NBER WORKING PAPER SERIES

COVID-19 AND THE U.S. SAFETY NET

Robert A. Moffitt
James P. Ziliak

Working Paper 27911
http://www.nber.org/papers/w27911

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
October 2020, Revised November 2020

We received excellent research assistance from Hyein Kang and Kenneth Tester. Ziliak gratefully acknowledges support from the U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, grant AE00103, through the Institute for Research on Poverty at University of Wisconsin. We thank two reviewers, Peter Germanis, Sherry Glied, Zach Parolin, Lara Shore-Sheppard, Tim Smeeding, and David Splinter for helpful comments on an earlier draft. The opinions and conclusions are solely those of the authors and do not represent the views of any sponsor, nor do they necessarily reflect the views of the National Bureau of Economic Research.

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JEL No. I38,J65,J78

ABSTRACT

We examine trends in employment, earnings, and incomes over the last two decades in the United States, and how the safety net has responded to changing fortunes, including the shutdown of the economy in response to the Covid-19 Pandemic. The U.S. safety net is a patchwork of different programs providing in-kind as well as cash benefits and had many holes prior to the Pandemic. In addition, few of the programs are designed explicitly as automatic stabilizers. We show that the safety net response to employment losses in the Covid-19 Pandemic largely consists only of increased support from unemployment insurance and food assistance programs, which did not replace the lost income for many households. We discuss possible options to reform social assistance in America that may provide more robust income floors in times of economic downturns.

Robert A. Moffitt
Department of Economics
Johns Hopkins University
3400 North Charles Street
Baltimore, MD 21218
and IZA
and also NBER
moffitt@jhu.edu

James P. Ziliak
Center for Poverty Research
and Department of Economics
University of Kentucky
550 South Limestone St.
Lexington, KY 40506-0047
jziliak@uky.edu

I. Introduction

The economic havoc wreaked down upon the global economy by first the Great Recession of 2007-2009 and now the Covid-19 health Pandemic has laid bare the many holes in the social safety net in the United States. Among major developed countries the U.S. stands alone in not providing universal health insurance, general cash assistance to the poor, and entitlement to child care subsidies, among others. Its patchwork of social assistance varies greatly across states, and often within states, leaving many Americans unprotected and vulnerable in periods of economic upheaval. In this paper, we use two decades of data to examine trends in employment, earnings, and incomes in the United States to examine how the safety net has responded to changing fortunes, including the Great Recession and the shutdown of the economy in response to the Covid-19 Pandemic.[1]

We begin by providing a brief overview of social assistance programs in the U.S., and reforms to those programs over the last twenty years. Among the plethora of social insurance and means-tested transfers, few are explicitly designed as automatic stabilizers to confront economic shocks induced by the likes of the Great Recession and Covid-19. Some are targeted at specific populations typically outside the labor force such as the elderly (e.g. Social Security and Medicare) or children (e.g. school meal programs), others are non-entitlement programs that are rationed and have fixed budgets (e.g. Temporary Assistance for Needy Families (TANF), housing), and still others like the Earned Income Tax Credit are provided only in the form of annual tax credits, which are not responsive to downturns. Yet unemployed individuals in the U.S. often lose their health insurance given the continued large reliance on an employer-based system and they often face eviction when they do not pay their rent (a phenomenon that has

[1] See Bitler et al. (forthcoming) for a related analysis of many of the same issues discussed in this paper and some similar conclusions.

received much greater visibility in the U.S. in the last few years (Desmond, 2016)). The notable exceptions are Unemployment Insurance (UI) and the Supplemental Nutrition Assistance Program (SNAP), often known as food stamps. However, eligibility for the first of these programs is narrowly targeted and the second is restricted to families with limited assets in many states. In addition, while SNAP is a federal program, UI is a state program whose benefits and coverage vary significantly across states. We also discuss actions taken by the Congress in the recent downturns to temporarily expand safety net program access, funding, and generosity, including the Great Recession and the Pandemic.

To document changing economic need over time and the business cycle, and the responsiveness of the safety net to that need, we use data for the pre-Pandemic and post-Pandemic periods. For the pre-Pandemic period, we use data from the Current Population Survey Annual Social and Economic Supplement, and for the post-Covid period, we rely on data from the Census Bureau's Household Pulse Survey and the Data Foundation's Covid Impact Survey. The latter two are new surveys fielded to provide real time information on a variety of outcomes induced by the Pandemic (U.S. Census Bureau 2020; Wozniak et al. 2020). For our purposes, we use the Pulse for employment information in 2020, and the Covid Impact Survey provides transfer program participation. We show that employment losses of low- and semi-skilled men and women were quite severe at the onset of the Covid crisis, and substantially exceeded those losses for most groups experienced in the Great Recession, but by the third month into the crisis employment partially rebounded. For much of the last two decades median earnings of men and women were stagnant in real terms, except for the last three years leading up to the Pandemic. Median household incomes were likewise flat until 2015, but there was a further pulling apart at the top of the income distribution such that 90-10 income inequality increased 22 percent in the

six years after the Great Recession. With the real growth in earnings among the less skilled after 2015, this inequality retrenched by about 10 percent. We show that the U.S. tax system reduces before tax inequality a robust 45 percent in a typical year, however it was only partially successful in slowing down the pace of widening inequality.

We next document pre-Pandemic trends in participation in five major safety net programs, including during the Great Recession, and how it has responded to the Pandemic. We show that there is strong secular growth in program participation, with a more than doubling among semi- and low-skilled men and women, driven chiefly by the Medicaid program, but also from food assistance. Among the programs we examine, both UI and SNAP served as the main income stabilizers during the Great Recession, and again in the early months of the Covid economic shock. The other programs showed little buoyancy to economic downturns over the last two decades.

This lack of automatic stabilization in much of the U.S. social safety net sets up our final section where we discuss possible reforms.[2] These include adding automatic triggers to UI, SNAP, and TANF for program eligibility during economic downturns, expanding access and benefit amounts for refundable tax credits, food assistance from SNAP, and child care, restoring some TANF cash assistance for the poor, and triggers for expanded federal financing to states for Medicaid. The potential advantage of these automatic triggers over the current discretionary system of legislative stopgap measures is improved targeting and efficiency of program operations, and greater smoothing of incomes and consumption over the cycle.

[2] We make no attempt to provide a formal definition of what an adequate response would be. The standard theory of insurance says that, in the absence of adverse selection and moral hazard, intertemporal consumption should be completely smoothed. No country does that, but instead tries to replace only a fraction of lost income. For those who are covered by UI, for example, the US replaces about 50 percent of prior earnings for a finite number of weeks (see below). An issue often discussed in the U.S. is that the patchwork nature of the system appears to result in many families receiving less than that and some receive zero.

II. The Structure of U.S. Social Safety Net

Social assistance in the United States falls into one of two categories, social insurance or means-tested transfers.[3] As a general rule, eligibility for social insurance programs is tied to a history of employment or old age, while means tested transfers are tied to having currently low income and assets. The former includes Social Security Retirement and Survivors Benefits (the country's retirement program), Disability Insurance (the U.S. program for the disabled with strong work histories), Medicare (the medical care program for the disabled and elderly), Unemployment Insurance, and Workers Compensation. Means-tested transfers include, among others, Medicaid (medical program for families and individuals), Supplemental Security Income (SSI) (cash welfare program for the elderly, blind, and disabled), Temporary Assistance for Needy Families (TANF) (cash assistance and non-cash for families with children), subsidized housing assistance, child care subsidies, and the Supplemental Nutrition Assistance Program (SNAP), which provides vouchers to families and individuals for food purchases. The other key means-tested programs that are directly tied to employment are two tax credits, the Earned Income Tax Credit (EITC) and the Child Tax Credit (CTC).

In terms of aggregate expenditure, that on Medicare, Medicaid and Social Security dwarfs all others, and with TANF the smallest among all major programs (Ben-Shalom et al., 2012, Table 22.1). In addition, as shown by Moffitt and Ziliak (2019), almost all the major programs in the safety net have experienced substantial secular growth in real spending over the last four decades, with the exception of UI and TANF. In 2017, they accounted for 12.3 percent

[3] Detailed reviews of the history and current status of U.S. safety net programs and the research that has been conducted on those programs can be found in Moffitt (2016). Short summaries of each major program as well as proposals for reform can be found in the papers published in the Fall 2019 issue of the Annals of the American Academy of Political and Social Science, a number of which are referenced below.

of the nation's GDP. However, eligibility for the programs is scattershot, with some covering only the elderly or disabled or retired, others covering only those with long histories of earnings or significant levels of current earnings, many often primarily intended for families with children, and others (like TANF, housing, and child care subsidies) with capped expenditures that result in rationing of slots.[4] As a consequence, among all very low income nondisabled nonelderly families in the country, less than half receive benefits from any major program at all and, among childless families, only about 20-25 percent do (Kosar and Moffitt, 2017, Table 1).

Despite the strong secular growth in spending, most of the programs in the safety net are not automatic stabilizers designed to respond to cyclical shocks like that associated with the Great Recession or the Covid-19 health Pandemic. Social insurance programs for retirees and the disabled, for example, do not provide assistance to most of those affected by an economic downturn (nor were they designed to).[5] But means-tested programs, because they are intended to provide support to those with low income, should be expected to kick in when earnings decline, though that is far from the case under current program structure and operations.

Housing assistance is not an entitlement program and the vast majority who are income eligible do not receive assistance in the first place. TANF is also not an entitlement, and requires the presence of dependent children in the family. It also has work requirements which cannot be fully relaxed during recessions without Congressional approval. Medicaid historically has required the presence of young children for eligibility among the non-disabled and non-elderly. The Affordable Care Act of 2010 expanded eligibility to childless adults but at state discretion

[4] Again, see Table 22.1 of Ben-Shalom et al. (2012) for a listing of eligible groups for each major program.
[5] While there is some evidence of a cyclical component to disability insurance (Maestas 2019), that program is designed to replace earnings of those who suffer a disability that is expected to result in a loss of gainful employment of at least a year, and usually permanently, and as such should have no direct relationship with the state of the business cycle.

and, as of 2020, only 37 states and the District of Columbia have expanded Medicaid to cover that group. The majority of states that did not expand Medicaid are located in the South, with populations that have above average shares of Black and Hispanic populations, perpetuating racial disparities in health care access.[6] The EITC provides a refundable tax credit to workers but only annually, and hence will provide support to those affected by the Pandemic recession only in the Spring of 2021. Moreover, increased EITC benefits will only accrue to those whose earnings are reduced from high earnings ranges down to an intermediate earnings range, who will therefore get more benefits than they would have had the recession not occurred. Those who are laid off or have earnings reduced to low earnings levels will, to the contrary, receive reduced tax credits (Larrimore, Mortenson, and Splinter 2016). Some evidence suggests that the program does provide insurance over the cycle for dual-earning families when the secondary worker has reduced earnings, but not for single-parent families who comprise over 80 percent of EITC recipients (Jones 2017; Bitler, Hoynes, and Kuka 2017).

There are only two major U.S. safety net programs that provide substantial income support during downturns, and these are the UI and SNAP programs. We devote a short discussion to each.

Among social insurance programs, only UI is specifically targeted to assist workers from economic recessions. Like most UI programs in industrialized countries (Moffitt, 2014), the U.S. UI program provides benefits to the involuntarily unemployed who meet requirements related to past earnings in an UI-eligible job, who are paid a benefit which is a fraction of past wages for a certain maximum duration, and who must meet certain job search requirements. As in all

[6] In fact, because the U.S. system of health insurance provision is still primarily employer-based, the reduction in employment that comes during a recession typically results in loss of health insurance for many families. For the Covid-19 Pandemic, Bowen and Gangopadhyaya (2020) have estimated that if the unemployment rate reaches 15 percent, over 17 million workers will lose employer health insurance coverage.

countries, these restrictions mean that only a fraction of the unemployed are covered (the voluntarily unemployed and those with short work histories are not, for example); even in the Great Recession, it was only 40 percent (von Wachter 2019). The U.S replacement rate is in about the middle of the pack among other countries but it has one of the shorter maximum durations. It also typically does not cover part-time workers, the self-employed, or independent contractors.

