The More Things Change, the More They Stay the Same:
The Safety Net, Living Arrangements, and Poverty in the Great Recession

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1. Introduction

The Great Recession led to large increases in unemployment, rising to a peak of 15.6 million persons (seasonally adjusted) in October 2009. Employment declined by more than 8 million between January 2008 and December 2009. [1] While the recession officially ended in July 2009, the unemployment rate remains high, at 7.5 percent in April 2013, several percentage points above the low point prior to entering the Great Recession.

In the wake of this sharp downturn, the share of persons living in poverty also increased. Official poverty increased by 2.6 percentage points, from 12.5 percent in 2007 to 15.1 percent in 2010. During this three year period, the percent of children in poverty increased by 4 percentage points from 18 in 2007 to 22 in 2010. This co-movement of labor market opportunities, economic growth and poverty reflects patterns experienced over prior business cycles (Bitler and Hoynes 2010; Blank 1989, 1993; Blank and Blinder 1986; Blank and Card 1993; Cutler and Katz 1991; Freeman 2001; Gunderson and Ziliak 2004; Hoynes et al., 2006; Meyer and Sullivan 2011).

At the same time, overall expenditures suggest that the social safety net provided significant support to households affected by the Great Recession. In 2011, Food Stamp expenditures amounted to 72.8 billion dollars and more than one in seven people in the U.S. are receiving benefits from the program. Maximum duration of Unemployment Insurance has been extended to up to 99 weeks, far beyond the normal maximum of 26 weeks or even the Extended Benefit maximum of 52 weeks in most state. Additionally, much attention has been given to the "private" safety net, particularly the response of living arrangements. Census figures show that more families are "doubling up" and more young adults are opting to live at home (Johnson 2011).

Against this backdrop of the social and private safety nets, in this paper we examine the relationship between poverty and business cycles historically and test whether there has been a significant change in this relationship during the Great Recession. We analyze both official poverty as well as an alternative poverty measure that incorporates taxes and the value of in-kind transfers

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[1] All employment outcomes in this first paragraph are seasonally adjusted.

(Citro and Michael, 1995). Our main analysis uses data from the March Current Population Survey, covering the years 1980 through 2011. We focus on poverty rates among the nonelderly, given the greater connection for this group to fluctuations in the labor market.

We explore the mediating role played by six core safety net programs-including Food Stamps, cash welfare (AFDC/TANF), the Earned Income Tax Credit, Unemployment Insurance, and disability benefits (Supplemental Security Income and Social Security Disability Income)-in buffering families from negative economic shocks. We use high quality administrative data on participation-both caseloads and total expenditures-to examine how use of these programs responded to the Great Recession and how this response differed from that during earlier business cycles. We then return to the CPS and measure how our baseline estimate of the cyclicality of poverty is affected by a simulated "zeroing out" of each of our six safety net programs. This, as we discuss, is a static exercise but provides a useful description of the protection provided by the safety net. A more complete analysis would require establishing full counterfactuals for eliminating the programs which is outside the scope of our analysis. We also use the CPS to examine the role played by the private safety net by looking at how living arrangements, such as the propensity to double-up and for young adults to be living at home, respond to shocks and how these choices vary over time and across cycles.

Throughout the paper, we identify the impact of the business cycle using variation across states in the timing and severity of cycles. We estimate state panel data models and measure the economic cycle using the state unemployment rate. We provide two different tests for whether the cyclicality of poverty, the public safety net, and living arrangements in the Great Recession represent a significant break from historical patterns. In the first, we compare the Great Recession to the early-1980s cycle and in the second we allow for asymmetric responses to the state cycle during national contractions and expansions and test if the Great Recession period is different from earlier contraction and recession periods.

This analysis yields several important findings. First, the relationship between unemployment

and official cash poverty remained remarkably consistent with historical patterns during the Great Recession. However, our more expansive alternative poverty measure shows that, if anything, the cyclicality of poverty has increased in the current period. Second, the safety net programs receiving the most attention through the Great Recession (Food Stamps and UI) exhibit adjustments very consistent with their behavior during previous historical cycles. The most dramatic change in the safety net, and one which is evident in the administrative data and our CPS analysis, is the post-welfare reform decline of cash assistance in providing protection for the most disadvantaged. Third, changes in living arrangements are modest and for the most part in line with prior cycles. Thus on balance we find, as our title suggests, that despite the attention to the apparent differences in the response of the private and social safety nets in the Great Recession, the relationship between cycles and economic well-being are as we would have predicted from the historical patterns.

In the final section of the paper, we provide speculative evidence on the possible role that safety net expansions during the 2000s and/or in the Great Recession may have played in causing moral hazard induced delays in returning to work/exiting from unemployment. We do so by looking at multiple program participation and by seeing whether states with larger amounts of spending on UI plus safety net programs around the peak of the recession in 2007 have experienced a slower labor market recovery. These suggestive tabulations are not supportive of a large moral hazard effect; although a full accounting of this possible moral hazard effect would require a comprehensive model of the marginal tax rates across all of these programs.

Our next section reviews the stylized facts about cycles, the Great Recession, and poverty. Section 3 touches on the major social safety net programs we focus on. Section 4 examines the cyclicality of poverty and how it has changed in the Great Recession. Section 5 examines the cyclicality of the public safety net-using administrative program data and the private safety net (through examining living arrangements). Section 6 speculates on how differences in the current safety net from that in previous downturns might have affected the work disincentives the system collectively provides. Section 7 concludes.

2. Cycles, the Great Recession and Poverty

We begin by examining the changes in poverty that have occurred, historically, across expansions and contractions in the U.S. Here and throughout the paper, we focus on the period from 1980 through the most recent data available (typically 2011). This allows for the comparison across two severe contractions (that of the early 1980s[2] and the Great Recession) and two smaller contractions (that of the early 1990s and the early 2000s). These cycles can be seen in Figure 1, where we present our measure of the economic cycle—the unemployment rate—annually over this period. The current recession officially began in December 2007 and since that time the unemployment rate has risen from 5 percent in December 2007 to a peak of 10.1 percent in October 2009. While the recession officially ended in July 2009, the unemployment rate remains high, at 7.5 percent in April 2013 (seasonally adjusted), several percentage points above the low point prior to entering the Great Recession. Based on the annual averages, shown in Figure 1, unemployment in the current recession increased from 4.6 percent in 2007 to 9.6 percent in 2010.

In addition to the unemployment rate, Figure 1 also includes data on our main measure of family well-being, the percent of persons in poverty, annually for 1980 to 2011. Official poverty status in the U.S. is determined by comparing total pre-tax family cash income to poverty thresholds, which vary by family size, number of children, and presence of elderly persons. (Thus, all persons in the same family have the same poverty status.) In 2011, the poverty threshold for a family of four (two adults, two children) was $22,811. The figure shows that poverty closely follows changes in the unemployment rate, rising in contractions and declining in expansions.

The official poverty measure has numerous drawbacks. Of particular relevance for our work, the measure of family cash income is not a complete measure of family resources. It excludes non-cash government transfers (such as food stamps or housing subsidies or housing vouchers); subtractions from income (such as income or payroll taxes); and additions to income (such as the

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[2] Two recessions in quick succession led to an increase in the unemployment rate from 5.8 percent in 1979 to 9.7 percent in 1982.

Earned Income Tax Credit) made through the tax system. Additionally, there is no geographic variation in the thresholds, despite wide variation in costs and wages across regions.[3] These limitations in the official poverty definition have been noted by many, and a National Academy of Sciences (NAS) panel made recommendations for revisions (Citro and Michael, 1995). Following the NAS report, Census started to release experimental poverty measures beginning with data for 1999. This led to the eventual release, in fall 2011, of the Census Supplemental Poverty Measure, which addresses many of the limitations in the official poverty rate (Short, 2011).

Figure 1 also plots NAS alternative poverty (incorporating non-cash transfers, taxes, out of pocket medical expenditures, and work-related deductions in income, and including consumption based measures in the thresholds) for the available years (1999−2011). This NAS measure of alternative poverty, while higher than official poverty, follows a similar trend until the end of the period. To examine more closely the recent period, Figure 2 presents official poverty and NAS poverty (left scale) and the unemployment rate (right scale) for 2007−2011. Notably, official poverty shows a 2.6 percentage point increase, from 12.5 in 2007 to 15.1 in 2010. During the same period, the NAS alternative poverty measure rose by one half percentage point. Given the striking differences across these measures and our interest in evaluating the efficacy of the safety net, throughout the paper we make use, to the fullest extent possible, of alternative poverty measures that rely on a comprehensive post-tax post-transfer income concept.[4]

3. The Social Safety Net

Given the severity of the job loss and increases in unemployment in the recent period, it is notable that poverty (as shown in Figure 2) did not increase more dramatically. The aim of this paper

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[3] Furthermore, the thresholds fail to adjust for many categories of expenses (e.g., shelter, clothing, work related expenses, medical expenses, and utilities), and thus do not capture measures of needs. The thresholds are also updated annually by the CPI-U, which may not well capture changes in needs.
[4] In Figure 1, we plot Census tabulations of the NAS alternative poverty for available years. In our own empirical analysis of the March CPS data, we are able to construct a consistent alternative poverty measure for calendar years 1980-1986, 1988-1990, and 1991-2011. The details of our measure are discussed below.

is to understand the factors that led to the relative stability of poverty rates across cycles. In particular, we explore the role of the safety net and of changes in living arrangements. We focus on six central elements of the social safety net: Food Stamps (now called SNAP or Supplemental Assistance for Needy Families), Temporary Assistance for Needy Families (TANF, known as Aid to Families with Dependent Children or AFDC prior to welfare reform), the Earned Income Tax Credit (EITC), Supplemental Security Income (SSI), Social Security Disability Income (SSDI), and Unemployment Insurance (UI). We examine these six programs because they represent the key cash and near-cash elements of the safety net for the non-elderly. [5] Before proceeding, we provide a brief description of these programs and how they have changed leading up to and during the Great Recession.

Cash Welfare (AFDC/TANF): Since its creation as part of the 1935 Social Security Act, AFDC provided cash welfare for single parent families with children. The program is means tested, requiring households to satisfy income and asset tests. A joint state-federal program, states set benefit generosity, while federal rules dictated most of the remaining eligibility and benefit rules. The benefits were structured in a manner typical for income support programs: if a family had no income, they received the maximum benefit or "guarantee." As their earnings increased, their benefit was reduced by the benefit reduction rate, leading to an implicit tax rate on earned income. Historically, this rate varied between 67% or 100%, providing strong disincentives for work (Moffitt 1983). Concerns about work disincentives (as well as disincentives to form two-parent families) led to the wholesale reform of the program. The Personal Responsibility and Work Opportunity Act (PRWORA) was enacted in 1996 and replaced AFDC with TANF. TANF now includes work requirements (with financial sanctions for noncompliance), a maximum of five years of *lifetime* use of welfare, and in many states, enhanced earnings disregards. These changes were designed to

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[5] The largest cash or near-cash safety net program is Social Security Old Age and Retirement benefits. Given our focus on the non-elderly, we do not analyze this program. Other programs which are part of the safety net, but are smaller in magnitude or cover a smaller segment of the population include public housing, WIC, the National School Lunch and Breakfast programs, and state programs such as General Assistance.

facilitate the transition from welfare to work and to reduce dependence on cash welfare. Caseloads fell to historic lows as a share of the population potentially eligible in the wake of this important reform.[6]

Food Stamps: Like AFDC/TANF, Food Stamps is a means tested program (whereby eligible families and individuals must satisfy income and asset tests) and benefits are also assigned using maximum benefits and then benefits are reduced by a benefit disregard or tax rate as earned income increases. But in contrast to AFDC/TANF, Food Stamps is a federal program with little involvement and few rules set by the states, and income eligibility threshold and benefits are adjusted for changes in prices each year.[7] Additionally, unlike many means-tested programs, Food Stamp eligibility is not limited to certain targeted groups such as families with children, aged, and the disabled. The benefit reduction rate is relatively low (30%), the income eligibility threshold is higher than other U.S. cash welfare programs, and the program serves the working and nonworking poor. Food stamp benefits can be used to buy a wide array of food items and the behavioral response to food stamps is similar to the response to cash (Fraker et al., 1992, Hoynes and Schanzenbach, 2009; Ohls et al., 1992). Welfare reform left Food Stamp rules relatively unaffected but did limit benefits for legal immigrants (who were deemed ineligible) and able-bodied adults without dependents 18-49 (who were limited to 3 months of benefits in a 3 year period). The 2002 Farm Bill reinstated benefits for legal immigrants. The American Recovery and Reinvestment Act of 2009 (federal stimulus or ARRA) led to a $25 (13.6 percent) increase in the maximum Food Stamp benefit (though October 2013) and also suspended the three-month time limit on able bodied childless adults temporarily in 2009 and 2010. In addition, beginning with regulatory changes in 1999 and continuing with the 2002 Farm Bill, the USDA has encouraged states to make changes in how they implement the program's rules to make

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[6] Even prior to welfare reform, the threshold at which eligibility for AFDC ended was very low in the income distribution. In 1996, on the eve of welfare reform, the median state provided benefits to families with income up to 68 percent of poverty and the median state's benefit level for a family of three was about 36% of the poverty guideline (U.S. House of Representatives 1996).
[7] Benefits are tied to the cost of a "market basked of foods which if prepared and consumed at home, would provide a complete, nutritious diet at minimal cost", the so-called Thrifty Food Plan, and then indexed periodically for increases in prices.

access to benefits easier. This has led to relaxing of asset requirements and expanding eligibility in some cases beyond the federal income eligibility limit (U.S. GAO 2007).

EITC: The federal EITC is a refundable tax credit with benefits targeted to families with children. The EITC functions as an earnings subsidy and as such is only extended to working families. The goal of the EITC is to increase after-tax income of lower earning taxpayers, primarily those with children, while incentivizing work. The expansion of the EITC, facilitated through tax acts in 1986, 1990 and 1993, has featured prominently in the movement toward more `in-work' assistance in the U.S. safety net (and with welfare reform, a decline in out-of-work assistance). The potential income transfer is substantial – in 2012 for a single taxpayer with two children, the maximum credit is $5,236 (annual payment) and the phase-out range extends to those with earned income of up to $41,952. Aside from its dramatic expansion in the 1990s, the EITC has undergone minimal changes in the past decade or more.[8] Notably, as part of the 2009 ARRA, the EITC expanded to include a more generous schedule for families with three or more children.

