Examining the Social Safety Net Response to the COVID-19 Pandemic

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Abstract

In response to the COVID-19 pandemic, TANF and SNAP cases together have increased by 3.5 million between March and June 2020, their largest quarterly increase ever. This paper presents statistics on the growth of TANF and SNAP caseloads from twenty-four state agencies during the initial five months of the COVID-19 crisis. I find that TANF and SNAP caseloads have risen by eleven and seventeen percent in response to the pandemic thus far. For every 10,000 people, the average state gained 4 TANF cases to an existing 35 cases and 109 cases to an existing 647 SNAP cases. I find that each percentage point increase in state unemployment rates is associated with a 1.1 percent increase in TANF cases and a 1.4 percent increase in SNAP cases. A similar county-level analysis suggests the TANF caseload response is double the state-level estimate and the SNAP response is lightly lower.

Introduction

Between March and June 2020, SNAP and TANF caseloads together surged by a combined 3.5 million, their largest quarterly gain ever. These changes were sparked by the COVID-19 pandemic and ensuing labor market carnage. This paper measures and explores how these two components of the US social safety net has responded to the COVID-19 crisis by collecting and analyzing data from individual state agencies. Understanding the responsiveness of TANF and SNAP during the pandemic is important for evaluating the need for additional support or policy changes going forward.

Unemployment Insurance (UI) has been the primary safety net program for funneling pandemic relief with 45 million claims filed over the March to June period. UI provides an important and well-targeted assistance because it quickly provides cash benefits to recently unemployed workers. Through the Coronavirus Aid, Relief, and Economic Security (CARES) Act signed in March 2020, UI benefits were extended, expanded, and augmented. The severe drop in labor demand during the pandemic (Forsythe et al., 2020) justifies this focus as UI targets assistance to workers negatively affected by the crisis. Han et al. (2020) use monthly CPS data to find that these UI enhancements effectively reduced poverty during the pandemic. While Han et al. (2020) find that a majority of households losing employment was covered by UI, delays in processing and receipt of benefits may have negatively affected many recipients. Despite this large benefit, some people outside the realm of UI benefits still face a significant economic hardship. Including those seeking work prior to the pandemic, those awaiting UI benefits, and those who quit their job or reduced their hours either to avoid the health risk of work or to supervise children now at home. Households with few financial assets may benefit greatly from alternative transfer programs, such as SNAP or TANF during the crisis as the weak labor market makes finding work difficult.

Two other social safety net programs capable of quickly responding to a sudden economic shock are Temporary Assistance for Needy Families (TANF) and the Supplemental Nutrition Assistance Program (SNAP). TANF is a means-tested block grant program that provides cash-assistance averaging $423 per month and primarily targets single parents. SNAP is a means-tested federal program offering food vouchers averaging $256 per month to most low-income households. Both TANF and SNAP provide benefits to

eligible households within a month of application and often sooner. Other core safety net programs are not designed to provide assistance for a sudden shock because either benefits are provided annually (Earned Income Tax Credit), the application process is lengthy (Supplemental Security Income), or the program is over-subscribed (Housing Assistance).

The Families First Coronavirus Response Act, signed into law on March 18th, 2020, allowed states to increase SNAP benefits to the maximum household level. Aside from assisting families during the crisis, this change meant that the benefit of enhanced UI benefits would not be reduced through the SNAP benefit formula. This policy change translates to a large increase in SNAP benefits. Simulating this policy on 2018 SNAP recipients, the average household received $238 per month but was eligible for an additional $105 (a 44 percent increase). In comparison, SNAP benefits were increased during the Great Recession by raising the maximum potential benefit by 14 percent. The Families First Act also included other policy adjustments for the pandemic such as compensation for child school lunches, extended certification periods, and waiving periodic reporting. The combination of these policy changes may contribute to increased benefit take-up and welfare of SNAP households during the pandemic.

Prior work has found that the social safety net caseload response to economic shocks has evolved over time. For instance, Bitler and Hoynes (2016) and Ziliak et al. (2003) use state-level variation to find SNAP caseloads responded to a one percentage point unemployment rate shock by increasing caseloads by 3.4 and 2.3 percent respectively. Ganong and Liebman (2018) expands on this by disentangling the SNAP caseload response to labor market conditions from state SNAP policy variation using county-level data, developing a SNAP policy index, and instrumenting for unemployment rate changes. They find that a much greater response where each percentage point increase in the local unemployment rate increases SNAP caseloads by 15 percent.

The relevance of TANF as a safety net program has decreased over time as caseloads have declined by seventy percent since its inception in 1996. Policies enforcing lifetime benefit limits and work requirements have contributed to a severe decline in caseloads (Chan, 2018; Grogger, 2004; Swann, 2005) while the gradual erosion of effective benefit guarantees (Hembre, 2020; Ziliak, 2007) has reduced the appeal of participation. While its role has diminished, TANF remains a highly valuable program because it targets

transfers to very low-income households and provides cash, as opposed to in-kind transfers. Cash may be especially important during the pandemic, as households with children may have to invest in remote learning materials and personal health safety measures among other essential expenses.

Historically, TANF, and it predecessor AFDC (Aid to Families with Dependent Children), were found to be quite responsive to unemployment shocks in the past (Klerman and Haider, 2004; Figlio et al., 2000; Blank, 2001). Bitler and Hoynes (2016) examine the safety net response during the largest economic shock in recent history and find that the TANF response was nonexistent. One potential cause for the change in the counter-cyclical behavior of TANF is the emphasis on work requirements relative to AFDC. Requiring work activity as a condition of benefit receipt raises the cost of participation during economic contractions. During a health pandemic, the cost of work requirements may be even higher as many daycares and schools are closed and family members are reluctant to help due to infection risk.

Because federal reporting of TANF and SNAP caseloads during the pandemic is released with a significant lag, I collect monthly reports provided by administrative agencies in twenty-four states covering the period between January 2017 through July 2020, to study the safety net response to COVID-19. This collection of states is broadly representative of the US and includes three-quarters of the population. This sample of states report total monthly caseloads for both TANF and SNAP, and eight of these states provide county-level monthly caseload data.

