

# CYCLICALITY OF THE U.S. SAFETY NET: EVIDENCE FROM THE 2000S AND IMPLICATIONS FOR THE COVID-19 CRISIS

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*In this paper, we explore the cyclicality of the U.S. safety net over the 2000s through the economic peak in February 2020 before the onset of the COVID-19 crisis. We compare the effects of means-tested programs with those of social insurance programs, separately and combined. We find, on a per capita basis, Unemployment Insurance (UI) is by far the most cyclical, particularly when fully funded federal extensions are included. A 1-percentage-point increase in the unemployment rate leads to a 17 percent increase in monthly real UI spending. Overall, the social insurance programs provide an additional \$31 (2019\$) in per capita real spending for each percentage point increase in the annual unemployment rate, while the means-tested programs provide a statistically insignificant \$8.50 per capita for each percentage point increase in unemployment. The means-tested programs without SSI provide a significant \$12 for each percentage point increase in the unemployment rate. Thus, the parts of the means-tested safety net that can respond quickly are also providing modest countercyclical stabilization. We conclude by speculating what this means for the current response to COVID-19.*

*Keywords:* safety net, means tested, social insurance, COVID-19, automatic stabilizer, cyclicality

*JEL Codes:* H5, H53, I3, I38

## I. INTRODUCTION

The United States has a patchwork safety net, with a variety of both means-tested programs and social insurance programs. The means-tested programs provide protection against having low consumption through provision of cash and in-kind benefits for those with sufficiently low income (and sometimes assets). The social insurance

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programs provide income to those paying premiums after they experience a triggering event. Some of these programs also serve as automatic stabilizers, spending more when the economy is in a downturn (Blank, 2001; Blank and Blinder, 1986; Blank and Card, 1993; Cutler and Katz, 1991; Hines, Hoynes, and Krueger, 2001; Ziliak, Gunderson, and Figlio, 2003). Before the COVID-19 crisis, these programs were most recently tested during the Great Recession (Bitler and Hoynes, 2010, 2016a; Mueller, Rothstein, and von Wachter, 2016; Ziliak, 2015; Hardy, Smeeding, and Ziliak, 2018). These programs are currently being called upon again and expanded to provide families with protection during this time of need (Bitler, Hoynes, and Schanzenbach, 2020).

In this paper, we explore the cyclicity of per capita real spending on these programs to the business cycle, which we model with the state-level unemployment rate. In addition to analyzing each program separately, we pool the social insurance programs and the means-tested programs and examine the responsiveness of the larger system. Not surprisingly, Unemployment Insurance (UI) provides the most stabilization among all of the U.S. transfer programs. We find that the disability programs (Social Security Disability Income (DI) and Supplemental Security Income (SSI)) are not at all countercyclical (as one might expect given the unpredictability of downturns and the waiting periods and delays associated with getting onto them). However, several of the means-tested programs also serve as stabilizers, with the Supplemental Nutrition Assistance Program (SNAP) providing the most additional spending as might be expected given its broad reach. The Earned Income Tax Credit (EITC), in contrast, provides very modest countercyclical spending. Somewhat surprisingly, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), which is narrowly targeted to women before and after pregnancy and children under five, provides quite significant countercyclical response, about on par in percentage terms with SNAP and larger than the EITC. When summed, we find that a 1-percentage-point increase in the unemployment rate leads to an additional \$40 (2019\$) in total transfer spending per capita, or a 3 percent increase relative to the baseline mean. Breaking this down, social insurance programs increase by \$31 per capita while means-tested programs increase by a statistically insignificant \$8.50 per capita, although the means-tested programs without SSI increase by \$12 for each percentage point increase in unemployment.

Since mid-March, we have experienced an unprecedented economic shock, with 30 million persons filing initial unemployment claims as of May 23. We use our findings to speculate as to how these programs will contribute to stabilizing lost income. Our results suggest that UI will provide the primary source for stabilization to those eligible for it during the COVID-19 crisis. This comes from the normal state and extended joint federal-state UI programs and the dramatic expansions as part of the Coronavirus Aid, Relief and Economic Security (CARES) Act. Families with children will likely also benefit from increased spending on SNAP and, if they have young children, WIC, as families with lower incomes become newly eligible for these programs. These families will also benefit from the EITC if their earnings decline to bring them within the EITC eligibility range, but perhaps not until next year when 2020 refunds are received. We have

also examined the cyclical nature of participation in the two largest child nutrition programs: the National School Lunch Program (NLSP) and the School Breakfast Program (SBP), also referred to as the “school meals” programs. Participation in the free and reduced-price NLSP was modestly countercyclical in previous downturns; however, because of school closures during the COVID-19 crisis, these benefits are lost to many eligible families.<sup>1</sup> The U.S. Department of Agriculture (USDA) has responded with a new program — Pandemic Electronic Benefits Transfers (or Pandemic EBT) — that provides families usually eligible for free or reduced-price school meals with electronic benefit cards to replace these school meals while schools are closed. However, because it is a brand new program that states had to implement, Pandemic EBT has been slow to send out payments relative to when schools closed (Dunn et al., 2020). And we know from experience with summer food programs that fewer families get food when schools are closed for summer. Some groups will be left out of all of these efforts, including unauthorized immigrants, who are ineligible for all but the WIC program (which is relatively small) and the school meals programs-- and are also ineligible (as are their families who file tax returns with them) for the Economic Impact Payments that provide \$1200 per person, \$2400 per couple, and \$500 per qualified dependent under 17.

