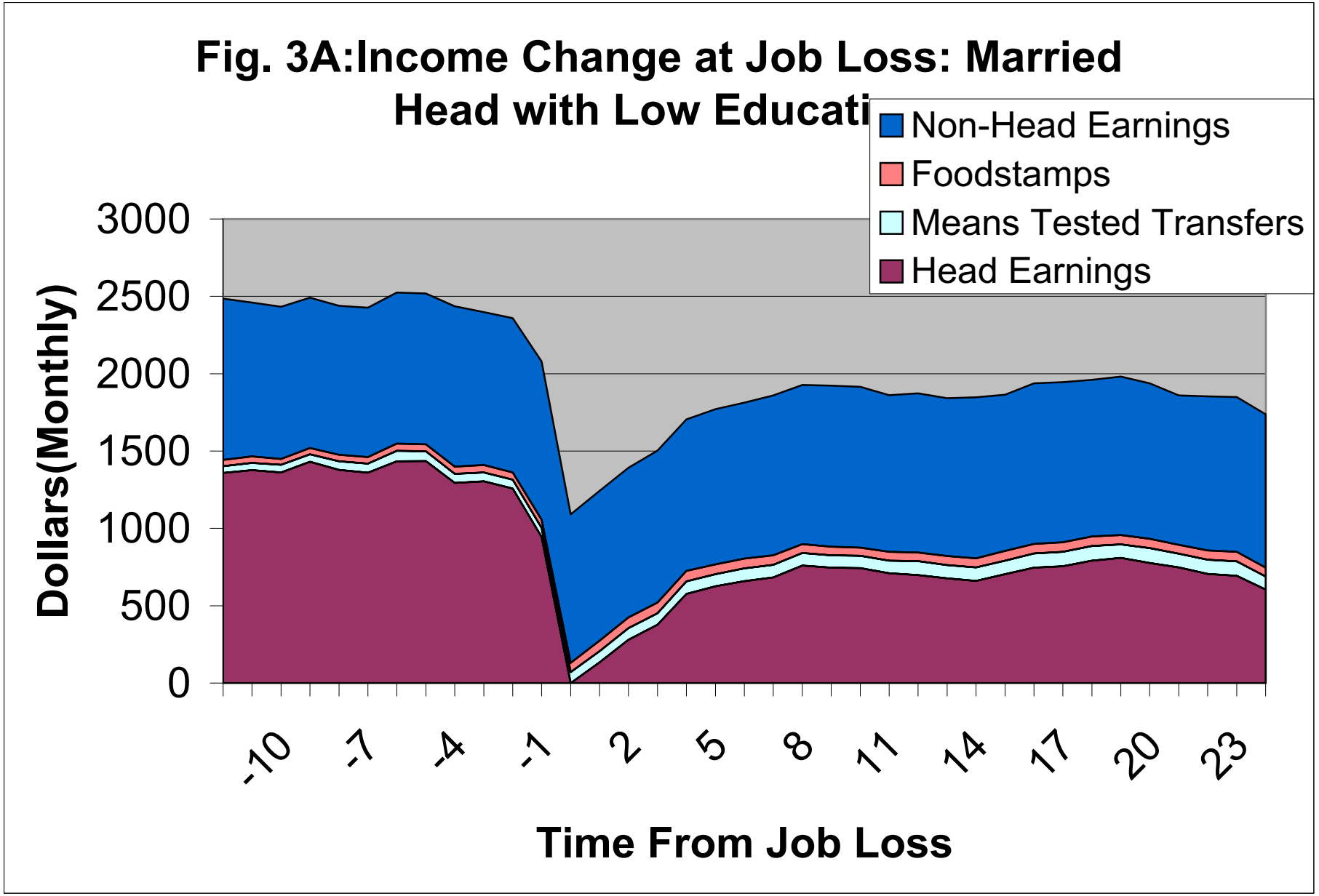


Fig. 3A:Income Change at Job Loss: Married
Head with Low Educati
Non-Head Earnings
Foodstamps
Means Tested Transfers
Head Earnings
Dollars(Monthly)
3000
2500
2000
1500
1000
500
0
-10
-7
-4
-1
2
5
8
11
14
17
20
23
Time From Job Loss