I find a swift TANF and SNAP response to the COVID-19 crisis. Compared to March 2020, TANF and SNAP caseloads rose eleven and seventeen percent by June or an estimated 139,000 and 3.38 million new caseloads. For TANF this is the largest quarterly percentage increase in its history, and for SNAP, it is the largest since the 1970s when the program was in its initial expansion phase. This increase was concentrated between March and May and mostly leveled off in June and July.

The safety net expansion during the COVID-19 crisis has not been uniform across states. In four months, Florida SNAP cases have risen forty-six percent while South Dakota cases declined. I measure the safety net response to the labor market shock induced by the COVID-19 crisis by regressing within-state changes in the unemployment rate on

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TANF and SNAP caseloads. I find that during my sample period, each percentage point increase in the unemployment rate is associated with a 1.1 percent increase in TANF and a 1.4 percentage point increase in SNAP when using state-level variation, and 1.7 percent and 1.8 percent when using county-level variation. While the focus on the unemployment rate as the driver of safety net participation during the pandemic may seem simplistic given the plethora of competing health concerns and policy changes during this period. However Kong and Prinz (2020) find that non pharmaceutical interventions such as stay-at-home orders, large-gathering bans, and schools closures, explain only six percent of the variation in UI claims during the pandemic.

Some state agencies were better equipped to handle the unique challenges of the pandemic. In particular, not all are equipped with an online TANF application system and required in-person interaction to process new TANF applications. This is in contract to SNAP, which requires states to have an online application. Schwabish (2012) used timing variation in the state adoption to conclude that online applications increased SNAP participation by five percent. Because of the stay-at-home orders in many states combined with the infectious disease risk, not having an online application particularly raised the application cost for new participants during the pandemic. I find that the TANF responsiveness was 0.74 percent lower —about three-quarters of the effect size —if a state did not have an online application.

Data and Methods

Monthly Caseload Data

To measure and evaluate the safety net response to the COVID-19 pandemic, I first collect data on TANF and SNAP caseloads since national administrative or survey data covering the pandemic period have not been published. State agencies report timelier TANF and SNAP caseload statistics. After surveying all available TANF and SNAP state agency websites, I find twenty-four that provide monthly reports for both programs through June 2020 or later. Appendix Table A.1 lists these states, which broadly represents each region. Because states that are more populous are more likely to provide

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caseload data, this sample covers three-quarters of the US population. Eight of these states provide reports at the county-level. State agencies vary in the historical caseload data they provide. The estimation sample includes observations between January 2017 and July 2020 to allow a sufficient pre-pandemic period to capture caseload trends and seasonality. I supplement the state-level analysis with a county-level analysis to improve precision and analyze within-state caseload response variation.

Some states were better equipped to adapt to the novel challenges of a negative labor market shock to the social safety net during an infectious disease pandemic. Many states have modified policies and procedures to reduce personal interaction in order to lessen the transmission risk introduced by the COVID-19 virus. But pre-existing infrastructure and procedures related to personal interaction may contribute to program take-up during the pandemic. In particular, potential recipients in states lacking an online-only application that can be submitted without going to a program office may be less likely to apply for benefits. I surveyed SNAP and TANF state agency websites in April 2020 to see which states offered online applications. While all states offered an online SNAP application, five of the twenty-four states surveyed did not have an online application available as listed in Appendix Table A.1.

Between March and April of 2020, the COVID-19 pandemic ravaged the labor market leading to a ten percentage point increase in the national unemployment rate. Both the availability and demand for labor dried up quickly. The passage of two bills the CARES Act and the Paycheck Protection Program and Health Care Enhancement Act, provided trillions in relief and stimulus primarily through extending and supplementing UI benefits, subsidizing payroll, and a one-time $1,200 "Economic Impact Payment". While this legislation was passed quickly, delays in benefit distribution and UI application backlogs detract from its effectiveness. The aftermath of the economic shock left many households either newly eligible or suddenly in need of additional income support and many applied for TANF and SNAP.

Pandemic Caseload Trends

Figure 1 displays changes in monthly TANF and SNAP caseloads in 2020 relative to January. The dark line displays the national weighted average monthly percentage change January of 2020 while each grey line represents a state in the study sample. Between March and June of 2020, TANF and SNAP experienced an unprecedented swell in caseloads. Within my study sample, TANF caseloads rose by 101,634 (11 percent) over this quarter while SNAP caseloads rose 2.47 million (17 percent). Assuming a similar percentage change among out-of-sample states, this predicts a national increase of 139,000 and 3.38 million TANF and SNAP caseloads. This flood of new TANF and SNAP caseloads due to the COVID crisis is greatest quarterly increase than for any quarter during Great Recession.

The majority of this caseload increase occurred in April and May, before caseloads leveled off in June and July. The stabilization of caseloads in June for most states could be the result of states processing the backlog of UI claims and supplemental benefits. Although the CARES Act increased benefits for SNAP-eligible households, the increased UI benefits and Economic Impact Payment could push some households past both the SNAP and TANF income eligibility threshold and disqualify them for benefits. Because the federal $600 UI supplement ended in July, caseloads may grow again beginning in August.

Results reveal significant variation in caseload response to the pandemic across states (see the thinner grey lines in Figure 1). Dispersion in the TANF caseload response is double that of SNAP, with four states reporting over a 20 percent caseload increase while seven states have fewer cases relative to January. The increased TANF dispersion may be partially related to some states directing new recipients towards short-term state-funded diversion programs instead of TANF as a survey of state TANF administrators reveals (Shantz et al., 2020). For SNAP, only one state, South Dakota, currently has (marginally) fewer cases relative to January 2020. Though the initial SNAP pandemic response appears coordinated across states, by July half of states reported decreases in SNAP caseloads while half continued an upwards trajectory.

To appreciate the scale and relationship between the TANF and SNAP caseload increase, Figure 2 plots changes in the per capita caseloads between June and February 2020.