UI Benefits: Unemployment insurance is a social insurance program which provides temporary and partial earnings replacement for involuntary unemployed individuals with recent employment. As a social insurance program, UI is not means tested (limited to those with low income) and eligibility is a function of earnings history. UI benefits consist of three separate "programs". Recipients receive benefits for a fixed duration, typically up to 26 weeks, through "regular" state benefits, funded by employer contributions. Under the Extended Benefits program, jointly funded by states and the Federal government, UI benefits can be extended for 13 or 20 additional weeks in states experiencing high unemployment rates. Lastly, in most major downturns, Congress has enacted emergency extensions to unemployment; these programs tend to be relatively short lived and are explicitly countercyclical and fully federally funded.[9] In the Great Recession,

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[8] Beginning in 2002, the earnings eligibility range increased modestly for married couples (previously the schedule depended only on number of children).
[9] States administer their programs and set payroll taxes and benefit levels. Funding for regular state benefits are paid by the state trust fund while fiscal responsibility for the extended program is shared by the states and the federal

both extended and emergency programs provided expansions to UI (for a summary, see Rothstein 2011). Many states implemented Extended Benefit programs in the Great Recession, but as costs are typically split between the states and the federal government, some states chose not to participate. The 2009 ARRA, however, shifted the full cost of extended benefits to the federal government and other states opted in. Additionally, in June 2008 Congress enacted the Emergency Unemployment Compensation program, which (eventually) raised maximum UI benefit durations to as long as 99 weeks (Rothstein 2011).

Disability benefits: SSI is a cash "welfare" program, where (like AFDC) income and assets must be below the eligibility maximum requirements. SSI is primarily a federal program, although some states have supplemental benefits. Eligibility for SSI benefits is limited to disabled adults, disabled children and aged (age 65 or older) low income persons. Eligibility for disabled adults requires establishing a documented work-limiting condition, the inability to engage in "substantial gainful activity." Given our focus on the nonelderly, we limit our attention to SSI expenditures paid to the disabled and exclude payments to the elderly (where possible). SSDI is a social insurance program, funded by payroll taxes while working; benefits depend on employment and earnings history. Like SSI, eligibility requires that the existence of a work-limiting disability must be established, and recipients transition to the old age Social Security programs when they reach retirement age. SSDI is not income-tested and is received by poor and non-poor families.

In Figure 3, we plot real per capita expenditures from 1980 to 2011 for these six social safety net programs.[10] The shaded regions are annualized contractionary periods, based on the NBER recession dates.[11] To provide more detail, Table 1 presents further data for these programs for 2010

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government. Recently, the emergency extensions have been fully federally funded. During some downturns, the federal government has also helped fund the extended program.

[10] TANF expenditures include only the cash benefit payments and SSI only includes benefits paid to the blind and disabled (excludes payments to the aged). The EITC data are available only through 2010. For details on the data and sources see the appendix.

[11] The official NBER recession dating is monthly; this figure presents annual data. We constructed an annual series for contractions based on the official monthly dates, augmented by examination of the peaks and troughs in the national unemployment rate. See Bitler and Hoynes (2010) or Appendix Table 1 for more information on the annual dating.

(the high point of the unemployment rate in the Great Recession); the table documents the number of recipients, total expenditures on each program and average monthly benefits. Among the means-tested benefits, at the end of this period, total benefit spending through SNAP and the EITC are the largest, followed by SSI and then TANF cash benefits. Furthermore, SNAP spending is increasing in the Great Recession much more quickly than is spending on the other means-tested programs. Notably, in the wake of the 1996 federal welfare reform, TANF is a very small program—Table 1 shows that in 2010, less than 2 million families received cash TANF benefits at a cost of $10.7 billion compared to $64.7 billion for SNAP and $58.6 billion for EITC.

As is clear on this figure, UI is a central income replacement program in recessions and the increase in UI expenditures in the Great Recession is striking. Table 1 shows that at the peak of the national unemployment rate, the emergency program represented a large share of dollars spent on UI—in 2010 emergency benefits were about $70 billion compared to a combined $69 billion for regular and extended benefits. SSDI and SSI do not appear to have strong cyclical variation, although the graph shows the dramatic (for SSDI) and steady (for both) increase in expenditures in the programs throughout the period.

The amount of income provided to participants varies dramatically across the programs. Table 1 shows that average monthly benefits for the social insurance programs far exceed the benefits for the income-conditioned programs. Average monthly benefits (in 2010) are around $1,300 for UI recipients and $1,068 for SSDI recipients. Among disabled SSI recipients, the average monthly benefits are $518; for TANF they are $402; for Food Stamps, they are $285; and at the bottom, for the EITC, they are $187.[12]

This figure illustrates several changes in the safety net that motivate our work. First, with the decline of AFDC/TANF (as a result of welfare reform) and the expansion of the EITC, the safety net for low income families with children has transformed from one subsidizing *out-of-work* families into one subsidizing *in-work* families. Second, repeated federally-funded expansions to UI have led

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[12] The average EITC benefit is substantially higher if limited to families with children.

to longer benefit durations and more income protection. Third, benefits disbursed through the Food Stamp program have dramatically expanded in the Great Recession. Fourth, these changes have taken place against a backdrop of a steady rise in disability benefits through SSI and SSDI accelerating in the early 1990s. This last increase in part is related to declines in labor market opportunities for some workers (Autor and Duggan 2003, Black et al., 2002).

Given these changes to the safety net, we are interested in exploring how and to what extent these programs are providing protection to at-risk families in the Great Recession. In particular, we explore how the reductions in labor market opportunities in the Great Recession translate into changes in poverty and family well-being. Has the growth in the social safety net buffered families against the adverse impacts of the Great Recession? How does this compare to prior recessions? To help guide our thoughts about this, Figure 4 presents tabulations, based on the March Current Population Survey, for the trough of the Great Recession (2010 calendar year, 2011 CPS survey) compared to the trough of the early 1980s recession (1982 calendar year, 1983 CPS survey). We construct two samples in each year—all nonelderly individuals and the subset of those individuals in households with (cash, pre-tax) income less than 200 percent of official poverty. We plot the share of households with income from various sources: SNAP, AFDC/TANF, UI, SSI, and SSDI. Because of data limitations in 1982, the "SSDI" measure (for both years) includes all payments through OASDI (social security retirement, survivor, and disability benefits). This figure shows the clear fall in the importance of AFDC/TANF, and the corresponding rise in Food Stamps and SSI. Interestingly, the fraction of households with UI is slightly lower in 2010 than 1982.[13]

4. The Cyclicality of Poverty, Historically and in the Great Recession

In this section, we document the historical relationship between economic cycles and poverty and test for a change in that relationship in the Great Recession. Our empirical strategy exploits

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[13] Given possible increases in underreporting of some of these programs over time (Meyer, Mok and Sullivan 2009), the increase in SNAP and SSI is even more striking.

variation in the timing and severity of cycles across states to estimate the effect of labor market conditions on household outcomes. Specifically, we measure the business cycle using the state unemployment rate.[14] We estimate a basic state panel fixed effects model:

(1) $y_{st} = \beta UR_{st} + \alpha_s + \delta_t + \varepsilon_{st}$

where subscripts refer to state s and year t. UR_{st} is the state unemployment rate and equation (1) also controls for state and year fixed effects, α_s and δ_t respectively. In all results in the paper, we cluster standard errors at the state level, and the regressions are weighted using the relevant denominator (here the CPS weighted population in the state-year cell).

Our analysis uses data from Annual Social and Economic Supplement to the Current Population Survey (CPS), administered to most households in March. The ASEC is an annual survey that collects labor market, income, and program participation information for the previous calendar year, as well as demographic information from the time of the survey. Our sample uses the 1981 through 2012 CPS surveys, corresponding to 1980-2011 calendar year outcomes. We construct our outcomes of interest (poverty, living arrangements, safety net income and participation) using households as the economic unit. We assign these household outcomes (e.g., poverty) to each member of the household. Given our focus in the paper, we then limit the sample to include all nonelderly persons. This data is then collapsed, using the March CPS weights, to state by year cells, which are merged to annual state unemployment rates.

Panel A of Table 2 presents the results of this model for data spanning years 1980−2011. The table presents results for official poverty and our alternative post-tax post-transfer poverty. To explore the impacts of the cycle at different points of the income distribution, we present models for the share of nonelderly persons with household incomes below 50 percent, 100 percent, 150 percent and 200 percent of the poverty level. We calculate alternative poverty using data provided in the public-use CPS data and available on a consistent basis back to 1980 (Bitler and Hoynes 2010,

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[14] Later drafts will also examine other ways of modelling the state cycle such as state GDP or changes in the employment to population rate.

2013). We developed this measure based on the recommendations in the National Academy of

Sciences report (Citro and Michael, 1995); it is also closely related to the measure of resources used

in the Supplemental Poverty Measure. Our alternative income measure adds to cash money income

the cash value of non-cash transfers (food stamps, school lunch, housing subsidies, energy subsidy,

Medicaid, and Medicare), federal employee retirement benefit contributions and the implied rental

value of an owner occupied home, and subtracts taxes (FICA payroll taxes, property taxes, net

federal and state taxes [including the EITC, child and child care tax credits, and stimulus payments]).

We then combine this enhanced resource measure to the standard poverty thresholds.[15]

The first four columns of Table 2 show that cash poverty ("official poverty") is highly

cyclical. The results show that a one percentage point increase in the unemployment rate leads to a

0.74 percentage point increase in share below 100 percent poverty. This result is well in line with the

many prior studies that have examined this relationship (Bitler and Hoynes 2010, 2013; Blank 1989,

1993; Blank and Blinder 1986; Blank and Card 1993; Cutler and Katz 1991; Freeman 2001;

Gunderson and Ziliak 2004; Hoynes et al., 2006; Meyer and Sullivan 2011); our estimates here

update that work using data through the Great Recession. We also show that the point estimates

increase as we move up the income distribution (across columns 1-4). However, given the

differences in the baseline rates of the various multiples of povety across the columns in the table, we

also calculate and present percent impacts which are defined as the estimated coefficients divided by

the mean of the dependent variables (over the entire time period for which the relevant independent

variable is non-zero, here for the entire time period). These normalized coefficients (labeled "%

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[15] We constructed this alternative measure ourselves, based on data in the public-use March CPS files, to be as consistent over time as possible while including as many components of CPS experimental poverty measures as possible (e.g., Dalaker, 2005). Our alternative poverty measure differs from the SPM in a couple of ways. The SPM family resource measure incorporates deductions for out of pocket medical expenses, child care, and fixed costs of work. The SPM poverty thresholds vary with geographic area and by expenditures on housing, food, clothing, and utilities. We cannot use the SPM measure for our analysis, however, as it is unavailable in public-use micro data before 2010. For more details, see the data appendix. Note that SNAP dollars and energy assistance are self-reported by respondents; other components are imputed by the Census bureau. Meyer and Sullivan (2012) point out that official cash poverty is more closely related to measures of material deprivation than alternative post-tax post-transfer poverty. This raises some concern about relying on an alternative poverty measure, but in order to evaluate the effects of taxes and non-cash transfers we need a measure that incorporates these sources of income.

impact" in the table) show that the impact of a one percentage point increase in unemployment leads to a larger percent impact at the bottom of the distribution (e.g. 8.6 percent for less than 50% poverty) than higher up the distribution (e.g. 6.1 percent, 4.4 percent, and 3.5 percent at 100%, 150%, and 200% of poverty, respectively).

Columns 5 through 8 present similar models for alternative poverty. The rates of being below the various shares of the poverty threshold measured utilizing a more comprehensive definition of resources are lower than were the cash poverty rates (see the dependent variable means in Table 2). The reductions are particularly large at the lowest income to poverty levels (below 50% and below 100% poverty) and less so at the higher income to poverty levels. This "tilting" of the income-to-poverty gradient reflects the high levels of various safety net programs and tax credits at the lowest income levels (the addition of tax credits and the value of non-cash benefits leads to increases in resources) and the potentially offsetting effects of taxes and non-cash benefits for the higher income levels.[16] Nonetheless, despite the changes in mean poverty rates and rates of being below various poverty multiples when we move to alternative poverty, the cyclicality of alternative poverty is strikingly similar to the cyclicality of official (cash) poverty. The notable exception to this is extreme poverty (below 50 percent poverty)—the results show that post-tax and transfer extreme poverty is substantially less cyclical than cash income extreme poverty (percent impact of 6.1 compared to 8.6). [add tests for differences]

We next modify the regression model to explore whether the cyclicality of poverty in the Great Recession represents a significant change from historical patterns. We perform two comparisons. In the first, we compare the Great Recession to the early-1980s recession by estimating the following model:

(2) $y_{st} = \beta_{80} D_{80} UR_{st} + \beta_{GR} D_{GR} UR_{st} + \beta_O D_O UR_{st} + \alpha_s + \delta_t + \varepsilon_{st}$

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[16] To be clear, the poverty thresholds are identical between the cash and alternative poverty measures. However the adjustments to income will be positive for some (reflecting the value of non-cash benefits, value of tax credits such as the EITC) and negative for others (reflecting the effect of taxes).

We split 1980−2011 into three periods: the 1980s recession and expansion ($D_{80} = 1$), the Great Recession and expansion ($D_{GR} = 1$) and the rest of period ($D_O = 1$). The corresponding coefficients β_k measure the cyclicality over a given period k (there is no main effect). These periods are 1980−1989, 1990−2006, and 2007−2011 and are assigned based on the periods of peak national unemployment rate to year before the subsequent peak of the national unemployment rate.[17] In this specification, we focus on β_{80} and β_{GR}, and test whether the cyclical responsiveness during the Great Recession is different than the 1980s cycle.