However, the major difference between the U.S. program and that in other countries is the state-based organization of the system and its method of financing, as contrasted with the national organization and financing in most other countries (see Vroman and Woodbury, 2014 for details on the US system). The ability of states to set the parameters of the program means that many of those parameters often vary widely (e.g., replacement rates range from 30 to 55 percent (Stone and Chen 2014)). However, more important, states have to raise their own revenues to support the program and they do so by building up rainy day "trust funds" for future downturns using a complicated tax on employers which is loosely related to their record of UI recipients. When recessions occur, states run down their trust funds and, in a severe recession, they have to borrow money from the federal government and pay it back later. After the Great Recession, states had to rebuild their trust funds either by raising taxes or cutting benefits or restricting eligibility, and many did the latter (Vroman and Woodbury, 2014; von Wachter, 2019). Some states lowered the maximum duration down to a very low 13 weeks, only half of the normal 26. Many states also tightened up their eligibility restrictions, which led to a decline of the fraction of the unemployed receiving UI benefits to an average of 28 percent shortly before the Pandemic, the lowest level in 45 years (von Wachter, 2019, Figure 2). Thus the UI system was trending in an unfavorable direction even prior to 2020.

This method of financing UI leads to the other important feature of the program relevant to recession relief. While there is a special program that triggers modest extra federal benefits for states if their unemployment rate rises above certain levels[7], this is not sufficient to address the needs of the unemployed in a major recession, so Congress typically enacts additional, temporary federal benefits with ad hoc legislation. It did so in the recessions in the early 1970s, mid-1970s, early 1980s, 1990s, early 2000s, and in the Great Recession (see Whittaker and Isaacs, 2013, for the history). The legislation is often hastily put together because of the emergency nature of the situation and, even after enactment, there are weeks of delay before benefits start to flow. We will discuss below some possible reforms that have been suggested to address this issue.

The means-tested transfer program that most closely resembles an automatic stabilizer is SNAP (Ziliak 2015; Ganong and Liebman 2018). The program provides a monthly allotment for the purchase of food that varies by household size, but is fixed nationally (with a top-up for residents of Alaska and Hawaii). It is not a cash program because benefits must be spent on food purchased from qualified vendors for preparation and consumption in the home. However, the distinctiveness of the program compared to the others in the U.S. is that eligibility is near-universal, with eligibility extended to families and individuals regardless of marital status, presence of children, or other demographic characteristic, as long as income and asset conditions are met. Unlike a number of other programs, it is federally financed and is an entitlement, with all eligibles legally entitled to benefits.

There are a few restrictions in the program relevant to recession relief. One is that the program does have asset tests and the asset limit at the federal level is only $2,250, which would

[7] This is the so-called Extended Benefit Program. States typically pay half of the cost but Congress has in the past temporarily paid all of it.

make almost all working families except for the poorest of the poor ineligible for the program if they become unemployed. However, beginning in the 2000s, states were allowed to have the authority to relax these limits and a growing number have done so, with some eliminating asset tests entirely (U.S. Congressional Research Service, 2019). A second restriction is that childless adults who do not have a disability must meet work requirements in the program. These can be relaxed if the unemployment rises above certain levels and the state requests that the requirement be temporarily suspended, and this is often done in major recessions.

Finally, a few remarks are merited about how the U.S. safety net compares to most other OECD countries, including the United Kingdom. First, the United States offers no universal health insurance, which is standard in the OECD. Persons ages 65 and older are covered under Medicare, but for the non-elderly, health insurance is most often tied to their employment. Firms are under no mandate to provide such coverage and there has been a long secular decline in employer coverage from 67 percent in 1998 to 58 percent in 2018 (Rae et al. 2020).[8] Thus, as of 2018, over 10 percent of the non-elderly U.S. population remain without health coverage (Tolbert et al. 2019). Second, the U.S. does not provide general income support to the low-income non-disabled, non-elderly population. The former Aid to Families with Dependent Children program did offer general assistance to low-income families with children under age 18, and while the work requirements for single-parent (mostly mothers) families were de minimis, they were much more stringent for two-parent families and thus the program mainly served lone-mother families (Moffitt 1992). The program was replaced by TANF as part of the 1996 welfare reform, whereby the program was stripped of its entitlement status and eligibility severely curtailed such that participation among families with children in poverty fell from 7 in

[8] Under the Affordable Care Act, firms with 50 or more employees are required to offer insurance to at least 95 percent of their full-time workforce or are subject to penalties from the Internal Revenue Service.

10 to 2.5 in 10 (Bitler and Hoynes 2016b). Income support for non-disabled non-elderly adults without dependent children has never been provided at any substantial level, and this population is only eligible for a very small work-conditioned tax credit and must meet strict work requirements for eligibility for food assistance from SNAP.

Third, the U.S. offers little in the way of child care assistance compared to other OECD countries. Child care is not an entitlement for low-income families, and thus the vast majority receive no assistance, even though center-based care can eat up one-fifth of earnings of the typical single-mother family (Ziliak 2014; Hotz and Wiswall 2019). There are tax credits available to offset some child rearing costs, but most benefits accrue to middle- and high-income families. Fourth, housing assistance in the United States is strictly curtailed, in recent years serving under 3 percent of the population compared, for example, to 16 percent of the population in Britain (Adam et al 2015; Collinson, Ellen, and Ludwig 2019). Fifth, as noted previously, the U.S. UI system is disadvantaged by its state-level financing structure, which makes it less responsive to recessions than in most OECD countries.

In summary, while the safety net in the U.S. is very large and has grown considerably over time in terms of the number of persons served and in inflation-adjusted spending, the patchwork of programs is generally not designed to provide a response to all families affected by changes in the macroeconomy.

III. The Great Recession and Covid-19 Policy Responses

The most recent major recession in the U.S. prior to the current one was the Great Recession, which took place approximately in the 2007-2011 period, with unemployment

peaking at approximately 10 percent and coming down very slowly, reaching pre-recession levels only in 2017. Through a series of pieces of legislation, the U.S. Congress enacted a number of major forms of temporary safety net relief (Burtless and Gordon, 2011). UI was greatly extended, reaching a maximum of 99 weeks of benefit eligibility at the peak. Maximum benefits in the SNAP program were increased by 13 percent, EITC benefits were extended for families with three or more qualifying members, the share of Medicaid expenses paid by the federal government was increased, emergency supplementary funds for the TANF program were provided, millions of dollars were appropriated in additional housing assistance, a one-time payment was given to Social Security and Disability recipients, and funds were provided for child care assistance. A temporary reduction in the payroll tax was enacted. The magnitude of the response provided major monetary assistance to the lower part of the income distribution and, rather astonishingly, kept the poverty rate from rising at all in its early period (Sherman, 2011; Moffitt, 2013; see also Bitler and Hoynes, 2016a).

The U.S. policy response to the Pandemic recession has been much narrower than in the Great Recession, although more generous in the programs it has focused on, at least in the short-term. Unlike in the Great Recession, Congress has provided little additional support for most means-tested and social insurance programs. SNAP benefits were increased temporarily but only for those whose benefit amounts were below the maximum (40 percent of recipients are already at the maximum and hence received no additional support). The federal share of Medicaid expenditures has been increased by only 6 percentage points, and that is to last until the health emergency ends. Support for rental assistance through housing vouchers was increased only by under 6 percent. However, as in the Great Recession, work requirements for certain SNAP recipients have been temporarily suspended, and additional funds have been provided for

summer Head Start programs and state child care funds. But funding and eligibility rules for the other means-tested programs in the safety net, including the EITC, TANF, SSI, and subsidized housing programs have largely remained at their pre-Covid levels.

However, two other responses, both short-term in nature, exceeded those in the Great Recession. First, a one-time cash payment was enacted to almost all families with incomes below fairly high levels equal to $1200 per adult, $2400 for a married couple, and $500 for each qualifying child under age 17. While one-time in character, and hence of diminishing impact if not renewed, this represents a much more universal cash supplement than anything considered in the Great Recession. Second, Congress enacted three major forms of UI relief. One was to provide any worker qualifying for state UI benefits an additional $600 per week funded by the federal government. As the average state weekly benefit amount is around $300, this tripled weekly UI income for the typical unemployed worker. Ganong, Noel, and Vavra (2020) have estimated that income under the expanded UI program raised incomes over pre-Covid earnings for two-thirds of UI recipients. But this program expired on July 31, 2020, and at this writing has not been renewed despite continued record high numbers of unemployed.[9] Second, an additional 13 weeks of benefits was added to whatever the state maximum currently is. A third innovation was the creation of an additional program that extended UI to self-employed workers, independent contractors (including so-called gig economy workers), those with short work histories, and those looking for part-time work. As noted previously, most of these individuals are not covered under the regular UI program. The Pandemic program provides a minimum

[9] The U.S. President has recently issued an executive order offering states a $300 weekly supplement, but only under certain conditions, financed by pulling funds out of emergency trust funds. As of this writing, 11 states have accepted the offer. The duration of the supplement has not been determined and depends on when the fixed dollar amount allocated to the effort expires.

weekly benefit based on the state's program and can be received for up to 39 weeks through the end of 2020.[10]

In the following sections we chart trends in employment, earnings, income, and—most important for the topic of this paper—safety net program participation, both before and during the initial months of the Covid Pandemic. We then follow this up with descriptive regressions showing the relationship between state business cycles and program participation, conditional on a host of socioeconomic characteristics, and whether the link between the economy and program participation changed after the Covid period.

IV. Data

The data for our analysis span the recession of 2001, the Great Recession of 2007-2009, and the early months of the Covid-19 pandemic. Data for the pre-Covid period comes from the Current Population Survey Annual Social and Economic Supplement (ASEC) for the 2001-2019 survey years. The ASEC, which is collected by the U.S. Census Bureau as a supplement to the monthly CPS labor-force survey, serves as the official source of income and poverty statistics. It consists of about 90,000 households and roughly 200,000 individuals in a typical year, with some interviewed in-person and others via telephone. Separate weights are provided to make the sample nationally representative at the person, family, and household level.[11]

Data for the Covid period come from two sources, the Census Bureau's Household Pulse Survey (Pulse) and the Data Foundation's Covid Impact Survey (CIS). The Pulse is a large, web-based survey of adults ages 18 and older collected by Census to provide timely information on

[10] These newly eligible recipients also received the additional $600 per week given to all UI recipients, which expired on July 31, 2020.
[11] The Census Bureau defines a family as two or more persons related by birth, marriage, or adoption, and does not include cohabiting partners. The household includes all persons residing in the household, regardless of relationship.

how the Pandemic initially affected employment, food security, health, housing, and education (but not program participation). Data are aggregated weekly and we use weeks 1, 4, and 7 referring to the months of April, May, and June 2020 with sample sizes ranging from 74,000 to 130,000. Weights are provided to make the weekly samples nationally representative of adults. The CIS is a web- and phone-based survey of adults ages 18 and older, also started in response to the Covid-19 health Pandemic (Wozniak et al. 2020). It is collected by the NORC at the University of Chicago and contains information on civic engagement, current employment and health status, transfer program participation, and actions taken in response to Covid-19. Like the Pulse, the CIS is fielded weekly with just under 9,000 observations in a typical week—a relatively small sample size to measure safety-net program participation--and separate weights are provided to make each weekly sample nationally representative or the samples can be combined and weighted to the national population. We use weeks 1-3 to overlap with the sample period used in the Pulse.[12]

A. Focal Outcomes and Their Reference Periods

Our focal outcomes are employment per population, earnings, household income before and after-taxes, and transfer program participation, with the last of these most directly addressing the issue of safety-net accuracy with which this paper is concerned. Employment, earnings, and transfer program participation are each available at the individual level in the ASEC, and thus we present series separately for men and women, and by education attainment, race/ethnicity, and poverty status within each gender.[13] Both the Pulse and CIS ask about employment status, but because of the large samples from the Pulse we use that survey for employment in order to

[12] The CIS only covers 10 large states and 8 metropolitan statistical areas. We recomputed all CPS statistics below for that subset of states and found no differences in trends.
[13] SNAP receipt in the ASEC is measured at the household level, but we assign participation to each member of the household under the assumption of resource sharing.

capture the monthly dynamics over the spring season. The reference period for employment in the Pulse is the prior 7 days, and thus to better align the series we use the corresponding survey-week employment measure in the ASEC. Earnings is only available in the ASEC, and refers to the prior calendar year. Likewise, household income is only continuously measured in the ASEC and refers to the prior year. The before-tax measure of household income includes most forms of labor and nonlabor cash income, but does not include capital gains or losses, or in-kind transfers such as SNAP or Medicaid. The after-tax measure of household income includes the amount of SNAP benefits received in the prior year, and subtracts federal, state, and payroll taxes, while adding back refundable EITC and CTC tax credits.[14]

We focus on the two programs in the safety net most likely responsive to changes in employment--UI and SNAP--but we also include Medicaid, TANF, and SSI, which are asked about in both the ASEC and the CIS (the Pulse did not ask program participation questions).[15] But we are not able to match the reference periods for participation in these programs in the ASEC and the CIS, because the former only asks about participation in the past calendar year and the latter only asks about participation in the survey week. We shall refer to the effect this noncomparability has on our results, but since participation in a full calendar year will always be greater than participation in a particular week, the 2020 Pandemic participation rate estimates from the CIS will necessarily tend to be somewhat lower than those in the ASEC.