Other Department of Labor (DOL) programs have expanded dramatically and will provide income replacement. The Pandemic Unemployment Assistance (PUA) program provides UI benefits to self-employed individuals and those with too low of earnings to qualify for regular UI if their job losses are directly due to COVID-19. Another new DOL benefit program — Pandemic Emergency Unemployment Compensation (PEUC) — provides 13 additional weeks for those who have exhausted usual UI benefits (through regular UI or PUA). Finally, large amounts of money are coming through the Federal Pandemic Unemployment Compensation (FPUC) program, which provides an additional \$600 for those in the usual UI system or getting PUA or PEUC for weeks unemployed from Sunday, March 29 through the end of the last full week in July. For those with low PUA/PEUC or typical UI, the value of their total UI benefits will shrink considerably once FPUC stops.

With many of these programs, administrative burdens made it difficult for individuals to access benefits that they were owed. Many of these programs — including PUA, PEUC, and Pandemic EBT — are new and required time for application systems to be set up and for claims processing. Emergency SNAP allotments also required further state administrative work. Additionally, the volume of new cases overloaded state capacity in both new and existing programs, most prominently in UI. Together, these factors led many to have to wait to get their benefits. In addition, some individuals were required to apply to access the Economic Impact Payment program, including those who had not recently filed taxes or claimed disability/Social Security recipient benefits, placing barriers between eligible recipients and their benefits.

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<sup>1</sup> Many districts are providing grab and go food to families who come by a subset of district sites, but this is not the same as providing kids meals at school.

## II. TRANSFER PROGRAMS AIMED AT LOW-INCOME OR DISADVANTAGED PERSONS IN THE UNITED STATES

We briefly discuss the programs and their eligibility rules and generosity.<sup>2</sup> Means-tested programs vary along a host of dimensions, including categorical eligibility (are they universal or limited to a particular demographic or other group?), entitlement status (does funding expand to cover all eligible persons or is spending limited to a fixed block grant amount?), the form for the transfer (are they in cash, or, if in-kind, near cash?), and the generosity of the eligibility rules and benefits. They also vary in whether they are conditional on work or not and what noncitizens are covered. We focus here on cash and “near cash” programs for low-income individuals.<sup>3</sup> These characteristics are summarized in Table 1, which lays them out for each program. The table also presents information on whether the program was unchanged or expanded during the COVID-19 response (and what the responses were) and whether some rules were waived.

We start with SNAP, which provides food vouchers for eligible low-income families. Families are eligible if their gross income is under 130 percent of the poverty guideline (or, in some cases, higher levels) and if their net income after various disregards is below 100 percent of poverty. Among those income eligible, SNAP is the most universal of the U.S. means-tested programs. An important exception to this universality is for able bodied adults without dependents, who, in normal economic conditions, are time limited in the benefits they can receive (limited to 3 out of 36 months). Additionally, unauthorized adult immigrants and recently arrived authorized immigrants are not eligible. Families receive benefits via EBT cards, which can be used in authorized stores to purchase most food items. In 2019, maximum benefits for a family of four were \$311 and the average benefit per person per month was \$130. Prompted by the COVID-19 crisis, The Food and Nutrition Service made numerous modifications to the program. These include procedural changes such as ending recertification (so people on the program during the start of the COVID-19 crisis should stay on until this is changed) and allowing people to apply without an in person interview. And, importantly, the modifications also include expanding SNAP benefits to the maximum benefit for everyone in states that applied for this new Emergency Allotment program. This expanded benefits for those whose earned income would have reduced their food stamp benefits to lower amounts than the maximum and likely helped those facing negative income shocks.

The EITC is a refundable tax credit with a broad reach, but eligibility is conditional on work. The credit provides eligible tax filers with an earnings subsidy, then a flat benefit, before being phased out, and provides much larger payments to families with

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<sup>2</sup> For more details on the means-tested programs, see Moffitt (2016). For more UI program details, see Congressional Research Service (2019), and for more SSDI program details, see ORES (2019). For more detail on UI and Social Security Disability Insurance (SSDI), see Krueger and Meyer (2002).

<sup>3</sup> We note that if we considered Medicaid or Medicare, their spending and caseloads would dwarf these other programs. However, Medicaid and Medicare benefits are not fungible.

**Table 1**  
**Key Program Details for Means-Tested and Social Insurance Programs**

Program	Eligibility	Categorical or Universal (Outside of Limits on Immigrants)	Cash, Near Cash, or In-Kind	Condition on Work	Block Grant or Entitlement	Unauthorized Immigrants Coverage	Expanded for COVID-19	Rules Changed for COVID-19
<i>Means-tested programs</i>								
SNAP	Income, <130% FPL gross and <100% FPL net	Universal (time limit for able bodied adults without dependents (ABAWDs) in good times)	Near cash	Mostly not, except ABAWDs	Entitlement	No (some state programs)	Increase benefit to maximum for those with benefits below maximum	Waive recertification requirement, in-person interviews waived
EITC	Earnings below phaseout	Universal (less generous for those without kids)	Cash	Must work	Entitlement	No (must have SSN)	No	Tax deadline July 15
TANF	Income, varies by state, lower limits than SNAP	Families with children, lifetime time limits	Cash and in-kind	Work requirements for cash assistance	Block grant, nominally fixed	No	No	No
NLSP	Income, <130% FPL for free, <185% FPL for reduced price	In participating schools, most public schools	Near cash	No	Entitlement	Yes	Pandemic EBT, cash replacement for closed schools	No
SBP	Income, <130% FPL for free, <185% FPL for reduced price	In participating schools, fewer schools than NLSP	Near cash	No	Entitlement	Yes	Pandemic EBT, cash replacement for closed schools	No