In the second comparison we break 1980-2011 into periods of contraction (D_{CON}) and periods of expansion (D_{EXP}) and test if the Great Recession period is different from earlier contraction and recession periods. This approach pools the pre-GR cycles and allows for asymmetric effects in contractions and expansions. We estimate the following model:

$$(3) \qquad y_{st} = \beta_{CON} D_{CON} UR_{st} + \beta_{EXP} D_{EXP} UR_{st} + \beta_{GR}^{CON} D_{GR} D_{CON} UR_{st} + \beta_{GR}^{EXP} D_{GR} D_{EXP} UR_{st} + \alpha_s + \delta_t + \varepsilon_{st}$$

Appendix Table 1 defines the contraction and expansion periods. The coefficients of interest are β_{GR}^{CON} which captures the difference between the cyclicality in the GR and the cyclicality in previous recessions and β_{GR}^{EXP} which captures the difference between the cyclicality in the expansion out of the Great Recession (compared to previous expansions). We should note there that we only have one year of expansion (2011); these results may change substantially as we move through the expansion.

These results are presented in panels B and C of Table 2. Starting with Panel B, five of the eight poverty measures show larger point estimates for the period beginning in 2007 ("UR x GR") compared to the early 1980s cycle ("UR x 1980s"). For only two of these outcomes—alternative income below 150 and 200 percent of poverty—are the differences statistically significant [tests not shown]. The results for these two outcomes show that in the 1980s cycle, a one percentage point

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[17] It is worth noting that our identification strategy leverages variation in the timing and severity of cycles across states. Yet we use the national cycle for unemployment to identify these three periods. We do this because of the focus here on the "national" Great Recession and possible changes in the safety net that have taken place during it.

increase in unemployment led to a 0.7 percentage point increase in alternative income below 150% poverty and a 0.8 percentage point increase in alternative income below 200% poverty. In the Great Recession period, a one percentage point increase in unemployment led to 0.9 and 1.3 percentage point increases in poverty at those levels. The most striking although not statistically significant result is the risk of extreme alternative poverty (below 50 percent of poverty)—in the 1980s cycle a one percentage point increase in unemployment led 4 percent increase compared to a 7 percent increase in the Great Recession cycle.

The results in Panel C provide a similar story. The main effects for unemployment (the first two rows of estimates in Panel C) show an asymmetric response to cycles—a one percentage point change in unemployment leads to larger effects on poverty in expansions than in contractions [add test]. All eight estimates in the next row ("UR x Contraction x GR") are positive, indicating that the effect of a one percentage point increase in unemployment during the Great Recession leads to larger increases in poverty across the outcomes when compared to all other contractions. Notably, these differences are statistically significant for all four alternative poverty measures. Conversely, seven of the eight coefficients in the last set of estimates ("UR x Expansion x GR") are *negative*, indicating that the effect of a one percentage point increase in unemployment during the expansion coming out of the Great Recession is leading to smaller improvements in poverty across the outcomes (compared to all other expansions), with the caveat that this recovery is ongoing.

In sum, the analysis in this and the prior section show that expenditures in several key elements of the safety net have expanded significantly in the Great Recession. These programs include Food Stamps, UI and (perhaps more a reflection of prior trends) SSI and SSDI. On the other hand, spending per capita on the main guaranteed income floor for families with children, TANF, is at historic lows. The net effect of these changes on poverty-as a function of variation in the timing and severity of state cycles-is that increases in unemployment are leading to larger increases in poverty in the Great Recession. And the expansion out of the Great Recession, while nascent, is not showing the reductions in poverty that we would have expected from historical patterns.

5. Assessing the Role of Private and Public Safety Nets

The previous section documented the historical relationship between economic cycles and poverty and showed that families were more at risk of falling into poverty due to the shocks during the Great Recession, compared to earlier recessionary periods. Here, we try to learn more about the role of public and private safety nets in buffering families from the effects of economic cycles on poverty and in so doing to understand more about how the effects of the Great Recession differ from the earlier experiences. In particular, we explore two dimensions of protection. First, we explore the private safety net, and in particular focus on household living arrangements. Second, we explore the role of the social safety net.

A. Private Safety Nets and Household Composition

We begin by examining the role of the private safety net in helping absorb shocks from recessions. Individuals and families may adjust to shocks by "doubling up" or sharing living conditions. One example of this is young adults living at (or moving back to) home (Pew Research Center 2009). Another example is two related (or unrelated) families sharing a household. There is a small literature that examines how these living arrangements change with business cycles (London and Fairlie 2006, Mykyta and Macartney 2011, Painter 2010). We contribute to this literature by exploring a variety of measures of household composition, examining a relatively long historical period (1980–2011), and testing for significant changes in living arrangements and the cycle during the Great Recession.

We return to the March CPS data, covering 1980–2011, and continue to analyze our nonelderly sample. As above, we construct our measures of living arrangements at the household level, and assign these measures to each person. We then collapse the individual data to state-year cells. The results are in Table 3. As with the above analysis of poverty, we present three sets of estimates: panel A presents estimates for the full sample period (equation 1), panel B compares the

Great Recession cycle to the early 1980s cycle, and panel C tests for differences between the GR and the expansion out of the GR, compared to earlier recession and contraction periods.[18]

The first two columns provide basic "count" measures of household composition, with the average number of persons (column 1) and families (column 2) per household.[19] The results show that households increase in size only modestly in economic downturns—a one percentage point increase in unemployment rates leads to 0.6 percent increase in the number of persons and a statistically insignificant 0.2 percent increase in the number of families. Following Mykyta and Macartney (2012), in column 3, we count the number of "extra adults" in the household. We define extra adults to be all persons over age 18 who are neither the household head nor the spouse of the head.[20] In column 3 we identify households that contain an "unconnected young adult", which we define as a person aged 18-30, who is neither in school nor working full time. These results show slightly larger but still very modest sized responses over the cycle. A one percentage point increase in the unemployment rate leads to an insignificant 1.2 percent increase in the number of "extra adults" and a statistically significant 2.9 percent increase in the propensity that the household contains an "unconnected" young adult.

Hoynes, Miller and Schaller (2012) document that this most recent recession disproportionately affected several demographic groups, one of which is young adults. To learn more about this young adult group, in the final four columns we limit the sample to those ages 18-30 and examine their living arrangements. In particular, we consider four mutually exclusive and exhaustive states: living alone, living with their parents, living with other relatives, and all other living

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[18] Living arrangements are measured of the time of the survey, which is typically in March. To correspond with the analysis of poverty and the safety net, we match the observation in year t to the unemployment rate over the prior calendar year.

[19] [to add] definition of families in this measure. How do individuals (non family units) come in here?

[20] Mykyta and Macartney, in their Census report, exclude the cohabitating partner in the count of extra adults. They are able do this because they examine only the most recent years in the CPS, when cohabitants are identified.

arrangements.[21] These results confirm our prior—in downturns, young adults are less likely to live independently, and are more likely to live with their parents or other relatives.

Panels B and C explore whether the mediating effects of living arrangements are different in the Great Recession. Beginning with the first four columns, the most striking differences correspond to the presence of "extra adults" (column 3) and "unconnected young adults (column 4). Increases in unemployment during the Great Recession are leading to larger increases in extra adults in the household compared to the other periods. For example, Panel B shows that a one percentage point increase in unemployment leads to a 2.4 percent increase in the number of extra adults in the household during the Great Recession compared a 0.6 percent increase in the 1980s cycle. Surprisingly, given the significant attention to this issue, the effect of a one percentage point increase in unemployment on the propensity to have "unconnected young adults" in the household is *lower* in the Great Recession compared to the 1980s cycle. Qualitatively similar findings are shown for the comparisons in Panel C.

B. The Social Safety Net

In addition to the private safety net, the social safety net plays an important role in protecting against economic downturns. We learned something about this above, by exploring the differences in the cyclical responsiveness of cash poverty versus alternative poverty. Here we explore these issues more comprehensively. We begin with a direct examination of the cyclical responsiveness of the central safety net programs: AFDC/TANF, Food Stamps, EITC, UI, SSI, and SSDI.[22] We do so using administrative data on aggregate state level caseloads and expenditures. This analysis extends existing estimates on the cyclicality of safety-net programs (e.g., Bitler and Hoynes 2010; Blank 2001; Corsetto 2012; Ziliak et al., 2000; Ziliak et al., 2003). [NEED CITES FOR UI]

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[21] Currently, in Table 3, the "other" category includes individuals living with their spouse and/or children (and no other relatives). In future drafts, this will be revised and we will instead identify those living independently as married or unmarried individuals with or without own children but not living with any other adult relatives. Living with parents and other relatives with or without own children will be the second and third categories. The "other" category will be the remainder, including those living with no other relatives.

[22] At this time, we do not have complete data for SSI and SSDI. A future draft will contain these estimates.

We begin by exploring how the number of recipients or families per capita participating in these programs varies with the unemployment rate, using administrative data. These estimates are provided in Table 4, where we present three panels (estimates of the same models presented in Tables 2 and 3). AFDC/TANF, Food Stamps, and UI are measured monthly, while the EITC is annual. The counts for AFDC, Food Stamps, and EITC correspond to families or households. The UI data are reported as weeks of UI per month; what we present here is the total population probability of being on UI for 52 weeks on a monthly basis, constructed by dividing total weeks within the month by 52 (unduplicated counts are unavailable). As mentioned above, the UI program consists of three elements: regular state benefits, state extended benefits and emergency benefits. We are able to measure state regular plus extended benefits for the entire period; however we only have emergency benefits beginning in 1988. We thus present results for two UI caseload measures: state regular plus state extended benefits for 1980-2011 and regular plus extended plus emergency benefits for 1988-2011. Each of the safety net caseload measures are divided by state-year population to create per capita measures.[23]

The results are in Table 4. Panel A, with estimates for the full sample period, shows that AFDC/TANF, Food Stamps and UI are all countercyclical (and Table 5, Panel A shows that this holds when measured by expenditures per person as well). UI is the most responsive of the three, with a one percentage point increase leading to a 13.3 percent increase in per capita regular plus extended benefits and a 16.3 percent increase in total per capita UI recipients. In contrast, a one percentage point increase in the unemployment rate leads to a 5.5 percent increase in per capita caseloads for AFDC/TANF and a 3.6 percent increase for Food Stamps. The final column shows that the EITC has a very small, but statistically insignificant, countercyclical pattern. This is an important result and reflects the "in work" requirement of the EITC. In other work, we show that this masks a

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[23] The sources for the administrative data are US Department of Health and Human Services (2013), US Department of Agriculture (2013), US Department of Labor (2010), and US Internal Revenue Service (2012). With the exception of the EITC, which covers 1980-2010, the other safety net programs cover 1980−2011.The state population data comes from SEER. See the data appendix for more details.

modest countercyclical effect for married couples and an insignificant *pro*-cyclical effect for single

parents on the EITC (Bitler, Hoynes and Kuka 2013). We argue that this is consistent with the

expected effects of job loss on one versus two parent families.

As a companion to the analysis of caseloads, in Table 5 we estimate similar models for

expenditures on AFDC/TANF, Food Stamps and UI. The data here correspond to annual per capita

real (2010$) expenditures. The results in panels B and C of Tables 4 and 5 provide tests of whether

the responsiveness of the safety net programs has changed during the Great Recession. Three

important findings are apparent from these results. First, in the post-welfare reform era the protection

provided by TANF when shocks hit has all but disappeared. Panel B shows that in the 1980s cycle, a

one percentage point increase in the unemployment rate leads to a 5.5 percent increase in AFDC

caseloads per capita. During the Great Recession period, this has fallen to a statistically insignificant

0.8 percent increase and cash spending per capita is actually lower in the Great Recession. Second,

the expansions in Food Stamps eligibility in the past 10 years are evident in the point estimates in

panels B and C for both caseloads and spending per capita. For example, Panel C shows that the

responsiveness of per capita Food Stamp caseloads during the Great Recession is double the full

period (the coefficient on "UR x Contraction x GR" is 0.066 compared to the main effect of 0.069),

although not significant. Table 5 shows a similar doubling on the effect on Food Stamp expenditures

per capita for the Great Recession compared to the full period. Importantly, however, the differences

between the Great Recession and the earlier periods are never statistically significant. Finally, if we

limit UI to consider only state regular and extended benefits, the results suggest that the Great

Recession is providing statistically significantly less protection (the coefficient on UR x Contraction

x GR is negative in Panel C in both Tables 4 and 5), although in part this may be due to states

spending less on extended benefits when fully federally funded Emergency Benefits are available.

However, if we use the most comprehensive UI measure (including emergency benefits, which we

can do only for 1988+) we find small and statistically insignificant differences in the Great

Recession. Thus we conclude that the large peak in UI spending in Figure 3 is well within historical predictions.

6. The Role of the Safety Net in Providing Protection across Cycles

The analysis in the prior section shows how safety net caseloads and expenditures vary across business cycles and whether that relationship changed during the Great Recession. We extend that analysis by bringing together our analysis of poverty and our analysis of the safety net to explore how the safety net programs affect the cyclicality of poverty. To do so, we return to our CPS nonelderly sample and our alternative poverty measures. For each of our six safety net programs, we (one at a time) "zero out" the income from the safety net program, recalculate alternative household income, and recalculate alternative poverty. This is a "static" calculation in that is assumes nothing else changes in the household. In particular, the counterfactual does not incorporate the behavioral changes that would likely happen if the particular program didn't exist.[24] Nonetheless, comparing the cyclicality of the poverty with and without income from the safety net provides a useful description of the extent of protection provided by these programs. Given data limitations in the earlier years in the CPS, here our analysis labeled "UI" captures not only UI but also veteran's payments and worker's compensation. In addition, our analysis labeled "SSDI" captures all OADSI programs including retirement, survivors and disability benefits.[25]

Figure 5 presents some results of that exercise. There are four graphs in Figure 5, one each for alternative income below 50%, 100%, 150% and 200% poverty. For each safety net program, we plot the change (in percentage points) in the alternative poverty rates that is obtained by zeroing out the safety net program and comparing the resulting income to the relevant share of the poverty

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[24] In the case of programs where they encompass negative work incentives, then the net effects incorporating the behavioral component could be smaller. Ben-Shalom, Moffitt, and Scholz (2012) review existing literature on the evidence about labor supply effects of these programs.