Fig 3B:Income Change at Job Loss: Unmarried Female Head with Low Education

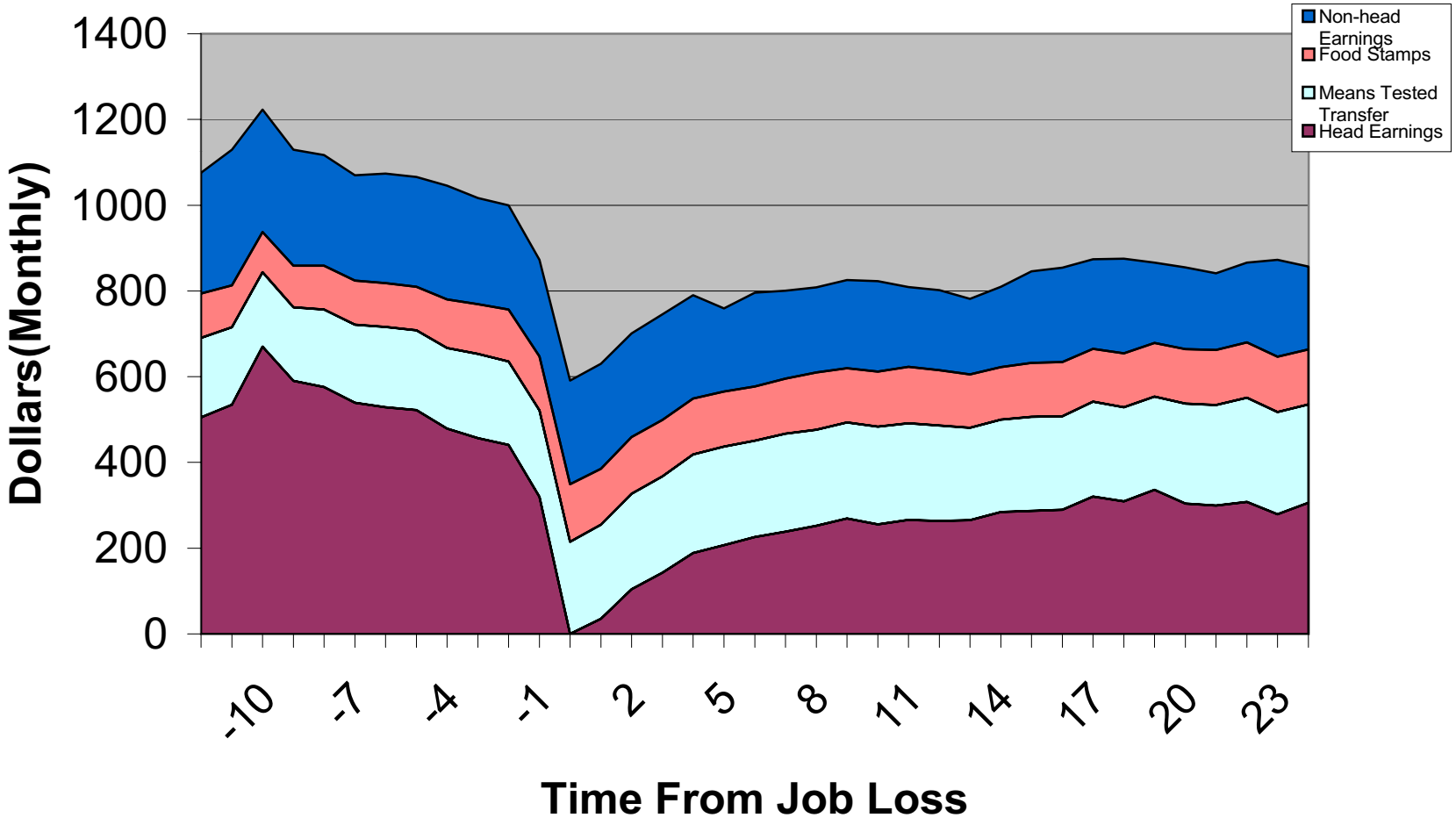


Table 1A
Transfer and Earnings Changes at Job Loss: Married Heads with Low Education

