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HOW WELL INSURED ARE JOB LOSERS? EFFICACY OF THE PUBLIC SAFETY NET.

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ABSTRACT

An extensive literature documents large and persistent declines in earnings following job loss. We study how the public safety net mitigates this using the 1996-2013 Survey of Income and Program Participation. Using an individual fixed effects model, we document which public programs provide the most insurance, and how this varies by pre-job loss characteristics. We find that Unemployment Insurance provides the largest buffer against lost income, but that the neediest are less well insured compared to middle- and higher- income job losers. This has important implications for the progressivity of the safety net, and how best to support displaced workers.

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1 Introduction

1.5% of the U.S. workforce experiences a job loss in an average year (Fernández Campbell, 2019). This is even higher in recessions, and during the first few months of the COVID-19 pandemic, an estimated 22 million people (13% of the workforce) lost their job in the U.S. (Bartash, 2020). Job losers–workers who lose their job through no fault of their own–experience a decrease in earnings of 14-66% in the first year after job loss, and these losses often persist for years after separation (Couch and Placzek, 2010). Moreover, the median job loser does not have enough liquid savings to cover even a month's worth of expenses (Rothstein and Valletta, 2017), suggesting that self insurance is unlikely to be a viable option for many of those displaced. Workers may instead rely on the public safety net for insurance against lost earnings.

This paper provides the first evidence of the efficacy of the public safety net as a whole, across all major programs, in mitigating the negative economic shock of job loss.[1] We take a comprehensive view of the safety net, looking at many programs beyond just Unemployment Insurance (UI), including the Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), Social Security (SS), Supplemental Security Income (SSI), Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), Free and Reduced Price Lunch (FRPL), energy assistance, the Earned Income Tax Credit (EITC), and public health insurance. We document which programs provide the largest insurance effects in terms of replacing lost income, and how this varies by pre-job loss demographics. We shed light on which job losers benefit the most from the safety net, the degree to which they benefit, from which programs those benefits are derived, and when those benefits occur.

We use the Survey of Income and Program Participation (SIPP) from 1996-2013, which is ideally suited for our study because it collects information about the duration of each job and the reason each job ends. Additionally, the SIPP collects detailed monthly information about earned income, as well as receipt and benefit amount of major cash and in-kind safety net programs. Finally, the SIPP follows individuals in the initial sample for 3-4 years, so we can examine how safety net benefits change around job loss in event study and difference in difference models with individual fixed effects.

Our first finding is that UI is the most important program for providing income replacement for displaced workers, both because it is the most commonly used program for

[1] We use the term "safety net" programs to describe both means-tested programs and social insurance programs that individuals pay into and can claim benefits from.

job losers and because it provides the largest benefit amounts. However, because of the time limits on benefit receipt, UI income mostly runs out within two years after the job loss even though earnings remain significantly lower than before job loss. Our second key finding is that the total dollars received of UI payments are regressive. This is likely due to the fact that UI eligibility is conditional on the worker having a minimum amount of job tenure (work history requirements) and meeting requirements on minimum past wages (earnings requirements) and is not available to self-employed and gig workers. Indeed, we show that rates of UI eligibility are lower among the most disadvantaged. The structure and generosity of UI has been highly debated by economists and policy-makers, with renewed interest due to the COVID-19 pandemic (e.g. Snell (2020); Palmer and Sherman (2020)). Our findings shed light on what changes could be made to better insure the neediest displaced workers.

Our third key finding is that there is an increase in participation in some means-tested safety net programs following job loss, but the magnitude of these transfers is negligible. Specifically, there is an increase in dollars transferred from SNAP of only $23-30 per month (in 2015$s) for those below 200% of the poverty line. Other means-tested programs including TANF, WIC, Free and Reduced Price Lunch, the EITC, or energy assistance transfer even smaller amounts.[2] Public health insurance does provide a buffer against the loss in private insurance, especially for children of job losers.[3]

Considering benefits from all major cash and near-cash transfer programs, income replaced by the safety net is regressive for the poorest households. Workers with pre-job loss household income below the poverty line have only 21% of their lost earnings replaced by the safety net. In contrast, workers with household income between 100-499% of the poverty line have 26-28% of their lost earnings replaced. These findings are robust to scaling for under-reporting (as discussed in Meyer et al. (2020) and Meyer et al. (2015)), to different sample selection choices and to addressing concerns about bias in two-way fixed effects models.

Our work builds on papers consistently finding large and persistent earnings losses for displaced workers, summarized by Couch and Placzek (2010). We are the first to study the buffering effects of the modern safety net in a comprehensive way for all job losers in the U.S. and to examine heterogeneous impacts by pre-job loss characteristics. We also contribute to the extensive literature studying the costs and benefits of UI (e.g. Chetty (2008); Rothstein (2011); East and Kuka (2015); Farber and Valletta (2015); Ganong and Noel (2019); Lindo

[2]In an earlier draft of this paper, we looked at employer-provided severance pay. Severance pay is uncommon (only about 20% of job losers receive any) and mainly is given to those with higher income. There is a stark increase of $600 in severance pay in the months immediately following a job loss, but these payments fall to zero within 4 months after job loss. See (East and Simon, 2020) for more details.

[3]Note, our sample is focused on the pre-Affordable Care Act (ACA) period.

et al. (2020)) by examining *which* workers receive UI and how UI fits into the broader safety net landscape.

Our analysis is also related to the literature on the cyclicality of safety net program expenditures and caseloads in the U.S. (e.g. Bitler and Hoynes (2016); Bitler et al. (2017a)). This past research studied the aggregate (state-level) responsiveness of these programs to the business cycle, whereas we take an individual-level approach and look at income receipt for the job loser and their household following a job loss.[4] The existing work at the individual level has focused on safety net interactions for specific subgroups: Rothstein and Valletta (2017) study changes in program participation and income following UI benefit exhaustion for those who were receiving UI benefits and were unemployed during recessions, and Leung and O'Leary (2020) examine safety net program interaction for job losers in Michigan on the margin of UI income eligibility. In contrast, our more comprehensive approach allows us to understand which job losers benefit from which programs, providing a full picture of the insurance value of the safety net, as well as the important gaps in the current safety net.

Section 2 describes the data and estimation sample, Section 3 describes our estimation strategy. Section 4 describes program participation and household resources effects. Section 5 concludes.

2 Sample and Program Description

2.1 SIPP Data and Sample Definition

The Survey of Income and Program Participation is a nationally representative panel survey that follows recipients for 3-4 years, asking detailed questions about many types of income receipt in each month in the panel. A new panel begins every few years with a new sample and we use the 1996, 2001, 2004, and 2008 SIPP panels for our analysis. Redesigns of the survey before the 1996 and after the 2008 panel prevent us from including additional years of data. We define job losers as those that lost their job through no fault of their own: due to a layoff, business closure, or transfer of ownership of the business. Following the literature, we focus on the first job loss we observe after the SIPP panel began (e.g. Stevens (1997)). Our sample is heads of household or the spouse/unmarried partner of a household head, who are working-aged (24-55) at time of job loss. To account for the potentially endogenous

[4]Recent work by Hershbein (2021) builds on this state-year approach by implementing an event study model that looks at the dynamics of the effects of recessions on city-level transfer payments.

effect of job loss on marital status, we link job losers to the observed spouse or unmarried partner first observed in the sample.[5] We further condition on the displaced worker having at least 1 year of job tenure, which is common in the job loss literature (e.g. Oreopoulos et al. (2008); Rege et al. (2011); Schaller and Zerpa (2019)) and has several advantages; first, it allows us to better identify exogenous shocks to income and, second, since we examine income dynamics up to 12 months prior to job loss, this means job transitions will not likely drive pre-trends.[6]

In Table (1) we show demographic characteristics for workers in the first survey month. We do this separately for the full sample of job losers, job losers with 1 year of job tenure, all workers (including those who eventually lose a job), and all workers with 1 year of job tenure. Job losers are less advantaged than their non-displaced counterparts based on their initial monthly earnings and education. Additionally, restricting the sample to workers with at least one year of job tenure (either at the beginning of the survey for all workers, or before the job loss for displaced workers) yields a more advantaged sample. We prefer this restriction for our main analysis for the reasons described above, however, we test robustness to this restriction in Section 4.2. Figure (1) shows the distribution of the year of job loss in our sample; there are many job losses in the 2001 and 2009 recessions, but there are job losses in non-recessionary years as well.

To measure program receipt, we look at the monthly amount received of Unemployment Insurance (UI), Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), Social Security (SS), Supplemental Security Income (SSI), WIC, Free and Reduced Price Lunch (FRPL), and energy assistance. For FRPL, we impute the dollar value of the benefits by using the reimbursement rate given to schools, since only participation is reported in the SIPP.[7] We also simulate EITC amounts using the NBER Taxsim program (Feenberg and Coutts, 1993) and observed income and household structure information, as described in more detail below in Section 4.4.1. Finally, we examine public health insurance (PHI) take-up and its interaction with private health insurance. This is important since the latter is often tied directly to employment, especially in the pre-ACA

[5]Only 4% of our sample becomes neither a head, spouse, nor partner at some point in the sample window. We keep individuals in the sample even after they are no longer a head, spouse, or partner.

[6]We drop observations more than 12 months before job loss and more than 23 months after job loss. For our main analysis, we do not restrict the sample to be balanced. Again, the results on a balanced sample are similar. See the discussion in Section 4.2.

[7]We take the maximum per meal reimbursement rate in the 48 contiguous states, multiply by the number of children reported to be receiving these benefits in the household, and finally multiplying this by 22 school days in the month. Reimbursement rates from:
`https://www.fns.usda.gov/cn/rates-reimbursement`

period we study. We adjust all income amounts to be in constant 2015$s.

One concern with using the SIPP is that there is under-reporting of safety net program receipt in survey data (Meyer et al., 2020, 2015)). To address this, we follow Meyer et al.'s (2009) suggestion and explore in Section 4.2.2 how the results change when we scale the reported outcome variables by the rates of under-reporting. This changes the levels of the estimates, but does not change the patterns or overall qualitative interpretation of our findings.

2.2 Descriptive Results

Before estimating a regression model, we examine descriptively how program receipt evolves around job loss in Table (2). The changes from pre (column 1) to post (column 2) job loss are stark: individuals have much lower earnings after job loss and are much more likely to receive safety net program benefits.[8] In the last three rows, we look at three measures of household poverty. To do so, we compare the poverty threshold for the household to three measures of income: 1) total household earned income only, 2) total household cash income (including earnings, UI, SS, SSI, and TANF) and 3) total household cash and near-cash income, which adds the cash value of near-cash safety net programs (SNAP, FRPL, WIC, and energy assistance). We see large increases in the "earnings only" measure of poverty, that are mitigated when we add in income from cash transfers.

From Table (2), it is clear that UI is the most responsive program to job loss in terms of both participation and benefit amounts received. UI is also the only safety net program designed specifically to aid displaced workers. Cash payments from UI are available to workers who lost their job through no fault of their own, and who meet work history and minimum earnings requirements in the base period (often four out of the past five quarters must have been spent working). The exact requirements and methods for calculating eligibility range from state to state. Additionally, not all workers are covered; for example, self-employed workers and gig workers are not often covered by UI. Benefits are typically calculated as a little less than half of the pre-job loss wages, up to a maximum benefit amount, which is again set by each state. Minimum benefits ranged from $5 (Hawaii) to $188 (Washington) in 2019. Similarly, maximum benefits (excluding additional benefits for dependents) range from $235 (Mississippi) to $795 (Massachusetts). UI is available to workers for 26 weeks in most states, except during recessions, when the Extended Benefit program

[8]UI receipt is non-zero in the pre-period, likely due to individuals who report experiencing short periods of temporary layoff before the permanent job separation (even though they have a tenure at the job of at least a year). Note, in this table we do not include the month of job loss in either the pre or post period.

can provide an additional 13 or 20 weeks. Also, during the Great Recession, a temporary program further extended benefit duration between July 2008 and December 2013.[9]

An important contribution of our analysis is that we look at not only UI, but the full range of safety net programs. SNAP is a means-tested program providing in-kind benefits (debit card to be used for food purchases only) and we find it to be, after UI, the second-most important program for replacing income from job loss. There is a much smaller increase in all of other safety net programs. We describe these programs briefly here. For more in depth information on the various programs see Appendix B. TANF is a means-tested cash benefit program for families with children, and has stricter eligibility rules and smaller benefit amounts relative to SNAP. Social Security (SS) provides cash benefits for the disabled and elderly who meet work history requirements, and Supplemental Security Income (SSI) also provides cash benefits for the disabled and elderly but is means-tested. We cannot separate out whether individuals received SS and SSI due to age or disability requirements; however, because our sample is aged 24-55 at the time of job loss individuals are most likely to be qualifying for these programs based on disability rather than age. The next program, Free and Reduced Price Lunch is a means-tested nutrition program that subsidizes school lunches for children. WIC is an in-kind means-tested program that provides supplemental food, formula, counseling, and health care referrals to pregnant individuals and mothers of children under age 5. For both WIC and FRPL, we look at whether anyone in the household received these benefits and the total household value of the benefits. The energy subsidies we examine cover household energy use expenses and are also means-tested. The EITC provides cash in the form of a refundable tax credit to low-income households with at least one earner. Finally, Public Health Insurance programs provide health insurance to adults and children who meet the means test.

Given the structure of the programs, we expect UI to be more widely available to higher income job losers. On the other hand, the means-tested programs will likely be used more frequently by lower income job losers. We investigate this in Figure (2). Panel (a) plots the participation rates in safety net programs *before* job loss against the household poverty ratio in the first survey month. Panel (b) plots the *change* in take-up after job loss, again against baseline household poverty ratio.[10] Panel (b) shows again that UI is clearly the program with the largest increase in take-up post job loss, increasing by 40-60 percentage points.

[9]This information is taken from Whittaker and Isaacs (2019).

[10]To calculate the household poverty ratio, we use household-level total cash income, and the SIPP-assigned Census poverty threshold for each household, which is based on household size and composition. We show the number of job losers by household poverty ratio in Appendix Figure (A1). In 2020, for a family of 4, the poverty threshold was $26,200. `https://aspe.hhs.gov/2020-poverty-guidelines`.

Take-up of UI is also increasing in pre-job loss household poverty ratio, a point we return to in more detail below. The increase in take-up of means-tested programs is much smaller, with participation in SNAP and FRPL increasing only for lower income individuals with household income up to 500% of the poverty line pre-job loss. Changes in participation in the other programs are very small.

Additionally, even before job loss in Panel (a), displaced workers with household income below 300% of the poverty line received benefits from FRPL, SNAP, and WIC.[11] For households below the poverty line, only a small percent (less than 10%) received TANF before job loss. Given that many households received means-tested programs *before* job loss, we will also look at the impact of job loss on the dollar value of benefits received from these programs in our regression analysis, as this may be responsive to the decline in earnings due to job loss, even if the household's program participation doesn't change.

3 Empirical Strategy

We follow the job loss literature (e.g. Jacobson et al. (1993); Stevens (1997); Sullivan and Von Wachter (2009)) and estimate event study models with individual fixed effects to examine the dynamics of income around job loss. Specifically, our baseline model is:

$$y_{it} = \alpha_i + \sum_{t=-12, t\neq -3,-4}^{24} \beta_t D_{it} + \gamma_1 X_{it} + \epsilon_{it} \tag{1}$$

where y_{it} is a measure of income or program participation for individual i at time t. Time is relative to job loss, which occurs at $t = 0$. The key set of regressors are D_{it}, which are indicator variables for job loser i being t periods before or after job loss. We group time into two-month bins to improve precision of our estimates, but the results are similar when un-binned. We omit the the third and fourth months before job loss, so β_t measures the change in income relative to the 3-4 months prior to job loss. We chose this as the omitted period rather than the second and first months before job loss to ensure our reference period is before any anticipatory effects. So, for example, β_2 measures the change in income 2-3 months after job loss, relative to 3-4 months before. Importantly, we include α_i, which is a vector of individual fixed effects that account for all time-fixed characteristics of individuals in our sample. Additionally, the vector of controls, X_{it}, has calendar year-month fixed effects to account for common shocks over time, and age and age squared to account for the age-

[11] The eligibility thresholds for these programs is below 300% of the poverty threshold, however, since we only measure household poverty ratio at one point in time (first survey month), variability in income pre-job loss may explain non-zero take-up even for households in the 200-299% bin.

earnings relationship.[12] We weight using the SIPP individual weight at the time of job loss, and cluster standard errors at the individual level.

In our baseline sample everyone experiences a no fault job displacement so, the key identifying assumption is that the timing of job loss is unrelated to individual trends in income. It is important to distinguish what type of causal estimates we can produce with this design. We rely on the plausible randomness of the timing of a worker's no-fault job loss to identify the causal impact of job loss on safety net program receipt. In addition, we investigate how the effects differ by pre-job loss characteristics. We do not study the causal effect of safety net programs on job losers' outcomes. Finally, our estimated effects are inclusive of any behavioral effects induced by safety net programs (such as changes in work incentives), although we do not directly estimate those behavioral effects here.

We also estimate a difference in difference equivalent of equation (1) where we replace all the post-job loss dummy variables with one dummy variable indicating an observation is after job loss, and we omit the pre-job loss dummy variables. This provides a parsimonious way of summarizing our findings, which is particularly useful in our analysis by subgroups.

We check the robustness of our results to potential bias caused by using two-way fixed effects estimators with staggered treatment timing by simply plotting the unconditional means of the outcomes of interest over time relative to job loss.[13] These means are very similar to our regression-adjusted estimates, discussed in Section 4.2.2 below. Additionally, we check the robustness of our main results to including non-job losers as a control group and the results are very similar (see Section 4.2.2 and Appendix C).[14]

[12]Note that calendar time is determined by both event time and individual fixed effects (based on when the job loss occurred) so X has subscripts for i and t. Because different individuals lose their job at different dates, the calendar time fixed effects are not co-linear with the event time dummies.

[13]We have many events occurring at different months in each year, making it unclear how to execute some of the corrections in the new difference in difference literature. However, since there are no fixed effects when simply graphing the raw means, if the job loss is truly exogenous, as we argue, there is no bias. This simple approach underlies the basic idea behind a stacked regression or other approaches in the literature Callaway and Sant'Anna (2021).

[14]Krolikowski (2018) points out that by choosing a control group that never loses their job, the econometrician imposes the assumption of employment stability over the observed period as the counterfactual. This could result in larger estimated effects of a job loss if the true counterfactual is that job loss might occur for the control group at some point in the post period.

4 Effects on Safety Net Program Receipt

4.1 Job Loss and Earnings: Replication

We begin by replicating the literature that documents large and persistent declines in earnings following an involuntary job loss. Figure (3) and column (1) of Appendix Table (A1) show the results of the event study analysis on job losers' monthly earnings (in 2015$s). In the first six months following the job loss, there is a monthly earnings loss of $2,265-3,043, about 50-68% relative to the pre-job loss mean ($4,485).[15] One year after the job loss, earnings losses are $1,766 (39%). These magnitudes are similar to that found in the prior literature, which has primarily examined annual rather than monthly earnings and has found annual earnings losses of 14-66% in the first year after job loss (Couch and Placzek, 2010). Also consistent with past findings, we see evidence of persistence in these earnings losses; earnings are still $1,519 (34%) lower than pre-job loss at the end of our sample period, 2 years after job loss. There are no significant pre-trends in earnings before job loss, which supports our identifying assumption of job loss timing being unrelated to trends in income.