[25] Beginning in 1989, we can identify separately income from UI, veteran's payments and worker's compensation. About 60 percent of the combined income comes from UI in non-recessionary periods, with larger shares (up to 70 percent or more) in the Great Recession. [ADD SIMILAR information about SS and SSDI].

threshold (we plot the zeroed out poverty measure minus base poverty measure). The blue bars on the left of each pair provide these statistics for 2010, the year with the peak unemployment rate in the Great Recession. The red bars on the right of each pair provide the same calculations for 1982, at the peak of the 1980s recession. On the right end of each graph we plot the base alternative poverty rates for the two years. For example, the top left graph shows that zeroing out food stamp benefits leads to almost a 2 percentage point increase in extreme poverty, relative to a base rate of 3.4 (3.5) percent in 1982 (2010). These results illustrate several important findings. First, the decline in importance of cash welfare is evident: TANF has very small impacts on poverty in 2010 while in 1982 TANF provided important protection at 50% and 100% poverty. Second, the growth of the EITC is also evident: in 2010 the EITC has sizable impacts on 100%, 150%, and 200% of the poverty level. Third, Food Stamps contributes more to declines in poverty at 150% and 200% of the FPL in 2010 (relative to 1982) [add tests]. Fourth, the effect of UI is evident at all poverty levels (and rises in importance with poverty level) but its antipoverty impact in 2010 is not dramatically different from 1982. Finally, the disability programs also impact poverty rates with SSI effects concentrated at the bottom of the distribution of the ratio of income to poverty and SSDI gains at 150% and 200% of the poverty threshold. Like UI, the disability programs do not show dramatic changes between these two years.[26]

We then use these "zero-out" poverty rates and estimate the state panel data models just as we did for "base" alternative poverty above (Table 2). We present these results for the full 1980-2011 period in Table 6 There are four panels in the table, one for each of the poverty levels (50%, 100%, 150%, and 200%). For example, in Panel A we estimate models for extreme alternative poverty. The base estimates, in column 1, show that a one percentage point increase in unemployment leads to a 0.15 percentage point or 6.1 percent increase in extreme poverty. This is identical to the results in Table 2 (panel A, column 5). The estimate in column 2 (Table 6, Panel A) shows that the point estimate increases to 0.269—this shows that zeroing out the income from Food Stamps increases the

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[26] Meyer, Mok and Sullivan (2009) document that underreporting of safety net participation and expenditures is declining over time in the March CPS (as well as other survey data). This would likely lead to a reduction in the measured antipoverty effectiveness between 1982 and 2010.

cyclicality of extreme poverty from 6.1 to 8.2 percent (for a one percentage point increase in unemployment). For five of the six safety net programs (SSI is the exception), the results in Panel A show that the zeroing out of the safety net program leads to an increase in the cyclicality of poverty. The effects of the safety net on the cyclicality of poverty are largest at the lowest poverty levels, with more modest changes at 150 and 200% poverty. This illustrates the protection (against economic shocks) that the programs are providing. A more complete analysis would require establishing full counterfactuals for eliminating the programs which is outside the scope of our analysis.[27]

Table 7 extends this analysis and presents estimates for the model that allows for different effects of the unemployment rate during the 1980s recession and the Great Recession (as in Panel B of Table 2). Because of our particular interest in the Great Recession period, we focus on the estimates for that period ("UR x GR"). Figure 6 provides a summary of those results. On the x-axis are the six safety net programs, representing the regressions corresponding to zeroing out income from each program. For each safety net program, there are four data points (bars), one for the each of the poverty rates (50%, 100%, 150%, and 200%). Each of the data points provides the difference between β_{GR} (in equation 2) estimated with "base" case poverty and β_{GR} estimated with the safety net program zeroed out. For example, for Food Stamps and 50% poverty, we see in Table 7, base poverty cyclicality is 0.193 and poverty cyclicality after zeroing out food stamps income the coefficient rises to 0.270 (showing that poverty is more cyclical in the absence of Food Stamps). The difference is -0.077 (0.193−0.270=−0.077) and that is plotted as the far left bar on Figure 6. A negative number here indicates that zeroing out this program leads to an increase in cyclicality. The Figure shows that, in the Great Recession period, UI benefits are providing the most protection, in terms of reducing the cyclicality of poverty. Food Stamps is also important, but only at the lowest poverty levels (50%, 100%). Like UI, SSDI reduces cyclicality across the distribution but at about

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[27] The analysis is static in the sense that it does not reflect adjustments due to elimination of the program ("zeroing out income"). It does, however, reflect adjustments that occur with response to changes in unemployment rates given the existing safety net programs.

half the rate that UI does. The EITC makes an impact on 100% poverty. SSI and TANF are providing little to no protection.

7. The Safety Net and Labor Supply

Ongoing policy discussion in the recent period about the slow recovery has brought attention to the possible role of the expanding safety net in delaying the return to pre-Great Recession employment levels. Mulligan (2012), for example, examines the role of expansions in the safety net and unemployment insurance in leading workers to delay returning to the labor market, a moral hazard effect of the safety net. Economic theory offers clear predictions that safety net expansions should have negative work incentives given the high implicit tax rates on earnings contained in these programs eligibility rules (e.g. Moffitt 1983, Currie 2006). The empirical question is then how large quantitatively are these negative disincentives? In this section, we speculate about the role these programs may play. We do not provide causal estimates, but instead descriptively assess the case for the role of the safety net in delaying the recovery.

The main safety net programs whose expansions during and around the Great Recession have been thought to lead to moral hazard include Unemployment Insurance and Food Stamps. The Federal response to the Great Recession led to an increase in the maximum duration of unemployment insurance to an unprecedented 99 weeks (through the Emergency Unemployment Compensation 2008 program). Meanwhile, over the 2000s, more generous eligibility rules have eliminated asset limits and otherwise simplified eligibility in many states for SNAP. Finally, there has been concern with the interactions of these programs with each other and other government programs.

A few authors have explored directly the link between the recent extensions to Unemployment Insurance and exits from unemployment.[28] Existing work by Rothstein (2011) suggests that the UI expansions had small but statistically significant effects on exit from

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[28] [TO DO: Expand this discussion to include Fed Bank letters and other papers.]

unemployment, but that these expansions raised the 2011 unemployment rate by at most 0.1 to 0.5

percentage points. Farber and Valletta (2013) find that the unemployment extensions during both the

relatively mild early 2000s recession and the Great Recession caused small and statistically

significant declines of similar magnitudes in the exit rate from unemployment. Farber and Valletta

(2013) also find that unemployment durations go up slightly, and that these effects are primarily due

to fewer exits from the labor force rather than fewer exits into new jobs. Aside from these two studies

of UI programs, there have been no studies (to our knowledge) that examine the work disincentives

of other elements of the safety net during the Great Recession (or downturns more generally).[29] We

are also unaware of papers looking at the effect of UI extensions on participation in other programs,

with the exception of Rothstein (2013) on the effects of the UI expansions on DI.

In the absence of substantive direct effects from any one of these programs on employment,

the labor force, or the unemployment rate, large work disincentive effects of the expanded safety net

require that these programs have important interactions in their eligibility rules and associated

marginal tax rates which are themselves a substantive work incentive. One approach to assess the

importance of these program interactions would require the researcher to parameterize program

eligibility rules (and their cross program interactions) and directly look at the extent to which more

generous program rules lead to less employment and more unemployment while controlling for fixed

characteristics of states and national shocks. However, these programs are complicated and such an

analysis is beyond the scope of this paper. Further, there could additionally be effects of a large

change in who accesses programs (e.g., changes in stigma), which this state-panel approach would

miss.

As a descriptive first step towards understanding the cumulative effects of the safety net on

families, we look at the magnitude of total safety net spending in the household for nonelderly

individuals. Figure 7 shows the average real spending per household across time, using our CPS data

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[29] [TO ADD: There is, of course, a large literature that provides estimates of the work disincentives in safety net
programs more generally. CITES.]

and sample of nonelderly persons. The lowest line shows total household transfers in SNAP, AFDC/TANF, SSI, and the Low Income Heating and Energy Assistance Program (LIHEAP). In 2009 real dollars, these programs together provided the typical nonelderly individual an average annual amount of around $1000 in household income. Surprisingly, this amount stayed fairly steady until peaking in the mid-1990s, right before the 1996 welfare reform. Then total spending underwent a steep decline during the boom of the late 1990s until experiencing a steep rise back to around the level (in real dollars) of the early 1980s in 2009. The two remaining lines on the figure explore the additional role that UI plays in supplementing the safety net. The line that spans the whole time period adds to safety net income the combination of Unemployment Compensation, Veteran's payments, and Worker's Compensation (these three programs are not reported separately in the CPS until 1989 and later). Thus, net spending on Veteran's payments, Worker's Compensation, and UI is the vertical distance between the lower line and the top line. This figure makes clear the countercyclical role of unemployment insurance, as the new series, which includes UI and the other two programs, now hits local peaks in the early 1980s, early 1990s, early 2000s, and during the Great Recession, around when peak unemployment levels are reached during the corresponding recessions. Interestingly, in real dollars, the average "safety net plus UI/Veteran's payments/Worker's Compensation" per household reaches similar maximum values in the early 1980s and early 1990s recessions, while reaching the overall maximum in the Great Recession. The third (middle) line begins in 1988, and the time series depicted includes only UI payments along with income from the other four safety net programs. With the addition of UI, the average annual household safety net plus UI income is around $2000 at the peak of the Great Recession for our non-elderly sample, about $1200 more than the pre-Great Recession low point in the mid-2000s.

We next look at participation in multiple programs using our CPS data. For the safety net to have become more important as a work disincentive through multiple program participation, we need either that multiple program participation has become more common, or that total spending has, or both. Table 8 reports household participation in multiple safety net programs for non-elderly persons

from the CPS. Each panel reports the share of households participating in each of the four programs—UI, Food Stamps, AFDC/TANF, and SSI—conditional on someone in the household participating in one of the other programs. These household participation levels are reported at two points in time, 1982, the trough year for the unemployment rate in the early 1980s recessions, and 2010, the trough year for the unemployment rate in the Great Recession.

As noted above, absent evidence of a large direct effect of one of the safety net programs on employment and the labor force, there must be significant interactions of these programs and associated significant levels of multiple program participation for the programs themselves to play a substantial role in delaying recovery. Panel A shows that among households where someone had UI income during the calendar year, participation in one of the three safety net programs is relatively low. Between 1982 and 2000, household levels of Food Stamp participation (conditional on UI participation) have increased from 14% to nearly 20% of households, while AFDC/TANF has gone down and SSI gone up. This increase in participation in Food Stamps conditional on UI receipt is a smaller increase in percentage terms than the near doubling in per capita spending on food stamps in Figure 3, which went from $101 per person in 1982 to $191 per person in 2010. Panel B examines program participation in UI, AFDC/TANF, and SSI conditional on households reporting having obtained Food Stamp income during the year. Here, we see that among food stamp households, the share receiving UI has held steady at about 20 percent (more precisely, it actually declined from 19.9% in 1982 to 18.0% in 2010).

Given the earlier results on the decline in AFDC/TANF in the wake of welfare reform and the large increases in Food Stamp participation overall in the 2000s, the large decline in the percentage of households on Food Stamps who also report AFDC/TANF, from 54% to 13%, is not surprising although still notable. Finally, one can also see an increase in SSI receipt across these two periods.[30] Finally, we turn to the last two programs, and see a slight increase in the prevalence of

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[30] [TO ADD: facts about dollars in each program for those on the pairs of programs.]

household UI receipt given that someone in the household participated in AFDC/TANF and similarly for UI receipt conditional on someone getting SSI.

One obvious explanation for these declines could be the deterioration in the accuracy of self-reported participation in transfer programs and social insurance programs documented in Meyer, Mok, and Sullivan (2009) and other sources. Unfortunately, the ability to look at multiple program use comprehensively is impossible using the administrative caseload data. But, with administrative Food Stamp Quality Control data, we can examine program participation among Food Stamp recipients. These data are collected from a nationally representative sample of households to allow state Food Stamp Program agencies to assess the accuracy of Food Stamp eligibility and benefit calculations. As a result, these data contain information on all the inputs into those calculations. These inputs include information on the eligibility units' income from other sources used to calculate the benefit levels—in particular, this identifies income from UI. The data also report unit members' participation in other programs that confer automatic eligibility for Food Stamps (e.g., AFDC/TANF and SSI). Table 9 contains program participation for Food Stamp recipiency units for 2001 and 2010, years of peak unemployment for the two most recent cycles (FSQC data is not available for the 1980s recession). The second panel of this table reports analogous household participation in UI, AFDC/TANF and SSI for all individuals in the CPS in households where someone was on food stamps.[31]

First, note that on a monthly level, only about 2% of units on Food Stamps also had a member who got UI in the same month in 2001 and only about 6% did so in 2010. These monthly shares are lower than the 9.3% of households with Food Stamp income who reported someone had income from UI in calendar year 2001 and 12.7% in 2010. One explanation for these differing results is the annual versus monthly reporting periods. In the QC data, the receipt of UI is reported within the month (the eligibility determination period) while the CPS numbers in panel B report receipt of

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[31] The Food Stamp QC data applies to all recipients, elderly and nonelderly. To be comparable the CPS calculations in Table 9 correspond to all persons not our primary sample of the nonelderly.

UI in the last calendar year given receipt of SNAP within the last year (but not necessarily at the same time).[32] Turning now to columns 3 and 4, there is little evidence of severe underreporting of AFDC/TANF or SSI receipt in the CPS (within households where someone got SNAP).[33] Taken as a whole, Table 9 suggests little reason to think that underreporting in the CPS is leading us to miss large amounts of multiple program participation.

Our final descriptive exercise follows. We wish to see if higher safety net spending is associated with worse labor market performance after the peak of the Great Recession. We take state level household averages for the sum of safety net dollars plus UI for 2009, the peak year for this combined spending in real dollars (this corresponds to the middle line on Figure 7). We then see whether states with larger per household safety net plus UI spending have had smaller improvements in their unemployment rate, employment to population ratio, or labor force to population ratios from 2009 to 2011.[34] If the overall interactions between these safety net programs are an important contributor to the slow recovery, we would expect that places with higher safety net plus UI spending in 2009 would have smaller declines in the unemployment rate and smaller increases in the employment to population ratio or labor force to population ratios. Figure 8 plots these relationships. The x-axis is always state average household safety net spending plus UI spending in calendar year 2009 and the y-axis shows the percent change in the relevant labor market measure from 2009 through 2011.[35] The circles vary in size to denote the state population associated with each observation.