Although TANF and SNAP reported similar caseload increases in percentage terms, SNAP greatly overshadows TANF in absolute terms. For every 10,000 people, the average state gained 4 TANF cases to an existing 35 cases and 109 SNAP cases to an existing 647 cases.

The large overlap of program eligibility could lead to a fair amount of complementarity between TANF and SNAP caseload responses. For instance, qualifying for TANF confers automatic SNAP eligibility to the household. Because the SNAP income threshold and other eligibility criteria are less stringent than TANF, we could expect that states with a greater influx of SNAP eligible households would also have a greater influx of TANF eligible households. Figure 2 displays a moderately weak correlation of 0.20 between the state per capita change in TANF and SNAP cases. This may partially be driven by the availability of TANF online applications. States without online TANF applications, shown in red crosses in Figure 2, had lower TANF caseloads changes relative to their SNAP caseload change. Excluding states without an online TANF application increases the correlation to 0.27.

This naive data analysis revealed large differences across states in the social safety net response to COVID-19, but these states experienced differing levels of economic hardship from the crisis. Cross-state differences in the TANF response to labor market conditions are not surprising given that states have wide discretion in setting TANF rules and regulations such as time limits, benefit levels, and benefit tax rates. In contrast, the SNAP benefit formula is uniform across all states.[1] However, states can vary in the administration of other SNAP policies and procedures, leading to cross-state differences (e.g. inclusion of asset tests, length of certification period, fingerprint requirements (Geller and Isaacs, 2019)). These policy differences have been shown to have a significant effect on SNAP participation (Ganong and Liebman, 2018; Mulligan, 2012).

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[1]Alaska and Hawaii have slightly higher maximum benefit amounts but neither are not in the study.

Methodology

To gauge the quality of a net one must compare the force exerted upon it against the cushion it provides. Similar to prior work such as Ganong and Liebman (2018), Bitler and Hoynes (2016), Hardy et al. (2018), and Blank (2001) I measure the TANF and SNAP caseload response relative to changes in the unemployment rate. Of particular interest is whether TANF provided any relief during the COVID-19 crisis Bitler and Hoynes (2016) found that while historically TANF (and its predecessor AFDC) provided a buffer to low-income households during period of reduced labor demand, during the Great Recession TANF provided no increased assistance to states with high unemployment rates. This finding confirmed worries that time limits and work-requirement greatly reduced the effectiveness of TANF to respond to labor market conditions.

I measure the responsiveness of the safety net to the COVID-19 crisis by estimating the following equation:

$$y_{it} = \beta_0 + \beta_1 UR_{it} + \alpha_{iy} + \eta_{im} + \epsilon_{it} \tag{1}$$

where subscripts refer to state (or county) i and date t, and UR_{it} is the state (or county) unemployment rate (divided by 100). The main specification includes state-by-year (α_{iy}) and state-by-month fixed effects, η_{sm}. The state-by-month fixed effects captures differences across states in seasonal caseload variation, while state-by-year fixed effects controls for longer-term cross-location caseload trends. Each regression is weighted by state (county) population and robust standard errors are clustered at the state (county) level. As a robustness check, I estimate Equation 1 by substituting state-by-year and state-by-month fixed effects with state, year, and month fixed effects.

The outcome variable, y_{it}, is TANF or SNAP caseloads divided by the state (county) population. The coefficient of interest, β_1, represents the effect of changes to the state or county-level unemployment rate on caseloads per capita. Unemployment rate data are provided by the Department of Labor.

To isolate the unemployment rate effect on safety net caseloads during the pandemic, I modify Equation (1) to separate the unemployment response in the year surrounding the

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pandemic relative to prior periods in the sample:

$$y_{it} = \beta_0 + \beta_1 UR_{it} \times \text{Pre-Pandmeic}_t + \beta_1 UR_{it} \times \text{Pandemic}_t + \alpha_{iy} + \eta_{im} + \epsilon_{it} \qquad (2)$$

In this equation *Pandemic* and *Pre-Pandemic* are indicators equal to one if the date is (or is not) within a year of July 2020.

To analyze state- or county-level variation in its unemployment responsiveness, I estimate the following modification of Equation (1):

$$y_{it} = \beta_0 + \sum_{s=i}^{N} \beta_s UR_{it} \times \{s = i\} + \gamma_{iy} + \eta_{im} + \epsilon_{it} \qquad (3)$$

where β_s is a state (county)-specific coefficient and N is the number of states (24) or counties (709) in the sample.

I consider both state and county level analysis of the safety net response to the COVID-19 crisis. An advantage of state-level analysis is that the sample covers a greater portion of the country implying results that are more representative. State-level analysis is also less variable compared to county-level caseload trends that are noisier and can include very small caseload levels especially in rural counties. Following Ganong and Liebman (2018), county-level caseload analysis helps isolate unemployment rate by reducing measurement error and allows me to analyze within-state variation. Within-state variation is particularly interesting because it eliminates cross-state policy variation which previous studies have found to influence participation (Ganong and Liebman, 2018; Mulligan, 2012). While the county-level estimation sample includes only eight states (Alabama, Michigan, California, Florida, Texas, New York, Pennsylvania, and Louisiana) these states cover almost half of the nation with a collective population of 142 million.

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Findings

State-level analysis

Panel A of Table 1 shows results from estimating Equation (1) at both the state and county level over the full sample period. The first two columns, using state-level data, reveal that for each percentage point increase in the unemployment rate during the pandemic time frame, TANF increases by 4 cases per 1,000 people and SNAP increases by 89 cases per 1,000 people with both effects statistically significant at the 99% level. To translate this effect size into the relative impact of an unemployment rate change on program caseloads, below the coefficient I report the percent impact defined as the estimated coefficient divided by the program mean over the sample period. While the SNAP caseload response dwarfs the TANF response in absolute terms, we see their relative impact during the COVID-19 crisis is quite similar. For each one percent increase in the unemployment rate, TANF cases rose by 1.1 percent while SNAP cases rose by 1.4 percent.

