Supported from Both Sides?
Changes in the Dynamics of Joint Participation in SNAP and UI Following the Great Recession

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Abstract

This paper uses panel data from the nationally representative Survey of Income and Program Participation (SIPP) from years 2000 through 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 UI and SNAP; a change in the sequencing of program entrance with joint participants becoming less likely to access SNAP first (also notable is the high incidence of joint participants who began accessing SNAP while still employed both pre- and post-recession); 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; the modernization of UI eligibility criteria; and the liberalization of SNAP eligibility requirements account for the remaining increase in joint participation. These results suggest that—through countercyclical design and through legislative action—our safety net programs have been responsive to a changed macroeconomic context and changing needs of the target populations of UI and SNAP. Further research, however, is called for to examine the sizable group of unemployed Americans who do not access help from either program.

Keywords: Supplemental Nutrition Assistance Program; SNAP; Unemployment Insurance; UI; Great Recession; Survey of Income and Program Participation; SIPP

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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); and

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 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 circumstances 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.

Using data from the Survey of Income and Program Participation (SIPP), we demonstrate below 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, as a whole, 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 able-bodied-adults-without-dependents [ABAWD] requirement); and

4. Policy changes resulting from new legislative action that expanded the availability and accessibility of the SNAP and UI programs.

Our multivariate results suggest that much 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, modernization of UI eligibility criteria, and the liberalization of SNAP eligibility requirement account for some of 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, it is important to note that despite the uptick in joint participation during the Great Recession, during the recessionary period—as in the non-recessionary period—a large proportion of job losers went unaided by either program.

BACKGROUND

Unemployment during the Great Recession

Since the start of the Great Recession, the United States has seen its unemployment rate increase from 5.0 percent to as high as 10.1 percent, 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 percent in December 2007 to a peak of 17.9 percent in February 2010, remaining above 14.0 percent 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 layoffs during recessions, UI recipiency rates usually go up during such contractions because a greater proportion of the unemployed is likely to meet UI nonmonetary requirements. In addition, during the Great Recession period policymakers 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 percent to nearly 75 percent.

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 and Kline, 2010; Shaefer, 2010; Shaefer and Wu, 2011; Gould-Werth and Shaefer, 2012). This is disproportionately a result of nonmonetary requirements (related to the reason for employment separation) rather than monetary (earnings) requirements (O'Leary and Kline, 2010; Shaefer, 2010; Shaefer and Wu, 2011). Further, Gould-Werth and 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)

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 percent, with 27 percent of the increase attributed to economic conditions.

Because of the SNAP income eligibility criteria, program participants are poor: in 2011, 75 percent had cash incomes below 50 percent of the poverty line. Only 1 in 6 of SNAP recipients had postsecondary education in 2011, and one-third had not completed high school (Rosenbaum, 2013). On the whole, 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 SNAP 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. More recent work focuses on the case of Florida during the recessionary period and finds that while SNAP recipients were more likely to access UI during the recession, the overall proportion

remained small, which points to limitations of the social safety net (Heflin and Mueser, 2013). This case, however, is also restricted to a single state.

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 to 2007, both programs were accessed during 8.0 percent of spells. In contrast, following the onset of the Great Recession from 2008 to 2011, we estimate that both programs were accessed during 15.2 percent of unemployment spells.

The present study seeks to uncover information about the changing demographic composition of joint UI-SNAP 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) policy changes resulting from new legislative action that expanded the accessibility of the SNAP and UI programs. 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 three- to four-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 early 2013, making it well timed for analyses of the Great Recession period. The 2001 and 2004 panels contain data on roughly 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; and SNAP and UI receipt and benefit amount. Unlike the Current Population Survey data, 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 and Kreider, 2008). However, the SIPP does relatively well in terms of reporting rates when compared to peer surveys. For example, Meyer and colleagues (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, SIPP data allow us to explore the dynamics of joint participation within a nationally representative sample.

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[1] Throughout this paper we will refer to the time period preceding the onset of the Great Recession as "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.

The Sample

We use the SIPP's longitudinal data to identify a sample of workers who 1) are between the ages of 25 and 64 when 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 one 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 six 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.

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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.

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 (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 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 more highly 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 than 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.

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, job loss occurring in the month of survey (to control for seam

bias), and state-month unemployment rate as controls.[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

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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.