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[32] Additionally, the food stamps recipiency unit is the set of individuals categorically eligible and also eligible after means testing. This unit cannot be larger than the household, and is smaller whenever the household either contains individuals who do not share resources/food or contains categorically ineligible individuals (e.g., some immigrants who are not eligible for SNAP).

[33] By the same argument as with UI, AFDC/TANF and SSI receipt at the household level should also be slightly larger in the CPS than in the FSQC data as the AFDC/TANF numbers in fact are. Because of the shorter duration of UI spells (compared to AFDC/TANF and SSI) the differences are magnified there.

[34] In the next draft of the paper, this will be updated to 2012.

[35] Future drafts will extend the labor market measures as far forward as they are available and also use the population 15 and older in the denominators of the employment to population ratio and labor force to population ratio. The current versions use the total state population in the denominators.

Turning first to the figure showing the change in the unemployment rate at the state level from 2009-2011 as a function of 2009 safety net plus UI spending, we see little or no descriptive evidence that states with more safety net or UI spending have smaller declines or larger increases in the unemployment rate. If anything, the figure suggests that more spending is associated with larger declines in the unemployment rate. The second panel of Figure 8 shows the relationship between the safety net plus UI spending and the percent change in the nonfarm employment to population ratio. Here, to be consistent with the story about moral hazard, the slope of the implied regression line should be negative (places with more spending on the safety net plus UI should have smaller increases or larger decreases in the employment to population ratio in percentage terms). Again, there is no evidence of this in the figure. Finally, we turn to the labor force to population ratio and the relation of safety net plus UI spending with changes in it from 2009 to 2011. Again, here a role for the safety net in delaying growth in the labor force would be consistent with a negative slope. And, here again, there doesn't seem to be a very strong link between these two variables. Thus, none of these three measures of improvement in the labor market from 2009 to 2011 seem to show any substantial relationship to safety net plus UI spending in 2009 in the depths of the Great Recession. Of course, it is still possible that these reported participation levels do not well capture the marginal work disincentives embodied in these programs, but this descriptive evidence seems to offer little or no support for the moral hazard argument.[36]

8. Conclusion

After several decades of mild business cycles, the Great Recession led to unemployment rates unseen since the deep recessions of the early 1980s. At the same time significant changes in the safety net both before and during this most recent downturn make an exploration of the role of the safety net in protecting well-being during the Great Recession important. Cash welfare for families

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[36] A leading alternative explanation for these correlations is that states with more severe losses in employment in the Great Recession will (mechanically) have more safety net spending and, possibly, a slower recovery. This would operate in the opposite direction to our findings.

with children was transformed in the late 1990s from an entitlement program which functioned as an automatic stabilizer to a time limited program funded by block grants. Over the 2000s, eligibility for the food stamp program was made more generous, and participation rates rose even before the downturn. This is also the first severe recession since the EITC was made much more generous in the mid 1990s. And the Federal Government responded through generous expansions in the maximum duration of unemployment benefits to an unprecedented 99 weeks.

In this paper, we explore the role of the public and private safety net in buffering families against economic shocks, and test whether this relationship has changed significantly during this most recent downturn. We look at the relationship between our measure of the cycle-the state unemployment rate-and both official poverty and our own constructed alternative poverty (which incorporates taxes and transfers) in a state-year panel model. We use CPS data from 1980-2011 and create state by year measures of average official and alternative poverty, and regress them on our measure of the cycle and state and year fixed effects, identifying the effects of the cycle locally by changes within state and over time in the unemployment rate. We then test whether there is evidence that this relationship is different in the current recession. We also examine the role of a variety of public programs including Food Stamps, cash welfare, the EITC, Unemployment Compensation, and disability benefits in responding to the business cycle, relating participation per capita at the state year level to the business cycle in similar panel models with state and year fixed effects.

Surprisingly, we find little evidence that the relationship between official poverty and the business cycle has changed over time. We do find evidence using our more expansive alternative poverty measures that poverty has become more cyclical (varies more with the unemployment rate) during the recent Great Recession.

The safety net's role in protecting the non-elderly from negative shocks has also changed. Cash welfare (AFDC/TANF) is no longer serving as a countercyclical stabilizer in the wake of the welfare reforms of the late 1990s. Point estimates suggest that Food Stamps has become more countercyclical in the most recent period, although these coefficients are not statistically significant.

The other programs we explore show no significant differences in the responsiveness to the cycle of per capita real spending or caseloads between the Great Recession and previous periods. We then test the contribution of these various programs to the responsiveness of poverty to the business cycle in a static sense by comparing the relationship of poverty to business cycle overall, and then if we remove the antipoverty contribution to household income of each program. This exercise suggests UI is playing the most important role, with some evidence that Food Stamps is also important for extreme poverty and poverty. Finally, we explore the role of one aspect of the private safety net, living arrangements. We test the responsiveness to the cycle of living arrangements overall among the nonelderly and then look at the specific living arrangements of 18-30 year olds (alone, with parents or other relatives) separately. This exercise also shows little change from previous recessions.

We conclude with a more exploratory analysis of the possible moral hazard role of the various safety net programs. Economic theory and existing empirical evidence suggest that these safety net programs singly and taken together have work disincentive effects. But for these effects to be much larger than in previous downturns, either individual programs must have larger effects or there must be important interactions between the expanded programs. Existing literature suggests no disproportionately larger role for UI, and we are unaware of other literature documenting large impacts of SNAP or other expansions. Thus, we look at the share of individuals participating in multiple programs, as without large direct effects of each program on the labor market, a disproportionate impact of the Great Recession is only possible with substantive program interactions. We find little or no evidence that multiple program participation is significantly different than in the deep recession of the 1980s. We also look for a correlation between high levels of spending on the safety net plus UI in 2009 (at the state level) and a slower labor market recovery from 2009-2011, finding no evidence of an association. Together, these cast some doubt on this moral hazard argument. A full accounting of the work disincentive effects, however, awaits work modeling marginal tax rates across all of these programs.

8. References

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Data Appendix

Contractions/Expansions: We identified annual periods of contractions as the range of years from lowest to highest annual unemployment and the expansions as the range of years from the highest to lowest annual unemployment rates that are near the beginning and end points of the various NBER recessions. We pooled the 2 early 1980s recessions into one contraction. The annual contraction periods are 1979-1982 (NBER recessions: 1/1980-7/1980, 7/1981-11/1982), 1990-1992 (NBER recession: 7/1990-3/1991), 2001-2003 (NBER recession: 3/2001-11/2001), and 2007-20010 (NBER recession 12/2007-6/2009). For more information see Appendix Table 1.

AFDC/TANF administrative data on caseloads and expenditures: AFDC caseloads were downloaded from http://www.acf.hhs.gov/programs/ofa/data-reports/caseload/caseload_archive.html and TANF caseloads (which beginning in 2000 include Separate State Program/Maintenance of Effort) are from http://www.acf.hhs.gov/programs/ofa/resource/caseload/caseload-recent. Unpublished data on AFDC cash expenditures (and combined AFDC/TANF expenditures) for 1980-2000 provided by Don Oellerich at ASPE/HHS. TANF expenditures are from http://www.acf.hhs.gov/programs/ofs/data/index.html. TANF cash expenditures are defined as "Column B of Table F-3, combined spending of federal and state funds with ARRA expended in Fiscal Year 2009, line 5a, basic assistance." The average monthly TANF benefit (used in Table 1) is the average family benefit for 2006, inflated to be in 2010 real $ from http://www.acf.hhs.gov/programs/ofa/data-reports/annualreport8/TANF_8th_Report_111908.pdf , DHHS (2009). All AFDC and TANF data are for the month or the Fiscal Year (year ending Sept 30).

Food Stamp administrative data on caseloads and expenditures: Caseload and expenditures by state and month for calendar years 1980-2009, and for 1/2010-12/2011 come from unpublished USDA data generously provided by Katie Fitzpatrick and John Kirlin, of the Economic Research Service, USDA. Data for Table 1 come from:
http://www.fns.usda.gov/pd/SNAPsummary.htm
http://www.fns.usda.gov/pd/16SNAPpartHH.htm
http://www.fns.usda.gov/pd/34SNAPmonthly.htm

Unemployment Insurance administrative data on caseloads and expenditures: Data for calendar years 1980 through 2011 come from unpublished data provided by the Office of the Chief Economist at the Department of Labor. Average amounts per month are the sum of monthly spending times 4.5 times the average number of weeks in a given month.

SSI administrative data on caseloads and expenditures: SSDI data comes from the Annual Statistical Report on the SSDI Program. Average monthly benefits are for workers. Source: http://www.ssa.gov/policy/docs/statcomps/ssi_asr/#editions

SSDI administrative data on caseloads and expenditures: SSI data comes from the Annual Statistical Supplement to the Social Security Bulletin. Caseloads and expenditures include the federal and state programs and exclude the aged recipients. Average monthly benefits are for disabled workers. http://www.socialsecurity.gov/policy/docs/statcomps/di_asr/2011/sect01b.html#table3

Unemployment for U.S. and by state: Number of unemployed and unemployment rate for U.S. and states, annually and by month, come from the Bureau of Labor Statistics' Current Population Survey, accessed from: http://www.bls.gov/lau/. The monthly numbers used in the paper are seasonally adjusted.

Population for U.S. and by state: U.S. population from the Economic Report of the President,

http://www.gpoaccess.gov/eop/2012/B34.xls. State population is from National Cancer Institute SEER data (http://seer.cancer.gov/popdata/download.html) for 1980-2011.

Deflator: The CPI-U is from the Economic Report of the President, http://www.gpoaccess.gov/eop/2012/B34.xls.

Census poverty rates: Official poverty all persons come from the US Census Bureau Report "Income, Poverty, and Health Insurance Coverage in the United States: 2011", report P60-243,Tables B-1 and Table B-2. NAS alternative poverty numbers come from tabulations provided by the US Census Bureau at http://www.census.gov/hhes/www/povmeas/tables.html, the spreadsheet labeled "Official and National Academy of Sciences NAS Based Poverty Rates; 1999 to 2011", downloaded from http://www.census.gov/hhes/povmeas/data/nas/tables/2011/web_tab4_nas_measures_historical_1999_2011.xls We report "MSI-NGA-CE", which means imputed medical out of pocket expenses are subtracted from income (MSI), no geographic adjustments are made (NGA), and the thresholds are based on consumption data from the Consumer Expenditure Survey (CE).

EITC: Data on recipients and the total tax cost of the EITC for 1980-2010 is from Tax Policy Center's Tax Facts on Historical EITC, for Fiscal Years 1976-2010, downloaded from http://www.taxpolicycenter.org/taxfacts/displayafact.cfm?Docid=37. State and year tabulations of caseloads and expenditures comes from U.S. IRS Statistics of Income file.

March CPS, Official Poverty and Alternative Poverty: We use the March Current Population Survey for years 1981 through 2012 (covering calendar years 1980 through 2011). The main sample used in the paper measures poverty and relevant living arrangements at the household level, after dropping unrelated children (as does the Census bureau). Thus, total cash or alternative income is summed across household members, and then the income is compared to various multiples of the poverty threshold, and this value attached to all household members. Then, we frequently restrict the analysis to nonelderly persons, using that sample. State by year aggregates poverty levels for example, are the average of the non-elderly poverty level weighted by the supplement person weight for each state for a given year of the March Survey.

Our alternative poverty uses data provided in the public-use CPS data and available on a consistent basis back to 1980 (Bitler and Hoynes 2010, 2013). We developed this measure based on the recommendations in the National Academy of Sciences report (Citro and Michael, 1995); it is also closely related to the resource measures in the Supplemental Poverty Rate first released in 2010 (Short 2011, 2012). In particular, we assign poverty using an expanded "alternative income" measure which we then apply to the standard poverty thresholds. Our alternative income measure (or a measure of resources) adds to cash money income the cash value of non-cash programs (food stamps, school lunch, housing subsidies, energy subsidy, Medicaid, and Medicare), federal employee retirement benefit contributions and the implied rental value of an owner occupied home, and subtracts taxes (FICA payroll taxes, property taxes, net federal and state taxes [including the EITC, child and child care tax credits, and stimulus payments]).

We are able to construct a consistent alternative poverty measure for calendar years 1980-1986, 1988-1990, and 1991-2011. We are using the "old" version of the 1988 data which does not correspond to the 1988 data on these measures so data are missing on alternative poverty for 1988. None of the components of alternative poverty were created in 1991, so this year also is missing alternative poverty. All variables are consistently reported for the other years with a single exception, the total dollars of LIHEAP was not reported until 1982, we have set it to zero for survey years 1980 and 1982.

Figure 1: Annual Unemployment, Official Poverty, and NAS Alternative Poverty
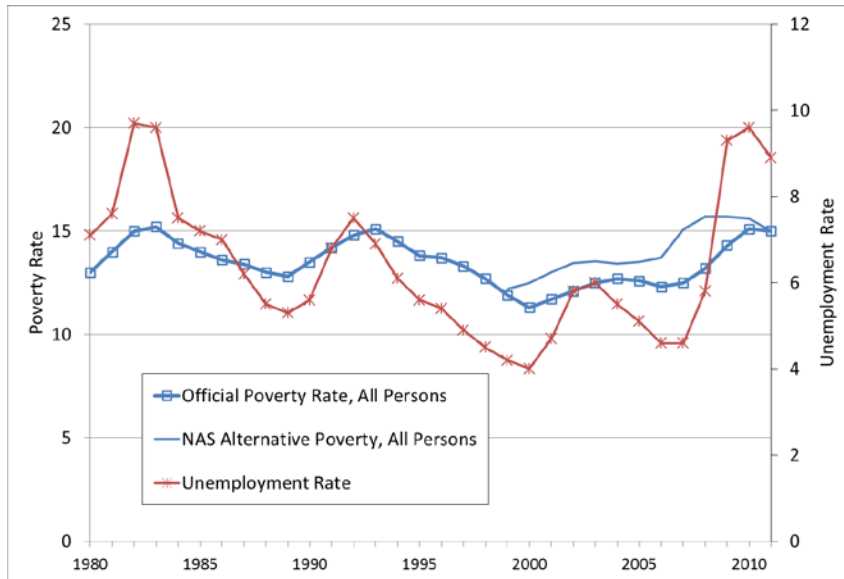
Notes: Measures directly available from published sources; see data appendix. Poverty refers to percent of persons living in families with income below the poverty line. NAS alternative poverty measure uses MSI-NGA-CE version of NAS tabulations. For more details, see data appendix.