B. Measurement Challenges

[14] Tax payments and credits are estimated using the National Bureau of Economic Research's TAXSIM program, found at http://users.nber.org/~taxsim/ . We use version 27, and code used to prepare the ASEC sample is available at https://sites.google.com/site/jamesziliak/Home/Research . Both the Pulse and CIS ask about household income in 2019, but only in wide bins and they do not contain enough information on household relationships to accurately estimate tax liabilities.

[15] None of the surveys ask questions about receipt of the EITC or CTC, and participation among those estimated to be eligible is assumed 100 percent in TAXSIM. Thus, we include these credits in the after-tax household income series but do not separately examine participation over time in the tax credits.

Beyond the reference period discrepancy, there are two additional measurement challenges affecting both the ASEC and CIS. A well-known concern with surveys in general, and the ASEC in particular, is underreporting of program participation, mostly from respondents reporting non-participation when in fact they did participate (Meyer, Mok, and Sullivan 2015). To address underreporting, we use a model-based approach to predict program participation as a rich function of household demographics (Moffitt and Pauley 2018). We then randomly assign participation to those nonparticipants with a high ex ante predicted probability of participation until the population weighted participation counts align with administrative totals.[16] We then assign the average state-by-year benefit amount among recipients to those individuals, and recompute household income. Because administrative totals are available with a lag, we only make this underreporting adjustment to the ASEC data covering calendar years 2000-2018.

Unfortunately, because the CIS is a new resource and there are not yet administrative records available to assess its reporting accuracy, there have been no analyses verifying how responses align with administrative records. However, given the evidence that most existing surveys underreport transfer participation, we expect the CIS to suffer from this measurement challenge as well. This means that, in addition to differences in reference period, our estimates of program participation from the CIS are likely understated compared to what we might expect in the ASEC when that data become available in 2021.[17]

All three surveys conduct some data imputation prior to public release. The Census imputes missing data on individual questions on the ASEC using what is known as the "hot-

[16] The administrative totals we match are adult participants in each program ages 18 and older, and thus we use an expanded ASEC sample of persons ages 18 and older in order to match administrative counts.
[17] The CIS question asks about safety net programs in a single question, with possibly confusing program names, and is likely to have random reporting error, as we discuss below. As noted previously, however, we adjust for systematic underreporting by adjusting to control totals, but only in the CPS ASEC.

deck" procedure, whereby observations with missing information get assigned the values from a randomly matched "donor" based on a set of observed demographic characteristics. Notably, some monthly CPS sample members refuse to answer any or enough questions on the ASEC to be usable, and these households receive a complete imputed record from a donor using a similar hot-deck imputation procedure. Bollinger et al. (2019) show that rates of supplement nonresponse have been on the rise in recent years, with nearly 25 percent of all households receiving a completely imputed ASEC record by 2018. The Census only does a limited amount of imputation on demographic characteristics in the Pulse, using a pared-down hot-deck procedure akin to that employed in the ASEC. The CIS assigns missing values using an iterative raking procedure based on age, gender, census division, race and ethnicity, education, and county groupings. Imputation flags are made available in both the ASEC and Pulse, but not the CIS. Consequently, we retain imputed values of individual variables in the three surveys, but we drop those ASEC households who have their entire supplement imputed.[18]

In order to abstract from most post-secondary education and retirement decisions, we select a sample of prime age adults ages 25-54 years old from each survey. This yields over 1.6 million observations across 19 years in the ASEC, 130,492 observations across three weeks of the Pulse, and 3,454 observations from three weeks of the CIS. Because we are interested in heterogeneity across different population groups, we pool the three weeks of the CIS data in order to minimize sampling variation. This means we provide three separate snapshots of weekly employment in 2020 from the Pulse, but only a single snapshot of transfer program participation in 2020 from the CIS.

[18] The whole supplement imputes are retained for the adjustment for underreporting of transfer programs in order to match population weighted totals to administrative counts.

V. The Labor-Market Impact of Covid-19

We begin by documenting trends in labor market outcomes in the two decades leading up to the Covid-19 pandemic. Figure 1 shows national trends in the monthly unemployment rate and the employment-population ratio for men and women from January 2000 thru July 2020.[19] The unemployment rate series shows two U.S. recessions prior to 2020, one modest recession in the early 2000s and the major recession in the 2007-2009 period (the Great Recession). The Pandemic downturn shows up as the jump in the 2nd quarter unemployment rate in 2020, reaching a level above that in almost all of the months of the Great Recession, and a sharp decline in the employment-population ratio (both exhibit a small bounce-back from the initial drop). By this measure, the Pandemic downturn is more severe than was the Great Recession. Also, as noted elsewhere (Alon et al., 2020), whereas in past recessions the unemployment rate for men has risen more than that for women, the opposite is the case for the Pandemic, where women's unemployment has risen slightly more. Alon et al. attribute this to the particular sectors affected by the Pandemic (e.g., restaurants and child care) and to school closures.

[Figure 1 here]

The employment-population ratio shows a smaller cyclical response than the unemployment rate because the downturns mostly reflect a decrease in employment, not labor force participation. Whereas we again see that in past recessions male employment has declined more than that of women, they declined by about the same amount in the Pandemic. Figure 1 also shows a long-term downward trend in the employment-population ratio, reflecting a decline in labor force participation for both men and women.

[19] The data in Figure 1 represent non-seasonally adjusted monthly employment and unemployment data on persons ages 25-54 from the Bureau of Labor Statistics, https://data.bls.gov/PDQWeb/ln..

We use the CPS ASEC and the two Pandemic surveys to explore these trends at the individual level. To explore their heterogeneity, we consider three separate splits based on education, race and ethnicity, and household poverty status. With our focus on transfer program receipt, it is the labor market experiences of more disadvantaged groups that is our main interest. The education groups are those with 15 or fewer years of schooling (high school graduates and dropouts, along with those with some college), and those with 16 or more years of schooling (including college and post-graduate degrees). The Census Bureau distinguishes Hispanic ethnicity from other ethnicities, and thus our racial groups are non-Hispanic white, non-Hispanic black, and non-Hispanic other race, the latter including Asian, Native American, Hawaiian, and Pacific Islanders. Poverty status is determined by whether household income in the prior calendar year is below or above two times the federal poverty line for that household size.[20]

[Figure 2 here]

Figure 2 presents trends in employment of men and women ages 25-54 as a share of their respective populations. The figure shows that the effects of both the Great Recession, and especially Covid-19, were not neutral with respect to education, race, and poverty status. For education, both men and women with lower levels of education had much more sizable reductions in employment in the Great Recession and Covid-19 pandemic than those with more education. Interestingly, compared to Figure 1, we see that women's employment fell less than that for men for the less educated as well as for the more educated. For men, these employment losses were sufficiently acute with the onset of Covid-19 that the gap in employment rates

[20] Income to needs is found by dividing household income by the household-size specific poverty threshold. In the CPS income is continuously measured, but the Pulse and CIS only release income in bins. We thus assign the midpoint of the bin to the household before dividing by the poverty threshold. The poverty thresholds are fixed over time except for an inflation adjustment.

between high-skilled men and low-skilled men doubled between the 2001 recession and Covid-19.

As for race-ethnicity, Black men had sharper employment losses in the Great Recession than white or Hispanic men, but Hispanic men took a bigger employment hit during the early months of Covid-19, falling 23 percentage points compared to 16 points for Black men. For women, the decline in Black employment was much larger than for other groups.[21] As for differences by household income stratum, men residing in households with low incomes likewise experienced much greater employment losses in all three recessions since 2000 than those in high-income households. The patterns are quite similar among women. The exceptions are that female employment rates were little affected over the Great Recession, and while there has been slight trend reduction in employment among prime-age low- and semi-skilled men, it has been much sharper among women in the years leading up to the Covid-19 crisis. The other importance difference in male and female employment is among the races. Black men have the lowest employment rates, while Hispanic women have the lowest rates. Notably, with the exception of college educated men and women, there has been a partial recovery in employment by June 2020.

[Figure 3 here]

Figure 3 depicts trends in median real weekly earnings of working men and women, found by dividing earnings in the prior year by the number of weeks worked and adjusting for inflation using the personal consumption expenditure deflator with 2010 base year (workers only). Most notable in Figure 3 is the stability of median earnings for both men and women across education, race, and household poverty status. This is true at least until 2015, when there

[21] The graphs also show much smaller differences in women's employment by race-ethnicity than in men's. It has been found before the racial differences for women are smaller than those for men.

were real gains in earnings among less skilled men and women, men of white and other race and Hispanic ethnicity, women of all races and Hispanic ethnicity and those in households with incomes above twice the poverty line. Given the steep employment losses among these same groups of pre-Covid earnings gainers denoted in Figure 1, the expectation is that unconditional earnings losses for these groups (i.e. earnings inclusive of job losers) will be sharp as well.[22]

[Figures 4 and 5 here]

We move beyond individual employment and earnings in Figure 4 where we present median real household income both before taxes and after taxes and inclusion of near-cash benefits from SNAP but only up to 2019, since we have no comparable 2020 values. We still show variation in incomes by education, race and ethnicity, and poverty status by selecting the relevant characteristic of the household head, but also add a fourth panel based on employment status of the head. Before tax incomes for the typical household whose household head had some college or less fell over the sample period, especially after the Great Recession, and nearly recovered those losses after 2015 so that by 2018 their incomes returned to about the same level as in 2000. Income gains after 2015 among the high skilled, households headed by a white person or other race, and those not in near poverty were strong enough to result in the first real gains in two decades. Accounting for taxes and SNAP only has the effect of reducing the level of household incomes, but not the basic trends beyond a slight slowing down of those trends. This is true also for household income inequality as seen in Figure 5, which shows the 90-10 income ratio of before-tax and after-tax household incomes. On average over the sample period, the tax system reduced household income inequality by a sizable 45 percent. However, from the Great Recession to 2015 before-tax inequality increased 22 percent, and while the tax system slowed

[22] Earnings conditional on those retaining work may not fall in response to Covid-19. This information for calendar year 2020 from the CPS ASEC will not be available until fall 2021.

that rate down, post-tax inequality increased 14 percent. After 2015, before-tax inequality fell 10 percent, but after-tax inequality was little changed, pulling back only 2 percent. Based on the employment trends showing substantial losses among the less skilled, we anticipate a sharp increase in earnings inequality in 2020, reversing the trends of recent years, but as we discuss below, inclusion of social assistance from unemployment compensation is likely to stabilize before-tax income inequality. Because the Trump tax cuts of 2017 were targeted toward high-income taxpayers, however, after-tax inequality may be exacerbated as hinted by the increase in 2018 shown in Figure 5.

VI. Transfer-Program Participation over Time and the Cycle

In this section we document how the U.S. social safety net responds to changes in employment and incomes over time and the business cycle. As noted previously, Sherman (2011) and Moffitt (2013) found strong safety net responses in the Great Recession. Bitler and Hoynes (2016a) examined whether those responses were consistent with prior recessions per unit increase in the unemployment rate, finding that Great Recession UI responses were in excess of historical experience, while SNAP responses were not statistically different per unit of past experience (see also Ziliak (2015) and Ganong and Liebman (2018)). We compare historical participation rates to those in the Pandemic.

