Supported from both sides?
Changes in the dynamics of joint participation in SNAP and UI following the Great Recession

Alix Gould-Werth and H. Luke Shaefer

ABSTRACT:

This paper uses panel data from the nationally representative Survey of Income and Program Participation (SIPP) from years 2000-2011, to examine changes in the prevalence and character of joint participation in the Supplemental Nutrition Assistance Program (SNAP) and Unemployment Insurance (UI) among job losers during the Great Recession. Descriptive as well as multivariate analyses are presented. Descriptive statistics examining changes following the onset of the Great Recession indicate heightened use of Unemployment Insurance and Food Stamps/Supplemental Nutrition Assistance Program, a change in the sequencing of program entrance with joint participants becoming less likely to access SNAP first, and the composition of the group joint participants becoming more advantaged across a range of demographic characteristics.

Our multivariate results suggest that the extended length of unemployment spells following the onset of the Great Recession drives much of the increase in joint participation. The extension of UI benefits and the liberalization of SNAP eligibility requirements account for the remaining increase in joint participation. These results suggest that our safety net programs have been responsive to a changed macroeconomic context and changing needs of the target populations of UI and SNAP. However, the fact that following the onset of the recession the demographic characteristics of joint participants reflect a *more advantaged* population--while other research demonstrates that the bulk of those experiencing unemployment following the Great Recession are *less advantaged*--suggests that, in terms of joint participation, the safety net is most flexible in responding to the needs of its more advantaged constituents.

Introduction

In 1964 the U.S. Congress established the first permanent national program providing food assistance to low-income Americans: the Food Stamp Program, now called the Supplemental Nutrition Assistance Program (SNAP). SNAP is designed to serve people whose level of financial resources is so low that they have difficulty affording food. The program thus disproportionately serves low-educated individuals (Strayer et al 2011) and individuals who are not attached to the labor force due to disability, age, or child-rearing responsibilities (Strayer et al 2011).

Earlier, in 1936, the federal government created the federal-state Unemployment Insurance (UI) program. The UI program is designed to serve workers who suffer a temporary job loss through no fault of their own and require assistance in order to smooth their consumption until they are re-employed. UI recipients are often more highly

educated than SNAP recipients (Gould-Werth and Shaefer 2012) and, in accordance with program rules, all UI recipients are active labor force participants.

The macroeconomic context of the Great Recession resulted in particularly trying spells of unemployment for job losers. Following the onset of the Great Recession individuals experiencing unemployment were more likely to simultaneously experience one or more of the following additional hardships:

1) Depreciation of assets such as savings or homes (Boguslaw et al 2013)
2) Decreased levels of income from other earners in the household due to job loss, furlough, or hours reduction (Farber 2010)
3) Difficulty obtaining re-employment resulting in longer spells than in normal economic times (Farber 2010).

Further, the individuals affected by job loss following the onset of the Great Recession were disproportionately clustered in low-wage jobs prior to the start of their unemployment spell (Farber 2010).

This paper seeks to explore whether and how the social safety net responded to these changes in the nature of unemployment. Caseload trends show at the population level that both UI receipt and SNAP receipt increased following the onset of the Great Recession.The changes in the characteristics of the unemployed noted above further suggest that individuals who would have accessed UI only (or neither benefit) in a different macroeconomic context may have the need for both for the consumption-smoothing associated with unemployment benefits and the help affording food associated with SNAP benefits. These changes also suggest that individuals who would have accessed SNAP only (or neither benefit) in a different macroeconomic context may be faced with job loss and thus need to augment their income support from SNAP—which can be used only to purchase food—with additional income replacement to cover the cost of other expenses.

Thus, if the safety net is responsive to the changing character of unemployment, we would expect to see an increase in joint UI-SNAP participation following the Great Recession. Further, if this ability to bundle programs became more available to some groups than others following the Great Recession's onset, we would expect to see a change in the demographic composition of joint participants and a change in the ordering of program access.

Below, using data from the Survey of Income and Program Participation, we demonstrate that following the onset of the Great Recession the level of joint participation did increase, the composition of the group joint participants was more advantaged across a range of demographic characteristics, and that joint participants were less likely to access SNAP first.

These descriptive results leave us with the following question: given that the amount and character of joint participation changed following the onset of the Great Recession, what mechanisms account for this change? We see four possibilities:

1) The changing demographic characteristics of the unemployed

2) General responsiveness of the social safety net to changing economic conditions (e.g. those who experience longer spells of unemployment access are able to take up programs that they need)
3) Planned countercyclical features of the programs (e.g. federal UI benefits extensions, waiving of the SNAP ABAWD requirement)
4) Fortuitously timed policy changes in expanding the availability and accessibility of the SNAP program.