Figure 2: Annual Unemployment, Official Poverty, and NAS Alternative Poverty in the Great Recession
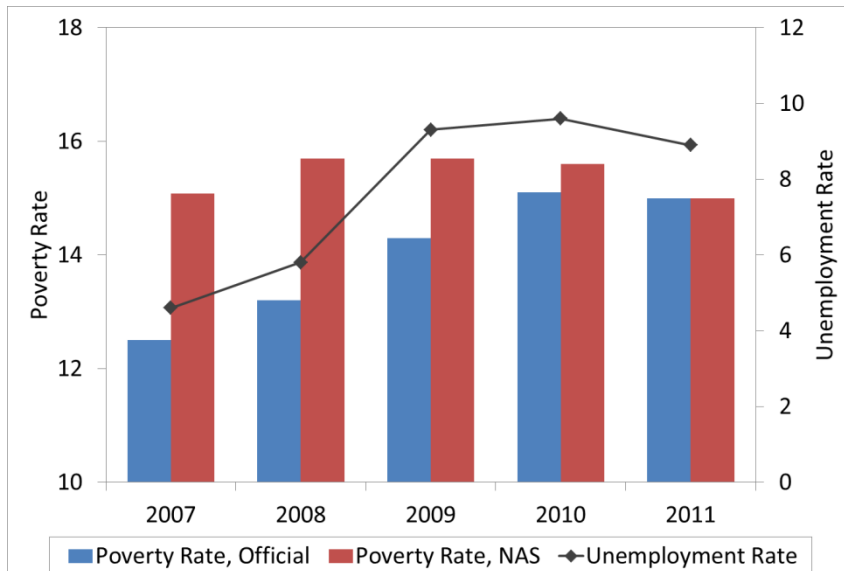
Notes: Measures directly available from published sources; see data appendix. Poverty refers to percent of persons living in families with income below the poverty line. NAS alternative poverty measure uses MSI-NGA-CE version of NAS tabulations. For more details, see data appendix.

Figure 3: Per capita real expenditures on cash and near cash safety net programs, 1980-2011
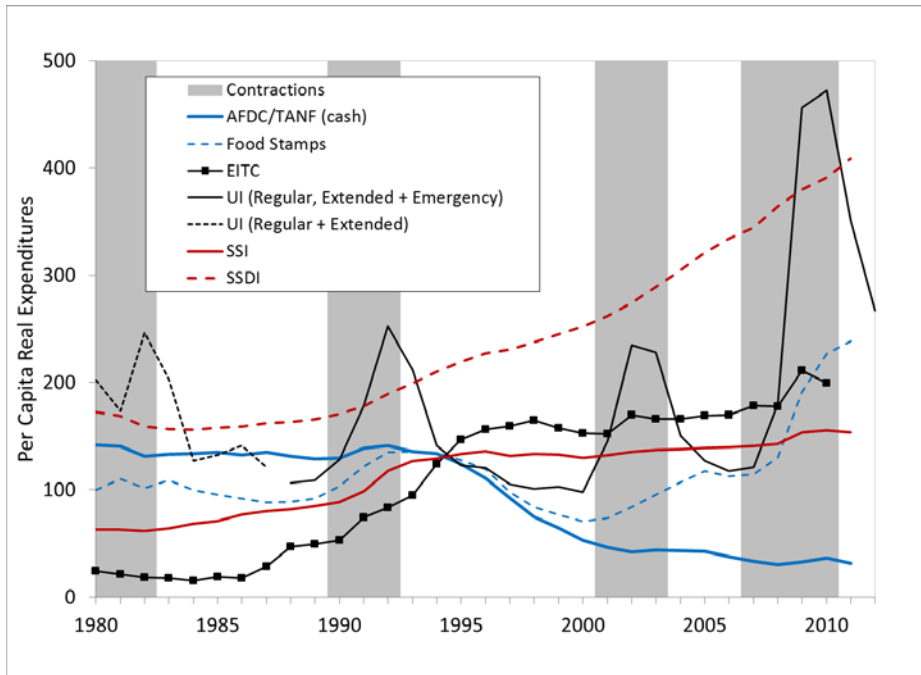
Notes: All data are available from published statistics except UI expenditures, which were provided by the Office of the Chief Economist; see data appendix for details. Contractions are annual periods of labor market contraction that closely follow NBER official recessions. Official recessions are dated monthly; we assigned our contraction periods to encompass the periods of rising unemployment rates. See data appendix for details.

Figure 4: Household Participation in Safety Net Programs for the Nonelderly, 1982 and 2010
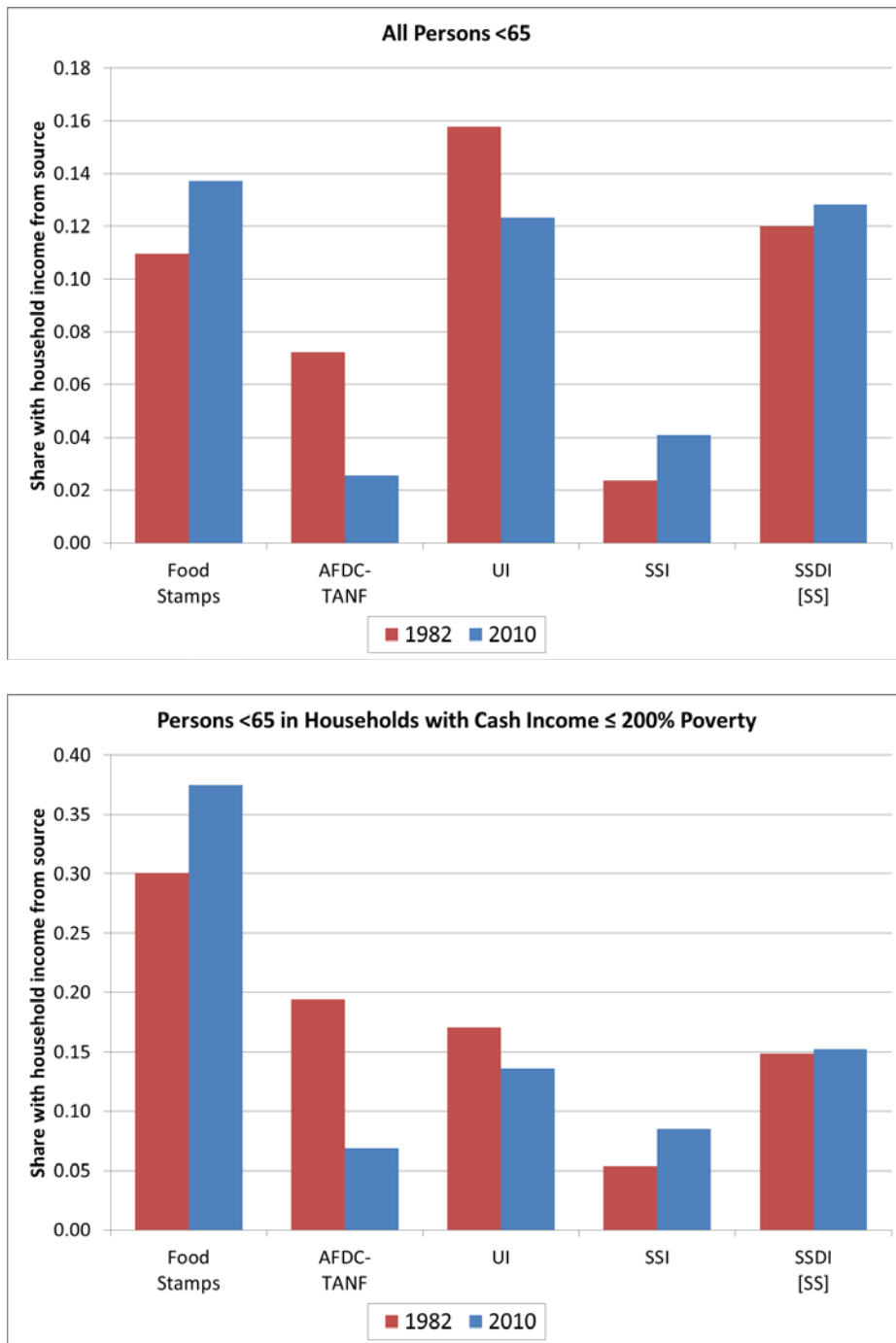
All Persons <65

Persons <65 in Households with Cash Income ≤ 200% Poverty

Notes: Authors' calculations from 1983 and 2011 March Current Population Survey data for 1982 and 2010 calendar year income. Sample includes nonelderly individuals. Panel A is all such individuals under 65 and panel B is further limited to nonelderly individuals living in households with cash income below 200 percent of the federal poverty threshold. Poverty is assigned at the household level.

Figure 5: Percentage Point Increase in Alternative Income Poverty, Zeroing out Safety Net Income, 2010 and 1982
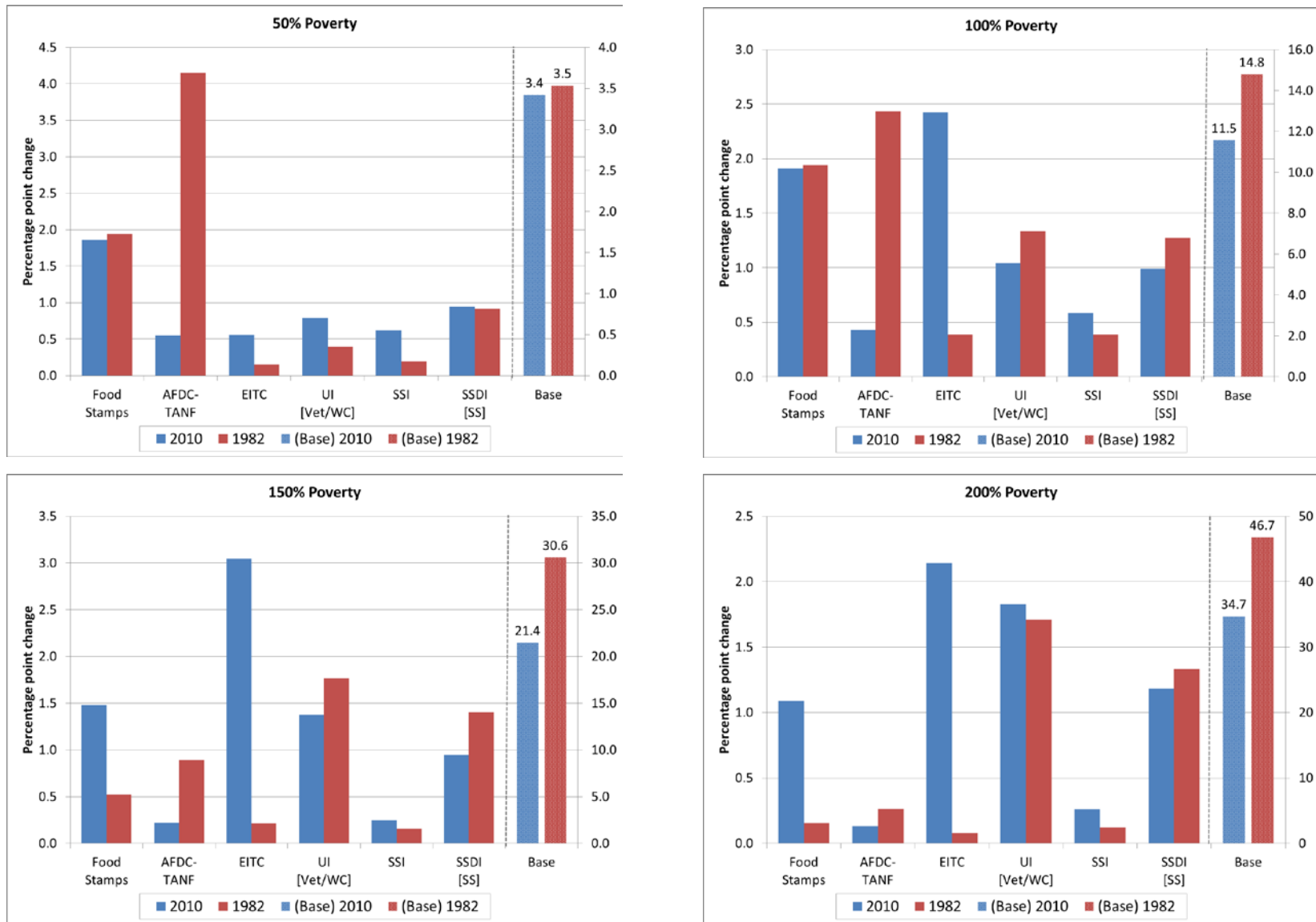
Notes: Authors' calculations from 1983 and 2011 March Current Population Survey. Sample includes nonelderly and alternative poverty is assigned using household income. Each data point is the difference between alternative poverty with safety net zeroed out from income minus "base" alternative poverty. On the right end of each figure are the "base" alternative poverty rates for the two years.