To understand the relative difference of the state- and county-level estimates, the middle two columns of Table 1 estimate Equation 1 on the sample of state which have county-level data available. Among this sample, the unemployment rate effect on TANF is slightly lower at 0.85 percent but slightly higher on SNAP at 1.72 percent.

Panel B of Table 1 displays results splitting the unemployment rate effect between the pre-pandemic period (January 2017-June 2019) and the pandemic period (July 2019-July 2020). Because the unemployment rate variation in the full sample period is concentrated during the pandemic period, this separation of the effect results in minor positive adjustments to the estimated percent impact.

For robustness, Appendix Table A.2 replicates Table 1 using state, year, and month fixed effects in place of state-year and month-year fixed effects, but results in comparable effect sizes.

Relative to the Great Recession, the positive and significant TANF response is surprising and encouraging considering the estimates Bitler and Hoynes (2016) that TANF cases

were unresponsive to unemployment during the Great Recession. In contrast, while adding 3 million cases to SNAP rolls in just three months is unprecedented, the SNAP response during the COVID crisis relative to the size of the unemployment shock has only been half as large compared to the Great Recession which had a percent impact of 3.4. The reduced SNAP response could be related to a higher fraction of the unemployed surpassing SNAP income eligibility threshold. For example, the self-employed, independent contractors, and gig workers all are not normally eligible for UI benefits but received benefits during the pandemic due to expanded UI coverage from the CARES act.

To further examine state-level variation in the TANF and SNAP COVID response, I estimate Equation (3) to obtain state-level responses. Figure 3 displays these state-level TANF and SNAP percent impact estimates. Points below the dotted 45 degree line indicate the state had a larger SNAP response relative to TANF. Perhaps surprisingly, nine of the twenty-four states reveal a relatively greater TANF response to the COVID crisis compared to SNAP. There is a positive correlation of 0.53 between the TANF and SNAP effect sizes which is a stronger relationship compared to the absolute effects displayed in Figure 2. On average, each percentage point increase in the unemployment percent impact for SNAP is associated with an increase of 0.61 percentage points in the unemployment percent impact for TANF.

TANF Online Applications

State without a TANF online application are marked using red crosses in Figure 3 relative to the black circles representing states with an online TANF application. On average, states without an online TANF application had a percent impact 0.73 percent lower than what would be predicted given their SNAP impact. The online application effect size is large and equates to a sixty-nine percent reduction in the expected TANF effect size. While this policy affects a small sample of states, it is one clear example of how pre-existing cross-state differences in program infrastructure and policies affected the safety net response to the COVID-19 crisis.

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County-level analysis

Columns 5 and 6 of panel A in Table 1 displays results from estimating Equation (1) at the county-level. Among this sample, the percent impact of the unemployment rate on caseloads is larger for both TANF and SNAP at 1.7 and 1.8 percent. Compared to the state-level estimates among the county sample, the TANF effect is twice as large while the SNAP effect is slightly higher. The increased effect size of county-level compared to state-level variation follows the findings in Ganong and Liebman (2018) which showed that measurement error in state-level variation can downward bias caseload responsiveness estimates. Assuming the same relationship between state and county estimates for non-sample states, the expected TANF and SNAP percent impact changes to 2.1 and 1.4 percent.

Panel B of Table 1 presents results isolating the unemployment response during the year surrounding the pandemic. Using this specification, the percent impact of the unemployment rate on caseloads increases considerably for TANF to 3.5 but declines to 1.4 for SNAP. This refinement highlights how unexpected the TANF response to COVID-19 has been and provides further evidence the SNAP response has been smaller relative to previous economic contractions.

Figure 4 plots county-level unemployment rate percent impact estimates obtained from estimating Equation (3). Circle sizes are proportional to county population. Counties located above the dotted forty-five degree line indicated that the unemployment shock has greater effect on TANF cases relative to SNAP. The solid red line reflects a population-weighted linear fit of the TANF and SNAP effects. Some counties have extremely low caseload levels, particularly for TANF which reaches single digit caseloads in some smaller counties. Small caseload levels can lead to large caseload swings in percentage terms. To reduce the effects of outlier observations in the figure, effect sizes are top and bottom-coded at positive 10 and -5 percent and counties with populations below 20,000 people are not shown.

The relationship between TANF and SNAP responsiveness within each state of the county-level sample reveals a positive slope in the linear fit line indicating a positive correlation between the two programs as expected. However, these county-level estimates

reveals wide variation both across and within states in the bunching of unemployment caseload effect sizes. For instance, the weighted unemployment effect standard deviation in Texas is 3.40 and 2.47 for TANF and SNAP respectively, more than triple the comparable statistics in Alabama at 0.34 and 1.04. The weighted standard deviation of these county-level effect sizes are double for TANF relative to SNAP. This likely reflects greater within-state policy variation in TANF relative to SNAP. Focusing on within-state unemployment variation, we see a stronger relationship between TANF and SNAP caseloads as each percentage point increase in the SNAP effect size predicts a 0.79 percentage point increase in TANF effect size compared to a 0.61 estimate among this sample at the state-level.

Conclusion

This paper presented statistics on the growth of TANF and SNAP caseloads from twenty-four state agencies during the initial five months of the COVID-19 crisis.

The economic shock induced by this health crisis has provided an extraordinary test of the social safety net. While a primary focus of the safety net response has been centered on UI generosity and eligibility, this paper illuminates how other core programs of the safety net have responded thus far. TANF and SNAP continue to provide vital assistance to low-income households, particularly to those with children. This assistance is especially valuable during the health crisis since the sharp reduction in labor demand and childcare or schooling arrangements has limited the ability of adults to increase labor supply to support their families. Understanding the initial evidence on the safety net response to COVID is immediately valuable to policymakers currently debating modifications to these programs.