Our multivariate results suggest that the majority of the increase in joint participation is driven by the general responsiveness of the social safety net to the extended length of unemployment spells following the onset of the Great Recession. The extension of UI benefits and the liberalization of SNAP eligibility requirement account for the remaining increase in joint participation.

These results suggest that our safety net programs have been responsive to a changed macroeconomic context and changing needs of the target populations of UI and SNAP. However, the fact that following the onset of the recession the demographic characteristics of joint participants reflect a *more advantaged* population while other research demonstrates that the bulk of those experiencing unemployment following the Great Recession are *less advantaged* suggests that – in terms of joint participation—the safety net is responding most flexibly to the needs of its more advantaged constituents.

Background

Unemployment during the Great Recession
Since the start of the Great Recession, the US has seen its unemployment rate increase from 5.0% to as high as 10.1%, with the average unemployment spell rising to an unprecedented 40 weeks, nearly double the previous post-war high. Low-educated workers have borne the brunt of the contraction. Adult workers with less than a high school diploma saw their unemployment rate jump from 8.2% in December 2007 to a peak of 17.9% in February 2010, remaining above 14.0% through February 2012—rates far above those experienced by more highly educated workers.

Unemployment Insurance Benefits
Unemployment insurance (UI) is the primary program meant to provide income support to workers who experience involuntary job loss. Because firms are more likely to use lay offs during recessions, UI recipiency rates usually go up during such contractions because a greater proportion of the unemployed is likely to meet UI non-monetary requirements. In addition, during Great Recession period policymakers have extended UI durations a number of times, to an unprecedented 99 weeks for some workers. These combined factors have led to the largest increase in UI recipiency rates in decades—up from a typical 30% to nearly 75%.

A number of studies that use pre-Great Recession data find that the low-educated unemployed access UI at low rates even though they may have reasonable labor force attachment, (O'Leary & Kline, 2010; Shaefer, 2010; Shaefer & Wu, 2011; Gould-Werth & Shaefer, 2012). This is disproportionately a result of non-monetary requirements (related to the reason for employment separation) rather than monetary (earnings)

requirements (O'Leary & Kline, 2010; Shaefer, 2010; Shaefer & Wu, 2011). Further, Gould-Werth & Shaefer (2012) find that those without a high school diploma are the least likely to apply for UI but the most likely to assume they are ineligible because of monetary requirements, which are relatively easy to meet. This suggests a low level of understanding of the program.

The Supplemental Nutrition Assistance Program

SNAP is an entitlement program with eligibility determined by household size and income and asset levels. During times of economic contraction, it is expected that eligibility rates—and thus program participation—will increase. Following the onset of the Great Recession participation in SNAP rose even more dramatically than participation in UI. The number of SNAP recipients increased from an average of 26.3 million recipients per month in 2007, to an average of 47.5 million in October 2012. Shaefer (2012) finds that much of this growth has been among low-income workers rather than those without significant labor force attachment.

Over the past two decades, SNAP eligibility requirements have become more liberalized and more workers with substantial labor force attachment but who are near the bottom of the economic spectrum have entered the program. These liberalizations, some of which were concurrent with the years of the Great Recession, have made it easier for any unemployed workers with little or no current income to enter the program. Prominent among these policy changes include broad base categorical eligibility (which shortens the application process for many applicants); the lengthening of recertification periods, and the ability to file applications online. Extant research shows that the liberalization of SNAP eligibility criteria (which first occurred in the 1990s) has resulted in a secular trend of increasing levels of program participation regardless of macroeconomic conditions. Wilde (2013) finds that between 2000 and 2009 the food stamps caseload increased 93%, with 27% of the increase attributed to economic conditions.

Because of the SNAP income eligibility criteria, program participants are poor: in 2011, 75% had cash incomes below 50% of the poverty line. Only 1/6 of SNAP recipients had post-secondary education in 2011, and one third had not completed high – school (http://www.cbpp.org/files/1-29-13fa.pdf). In general, the SNAP recipients are more disadvantaged than UI recipients.

Joint UI-SNAP receipt during the Great Recession

Extant work on joint participation in a non-recessionary context (Texas, 1996-2004) finds that when individuals access both UI and SNAP, UI serves as a "first tier" safety net, while Food Stamps serves as a "second tier" that individuals access subsequent to UI, although results also suggest that SNAP receipt is associated with reduced odds of UI take-up, suggesting a substitution effect (though it is unclear whether UI-ineligible individuals are driving this effect) (Schroeder 2007). It is reasonable to believe that the liberalization of SNAP eligibility criteria, the extended availability of UI, and the change in the severity of unemployment spells following the onset of the Great Recession may affect the generalizability of these results.