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

unemployment spell, a control for the modernization of UI eligibility criteria, and controls for liberalization of SNAP eligibility criteria.[5] Our full model specification is:

$$\text{Joint Participation}_s = \beta\, \text{recession}_{s,t} + \delta\, \text{educational level}_{s,i,t} + X_{,s,i,t} + \theta\text{spell-length}_{s,t} + \eta\, \text{maximum}$$

$$\text{duration of UI benefits}_{state,t} + \mu\, \text{SNAP program variables}_{state,t} + \psi_{state,t} + \varepsilon$$

"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 given spell has less than a high school degree, a high school diploma only, some college, or a bachelor's degree or 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, the state-month unemployment rate, and a control for seam bias. ε is our error term.

We control for three 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 beneficiaries during the Great Recession. Then, we control the existence of the Alternative Base Period—a policy change designed to modernize the monetary eligibility criteria for UI eligibility. Because states may implement this policy contemporaneously with other modernizing

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

changes to the UI system, this variable captures the combined effect of these changes. "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.

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

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.

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 percent 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 to 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 percent, in both cases nearly doubling. The proportional increase was largest for those with a bachelor's degree or more, with the 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

Table 2
Proportion of Unemployed Workers Accessing Social Programs by Education Level, Pre- and Post-Great Recession

	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
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	1,643	1,362	1,837	1,776	1,084	1,017

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.

Figure 1
Proportion of Job Losers Participating in SNAP, UI, and Both by Month of Unemployment Spell
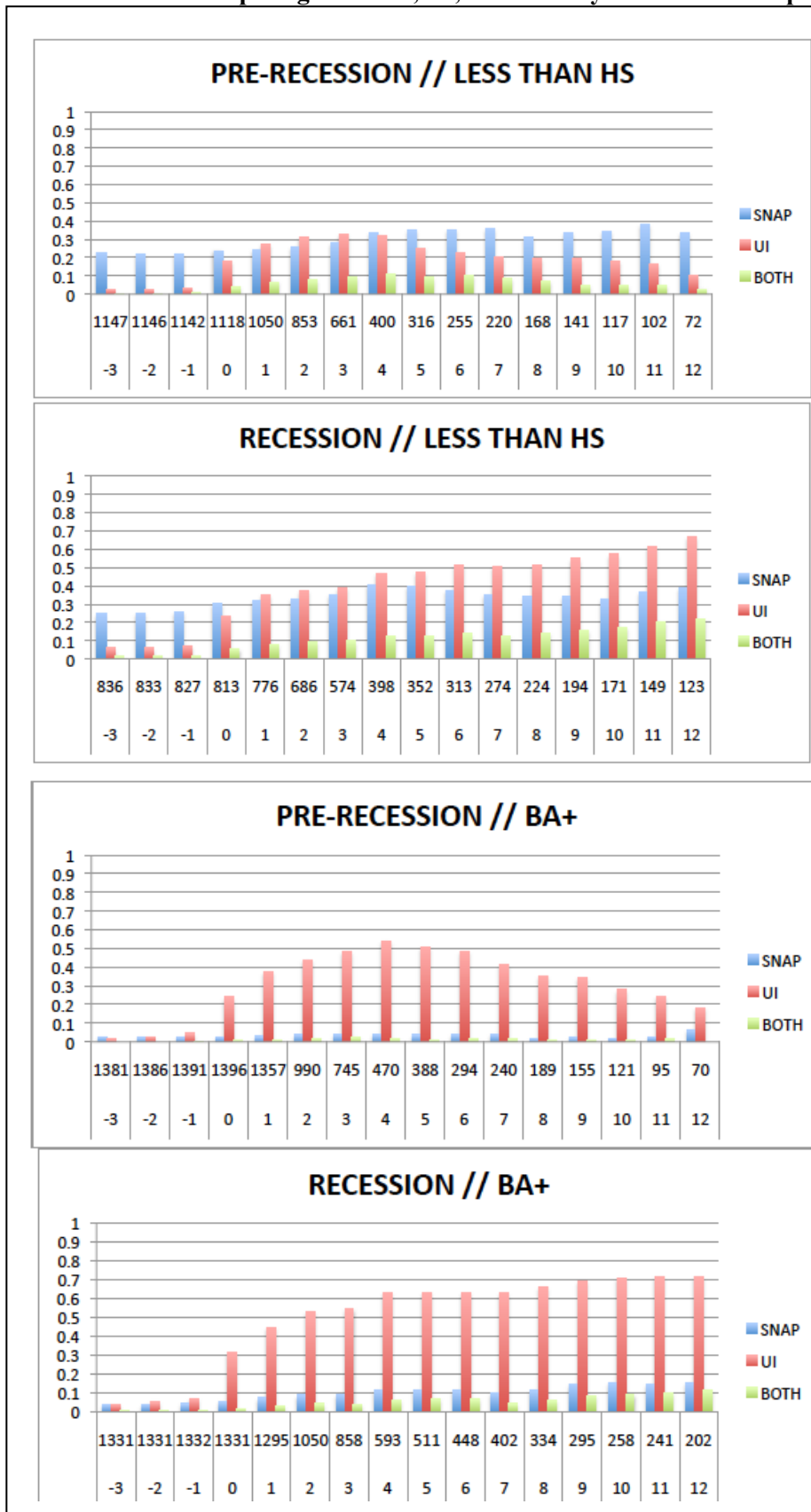
exploring how participation in the two programs changes over the course of a spell of unemployment. Each month is labeled relative to the month of job loss (month 0) so that the three months preceding job loss are labeled -3, -2, -1 and subsequent months are labeled 1, 2, 3, 4, etc. Thus, each proportion 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 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 4 and then plateaus among most educational groups. In contrast, prior to the Great Recession, participation would increase until a peak in Month 4, 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, 8.5 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 regression examining the relationship of a spell occurring after the onset of the Great Recession on the probability of joint participation. When the only control variables included are state unemployment rate and a control for seam bias, having a spell occur in the post-recession time period is associated with a 3.6 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.