I find that between January and June 2020 TANF and SNAP cases increase by eleven and seventeen percent corresponding to an estimated increase of 139,000 TANF cases and 3.38 million SNAP cases. Relative to the size of the labor market shock, this response has been lower than expected for SNAP but greater for TANF compared to the Great Recession. Using state-level variation, the estimated relationship between the unemployment rate and caseloads suggest that for each percentage point increase in the

unemployment rate, TANF caseloads increased by 1.1 percent and SNAP caseloads increased by 1.4 percent. Utilizing within-state variation with county-level data, these effects increase to 1.7 and 1.8 percent.

One aspect that appears to have hindered the TANF caseload response in several states is the absence of an online application option. I find that states without a TANF online application had on average a 0.73 lower percent increase in caseloads than would be expected given the SNAP response. Policymakers may wish to consider suspending enforcement of other TANF policies during the crisis such as work requirements as closed childcare facilities and shelter-in-place orders limit capacity for participants to fulfill these requirements.

While this study provided early evidence on the safety net response to the COVID pandemic, many aspects deserve continued focus. One important question will be studying the participation response and welfare consequences of the large expansion of SNAP benefits in the CARES act. Since SNAP benefits are traditionally indexed to inflation, increasing each participants benefits to the maximum monthly amount will result in the largest SNAP benefit expansion in program history. The results of this expansion will provide an excellent test for the relative benefits of a future program expansion. Alternatively, the increase in TANF participation provides an important test of TANF lifetime limits. Young mothers forced onto TANF during the pandemic reduce their ability to utilize TANF benefits in the future and could suffer as a result.

In summary, this paper concludes that thus far the safety net has expanding significantly during the COVID pandemic, although this expansion has been smaller than expected relative to the size of the economic shock. The resurgence of TANF as a cushion to economic shocks, though small in absolute terms, is encouraging given prior results while the final evaluation of the SNAP response may depend on its adjustment after UI benefits expire.

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Figure 1: Percent Change in Safety Net Caseloads, January-July 2020
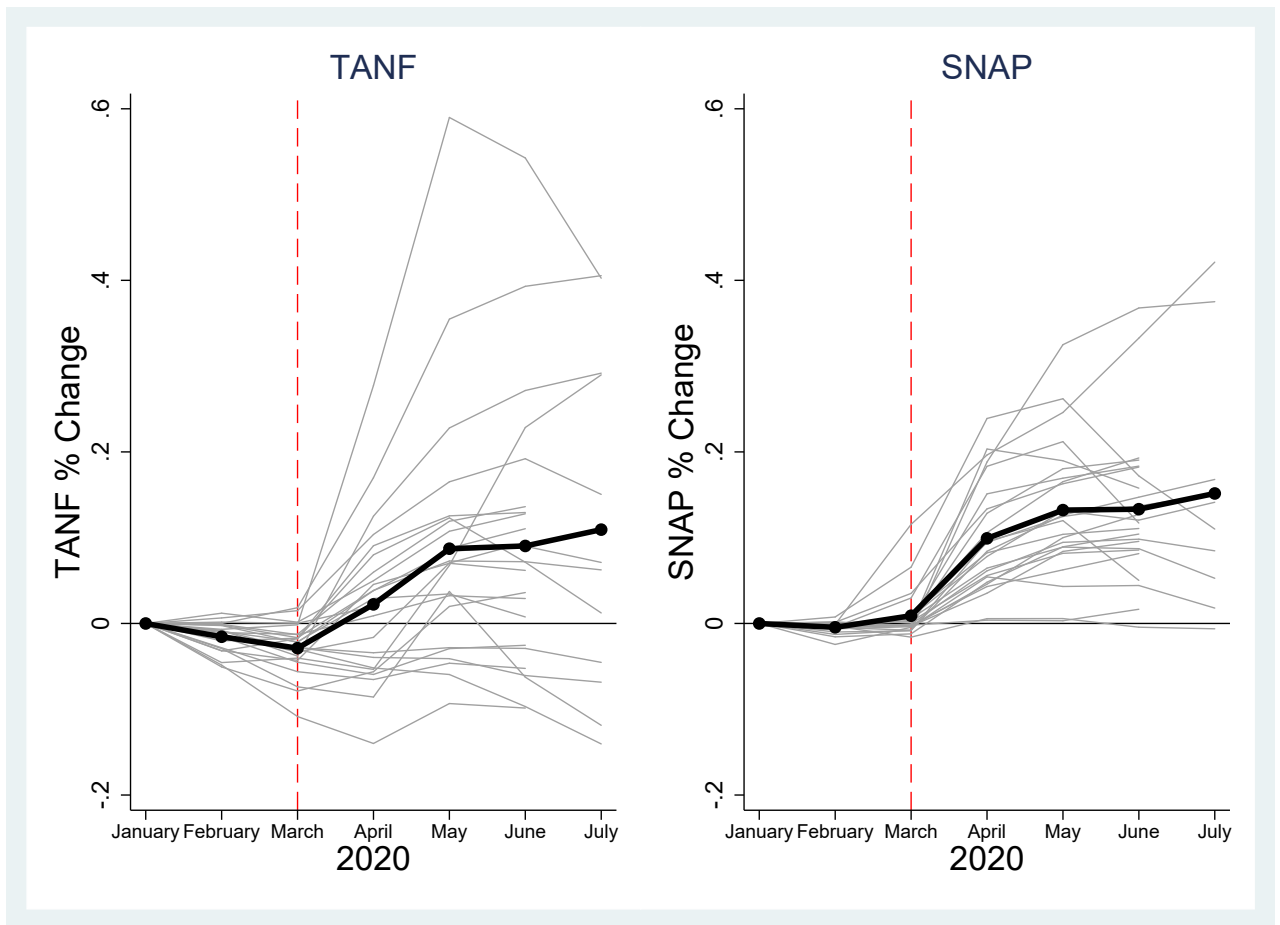
Note: This figure displays the percentage change in monthly TANF and SNAP caseloads relative to January 2020. Each grey line represents a state and the black is the state average. The dotted red line represents the beginning of the COVID crisis in March 2020.