Given the rise in levels of UI and SNAP participation during the Great Recession, it is not surprising that joint participation in both SNAP and UI rose among job losers during the Great Recession. In 2005, prior to the Great Recession, we estimate that

295,000 Americans accessed both UI and SNAP during a spell of unemployment. As of 2008, this number had more than doubled, with 815,000 accessing both programs during a spell of unemployment (authors' calculations from Survey of Income and Program Participation data). In addition to an increase in raw numbers, the proportion of the unemployed accessing both programs increased. We estimate that in the pre-recessionary period from 2001-2007, both programs were accessed during 8.0% of spells. In contrast, following the onset of the Great Recession from 2008-2011, we estimate that both programs were accessed during 15.2% of spells of unemployment.

       The present study seeks to uncover information about the changing demographic composition of joint participants and to answer questions about the mechanisms that account for increased levels of joint participation among joint participants as a whole and among joint participants of differing education levels. We see four possible mechanisms that could account for the increase in joint participation: (1) the changing demographic composition of the unemployed (2) general responsiveness of the social safety net to changing economic conditions, (3) planned countercyclical features of the SNAP and UI programs, and (4) fortuitously timed policy changes in expanding the accessibility of the SNAP program. By examining both the mechanisms accounting for increased participation and the demographic characteristics of joint participants we hope to advance an understanding of how our social safety net responded to the changed nature of unemployment during the Great Recession and for whom the safety net was most responsive.

Data and Measures
Data
       This study uses data from the 2001, 2004 and 2008 panels of the Survey of Income and Program Participation (SIPP) to generate information on the timing and rates of UI and SNAP take-up among job losers pre- and post-Great Recession[1]. The SIPP is a nationally representative, longitudinal sample of civilian, non-institutionalized U.S. households. Data are collected in 3-4 year panels, and recent panels oversample households from areas with high poverty concentrations. The 2008 panel follows approximately 40,000 households and 105,000 individuals from late 2008 through the end of 2012, making it well timed for analyses of the Great Recession period. The 2001 and 2004 panels contain data on a combined 80,000 households and 200,000 individuals.

       The SIPP provides more detailed and comprehensive data on income and program participation than other nationally representative surveys. It contains all variables necessary for our analyses: individual and household demographic data; individual and household income and asset information; individual employment history; the nature of job separation; and SNAP and UI receipt and benefit amount. Unlike the Current Population Survey, SIPP data contain monthly measures, which will allow us to track the timing of job loss, SNAP take-up, UI take-up and re-employment. Under-reporting of benefits receipt in household surveys remains a limitation (Gundersen & Kreider, 2008). However, the SIPP does relatively well in terms of reporting rates when compared to peer

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[1] Throughout this paper we will refer to the time period preceding the onset of the Great Recession "pre-recession" and the time period following the onset of the recession in December 2007 as "post-recession." We do not distinguish between the recessionary period from December 2007 to June 2009 and the subsequent sluggish recovery. Our pre-recession period does include the mild recession of 2001.

surveys. For example, Meyer et al. (2008) estimate that the SIPP reported 87.7 percent of SNAP participants for 1998, 84.8 percent for 2003, and 82.9 percent for 2005, far above CPS rates. Unlike administrative data, the SIPP allows us to explore the dynamics of joint participation within a nationally representative sample.

The Sample

        We use the SIPP's longitudinal data to identify a sample of workers who 1) are between the ages 25 and 64 at the point at which they enter a spell of unemployment after working steadily for at least three months and 2) remain in the SIPP for at least six months following the initial job loss[2]. We define unemployment as occurring when a respondent has no job for at least 1 full month, and are on layoff or looking for work all month. The 2001 and 2004 panels contain 4,809 unemployed respondents who experienced job loss after steady work and then remained in the SIPP for at least six months in the pre-recession time period. The 2008 panel contains 4,262 unemployed respondents who lost jobs following steady work and then remained in the SIPP for at least 6 months during or following the Great Recession.

Main Measures

        We measure participation in SNAP by looking at all job losers who had household income from SNAP during their unemployment spell. We look at a household measure because any individual in a household could access SNAP in response to the income shock caused by the respondent's job loss, and the respondent would ostensibly benefit from that program access. We measure participation in UI by looking at receipt of UI for respondents only during their unemployment spell. We define joint SNAP-UI participants as those who access both SNAP and UI during their spell of unemployment, but not necessarily simultaneously. We create a set of mutually exclusive variables indicating if respondents participated in SNAP only, UI only, experienced joint participation or no program participation over the course of a spell. In general, our unit of analysis is "person-spell" and we examine each spell of unemployment experienced by an individual as a separate event.