We first present overall participation rates in the aggregate—that is, over all five programs we examine--and then by education attainment. This is then followed up with descriptive regressions of program participation as a function of demographic characteristics and the state labor market.

[Figure 6 here]

Figure 6 shows the fraction of men and women ages 25-54 receiving any assistance from UI, Medicaid, SNAP, TANF, or SSI over the last twenty years, including the first few months of the Covid crisis in 2020, along with trends in each of the individual programs. The figure shows that the participation rate in any assistance program resembles a step function, with steps up at the onset of the Great Recession and Covid-19 Pandemic. Participation held steady at around 15 percent prior to the Great Recession, and then jumped about 7 percentage points during the Recession but did not come down to pre-Recession levels afterwards. Instead, participation grew modestly but steadily over the next decade. This reflects the long-term upward trend growth in safety net participation referred to in the Introduction. Overall participation in the five programs then jumped another 10 percentage points to just under 35 percent with the onset of the Pandemic. Given the change in definition of program participation in the pre-2020 data and the 2020 data referred to earlier, this jump is likely to be an underestimate of the true increase.[23] Thus we find that the increase in safety net participation in these first few months of the Pandemic exceeded that in the Great Recession.[24]

The Pandemic increase was driven by the sharp uptick in UI and SNAP, as expected, with no obvious response of TANF and SSI. The jump in UI receipt slightly exceeds that in the Great Recession while the SNAP jump is approximately the same.[25] However, there also

[23] As we noted earlier, we expect the 2020 participation estimates to be on the conservative side because they reflects participation in the prior 7 days at the different weeks between April and June 2020, whereas the CPS ASEC estimates refer to any participation in the prior year. We cannot rule out, however, that some of the difference could stem from different sampling frames between the ASEC and CIS.

[24] Whether they exceed the Great Recession experience per unit of the unemployment rate is a different question, because the rate has jumped up more in the Pandemic than it did in the Great Recession. See our discussion of this issue below. We should also note that there were many more increases in other safety net programs in the Great Recession than there have been in the Pandemic, however; see the discussion above.

[25] We should note that a number of other reports of UI during the Pandemic report increases in the number of claims rather than receipt, which can be quite problematic (see the paper by von Wachter in this issue). The CIS data asked respondents if they had applied for UI as well as whether they received it. Our tabulations of the 2020 UI participation rates in Figure 6 double when we include applications.

appears to be a jump in Medicaid during the Pandemic that was not observed during the Great Recession. To be certain, Medicaid growth over time reflects secular expansion, which accelerated after the 2014 ACA (Currie and Duque 2019). That there might be a business cycle jump in Medicaid in the Covid period not observed in previous recessions could stem in part from the fact that the ACA expanded coverage for the first time to low-income non-disabled childless adults (at least in some states) and, as Figure 2 suggests, employment losses in 2020 were quite severe for this population.[26]

[Figure 7 here]

In Figure 7 we present trends in participation rates overall and for individual programs by educational attainment. The figure makes clear the relationship of program participation to the overall state of the macroeconomy, with participation responses greatest among semi- and lower-skilled workers. UI shows a modest increase during the mild recession of 2001, but with a sharp increase with the Great Recession and even more so during the Covid-19 recession.[27] However, UI receipt rates for the unemployed are far below 1, even during the Pandemic. This reflects the continued incomplete coverage of the program discussed above, even after the expansions of UI eligibility provided for in the Pandemic legislation.[28] The figure also shows a huge response of SNAP to the Great Recession among men and women with some college or less, but this participation expansion lasted well beyond the official end of the recession. Prior studies showed that the business cycle was the primary driver of program growth during that decade, though

[26] We produced a complete set of figures using data as reported in the CPS ASEC without the adjustment for underreporting. This adjustment has the effect of slightly increasing the levels of participation, but has no effect on the trends presented in the figures in the paper.

[27] In results not presented, we constructed the series separately for men and women by skills. Notably, the amplitudes of UI participation among women were more muted the 2001 and 2007-09 recessions, but UI participation among less-skilled women in the Covid period has been even stronger than among less skilled men consistent with the shut-down of work in the hospitality and entertainment sectors where these women are more concentrated.

[28] See Bitler et al. (forthcoming) for a more detailed discussion of incomplete UI coverage in the Pandemic period.

there were also a number of policies adopted at the state level that eased access and recertification of program benefits (Ziliak 2015; Ganong and Liebman 2018). Consistent with the earnings growth starting in 2015, SNAP participation fell in the years leading up to the pandemic. Then we see a very sharp uptick in participation among the semi- and less-skilled during the Pandemic to rates that slightly exceed the record highs of the Great Recession.[29]

Figure 7 also shows the huge secular growth in the Medicaid program that affected both the skilled and less skilled. Participation rates among those with some college or less tripled to over 30 percent in the last two decades, but this rate of growth was even higher among the college education, albeit from a much smaller base participation rate in 2000. The latter speaks to the weakness in the labor market, and secular loss in employer-provided insurance. There is no detectable response of Medicaid, TANF, or SSI participation to the 2001 recession or the Great Recession, with the possible exception of a very mild uptick in TANF among the less skilled in the Great Recession, but in the Pandemic we see more pronounced evidence of a cyclical response among the semi- and less-skilled in both Medicaid and TANF. This underscores the fact that Medicaid appears to be reaching new populations in a program heretofore not affected as much by the humps and bumps of the business cycle. That TANF also increased in the Pandemic among those with some college or less could reflect just how deeply the crisis cut into the employment opportunities for those in the hospitality and entertainment sectors, but it should also be noted that the TANF participation rates are extremely small compared to the other programs in the Figure and, compared to them, is visually barely detectable (see Figure 6).

[29] Bitler et al. (forthcoming, Table 1) show Pandemic UI and SNAP participation rates from the same data source as ours, but for only the short-term unemployed and those who report themselves as furloughed instead of all the unemployed. Interestingly, their UI participation rates are higher than ours and their SNAP participation rates are lower. Our sample includes the longer-term unemployed, many of whom may have exhausted benefits and who have had more time to access the SNAP program.

Finally, SSI experienced trend growth among the semi- and less-skilled from 2000 to 2014, but then stabilized thereafter. Although there is a marked increase in SSI receipt among the skilled during the Pandemic, this is to a very low level and we are less confident that this a real program response.[30]

We summarize these business-cycle responses with a series of descriptive weighted probit regressions, using the person weights provided in each survey. For all programs combined, and each one individually, we regress program participation on indicators for age (ages 45-54 omitted), gender, race (white omitted), education (college omitted), household size, number of children under age 14, and the state unemployment rate. We also control for state fixed effects and year dummies. The state fixed effects control for permanent differences across states, such as political preferences for welfare, while the year dummies are necessary to control for common aggregate factors affecting program participation, including, but not limited to, business-cycle shocks. This means that the state unemployment rate captures local deviations from national unemployment rates, and thus may understate the program response to the total (state plus aggregate) unemployment rate. Also, as is well known, the magnitudes of probit coefficients are not directly interpretable and thus we present marginal effects evaluated at the means of the regressors, with marginal effects of indicator variables reflecting the difference in the predicted CDF with the indicator set to 1 and 0, respectively. We present the direct coefficients in Appendix Tables 1-2 and summary statistics of regression variables in Appendix Table 3.

[30] The CIS questionnaire inadvertently refers to SSI as "Supplemental Social Security" rather than Supplemental Security Income, and there appears to be some discrepancy among men in the responses to SNAP and SSI. Consequently, we are concerned that the SSI response could be more survey response error than real.

Because the state unemployment rate is the focal regressor of interest, we cluster the standard errors at the state level.[31]

[Table 1 here]

Table 1 presents the marginal effects from the probit models for the combined 2001-2020 survey years. There we see that overall program participation is U-shaped with respect to age, with younger adults more likely to participate than those 45-54 years old, but those ages 35-44 are less likely to participate than their older counterparts, though the latter age effect is not statistically significant at usual significance levels. Looking across columns, it appears this pattern is driven by Medicaid, and reinforced by SSI. Most Medicaid recipients are families with young children, consistent with the larger effect among young adults, but some disabled are also on Medicaid and this is more likely to affect older adults as seen in the SSI column. The table also shows that women are about 2.5 percentage points more likely than men to receive any program, and this higher participation among women holds across all programs except for UI. Blacks are 14 percentage points more likely to be on social assistance than whites, and Hispanics are 4 percentage points more likely to be on assistance than non-Hispanics. Black participation is higher across all programs, and the same is true of Hispanics except for UI and SSI. Program participation is strongly decreasing in education attainment. Those with high school or less are 26 percentage points more likely to be on assistance than college educated, compared to 17 percentage points for some college versus college. The program for which the marginal effects of high school or less and some college are comparable in magnitude is UI, underscoring the fact

[31] To expand the number of states covered in 2020 in the CIS we use the regional sample rather than the national sample in the figures. This increases the number of states represented from 10 to 18. We reproduced Figure 7 using the regional sample, and while the Covid-period response of UI and Medicaid is little changed, we do observe a larger SNAP, TANF, and SSI response for the less than college education group in the regional sample. We believe this is explained in part by the fact that the extra 8 states in the regional CIS are drawn from large metro areas, where SNAP, TANF, and SSI participation rates tend to be higher than average.

that unlike means-tested transfers, the reach of UI is higher up the skill and income distribution. Participation on social assistance programs is decreasing in household size, but increasing in the number of children under age 14, reflecting the need and subsequent targeting of assistance to young families.

[Figure 8 here]

Finally, Table 1 shows that consistent with the aggregate trends depicted in Figures 6 and 7, program participation overall is responsive to local economic conditions, and this is driven by UI and SNAP. To assist in interpretation of this relationship, Figure 8 shows how the predicted probability of program participation changes as the unemployment rate increases from 3 to 12 percent, which captures the range of values in our sample period (the sample average at 6 percent). Going from an unemployment rate of 6 to 9 percent increases the probability of any program participation from 15.7 percent to 18.1 percent, increases UI participation from 4.1 to 5.6 percent, and increases SNAP from 5.4 to 7.0 percent. In the Covid period, however, the US went from an unemployment rate from just over 3 percent to over 14 percent. Figure 8, which is based on the subset of 25-54 year olds, shows that going from 3 to 12 percent unemployment increases program participation by 7 percentage points overall, 4 points on UI, and 5 points on SNAP. The other programs in Figure 8 show no responsiveness to the business cycle.

[Table 2 here]

To see whether the relationship between the macroeconomy and program participation changed in the Covid period, in Table 2 we redo the analysis but now permit the effect of the state unemployment rate to differ in the pre-Covid - and Covid periods.[32] Not surprising, the

[32] In earlier analyses we explored heterogeneity in program participation by selected demographics such as race, detailed education, and poverty status. However, sample sizes in the CIS are limited compared to the CPS, and thus lack power to robustly identify whether the relationship between socioeconomic characteristics and program participation changed in the Covid period. We should also note that these regressions use the regional sample of the

partial effects of the socioeconomic characteristics in Table 2 are unchanged from Table 1, but the unemployment interaction coefficients are of interest. While the unemployment rate increase in the Covid period shows a stronger business-cycle effect in overall safety net participation, and the interaction coefficients for individual programs are positive and often sizable in magnitude relative to the pre-Covid coefficients (especially for Medicaid and TANF), the effects are not statistically significant at usual levels. This implies that the increases in program participation in 2020 shown in Figure 6, which are greater than in prior downturns, are no greater than would be expected on the basis of the greater increase in the unemployment rate during the Pandemic. However, this result should be qualified both by the relatively modest sample sizes in the 2020 CIS data, which reduce the power of the analysis, and the difference in program participation in the pre-2020 and 2020 periods which, as we have already noted, could bias the interaction coefficient downward.[33] In sum, with the exceptions of UI and SNAP, the safety net programs considered here demonstrate little buoyancy with respect to state business cycles, and in the next section we consider possible reform to strengthen UI and SNAP, as well as to introduce changes to some other programs to offer greater access and coverage to the safety net during economic downturns.