4.2 Job Loss and the Safety Net

Next, we explore how the take-up of safety net programs changes using the same event study model. In Figure (4) we report the results. For ease of presentation, we show only the coefficients, but all these coefficients and their associated standard errors are reported in Appendix Table (A2). Note, we scale all the dummy variables by 100, so the vertical axis measures the percentage point change. In Panel (a), it is clear that the program with the largest increase in take-up relative to pre-job loss is UI. There is at first a roughly a 40 percentage point increase in take-up, consistent with unadjusted mean changes in take-up in Section 2. UI receipt is time-limited, so we also observe a sharp decline in receipt of UI as we move away from the job loss.[16]

In Panel (b) we re-scale the vertical axis after dropping UI to better examine the effects on other programs. The results indicate meaningful increases in participation in

[15] Note that when t=0, the earnings loss is smaller because the job loss happens during this two-month period, and not always at the beginning of it.

[16] Recall that the longest UI duration was 99 weeks during the Great Recession, though we still see significant increases in UI receipt up to 2 years following the job loss (Appendix Table (A2)). This is likely due to the fact that job losers often suffer multiple job losses (Stevens, 1997). A worker could lose a job again within two years of the first job loss and re-qualify for UI because the vast majority of states require 20 weeks of work, plus meeting minimum earnings requirements. Information from: `https://oui.doleta.gov/unemploy/content/sigpros/2000-2009/January2008.pdf`.

SNAP, TANF, SS, SSI, and FRPL. These effects in percentage point terms are much smaller than UI effects, but relative to the pre-job loss mean, these are very large increases; one year after job loss, SNAP participation has increased by 42%, TANF by 25%, SS by 86%, SSI by 78%, and FRPL by 14% (see Appendix Table (A2)). Interestingly, participation in SNAP, FRPL, SS and SSI remain significantly higher than pre-job loss for at least two years after the job loss. This could be due to: 1) the persistent earnings decline after job loss, which allows individuals to remain eligible for these programs; 2) to these programs dis-incentivizing work after job loss; 3) or to job loss leading to take up of programs that families had already qualified for but had not made use of. In what follows, we explore whether these large percent increases in participation translate to meaningful increases in household income.[17]

We estimate the extent to which these programs make up for the lost earnings in Figure (5) and Appendix Table (A1). Means-tested programs are available for the working poor *before* job loss, but often increase in benefit amount as income decreases, so the dollar value of benefits for those already enrolled may increase with job loss. The black dots replicate the estimates on earnings from Figure (3), and the blue dots indicate the effect of job loss on earnings plus UI income. The other colored marks show the effect on income sequentially adding in other safety net program income that could act as a replacement for lost income (all measures are inclusive of zeros). From this figure it is clear that UI is the most important program for job losers, not only in terms of participation, as seen above, but in terms of the dollar value of income received. It is the only program that meaningfully makes up for the lost income following the job loss in the full sample, despite the large percentage increases in take-up of other programs.

On average, UI provides $562 in benefits in the months immediately following job loss.[18] In comparison, SNAP, which is the second largest program in terms of transfer dollars 2-3 months following job loss, provides only $13 in monthly benefits on average. To understand how much of the differences in benefits transferred across programs is due to differences in benefit generosity, we tabulate the mean monthly benefit amount received after job loss for each program, *conditioning on program participation* in Figure (6). For participants, UI is the most generous program in terms of average monthly benefit paid. SS and SSI benefits are

[17] In Appendix Table (A2) we do see a few significant coefficients before job loss for a few programs. This includes an increase in UI receipt 1-2 months before job loss. However, in all cases there is no clear pre-trend and there is a clear break in trend in participation around the time of job loss in these programs. So, we do not view the results after job loss as being driven by a pre-trend. It is likely that there is some measurement error in reported time of layoff in the survey data that could explain these small irregularities.

[18] (For this calculation, we subtract the estimated effect on earnings from the estimated effect on earnings plus UI income for the 6 months following job loss in Appendix Table (A1)).

the second most generous after UI (but are much more restrictive in terms of who qualifies, especially in the age range 24-55 at the time of job loss). Finally, the means-tested programs (SNAP, TANF, FRPL, WIC, and energy assistance) provide relatively small benefit amounts to participants compared to other programs.

We next test the robustness of these results to changes to the sample definitions: changing the job tenure restriction to be 6 months or 18 months instead of 1 year; dropping those who report experiencing a temporary layoff; and, finally, requiring the sample to be balanced. These checks, shown in Appendix Figures (A2)-(A5), confirm that our findings are not sensitive to any of these sample definition choices. When we balance the sample, there is a slight pre-trend in earnings that goes in the opposite direction as our main results (increasing earnings prior to job loss), but only one of these pre-period coefficients is statistically significantly different from zero (results available on request).

4.2.1 By Pre-Job Loss Household Poverty Ratio

Because eligibility for many safety net programs is conditional on income tests (means-tested), we examine heterogeneous effects by the pre-job loss household poverty ratio that is measured in the first survey month. To easily compare the effects across income groups, we estimate a difference in difference equivalent of the event study model.[19] Specifically, we replace the event time dummies with one post-job loss dummy, and we plot the coefficient on this dummy by pre-job loss household poverty ratio bins. Bins go from 99% up to 800+% of the poverty line. The outcomes are the dollar value of safety net benefits received by each program.

Figure (7) demonstrates that the value of the safety net for job losers varies greatly by income, shown in the bars with each program represented by a different color. Households with income below poverty before job loss receive less than half of the transfer dollars than households with incomes between 400-699% of the poverty line ($299 compared to $667-773). And, as we saw before, UI makes up the vast majority of transfer dollars to displaced workers. This is true even for workers below poverty, who are likely eligible for many means-tested programs.

We next tabulate the estimated change in total transfer dollars *as a percent of the estimated loss in earnings following job loss*, by pre-job loss household poverty ratio. This

[19]Note that because our sample is unbalanced, more weight is put towards observations directly around the time of job loss. However, the baseline results are very similar to results on the balanced sample as shown in Appendix Figure (A5).

is shown in the gray line in Figure (7), labeled the "replacement rate."[20] This pattern is more ambiguous than absolute dollars transferred, following an inverse "U" shape across the income distribution, though by this measure the safety-net is still regressive at the bottom of the income distribution. Workers below poverty pre-job loss receive replacement rates of 20%. In contrast, for workers in households at a poverty ratio between 100-499%, the replacement rate is 27-29%, on average. For workers above 500% of the poverty line, the replacement rate begins to decline, likely due to the caps on UI benefit amounts.[21]

To shed further light on why UI may be less protective at the bottom of the income distribution, we tabulate UI eligibility rates based on observed income history and self-employment status by pre-job loss poverty. Recall that UI eligibility is conditional on meeting minimum work history and prior earnings requirements, and, in our time period, self-employed individuals were not covered by UI. These results are shown in Figure (8) where eligibility based only on income history observed in the SIPP is in blue and eligibility based on this and self-employment is in red.[22] As expected, workers at the bottom of the income distribution (below the poverty line pre-job loss) are 8.5 percentage points less likely to be covered by UI based on income than those with income 100-199% of the poverty line. Factoring in self-employment they are 9.4 percentage points less likely to be eligible. For incomes above 200% of the poverty line, rates of eligibility are fairly stable across the income distribution.

4.2.2 Robustness

To investigate the robustness of our results, we explore adding in a control group, accounting for potential bias in two-way fixed effects models by omitted the fixed effects, and adjusting for under-reporting of program receipt in the SIPP.

In Appendix Figures (C1), (C2), (C3) and (C4), we show results that correspond to Figures (3), (4), (5) and (7), but include a control group of workers who have never lost their jobs. The pattern of results with the added control group are nearly identical. See Appendix C for more details.

[20] To calculate the numbers plotted in this line, in the numerator we sum the coefficients across all programs in Figure (7) by household poverty ratio group. For the denominator, we estimate a difference in difference model by household poverty ratio group with earnings as the outcome variable, and use the coefficient on this post period dummy.

[21] We also explore whether this same pattern holds when we split the sample by individuals' pre-job loss earnings quintile in the first survey month in Appendix Figure (A6). The same overall pattern is seen: more dollars in aid go to higher earner quintiles and the replacement rate as a function of pre-job loss earnings is U-shaped.

[22] Information on income eligibility is from the UI benefit and eligibility calculator in Kuka (2020).

A new and rapidly growing literature has raised concerns about two-way fixed effects models in the context of differential treatment timing (e.g. Goodman-Bacon (2021); Callaway and Sant'Anna (2021)). We re-estimate our model omitting time and individual fixed effects: this effectively shows how the age-adjusted mean earnings and program benefits change relative to the time of job loss (see Appendix Figure (A7)). The only covariates in this model are age and age squared. Reassuringly, the results are nearly identical to our baseline results, indicating that heterogenous treatment effects are likely not biasing our results.

Finally, it is well documented that program receipt is under-reported in many major U.S. surveys including the SIPP (e.g. Meyer et al. (2020) and Meyer et al. (2015)). We adjust for this under-reporting to see how much it changes our results. Mechanically, this means dividing the program participation and benefit amount variables by the estimated rates of under-reporting and using these scaled variables as the outcome variables in our models. These rates come from Meyer et al. (2015), are specific to the SIPP, and they provide separate rates for each survey year in our sample.[23] One limitation of adjusting by these rates of under-reporting is that they do not vary by household income, however, in recent work, Meyer et al. (2020) find no significant relationship between a household's income to poverty ratio and the likelihood they incorrectly report not receiving SNAP benefits in the SIPP. This suggests assuming the same or similar rates by household income may be a reasonable assumption.

The scaled versions of our main results are shown in Appendix Figures (A8)-(A9). The patterns on program receipt are the same–UI is the most important program for job losers in terms of both increased participation and dollars transferred. Turning to the magnitudes, the effect on take-up is very similar for all programs besides UI. For UI, after adjusting for under-reporting, we find effects on take-up 2 months after the job loss of around 70 percentage points (Panel (a)), compared to our baseline result of 40 percentage points (Panel (b)). Similarly, in terms of dollars transferred, the results are very similar for all programs but UI; after adjustment, we find that roughly $971 are transferred from UI in the several months after job loss. This is almost double the un-adjusted amount we calculate ($561). Appendix Figure (A10) shows the relationship between transfer income and pre-job loss household poverty is the same with and without adjusting for under-reporting, though the levels are larger after adjustment. For example, there is a roughly 40% replacement rate for the full sample compared to 25% without adjustment.

[23]When available, we scale separately by the participation under-reporting rate for our participation variables and by the dollars received under-reporting rate for dollars transferred variables. Otherwise, we scale by the participation under-reporting only. We do not have rates of under-reporting for energy benefits, so we drop that outcome from this set of results.

4.3 Other Types of Heterogeneity

We next explore splitting the sample by race/ethnicity, by the presence of children in the household, and by economic conditions. Splitting into non-Hispanic white, non-Hispanic black, and Hispanic, we see that non-Hispanic whites receive the largest amount of benefits. However, scaling as a percent of lost earnings, the differences largely disappear (shown in Appendix Figure (A11)). This again indicates that the more advantaged tend to receive a higher (total) amount of transfer dollars after job loss.

Children may be an important factor in determining take-up and benefit amounts for some safety net programs. In most states UI benefit amounts are larger for workers with children, and TANF, FRPL and WIC are only available to workers with children. Likewise, SNAP eligibility is unconditional on work for individuals with children. Appendix Figure (A12) shows that (as expected) FRPL benefits are concentrated among workers with kids, as are SNAP benefits, however the total value of safety net transfers are actually somewhat larger for workers without children. There is minimal difference in percentage of lost earnings replaced with transfers between workers with and without children (again shown as the replacement rate line in gray). This suggests that, per person, transfers are much lower in households with children than in those without.

Finally, we examine if the effects are different for individuals who are displaced during a recession or not in Appendix Figure (A13). We define recessions using the NBER business cycle dates.[24]. In our sample recessions capture the Great Recession and the 2001 Dot Com recession. Interestingly, the dollar value transferred is similar, but the replacement rate is higher for workers displaced in recessions, suggesting that the average wages of these workers is lower.

4.4 Other Safety Net Programs

We look separately at two additional safety net programs that by their nature do not fit naturally into the analysis above: the Earned Income Tax Credit (EITC) and public health insurance (PHI).

4.4.1 The Earned Income Tax Credit

The EITC is one of the largest safety-net programs for the working poor, so it is important to analyze its role in insuring against job loss. However, unlike other programs, the EITC is

[24] `https://www.nber.org/research/business-cycle-dating`

not reported monthly in the SIPP. The EITC is typically received as a lump sum payment as a part of a families' tax return once a year. This not only complicates measurement of program receipt, but may also limit its ability to buffer lost income in the short term. We therefore analyze the EITC separately from other programs, using the detailed family income data in the SIPP to perform simulations to estimate how the amount of credit a household is eligible for changes with job loss. It is ambiguous whether the EITC will increase or decrease post job loss since the EITC is a non-linear function of earned income (Bitler et al., 2017b). Specifically, there are three phases of EITC eligibility. A "phase-in" region during which the tax credit increases per dollar of earned income. After earned income reaches a set threshold, there is a "plateau region" over which the credit amount is constant, before eventually phasing out at higher levels of earned income ("phase out" region). See Appendix B for more details. If job loss causes earned income to decline from the "plateau/phase-out" region to the "phase-in" region (or from a higher to lower point in the "phase -in" region), then the credit amount would decline. If income was high enough pre-job loss that the family did not qualify for the EITC, then a job loss could increase the amount of EITC credit the family qualifies for.

We simulate the amount of EITC a family is eligible for using Taxsim.[25] Simulating EITC eligibility amounts is complicated by the fact that the EITC uses taxable income from each calendar year to determine eligibility. For workers who lose their job in the middle of the year, calculating pre and post job loss EITC values is not straightforward. We address this issue by taking the average of monthly income values we observe for a family both pre and post job loss. We then annualize this income by dividing by the number of months observed (separately pre and post job loss) and multiplying by 12. This allows us to predict a pre and post job loss EITC amount.[26] The idea is to predict what annual EITC income would be over two states of the world: a hypothetical year directly before the worker lost their job, and a hypothetical year directly after. Our approach likely over-states the EITC eligibility amounts, because in most cases, a job loss happens in the middle of the year and therefore eligibility would be calculated based on a mixture of the high (pre-job loss) income and lower (post-job loss) income. Additionally, not all of those eligible for the EITC participate: participation is estimated to be roughly 80%.[27]

[25]Taxsim is a program available through NBER at http://www.nber.org/taxsim that calculates tax liabilities given information on family income and circumstances based on Federal and State income tax laws. We use Taxsim to generate predicted EITC amounts assuming full takeup among those eligible for the EITC. Some topical modules in the SIPP ask about EITC receipt, however, the EITC isn't asked about regularly enough to estimate as an outcome in a pre/post job loss model or event study design.

[26]In addition to annualized earnings, we use number of children, marital status, and state of the job loser to calculate EITC eligibility amounts.

[27]https://www.eitc.irs.gov/eitc-central/participation-rate/eitc-participation-rate-by-states

We estimate our difference in difference model to analyze the change in EITC amounts and Appendix Table (A3) shows these results. For the full sample, there is an increase in EITC amount of roughly $24 *annually* post-job loss. We also break the sample down by pre-job loss household poverty as before. Given the structure of the EITC, it is not surprising that we see the largest increases in EITC after job loss at the bottom of the income distribution. For those with household income above 300% of the poverty line, there are no significant increases in EITC. However, even those with low income see a very small increase in EITC amounts of just $116 per year (or just $9.6 per month). As we discussed above this is likely an upper bound of actual EITC receipt. Therefore, we take this as evidence that the EITC does not provide meaningful income replacement for job losers.

4.4.2 Public Health Insurance

We consider another major facet of the safety net: public health insurance. Unlike near-cash transfers such as SNAP, health insurance is difficult to monetize because it is not only valued in terms of the amount spent on premiums, but also the value from reducing risk. Earlier work has examined how job losers' health insurance and that of their children changes around job loss, finding that declines in employer-provided private health insurance are at least partially made up for with increases in public health insurance (Schaller and Stevens, 2015; Schaller and Zerpa, 2019). We build on this work by looking at the impacts across all members of the household (rather than just the job loser or their children) and looking at heterogeneity by pre-job loss household poverty ratio.

Figure (9) shows changes in health insurance by type, plotting the likelihood of having any insurance, public insurance, or private insurance. Panel (a) focuses on job losers own coverage and shows a 17 percentage point decline in private insurance coverage after job loss. This is modestly offset by a roughly 2 percentage point increase in public insurance. The impacts of insurance loss on job losers are slightly larger than those found in Schaller and Stevens (2015). Panel (b) shows a similar pattern for the likelihood that *any adult* in the household (including the job loser) is covered by insurance. The decline in the likelihood that *any* adult is covered by private insurance is smaller than for the job loser, though is offset similarly by public insurance. It is also striking how persistent these effects are; two years after job loss the likelihood of not having any insurance for at least one adult in the household is still 7-8 percentage points lower (and 9 percentage points lower for the job loser).

Finally, Panel (c) looks at health insurance of *any child* in the household. The effect of public insurance in offsetting declines in private insurance is larger for children than adults.

There is a 5 percentage point increase in public health insurance that persists for two years, and makes up for the decline in private insurance coverage caused by job loss. The difference from the results on adults is likely due to income eligibility thresholds being on average much higher for children than adults. Within six months after the job loss, overall insurance coverage for children has returned to the baseline levels.[28] We have also run these models on indicators for no child/adult in the household having any insurance or public/private insurance and we find that the results follow a similar pattern [29]

Figure (10) considers the patterns across pre-job loss household poverty ratios by estimating difference in difference models. Panel (a) shows results for any adult and Panel (b) for any child, where both panels plot the coefficients from difference in differences models on an indicator for having private insurance (in red) and for having public insurance (in blue). The results reveal that public insurance is more progressive than the cash and near-cash safety net. Focusing first on adults, households in poverty experience smaller declines in private insurance and larger increases in public insurance. The relatively small decline in private insurance may be due to lack of private coverage even while working. Adults in households with the highest incomes have the smallest declines in private insurance and little to no increase in public insurance. For adults and children at the top of the income distribution, there are are some small declines in public insurance, but these are not statistically significant (results available upon request). Overall, these results suggest that the middle class are the ones most vulnerable to losing health insurance following a job loss with a net increase of above 15 percentage points for any adult having insurance in households at 200-399% of the poverty level (versus less than 5 percentage points for families with pre-job loss earnings below the poverty line).[30]

For children, the pattern by household income is similar, though public insurance is both much more generous and somewhat less progressive. In households below the poverty line, children's loss in private insurance is on average completely offset by public insurance.