Measurement of Spells

        Throughout the paper, our unit of analysis is the spell of unemployment. To identify spells of unemployment we create an indicator for our sample where respondents are working in months t-3, t-2, and t-1, and not working but seeking work in month t. If a respondent enters a spell of unemployment and then has one to three months where they are not measured as unemployed (due to missing data, or status as working or not in the labor force) subsequent months of unemployment are coded as part of the initial spell, and months of unemployment are counted in reference to the initial month. Standard

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[2] We restrict our sample to respondents who remain in the sample for six months following job loss because we are concerned with non-random attrition. It is possible that leaving the SIPP sample shortly following job loss is correlated with our dependent variable of interest (program access). Because of this we ran our analyses with the full population (including respondents who left the sample prior to the end of the panel and shortly after job loss) and with a group restricted to those who remained in the survey for at least six months following job loss. The results were substantively similar, and here we present results with the sample that is restricted to those who stayed in the survey for at least six months following job loss.

errors are clustered by person to account for multiple spells occurring for the same individual.

In addition, for one analysis of program participation in a given month following job loss, we create a month-specific indicator of UI participation only, SNAP participation only, or joint participation *in that month* regardless of behavior over the course of the spell.

Stratifying the Sample

We use educational attainment as the main variable for stratifying the population of program recipients. We follow this strategy for several reasons: first, educational attainment is highly predictive of labor market outcomes. We expect that higher educated individuals will have shorter, less severe spells of unemployment and need program help less (Gottschalk 2006). Second, educational attainment has been shown to be correlated with program participation in previous work: individuals with high levels of educational attainment are more likely to access UI than lower educated individuals (Gould-Werth and Shaefer 2012) and conversely individuals with low levels of educational attainment are more likely to access SNAP that individuals with high levels of educational attainment. Third, educational level is closely correlated with socioeconomic status. Individuals of higher socioeconomic status are often thought of as the target population for social insurance programs such as UI while individuals of lower socioeconomic status are considered the target population for social welfare programs such as SNAP (Soss 2000). However, socioeconomic status itself is difficult to measure (Hauser and Warren 1997).

Analytic Strategy

We begin by reporting a series of descriptive results that offer information about the changing nature of joint participation during the Great Recession. Then, we present multivariate models that attempt to assess the relationship between a series of factors and changing rates of joint participation[3].

Our descriptive statistics begin by examining the demographic composition of the group of joint participators pre- and post-recession. We then examine overall program participation by educational group, again both pre- and post-recession. Next, we present an additional set of descriptive statistics, examining the timing of program take-up to get a sense of whether respondents are using one program as a "first tier" of financial support when experiencing the economic shock of job loss and the second program as a second tier when the primary program is not sufficient or (in the case of Unemployment Insurance) program eligibility expires. We include a month-by-month analysis of program participation, as well as a simple examination of joint participants and which program these individuals take up first, pre- and post-recession. When joint participation more often occurs late in a spell, this is evidence that the joint participation is responsive to the changing length of unemployment spells.

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[3] For each model that we present in LP form, we also ran the same model as a logistic regression and as a multinomial model with a dependent variable indicating whether during the spell there was no program participation, joint participation, participation in UI only or participation in SNAP only. All logistic results were consistent with LP results. Our multinomial models were either consistent with LP and logit results, or failed to converge due to inadequate sample size given the number of cells in our model.

Finally, using a series of linear probability models with joint participation as the dependent variable, we examine which factors account for the effect of the recession on joint participation. We first run an LP with joint participation as the dependent variable and the post-recessionary time period as the independent variable of interest and state-month unemployment rate as a control[4]. We then sequentially add variables controlling for the demographic characteristics of the job loser, the total length of the unemployment spell plus a squared term, a control for maximum possible duration of UI benefit receipt during the first month of the unemployment spell, and controls for liberalization of SNAP eligibility criteria[5]. Our full model specification is:

$$\text{Joint Participation}_s = \beta \; \text{recession}_{s,t} + \delta \; \text{educational level}_{s,i,t} + X_{,s,i,t} + \theta \text{spell-length}_{s,t} + \eta \; \text{maximum duration of UI benefits}_{state,t} + \mu \; \text{SNAP program variables}_{state,t} + \psi_{state,t} + \varepsilon$$

"Joint Participation" is a dichotomous variable where 1 represents joint program participation during spell s and 0 indicates participation in neither program or participation in just one program. Educational level is a dummy variable indicating whether the individual experiencing a give spell has less than a high school degree, a high school diploma only, some college or a bachelor's degree more. X represents a vector of individual and household-level covariates drawn from time t for the individual experiencing spell s. We include the respondent's race/ethnicity using a dummy variable indicating Hispanic/non-Hispanic and dummies for the racial groups Black, White, Asian and other. We also include, sex, age (25-36; 36-45; 46-55; 56-65), marital status (married v. unmarried) and a dummy variable indicating the presence of children in the household. θ is a vector that includes a measure of the length of the total spell of unemployment as well as a squared measure of the spell-length. Ψ is a vector that includes state dummies and the state-month unemployment rate. ε is our error term.