Figure 2: State-level Safety Net Caseload Response to COVID Crisis
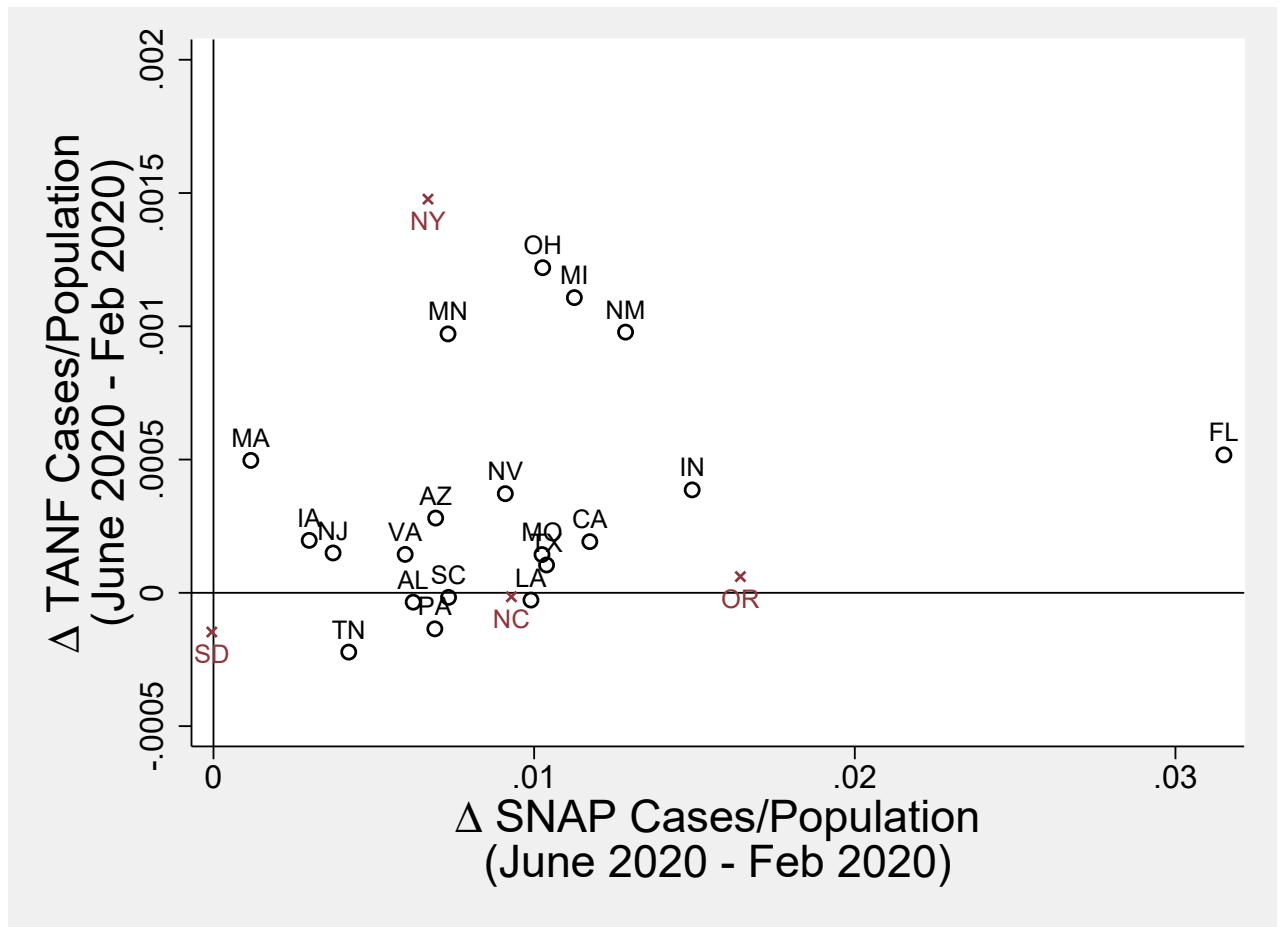
Note: This figure displays state-level per capita change in TANF and SNAP caseloads between February and June 2020. Black circles represent states that have an online application while red crosses represent states without an online application option.