[28]Insurance coverage is actually larger for children over a year post-job loss than it was pre-job loss, potentially reflecting that job loss encourages take-up of public insurance for families who qualified pre-job loss. However, the standard errors are large on these coefficients (see Appendix Table (A4)).

[29]There is a slight pre-trend of increasing private insurance leading up to the job loss across for both any child and any adult outcomes. One explanation is as job tenure increases, it becomes more likely for a family to add household members to employer-provided insurance. Since tenure mechanistically increases leading up to job loss, this induces a correlation between coverage and tenure. These coefficients are only significant for kids and only in periods -12 and -10. Additionally, the relationship is small relative to the change following job loss. The pre-trend is weaker (smaller and magnitude and not significant) when looking at "no" children or adults insured.

[30]Recall that because our sample is unbalanced, more weight is put towards observations right around the job loss, so these difference in difference estimates look more like the estimates in the first few months after job loss, rather than two years after job loss.

The increases in public insurance for children with pre-job loss household incomes of 100-499% of the poverty line is similar in magnitude to children in households below poverty. However, there are somewhat larger declines in private insurance following job loss for children in these households as well.

4.5 Total Household Resources

Finally, we look at the impact of job loss on several measures of household resources to get a sense of overall well-being following a job loss. We follow Bitler et al. (2017a) and create three measures of household resources. First, we divide total household earned income by the household-specific poverty threshold. Second, we divide total household cash income by the poverty threshold (the standard measure of income used for calculating the poverty rate). This second measure includes cash transfers from UI, TANF, SS, SSI, and severance pay, as well as cash income from other sources. Our third measure adds the cash value of the near-cash safety net programs we measure: SNAP, FRPL, WIC, and energy assistance. The differences between the poverty measures will inform us about how much the cash and near-cash programs help individuals stay out of poverty after a job loss.

Figure (11) displays the results for these three poverty measures, also shown in Appendix Table (A5). Looking only at earned income (Panel (a)), there is an immediate increase in the likelihood of being below 100% and 200% of the poverty line by about 30 percentage points after job loss. This decreases over time, but even two years after the job loss, the likelihood is more than 15 percentage points higher than pre-job loss. The likelihood of being below 400% of the poverty line based only on earned income follows a similar pattern, though with smaller effect sizes. Turning to the second measure of poverty in Panel (b), it is clear that the effects on poverty are smaller once we take into account cash transfers. The increase in the likelihood of being below 100% and 400% of poverty are similar, between 7-15 percentage points following job loss. Interestingly, the increase in the likelihood of being below 200% of poverty is larger than 100% and 400% of poverty, though the level increases are still smaller than when we looked at earnings only. This indicates that cash transfers–as we have shown, primarily UI–reduce the likelihood of falling below the poverty line. Instead, these programs move some of those households into slightly higher parts of the income distribution. Finally, adding in near-cash benefits in Panel (c), does not meaningfully change the effects relative to Panel (b), demonstrating that these means-tested programs (SNAP, FRPL, WIC, and energy assistance) are less important sources of income for the average displaced worker at risk of falling into poverty. Overall these results summarize some of our key findings: the cash safety net substantially reduces poverty following job

loss, though poverty still substantially increases and near-cash transfers do little to mitigate this effect.

5 Conclusion

This paper uses an individual fixed effects model to investigate the role of the public safety net in mitigating lost income from no fault job loss. We look at the effects of job loss on take-up and benefit amount of a large number of public programs. We quantify which programs compensate the most for lost income, who benefits from these programs by pre-job loss characteristics, and the dynamics of when programs matter during the two-year period following displacement.

Our results demonstrate that Unemployment Insurance is by far the most important source of insurance for displaced workers. Additionally, we show that UI, and by extension the safety net as a whole is less generous for those in poverty compared to those with income 100-699% of the poverty line pre-job loss. For workers with pre-job loss household income below 200% of the poverty line, means-tested safety net benefits are also important: SNAP and FRPL do the most to offset lost income after UI, though they transfer a much smaller amount than UI. Similarly, receipt of Social Security, SSI and the EITC also increase following job loss, but the value of these benefits is relatively small for the average worker. Public health insurance also plays an important role for members in low-income families, particularly for children.

These results are important to understanding optimal policy design to help workers insure against the common phenomena of involuntary job loss. The lower amounts of insurance following job loss for poor households is a key finding. This suggests that expanding the generosity of SNAP and FRPL could improve their ability to buffer household income against earnings loss. Alternatively, targeting UI to provide more and larger transfers to those who work in lower wage jobs could also make the system more progressive.

Our findings are particularly relevant in light of the COVID-19 recession and the associated rescue plans. In early 2020, lawmakers passed several relief laws that expanded UI, SNAP, and FRPL. While not included in our analysis, the expansions to UI counteracted some of the regressivity we documented here, by increasing benefits by a flat amount for everyone, and by extending eligibility to groups that previously were not covered by UI (e.g. self-employed and gig workers) (Bitler et al., 2020; Ganong et al., 2020). Additionally, there was a 13 week benefit extension and work history requirements were waived. Our work

shows that many workers and their families, particularly the neediest, would likely have experienced larger increases in material hardship if the federal government had not passed these relief packages.

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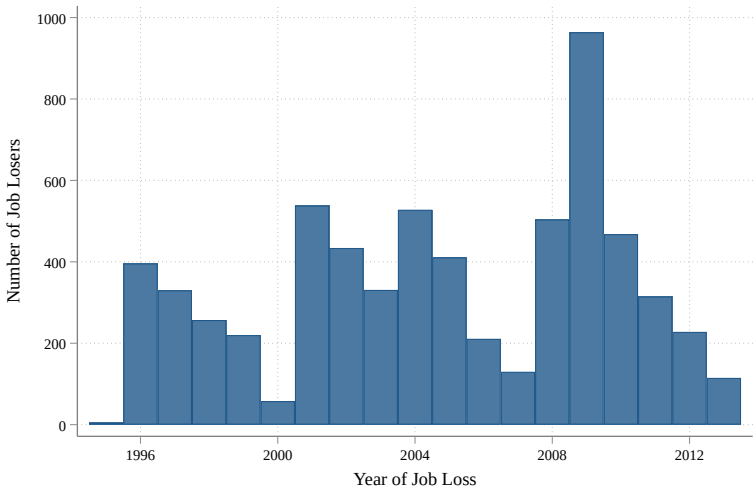
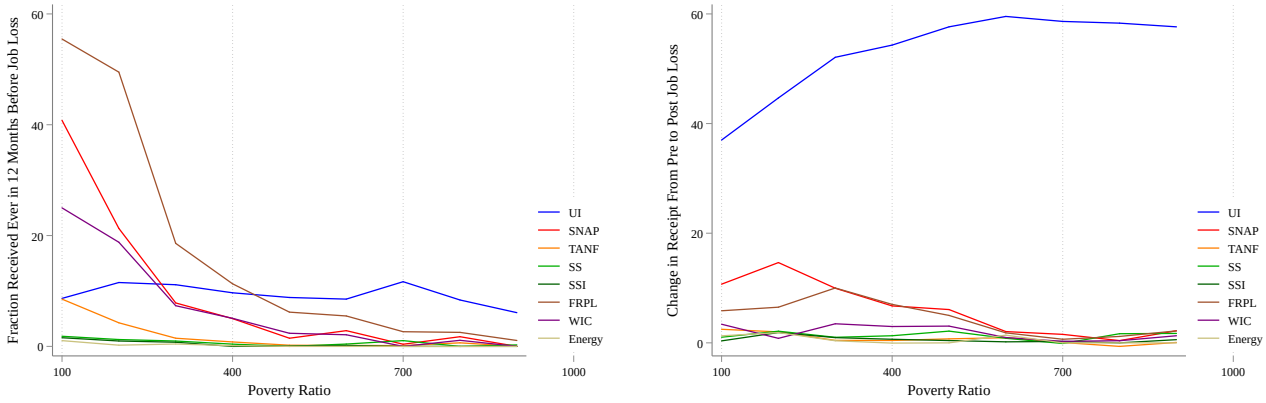
6 Figures

Figure 1: Number of Job Losers by Year of Job Loss



Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it.

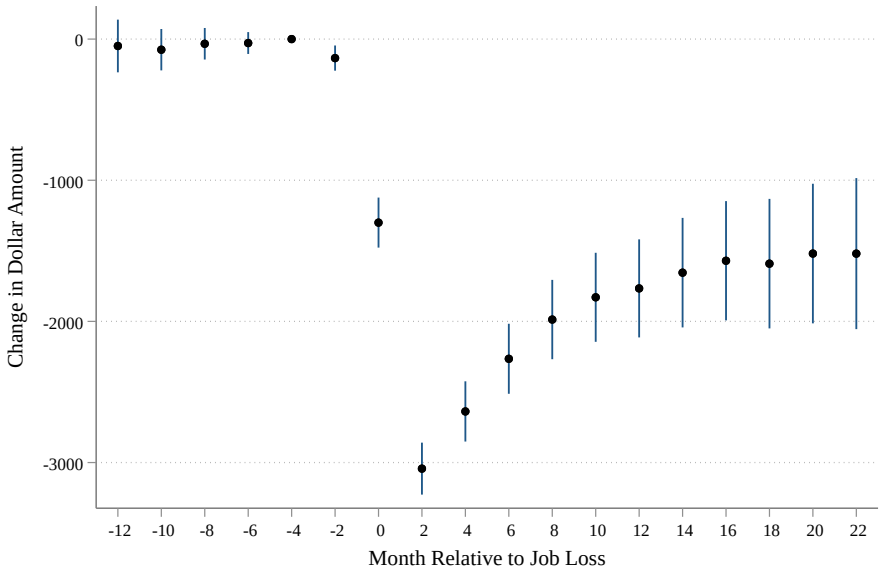
Figure 2: Receipt of Safety Net Programs by Pre-Job Loss Household Poverty



(a) Before Job Loss **(b)** Change from Before to After Job Loss

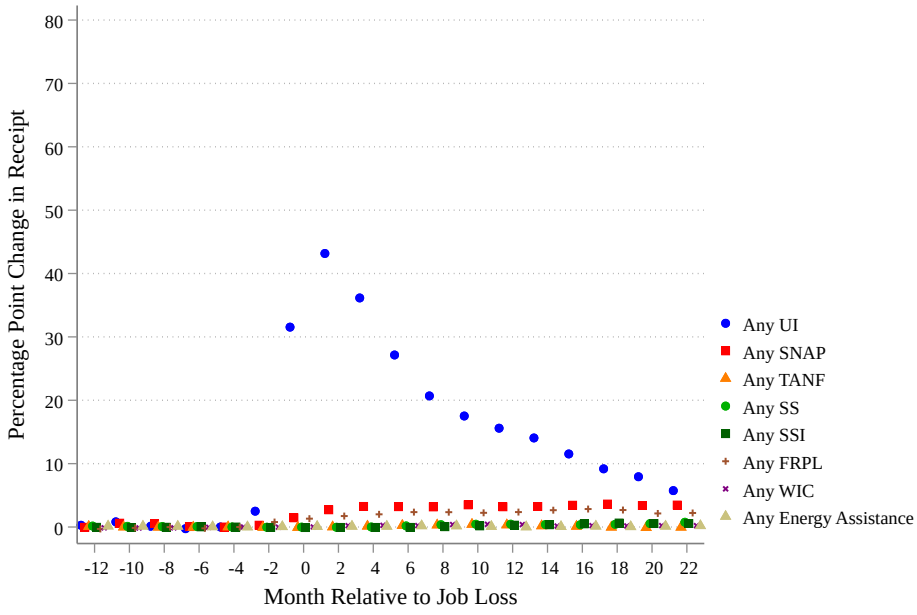
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The results are weighted using the individual survey weight in the month of job loss. The data is collapsed into bins based on the ratio of total household cash income to the household poverty threshold in the first survey month. The bins are below 100% (marked as 100 on the horizontal axis), 100-199% (marked as 200), 200-299% (marked at 300), and so on, up to the highest bin of above 800% of the poverty line (marked as 900). The Census poverty line threshold is assigned to each household in the SIPP based on household size and composition (number of adults and children). Panel (a) plots the likelihood of displaced workers ever taking up each program in the year prior to job loss. Panel (b) plots the change in the likelihood of ever taking up each program in the two years after job loss compared to the year prior to job loss.

Figure 3: Event Study around Job Loss: Own Earnings

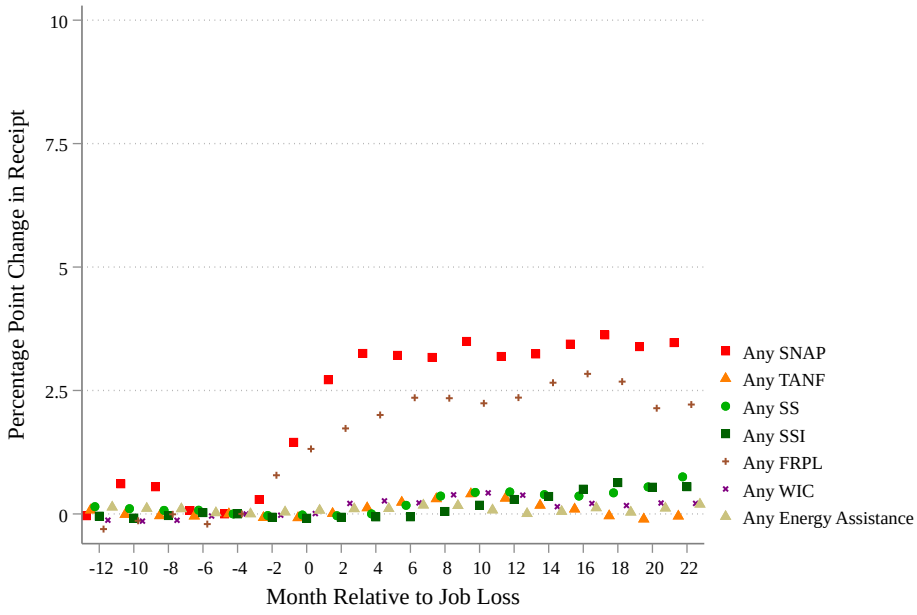


Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. The horizontal axis denotes months from job loss. The black dots represent the event study coefficients. The results are weighted using the individual survey weight in the month of job loss. Standard errors clustered at the individual level and the 95% confidence intervals are plotted in the vertical lines. The estimates are also reported in column (1) of Appendix Table (A1).

Figure 4: Event Study around Job Loss: Receipt of Safety Net Programs



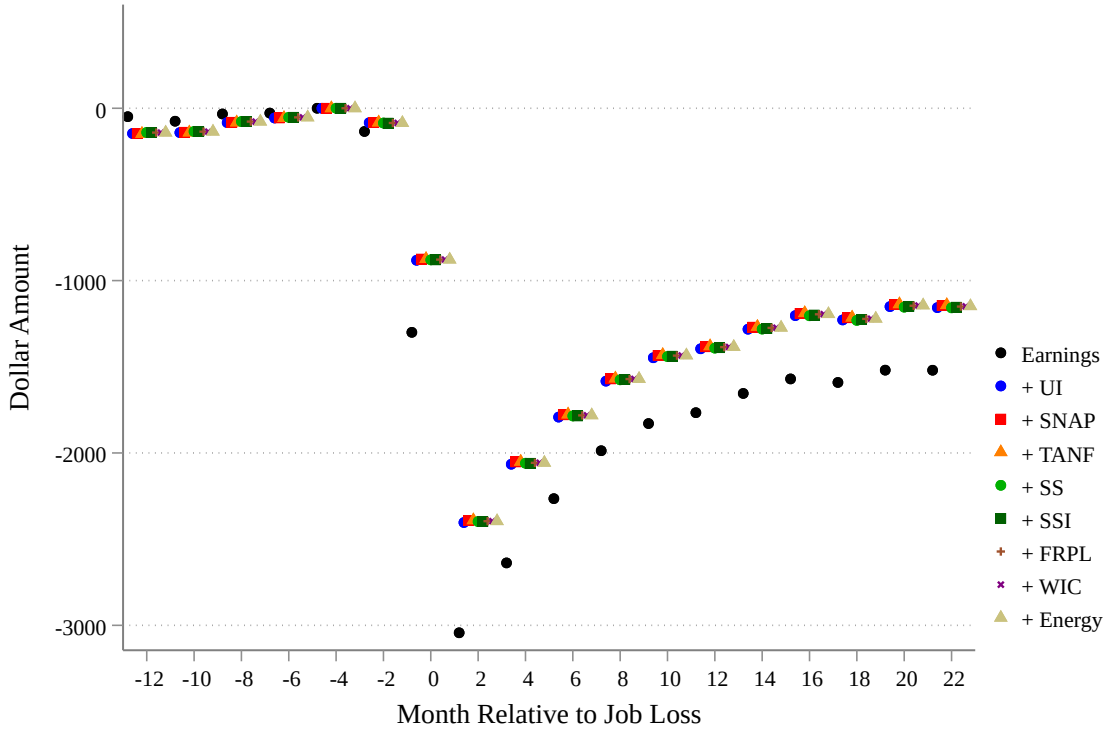
(a) Percentage Point Effect



(b) Percentage Point Effect, Omit UI

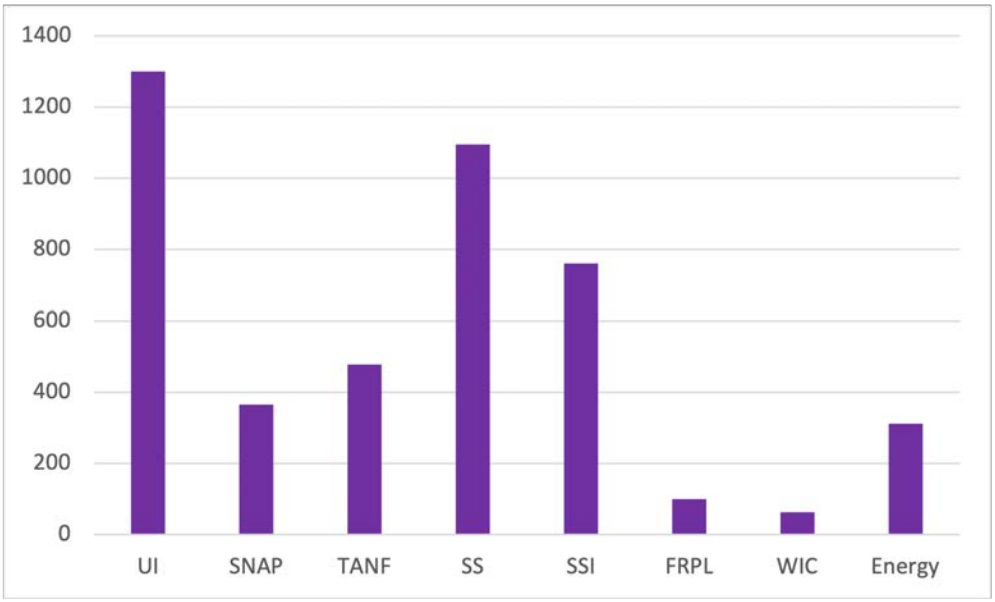
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. The horizontal axis denotes months from job loss. The markers represent the event study coefficients. The results are weighted using the individual survey weight in the month of job loss. The estimates and standard errors are also reported in Appendix Table (A2).