**Table 1 (continued) Key Program Details for Means-Tested and Social Insurance Programs**

Program	Eligibility	Categorical or Universal (Outside of Limits on Immigrants)	Cash, Near Cash, or In-Kind	Condition on Work	Block Grant or Entitlement	Unauthorized Immigrants Coverage	Expanded for COVID-19	Rules Changed for COVID-19
<i>Means-tested programs</i>								
WIC	Income <185% FPL, or receiving SNAP, TANF, or Medicaid	Child <5 or pregnant, postpartum, breastfeeding woman and at nutritional risk	In kind	No	Block grant (but rarely binding)	Yes, but states can opt out	No	Waive recertification requirement, in-person interviews waived
SSI	Income limit	Disabled, blind, elderly	Cash	Conditions on not working	Entitlement	No	No	No
<i>Social insurance</i>								
UI	Sufficient recent work history in covered employment	—	Cash	Must look for work to receive benefits	Entitlement	No	FPUC extra \$600; PEUC expanded 13 weeks	PUA for self-employed, insufficient work history
SSDI	40 quarters of covered earnings	—	Cash	Conditions on not working	Entitlement	No	No	Waiting week and search requirement waived

Notes: This table presents the key program characteristics for the programs we consider in this paper. This includes program eligibility generosity, whether it is categorical or universal, whether it is cash or near cash, whether it is conditional on work, whether it is a block grant or an entitlement, whether unauthorized immigrants are covered, whether it is expanded for COVID-19 and what, if any, changes were made to it for the COVID-19 crisis.

children. Benefits are restricted to those with annual income under \$52,000 for married couples with two kids, and the maximum benefits are \$5,828. The largest share of the program's spending is the refundable portion of the tax credit, available to families with no tax liability. Average benefits were \$2,476 in 2019 (for tax year 2018). To date, there have not been any adjustments to the EITC except that the deadline to file taxes has been moved to July 15.

Temporary Assistance for Needy Families (TANF), the block-granted successor program to the former entitlement program Aid to Families with Dependent Children (AFDC), is more targeted and provides limited cash benefits to families with children with sufficiently low incomes. Total TANF spending has been flat in nominal terms since its inception in 1996 and states have shifted much of their TANF spending to other purposes (Bitler and Hoynes, 2016b), so overall cash benefit spending has decreased in real terms since then. To date, there have not been significant changes in TANF due to COVID-19.

In addition to these cash and near cash programs, we also consider age-targeted food assistance programs, which provide in-kind benefits. The school meals programs (the NLSLP and the SBP) provide subsidized hot meals for primary and secondary students at participating schools. All meals are subsidized, but the more targeted assistance provides free meals at school for those with income under 130 percent of the poverty guideline (or participating in SNAP or TANF) and reduced-price meals at school for those with income between 130 percent and 185 percent of the poverty guideline. Below, we focus on free and reduced-price participation in the NSLP and SBP, as this is the part targeted at low-income individuals. These programs have enormous reach, with 21.8 million children receiving free or reduced-price school lunches in FY2019 and 12.5 million children receiving free or reduced-price breakfasts. The school meals programs (with WIC) are the only means-tested benefit programs available in most states for unauthorized immigrants.

The WIC program provides benefits to purchase set amounts of nutritious foods for low-income (under 185 percent of poverty) and nutritionally at risk pregnant, postpartum, and breastfeeding women, as well as for infants and children under five. WIC is more targeted than most of the other programs, both in terms of categorical eligibility and the quantity voucher nature of the benefits. Benefits are lower in WIC compared to SNAP but are still nontrivial.<sup>4</sup> WIC is also the only one of these programs that is not an entitlement, although there is little evidence of recent excess demand. WIC has had in-person requirements and recertification waived during the COVID-19 crisis but has not had other changes.

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<sup>4</sup> This is especially so for infants receiving formula. In 2019, food costs for WIC were \$41 per person, but this is net of food rebates for infant formula, which can be substantial, suggesting that families obtaining formula benefit more than this in terms of purchasing power. WIC is also the only one of these programs that is not an entitlement, with Congress approving total amounts to be spent each year, and adjusted for past use, but not automatically, although in recent years all need has been met.

The last of the means-tested programs is the SSI program. SSI provides cash benefits for disabled, blind, and elderly individuals with low incomes and assets. For 2020, unearned income must be under \$803 a month to get SSI and earnings must be below \$1260. Disabled adults must suffer from a severe impairment that will last at least 12 months or end in death and makes it impossible to participate in work. Disabled children face slightly different rules but are reassessed at age 18 to see if they pass the adult eligibility rules. Maximum monthly SSI benefits for 2019 were \$771 per eligible adult and \$1175 for eligible couples. Average payments for 2018 were \$551 per person. We are not aware of any changes to SSI due to COVID-19.

Social insurance programs are structured quite differently from means-tested programs. They are typically established to provide consumption smoothing during events when market failures prevent private markets from providing insurance. The two social insurance programs we consider here are UI and SSDI.

UI is mandated insurance for wage and salary workers (not the self-employed) and delivers benefits for those who have sufficient earnings history and have lost their jobs through no fault of their own. The regular UI program is funded by payroll taxes to state UI systems. Benefits and replacement rates vary dramatically across states (Ganong, Noel, and Vavra, 2020). There is also an extended benefit program, which is jointly funded by states and the federal government. During recessions, the federal government creates emergency programs in addition to the state and federal-state systems, which are fully federally funded. To be eligible for regular UI, workers also need to be authorized to work in the United States. Self-employed and so-called gig workers are not typically eligible for UI. Benefit levels are assigned based on prior earnings, and workers typically get a share of their weekly earnings up to some maximum amount. In 2019, the mean weekly benefit varied by state, from \$212 in Mississippi to \$538 in Massachusetts.