We control for two sets of changes to SNAP and UI during the Great Recession period that may have led to increased joint participation. First, "maximum duration of UI benefits" is a continuous measure of the maximum possible length of UI benefit receipt in the state where a spell occurred and at the time of the first month of the spell, and this variable accounts for the unprecedented durations of UI receipt possible for unemployed beneficiares during the Great Recession. "SNAP program variables" is a vector of dummy variables indicating whether the state in which the spell occurred had any of the following SNAP program features during the first month of the unemployment spell: broad base category eligibility , the proportion of earners that re-certify in three months, existence of an on-line application, and simplified reporting requirements. These variables, many of which were liberalized over the course of the 2000s, may increase the likelihood of joint participation by making it possible for more advantaged workers to access SNAP along with UI.

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[4] Because of concerns about collinearity, we ran a version of each model omitting state-month unemployment rate. Results were similar in each case.

[5] We ran variations of these models with different configurations of each variable. For simplicity of presentation, we present the results in cumulative fashion.

To account for the SIPP's survey design and for multiple spells of unemployment that occur for a single respondent we use probability weights and cluster our standard errors by individual.

Results

Changes in the demographic composition of joint participators

Table 1 compares the characteristics of joint participants during the pre-recession era to those in the post-Recession area. Overall, the composition of this group became more advantaged in the post-recession period. Joint participants in the post-Recession period were more likely to be white and non-Latino and less likely to be Black or Latino than they were during the pre-recession period. They were also more likely to come from married households before the recession and were even more likely to be married following the recession, and more likely to come from households with children though the proportion of joint participants residing in households with children fell following the recession. Indeed, over a third of joint participants during the post-recession period lived in a household with no children, while only 22.7 percent did in the pre-recession period.

Our main variable of interest is level of educational attainment. The post-recession period saw a decrease in the overall proportion of joint participants with low levels of education, and an increase in the proportion of those with high levels of education. The proportion of joint participants without a high school diploma decreases by 7.3 percentage points and the proportion of joint participants with a high school diploma only 2.3 percentage points. This decrease is offset by increases in the proportion of joint participants with some college education (3.2 percentage points) and those with a bachelor's degree or more (6.5 percentage points).

Table 2 is stratified by the educational level of the individual experiencing a given spell and whether the spell occurred pre- or post-Great Recession. It displays the proportion of spells within each group during which no social program was accessed; SNAP only was accessed; Unemployment Insurance only was accessed; or both programs were accessed. In each educational category, the proportion of spells where no social program was accessed declines following the Great Recession, although it is worth noting that the proportion of unemployed workers accessing neither program remains substantial (over 30% in all cases) even during the post recession period. A third of all workers with less than a high school degree received no assistance from either program during the post-recession period, compared roughly 46 percent in the pre-recession era. Those with a bachelor's degree were the most likely to go without any aid.

Across the categories of aid (SNAP only; UI only; and Joint SNAP-UI), there were increases among every educational group for every category. More unemployed workers were getting SNAP only, UI only, or both. As educational attainment goes up, the likelihood of accessing SNAP goes down, while the likelihood of accessing UI goes up. Within each educational group the proportional increase in joint participation is the largest. Among those without a high school diploma, 10.8 percent was joint SNAP-UI pre-recession, but 16.5 percent was post-recession. The increase among those with exactly a high school diploma was from 6.8 percent to 12.9 percent, and for those with some college it was 5.9 percent to 11.1 point, in both case nearly doubling. The proportional increase was largest for those with a bachelor's degree or more, with the

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proportion of unemployment workers jointly participating in SNAP and UI more than tripled.

Timing of program participation among different educational groups

What explains this increase in joint participation across all educational groups during the Great Recession? Figure 1 attempts to examine this by taking the highest and lowest educated groups and exploring how participation in the two programs changes over the course of a spell of unemployment. Each month is labeled relative to the month of job loss (month 0) so that the three months preceding job loss are labeled -3, -2, -1 and subsequent months are labeled 1, 2, 3, 4, etc. Thus, each proportion in a given month can be thought of as an independent sample of job losers who were unemployed that many months following job loss. We follow respondents for up to 12 months following job loss, but the majority of respondents exit our sample earlier due to changing labor force status (e.g. finding employment or exiting the labor force), non-response, or the end of the SIPP panel. Unlike in our other analyses, we here include respondents that do not remain in the SIPP for six months following job loss. Each proportion indicates the proportion of individuals experiencing in a spell of unemployment in month 0+n. who access either SNAP only, UI only or both programs in a given month. The horizontal axes of each chart in Figure 1 display the month of the spell, and the size of the sample for that month.