Figure 5: Event Study around Job Loss: Own Earnings and Dollar Value of Safety Net Programs



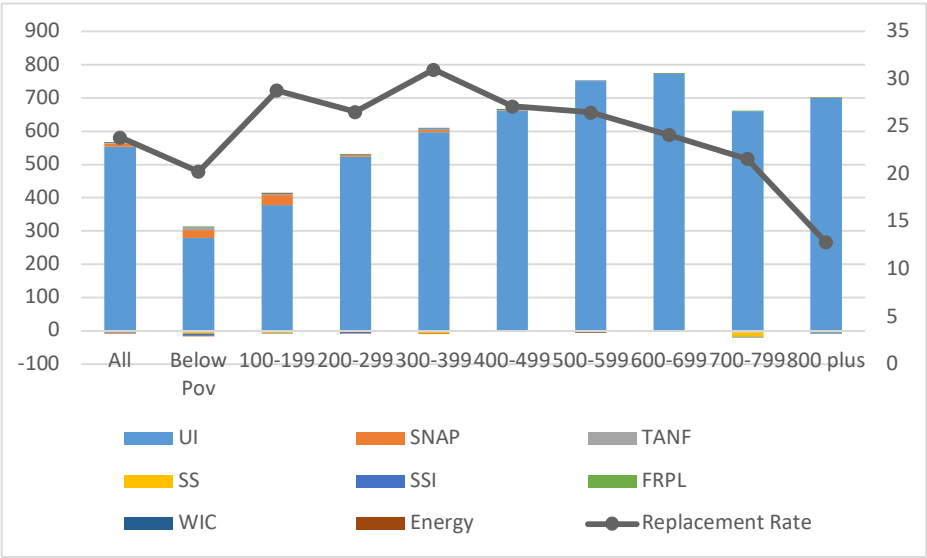
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. The horizontal axis denotes months from job loss. The black dots replicate the estimates on earnings from Figure (3), and the blue dots indicate the effect of job loss on earnings plus UI income. The other colored marks show the effect on income sequentially adding in other safety net program income that could act as a replacement for lost income (all measures are inclusive of zeros). There is a set of marks for each event time period. The results are weighted using the individual survey weight in the month of job loss. The estimates and standard errors are also reported in Appendix Table (A1).

Figure 6: Monthly Benefit Amount Received Among Participants by Program



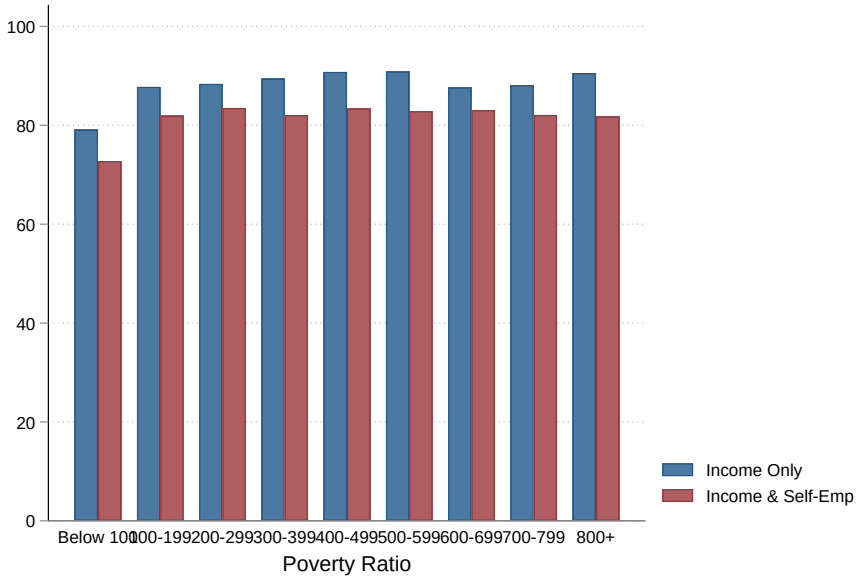
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. Only observations for those who participate in the given program after job loss are included to calculate the mean monthly benefit amount among participants. The results are weighted using the individual survey weight in the month of job loss.

Figure 7: Difference in Difference Estimates of Safety Net Program Value and Replacement Rate, by Pre-Job Loss Household Poverty Status



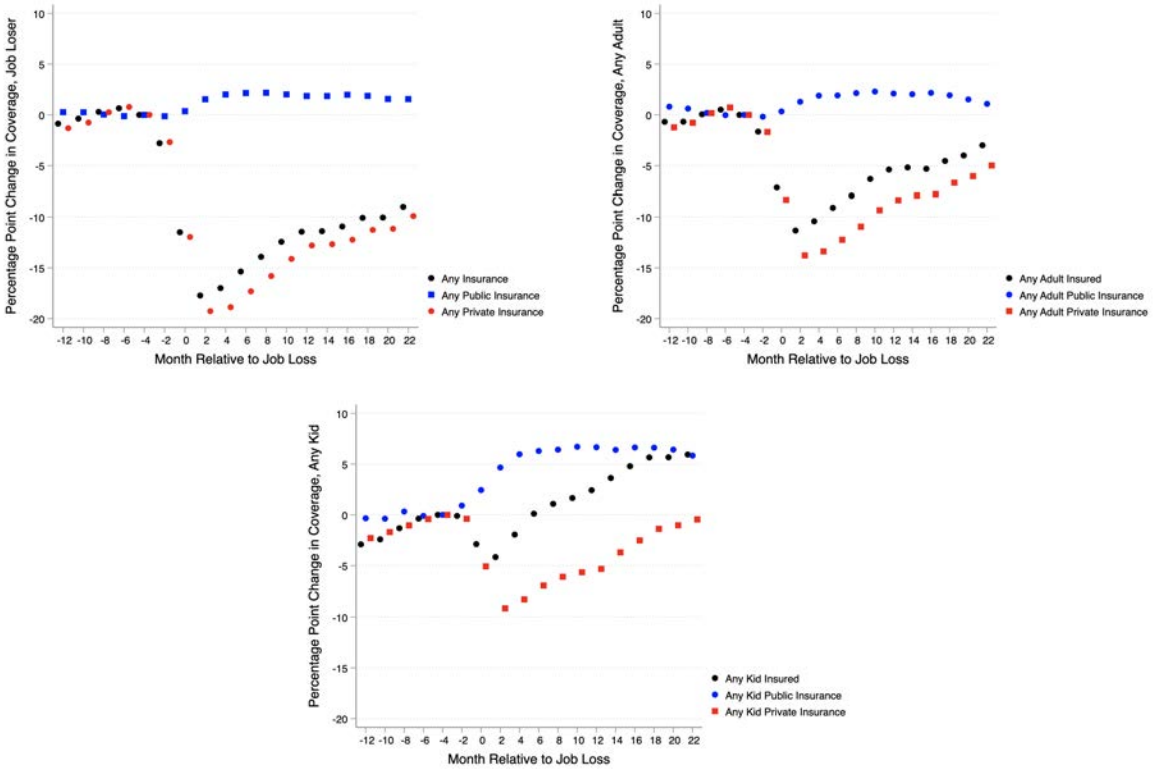
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The plotted estimates are from a difference in difference version of equation (1) with a post period dummy replacing the event time coefficients: $y_{it} = \alpha_i + \beta post_{it} + \gamma_1 X_{it} + \epsilon_{it}$. We estimate this model for the full sample and split by household poverty ratio in the first survey month. The estimates reported in the bars are the effect of job loss on the dollar value of the benefits received from each program, with values reported on the left vertical axis. To calculate the replacement rates (percent of lost income made up by safety net benefits) shown in the line we separately calculate and numerator and a denominator. We sum the estimated effect on each program shown in the bars for the numerator. For the denominator, we run regressions with earnings as the outcome variable and use the estimated coefficient on the "post" dummy for each sample. Values for the replacement rate are reported on the right vertical axis. The results are weighted using the individual survey weight in the month of job loss.

Figure 8: UI Eligibility by Pre-Job Loss Household Poverty Status



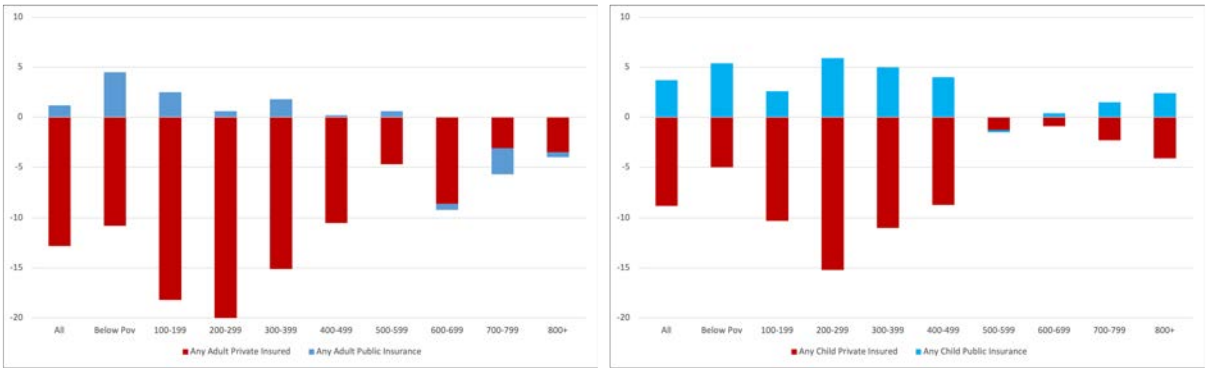
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 in the month of job loss who worked at their lost job for at least one year prior to losing it. The blue bars show percent of the sample eligible for UI based only on the job losers observed income history, while the red bars show percent eligible for UI based on both income and self-employment status. The results are weighted using the individual survey weight in the month of job loss.

Figure 9: Event Study around Job Loss: Health Insurance Coverage and Type



Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes the household members of heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. In the top left panel, the outcome variables are indicators for if the job loser has any insurance, private insurance, or public insurance. For the other panels, we look at all adults (top right) and all children (bottom) in the household and create indicators for if *any* of the children/adults in the household have health insurance, public health insurance or private health insurance. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age. The horizontal axis denotes months from job loss. The markers represent the event study coefficients. The results are weighted using the individual survey weight in the month of job loss. The estimates and standard errors are reported in Appendix Table (A4).

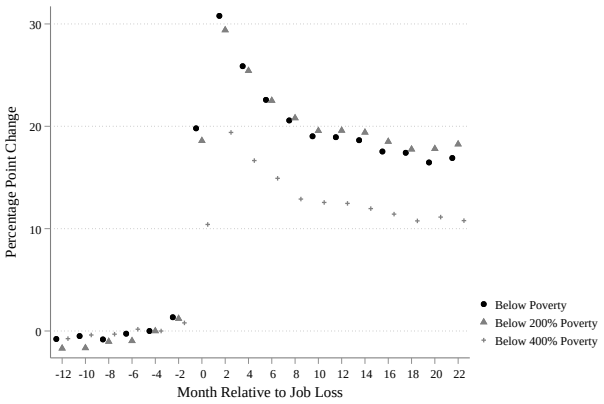
Figure 10: Difference in Difference Estimates of Insurance Coverage by Pre-Job Loss Household Poverty Ratio



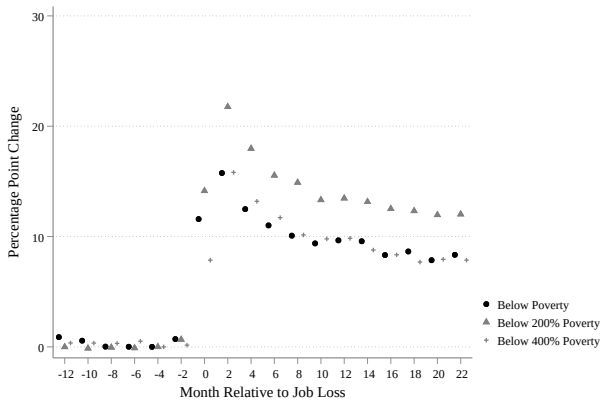
(a) Insurance, Any Adult **(b)** Insurance, Any Child

Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes the household members of heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The plotted estimates are from a difference in difference version of equation (1) with a post period dummy replacing the event time coefficients: $y_{it} = \alpha_i + \beta post_{it} + \gamma_1 X_{it} + \epsilon_{it}$. y_{it} is an indicator for if any of adults (children) in the household have insurance. The red bars represent the percentage point change in the likelihood of having private insurance for adults (left) or children (right). The blue bars represent the percentage point change in the likelihood of having public insurance for adults (left) or children (right). The results are weighted using the individual survey weight in the month of job loss.

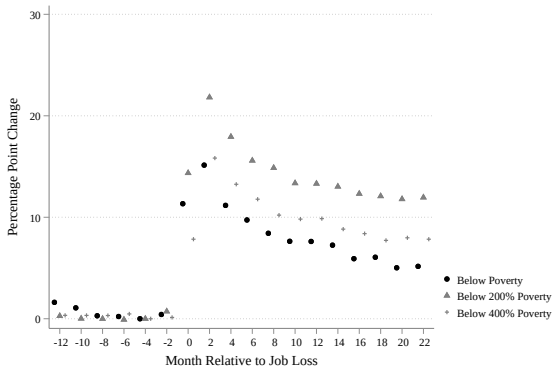
Figure 11: Event Study around Job Loss: Household Poverty



(a) Household Earned Income / Poverty Threshold



(b) Household Cash Income / Poverty Threshold



(c) Household Cash and Near-Cash Income / Poverty Threshold

Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. The outcome variables are the ratio of total household income, as noted, to Census household poverty thresholds, which are assigned to each household in the SIPP based on household size and composition. The horizontal axis denotes months from job loss. The markers represent the event study coefficients. The results are weighted using the individual survey weight in the month of job loss. The estimates and standard errors are reported in Appendix Table (A5).

7 Tables

Table 1: Demographics of Job Losers and All Workers in 1st Survey Month

	All Job Losers	Job Losers w 1 Year Job Tenure	Full Sample of Workers	Workers w 1 Year Job Tenure
Earnings (2015$s)	3928.50	4619.70	4624.50	5915.73
Age	39.23	40.10	40.01	40.44
Female	0.45	0.45	0.52	0.48
Hispanic	0.17	0.17	0.12	0.11
Non-Hispanic Black	0.12	0.11	0.11	0.10
Non-Hispanic White	0.65	0.67	0.72	0.74
Other	0.06	0.05	0.06	0.05
Less than High School	0.14	0.12	0.10	0.07
High School	0.47	0.47	0.46	0.44
Some College	0.18	0.18	0.17	0.17
College	0.21	0.24	0.30	0.32
Married	0.63	0.65	0.70	0.71
# Kids	1.02	0.96	1.01	0.96
N	10,146	6,443	155,239	89,272

Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 in the first survey month. All dollar amounts are inflation adjusted to be in 2015$. The results are weighted using the individual survey weight in the first survey month. For the full sample of workers, including those that eventually lose a job, we restrict to those with 1 year of job tenure in the first survey month.

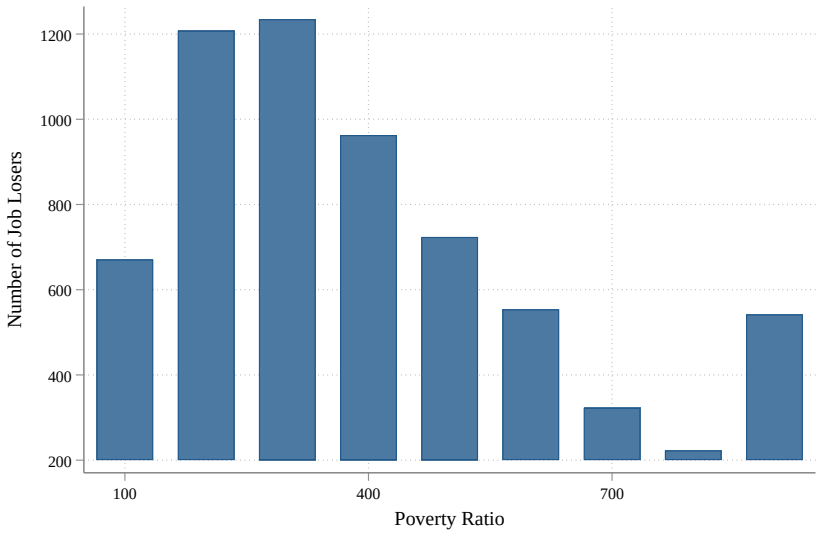
Table 2: Income and Program Participation Before and After Job Loss

	Pre-Job Loss	Post-Job Loss
Monthly Income Receipt		
Receipt of Own UI	2.49	24.05
Receipt of Hhold SNAP	7.44	10.46
Receipt of Hhold TANF	1.20	1.26
Receipt of Own Social Security	0.47	0.94
Receipt of Own Supplemental Security Income	0.33	0.50
Receipt of Hhold FRPL	16.43	18.34
Receipt of Hhold WIC	6.21	6.47
Receipt of Hhold Energy Subsidy	0.08	0.21
Monthly Health Insurance Receipt		
Own Private Health Insurance	0.76	0.61
Own Public Health Insurance	0.05	0.07
Own Any Health Insurance	0.81	0.67
Monthly Income Amounts (2015$s)		
Own Earnings	4519.29	2531.64
Own UI Benefits	26.06	312.62
Hhold SNAP Benefits	25.23	38.30
Hhold TANF Benefits	5.72	6.04
Own Social Security Benefits	4.72	10.30
Own Supplemental Security Income Benefits	2.12	3.82
Hhold FRPL Benefits	20.95	22.85
Hhold WIC Benefits	4.06	4.14
Hhold Energy Subsidy	0.19	0.64
Monthly Predicted EITC	45.01	90.78
Household Poverty Status		
Hhold Earned Income Below Poverty Line	11.25	29.47
Hhold Cash Income Below Poverty Line	8.56	18.60
Hhold Cash Income + Near-Cash Transfers Below Poverty Line	7.13	16.89
N	61,531	110,076

Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The results are weighted using the individual survey weight in the month of job loss. All dollar amounts are inflation adjusted to be in 2015$ Pre-job loss observations are 12 to 1 month prior to job loss. Post-job loss observations are 1 to 24 months after the job loss. We do not include observations in the month of job loss since that is not a clear pre or post period.