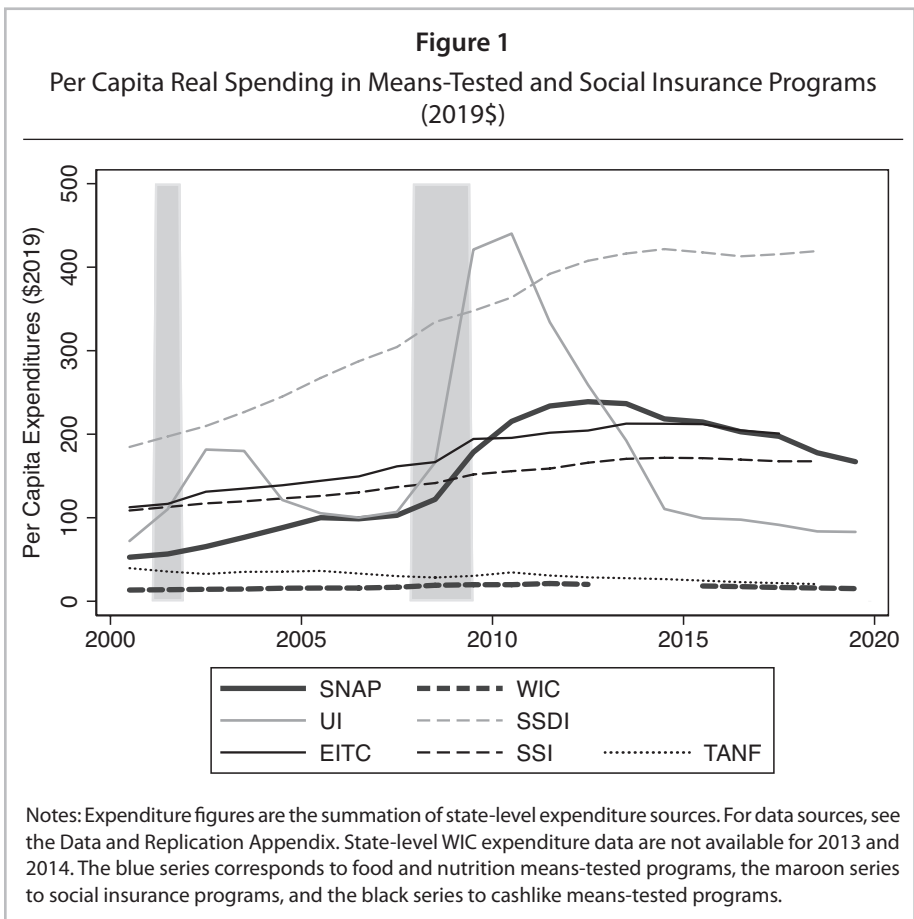
Part of the response to COVID-19 includes expansions to the existing UI program through PEUC (which provides a fully federally funded 13-week extension to usual benefits and is similar to but not as long as the Emergency Unemployment Program during the Great Recession). But there have also been two additional, notable expansions to UI. First, workers with only self-employment earnings or with earnings too low to qualify for usual UI who have lost work through COVID-19 directly (e.g., because they are sick or caring for sick individuals or because of caretaking responsibilities from closed schools or from stay at home orders or pandemic-related business closings) are eligible for the new PUA program. Second, from late March through June, those getting even a single dollar of UI benefits (either from the normal program or from PUA or PEUC) are also eligible for an extra \$600 per week. However, many eligible individuals impacted by COVID-19 faced long waits before receiving UI benefits, both because these new programs took time to pass through Congress and because the COVID-19 crisis overwhelmed many state UI systems, which had to figure out how to determine eligibility for PUA and how to send additional benefits to those on the programs. The federal government is also funding an additional 13 weeks of UI through the Pandemic Emergency Unemployment Compensation program (PEUC) to those whose regular state benefits have expired. Beyond changes at the federal level, in the period after the Great Recession a number of states have made their programs less



generous, for example, cutting the weeks covered in their regular programs from 26 to 10 or 14. This suggests that even with these generous federal expansions, unemployed individuals in some states may suffer more if the COVID-19 crisis goes beyond the fall.

The last program we consider is SSDI, which provides payments for disabled workers with sufficient involvement in the Social Security system (40 quarters of sufficient earnings, or less if younger, and qualified to work in the United States). Benefits depend on average earnings while working. Average benefits for May 2020 were \$1,259, making it more generous than many of the other programs. SSDI has not made significant changes due to COVID-19 that we are aware of.

Figure 1 shows real (2019\$) per capita spending in each program over time, along with recessionary periods in gray. This figure shows two things. First, it shows how programs responded to recent business cycles. Figure 1 shows that UI is highly countercyclical, with large increases in the wake of recessions. SNAP also looks fairly countercyclical during the Great Recession and after. Most of the other programs are flat, or perhaps



slightly expanding, with one exception: TANF has mostly declined across time. This figure also shows how much more generous (or, alternatively, broadly targeted) programs are. Food Stamps and the social insurance programs are fairly widely available, while the school meals and WIC programs are targeted to specific age and status (pregnant or postpartum/breastfeeding women) groups.

These diverse programs target different groups, yet we will explore them on a common basis, primarily focusing on the impacts of economic fluctuations on real per capita expenditures. To make the results comparable, for each program, we present percent effects (relative to the baseline mean) of a 1-percentage-point increase in the unemployment rate. We will also compare the effects of the means-tested programs to those of the social insurance programs on a spending per capita basis, summing up spending across the programs. We focus on per capita expenditures for a couple of reasons. First, they are available across almost all programs on an aggregate state-by-year basis. Second, they can be summed across programs to get a sense of total spending.