We find that the timing of participation in SNAP does not change substantially following the recession: among all groups the level of SNAP participation appears to reach a peak around the fourth month of a spell. In some cases the proportion of respondents accessing SNAP climbs later in the spell (both pre- and post-recession), but our descriptive statistics do not allow us to determine whether the high rates of SNAP access toward the end of the spell are related to the number of months of unemployment experienced or other characteristics of the respondents that remain in the sample after nine months.

In contrast, the timing of participation in the Unemployment Insurance program shifts markedly following the onset of the Great Recession: we see a large increase in participation later in spells of unemployment for all groups; the distribution of timing of participation increases until approximately month four and then plateaus among most educational groups. In contrast, prior to the Great Recession, participation would increase until a peak in month four, followed by a decline in participation. This difference can likely be attributed to program features: during the Great Recession many unemployed workers were entitled to up to an unprecedented 99 weeks of benefits, rather than the normal 26 weeks.

Table 3 looks specifically at the sequencing of program participation among joint participants, stratified by education level and pre- and post- recession periods. We compare the least educated group (less than high school) to workers with some college or more, as small sample size prevents us from examining workers with a bachelor's degree or more only. Both high and low educated joint participants were most likely to access SNAP first during the pre-recession period. But in the post-recession period, in both groups, there is a marked growth in the proportion of joint participants who enter both programs simultaneously. For example, in the pre-recession era, 58.0 percent of joint participants without a high school diploma entered SNAP first, but the same was true of

only 43.3 percent following the onset of the Great Recession. In contrast, among this group, 8.50 percent entered both programs simultaneously, while 33.5 percent did the same post-recession. The changes across time periods are similar among workers with at least some college experience. Interestingly, for both high- and low-educated respondents and both pre-and post recession, the vast majority of joint respondents who access SNAP prior to UI do so before the job loss occurs. For these respondents the *take-up* of the two programs is not a response to job loss, although SNAP benefits should increase in response to the income drop associated with job loss.

Multivariate Analysis

       In order to determine which factors account for the rise in joint participation associated with the Great Recession, we present a series of linear probability models in Table 4. All results were replicated with logit models and—when sample size permitted—multinomial logit models; results were substantively similar.

       Column 1 shows a simple regression examining the relationship of a spell occurring after the onset of the great recession on the probability of joint participation. When no control variables are included, having a spell occur in the post-recession time period is associated with a 4.9 percentage point increase in the probability that a job loser will access both UI and SNAP during a spell of unemployment, significant at the .001 level.

       During the Great Recession the demographic composition of the population of job losers changed, as did the group of states in which job losers were concentrated. To account for this change we include a vector of demographic controls and state dummies. When we account for the demographic characteristics of the population (Column 2) we uncover a suppression effect. When we control for demographic and geographic factors, we find the association between the recession and joint participation to be stronger: the recession is associated with a 5.7 percentage point increase in the probability that a job loser will access both programs during the unemployment spell.

       In column 3 we account for the length of an unemployment spell. We find that an additional week of unemployment in a spell is associated with a 1.2 percentage point increase in the probability of joint participation. When demographic controls are included, spell length accounts for about a third of the association between the recession and joint participation. When we control for spell length as well as demographic characteristics, we find that the recession is associated with a 3.6 percentage point increase in the probability that both programs will be accessed.

       Finally, in columns 4 and 5, we add in controls for the program changes to SNAP and UI that overlapped with the recessionary time period. When we control for the extended length of UI benefits and the liberalization of SNAP eligibility criteria we do not find any single significant association between these policy changes and the probability of joint participation. However, when we control for these policy changes, the point estimate of the association between the recession and the probability of joint participation decreases to 2.0 and is significant only at the .1 level.

       In Table 5 we stratify our sample by educational level and re-run the same series of LP models. Columns 1-5 replicate our analyses among job losers with less than a high school diploma and columns 16-20 replicate the analyses among job losers with bachelor's degrees. Among these groups, controlling for the demographic characteristics

of job losers explains nearly all of the association between the recession and the probability of joint participation. Among individuals without high school diplomas, controlling for demographic characteristics causes a loss of statistically significant association between the recession and the probability of joint participation. Among those with bachelor's degree's, the level of significance inflates to .1 and then greater with the inclusion of additional controls.