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+	Less Than High School	Some College+
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 4: All Education Levels, Probability of Joint Participation, Linear Probability Model

	1	2	3	4	5
Recession	0.0357***	0.0557***	0.0350***	0.0267**	0.0140
	(0.00895)	(0.0107)	(0.0104)	(0.0112)	(0.0126)
Demographic controls + state dummies	N	Y	Y	Y	Y
No diploma		0.0279**	0.0260**	0.0262**	0.0240**
		(0.0109)	(0.0107)	(0.0107)	(0.0109)
Some College		-0.0111	-0.0101	-0.0100	-0.0111
		(0.0069)	(0.0069)	(0.0069)	(0.0072)
Bachelor's Degree or More		-0.0365***	-0.0323***	-0.0324***	-0.0315***
		(0.0074)	(0.0073)	(0.0073)	(0.0076)
Spell Length			0.0123***	0.0124***	0.0125***
			(0.0016)	(0.0016)	(0.0016)
Spell Length Squared			-0.0002**	-0.0002**	-0.0002**
			(0.000)	(0.000)	(0.000)
Maximum weeks UI available				0.0004*	0.0005
				(0.0002)	(0.0003)
ABP				0.0024	0.0055
				(0.0121)	(0.0140)
Broad Base Categorical Eligibility					0.0124
					(0.0109)
Re-certification Proportion					-0.0028
					(0.0222)
Online Application					0.0105*
					(0.0063)
Simplified Reporting					0.0023
					(0.0090)
R-squared	0.008	0.055	0.083	0.083	0.087

Notes: Standard errors in parentheses, educational reference category is high school diploma only. All models include unemployment rate by state and a control for whether job loss occurred in the reporting month.
Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

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 5.6 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 3.5 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 (at the .05 level) between these policy changes and the probability of joint participation. However, when we control for these policy changes, the point estimate indicating the association between the recession and the increased probability of joint participation decreases to 1.4 and loses statistical significance.

In Table 5 we stratify our sample by educational level and re-run the same series of LP models. Columns 1 through 5 replicate our analyses among job losers with less than a high school diploma. Among this group, 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 a bachelor's degree, the level of significance inflates to .1 and then greater with the inclusion of additional