In addition to examining the cyclicity of expenditures, we also examine the cyclicity of “caseloads” or utilization of the programs (in Appendix Table 1) for two reasons. First, we have state-by-year caseload data for the free and reduced-price portions of the school meals programs (NSLP and SBP), an important source of meals for many families with children, while data on expenditures for these two programs are not available. Second, the sources of fluctuations in expenditures versus caseloads differ. Participation goes up when the number of people leaving the program exceeds the number of people entering. Spending per person can go up because of new entrants exceeding those leaving the program, but it can also go up because payments for participants rise. So, they capture slightly different measures.<sup>5</sup>

### III. HOW DO THESE PROGRAMS RESPOND TO LOCAL LABOR MARKET SHOCKS?

We model the response of annual spending (real 2019\$ per capita) and, to a lesser extent, caseloads (households, families, tax filing units, or persons per capita) to labor market fluctuations.<sup>6</sup> For each program, we construct state-by-year panel data and measure the business cycle labor market fluctuations using the state annual unemployment rate. In particular, we estimate two-way fixed effect models that account for state-level time-invariant factors (state fixed effects) and time shocks (year fixed effects). The key independent variable is the annual unemployment rate. Given the inclusion of state and

<sup>5</sup> There is also a challenge with the participation measures (addressed by us by presenting percent effects). Some programs measure total participation by the count of persons on the program (WIC, NLSP, SBP, SSI, and SSDI), some measure weeks of participation by persons (UI), and some measure participation per household/family/tax filing unit (SNAP/TANF/EITC). So, this complicates interpretation. Regardless, the spending and participation findings are relatively similar.

<sup>6</sup> We describe the sources for our administrative data (numerators) and population (denominators) in the Data and Replication Appendix, posted at the authors’ websites. We use the Bureau of Labor Statistics’ unemployment rate annually for annual measures.

year fixed effects, the key variation is within-state changes in the unemployment rate relative to the state average. We weight the regressions using state total populations (from SEER),<sup>7</sup> and the variance covariance matrices allow for clustering at the state level (arbitrary correlations within states across time).

We begin by presenting estimates for three programs for which we have data spanning 1980 through 2018/2019: AFDC/TANF, SNAP, and UI. Table 2 shows estimates for per capita real spending on an annual basis for these programs. The table also contains the means, which show that over this time frame and among these three programs, UI has the highest average real spending, followed by SNAP, then AFDC/TANF. Panel A shows estimates of the impact of the unemployment rate for data covering the entire period from 1980 as far forward as data are available pre-COVID-19. We see that across this wide time span, UI provides the largest countercyclical response, followed by SNAP. AFDC/TANF is insignificantly related to the unemployment rate over the full period. The effect of a 1-percentage-point increase in the unemployment rate leads to a 17 percent increase in UI spending per capita ( $(3121 \times 0.01)/184 = 0.17$ ). For SNAP, a 1-percentage-point increase in the unemployment rate leads to a 5 percent increase in SNAP per capita spending. AFDC/TANF has a statistically insignificant 5.3 percent increase.

Panel B shows analogous results but allows the effects of the business cycle to vary across three periods: 1980–1989 (including the two consecutive recessions of the early 1980s and that recovery), 1990–2006 (including the 1990–1991 and 2001 downturns and recovery), and 2007 forward (spanning the Great Recession and post-Great Recession recovery period). This allows us to see the effect of labor market shocks on cyclical-ity of AFDC/TANF after welfare reform made the program a block grant during the late 1990s. Compared to the other periods, AFDC/TANF was not countercyclical in the Great Recession and after (in fact, the coefficient is negative and significant at the 10 percent level). SNAP, by contrast, became more countercyclical after 1990. UI is strongly countercyclical in all three periods.

Table 3 turns to looking at real spending per capita for as much of the 2000–2019 period as we have data covering our full set of programs. We note that on a per capita basis, SSDI is the largest program at \$392 per person (2019\$). EITC is the next largest program, on average, at \$207 per person, with UI, SNAP, and SSI being very similar in average per capita spending, at \$200, \$177, and \$174, respectively, per person. AFDC/TANF and WIC are considerably smaller, with per capita spending of \$37 for AFDC/TANF and \$20 for total WIC and \$14 for WIC food benefits, respectively.<sup>8</sup>

Over this time frame, we find that all of the means-tested programs are countercyclical except for SSI. SNAP spending increased the most in dollars per person among the means-tested programs for each percentage point increase in the unemployment rate, going up by \$7.47 for each 1-percentage-point increase in the unemployment rate (a

<sup>7</sup> Note that we do not have population measures from SEER for 2019. We use the three-year average of state population growth by single year of age and state and apply it iteratively to generate 2019 populations.

<sup>8</sup> We note that these programs are all more targeted than SNAP, and to some extent EITC. We discuss the NLSB and SBP below when we discuss the effects on annual caseloads.

**Table 2**  
**Effect of Unemployment Rate on Real Per Capita Spending (2019\$) in Safety Net Programs; Annual Data from 1980 through 2018/2019**

	Annual Per Capita Program Expenditures (2019\$)		
	AFDC/TANF	SNAP	UI
<i>Panel A. Pooled effects</i>			
Annual UR	442.4 (315.0)	760.1*** (132.9)	3,120.9*** (275.7)
R <sup>2</sup>	0.850	0.912	0.886
Percent impact	5.3	5.0	17.0
<i>Panel B. Allow effects of the UR to vary across periods</i>			
Annual UR × 1980–1989	834.5 (538.3)	531.7*** (137.1)	3,146.8*** (290.8)
Annual UR × 1990–2006	1,167.8*** (380.7)	917.0*** (181.2)	2,771.4*** (472.9)
Annual UR × GR and Post-GR	–808.6* (435.2)	1,073.7** (433.2)	3,321.5*** (528.1)
Observations	1,989	2,040	2,040
R <sup>2</sup>	0.864	0.914	0.886
State FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Period covered	1980–2018	1980–2019	1980–2019
Percent impact: 1980–1989	10.0	3.5	17.1
Percent impact: 1990–2006	14.0	6.1	15.1
Percent impact: GR and post-GR	–9.7	7.1	18.1
Mean of dependent variable	83.6	150.6	183.7

Notes: This table presents regressions of the effect of annual unemployment rates on real per capita spending on UI, AFDC/TANF, and SNAP. Panel A presents effects across the entire period. Panel B splits the effect of the cycle into three periods from 1980 to 1989 (trough of two 1980s recessions to peak), 1990–2006 (trough of next recession across to peak before the Great Recession (GR)), and 2007 on (during or after the GR). Regressions control for state FE and year FE and are weighted by the state population from SEER (extrapolated for 2019). Variance covariance matrices are allowed to vary arbitrarily within state but are independent across states. Unemployment rates are presented as a share. Percent effects are the ratio of the effect of the unemployment rate on per capita participation to the full period mean of the dependent variable. \*\*\*p < 0.01, \*\*p < 0.05, and \*p < 0.1.