	Means tested cash transfers	Food stamps	Head's Earnings
D1 (1-4 months after job loss)	10.432***	4.161***	-107.679***
	(7.06)	(5.14)	(7.45)
D2 (5-12 months after job loss)	-2.615***	-3.065***	28.077***
	(2.64)	(5.64)	(2.89)
D3 (13+ months after job loss)	0.778	-0.089	-8.385
	(1.35)	(0.28)	(1.50)
Dprior (4 months prior to job loss)	-0.595	0.912	-95.552***
	(0.50)	(1.40)	(8.24)
Black	0.024	-0.053	-2.498
	(0.04)	(0.17)	(0.45)
Number kids (age<18)	0.014	-0.069	0.254
	(0.09)	(0.79)	(0.16)
Have child age<6	1.651***	0.807***	2.369
	(2.91)	(2.60)	(0.43)
Female	-0.069	-0.033	3.826
	(0.11)	(0.10)	(0.64)
Age	0.094	0.000	-0.597
	(0.49)	(0.00)	(0.32)
Age squared	-0.001	0.000	0.003
	(0.29)	(0.14)	(0.13)
Observations	120727	122230	122230
Calendar Year, season, Seam dummies	Yes	Yes	Yes

Person month data from SIPP. All heads aged 25-59, Excludes self-employed, armed forces, enrolled students. Weighted by panel weights. 1996 dollars. Absolute value of t-statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 1 B
Earnings and Transfer Changes at Job Loss: Female Headed Families with Low Education

	(1) Means Tested Cash Transfers	(2) Foodstamps	(3) Head's Earnings
D1 (months 1-4 after job loss)	6.079**	0.658	-32.441***
	(2.44)	(0.64)	(3.53)
D2 (months 5-12 after job loss)	-1.312	-0.738	10.086
	(0.77)	(1.06)	(1.61)
D3 (months 13+ after job loss)	-0.099	0.141	-2.349
	(0.09)	(0.33)	(0.61)
Dprior (4 months prior to job loss)	-0.194	0.443	-36.093***
	(0.09)	(0.51)	(4.63)
Black	0.187	-0.343	0.333
	(0.24)	(1.07)	(0.12)
Number kids (age<18)	-0.357	-0.204	0.051
	(1.15)	(1.61)	(0.05)
Have child age<6	0.432	1.185**	3.700
	(0.37)	(2.48)	(0.86)
Age	-0.180	-0.102	1.104
	(0.50)	(0.70)	(0.84)
Age squared	0.002	0.001	-0.015
	(0.59)	(0.72)	(0.97)
Observations	64283	65020	65020
Calendar Year, season, Seam dummies	Yes	Yes	Yes

Person month data from SIPP. All heads aged 25-59, Excludes self-employed, armed forces, enrolled students. Weighted by panel weights. 1996 dollars.

Absolute value of t-statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 2
Means for Monthly Permanent Earnings and Transitory Earnings Standard Deviation

A. Married Heads with Low Education

Panel	Variable	Obs	Mean
1984	Mean Permanent Earnings (1000s)	23126	1.818134
	Transitory Earnings Std Dev(1000s)	23126	0.498695
1986	Mean Permanent Earnings (1000s)	10955	1.832638
	Transitory Earnings Std Dev(1000s)	10955	0.529763
1988	Mean Permanent Earnings (1000s)	9591	1.758624
	Transitory Earnings Std Dev(1000s)	9591	0.472316
1990	Mean Permanent Earnings (1000s)	20441	1.67007
	Transitory Earnings Std Dev(1000s)	20441	0.500578
1992	Mean Permanent Earnings (1000s)	22119	1.485034
	Transitory Earnings Std Dev(1000s)	22119	0.45401
1994	Mean Permanent Earnings (1000s)	26187	1.306701
	Transitory Earnings Std Dev(1000s)	26187	0.424226