VII. Reform Options for the U.S. Safety Net

The descriptive evidence presented here highlights the shortcomings of the U.S. social safety net to respond to economic and health crises, and points to several areas for possible

CIS whereas Figures 6 and 7 used the national sample. SNAP, TANF, and Medicaid show slightly greater 2020 increases in the regional sample.

[33] A recent working paper by Hembre (2020) using administrative caseload data finds a comparably-sized response in both TANF and SNAP to changes in state unemployment rates.

reform. In this section we emphasize two areas, one a system of automatic triggers targeted to negative business cycle shocks, and the other to expansion of program access and generosity to un- and under-covered populations during both good and bad economic times.

Under current practice, during economic downturns expanding program access and benefit generosity and duration requires an explicit act of Congress. For example, under normal conditions a qualifying individual is eligible for UI benefits up to 26 weeks, though there are some states that cap that at a lower level. Since 1970 there has been the Extended Benefits Program (EBP) that provides anywhere from 13 to 20 additional weeks of UI benefits conditional on the national and state insured unemployment rates reaching a certain "trigger" threshold.[34] A problem with this program is that half the benefits must be paid by the states but states are typically financially strapped during recessions.[35] In the Great Recession, Congress authorized the federal government to pay 100 percent of benefits, a policy that could be considered for the Pandemic recession.

During the Great Recession Congress passed the Emergency Unemployment Compensation Program whereby all additional benefits were paid out of federal funds. A similar provision was invoked during the Covid-19 pandemic. The problem is that this requires Congress to enact legislation, but this is far from a given. The initial $600 per week bonus UI payment expired at the end of July 2020 and Congress has not reached agreement on whether to extend the program, and if so by how much, despite the fact that unemployment rates remain in excess of 10 percent. Not only does the legislative process result in gaps in coverage, it creates

[34] There has been much discussion in the U.S. about whether the triggers are too stringent. See, for example, https://www.brookings.edu/blog/up-front/2020/08/06/unemployment-insurance-extended-benefits-will-lapse-too-soon-without-policy-changes/.

[35] U.S. states have budget rules that require them to have balanced budgets on operating expenses (i.e., excluding capital expenses) but UI spending is exempt from the requirement. Nevertheless, state tax revenues fall and state safety net expenditures rise during recessions, making it difficult for states to spend more on UI.

uncertainty to workers which probably has effects on job-search and decisions on whether to take jobs or not, and on their decisions on spending now versus saving for later.

. One way to address these issues would be to reform the EBP with federal funding of additional weeks of eligibility as well as automatic triggers that turn on and off when certain thresholds are crossed. Federal supplements to the benefit amounts in states with low wage replacement rates could also be considered. Beyond this, there are more fundamental reforms in UI that might be considered. One is the cross-state differences in generosity, which could be reduced by a floor established for all states. These differences are partly the result of differences in tax bases across states as well, which could be addressed by federal subsidies to states with low tax bases who find it more difficult to establish programs of minimal generosity. All the reforms we describe require heavier federal involvement and regulation of the program, which may be the most effective way to address the evident problems with the program revealed by the Pandemic.

SNAP has functioned as an automatic stabilizer, but there are several incremental changes that could improve program coverage and generosity. As part of the 1996 welfare reform the program introduced a 20 hour per week work requirement for so-called ABAWDS, able-bodied adults without dependents. This work requirement can be suspended if local employment conditions deteriorate above a certain level, but states must request a waiver. The program could operate more efficiently and equitably if that state discretion was removed and the local employment conditions served as an automatic trigger for eligibility. Likewise, other automatic triggers that might improve program effectiveness are suspension of asset tests during downturns, expansion of gross-income eligibility limits, extension of recertification intervals, and expansion of benefit generosity. The liquid asset limit of $2,250 for eligibility has only been

increased $250 since the early 1980s, and precludes many low- and moderate-income families from participating. A policy option that could be considered would be to raise this limit and possibly suspend it automatically during economic downturns. Also, program participants without earnings generally must recertify every 6 months, but those with earnings often recertify every 3 months. This could be extended to at least 6 months during recessions, and perhaps could be staggered to increase even longer based on the severity of the recession. During the Great Recession the maximum SNAP benefit was increased by 13 percent, and this resulted in reduced food insecurity (Nord and Prell 2011). An automatic trigger that temporarily raises benefit levels during downturns might be more transparent and effective.

Unlike SNAP, the TANF program would require more fundamental reform to make it more responsive to economic crises. As shown in Figure 8 the program is completely unresponsive to recessionary periods, which was not the experience of its predecessor Aid to Families with Dependent Children. When TANF was established, a $2 billion contingency fund was created that states could tap once certain triggers were met, but the fund was depleted during the Great Recession and, while Congress has made upward of $600 million available subsequently in each year, it is typically depleted by April and not replenished until the next fiscal year (Falk 2016). However, the Congress did provide some emergency funding to the program in the Great Recession, but did not do so in prior recessions and has not during the Pandemic. Thus, similar to the UI Extended Benefit Program, Congress could establish a TANF Extended Benefit Program that is fully federally funded and automatically accessible once certain labor market thresholds are crossed. These automatic triggers could also initiate a series of changes to program operations, including the suspension of time limits, work requirements, and benefit sanctioning procedures, along with a federal top-up of cash assistance. Currently,

federal law greatly limits the ability of states to relax those rules during recessions even if the state desires to. General cash assistance is all but nonexistent in the U.S., and thus additional federally provided cash support for low-income families with young children via the TANF program could reduce income volatility during downturns.

In addition to reforms that improve program effectiveness over the business cycle, there are a number of incremental reforms that could improve general program coverage. Historically, the UI program has not covered part-time workers, the self-employed, or independent contractors. During the Great Recession a handful of states extended coverage to part-time workers, but not to the other groups. Congress did provide coverage to all three groups during the initial Covid-19 legislation, but this coverage is slated to end this year. A policy option could be to permanently cover this growing share of the labor force, or at least to offer coverage to those groups at a price. Another problem widely noted in the U.S. media concerning the UI response to the Pandemic is that many states have IT systems that are decades behind the technological curve, which caused major delays in processing applications. This is not surprising since states do not have the incentive to make capital investments when they struggle to raise enough revenues to pay benefits. Federal subsidies to states to invest in upgrades could be an effective investment in infrastructure.

Covid-19 also exposed a major tear in the U.S. safety net with health insurance for many tied to their employer. The expansion of Medicaid in the Affordable Care Act substantially reduced rates of uninsurance, but 10 percent of the population remain without coverage. The Supreme Court ruled unconstitutional the requirement that states expand Medicaid, and thus 13 states still have not extended coverage. One possible reform is to permanently increase the cost sharing if states extend coverage to provide additional incentives for states to adopt the

expansion. A more fundamental reform would be to enact some form of single payer insurance or public option to guarantee coverage to all regardless of state of residence.

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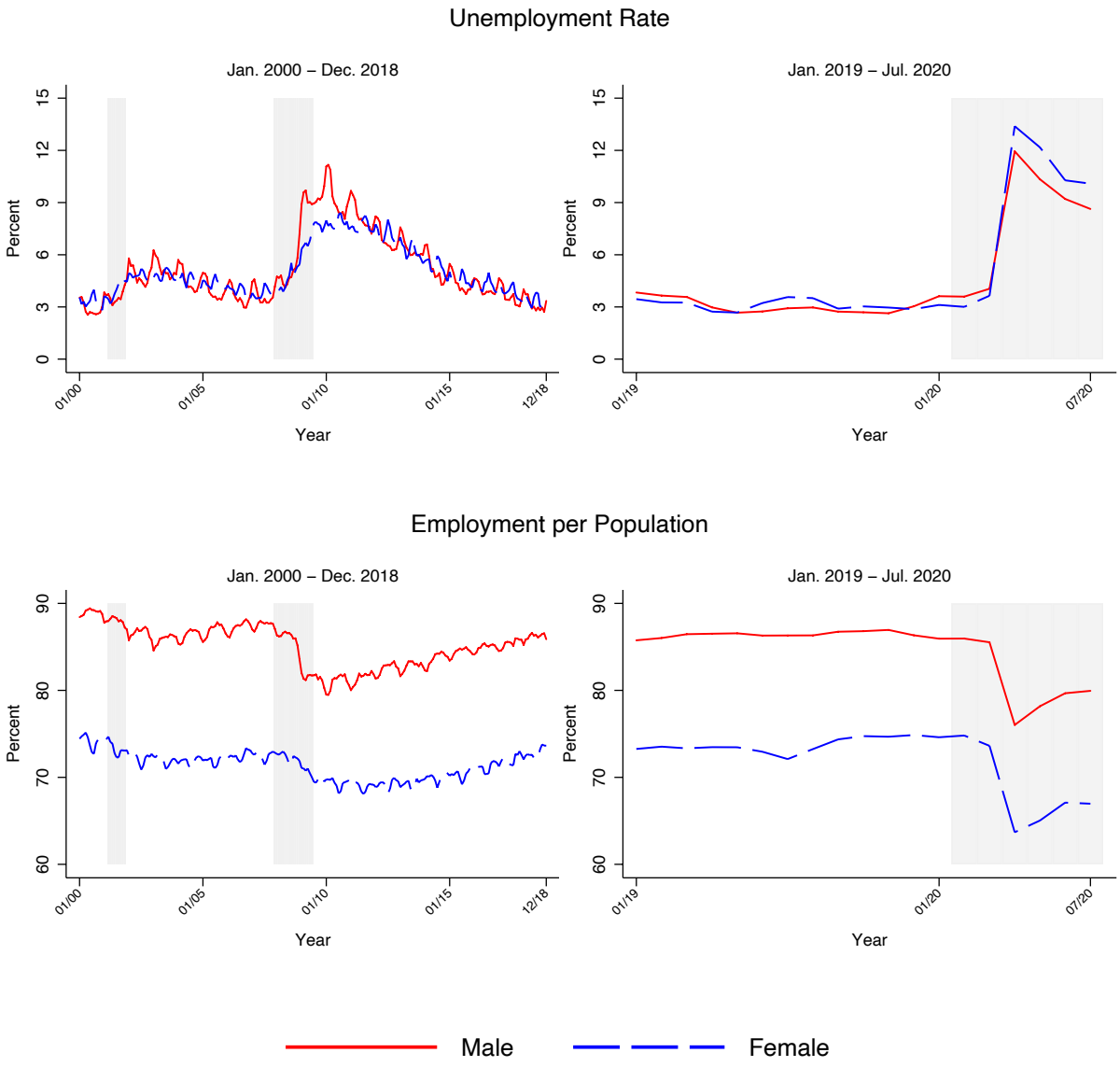
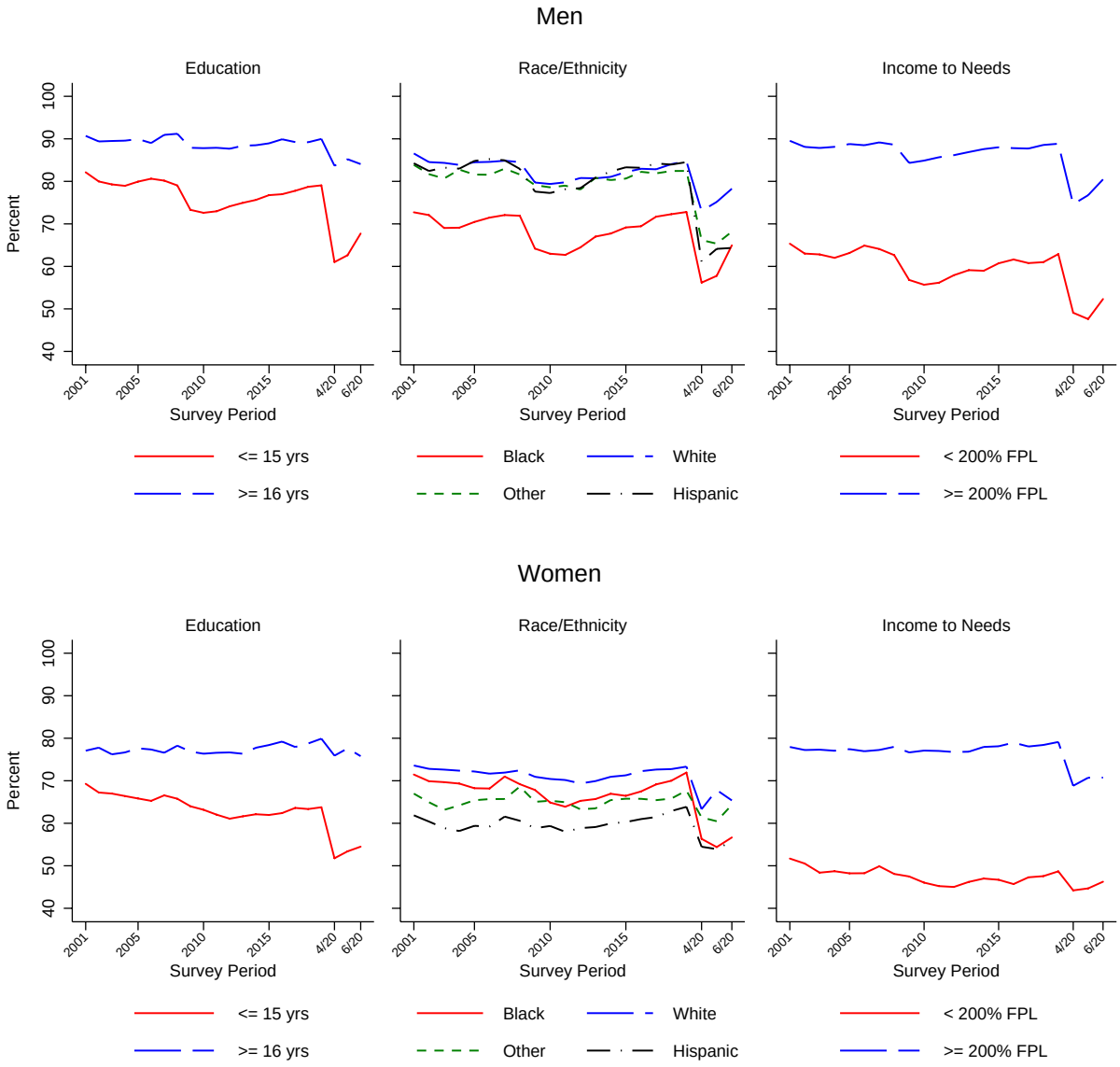
Figure 1. Trends in Unemployment Rates and Employment per Population