**Table 3**  
**Effect of Unemployment Rate on Real Per Capita Spending (2019\$) on Safety Net Programs;**  
**Annual Data from 2000 through 2017/2019**

	Means-Tested Programs						Social Insurance Programs		
	AFDC/ TANF	SNAP	EITC	WIC (Food Costs)	WIC (Food + Other)	SSI	UI	SSDI	
Annual UR	175.5** (82.6)	746.6* (412.2)	396.8*** (83.1)	72.9** (28.7)	90.0*** (32.6)	-256.7** (105.5)	3,372.8*** (692.4)	-289.8 (179.8)	
Observations	969	1,020	918	918	918	969	1,020	969	
R <sup>2</sup>	0.937	0.929	0.984	0.882	0.899	0.965	0.91	0.967	
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Period covered	2000–2018	2000–2019	2000–2017	2000–2019	2000–2019	2000–2018	2000–2019	2000–2018	
Percent impact	4.7	4.2	1.9	5.1	4.4	-1.5	16.8	-0.7	
Mean of dependent variable	37	177	207	14	20	174	200	392	

Notes: The table presents regressions of the effect of annual unemployment rates on real per capita administrative spending on safety net programs. Spending in real 2019\$ using CPI-U. Regressions control for state FE and year FE and are weighted by the annual state population from SEER (extrapolated for 2019). Dependent variables are spending per person. Variance covariance matrices are allowed to vary arbitrarily within state but are independent across states. Unemployment rates are presented as a share. Percent effects are the ratio of the effect of the unemployment rate on per capita participation to the full period mean of the dependent variable. \*\*\*p < 0.01, \*\*p < 0.05, and \*p < 0.1.

4.2 percent increase in spending), although the estimate is only marginally statistically significant. The EITC went up by about \$4 for each percentage point increase in unemployment, although given the large mean spending on the EITC, this translates into a modest 1.9 percent effect. Strikingly, WIC food spending went up by nearly \$0.73 for each 1-percentage-point increase in annual unemployment, despite its narrow targeting (to pregnant and postpartum women and to children under five).<sup>9</sup> WIC is also quite countercyclical in percent terms, with food costs going up by 5.1 percent and total spending increasing by 4.4 percent for each percentage point increase in unemployment. In this period, when TANF is block granted, TANF is only increased by \$1.76 for each percentage point increase in unemployment despite being targeted to all low-income families with children, although given the very low mean spending at \$37 per person, this translates into about a 4.7 percent effect.<sup>10</sup> SSI is, if anything, procyclical but certainly not at all countercyclical (but likely this is due to waiting periods to get onto the program).

Next, we turn to consideration of the effect of the business cycle on spending in the two social insurance programs we consider, UI and SSDI.<sup>11</sup> UI is far more countercyclical than any of the means-tested programs, with a 1-percentage-point increase in the unemployment rate leading to an increase of \$34 per capita, or about a 16.8 percent effect. This is, of course, partially mechanical as one needs to be unemployed to be eligible to get UI. But it also suggests that the UI social insurance system is serving its countercyclical role well over this time period (undoubtedly, in part, due to the very long extensions of UI to 99 weeks during the Great Recession). As expected, and like SSI, given the long waiting periods for people to get onto these programs, SSDI shows no evidence of being countercyclical.<sup>12</sup>

Of course, as noted above, spending measures have advantages and disadvantages. A key advantage is that they can be combined (and we will do this below). However,

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<sup>9</sup> This may seem like a puzzle given WIC is a block grant where total state allocations are generally set before the year during which spending happens. However, we note that the effect is mostly for food spending and that the increase in percentage terms is much larger for spending than for participation. This could be because when times are tough, families redeem a larger share of the food they could buy with WIC. (WIC benefits are only “good” for the month during which they are issued, unlike SNAP, which can be carried over for up to 3 months after issuance.) Or it could be because more families are eligible when times are tough.

<sup>10</sup> We note that here, across the entire 2000–2018 period, AFDC is countercyclical, while in Table 1, it was not during the post–Great Recession period. We have estimated models where the effect of the unemployment rate is allowed to vary from 2000 to 2006 and from 2007 on. The point estimate for the effects during 2000–2006 is an insignificant \$288, while those during the Great Recession through 2018 are a statistically significant \$158. It is worth noting that even if countercyclical, due to the large decline in real TANF spending per person relative to the old AFDC program, it is not providing a large countercyclical response. For example, through 1999, real annual spending per person on AFDC was \$138, while from 2000 forward, it was only \$37 per person.

<sup>11</sup> We exclude the two largest social insurance programs, Medicare and Old Age Social Security. Medicare eligibility starts at age 65 for most individuals (and after a waiting period for those on SSDI) and, thus, is unlikely to respond to unemployment. Medicare, like Medicaid, covers health expenses and is not fungible. The Congressional Budget Office typically does not consider the outlay component of Old Age Social Security or Medicare an automatic stabilizer (Russek and Kowalewski, 2015) and we are not modeling the automatic stabilizing effects of any payroll taxes.