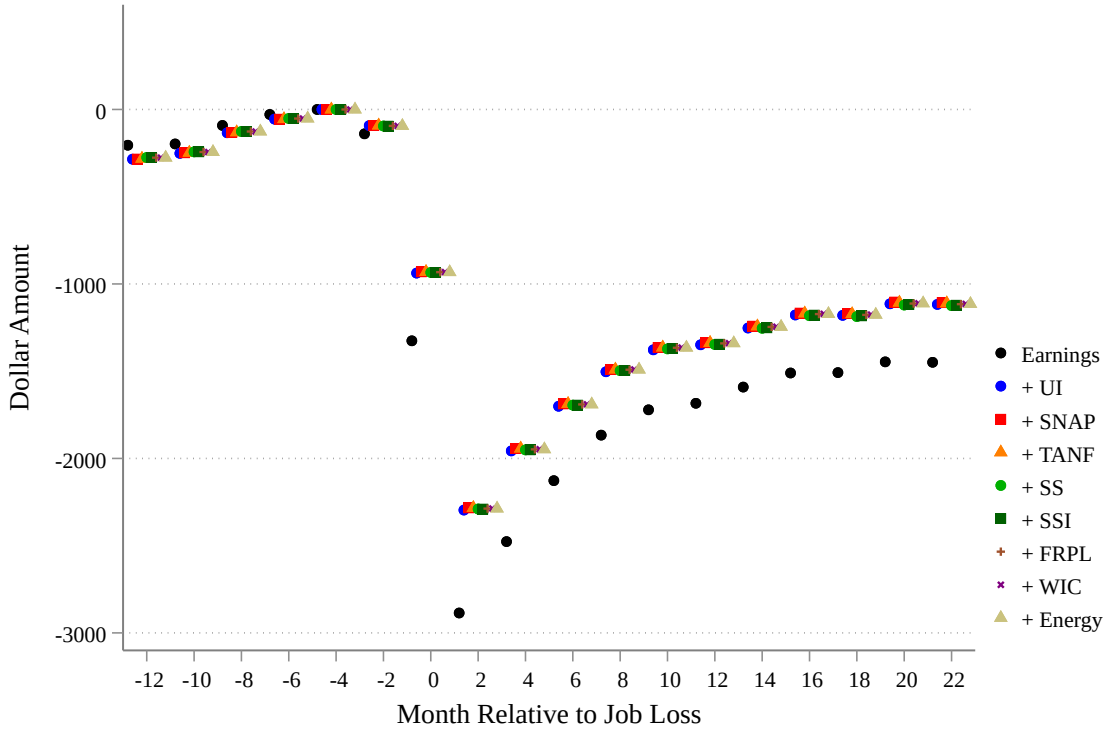
A Additional Results

Figure A1: Number of Job Losers by Pre-Job Loss Household Poverty



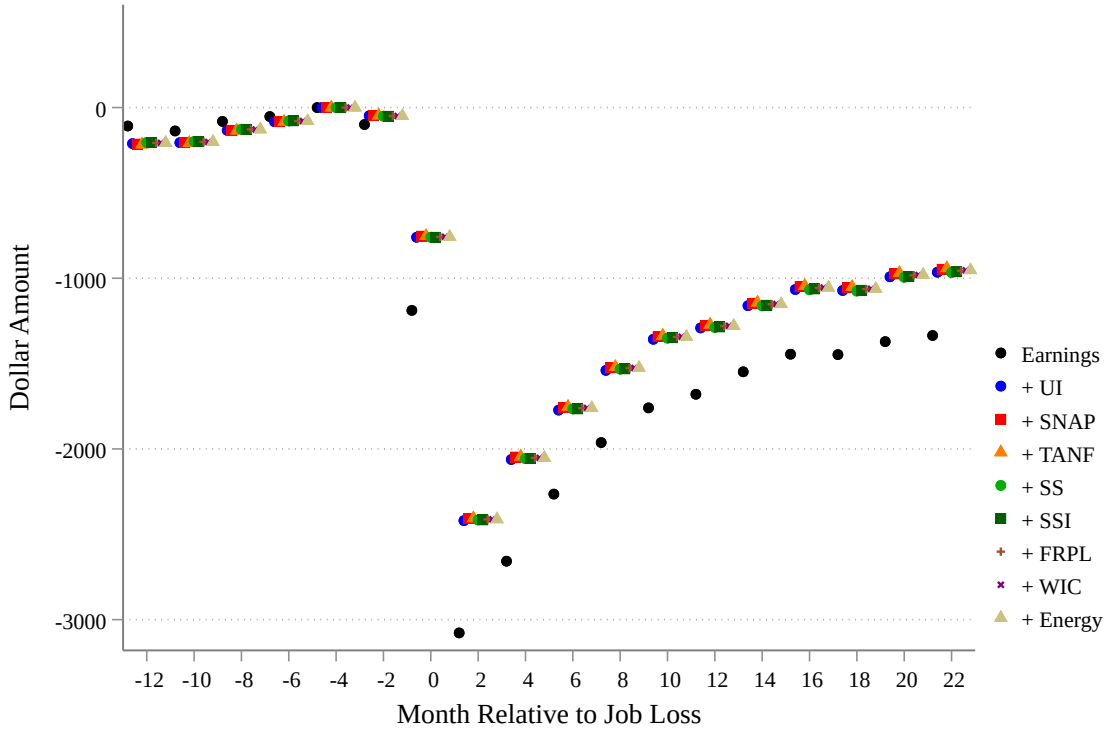
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The data is collapsed into bins based on the ratio of total household cash income to the household poverty threshold in the first survey month. The bins are below 100% (marked as 100 on the horizontal axis), 100-199% (marked as 200), 200-299% (marked at 300), and so on, up to the highest bin of above 800% of the poverty line (marked as 900).

Figure A2: Event Study around Job Loss: Own Earnings and Value of Safety Net Programs, 6 Months Job Tenure



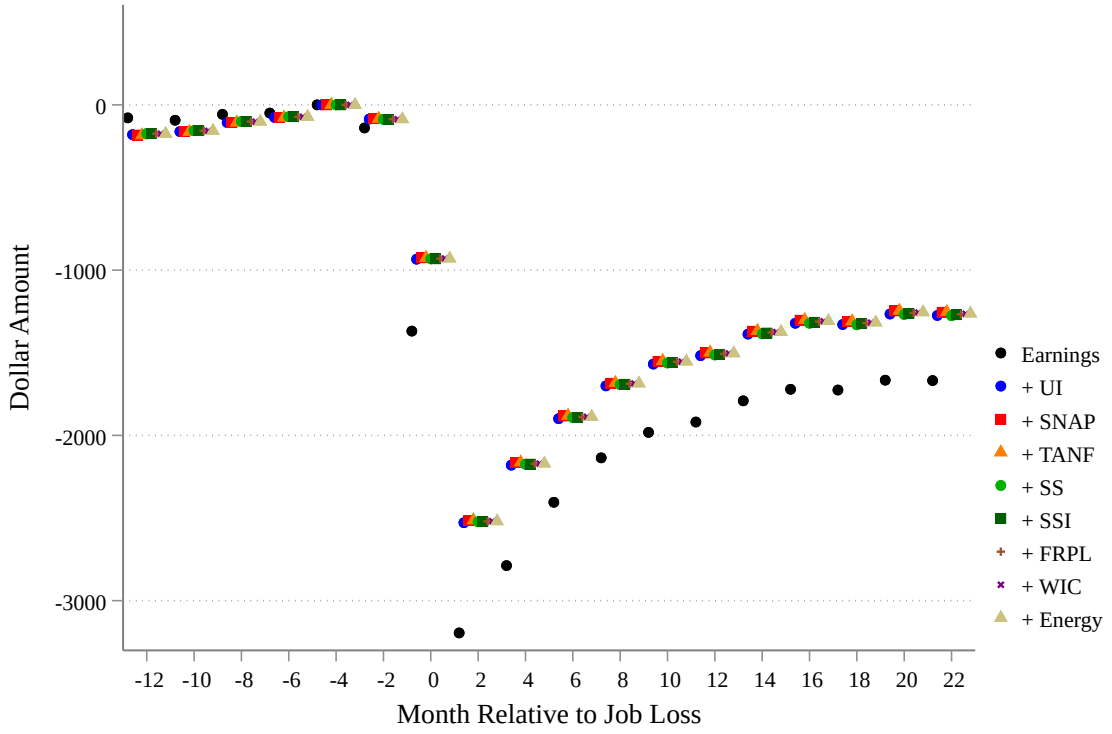
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least 6 months prior to losing it. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. The horizontal axis denotes months from job loss. The black dots show the estimates on earnings as in Figure (3) for this subsample, and the blue dots indicate the effect of job loss on earnings plus UI income. The other colored marks show the effect on income sequentially adding in other safety net program income that could act as a replacement for lost income (all measures are inclusive of zeros). There is a set of marks for each event time period. The results are weighted using the individual survey weight in the month of job loss.

Figure A3: Event Study around Job Loss: Own Earnings and Value of Safety Net Programs, 18 Months Job Tenure



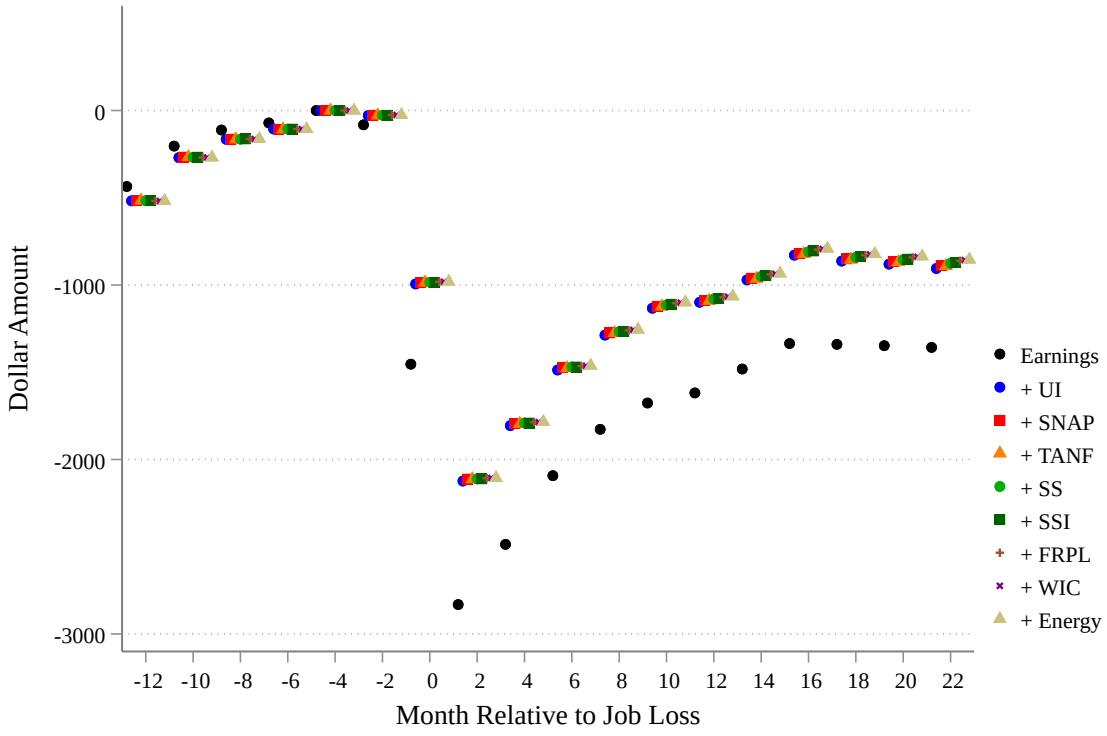
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least 18 months prior to losing it. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. The horizontal axis denotes months from job loss. The black dots show the estimates on earnings as in Figure (3) for this subsample, and the blue dots indicate the effect of job loss on earnings plus UI income. The other colored marks show the effect on income sequentially adding in other safety net program income that could act as a replacement for lost income (all measures are inclusive of zeros). There is a set of marks for each event time period. The results are weighted using the individual survey weight in the month of job loss.

Figure A4: Event Study around Job Loss: Own Earnings and Value of Safety Net Programs, Drop Temporary Layoffs



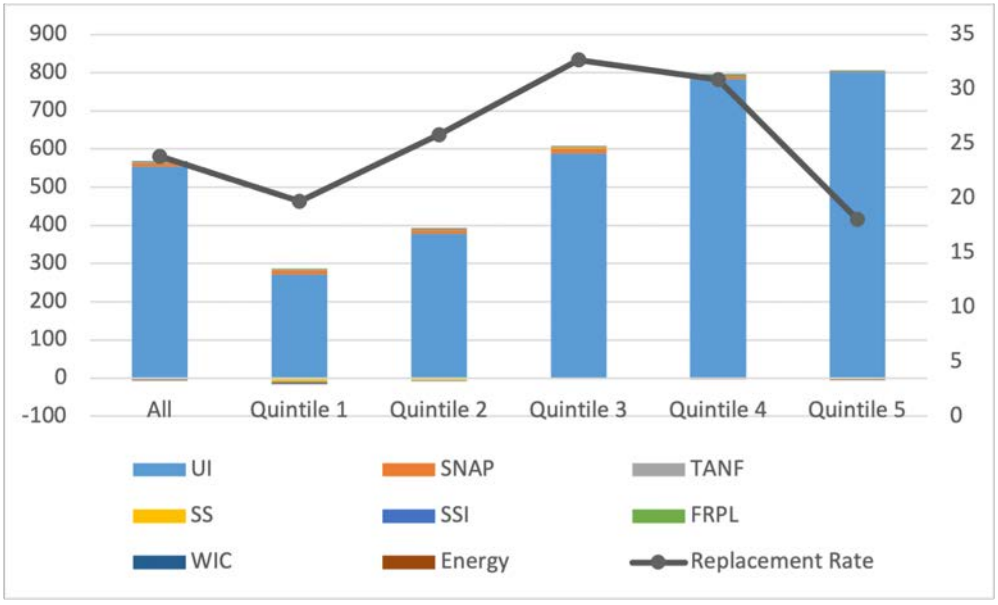
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. The horizontal axis denotes months from job loss. The black dots show the estimates on earnings as in Figure (3) for this subsample, and the blue dots indicate the effect of job loss on earnings plus UI income. The other colored marks show the effect on income sequentially adding in other safety net program income that could act as a replacement for lost income (all measures are inclusive of zeros). There is a set of marks for each event time period. The results are weighted using the individual survey weight in the month of job loss.

Figure A5: Event Study around Job Loss: Own Earnings and Value of Safety Net Programs, Balanced Sample



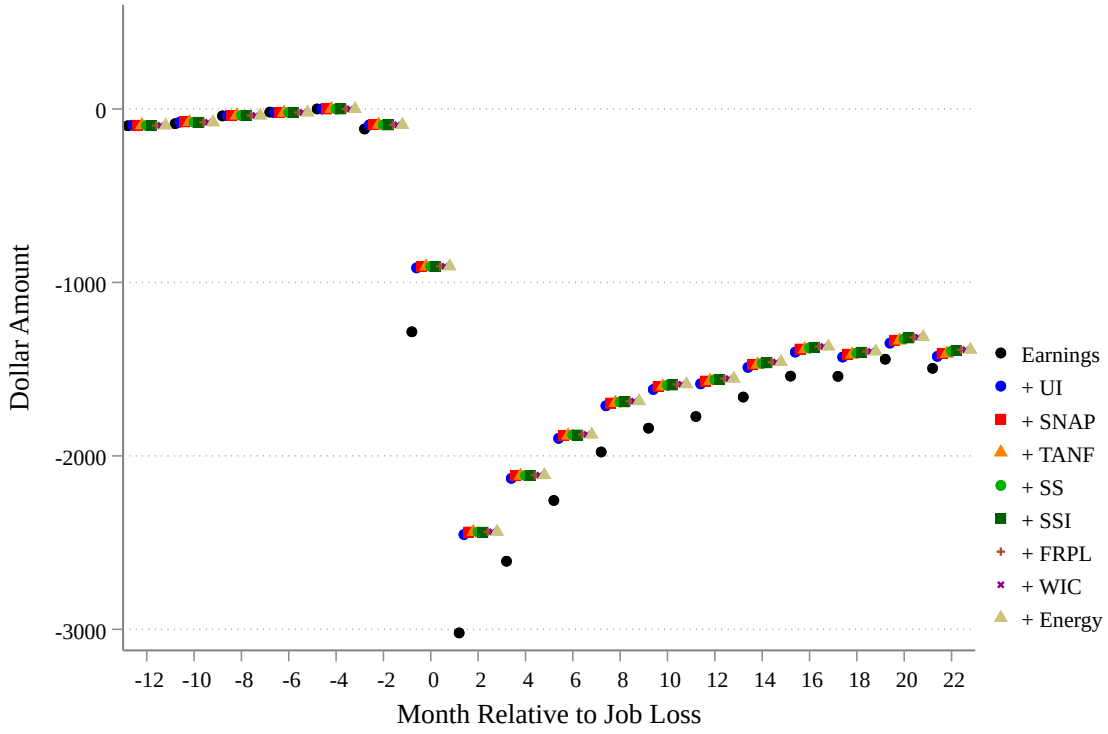
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. The horizontal axis denotes months from job loss. The black dots show the estimates on earnings as in Figure (3) for this subsample, and the blue dots indicate the effect of job loss on earnings plus UI income. The other colored marks show the effect on income sequentially adding in other safety net program income that could act as a replacement for lost income (all measures are inclusive of zeros). There is a set of marks for each event time period. The results are weighted using the individual survey weight in the month of job loss.

Figure A6: Difference in Difference Estimates of Safety Net Program Value and Replacement Rate, by Pre-Job-Loss Monthly Earnings



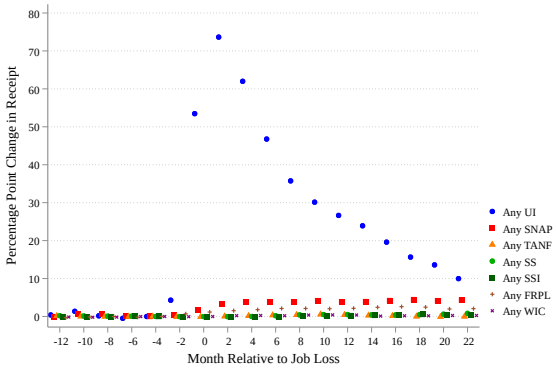
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The plotted estimates are from a difference in difference version of equation (1) with a post period dummy replacing the event time coefficients: $y_{it} = \alpha_i + \beta post_{it} + \gamma_1 X_{it} + \epsilon_{it}$. We estimate this model for the full sample, and split by initial earnings quintile of the job loser. The estimates reported in the bars are the effect of job loss on the dollar value of the benefits received from each program, with values reported on the left vertical axis. To calculate the replacement rates (percent of lost income made up by safety net benefits) shown in the line we separately calculate and numerator and a denominator. We sum the estimated effect on each program shown in the bars for the numerator. For the denominator, we run regressions with earnings as the outcome variable and use the estimated coefficient on the "post" dummy for each sample. Values for the replacement rate are reported on the right vertical axis. The results are weighted using the individual survey weight in the month of job loss.