Figure 6: Effect of Safety Net Programs on Cyclicality of Alternative Poverty
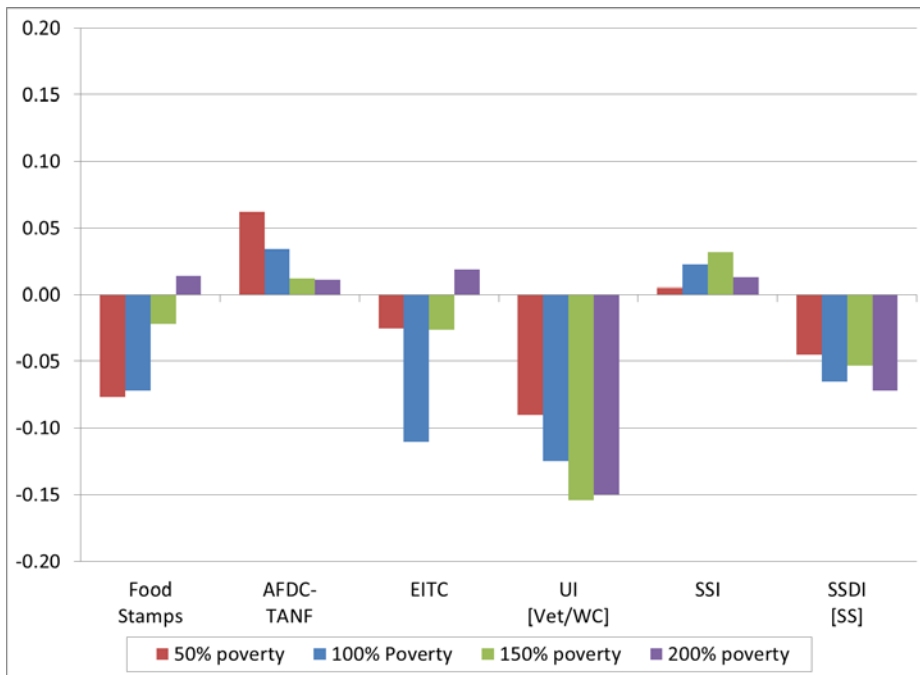
Notes: Author's manipulations of parameter estimates presented in Table 7. See text for details.

Figure 7: Annual Household Participation in Multiple Safety Net Programs and UI
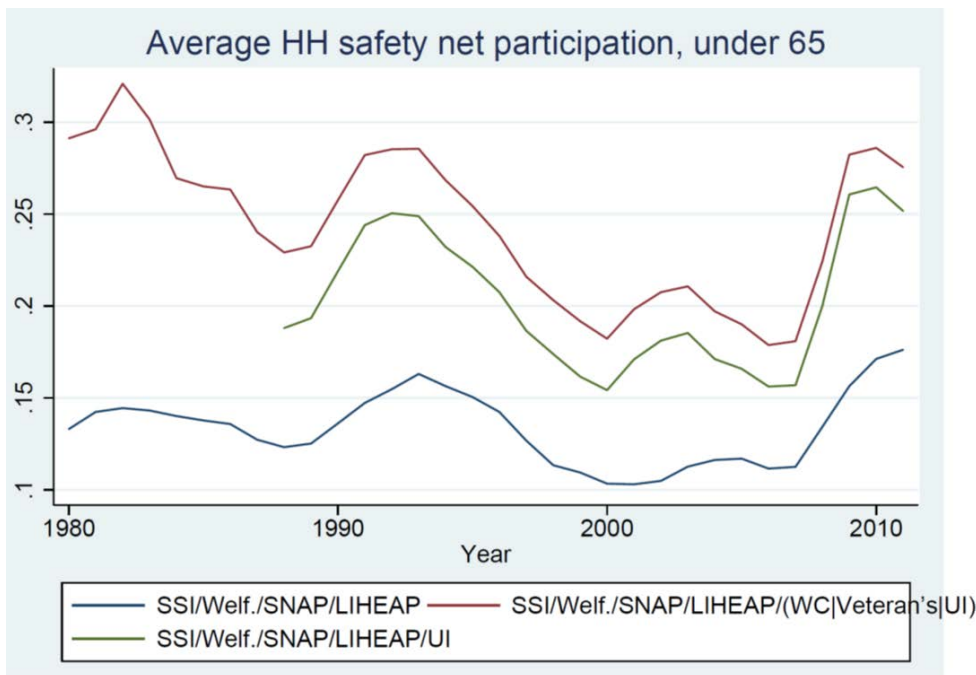
Notes. Figure reports measure of any household participation in any one of various combinations of safety net programs, as calculated from the 1980-2011 March CPS for individuals under 65. Figures are weighed.

Figure 8: Change in Labor Market Outcomes versus Level of Household Safety Net Spending by State
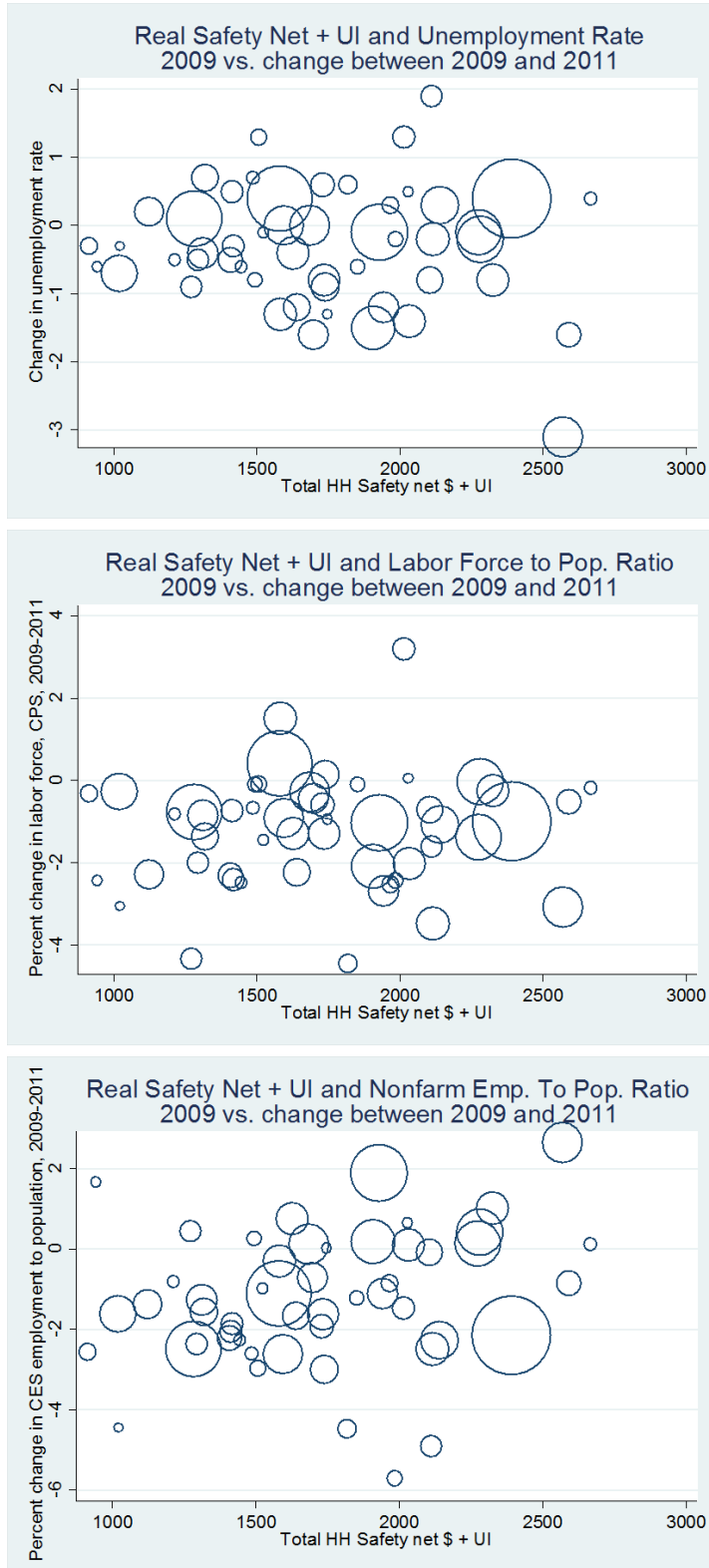
Notes. Figure shows the 2009 state average level of real safety net spending per household (including all safety net programs plus UI) on the x-axis versus the percent change in various labor market values from 2009 to 2011 on the y-axis. The size of the circles reflects the state population. The top graph shows the figure for the percent change in the unemployment rate as a function of safety net plus UI spending. The middle graph shows the figure for the percent change in the labor force to population ratio as a function of safety net plus UI spending. The bottom graph shows the figure for the percent change in the nonfarm employment to population ratio as a function of safety net plus UI spending.

Table 1: Expenditures and Participation in Cash or Near-Cash Safety Net Programs, 2010

	Number of recipient units (thousands)	Total benefit payments (millions of 2010$)	Average monthly benefit
Temporary Assistance for Needy Families, Cash Benefits	1,911	$10,699	$402
Food Stamps	18,618	$64,702	$285
Federal Earned Income Tax Credit	26,170	$58,620	$187
Supplemental Security Income, Nonaged Caseload	6,728	$45,618	$518
Social Security Disability Income	9,398	$114,854	$1,068
Unemployment Compensation - Regular State Benefits	3,927	$59,461	$1,262
Unemployment Compensation - Extended Benefits	604	$9,344	$1,289
Unemployment Compensation - Emergency Benefits	4,508	$69,894	$1,292
Unemployment Compensation - Total	9,039	138,699	$1,279

Notes: Data for all programs refers to 2010 and are in real $2009. See data appendix for sources.

Table 2: Effects of Unemployment Rate on Official Cash Poverty and Alternative Poverty

	Official poverty (cash pre-tax)				Alternative poverty (post-tax, all transfers)			
	<50%	<100%	<150%	<200%	<50%	<100%	<150%	<200%
	A. Pooled Estimates							
UR	0.403***	0.735***	0.897***	1.036***	0.148***	0.556***	0.844***	1.046***
	(0.054)	(0.072)	(0.113)	(0.137)	(0.024)	(0.061)	(0.118)	(0.157)
% impact	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
	B. By Period (1980s, GR, Rest of Period)							
UR x 1980s	0.384***	0.662***	0.756***	0.821***	0.102***	0.513***	0.697***	0.817***
	(0.062)	(0.075)	(0.121)	(0.154)	(0.033)	(0.062)	(0.146)	(0.160)
UR x Rest of period	0.506***	1.047***	1.317***	1.466***	0.208***	0.732***	1.132***	1.316***
	(0.074)	(0.150)	(0.227)	(0.240)	(0.057)	(0.136)	(0.189)	(0.274)
UR x GR	0.354***	0.624***	0.843***	1.148***	0.193***	0.496***	0.907***	1.302***
	(0.071)	(0.079)	(0.120)	(0.160)	(0.034)	(0.055)	(0.084)	(0.159)
% Impact, 1980s	*7.9%*	*5.2%*	*3.5%*	*2.6%*	*4.2%*	*5.5%*	*3.5%*	*2.6%*
% Impact, rest of period	*11.2%*	*9.0%*	*6.6%*	*5.1%*	*9.1%*	*9.0%*	*6.9%*	*4.9%*
% impact, GR	*7.2%*	*5.0%*	*4.0%*	*3.8%*	*7.1%*	*6.0%*	*5.8%*	*5.1%*
	C. By Expansion/Contraction and GR							
UR x Contraction	0.259***	0.535***	0.601***	0.703***	0.072**	0.336***	0.465***	0.581***
	(0.057)	(0.094)	(0.157)	(0.201)	(0.033)	(0.067)	(0.172)	(0.201)
UR x Expansion	0.502***	0.902***	1.091***	1.176***	0.171***	0.715***	1.033***	1.185***
	(0.052)	(0.101)	(0.150)	(0.177)	(0.039)	(0.086)	(0.126)	(0.184)
UR x Contraction x GR	0.089	0.051	0.180	0.358	0.130**	0.171***	0.384**	0.614**
	(0.060)	(0.129)	(0.222)	(0.298)	(0.048)	(0.072)	(0.181)	(0.275)
UR x Expansion x GR	-0.197**	-0.349***	-0.329	-0.063	-0.045	-0.352***	-0.159	0.191
	(0.080)	(0.125)	(0.211)	(0.230)	(0.078)	(0.106)	(0.130)	(0.166)
Means by period								
Pooled: 1980-2011	0.047	0.121	0.206	0.296	0.024	0.085	0.171	0.278
1980s: 1980-1989	0.049	0.126	0.214	0.306	0.026	0.087	0.173	0.282
GR: 2007-2011	0.045	0.117	0.200	0.288	0.023	0.082	0.169	0.275
Rest of period: 1990-2006	0.051	0.130	0.217	0.306	0.028	0.084	0.158	0.259
N	1632	1632	1632	1632	1530	1530	1530	1530

Notes: Data are from the CPS ASEC calendar years 1980-2011 and are collapsed to the state by year level (weighted). All regressions include controls for state and year fixed effects. The results are weighted by the sum of the CPS weights in the cell. Standard errors are clustered by state and shown in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table 3: Effects of Unemployment Rate on Living Arrangements

	All nonelderly persons				Young adult sample, age 18-30			
	Number of persons	Number of families	Number of "extra" adults	Any young adult with no FT work & no school	Living alone	Living with parents	Living with other relative	Other
	A. Pooled Estimates							
UR	2.161**	0.408	0.716	0.752***	-0.314*	0.211	0.243**	-0.075
	(0.985)	(0.256)	(0.483)	(0.059)	(0.164)	(0.147)	(0.088)	(0.113)
% impact	*0.6%*	*0.4%*	*1.2%*	*2.9%*	*-1.7%*	*0.6%*	*2.9%*	*-0.2%*
	B. By Period (1980s, GR, Rest of Period)							
UR x 1980s	2.336***	0.329**	0.334	0.761***	-0.206*	0.129	0.180**	-0.032
	(0.689)	(0.129)	(0.301)	(0.075)	(0.120)	(0.160)	(0.072)	(0.138)
UR x Rest of period	1.876	0.469	0.682*	0.936***	-0.505**	0.004	0.387**	0.136
	(1.503)	(0.286)	(0.378)	(0.105)	(0.241)	(0.179)	(0.146)	(0.142)
UR x GR	2.012	0.538	1.634	0.565***	-0.392	0.591*	0.260*	-0.367**
	(1.782)	(0.570)	(1.168)	(0.168)	(0.293)	(0.307)	(0.136)	(0.148)
% Impact, 1980s	*0.6%*	*0.3%*	*0.6%*	*2.5%*	*-1.3%*	*0.4%*	*3.6%*	*-0.1%*
% Impact, rest of period	*0.5%*	*0.5%*	*1.2%*	*3.8%*	*-2.6%*	*0.0%*	*4.3%*	*0.4%*
% impact, GR	*0.6%*	*0.6%*	*2.4%*	*2.3%*	*-1.9%*	*1.5%*	*2.4%*	*-1.2%*
	C. By Expansion/Contraction and GR							
UR x Contraction	2.106**	0.447**	0.741**	0.954***	-0.361*	0.097	0.245**	0.056
	(0.870)	(0.208)	(0.337)	(0.110)	(0.195)	(0.169)	(0.097)	(0.179)
UR x Expansion	2.241***	0.335*	0.296	0.747***	-0.266*	0.084	0.244***	0.002
	(0.824)	(0.165)	(0.306)	(0.062)	(0.146)	(0.128)	(0.087)	(0.114)
UR x Contraction x GR	0.097	0.062	0.925	-0.383**	0.040	0.419	-0.001	-0.416**
	(1.259)	(0.415)	(0.961)	(0.170)	(0.217)	(0.294)	(0.125)	(0.187)
UR x Expansion x GR	-0.597	0.244	1.174	-0.238	-0.222	0.753**	-0.014	-0.439*
	(0.989)	(0.376)	(0.987)	(0.169)	(0.236)	(0.328)	(0.100)	(0.229)
Means by period								
Pooled: 1980-2011	3.599	0.951	0.589	0.261	0.187	0.360	0.083	0.380
1980s: 1980-1989	3.678	0.961	0.563	0.300	0.161	0.343	0.051	0.447
GR: 2007-2011	3.574	0.947	0.575	0.246	0.193	0.358	0.090	0.370
Rest of period: 1990-2006	3.554	0.946	0.672	0.246	0.210	0.391	0.109	0.308
N	1632	1632	1632	1632	1632	1632	1632	1632