Interestingly, in results not presented here due to space constraints, we see that among the most- and least- educated respondents in our sample, the demographic characteristics have different associations with the probability of joint participation. In both groups having children in the household is associated with an increase in the probability of joint participation. However, among those with less than a high school diploma, being aged 56-64 and being female are strongly associated with an increased probability of joint participation. Among the highly educated, we see a weak or no effect. Among the highly educated, however, we see a strong positive association with joint participation and 1) being married and 2) being African American, whereas we see a weak association with being married and no association between race and joint participation among respondents with less than a high school diploma. Finally, among highly educated respondents we see a NEGATIVE association between joint participation and Latino ethnicity, whereas among low-educated respondents we see a weak, positive association. For both groups, however, the point estimate decreases to essentially zero and all statistical significance is lost in the full model: the inclusion of our controls accounts for all association between the recession and the probability of joint participation.

Columns 6-10 replicate our analyses among job losers with a high school diploma and columns 11-15 replicate the analyses among those with some college. The results for these groups are similar to those of the full population: demographic characteristics act as suppressors, spell length accounts for a substantial chunk of the association between the recession and the probability of joint participation, and we lose any statistically significant association between the recession and the probability of joint participation in our full model, though the point estimate remains non-negligible and positive.

Discussion

We saw four possible reasons for the increase in joint participation following the onset of the Great Recession:

1) The changing demographic characteristics of the unemployed
2) General responsiveness of the social safety net to changing economic conditions (e.g. those who experience longer spells of unemployment access are able to take up programs that they need)
3) Planned countercyclical features of the programs (e.g. federal UI benefits extensions, waiving of the SNAP ABAWD requirement)
4) Fortuitously timed policy changes in expanding the availability and accessibility of the SNAP program.

Our descriptive results show that, while the demographically disadvantaged bore the brunt of the Great Recession, joint participants as a group became *more advantaged*

during the post-Great Recession years because of a greater increase in joint participation among higher-educated job losers. Further, our multivariate results suggest that demographic characteristics do not explain the association between the Recession and joint participation—in fact, they act as repressors, masking the extent of the association between the recessionary years and the probability of joint participation. These results lead us to believe that demographic changes in the population of job losers cannot fully explain the rise in joint participation during the Great Recession.

When we examine the timing of program participation during the Great Recession we see increases in joint participation late in spells, and also find that joint participants are more likely to take-up both programs simultaneously in the recessionary context. Turning to our multivariate findings, we find that the increased length of unemployment spells is a primary mechanism through which joint participation increased during the Great Recession. Our descriptive results suggest that this mechanism may work in two ways: 1) respondents may be unemployed for longer periods of time and take up Food Stamps later in their spells, as a complement to their UI benefits, 2) respondents may anticipate the increased length of their spell and take up both benefits immediately following job loss in order to use all possible resources to smooth consumption over the course of their spell.

Finally, our multivariate results suggest that, together, the planned countercyclical features of the social safety net programs (e.g. UI extensions) and the fortuitously timed expansion of the SNAP program explains the majority of the remaining association between joint participation and the Great Recessionary context. Our main analyses show some remaining weak association between joint participation and the recessionary period, particularly for middle-educated groups. It is possible that this remaining variation could be explained by changing norms or increased information about these programs in the social networks of job losers. Unfortunately, survey data do not allow us to test these hypotheses.

Conclusion and Policy Implications

Our results show that the social safety net responded to the changes in the nature of unemployment following the Great Recession, as job losers experiencing more lengthy spells of unemployment could take up both SNAP and UI, as well as through planned countercyclical features and through the fortuitously timed expansion of the SNAP program. Our descriptive results show that the least- and most-advantaged job losers were less likely to participate jointly. For the most advantaged job losers, it is possible that they were able to turn to private safety nets during their unemployment spells. This is less likely for the least advantaged job losers. More work needs to be done in order to determine whether other aspects of the social safety net responded to their needs during the economic downturn, and if not, why the most vulnerable members of society were less likely to receive public aid.

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Tables and Figure:

Table 1: Demographic Characteristics of Joint UI-SNAP Participants, Pre- and Post-Great Recession		
	Pre-Recession	Post-Recession
White	0.651	0.662
	(0.030)	(0.026)
Black	0.284	0.240
	(0.028)	(0.023)
Latino	0.782	0.742
	(0.028)	(0.027)
Non-Latino	0.218	0.258
	(0.028)	(0.027)
Married	0.508	0.532
	(0.032)	(0.027)
Unmarried	0.492	0.468
	(0.032)	(0.027)
Children in Household	0.773	0.653
	(0.026)	(0.025)
No Children	0.227	0.347
	(0.026)	(0.025)
Female	0.542	0.466
	(0.032)	(0.027)
Male	0.458	0.534
	(0.032)	(0.027)
No HS Diploma	0.286	0.213
	(0.029)	(0.022)
High School	0.317	0.294
	(0.029)	(0.023)
Some College	0.328	0.360
	(0.030)	(0.025)
BA+	0.069	0.134
	(0.018)	(0.025)
N	3943	8176
Source: Authors' analysis of Survey of Income and Program Participation 2001, 2004 and 2008 panels Standard Errors in Parentheses		