Figure A7: Event Study around Job Loss: Own Earnings and Value of Safety Net Programs, Omitting Individual and Calendar Time Fixed Effects

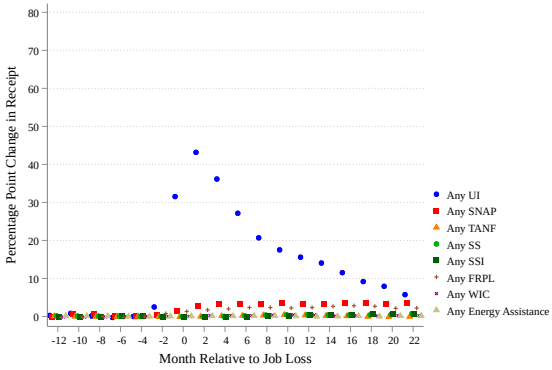


Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The horizontal axis denotes months from job loss. The model includes only event time dummies and controls for individual's age and age squared. The black dots show the estimates on earnings as in Figure (3), and the blue dots indicate the effect of job loss on earnings plus UI income. The other colored marks show the effect on income sequentially adding in other safety net program income that could act as a replacement for lost income (all measures are inclusive of zeros). There is a set of marks for each event time period. The results are weighted using the individual survey weight in the month of job loss.

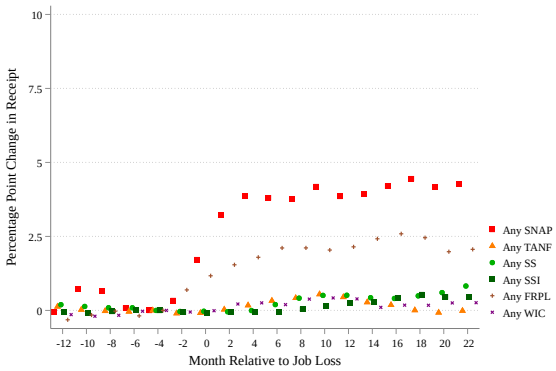
Figure A8: Event Study around Job Loss: Receipt of Safety Net Programs, Adjusted for Under-Reporting



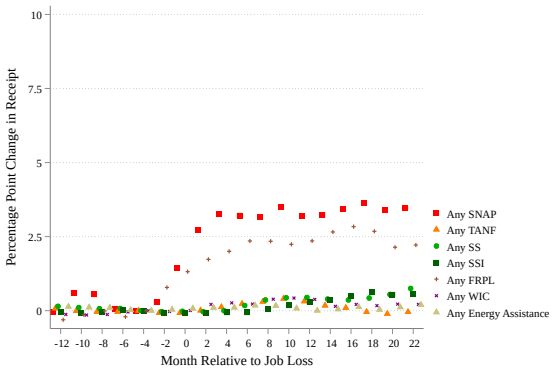
(a) Percentage Point Effect, Adjusted for Under-Reporting



(b) Percentage Point Effect, Baseline Result



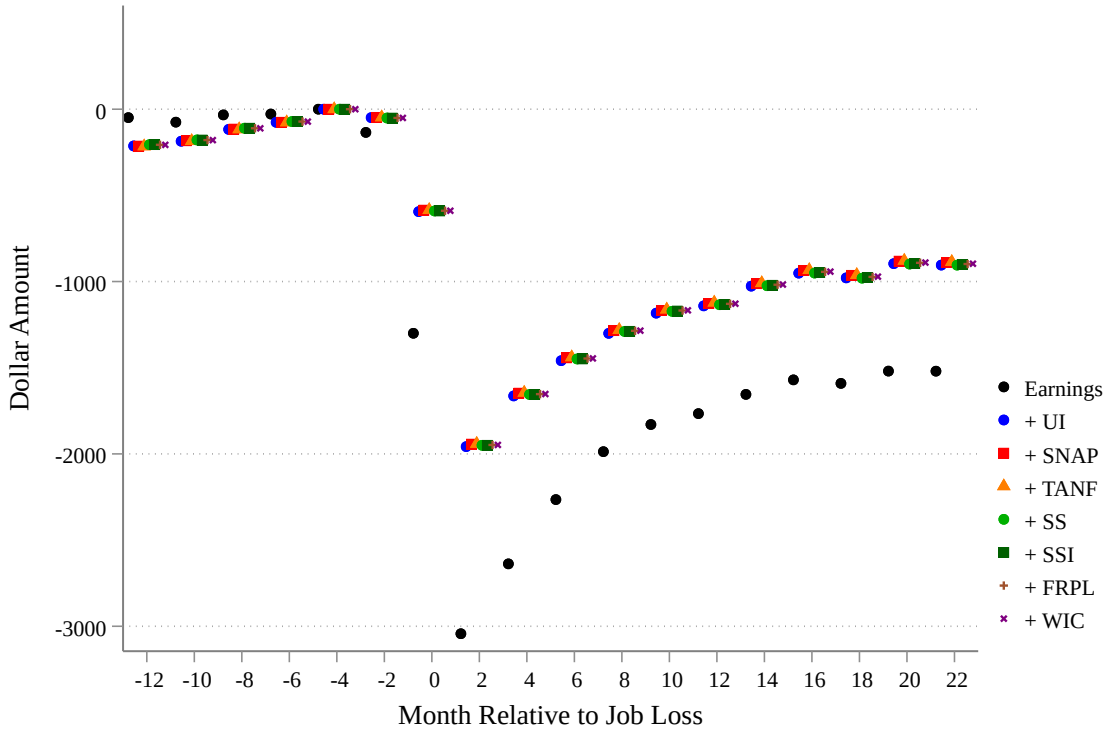
(c) Percentage Point Effect, Adjusted for Under-Reporting, Omit UI



(d) Percentage Point Effect, Baseline Result, Omit UI

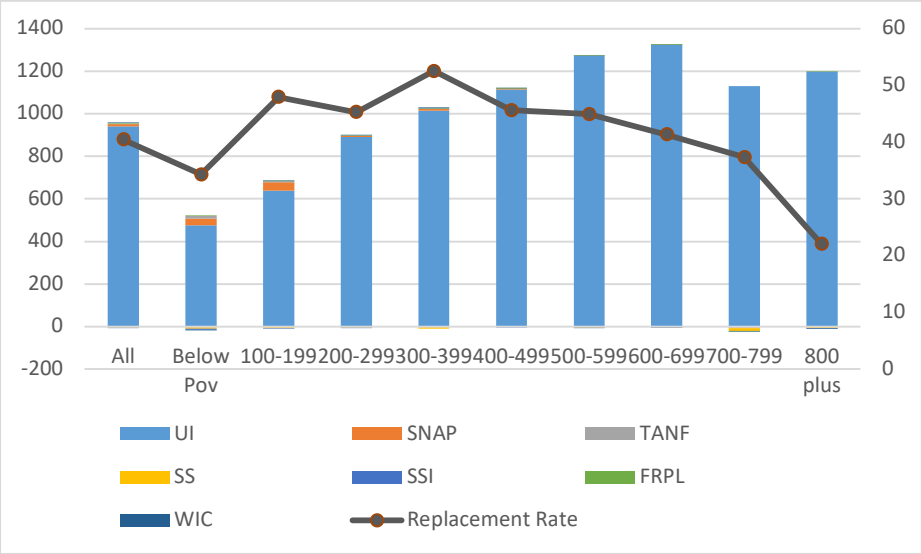
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. The horizontal axis denotes months from job loss. The markers represent the event study coefficients. The results are weighted using the individual survey weight in the month of job loss. To adjust for under-reporting, we divide the outcome variables by the program and year specific rates of under-reporting in the SIPP from Meyer et al. (2015).

Figure A9: Event Study around Job Loss: Own Earnings and Value of Safety Net Programs, Adjusted for Under-Reporting



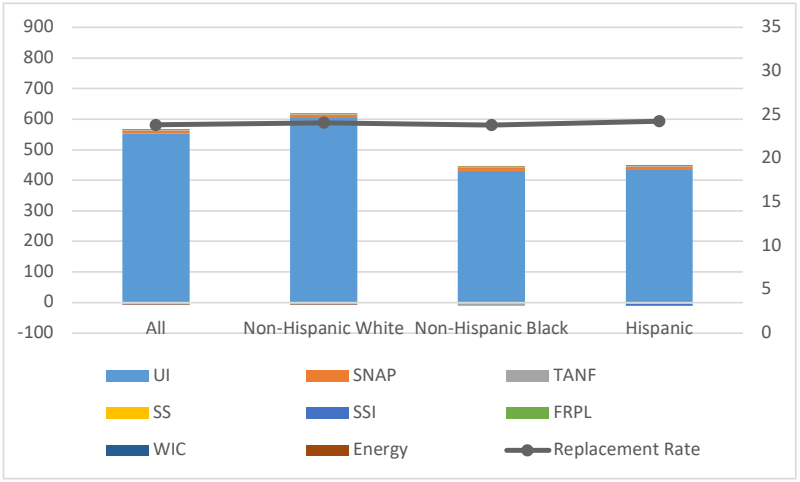
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. The horizontal axis denotes months from job loss. The black dots show the estimates on earnings as in Figure (3), and the blue dots indicate the effect of job loss on earnings plus UI income. The other colored marks show the effect on income sequentially adding in other safety net program income that could act as a replacement for lost income (all measures are inclusive of zeros). There is a set of marks for each event time period. The results are weighted using the individual survey weight in the month of job loss. To adjust for under-reporting, we divide the program outcome variables by the program and year specific rates of under-reporting in the SIPP from Meyer et al. (2015).

Figure A10: Difference in Difference Estimates of Safety Net Program Value and Replacement Rate by Pre-Job Loss Household Poverty Status, Adjusted for Under-Reporting



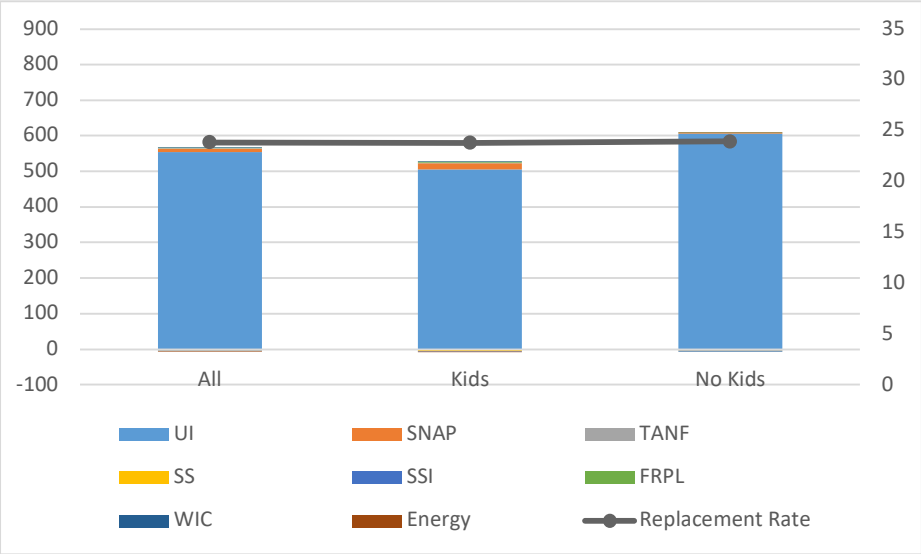
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The plotted estimates are from a difference in difference version of equation (1) with a post period dummy replacing the event time coefficients: $y_{it} = \alpha_i + \beta post_{it} + \gamma_1 X_{it} + \epsilon_{it}$. We estimate this model for the full sample, and split by pre-job loss household poverty status. The estimates reported in the bars are the effect of job loss on the dollar value of the benefits received from each program, with values reported on the left vertical axis. To calculate the replacement rates (percent of lost income made up by safety net benefits) shown in the line we separately calculate and numerator and a denominator. We sum the estimated effect on each program shown in the bars for the numerator. For the denominator, we run regressions with earnings as the outcome variable and use the estimated coefficient on the "post" dummy for each sample. Values for the replacement rate are reported on the right vertical axis. The results are weighted using the individual survey weight in the month of job loss. To adjust for under-reporting, we divide the program outcome variables by the program and year specific rates of under-reporting in the SIPP from Meyer et al. (2015).

Figure A11: Difference in Difference Estimates of Safety Net Program Value and Replacement Rate, by Race/Ethnicity



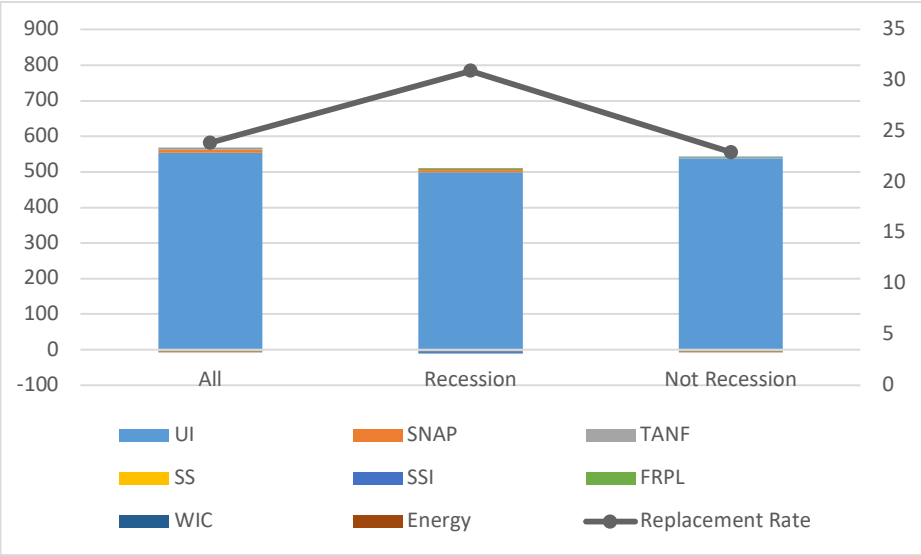
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The plotted estimates are from a difference in difference version of equation (1) with a post period dummy replacing the event time coefficients: $y_{it} = \alpha_i + \beta post_{it} + \gamma_1 X_{it} + \epsilon_{it}$. We estimate this model for the full sample and by race/ethnicity. The estimates reported in the bars are the effect of job loss on the dollar value of the benefits received from each program, with values reported on the left vertical axis. To calculate the replacement rates (percent of lost income made up by safety net benefits) shown in the line we separately calculate and numerator and a denominator. We sum the estimated effect on each program shown in the bars for the numerator. For the denominator, we run regressions with earnings as the outcome variable and use the estimated coefficient on the "post" dummy for each sample. Values for the replacement rate are reported on the right vertical axis. The results are weighted using the individual survey weight in the month of job loss.

Figure A12: Difference in Difference Estimates of Safety Net Program Value and Replacement Rate, by Presence of Children in First Survey Month



Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The plotted estimates are from a difference in difference version of equation (1) with a post period dummy replacing the event time coefficients: $y_{it} = \alpha_i + \beta post_{it} + \gamma_1 X_{it} + \epsilon_{it}$. We estimate this model for the full sample and the presence of children. The estimates reported in the bars are the effect of job loss on the dollar value of the benefits received from each program, with values reported on the left vertical axis. To calculate the replacement rates (percent of lost income made up by safety net benefits) shown in the line we separately calculate and numerator and a denominator. We sum the estimated effect on each program shown in the bars for the numerator. For the denominator, we run regressions with earnings as the outcome variable and use the estimated coefficient on the "post" dummy for each sample. Values for the replacement rate are reported on the right vertical axis. The results are weighted using the individual survey weight in the month of job loss.

Figure A13: Difference in Difference Estimates of Safety Net Program Value and Replacement Rate, Split by Whether Job Loss in Recession or Not



Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The plotted estimates are from a difference in difference version of equation (1) with a post period dummy replacing the event time coefficients: $y_{it} = \alpha_i + \beta post_{it} + \gamma_1 X_{it} + \epsilon_{it}$. We estimate this model for the full sample and by whether the job loss occurred during a recession. The estimates reported in the bars are the effect of job loss on the dollar value of the benefits received from each program, with values reported on the left vertical axis. To calculate the replacement rates (percent of lost income made up by safety net benefits) shown in the line we separately calculate and numerator and a denominator. We sum the estimated effect on each program shown in the bars for the numerator. For the denominator, we run regressions with earnings as the outcome variable and use the estimated coefficient on the "post" dummy for each sample. Values for the replacement rate are reported on the right vertical axis. The results are weighted using the individual survey weight in the month of job loss.

Table A1: Event Study around Job Loss: Own Earnings and Dollar Value of Safety Net Programs

	Earnings	Plus UI	Plus SNAP	Plus TANF	Plus SS	Plus SSI	Plus FRPL	Plus WIC	Plus Energy
-12	-48.870	-146.556	-147.341	-148.561	-140.121	-140.191	-141.124	-141.379	-141.120
	(95.200)	(94.092)	(93.940)	(93.970)	(93.590)	(93.439)	(93.425)	(93.435)	(93.437)
-10	-75.196	-141.070*	-139.167*	-140.552*	-134.674*	-135.112*	-135.610*	-135.760*	-135.571*
	(74.747)	(73.853)	(73.787)	(73.811)	(73.528)	(73.421)	(73.413)	(73.420)	(73.421)
-8	-33.117	-82.854	-81.186	-82.209	-76.889	-76.897	-77.404	-77.485	-77.376
	(57.001)	(56.361)	(56.329)	(56.339)	(56.175)	(56.111)	(56.108)	(56.110)	(56.110)
-6	-28.002	-56.391	-56.035	-56.645	-52.477	-52.290	-52.903	-52.942	-52.965
	(39.478)	(39.239)	(39.215)	(39.218)	(39.176)	(39.150)	(39.150)	(39.151)	(39.150)
-2	-134.573***	-83.919*	-82.304*	-82.429*	-85.843*	-86.105*	-85.222*	-85.178*	-85.150*
	(45.507)	(45.243)	(45.212)	(45.214)	(45.161)	(45.133)	(45.134)	(45.135)	(45.135)
0	-1300.128***	-882.051***	-874.816***	-874.495***	-879.346***	-879.604***	-877.992***	-877.851***	-877.822***
	(90.389)	(89.735)	(89.667)	(89.671)	(89.611)	(89.577)	(89.574)	(89.575)	(89.575)
2	-3043.128***	-2403.532***	-2391.390***	-2390.381***	-2397.907***	-2397.993***	-2395.765***	-2395.504***	-2395.426***
	(93.885)	(91.426)	(91.321)	(91.330)	(91.162)	(91.101)	(91.093)	(91.097)	(91.098)
4	-2637.890***	-2065.361***	-2052.003***	-2050.645***	-2059.591***	-2059.732***	-2057.074***	-2056.701***	-2056.672***
	(108.797)	(105.993)	(105.855)	(105.867)	(105.604)	(105.496)	(105.474)	(105.481)	(105.481)
6	-2264.833***	-1791.950***	-1778.505***	-1776.568***	-1784.891***	-1785.096***	-1782.024***	-1781.550***	-1781.401***
	(126.499)	(123.669)	(123.438)	(123.442)	(123.023)	(122.856)	(122.829)	(122.838)	(122.839)
8	-1986.883***	-1583.244***	-1570.247***	-1567.676***	-1575.497***	-1574.500***	-1571.201***	-1570.499***	-1570.194***
	(143.299)	(140.437)	(140.169)	(140.180)	(139.688)	(139.461)	(139.439)	(139.456)	(139.458)
10	-1829.310***	-1447.598***	-1434.223***	-1431.244***	-1440.502***	-1438.361***	-1434.973***	-1434.243***	-1433.684***
	(160.885)	(157.969)	(157.661)	(157.689)	(157.125)	(156.857)	(156.833)	(156.850)	(156.854)
12	-1766.235***	-1395.455***	-1383.719***	-1380.801***	-1391.692***	-1389.234***	-1385.800***	-1385.074***	-1384.372***
	(177.145)	(174.141)	(173.757)	(173.786)	(173.167)	(172.854)	(172.823)	(172.846)	(172.852)
14	-1654.682***	-1281.994***	-1269.969***	-1267.978***	-1281.185***	-1277.859***	-1274.131***	-1273.473***	-1272.933***
	(197.900)	(194.701)	(194.247)	(194.263)	(193.549)	(193.189)	(193.145)	(193.173)	(193.177)
16	-1570.263***	-1203.097***	-1190.169***	-1188.417***	-1203.818***	-1199.563***	-1195.437***	-1194.540***	-1194.099***
	(215.494)	(211.978)	(211.510)	(211.529)	(210.707)	(210.322)	(210.265)	(210.294)	(210.297)
18	-1590.911***	-1228.190***	-1215.549***	-1214.381***	-1230.896***	-1226.144***	-1222.132***	-1221.082***	-1220.671***
	(234.041)	(230.254)	(229.668)	(229.700)	(228.779)	(228.356)	(228.289)	(228.316)	(228.318)
20	-1519.465***	-1150.762***	-1138.399***	-1136.951***	-1154.040***	-1149.227***	-1145.665***	-1144.611***	-1143.583***
	(252.251)	(248.279)	(247.590)	(247.623)	(246.615)	(246.147)	(246.075)	(246.106)	(246.109)
22	-1519.841***	-1156.649***	-1143.919***	-1141.931***	-1157.907***	-1154.063***	-1150.384***	-1149.179***	-1148.004***
	(272.857)	(268.688)	(267.937)	(267.974)	(266.883)	(266.356)	(266.280)	(266.320)	(266.327)
Mean Y Before Job Loss	4485.14	4512.02	4537.72	4543.61	4548.75	4551.23	4572.94	4577.01	4577.27
N-Job Losers	6443	6443	6443	6443	6443	6443	6443	6443	6443
N-Observations	178050	178050	178050	178050	178050	178050	178050	178050	178050

Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. We display the estimates on the event time variables. The results are weighted using the individual survey weight in the month of job loss. Standard errors clustered at the individual level. * p<0.10, ** p<0.05, *** p<0.01

Table A2: Event Study around Job Loss: Receipt of Safety Net Programs

	UI	SNAP	TANF	SS	SSI	FRPL	WIC	Energy
-12	0.275	-0.037	0.078	0.148	-0.044	-0.307	-0.127	0.137***
	(0.413)	(0.363)	(0.175)	(0.134)	(0.111)	(0.462)	(0.316)	(0.053)
-10	0.816**	0.609*	-0.012	0.107	-0.082	-0.139	-0.145	0.112**
	(0.368)	(0.316)	(0.139)	(0.119)	(0.096)	(0.433)	(0.274)	(0.051)
-8	0.126	0.549**	-0.038	0.073	-0.034	-0.007	-0.128	0.103**
	(0.289)	(0.264)	(0.107)	(0.094)	(0.073)	(0.328)	(0.223)	(0.048)
-6	-0.264	0.070	-0.045	0.076	0.026	-0.205	-0.042	0.022
	(0.188)	(0.172)	(0.071)	(0.051)	(0.036)	(0.198)	(0.155)	(0.030)
-2	2.495***	0.293	-0.075	-0.032	-0.065*	0.784***	-0.025	0.038
	(0.226)	(0.180)	(0.063)	(0.043)	(0.039)	(0.225)	(0.141)	(0.035)
0	31.543***	1.451***	-0.078	-0.021	-0.086	1.317***	0.008	0.073
	(0.578)	(0.287)	(0.104)	(0.070)	(0.064)	(0.327)	(0.212)	(0.046)
2	43.164***	2.717***	0.008	-0.036	-0.065	1.732***	0.213	0.103*
	(0.724)	(0.366)	(0.121)	(0.090)	(0.078)	(0.401)	(0.268)	(0.054)
4	36.145***	3.252***	0.122	0.001	-0.060	2.005***	0.264	0.106*
	(0.737)	(0.396)	(0.141)	(0.113)	(0.090)	(0.451)	(0.318)	(0.057)
6	27.147***	3.213***	0.236	0.174	-0.059	2.353***	0.224	0.178**
	(0.725)	(0.430)	(0.169)	(0.140)	(0.104)	(0.484)	(0.363)	(0.084)
8	20.690***	3.171***	0.306*	0.362**	0.051	2.344***	0.387	0.167*
	(0.729)	(0.458)	(0.185)	(0.173)	(0.127)	(0.510)	(0.394)	(0.089)
10	17.520***	3.495***	0.407*	0.437**	0.178	2.241***	0.426	0.078
	(0.757)	(0.509)	(0.214)	(0.188)	(0.144)	(0.565)	(0.442)	(0.075)
12	15.592***	3.190***	0.317	0.446**	0.295*	2.356***	0.381	0.005
	(0.783)	(0.550)	(0.222)	(0.185)	(0.158)	(0.606)	(0.478)	(0.075)
14	14.055***	3.239***	0.174	0.391*	0.355*	2.658***	0.146	0.049
	(0.818)	(0.606)	(0.219)	(0.211)	(0.186)	(0.643)	(0.502)	(0.097)
16	11.529***	3.441***	0.098	0.362	0.503**	2.837***	0.212	0.123
	(0.836)	(0.606)	(0.226)	(0.224)	(0.230)	(0.671)	(0.531)	(0.137)
18	9.183***	3.625***	-0.040	0.427*	0.634**	2.680***	0.170	0.035
	(0.872)	(0.658)	(0.238)	(0.247)	(0.259)	(0.731)	(0.552)	(0.120)
20	7.933***	3.388***	-0.105	0.547**	0.543*	2.142***	0.222	0.117
	(0.919)	(0.697)	(0.261)	(0.264)	(0.292)	(0.789)	(0.584)	(0.127)
22	5.741***	3.469***	-0.045	0.751**	0.551*	2.216***	0.214	0.196
	(0.970)	(0.750)	(0.280)	(0.292)	(0.311)	(0.834)	(0.609)	(0.154)
Mean Y Before Job Loss	2.60	7.56	1.25	0.52	0.38	17.06	6.22	0.09
N-Job Losers	6443	6443	6443	6443	6443	6443	6443	6443
N-Observations	178050	178050	178050	178050	178050	178050	178050	178050

Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. We display the estimates on the event time variables. The results are weighted using the individual survey weight in the month of job loss. Standard errors clustered at the individual level. * p<0.10, ** p<0.05, *** p<0.01

Table A3: Difference in Difference Estimates of Simulated Earned Income Tax Credit Eligibility

	all	Below pov	100 to 199	200 to 299	300 to 399	400 pl
post job loss	26.376***	116.471***	43.364*	25.809**	-11.744	12.950
	(7.180)	(25.854)	(20.919)	(11.898)	(19.621)	(9.109)
Mean EITC Before Job Loss	101.05	54.10	30.49	19.78	18.18	16.11
Observations	15628	1552	2987	3121	2299	5669

Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The model includes individual fixed effects, year-month fixed effects, as well as controls for age and age squared. We predicted EITC before and after job loss using Taxsim along with family income, marital status, number of dependents, and state of residence. See text for more details. We do not disaggregate income bins past 400% of the poverty level. Very few families qualify for the EITC (even post job loss) at these higher income levels. More disaggregated income bins at higher income levels means any predicted EITC amounts in Taxsim are likely to be the result of measurement error in reported income. Standard errors are clustered at the individual level. * p<0.10, ** p<0.05, *** p<0.01

Table A4: Event Study Coefficients on Health Insurance

	Job Loser			All Adults			All Kids		
	Any	Public	Private	Any	Public	Private	Any	Public	Private
-12	-0.868	0.267	-1.314	-0.685	0.807	-1.229	-2.902*	-0.338	-2.296
	(1.260)	(0.650)	(1.200)	(1.206)	(0.809)	(1.166)	(1.480)	(1.566)	(1.518)
-10	-0.369	0.259	-0.759	-0.673	0.617	-0.777	-2.409**	-0.377	-1.692
	(0.975)	(0.495)	(0.932)	(0.927)	(0.647)	(0.893)	(1.151)	(1.237)	(1.164)
-8	0.295	0.039	0.258	0.055	0.191	0.181	-1.316	0.331	-1.037
	(0.715)	(0.384)	(0.663)	(0.673)	(0.485)	(0.631)	(0.844)	(0.907)	(0.828)
-6	0.652	-0.127	0.777**	0.511	-0.026	0.720**	-0.371	-0.103	-0.414
	(0.416)	(0.239)	(0.376)	(0.384)	(0.287)	(0.359)	(0.466)	(0.513)	(0.461)
-2	-2.789***	-0.138	-2.687***	-1.649***	-0.181	-1.682***	-0.102	0.913*	-0.392
	(0.414)	(0.205)	(0.400)	(0.401)	(0.281)	(0.398)	(0.512)	(0.515)	(0.492)
0	-11.495***	0.367	-11.960***	-7.143***	0.337	-8.323***	-2.879***	2.444***	-5.070***
	(0.748)	(0.368)	(0.721)	(0.722)	(0.475)	(0.704)	(0.867)	(0.850)	(0.882)
2	-17.723***	1.536***	-19.264***	-11.325***	1.290**	-13.777***	-4.155***	4.662***	-9.145***
	(1.064)	(0.532)	(1.027)	(1.014)	(0.653)	(0.998)	(1.209)	(1.218)	(1.271)
4	-16.994***	2.010***	-18.874***	-10.417***	1.890**	-13.385***	-1.939	5.966***	-8.259***
	(1.307)	(0.680)	(1.256)	(1.249)	(0.826)	(1.229)	(1.506)	(1.577)	(1.564)
6	-15.365***	2.149***	-17.312***	-9.098***	1.914*	-12.238***	0.113	6.291***	-6.954***
	(1.570)	(0.830)	(1.511)	(1.490)	(0.998)	(1.472)	(1.812)	(1.932)	(1.870)
8	-13.914***	2.173**	-15.809***	-7.930***	2.144*	-10.948***	1.083	6.421***	-6.093***
	(1.833)	(0.962)	(1.768)	(1.753)	(1.166)	(1.725)	(2.079)	(2.249)	(2.176)
10	-12.438***	2.019*	-14.117***	-6.305***	2.293*	-9.340***	1.659	6.703***	-5.646**
	(2.107)	(1.086)	(2.030)	(2.036)	(1.332)	(1.994)	(2.371)	(2.574)	(2.493)
12	-11.445***	1.856	-12.794***	-5.379**	2.101	-8.359***	2.428	6.659**	-5.321*
	(2.384)	(1.217)	(2.303)	(2.300)	(1.484)	(2.260)	(2.702)	(2.919)	(2.810)
14	-11.389***	1.849	-12.673***	-5.173**	2.034	-7.906***	3.627	6.400**	-3.697
	(2.656)	(1.378)	(2.575)	(2.561)	(1.671)	(2.522)	(3.037)	(3.257)	(3.135)
16	-10.928***	1.983	-12.233***	-5.308*	2.163	-7.778***	4.792	6.639*	-2.516
	(2.928)	(1.545)	(2.830)	(2.828)	(1.858)	(2.781)	(3.333)	(3.585)	(3.432)
18	-10.076***	1.871	-11.263***	-4.539	1.929	-6.673**	5.656	6.617*	-1.381
	(3.208)	(1.701)	(3.094)	(3.099)	(2.049)	(3.043)	(3.637)	(3.936)	(3.771)
20	-10.050***	1.568	-11.160***	-3.999	1.521	-6.024*	5.672	6.423	-1.024
	(3.495)	(1.857)	(3.362)	(3.384)	(2.236)	(3.307)	(3.949)	(4.256)	(4.083)
22	-9.002**	1.551	-9.906***	-2.995	1.084	-4.984	5.940	5.834	-0.452
	(3.779)	(1.994)	(3.636)	(3.658)	(2.396)	(3.580)	(4.269)	(4.588)	(4.407)
Mean Y Before Job Loss									
N-Job Losers									
N-Observations	178050	178050	178033	178050	178050	178045	102705	102705	102705

Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. We display the estimates on the event time variables. The results are weighted using the individual survey weight in the month of job loss. Standard errors clustered at the individual level. * p<0.10, ** p<0.05, *** p<0.01

Table A5: Event Study Coefficients on Household Poverty

	Earned Income			Cash Income			Cash Income + Near-Cash Transfers		
	<100%	<200%	<400%	<100%	<200%	<400%	<100%	<200%	<400%
-12	-0.781	-1.694	-0.746	0.883	-0.007	0.354	1.619*	0.271	0.336
	(1.049)	(1.145)	(1.045)	(0.936)	(1.127)	(1.008)	(0.877)	(1.150)	(1.009)
-10	-0.493	-1.657*	-0.388	0.560	-0.135	0.344	1.074	0.016	0.330
	(0.814)	(0.912)	(0.834)	(0.729)	(0.899)	(0.817)	(0.694)	(0.923)	(0.817)
-8	-0.823	-1.030	-0.309	0.023	-0.052	0.314	0.294	-0.002	0.320
	(0.588)	(0.658)	(0.618)	(0.534)	(0.656)	(0.608)	(0.507)	(0.674)	(0.609)
-6	-0.262	-0.966**	0.175	0.010	-0.104	0.511	0.222	-0.088	0.475
	(0.354)	(0.411)	(0.384)	(0.324)	(0.414)	(0.387)	(0.306)	(0.418)	(0.388)
-4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
0	19.801***	18.589***	10.411***	11.580***	14.138***	7.857***	11.336***	14.358***	7.838***
	(0.697)	(0.770)	(0.680)	(0.618)	(0.746)	(0.657)	(0.602)	(0.732)	(0.658)
2	30.786***	29.401***	19.400***	15.757***	21.756***	15.813***	15.138***	21.822***	15.834***
	(1.018)	(1.073)	(0.950)	(0.872)	(1.029)	(0.909)	(0.845)	(1.025)	(0.909)
4	25.870***	25.429***	16.652***	12.486***	17.971***	13.194***	11.172***	17.932***	13.253***
	(1.194)	(1.288)	(1.131)	(1.032)	(1.240)	(1.076)	(0.988)	(1.231)	(1.076)
6	22.585***	22.509***	14.917***	11.010***	15.542***	11.712***	9.733***	15.588***	11.780***
	(1.394)	(1.532)	(1.304)	(1.198)	(1.482)	(1.253)	(1.138)	(1.463)	(1.253)
8	20.573***	20.806***	12.892***	10.081***	14.895***	10.143***	8.422***	14.871***	10.210***
	(1.600)	(1.768)	(1.513)	(1.391)	(1.714)	(1.452)	(1.315)	(1.694)	(1.452)
10	19.023***	19.560***	12.561***	9.378***	13.319***	9.788***	7.631***	13.358***	9.820***
	(1.819)	(1.997)	(1.705)	(1.593)	(1.941)	(1.631)	(1.505)	(1.920)	(1.632)
12	18.933***	19.588***	12.467***	9.654***	13.467***	9.842***	7.617***	13.314***	9.867***
	(2.035)	(2.230)	(1.898)	(1.798)	(2.167)	(1.819)	(1.694)	(2.143)	(1.820)
14	18.639***	19.402***	11.961***	9.574***	13.149***	8.775***	7.251***	13.027***	8.832***
	(2.251)	(2.474)	(2.110)	(2.004)	(2.408)	(2.012)	(1.884)	(2.378)	(2.013)
16	17.537***	18.506***	11.420***	8.322***	12.515***	8.348***	5.918***	12.320***	8.389***
	(2.472)	(2.700)	(2.308)	(2.189)	(2.632)	(2.209)	(2.060)	(2.599)	(2.210)
18	17.415***	17.753***	10.760***	8.647***	12.323***	7.690***	6.062***	12.081***	7.723***
	(2.690)	(2.965)	(2.513)	(2.380)	(2.895)	(2.422)	(2.241)	(2.826)	(2.423)
20	16.466***	17.805***	11.129***	7.853***	11.961***	7.936***	5.023**	11.789***	7.978***
	(2.915)	(3.213)	(2.713)	(2.580)	(3.142)	(2.608)	(2.419)	(3.079)	(2.610)
22	16.900***	18.250***	10.786***	8.343***	12.022***	7.860***	5.163**	11.955***	7.839***
	(3.141)	(3.471)	(2.927)	(2.787)	(3.396)	(2.815)	(2.613)	(3.329)	(2.818)
Mean Y Before Job Loss	11.68	30.80	64.87	8.81	27.09	62.38	7.27	26.44	62.32
N-Job Losers	6443	6443	6443	6443	6443	6443	6443	6443	6443
N-Observations	178050	178050	178050	178050	178050	178050	178050	178050	178050

Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. We display the estimates on the event time variables. The results are weighted using the individual survey weight in the month of job loss. Standard errors clustered at the individual level. * p<0.10, ** p<0.05, *** p<0.01

B Program Details

In this section, we focus on several features of each program besides UI to provide context for expected effects. First, whether programs provide cash or in-kind benefits. Second, whether the eligibility rules include income tests (means-tested) and/or other restrictions (categorical eligibility rules). Third, if there is a substantial waiting period between application time and initial benefit receipt. In our analyses, we focus on individual-level program receipt, except for household-level programs as noted below.

Supplemental Nutrition Assistance Program (SNAP): In contrast to UI, SNAP is means-tested, rather than conditional on job loss. Households with net income below 130% of the federal poverty line, who meet applicable asset tests, qualify for benefits. Benefit amounts are a decreasing function of total household income. SNAP is available to all income and asset eligible households regardless of marital status and presence of children. For most participants, there are no time limits of benefit receipt, however, for working-aged non-disabled childless adults, there are time limits during periods of low unemployment.[31] Since SNAP eligibility and benefits amounts are determined based on household information, we examine household-level receipt of SNAP.

Temporary Assistance for Needy Families (TANF): TANF is also a means-tested program that provides cash benefits to low-income families with children.[32] Created as part of welfare reform in 1996, TANF has strict lifetime time limits on program receipt; for example, in 2002, over 30 states had a lifetime limit of 60 months or less.[33] Additionally, states are mandated to impose work requirements on at least some recipients.[34] The benefits are also relatively small compared to other programs–the median monthly benefit amount in 2020 was only 27% of the federal poverty line[35] and benefit amounts are a decreasing function of household income. As with SNAP, we examine household-level TANF receipt.