Figure 3: State-level Safety Net Caseload Response to COVID Crisis
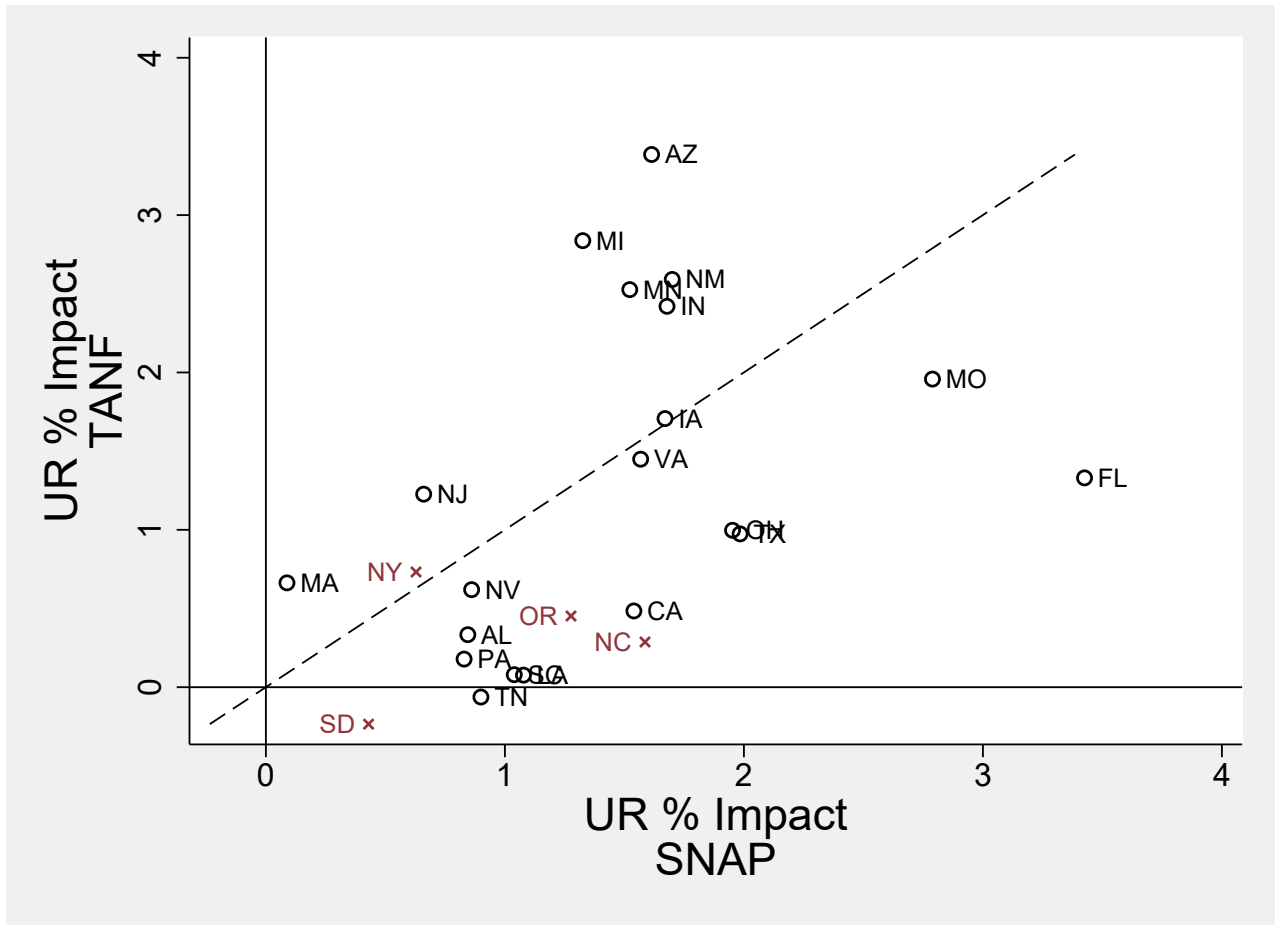
Note: This figure displays the state-level unemployment rate percent impact on TANF and SNAP from estimating Equation 2. Black circles represent states that have an online application while red crosses represent states without an online application option. Percent impact is the estimated percentage change in TANF or SNAP caseloads in response to one percentage point increase in the unemployment rate. Dashed line is the 45 degree line.

Figure 4: County-level Safety Net Caseload Response to COVID Crisis
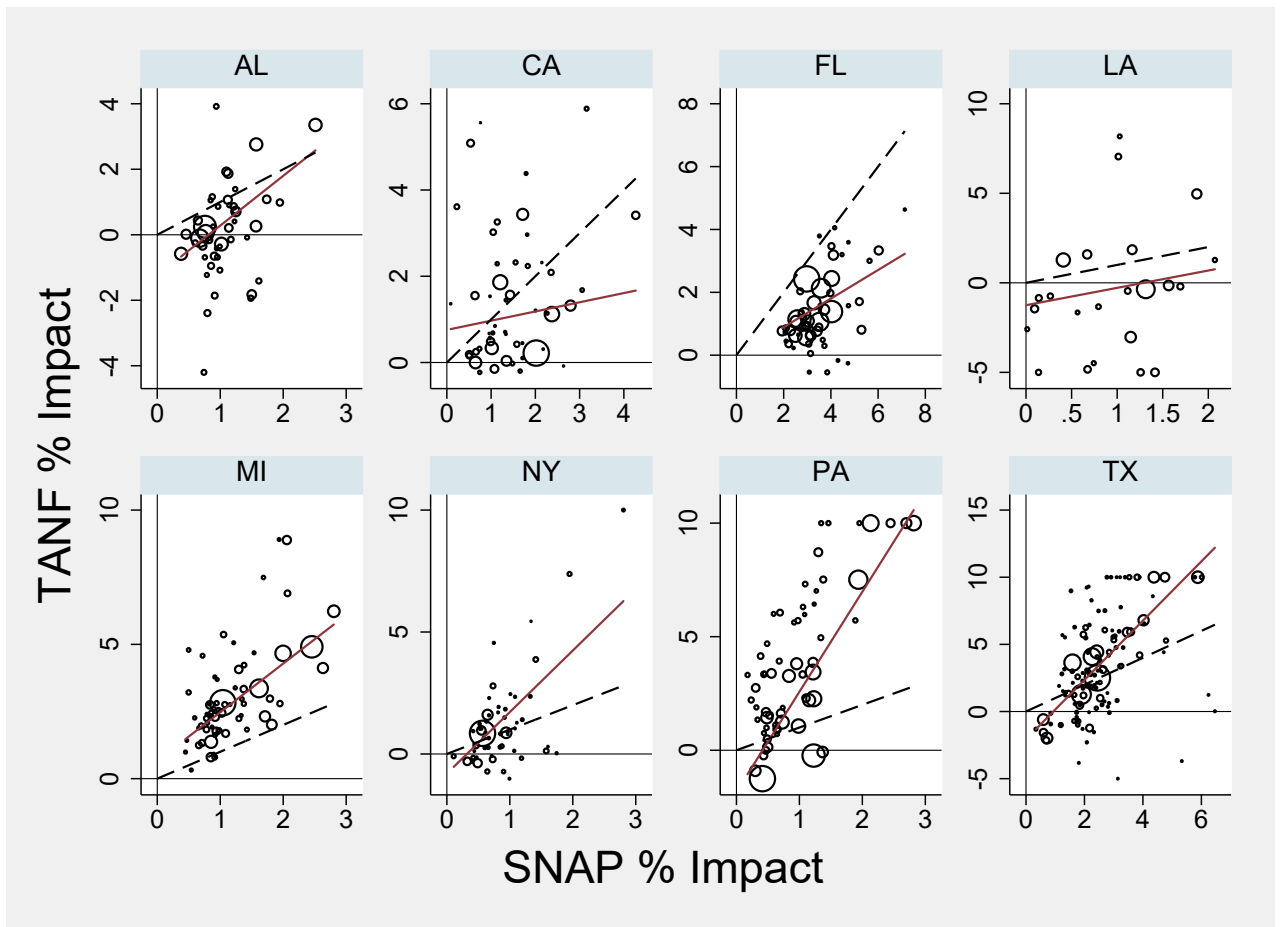
Note: This figure displays county-level unemployment rate percent impact on TANF and SNAP from estimating Equation 3. Marker size weighted by county population. Dotted line reflects the 45 degree line. Solid red line is a population-weighted linear fit of data. Values are top and bottom coded at 10 and -5. Counties with populations below 20,000 are excluded from the figure.