	Less than HS Diploma		High School Diploma		Some College		Bachelor's Degree or More	
	pre-recession	post-recession	pre-recession	post-recession	pre-recession	post-recession	Pre-recession	post-recession
Table 2: Proportion of Unemployed Workers Accessing Social Programs by Education Level, Pre- and Post-Great Recession								
NEITHER	0.457	0.334	0.443	0.304	0.441	0.324	0.486	0.407
	(0.020)	(0.021)	(0.014)	(0.014)	(0.014)	(0.013)	(0.017)	(0.017)
SNAP ONLY	0.213	0.228	0.126	0.173	0.100	0.118	0.022	0.040
	(0.016)	(0.018)	(0.010)	(0.011)	(0.008)	(0.010)	(0.005)	(0.007)
UI ONLY	0.222	0.273	0.363	0.394	0.399	0.447	0.472	0.486
	(0.018)	(0.019)	(0.014)	(0.015)	(0.014)	(0.013)	(0.017)	(0.017)
JOINT	0.108	0.165	0.068	0.129	0.059	0.111	0.020	0.066
	(0.011)	(0.016)	(0.007)	(0.010)	(0.006)	(0.008)	(0.005)	(0.010)
N	873	656	1643	1362	1837	1776	1084	1017

Source: Authors' analysis of Survey of Income and Program Participation
Robust Standard Errors Listed in Parentheses
Note: data are analyzed by spell and clustered by individual

Table 3: Ordering of Program Access Among Unemployed Joint Program Participators by Education Level, Pre- and Post-Great Recession

	pre-recession		post-recession	
	less than high school	some college +	lths	somecoll+
SNAP first, after job loss	2.7%	5.4%	6.3%	6.5%
SNAP first, before job loss	55.3%	34.4%	41.8%	36.8%
UI First	33.6%	19.3%	37.8%	23.2%
Simultaneous	8.5%	40.9%	14.0%	33.5%
N	107	146	116	278

Source: Authors' analysis of Survey of Income and Program Participation 2001, 2004 and 2008 panels
Note: data are analyzed by spell and clustered by individual

Table 3: Ordering of Program Access Among Unemployed Joint Program Participators by Education Level, Pre- and Post-Great Recession

	less than high school		some college +	
	pre-recession	post-recession	pre-recession	post-recession
SNAP first, after job loss	2.70%	6.50%	6.30%	5.40%
SNAP first, before job loss	55.30%	36.80%	41.80%	34.40%
UI First	33.60%	23.20%	37.80%	19.30%
Simultaneous	8.50%	33.50%	14.00%	40.90%
N	107	278	116	146

Source: Authors' analysis of Survey of Income and Program Participation 2001, 2004 and 2008 panels
Note: data are analyzed by spell and clustered by individual

Table 4: All Education Levels, Probability of joint participation, Linear Probability Model

	1	2	3	4	5
recession	0.0486***	0.0570***	0.0364***	0.0316**	0.0204*
	(0.0052)	(0.0120)	(0.0127)	(0.0126)	(0.0103)
demographic controls + state dummies	N	Y	Y	Y	Y
No diploma		0.0270**	0.0251*	0.0254**	0.0233*
		(0.0133)	(0.0126)	(0.0126)	(0.0125)
Some College		-0.0102	-0.00913	-0.0091	-0.0100
		(0.0075)	(0.0078)	(0.0078)	(0.0084)
Bachelor's Degree or More		-0.0353***	-0.0310***	-0.0311***	-0.0300***
		(0.0066)	(0.0070)	(0.0070)	(0.0071)
State Unemployment Rate		-0.0005	-0.0004	-0.0023	-0.0024
		(0.0028)	(0.0027)	(0.0034)	(0.0042)
Spell Length			0.0118***	0.0119***	0.0120***
			(0.0014)	(0.0014)	(0.0014)
Spell Length Squared			-0.0001*	-0.0001*	-0.0001
			(0.000)	(0.000)	(0.000)
Maximum weeks UI available				-0.0005	-0.0006
				(0.0007)	(0.0007)
Maximum weeks UI available squared				0.000	0.000
				(0.000)	(0.000)
Broad Base Categorical Eligibility					0.0102
					(0.0123)
Re-certification Proportion					-0.0003
					(0.0167)
Online Application					0.0088
					(0.0079)
Simplified Reporting					0.0029
					(0.0093)
Observations	12,118	12,118	12,118	12,118	11,081
R-squared	0.008	0.053	0.081	0.081	0.085

Standard errors in parentheses, educational reference category is high school diploma only.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Figure 1: Proportion of Job Losers Participating in SNAP, UI, and both
by month of unemployment spell