Notes: Data are from the CPS ASEC calendar years 1980-2011 and are collapsed to the state by year level (weighted). The first four columns include all nonelderly persons and the second four columns are limited to those age 18-30. All regressions include controls for state and year fixed effects. The results are weighted by the sum of the CPS weights in the cell. Standard errors are clustered by state and shown in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table 4: Effect of Unemployment Rate on Safety Net Caseloads

| | Caseload / Population, Monthly | | | | Case./Pop., Annual |
	AFDC/TANF	Food Stamps	UI [Reg., Ext.]	UI, 1988+ [Reg., Ext., Emerg.]	EITC
A. Pooled Estimates					
UR	0.064***	0.132***	0.011***	0.016***	0.035
	(0.015)	(0.038)	(0.001)	(0.001)	(0.044)
% impact	*5.5%*	*3.6%*	*13.3%*	*16.3%*	*0.6%*
B. By Period (1980s, GR, Rest of Period)					
UR x 1980s	0.086***	0.088***	0.012***	-	-0.024
	(0.024)	(0.029)	(0.001)		(0.061)
UR x Rest of period	0.074***	0.210***	0.011***	-	0.155**
	(0.019)	(0.038)	(0.001)		(0.069)
UR x GR	0.005	0.149	0.009***	-	0.071
	(0.029)	(0.164)	(0.001)		(0.082)
% Impact, 1980s	*5.5%*	*2.8%*	*13.3%*	*-*	*-0.8%*
% Impact, rest of period	*6.3%*	*6.1%*	*14.8%*	*-*	*2.3%*
% impact, GR	*0.8%*	*2.8%*	*8.6%*	*-*	*0.9%*
C. By Expansion/Contraction and GR					
UR x Contraction	0.079**	0.069**	0.015***	0.015***	0.036
	(0.024)	(0.033)	(0.001)	(0.001)	(0.068)
UR x Expansion	0.082***	0.153***	0.010***	0.013***	0.028
	(0.017)	(0.031)	(0.001)	(0.001)	(0.053)
UR x Contraction x GR	-0.082**	0.066	-0.006***	0.003	0.019
	(0.036)	(0.140)	(0.001)	(0.003)	(0.122)
UR x Expansion x GR	-0.076**	-0.027	-0.004***	0.001	-
	(0.030)	(0.234)	(0.001)	(0.002)	
Mean by period					
Mean of Y, pooled	0.012	0.037	0.001	0.001	0.059
Mean of Y, 1980s	0.016	0.031	0.001	-	0.031
Mean of Y, GR	0.012	0.034	0.001	0.002	0.067
Mean of Y, rest of period	0.006	0.053	0.001	-	0.081
N	19,584	19,488	19,584	14,688	1581

Notes: Data cover 1980-2011 (or 2010 for the EITC). The dependent variables are safety net caseloads divided by the state population. Sources for caseloads are in the appendix. The EITC data are annual, the other programs are monthly. All regressions include state and year (or year-by-month) fixed effects. The results are weighted by the state population. Standard errors are clustered by state and shown in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table 5: Effect of Unemployment Rate on Safety Net Expenditures

	Expenditures / Population, Annual			
	AFDC/TANF	Food Stamps	UI [Reg., Ext.]	UI, 1988+ [Reg., Ext., Emerg.]
	A. Pooled Estimates			
UR	422.8	611.8***	2113.0***	2823.1***
	(258.1)	(87.1)	(203.4)	(393.0)
% impact	*4.9%*	*5.4%*	*14.2%*	*15.5%*
	B. By Period (1980s, GR, Rest of Period)			
UR x 1980s	762.2*	456.0***	2484.1***	-
	(434.6)	(102.0)	(207.1)	
UR x Rest of period	781.0***	891.8***	1735.2***	-
	(226.4)	(146.1)	(316.8)	
UR x GR	-672.8**	717.4*	1602.4***	-
	(384.8)	(399.7)	(257.7)	
% Impact, 1980s	*5.8%*	*4.8%*	*16.3%*	*-*
% Impact, rest of period	*9.6%*	*8.7%*	*13.2%*	*-*
% impact, GR	*-20.9%*	*4.1%*	*8.1%*	*-*
	C. By Expansion/Contraction and GR			
UR x Contraction	871.5**	357.4***	3139.5***	3323.9***
	(363.6)	(125.9)	(309.0)	(435.4)
UR x Expansion	713.0**	701.0***	1824.7***	2066.7***
	(293.7)	(120.4)	(235.7)	(327.8)
UR x Contraction x GR	-1578.5***	301.7	-1282.4***	198.5
	(535.1)	(407.8)	(414.0)	(648.5)
UR x Expansion x GR	-1283.1**	-25.9	-509.3	876.2
	(551.6)	(623.0)	(348.4)	(619.8)
Mean by period				
Mean of Y, pooled	86.7	114.2	149.0	181.7
Mean of Y, 1980s	131.7	95.7	152.3	-
Mean of Y, GR	81.7	103.0	131.7	310.8
Mean of Y, rest of period	32.1	176.9	196.8	-
N	1632	1632	1632	1224

Notes: Data are annual and cover 1980-2011. The dependent variables are safety net expenditures divided by the state population. Sources for expenditures are in the appendix. All regressions include state and year fixed effects. The results are weighted by the state population. Standard errors are clustered by state and shown in parentheses. * p<0.10, ** p<0.05,*** p<0.01.

Table 6: Effect of Unemployment Rate on Poverty, With and Without Safety Net

	Base	Food Stamps	AFDC-TANF	EITC	UI [Vet, WC]	SSI	SSDI [SS]
		Zero out safety net, recalculate poverty					
A. 50% Poverty							
UR	0.148	0.269	0.280	0.166	0.210	0.126	0.169
	(0.024)	(0.030)	(0.046)	(0.027)	(0.023)	(0.030)	(0.028)
Mean Y	0.024	0.033	0.034	0.026	0.027	0.029	0.034
% impact	*6.1%*	*8.2%*	*8.2%*	*6.3%*	*7.7%*	*4.3%*	*4.9%*
B. 100% Poverty							
UR	0.556	0.605	0.608	0.610	0.681	0.534	0.589
	(0.061)	(0.058)	(0.054)	(0.064)	(0.062)	(0.058)	(0.060)
Mean Y	0.085	0.092	0.091	0.093	0.091	0.089	0.099
% impact	6.6%	6.6%	6.7%	6.5%	7.5%	6.0%	5.9%
C. 150% Poverty							
UR	0.844	0.861	0.874	0.859	1.000	0.834	0.879
	(0.118)	(0.122)	(0.120)	(0.124)	(0.120)	(0.117)	(0.119)
Mean Y	0.171	0.176	0.175	0.180	0.179	0.175	0.188
% impact	4.9%	4.9%	5.0%	4.8%	5.6%	4.8%	4.7%
D. 200% Poverty							
UR	1.046	1.038	1.055	1.024	1.191	1.030	1.063
	(0.156)	(0.154)	(0.154)	(0.157)	(0.152)	(0.156)	(0.157)
Mean Y	0.278	0.281	0.280	0.284	0.288	0.282	0.297
% impact	3.8%	3.7%	3.8%	3.6%	4.1%	3.7%	3.6%
N	1530	1530	1530	1530	1530	1530	1530

Notes: Data are from the CPS ASEC calendar years 1980-2011 and are collapsed to the state by year level (weighted). All regressions include controls for state and year fixed effects. The results are weighted by the number of sum of the CPS weights for the individuals in each cell. Standard errors are clustered by state and shown in parentheses. * $p<0.10$, ** $p<0.05$, ***$p<0.01$.

Table 7: Effect of Unemployment Rate on Poverty, With and Without Safety Net

	Base	Zero out safety net, recalculate poverty					
		Food Stamps	AFDC-TANF	EITC	UI [Vet, WC]	SSI	SSDI [SS]
A. 50% Poverty							
UR x 1980s	0.102	0.239	0.324	0.109	0.161	0.062	0.101
	(0.033)	(0.034)	(0.079)	(0.033)	(0.031)	(0.038)	(0.039)
UR x Rest of period	0.208	0.340	0.341	0.246	0.248	0.210	0.256
	(0.057)	(0.070)	(0.096)	(0.064)	(0.059)	(0.057)	(0.056)
UR x GR	0.193	0.270	0.131	0.218	0.283	0.188	0.238
	(0.034)	(0.028)	(0.045)	(0.039)	(0.040)	(0.039)	(0.046)
B. 100% Poverty							
UR x 1980s	0.513	0.543	0.600	0.521	0.646	0.494	0.521
	(0.062)	(0.067)	(0.078)	(0.061)	(0.065)	(0.066)	(0.068)
UR x Rest of period	0.732	0.798	0.794	0.831	0.834	0.701	0.787
	(0.136)	(0.130)	(0.138)	(0.133)	(0.141)	(0.131)	(0.137)
UR x GR	0.496	0.568	0.462	0.606	0.621	0.473	0.561
	(0.055)	(0.055)	(0.072)	(0.059)	(0.052)	(0.055)	(0.053)
C. 150% Poverty							
UR x 1980s	0.697	0.698	0.730	0.688	0.852	0.688	0.720
	(0.146)	(0.146)	(0.139)	(0.137)	(0.144)	(0.148)	(0.155)
UR x Rest of period	1.132	1.183	1.203	1.191	1.292	1.144	1.173
	(0.189)	(0.202)	(0.223)	(0.200)	(0.203)	(0.193)	(0.187)
UR x GR	0.907	0.929	0.895	0.933	1.061	0.875	0.960
	(0.084)	(0.084)	(0.084)	(0.095)	(0.087)	(0.083)	(0.080)
D. 200% Poverty							
UR x 1980s	0.817	0.807	0.828	0.792	0.978	0.788	0.814
	(0.160)	(0.161)	(0.160)	(0.161)	(0.158)	(0.162)	(0.172)
UR x Rest of period	1.316	1.321	1.339	1.296	1.415	1.329	1.317
	(0.274)	(0.274)	(0.278)	(0.278)	(0.270)	(0.272)	(0.264)
UR x GR	1.302	1.288	1.291	1.283	1.452	1.289	1.374
	(0.159)	(0.156)	(0.156)	(0.165)	(0.163)	(0.156)	(0.155)
N	1530	1530	1530	1530	1530	1530	1530

Notes: Data are from the CPS ASEC calendar years 1980-2011 and are collapsed to the state by year level (weighted). All regressions include controls for state and year fixed effects. The results are weighted by the number of sum of the CPS weights for the individuals in each cell. Standard errors are clustered by state and shown in parentheses. * $p<0.10$, ** $p<0.05$, ***$p<0.01$.

Table 8: Household Multiple Program Participation, CPS

| | Household participation in safety net | | | |
	UI	Food Stamps	AFDC/ TANF	SSI
A. Participation conditional on receiving UI				
1982	1.000	0.138	0.055	0.016
2010	1.000	0.199	0.031	0.043
B. Participation conditional on receiving Food Stamps				
1982	0.199	1.000	0.541	0.097
2010	0.180	1.000	0.134	0.146
C. Participation conditional on receiving AFDC/TANF				
1982	0.120	0.806	1.000	0.086
2010	0.153	0.772	1.000	0.138
D. Participation conditional on receiving SSI				
1982	0.108	0.446	0.262	1.000
2010	0.129	0.492	0.086	1.000

Notes: Authors' calculations from 1983 and 2011 March Current Population Survey data for 1982 and 2010 calendar year income. Sample includes nonelderly individuals. Safety net participation is assigned at the household level.

Table 9: Household Multiple Program Participation, Comparison of CPS to Food Stamp Quality Control Data

| | Household participation in safety net conditional on receving Food Stamps | | | |
	UI	Food Stamps	AFDC/ TANF	SSI
A. Food Stamp Quality Control Data (Recipiency Unit)				
2001	0.019	1.000	0.234	0.335
2010	0.059	1.000	0.076	0.202
B. March CPS (Household)				
2001	0.093	1.000	0.240	0.286
2010	0.127	1.000	0.119	0.198

Notes: Panel A is authors' calculations from 1983 and 2011 March Current Population Survey data for 1982 and 2010 calendar year income. Sample includes nonelderly individuals. Safety net participation is assigned at the household level. Panel B is authors' tabulations of the Food Stamp Quality Control data.

Appendix Table 1: Dating of Contractions and Expansions

	Annual Data		Monthly Data	
	Contraction	Expansion	Contraction	Expansion
1980s Cycle	1979 – 1982	1983 – 1989	– 11/1982	12/1982 – 3/1989
	1979 – 1989		– 3/1989	
Rest of Period	1990 – 1992	1993 – 2000	4/1989 – 6/1992	7/1992 – 4/2000
	2001 – 2003	2004 – 2006	5/2000 – 6/2003	7/2003 – 10/2006
	1990-2006		4/1989 – 10/2006	
Great Recession	2007 – 2010	2011+	11/2006 – 10/2009	11/2009 +
	2007+		11/2006 +	

Notes: See text and data appendix.