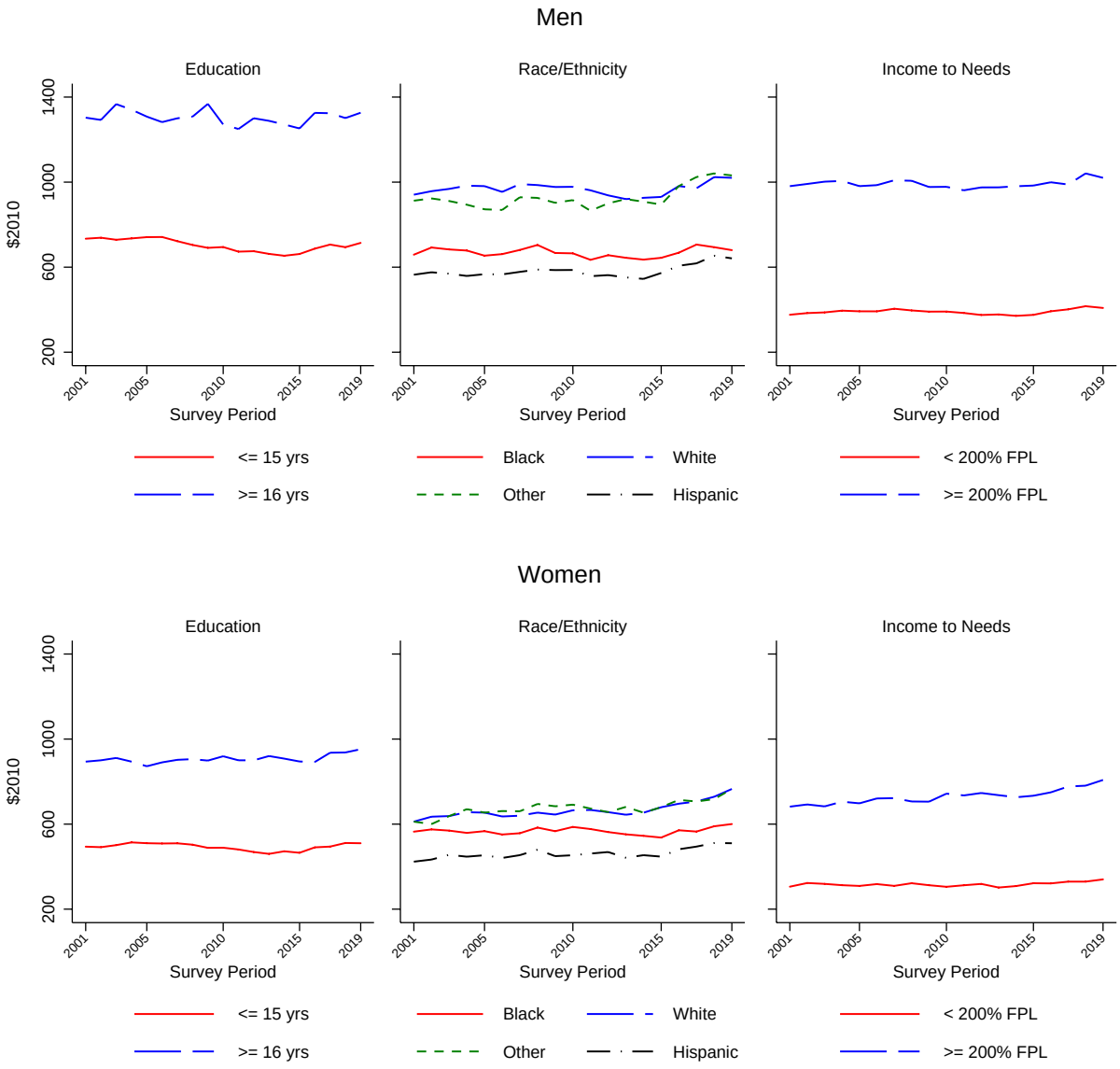
Source: Authors' calculations of non-seasonally adjusted monthly employment and unemployment data on persons ages 25-54 from the Bureau of Labor Statistics, https://data.bls.gov/PDQWeb/ln. Shaded areas in the figure represent recessions as officially designated by the National Bureau of Economic Research Business Cycle Dating Committee https://www.nber.org/cycles.html.

Figure 2. Employment per Population by Education, Race, and Poverty Status



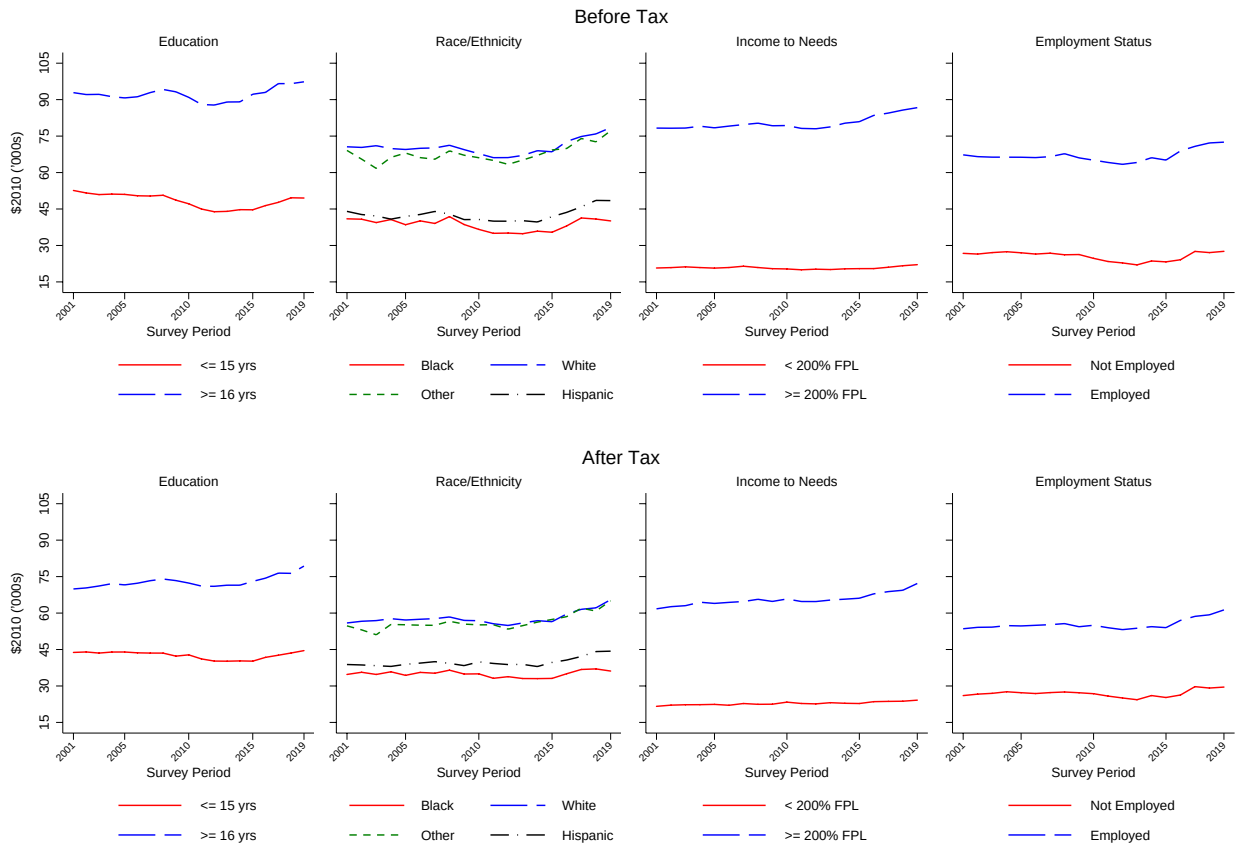
Source: Authors' calculations of 2001-2019 Current Population Survey Annual Social and Economic Supplement and Weeks 1, 4, and 7 of the Census Household Pulse Survey. Results weighted using person weights.

Figure 3. Median Real Weekly Earnings



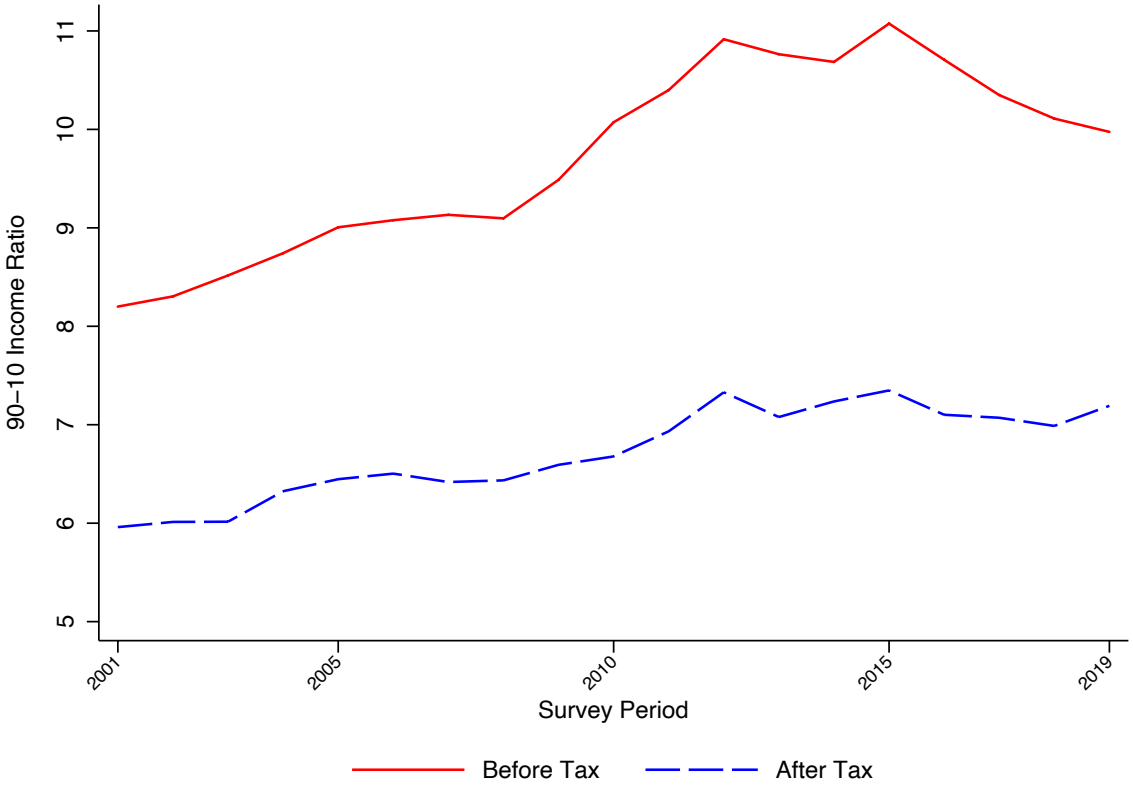
Source: Authors' calculations of 2001-2019 Current Population Survey Annual Social and Economic Supplement. Results weighted using person weights.