B.Female Heads with Low Education

Panel	Variable	Obs	Mean
1984	Mean Permanent Earnings (1000s)	7041	0.859547
	Transitory Earnings Std Dev(1000s)	7041	0.259068
1986	Mean Permanent Earnings (1000s)	3522	0.982413
	Transitory Earnings Std Dev(1000s)	3522	0.278532
1988	Mean Permanent Earnings (1000s)	2913	1.107194
	Transitory Earnings Std Dev(1000s)	2913	0.338278
1990	Mean Permanent Earnings (1000s)	7394	0.878324
	Transitory Earnings Std Dev(1000s)	7394	0.237331
1992	Mean Permanent Earnings (1000s)	6435	0.894187
	Transitory Earnings Std Dev(1000s)	6435	0.260206
1996	Mean Permanent Earnings (1000s)	12631	0.76854
	Transitory Earnings Std Dev(1000s)	12631	0.267667

Notes: All heads aged 25-59, Excludes self-employed, armed forces, enrolled students. Weighted by panel weights. 1996 dollars.

Table 3A
Participation Probit: Married Heads with Low Education

	Receipt of Means Tested Cash Transfers	Receipt of Food Stamps
Dprior (4 months prior to job loss)	-0.014***	-0.047***
	(13.67)	(42.67)
Perm. Earnings	-0.013***	0.035***
	(3.68)	(12.08)
Transitory Earnings Standard Deviation	0.002	0.021***
	(0.36)	(2.95)
D1 (months 1-4 after job loss)	0.034***	0.019***
	(3.81)	(2.95)
D2 (months 5-12 after job loss)	0.043***	0.032***
	(7.69)	(6.74)
D3 (months 13+ after job loss)	0.014***	-0.009***
	(4.34)	(3.60)
Perm Earnings* Dprior	-0.001	-0.002
	(0.11)	(0.32)
Perm Earnings* D1	0.030***	0.052***
	(3.60)	(8.26)
Perm Earnings* D2	0.019***	0.033***
	(3.84)	(6.90)
Perm Earnings* D3	0.002	0.031***
	(0.69)	(11.14)
Trans Earnings SD*Dprior	-0.014	-0.026*
	(0.77)	(1.78)
Trans Earnings SD*D1	-0.063***	-0.057***
	(2.71)	(4.69)
Trans Earnings SD*D2	-0.035***	-0.058***
	(2.93)	(6.42)
Trans Earnings SD*D3	-0.017**	-0.037***
	(2.52)	(5.63)
Number of kids (age<18)	0.008***	0.015***
	(18.19)	(34.57)
Have child age<6	0.039***	0.032***
	(21.03)	(18.37)
Age	0.006***	0.003***
	(10.53)	(4.76)
Age squared	-0.000***	-0.000***
	(7.38)	(5.17)
Black	0.021***	0.013***
	(13.12)	(7.33)
Observations	112419	112419
Calendar Year, season, Seam dummies	Yes	Yes

Person month data from SIPP. All heads aged 25-59, Excludes self-employed, armed forces, enrolled students. Weighted by panel weights.
Robust z-statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 3B
Participation Probits: Unmarried Female Heads with Low Education