Table 1: Effect of Unemployment Rate on Safety Net Caseloads During the COVID-19 Crisis

	State		State (County Sample)		County	
	TANF	SNAP	TANF	SNAP	TANF	SNAP
	A. Pooled Estimates					
Unemployment Rate	0.0037***	0.0894***	0.0030***	0.1115**	0.0045***	0.1008***
	(0.0010)	(0.0210)	(0.0007)	(0.0375)	(0.0017)	(0.0096)
% Impact UR	1.051	1.382	0.851	1.72	1.677	1.755
Outcome Mean	0.0035	0.0647	0.0035	0.0647	0.0027	0.0576
	B. By Period (Pre-Pandemic, Pandemic)					
Unemployment Rate	0.0016	0.0111	0.0008	-0.0480	0.0042**	0.1028***
(Pre-Pandemic)	0.0016	0.0553	0.0008	0.0519	0.0042**	0.1025***
	(0.0016)	(0.0441)	(0.0020)	(0.0909)	(0.0017)	(0.0097)
Unemployment Rate	0.0039***	0.0844***	0.0032**	0.1009*	0.0095***	0.0788***
(Pandemic)	0.0039***	0.0918***	0.0032**	0.1151**	0.0095***	0.0786***
	(0.0010)	(0.0208)	(0.0008)	(0.0360)	(0.0020)	(0.0170)
% Impact UR	1.096	1.419	0.892	1.779	3.502	1.363
(Pandemic)						
N	940	940	240	240	27,052	27,052

* $p<0.10$, ** $p<0.05$, *** $p<0.010$

Note: This table represents results from estimating Equations (1) and (2) on the period January 2017 through July 2020. The table is split by whether observations are at the state or county level.
Source: State TANF and SNAP agencies.

Appendix

Table A.1: TANF and SNAP Data

State	Begin Date	Last Date	County-Level Data	TANF Online
AL	Apr 2016	Jun 2020	Yes	Yes
AZ	Jan 2017	Jul 2020	No	Yes
CA	Jan 2016	Jun 2020	Yes	Yes
FL	Jan 2016	Aug 2020	Yes	Yes
IA	Feb 2016	Jun 2020	No	Yes
IN	Jul 2016	Jul 2020	No	Yes
LA	Apr 2016	Jun 2020	Yes	Yes
MA	Jan 2017	Jun 2020	No	Yes
MI	Jan 2016	Jul 2020	Yes	Yes
MN	Jan 2016	Jul 2020	No	Yes
MO	Jan 2016	Jul 2020	No	Yes
NC	Jan 2016	Jul 2020	No	No
NJ	May 2016	Jun 2020	No	Yes
NM	Apr 2017	Jun 2020	No	Yes
NV	Jan 2017	Jul 2020	No	Yes
NY	Jan 2016	Jun 2020	Yes	No
OH	Jan 2017	Jun 2020	No	Yes
OR	Aug 2016	Jun 2020	No	No
PA	Jan 2016	Jun 2020	Yes	Yes
SC	Jan 2016	Jun 2020	No	Yes
SD	Jul 2016	Jul 2020	No	No
TN	Jan 2017	Jul 2020	No	Yes
TX	Jan 2017	Jun 2020	Yes	Yes
VA	Jan 2019	Jul 2020	No	Yes

Note: This table displays states which had both TANF and SNAP monthly caseload data available through at least June 2020. Sample begin and end dates are shown in columns 2 and 3. Columns 4 and 5 indicate whether the state is included in the county-level sample and whether the state had the option for an online TANF application. All states have a SNAP online application available.
Sources: State TANF and SNAP agencies.

Table A.2: Effect of Unemployment Rate on Safety Net Caseloads During the COVID-19 Crisis

	State		State		County	
			(County Sample)			
	TANF	SNAP	TANF	SNAP	TANF	SNAP
	A. Pooled Estimates					
Unemployment Rate	0.0029***	0.0929***	0.0021	0.1187***	0.0033*	0.1031***
	(0.0010)	(0.0166)	(0.0013)	(0.0287)	(0.0018)	(0.0105)
% Impact UR	0.820	1.437	0.606	1.835	1.203	1.787
Outcome Mean	0.0035	0.0647	0.0035	0.0647	0.0027	0.0577
	B. By Period (Pre-Pandemic, Pandemic)					
Unemployment Rate	0.0033**	0.0464	0.0031	-0.0411	0.0029	0.1041***
(Pre-Pandemic)	0.0033**	0.0524	0.0031	0.0544	0.0029	0.1041***
	(0.0013)	(0.0430)	(0.0019)	(0.0858)	(0.0018)	(0.0107)
Unemployment Rate	0.0029***	0.0955***	0.0022	0.1105**	0.0119***	0.0818***
(Pandemic)	0.0029***	0.0954***	0.0021	0.1220***	0.0118***	0.0818***
	(0.0010)	(0.0167)	(0.0014)	(0.0274)	(0.0018)	(0.0173)
% Impact UR	0.812	1.475	0.592	1.886	4.367	1.418
(Pandemic)						
N	940	940	240	240	27,052	27,052

* p<0.10, ** p<0.05, *** p<0.010

Note: This table represents results from estimating Equations (1) and (2) on the period January 2017 through July 2020. The table is split by whether observations are at the state or county level.
Source: State TANF and SNAP agencies.