Figure 4. Median Real Household Income



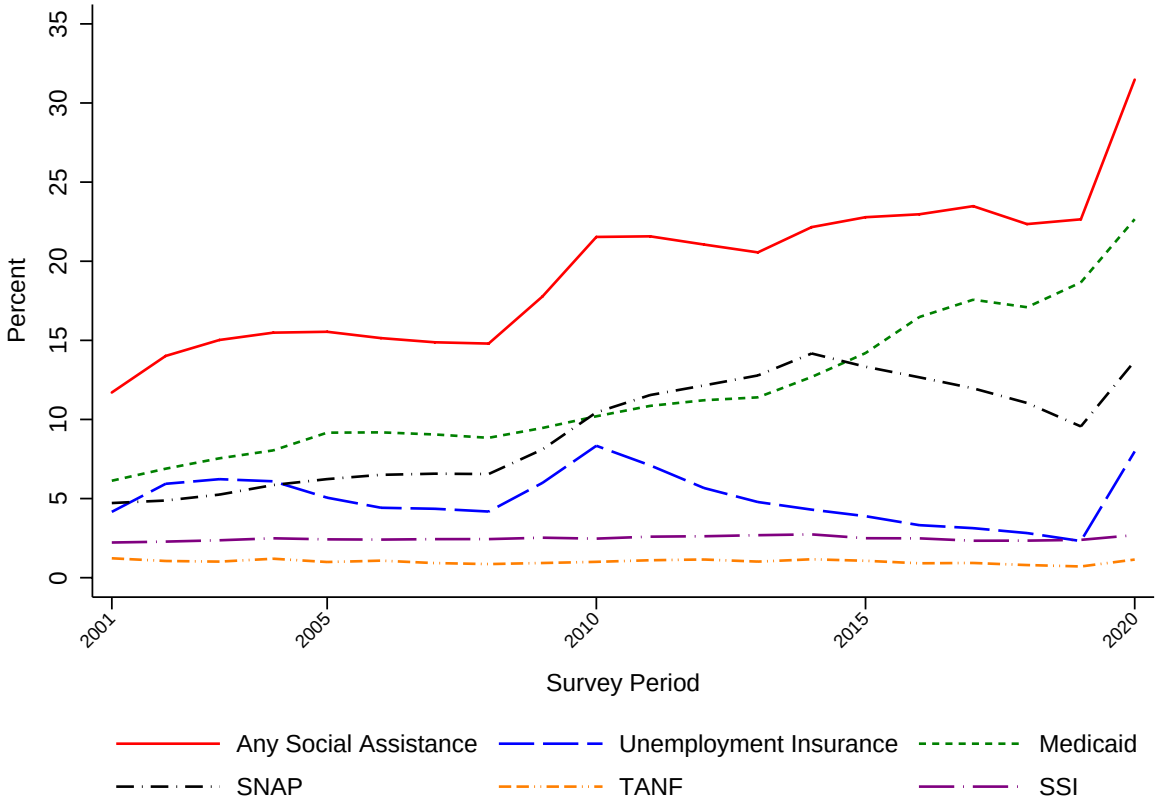
Source: Authors' calculations of 2001-2019 Current Population Survey Annual Social and Economic Supplement. Results weighted using household weights.

Figure 5. Household Income Inequality



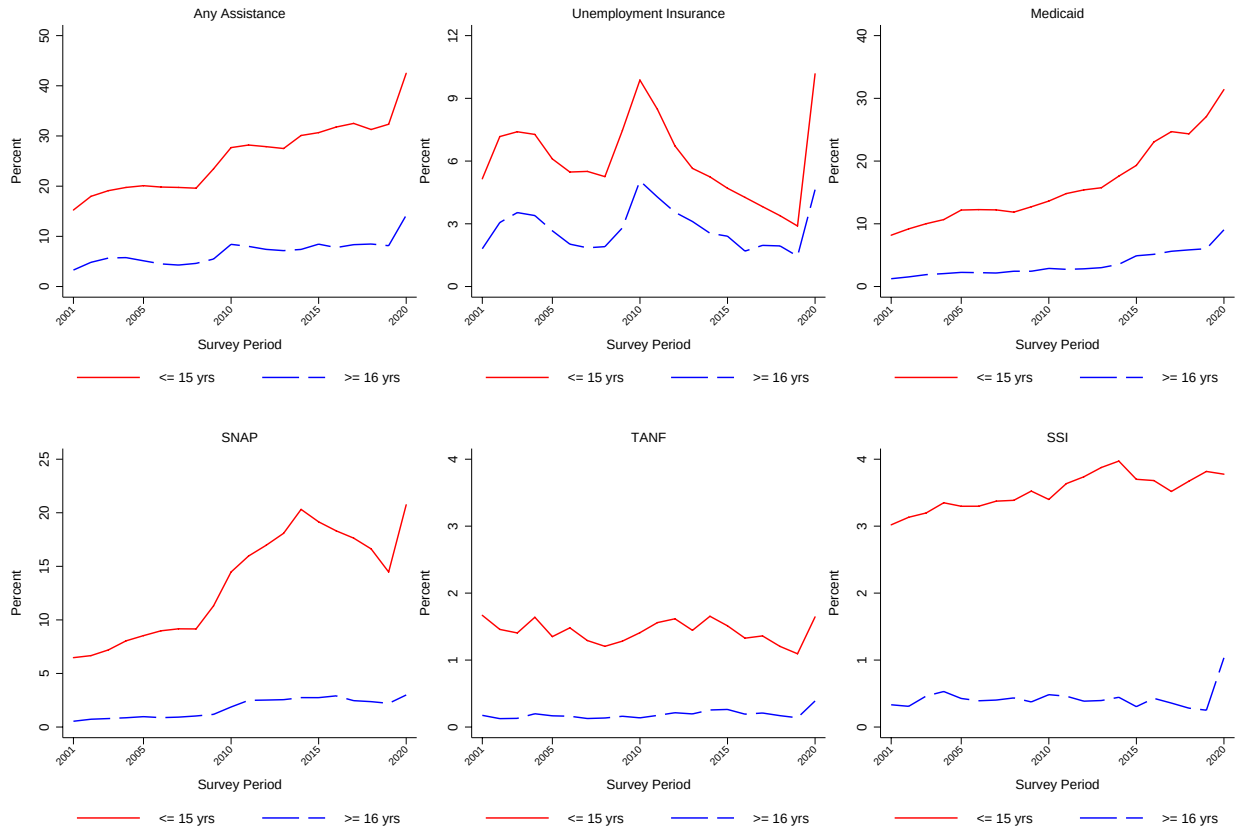
Source: Authors' calculations of 2001-2019 Current Population Survey Annual Social and Economic Supplement. Results weighted using household weights.

Figure 6. Participation Rates in Social Assistance Programs



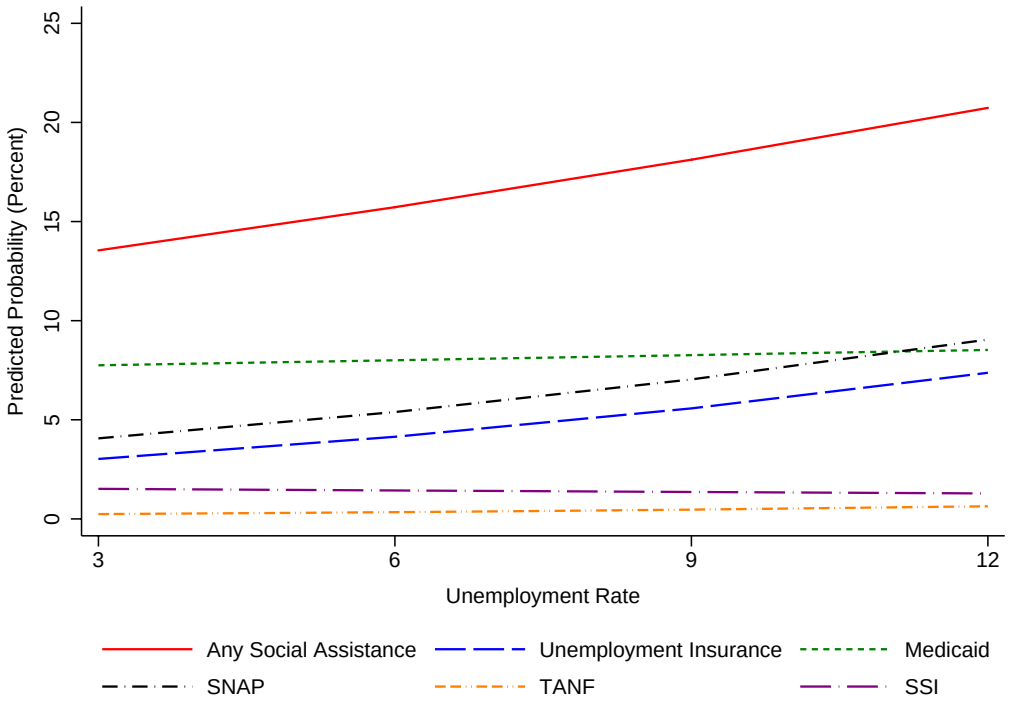
Source: Authors' calculations of 2001-2019 Current Population Survey Annual Social and Economic Supplement and Weeks 1-3 of Covid Impact Survey. Social assistance programs include Unemployment Insurance, Medicaid, Supplemental Nutrition Assistance Program, Temporary Assistance for Needy Families, and Supplemental Security Income. Results weighted using person weights.

Figure 7. Participation Rates in Social Assistance Programs by Education Attainment



Source: Authors' calculations of 2001-2019 Current Population Survey Annual Social and Economic Supplement and Weeks 1-3 of Covid Impact Survey. Results weighted using person weights.

Figure 8. The Effect of the Unemployment Rate on Program Participation



Source: Authors' calculations of 2001-2019 Current Population Survey Annual Social and Economic Supplement and Weeks 1-3 of Covid Impact Survey. Any Social Assistance includes Unemployment Insurance (UI), Medicaid, Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), and Supplemental Security Income (SSI). Results show the effect of changing the unemployment rate on the predicted probability of participation holding other variables at their mean values.