Social Security Programs (SS): Several groups of individuals may qualify for SS income: those who retire at age 62 and older, those who are permanently disabled (SSDI), and surviving spouses and dependent children. To be eligible, the individual or decedent needs to have sufficient work history before retirement, disability claim, or death. We condition our sample on individuals aged 24-55 at job loss, and only follow them for up to two years after job loss. So SS retirement benefits are unlikely to be a large part of SS receipt in our analysis. On the other hand, SSDI (disability) may be more relevant. To qualify for SSDI, an individual must demonstrate that they are disabled, and that this disability is expected to inhibit their ability to work for at least 12 months. The individual must be earning below a threshold at the time they apply ($1260 per month in 2020) to demonstrate the disability limits their work ability. It typically takes 3-5 months from SSDI application to decision (which can then be appealed). If approved, there is an additional 5 month waiting period before an individual receives the benefits. Additionally,

[31] Beginning in 1996, after the passage of welfare reform, many non-citizen documented immigrants become ineligible for SNAP, TANF, public health insurance, and SSI. In our sample, we do not condition on citizenship status. This discussion taken primarily from Hoynes and Schanzenbach (2015).

[32] TANF funds are also spent on other services to low-income families, however, we focus on the cash benefit component here.

[33] https://www.urban.org/sites/default/files/publication/58396/900769-State-Time-Limit-Policies.PDF

[34] https://www.cbpp.org/sites/default/files/atoms/files/7-22-10tanf2.pdf.

[35] https://www.cbpp.org/research/family-income-support/tanf-benefits-still-too-low-to-help-families-espec

individuals who receive SSDI can receive Medicare, but there is a two-year waiting period for Medicare, so many receive Medicaid during this waiting period. We focus only on SS benefits received by the displaced worker.[36]

Supplemental Security Income (SSI): Similar to SS, SSI is available to individuals over age 65, blind individuals, and disabled individuals. All three groups must meet income tests, but there is no work history requirement in contrast to SS. Adult recipients have to have monthly income lower than the minimum monthly benefit amount ($733 in 2015). Average wait time to decision about disability for SSI is 4 months, and there is no mandatory waiting time after that before benefit receipt.[37] We focus only on SSI benefits received by the displaced worker.

Free and Reduced Price Lunch (FRPL): The Free and Reduced Price Lunch Program is available to school-aged children who live in low-income households. Households with income below 130% of the poverty line qualify for free meals, and households with income between 130-185% qualify for reduced price meals. Additionally, categorical eligibility exists for children who receive SNAP benefits, TANF benefits, are a foster child, homeless, a runaway, a migrant, or if the child is in Head Start. In the mid-2000s states began to expand the program information they used to directly certify children's eligibility to also include Medicaid information. School breakfast operates similarly, but participation is more limited in our time period, so we focus on school lunch only. Since only children are eligible for this program, we create a variable indicating whether anyone in the household received these benefits, which is also how the SIPP solicits this information.[38]

Special Supplemental Nutrition Program for Women, Infants, and Children (WIC): WIC is available to low-income mothers with children under age 5, as well as pregnant women. The program provides vouchers for specific food items and other services, such as nutritional education and referrals to other social services. Individuals meeting these categorical requirements must have income below 185% of the poverty line, or be participating in SNAP, Medicaid, or TANF, and be deemed nutritionally needy (the latter of which in practice is not a very binding constraint).[39] Since only some demographic groups are eligible for this program, we create variables indicating whether anyone in the household received these benefits and the total reported household value of WIC benefits.

Energy Assistance: The largest energy assistance program for low-income households is the Low-Income Home Energy Assistance Program. Households must have income below 150% of the federal poverty line and 60% of the state median income level.[40] Additionally, households participating in SNAP, SSI, or TANF may be automatically eligible.[41] The SIPP collects information about all energy assistance provided by federal, state, and local governments, and we use information about this benefit receipt at the household level.

Public Health Insurance (PHI): There are three major public health insurance (PHI) programs that we examine here. The first is Medicaid, which provides PHI to low-income individuals. Historically, the program was much more generous for children and pregnant women

[36]Information taken from *What You Should Know Before You Apply for Social Security Disability Benefits* (n.d.); *If You Are The Survivor* (n.d.); *Disability Benefits — How You Qualify* (n.d.).

[37]This information taken from Duggan et al. (2015).

[38]This discussion taken primarily from Hoynes and Schanzenbach (2015).

[39]This discussion primarily references Hoynes and Schanzenbach (2015).

[40]`https://liheapch.acf.hhs.gov/delivery/income_eligibility.htm`

[41]`https://www.benefits.gov/benefit/623`

than adults, but in the late 1990s and early 2000s states began to expand eligibility to low-income parents and childless adults as well, though income eligibility thresholds were still very low for these groups compared to children (Buchmueller et al., 2015).[42] For children, the State Children's Health Insurance Program also provides PHI, often to income eligibility thresholds greater than Medicaid. Finally, Medicare provides PHI to elderly (age 65+) and disabled individuals. Since we restrict our sample to be job losers age 24-55, elderly eligibility for Medicare is less likely to be important. We categorize any of these programs as "public health insurance", and employer or on non-group market insurance as "private health insurance".

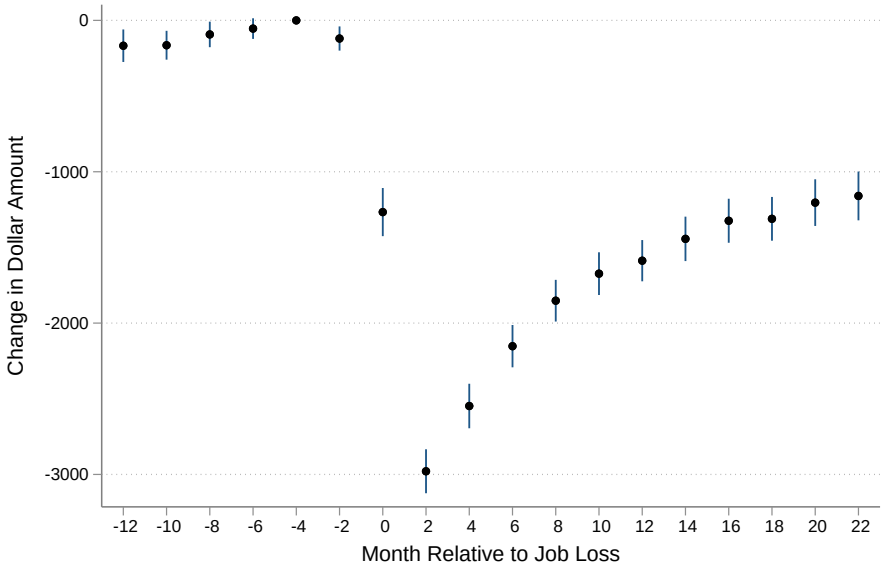
Earned Income Tax Credit (EITC): The Earned Income Tax Credit provides a subsidy that supplements the wages of the working poor and is dependent on family structure and earnings of the household. The phase-in rate, maximum credit amount, and phase-out of the EITC vary by number of dependents, and tax year (there have been a number of expansions over time). Individual states have separately implemented their own EITCs over time usually as done as a percent of the federal credit. The EITC is fully refundable–after reducing a tax liability to zero, the family gets the remainder of the credit as a lump sum payment with their tax returns. Most families who get the EITC receive it in February. While there is an option to get the EITC as a regular check throughout the year, virtually no families take up this option.

[42] Additionally, the Affordable Care Act allowed states to expand Medicaid eligibility for low-income childless adults, however this didn't happen until 2014 and our sample ends in 2013.

C Results with Control Group

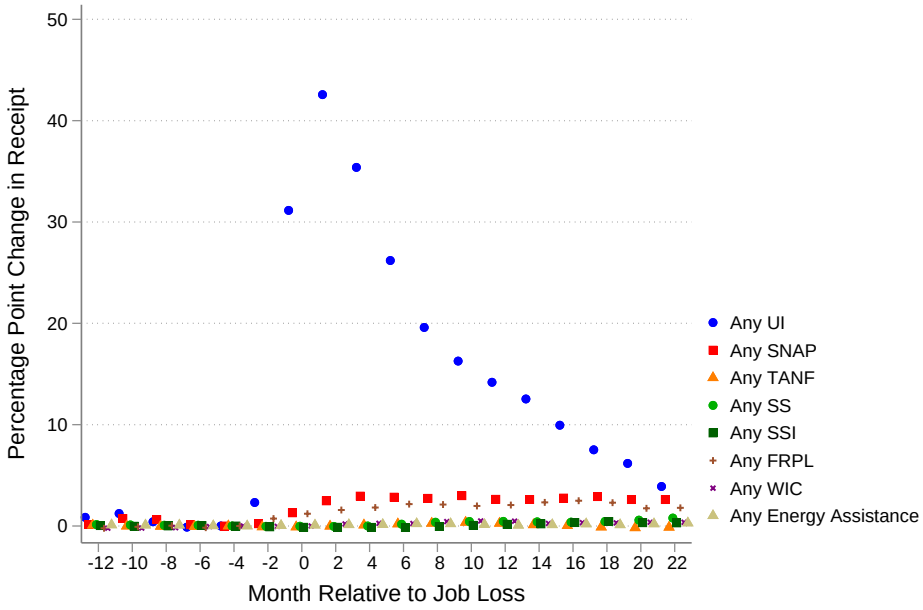
We reproduce our main results including a control group. The control group consists of all workers who did not experience a job loss, who are household heads, spouses, or partners, with at least one year of job tenure and between the ages of 24-55 in the first survey month they were observed in the SIPP. We estimate a version of equation (1) where the event time dummies are all zero for the control group. This effectively puts the control group with the "excluded" period of 3-4 months before job loss. When we split the sample by pre-job loss household income, we use income observed for the control group in the month the worker is first observed in the SIPP. We weight all control group observations using the person weight in the first survey month that individual was observed in the SIPP.

Figure C1: Event Study around Job Loss with Never Job Losers as Control Group: Own Earnings

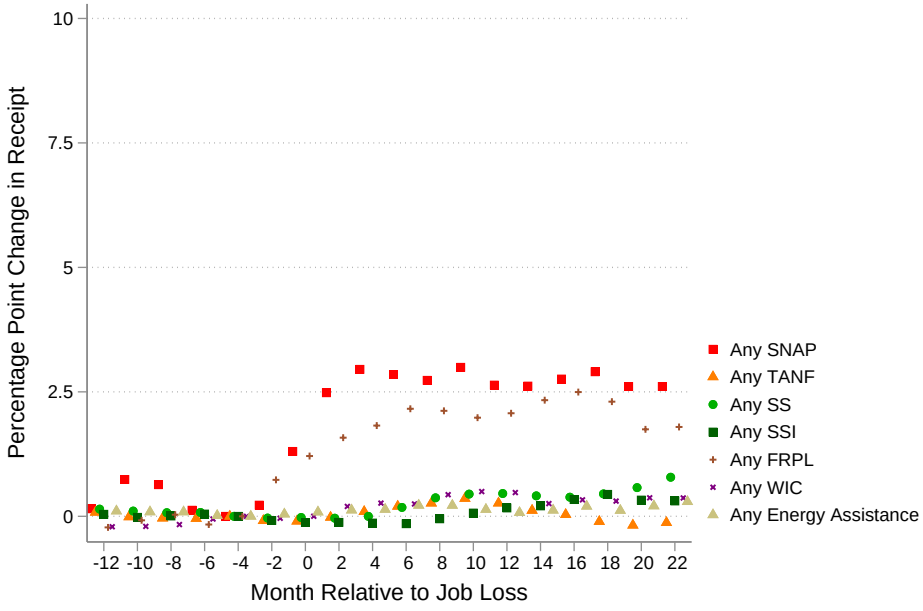


Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The control group is heads, spouses, and unmarried partners aged 24-55 when first observed in the SIPP who worked at their job for at least one year prior to the beginning of the survey. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. The horizontal axis denotes months from job loss. The black dots represent the event study coefficients. Job loser observations are weighted using the individual survey weight in the month of job loss. Control group observations are weighted using the individual survey weight in the first month the individual was observed in the SIPP. Standard errors clustered at the individual level and the 95% confidence intervals are plotted in the vertical lines.

Figure C2: Event Study around Job Loss with Never Job Losers as Control Group: Receipt of Safety Net Programs



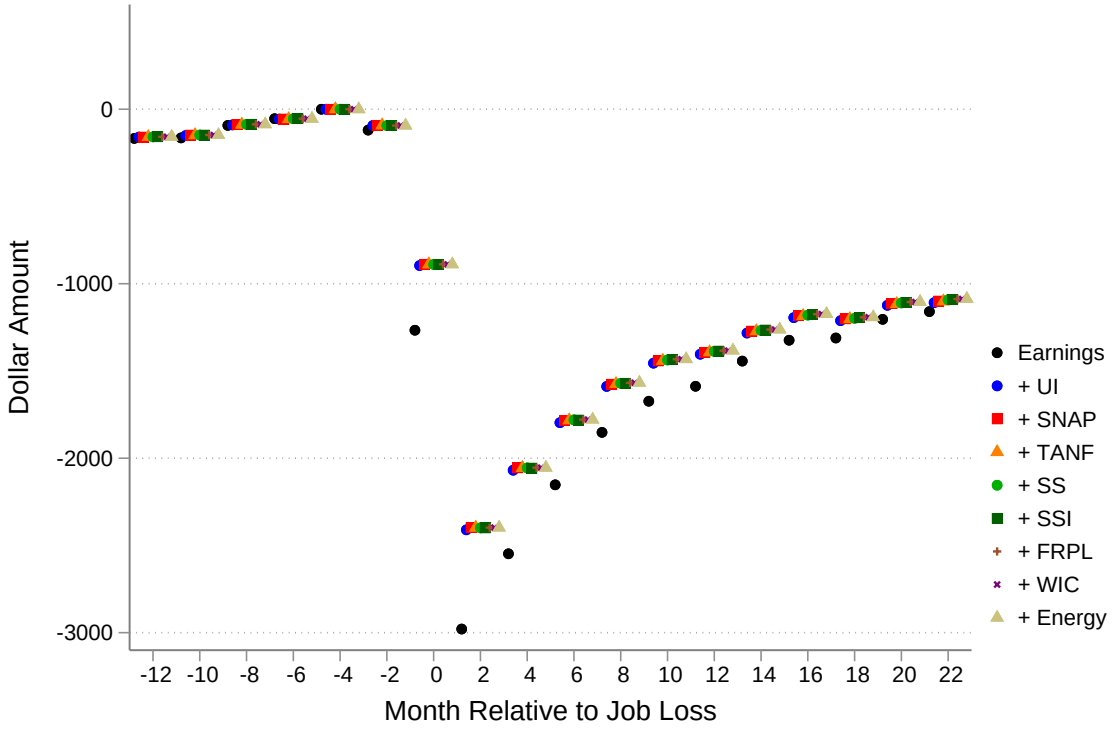
(a) Percentage Point Effect



(b) Percentage Point Effect, Omit UI

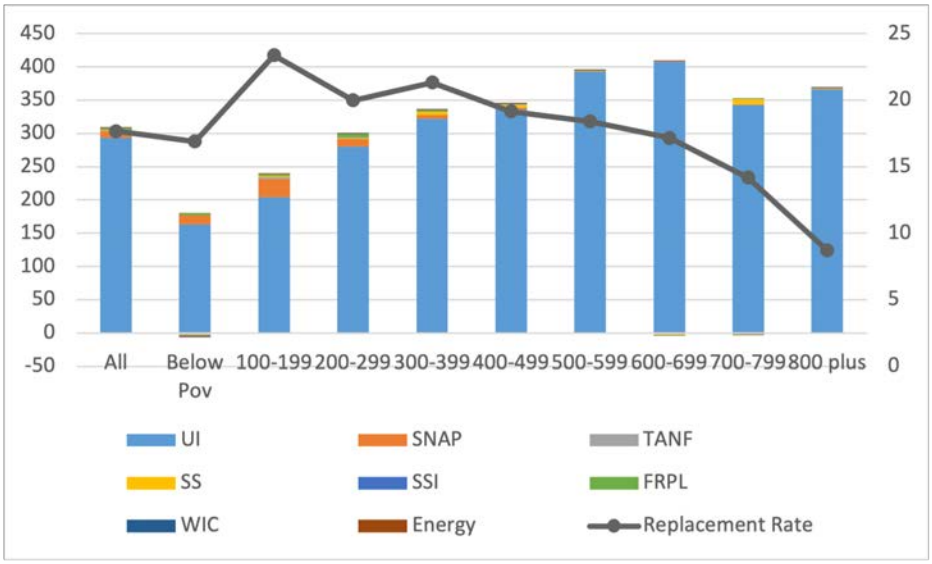
Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The control group is heads, spouses, and unmarried partners aged 24-55 when first observed in the SIPP who worked at their job for at least one year prior to the beginning of the survey. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. The horizontal axis denotes months from job loss. The markers represent the event study coefficients. Job loser observations are weighted using the individual survey weight in the month of job loss. We weight all control group observations using the person weight in the first survey month that individual was observed in the SIPP.

Figure C3: Event Study around Job Loss with Never Job Losers as Control Group: Own Earnings and Value of Safety Net Programs



Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The control group is heads, spouses, and unmarried partners aged 24-55 when first observed in the SIPP who worked at their job for at least one year prior to the beginning of the survey. The model includes individual fixed effects, calendar time fixed effects, and controls for individual's age and age squared. The horizontal axis denotes months from job loss. The black dots show the estimates on earnings as in Figure (3), and the blue dots indicate the effect of job loss on earnings plus UI income. The other colored marks show the effect on income sequentially adding in other safety net program income that could act as a replacement for lost income (all measures are inclusive of zeros). There is a set of marks for each event time period. Job loser observations are weighted using the individual survey weight in the month of job loss. We weight all control group observations using the person weight in the first survey month that individual was observed in the SIPP.

Figure C4: Difference in Difference Estimates of Safety Net Program Value and Replacement Rate with Never Job Losers as Control Group, by Pre-Job Loss Household Poverty Status



Notes: Data are from the 1996-2008 Survey of Income and Program Participation. The sample includes heads, spouses, and unmarried partners aged 24-55 at the time of job loss who worked at their lost job for at least one year prior to losing it. The control group is heads, spouses, and unmarried partners aged 24-55 when first observed in the SIPP who worked at their job for at least one year prior to the beginning of the survey. The plotted estimates are from a difference in difference version of equation (1) with a post period dummy replacing the event time coefficients: $y_{it} = \alpha_i + \beta post_{it} + \gamma_1 X_{it} + \epsilon_{it}$. We estimate this model for the full sample and split by household poverty ratio in the first survey month. The estimates reported in the bars are the effect of job loss on the dollar value of the benefits received from each program, with values reported on the left vertical axis. To calculate the replacement rates (percent of lost income made up by safety net benefits) shown in the line we separately calculate and numerator and a denominator. We sum the estimated effect on each program shown in the bars for the numerator. For the denominator, we run regressions with earnings as the outcome variable and use the estimated coefficient on the "post" dummy for each sample. Values for the replacement rate are reported on the right vertical axis. Job loser observations are weighted using the individual survey weight in the month of job loss. We weight all control group observations using the person weight in the first survey month that individual was observed in the SIPP.