<sup>12</sup> Maestas, Mullen, and Strand (2018) find that the labor market shock of the Great Recession led to increases in applications and ultimately claims for SSDI. Our not finding an association between the unemployment rate and disability claims may be due to the long time lapse between application and approval of claims.

both increases in net participation and increases in benefits, which do not change who participates, show up as spending increases. Thus, we complement the spending analysis with caseload analysis. Appendix Table 1 shows similar results for caseloads per capita (counted as households or persons per capita depending on the outcome). This lets us capture net changes in who is on the program (rather than combining participation increases with benefit changes). But this also allows us to add two outcomes: participation in the free and reduced-price NLSP and that in the free and reduced-price SBP. These two programs are important for a couple of reasons. They are the only programs we consider (besides WIC) available to unauthorized immigrant families and are exempt from public charge requirements. But they are also important to consider given the fact that during COVID-19, schools have mostly been closed from March to the end of the year and the USDA has implemented an entirely new program — Pandemic EBT — to address this, suggesting that the usual response may both be of interest and also not apply.

The main results for caseloads are similar to the spending outcomes for the programs shown in Table 3. The EITC and WIC are countercyclical, though the percent impacts are modest at best. The disability programs are procyclical, as found above for spending. Participation in the free and reduced-price NLSP is modestly countercyclical, showing that a 1-percentage-point increase in the unemployment rate leads to a 1.4 percent increase in participation. The impact for the SBP is statistically insignificant and smaller than that for the NLSP. Again, the UI program is very countercyclical, and the responsiveness of UI dwarfs the other programs, increasing by 18.5 percent for each percentage point increase in the unemployment rate.

In Table 4, we consider combined means-tested program spending and social insurance spending per capita, as well as total spending. Here, since information on the EITC is only available through 2017, the regressions are restricted to 2000–2017 and we include the measure of total WIC spending (food plus nutritional education and other services). The results show that a 1-percentage-point increase in the unemployment rate leads to a \$31.13 (2019\$) increase in per capita social insurance spending, or a 5.2 percent effect. The combined means-tested programs, in contrast, provide a statistically insignificant increase in per capita spending of \$8.50, or 1 percent. The second “means-tested, No SSI” column of Table 3 shows spending on the means-tested programs excluding SSI (including the means-tested programs where new applicants can get benefits relatively quickly). When SSI is removed, the responsiveness of the means-tested safety net to a 1-percentage-point increase in unemployment is about 2.3 percent. Combining all transfer spending (means tested and social insurance), we find that a 1-percentage-point increase in the unemployment rate leads to a statistically significant 3.1 percent increase in per capita spending, showing a net countercyclical social safety net.

#### IV. IMPLICATIONS FOR THE COVID-19 CRISIS

We conclude by considering the implications of these findings for the COVID-19 crisis. We start by noting a key limitation in extrapolating findings from the Great Recession to the COVID-19 era, that the previous recessions we included did not have people staying home because they were afraid of getting sick. The employment losses

**Table 4**  
**Effect of Unemployment Rate on Real Per Capita Spending (2019\$)**  
**in Means-Tested Safety Net Programs, Social Insurance Programs,**  
**and All Programs; Annual Data from 2000 through 2017**

	Combined Expenditures Per Capita (2019\$)			
	Means Tested	Means Tested, no SSI	Social Insurance	All
Annual UR	849.9 (609.1)	1,158.7** (496.3)	3,113.3*** (693.1)	3,963.2*** (825.7)
Observations	918	918	918	918
$R^2$	0.962	0.949	0.941	0.967
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Period covered	2000–2017	2000–2017	2000–2017	2000–2017
Percent impact	1.2	2.3	5.2	3.1
Mean of dependent variable	689	515	604	1293

Notes: The table presents regressions of the effect of unemployment on per capita real spending on safety net means-tested programs (sum of SNAP, EITC, AFDC/TANF, WIC (all spending), and SSI); on means-tested programs without SSI (SNAP, EITC, AFDC/TANF, and WIC); on social insurance programs (sum of UI and SSDI); and on all spending. Spending in real 2019\$ using CPI-U. Estimates for 2000–2017. Regressions control for state FE and year FE and are weighted by the annual state population from SEER. Dependent variables are spending per person. Variance covariance matrices are allowed to vary arbitrarily within state but are independent across states. Unemployment rates are presented as a share. Percent effects are the ratio of the effect of the unemployment rate on per capita participation to the full period mean of the dependent variable. \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , and \* $p < 0.1$ . WIC data are missing for 2013/2014.

due to COVID-19 occurred extremely quickly, and the timing suggests they were closely related to personal concerns about getting sick affecting spending rather than stay at home orders. For example, Bartik et al. (2020) use traditional Current Population Survey data and much higher frequency private sector labor market data to document that the collapse was extremely sudden and driven by large declines in low-wage sectors, such as retail and hospitality and leisure, which preceded shelter at home orders. Their data extend through June, but they find some evidence that UI and the Paycheck Protection Plan may have helped spur early recoveries. Chetty et al. (2020) use private sector data and find that high income spending declined quickly with health concerns, having follow on impacts on workers providing services to these high-income areas. They find spending responded to the stimulus payments but employment did not, while finding no evidence that employment increased following the lifting of stay at home orders. Thus, this is a different recession, impacting different industries and occupations, and it places



different demands on state benefit programs. Additionally, schools in most places were closed for three months, which has ramifications for children reliant on school meals and on families where adults depend on schools to provide childcare.