Table 1. Marginal Effects from Probit Regression of Social Assistance Program Participation

VARIABLES	(1) Any Program	(2) UI	(3) Medicaid	(4) SNAP	(5) TANF	(6) SSI
Ages 25-34	0.0223	0.0001	0.0144	0.0123	0.0017	-0.0054
	(0.0026)	(0.0007)	(0.0021)	(0.0015)	(0.0002)	(0.0006)
Ages 35-44	-0.0026	0.0022	-0.0019	-0.0003	0.0009	-0.0028
	(0.0020)	(0.0008)	(0.0012)	(0.0012)	(0.0003)	(0.0004)
Female	0.0246	-0.0195	0.0401	0.0256	0.0063	0.0058
	(0.0023)	(0.0015)	(0.0009)	(0.0008)	(0.0003)	(0.0004)
Black	0.1430	0.0117	0.0949	0.0968	0.0094	0.0209
	(0.0047)	(0.0020)	(0.0035)	(0.0035)	(0.0006)	(0.0012)
Other	0.0341	-0.0077	0.0360	0.0202	0.0019	0.0031
	(0.0081)	(0.0012)	(0.0076)	(0.0044)	(0.0007)	(0.0010)
Hispanic	0.0438	-0.0080	0.0309	0.0314	0.0015	-0.0022
	(0.0099)	(0.0019)	(0.0083)	(0.0074)	(0.0012)	(0.0025)
High School or Less	0.2619	0.0400	0.1843	0.1619	0.0135	0.0538
	(0.0057)	(0.0025)	(0.0027)	(0.0038)	(0.0005)	(0.0013)
Some College	0.1677	0.0361	0.1143	0.1077	0.0095	0.0284
	(0.0045)	(0.0018)	(0.0019)	(0.0030)	(0.0004)	(0.0013)
Household Size	-0.0108	-0.0057	-0.0073	-0.0044	-0.0015	-0.0046
	(0.0014)	(0.0003)	(0.0012)	(0.0014)	(0.0003)	(0.0003)
Number of Children Ages < 14	0.0404	0.0035	0.0256	0.0269	0.0029	0.0008
	(0.0017)	(0.0004)	(0.0008)	(0.0009)	(0.0002)	(0.0005)
State Unemployment Rate	0.0077	0.0043	0.0009	0.0050	0.0004	-0.0003
	(0.0032)	(0.0006)	(0.0019)	(0.0008)	(0.0001)	(0.0003)
Observations	1,355,729	1,356,054	1,355,773	1,356,042	1,356,015	1,356,055
State Effects	YES	YES	YES	YES	YES	YES
Year Effects	YES	YES	YES	YES	YES	YES

Notes: The sample consists of adults ages 25-54 from the 2001-2019 CPS ASEC and Weeks 1-3 of the Covid Impact Survey. The CIS sample is the regional sample. Results are weighted using person weights. Standard errors are clustered at the state level.

Table 2. Marginal Effects from Probit Regression of Social Assistance Program Participation with Nonlinear 2020 Unemployment Rate

VARIABLES	(1) Any Program	(2) UI	(3) Medicaid	(4) SNAP	(5) TANF	(6) SSI
Ages 25-34	0.0223	0.0001	0.0144	0.0123	0.0017	-0.0054
	(0.0026)	(0.0007)	(0.0021)	(0.0015)	(0.0002)	(0.0006)
Ages 35-44	-0.0026	0.0022	-0.0019	-0.0003	0.0009	-0.0028
	(0.0020)	(0.0008)	(0.0012)	(0.0012)	(0.0003)	(0.0004)
Female	0.0247	-0.0195	0.0401	0.0256	0.0063	0.0058
	(0.0023)	(0.0015)	(0.0009)	(0.0008)	(0.0003)	(0.0004)
Black	0.1430	0.0117	0.0948	0.0968	0.0093	0.0209
	(0.0047)	(0.0020)	(0.0035)	(0.0035)	(0.0006)	(0.0012)
Other	0.0340	-0.0077	0.0359	0.0202	0.0019	0.0031
	(0.0081)	(0.0012)	(0.0076)	(0.0044)	(0.0007)	(0.0010)
Hispanic	0.0438	-0.0080	0.0309	0.0314	0.0015	-0.0022
	(0.0099)	(0.0019)	(0.0083)	(0.0075)	(0.0012)	(0.0025)
High School or Less	0.2619	0.0400	0.1844	0.1619	0.0135	0.0538
	(0.0057)	(0.0025)	(0.0027)	(0.0038)	(0.0005)	(0.0013)
Some College	0.1677	0.0361	0.1144	0.1077	0.0095	0.0284
	(0.0045)	(0.0018)	(0.0019)	(0.0030)	(0.0004)	(0.0013)
Household Size	-0.0107	-0.0057	-0.0072	-0.0044	-0.0015	-0.0046
	(0.0015)	(0.0003)	(0.0012)	(0.0014)	(0.0003)	(0.0003)
Number of Children Ages < 14	0.0404	0.0035	0.0256	0.0269	0.0029	0.0008
	(0.0017)	(0.0004)	(0.0008)	(0.0009)	(0.0002)	(0.0005)
State Unemployment Rate	0.0073	0.0043	0.0005	0.0049	0.0003	-0.0003
	(0.0034)	(0.0006)	(0.0020)	(0.0010)	(0.0001)	(0.0003)
State Unemployment Rate*Year=2020	0.0051	0.0001	0.0046	0.0018	0.0004	0.0002
	(0.0043)	(0.0023)	(0.0032)	(0.0023)	(0.0006)	(0.0007)
Observations	1,355,729	1,356,054	1,355,773	1,356,042	1,356,015	1,356,055
State Effects	YES	YES	YES	YES	YES	YES
Year Effects	YES	YES	YES	YES	YES	YES

Notes: The sample consists of adults ages 25-54 from the 2001-2019 CPS ASEC and Weeks 1-3 of the Covid Impact Survey. The CIS sample is the regional sample. Results are weighted using person weights. Standard errors are clustered at the state level.

Appendix Table 1. Probit Regression of Social Assistance Program Participation

VARIABLES	(1) Any Program	(2) UI	(3) Medicaid	(4) SNAP	(5) TANF	(6) SSI
Ages 25-34	0.0910	0.0010	0.0947	0.1078	0.1515	-0.1575
	(0.0108)	(0.0078)	(0.0136)	(0.0127)	(0.0174)	(0.0159)
Ages 35-44	-0.0110	0.0239	-0.0128	-0.0029	0.0834	-0.0781
	(0.0082)	(0.0088)	(0.0079)	(0.0112)	(0.0238)	(0.0111)
Female	0.1021	-0.2166	0.2692	0.2310	0.5627	0.1594
	(0.0097)	(0.0173)	(0.0062)	(0.0082)	(0.0283)	(0.0117)
Black	0.4998	0.1208	0.4950	0.6110	0.5120	0.4046
	(0.0148)	(0.0194)	(0.0160)	(0.0177)	(0.0240)	(0.0190)
Other	0.1335	-0.0922	0.2134	0.1640	0.1550	0.0795
	(0.0304)	(0.0156)	(0.0407)	(0.0327)	(0.0451)	(0.0252)
Hispanic	0.1717	-0.0943	0.1903	0.2492	0.1311	-0.0629
	(0.0370)	(0.0244)	(0.0474)	(0.0525)	(0.0912)	(0.0740)
High School or Less	0.9884	0.4091	1.0363	1.1424	0.8619	1.0220
	(0.0224)	(0.0254)	(0.0158)	(0.0259)	(0.0354)	(0.0263)
Some College	0.6131	0.3500	0.6299	0.7395	0.5953	0.5689
	(0.0163)	(0.0169)	(0.0108)	(0.0198)	(0.0279)	(0.0240)
Household Size	-0.0445	-0.0634	-0.0488	-0.0399	-0.1434	-0.1252
	(0.0061)	(0.0030)	(0.0084)	(0.0127)	(0.0234)	(0.0087)
Number of Children Ages < 14	0.1671	0.0387	0.1719	0.2430	0.2835	0.0214
	(0.0071)	(0.0040)	(0.0056)	(0.0088)	(0.0149)	(0.0125)
State Unemployment Rate	0.0317	0.0476	0.0057	0.0450	0.0360	-0.0072
	(0.0134)	(0.0065)	(0.0130)	(0.0078)	(0.0090)	(0.0075)
Constant	-2.3048	-2.1603	-2.8061	-3.1189	-3.8184	-2.3976
	(0.0701)	(0.0326)	(0.0542)	(0.0603)	(0.0850)	(0.0489)
Observations	1,355,729	1,356,054	1,355,773	1,356,042	1,356,015	1,356,055
State Effects	YES	YES	YES	YES	YES	YES
Year Effects	YES	YES	YES	YES	YES	YES

Notes: The sample consists of adults ages 25-54 from the 2001-2019 CPS ASEC and Weeks 1-3 of the Covid Impact Survey. The CIS sample is the regional sample. Results are weighted using person weights. Standard errors are clustered at the state level

Appendix Table 2. Probit Regression of Social Assistance Program Participation with Nonlinear 2020 Unemployment Rate

VARIABLES	(1) Any Program	(2) UI	(3) Medicaid	(4) SNAP	(5) TANF	(6) SSI
Ages 25-34	0.0910	0.0010	0.0948	0.1078	0.1515	-0.1575
	(0.0108)	(0.0078)	(0.0136)	(0.0127)	(0.0174)	(0.0159)
Ages 35-44	-0.0110	0.0239	-0.0128	-0.0029	0.0834	-0.0781
	(0.0082)	(0.0088)	(0.0079)	(0.0112)	(0.0238)	(0.0111)
Female	0.1021	-0.2166	0.2692	0.2310	0.5626	0.1594
	(0.0097)	(0.0174)	(0.0062)	(0.0082)	(0.0285)	(0.0117)
Black	0.4998	0.1208	0.4948	0.6109	0.5117	0.4046
	(0.0148)	(0.0194)	(0.0160)	(0.0177)	(0.0241)	(0.0190)
Other	0.1334	-0.0922	0.2132	0.1639	0.1546	0.0795
	(0.0304)	(0.0155)	(0.0407)	(0.0328)	(0.0445)	(0.0252)
Hispanic	0.1715	-0.0943	0.1901	0.2491	0.1308	-0.0630
	(0.0370)	(0.0242)	(0.0474)	(0.0526)	(0.0908)	(0.0739)
High School or Less	0.9884	0.4091	1.0364	1.1424	0.8620	1.0221
	(0.0223)	(0.0254)	(0.0157)	(0.0259)	(0.0353)	(0.0263)
Some College	0.6132	0.3500	0.6300	0.7395	0.5954	0.5689
	(0.0163)	(0.0169)	(0.0107)	(0.0198)	(0.0280)	(0.0240)
Household Size	-0.0445	-0.0634	-0.0487	-0.0398	-0.1433	-0.1252
	(0.0061)	(0.0031)	(0.0085)	(0.0128)	(0.0233)	(0.0088)
Number of Children Ages < 14	0.1671	0.0387	0.1718	0.2430	0.2835	0.0214
	(0.0071)	(0.0040)	(0.0057)	(0.0088)	(0.0149)	(0.0125)
State Unemployment Rate	0.0303	0.0475	0.0033	0.0439	0.0334	-0.0076
	(0.0141)	(0.0065)	(0.0131)	(0.0090)	(0.0096)	(0.0073)
State Unemployment Rate*Year=2020	0.0212	0.0008	0.0312	0.0164	0.0380	0.0049
	(0.0176)	(0.0256)	(0.0214)	(0.0205)	(0.0613)	(0.0202)
Constant	-2.2985	-2.1601	-2.7952	-3.1138	-3.8060	-2.3962
	(0.0734)	(0.0332)	(0.0566)	(0.0646)	(0.1010)	(0.0488)
Observations	1,355,729	1,356,054	1,355,773	1,356,042	1,356,015	1,356,055
State Effects	YES	YES	YES	YES	YES	YES
Year Effects	YES	YES	YES	YES	YES	YES

Notes: The sample consists of adults ages 25-54 from the 2001-2019 CPS ASEC and Weeks 1-3 of the Covid Impact Survey. The CIS sample is the regional sample. Results are weighted using person weights. Standard errors are clustered at the state level

Appendix Table 3. Selected Summary Statistics

VARIABLES	Mean	Standard Deviation
Ages 25-34	0.33	0.47
Ages 35-44	0.33	0.47
Ages 45-54	0.34	0.47
Female	0.51	0.50
White Non-Hispanic	0.64	0.48
Black Non-Hispanic	0.12	0.32
Other Non-Hispanic	0.08	0.27
Hispanic	0.17	0.37
High School or Less	0.39	0.49
Some College	0.28	0.45
College	0.33	0.47
Household Size	3.21	1.41
Number of Children Ages < 14	0.81	1.09
Any Social Assistance	0.19	0.39
Unemployment Insurance	0.05	0.22
Medicaid	0.11	0.32
SNAP	0.09	0.29
TANF	0.01	0.10
SSI	0.02	0.16
State Unemployment Rate	6.19	2.08

Notes: The sample consists of adults ages 25-54 from the 2001-2019 CPS ASEC and Weeks 1-3 of the Covid Impact Survey. The CIS sample is the regional sample. Results are weighted using the person supplement weight in the ASEC and the regional weight in the CIS.