	Receipt of Means Tested Cash Transfers	Receipt of Food Stamps
Dprior (4 months prior to job loss)	-0.007 (0.47)	0.022 (1.44)
Perm. Earnings	-0.119*** (24.57)	-0.159*** (31.66)
Transitory Earnings Standard Deviation	0.005 (0.35)	0.015 (0.70)
D1 (months 1-4 after job loss)	0.018 (1.03)	0.042** (2.29)
D2 (months 5-12 after job loss)	-0.022** (2.11)	-0.001 (0.07)
D3 (months 13+ after job loss)	-0.048*** (7.69)	-0.024*** (3.53)
Perm Earnings* Dprior	0.012 (0.49)	0.053** (2.11)
Perm Earnings* D1	0.131*** (4.40)	0.200*** (6.60)
Perm Earnings* D2	0.055*** (2.71)	0.196*** (9.74)
Perm Earnings* D3	0.190*** (16.72)	0.114*** (10.50)
Trans Earnings SD*Dprior	0.023 (0.50)	-0.197*** (3.45)
Trans Earnings SD*D1	-0.106* (1.94)	-0.270*** (4.05)
Trans Earnings SD*D2	0.120*** (3.39)	-0.166*** (3.06)
Trans Earnings SD*D3	-0.203*** (7.00)	-0.076*** (2.64)
Number of kids (age<18)	0.029*** (20.04)	0.042*** (27.76)
Have child age<6	0.060*** (9.47)	0.038*** (5.86)
Age	-0.000 (0.20)	0.000 (0.13)
Age squared	0.000 (0.31)	-0.000** (2.02)
Black	0.050*** (13.18)	0.084*** (20.99)
Observations	39936	39936
Calendar Year, season, Seam dummies	Yes	Yes

Person month data from SIPP. All heads aged 25-59, Excludes self-employed, armed forces, enrolled students. Weighted by panel weights.
Robust z-statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Appendix Table 1 A
Transfer and Earnings Changes at Job Loss by Panel: Married Heads with Low Education

	Means Tested Cash Transfers	Foodstamps	Head's Earnings
D0 (Month 1-4 after job loss)	12.099***	3.773**	-123.096***
	(3.82)	(2.17)	(3.97)
D1 (Month 4-12 after job loss)	-3.050	-2.950**	26.680
	(1.42)	(2.50)	(1.27)
D2 (Month 13+ after job loss)	0.932	-0.009	-18.809
	(0.71)	(0.01)	(1.51)
panel==86	-0.705	-1.268	-44.920***
	(0.42)	(1.42)	(2.82)
panel==88	-0.257	-0.731	-26.094
	(0.10)	(0.52)	(1.03)
panel==90	1.010	-0.438	18.968
	(0.25)	(0.20)	(0.49)
panel==92	1.380	-0.229	21.407
	(0.33)	(0.10)	(0.52)
panel==96	0.330	-0.524	-7.231
	(0.22)	(0.65)	(0.50)
D1& panel==86	0.383	0.881	-37.947
	(0.08)	(0.33)	(0.78)
D1 & panel==88	1.892	3.688	33.515
	(0.36)	(1.27)	(0.65)
D1& panel==90	-2.862	0.892	53.376
	(0.62)	(0.35)	(1.18)
D1 & panel==92	-6.442	-0.725	32.102
	(1.47)	(0.30)	(0.75)
D1 & panel==96	1.671	-2.360	0.444
	(0.26)	(0.68)	(0.01)
D2 & panel==86	-0.742	-0.467	29.350
	(0.22)	(0.25)	(0.89)
D2 & panel==88	4.148	0.624	-7.523
	(1.18)	(0.32)	(0.22)
D2 & panel==90	-0.666	-1.030	10.412
	(0.21)	(0.60)	(0.34)
D2 & panel==92	0.958	0.529	-20.284
	(0.32)	(0.33)	(0.70)
D2 & panel==96	-1.782	-0.686	24.028
	(0.42)	(0.30)	(0.58)
D3 & panel==86	-0.541	-0.600	8.466
	(0.24)	(0.48)	(0.38)
D3 & panel==88	-1.633	-0.559	17.878
	(0.62)	(0.39)	(0.70)
D3 & panel==90	-0.645	0.097	15.178
	(0.35)	(0.10)	(0.86)
D3 & panel==92	-0.700	-0.172	10.954
	(0.40)	(0.19)	(0.66)
D3 & panel==96	1.189	0.102	12.978
	(0.67)	(0.11)	(0.77)
Dprior (4 months prior to job loss)	-0.552	0.948	-94.782***
	(0.46)	(1.45)	(8.13)