Table 5: Probability of Joint Participation by Education Level, LP Models

	Less than High School					High School Diploma Only				
	1	2	3	4	5	6	7	8	9	10
Recession	0.0566***	0.0472	0.0110	0.00435	-0.0100	0.0575***	0.0750***	0.0555**	0.0531**	0.0361
	(0.0182)	(0.0350)	(0.0333)	(0.0361)	(0.0417)	(0.0112)	(0.0218)	(0.0216)	(0.0226)	(0.0252)
Demographic controls + state dummies	N	Y	Y	Y	Y	N	Y	Y	Y	Y
Spell Length			0.0189***	0.0187***	0.0204***			0.0135***	0.0135***	0.0138***
			(0.0047)	(0.0047)	(0.0049)			(0.0029)	(0.0029)	(0.0030)
Spell Length Squared			-0.0002	-0.0002	-0.0002			-0.0002*	-0.0002*	-0.0002*
			(0.0002)	(0.0002)	(0.0002)			(0.0001)	(0.0001)	(0.0001)
Maximum weeks UI available				0.0006	0.0006				0.0002	0.0004
				(0.0007)	(0.0008)				(0.0005)	(0.0006)
Maximum weeks UI available squared				-0.0112	0.0128				-0.0014	-0.0122
				(0.0394)	(0.0458)				(0.0240)	(0.0277)
ABP					-0.0314					-0.0092
					(0.0351)					(0.0201)
Broad Base Categorical Eligibility					0.00117					-0.0337
					(0.0921)					(0.0402)
Re-certification Proportion					0.0141					0.0104
					(0.0173)					(0.0134)
Online Application					0.0234					0.0155
					(0.0334)					(0.0164)
Observations	1,783	1,783	1,783	1,783	1,665	3,572	3,572	3,572	3,572	3,289
R-squared	0.007	0.082	0.136	0.137	0.149	0.010	0.057	0.080	0.080	0.085

(table continues)

Table 5 continued: Probability of joint participation by education level, LP models

	Some College					Bachelor's Degree or Greater				
	11	12	13	14	15	16	17	18	19	20
Recession	0.0474***	0.0595***	0.0405**	0.0324*	0.0255	0.0446***	0.0404**	0.0253	0.00964	-0.00505
	(0.0090)	(0.0163)	(0.0163)	(0.0173)	(0.0195)	(0.0101)	(0.0199)	(0.0181)	(0.0214)	(0.0229)
Demographic controls + state dummies	N	Y	Y	Y	Y	N	Y	Y	Y	Y
Spell Length			0.0125***	0.0126***	0.0120***			0.0070**	0.0070**	0.0075**
			(0.0026)	(0.0026)	(0.0027)			(0.0031)	(0.0031)	(0.0031)
Spell Length Squared			-0.0002*	-0.0002*	-0.0002			0.0000	0.0000	0.0000
			(0.0001)	(0.0001)	(0.0001)			(0.0002)	(0.0002)	(0.0002)
Maximum weeks UI available				0.0003	0.000				0.0007*	0.0007
				(0.0004)	(0.0005)				(0.0004)	(0.0006)
Maximum weeks UI available squared				0.0135	0.0122				0.00862	0.0280
				(0.0206)	(0.0237)				(0.0190)	(0.0241)
ABP					0.0224					0.0490**
					(0.0169)					(0.0213)
Broad Base Categorical Eligibility					0.0509					-0.0205
					(0.0376)					(0.0291)
Re-certification Proportion					0.00679					0.0198*
					(0.0103)					(0.0112)
Online Application					-0.00206					-0.0169
					(0.0158)					(0.0133)
Observations	4,279	4,279	4,279	4,279	3,888	2,484	2,484	2,484	2,484	2,239
R-squared	0.008	0.066	0.089	0.089	0.090	0.013	0.098	0.122	0.124	0.149

Notes: Standard errors in parentheses, educational reference category is high school diploma only. All models include unemployment rate by state and a control for whether job loss occurred in the reporting month.
Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

controls. Columns 16 through 20 replicate these analyses among job losers with a bachelor's degree or greater. Among these individuals, the addition of demographic controls only slightly decreases the association of the recession with joint participation, and brings statistical significance to the .05 level from the .01 level.

Columns 6 through 10 replicate our analyses among job losers with a high school diploma and columns 11 through 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); and

4. Policy changes resulting from new legislative action that expanded the availability and accessibility of the SNAP and UI programs.

Our descriptive results show that 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 SNAP 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 policy change from legislative action is the final mechanism through which the recessionary context may have affected the likelihood of joint participation, explaining the remaining association between joint participation and the Great Recessionary context.

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 lengthier 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. Finally, while joint participation increased in the recessionary period, when we break types of participation into SNAP-only, UI-only, joint participation, and no participation, the nonparticipants are the largest group, even in the recessionary period. It is this group that should be examined further.

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