First, we rely on our empirical work to predict that expansions to SNAP and UI should result in an increase in both the number of eligible recipients and the benefits they receive. This also should hold for the Pandemic EBT payments to replace school meals for those eligible for free and reduced-price school meal programs. We note that UI and, to a somewhat lesser extent, SNAP greatly increased their generosity during the COVID-19 crisis (Bitler, Hoynes, and Schanzenbach, 2020). This suggests that both should be able to respond at least as well as they did during the Great Recession to the extent that they can accommodate the rapid increase in need. Of course, we have also seen delays in program benefits getting to eligible individuals and families as states have to create and administer new programs (while many workers struggle to work at home). There is already evidence that implementing the new FPUC and PUA programs has strained state UI systems (Bitler, Hoynes, and Schanzenbach, 2020). Further, existing neglect of the UI system in some states has interacted with new programs and unprecedented demand to slow the flow of funding to below what would be ideal given the magnitude of the economic shock.<sup>13</sup> Second, we note that our findings (above) about cyclicalities of UI suggest that those eligible for UI will get considerably more relief than those losing their jobs but not eligible for even the expanded UI pandemic programs, given the inability of most other programs to help job losers who are unauthorized immigrants.

One program that was not available prior to the COVID-19 crisis is the Economic Impact Payments. Enacted as a part of the CARES Act in March 2020, each adult is eligible for \$1,200, conditional on having income less than \$75,000 in either the 2019 or 2018 tax year. In addition, they are eligible for \$500 per dependent child under 17. This payment was sent out automatically to all those who had filed taxes in 2018 or 2019. However, nonfilers who did not claim Social Security or Veterans benefits did not automatically receive the credit and had to apply for it by filling out a form.<sup>14</sup> Further, all members of a household or tax filing unit are ineligible for this benefit if any member of the household does not have a Social Security number. Thus, some groups were disproportionately slow or unable to get these payments. Importantly, this was also a one-time program, with no ability to continue to provide consumption smoothing should the economic shock be long term.

Finally, we note that the vast bulk of this spending categorically excludes unauthorized immigrant workers/adults. These workers are ineligible for UI, SSDI, and the EITC. Unauthorized adults are also ineligible for AFDC/TANF, SSI, and SNAP, although their children — most of whom are citizens — are eligible for these programs. Recent public

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<sup>13</sup> For example, Rinz (2020) shows that the share of first payments to initial UI claims plunged to 14 percent in March 2020 (compared to 46 percent in March 2019) before rebounding to 68 percent in April 2020. This suggests state systems were overwhelmed initially.

<sup>14</sup> Additionally, Social Security and Veterans benefit recipients with dependents had to submit the application form to receive these benefits they are eligible for.

charge rule changes which affect families ability to enter the country or get green cards may have affected some people's participation.<sup>15</sup> This leaves these families eligible for WIC and NLSP/SBP regardless of immigration status, but these programs do not provide much smoothing.

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## DISCLOSURE

The authors have no financial arrangements that might give rise to conflicts of interest with respect to the research reported in this paper.

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<sup>15</sup> The public charge rule considers past and future potential participation in means-tested programs for immigrants entering the United States. Importantly, it also may affect applications for legal residency among currently unauthorized immigrants. The Trump administration recently changed this rule, increasing the role of U.S. Citizenship and Immigration Service (CIS) agents in applying these rules to new immigrants trying to enter the United States or change their immigration status. TANF, SSI, General Assistance, SNAP, public housing, and Medicaid for adults (except pregnant women before and 60 days after pregnancy) are considered as public charges. CHIP, NLSP, SBP, WIC, and emergency Medicaid are exempt, as is child use of Medicaid are exempt. U.S. CIS issued a statement clarifying that preventive care or treatment related to COVID-19 will not be considered as part of a future public charge analysis. Refugees, asylees, and those serving in the armed forces are exempt from these rules, as are children.

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**Appendix Table 1**  
**Effect of Unemployment Rate on Per Person Participation in Safety Net Programs;**  
**Annual Data from 2000 through 2017/2019**

	Means-Tested Transfers										Social Insurance		
	AFDC/ TANF	SNAP	EITC	WIC	SSI	Free and Reduced Price			UI	SSDI			
						School Lunch	School Breakfast						
Annual UR	0.027 (0.018)	0.180 (0.128)	0.125*** (0.025)	0.063*** (0.022)	-0.023** (0.009)	0.087*** (0.031)	0.019 (0.027)	0.208*** (0.027)	-0.028** (0.010)				
Observations	950	1,020	918	1,020	969	969	969	1,020	969	969			
R <sup>2</sup>	0.897	0.916	0.979	0.903	0.98	0.969	0.971	0.942	0.97	0.97			
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Period covered	2000–2018	2000–2019	2000–2017	2000–2019	2000–2018	2000–2018	2000–2018	2000–2018	2000–2019	2000–2018			
Percent impact	4.5	3.5	1.5	2.5	-0.9	1.4	0.6	18.5	-1.0				
Mean of dependent variable	0.006	0.052	0.082	0.025	0.025	0.061	0.030	0.011	0.028				

Notes: The table presents regressions of the effect of annual unemployment rates on per person administrative participation (WIC, SSI, and SSDI); household/ family/ tax filing unit participation (AFDC/TANF, SNAP, and EITC); or person years of claims (UI). Regressions control for state FE and year FE and are weighted by the annual state population from SEER (extrapolated for 2019). Unemployment numbers are person years of claims across all programs per 52 weeks; SNAP, AFDC/TANF, and EITC are households/families/tax filing units per person; and WIC, the school meals programs, and SSI/SSDI are persons participating per person in the population. Variance covariance matrices are allowed to vary arbitrarily within state but are independent across states. Unemployment rates are a share. Percent effects are the ratio of the effect of the unemployment rate on per capita participation to the full period mean of the dependent variable. Missouri is excluded from the AFDC-TANF regressions due to missing data in 2006. \*\*\*p < 0.01, \*\*p < 0.05, and \*p < 0.1.