Black	0.014	-0.062	-2.426
	(0.02)	(0.20)	(0.43)
Number kids (age<18)	0.017	-0.072	0.150
	(0.10)	(0.82)	(0.10)
Have child under 6	1.686***	0.859***	3.932
	(2.95)	(2.75)	(0.71)
Female	-0.122	-0.025	3.569
	(0.20)	(0.07)	(0.60)
Age	0.103	0.008	-0.451
	(0.54)	(0.07)	(0.24)
Age squared	-0.001	0.000	0.001
	(0.33)	(0.08)	(0.07)
Observations	120727	122230	122230
Calendar Year, season, Seam dummies	Yes	Yes	Yes

Absolute value of t-statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Appendix Table 1B
Table Transfer and Earnings Changes at Job Loss by Panel: Female Headed Families with Low Education

	(1) Means Tested Cash Transfers	(2) Food stamps	(3) Head's Earnings
D1 (months 1-4 after job loss)	6.556	-2.668	-41.196**
	(1.26)	(1.25)	(2.16)
D2 (months 5-12 after job loss)	-1.334	0.189	14.722
	(0.37)	(0.13)	(1.12)
D3 (months 13+ after job loss)	0.164	0.609	-4.816
	(0.07)	(0.65)	(0.57)
panel==86	-2.062	-1.961	-18.610
	(0.60)	(1.44)	(1.52)
panel==88	-2.281	-2.612	-17.919
	(0.44)	(1.25)	(0.95)
panel==90	-2.451	-2.864	-22.648
	(0.31)	(0.88)	(0.78)
panel==92	-2.375	-3.222	-22.992
	(0.28)	(0.95)	(0.75)
panel==96	1.999	3.899*	-8.368
	(0.41)	(1.95)	(0.47)
D1 & panel==86	-4.069	1.439	22.993
	(0.50)	(0.43)	(0.77)
D1 & panel==88	10.629	8.035**	4.059
	(1.23)	(2.27)	(0.13)
D1 & panel==90	-2.769	2.304	19.626
	(0.37)	(0.75)	(0.71)
D1 & panel==92	-1.256	4.304	-3.359
	(0.15)	(1.24)	(0.11)
D1 & panel==96	-2.612	8.958**	14.367
	(0.30)	(2.53)	(0.45)
D2 & panel==86	3.463	-1.275	-16.784
	(0.62)	(0.56)	(0.82)
D2 & panel==88	-8.399	-0.457	2.335
	(1.44)	(0.19)	(0.11)
D2 & panel==90	1.905	-0.657	-9.774
	(0.37)	(0.31)	(0.52)
D2 & panel==92	-1.502	0.487	-3.991
	(0.26)	(0.20)	(0.19)
D2 & panel==96	3.490	-3.872	5.271
	(0.60)	(1.63)	(0.25)
D3 & panel==86	1.823	-0.051	10.691
	(0.41)	(0.03)	(0.65)
D3 & panel==88	-0.728	0.606	-4.129
	(0.13)	(0.26)	(0.20)
D3 & panel==90	-0.508	-0.053	0.842
	(0.13)	(0.03)	(0.06)
D3 & panel==92	0.080	-0.783	2.422
	(0.02)	(0.60)	(0.21)
D3 & panel==96	-0.923	-0.950	3.264
	(0.32)	(0.81)	(0.31)

Dprior (4 months prior to job loss)	-0.168 (0.08)	0.505 (0.58)	-35.298*** (4.50)
Black	0.173 (0.22)	-0.327 (1.02)	0.536 (0.19)
Number kids (age<18)	-0.379 (1.21)	-0.209* (1.65)	-0.040 (0.04)
Have child age <6	0.524 (0.44)	1.290*** (2.68)	4.438 (1.03)
Age	-0.184 (0.51)	-0.094 (0.64)	1.144 (0.87)
Age squared	0.003 (0.60)	0.001 (0.68)	-0.015 (0.99)
Observations	64283	65020	65020
Calendar Year, season, Seam dummies	Yes	Yes	Yes

Absolute value of t-statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%