



COVID-19 and the US Safety Net*

ROBERT A. MOFFITT† and JAMES P. ZILIAK‡

†*Johns Hopkins University*

(moffitt@jhu.edu)

‡*University of Kentucky*

(ziliak@uky.edu)

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 US safety net is a patchwork of different programmes providing in-kind as well as cash benefits, and it had many holes prior to the pandemic. In addition, few of the programmes are designed explicitly as automatic stabilisers. 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 programmes, an inadequate response compared with the magnitude of the downturn. We discuss options to reform social assistance in the United States to provide more robust income floors in times of economic downturns.

* Submitted August 2020.

We received excellent research assistance from Hyein Kang and Kenneth Tester. J. Ziliak gratefully acknowledges support from the US 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. This work has been supported by the Nuffield Foundation via the IFS Deaton Review, 'Inequality in the Twenty-First Century' (reference WEL/43603). We thank two reviewers, Peter Germanis, 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.

Keywords: automatic stabilisers, COVID-19, means-tested transfers, social insurance.

JEL classification numbers: I38, J21.

I. Introduction

The economic havoc wreaked upon the global economy by first the Great Recession of 2007–09 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 United States stands alone in its failure to provide universal health insurance, general cash assistance to the poor, and entitlement to childcare 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 programmes in the United States, and reforms to those programmes over the last 20 years. Among the plethora of social insurance and means-tested transfers, few are explicitly designed as automatic stabilisers to confront economic shocks induced by the likes of the Great Recession and COVID-19. Some are targeted at specific populations typically outside the labour force, such as the elderly (e.g. Social Security and Medicare) or children (e.g. school meal programmes), others are non-entitlement programmes that are rationed and have fixed budgets (e.g. Temporary Assistance for Needy Families (TANF) and housing), and still others (e.g. 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 United States 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 received much greater visibility in the United States in the last few years²). 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 programmes is narrowly targeted and the second is restricted, in many states, to families with limited assets. In addition, while SNAP is a federal programme, UI is a state programme 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 programme access, funding and generosity, including the Great Recession and the COVID-19 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

¹See Bitler, Hoynes and Schanzenbach (2020) for a related analysis of many of the same issues discussed in this paper and some similar conclusions.

²Desmond, 2016.

period before the pandemic and for the COVID-19 crisis period. For the pre-pandemic period, we use data from the Current Population Survey Annual Social and Economic Supplement, and for the COVID-19 crisis 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.³ For our purposes, we use the Household Pulse Survey for employment information in 2020, and the COVID Impact Survey provides transfer programme participation. We show that employment losses of low- and semi-skilled men and women were quite severe at the onset of the COVID-19 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 per cent 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 per cent. We show that the US tax system reduces before tax inequality a robust 45 per cent 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 programmes, including during the Great Recession, and how this participation has responded to the pandemic. We show that there is strong secular growth in programme participation, which more than doubles among semi- and low-skilled men and women, driven chiefly by the Medicaid programme, but also by food assistance. Among the programmes we examine, both UI and SNAP served as the main income stabilisers during the Great Recession, and again in the early months of the COVID-19 economic shock. The other programmes have shown little buoyancy to economic downturns over the last two decades.

This lack of automatic stabilisation in much of the US social safety net sets up our final section where we discuss possible reforms.⁴ These include adding automatic triggers to UI, SNAP and TANF for programme eligibility during

³US Census Bureau, 2020; Wozniak et al., 2020.

⁴We 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 this, 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 per cent of prior earnings for a finite number of weeks (see below). The problem in the United States is that the patchwork nature of the system means that millions of families receive much less than that, and some even receive zero.

economic downturns, expanding access and benefit amounts for refundable tax credits, food assistance from SNAP and childcare, restoring some TANF cash assistance for the poor, and triggering expanded federal financing to states for Medicaid. The advantage of these automatic triggers over the current discretionary system of legislative stopgap measures is improved targeting and efficiency of programme operations, and greater smoothing of incomes and consumption over the cycle.

II. The structure of the US social safety net

Social assistance in the United States falls into one of two categories: social insurance or means-tested transfers.⁵ As a general rule, eligibility for social insurance programmes 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 programme), Disability Insurance (the US programme for the disabled with strong work histories), Medicare (the medical care programme for the disabled and elderly), Unemployment Insurance, and Workers Compensation. Means-tested transfers include, among others, Medicaid (medical programme for families and individuals), Supplemental Security Income (SSI; a cash welfare programme for the elderly, blind and disabled), Temporary Assistance for Needy Families (TANF; cash assistance and non-cash for families with children), subsidised housing assistance, childcare subsidies, and the Supplemental Nutrition Assistance Program (SNAP), which provides vouchers to families and individuals for food purchases. The other key means-tested programmes 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 programmes.⁶ In addition, as shown by Moffitt and Ziliak (2019), almost all the major programmes 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 per cent of the nation's GDP. However, eligibility for the programmes is scattershot, with some covering only the elderly, disabled or retired, others covering only those with long histories of earnings or significant levels of current earnings, many often primarily

⁵Detailed reviews of the history and current status of US safety net programmes and the research that has been conducted on those programmes can be found in Moffitt (2016). Short summaries of each major programme, as well as proposals for reform, can be found in the papers published in the November 2019 volume of the *ANNALS of the American Academy of Political and Social Science*, a number of which are referenced in this paper.

⁶See Table 22.1 of Ben-Shalom, Moffitt and Scholz (2012).

intended for families with children, and others (such as TANF, housing, and childcare subsidies) with capped expenditures that result in rationing of slots.⁷ As a consequence, among all very-low-income non-disabled non-elderly families in the country, fewer than half receive benefits from any major programme at all and, among childless families, only about 20–25 per cent do.⁸

Despite the strong secular growth in spending, most of the programmes in the safety net are not automatic stabilisers designed to respond to cyclical shocks, such as those associated with the Great Recession and the COVID-19 health pandemic. Social insurance programmes 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).⁹ But means-tested programmes, 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 the current programme structure and operations.

Housing assistance is not an entitlement programme 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 Patient Protection and Affordable Care Act of 2010 expanded eligibility to childless adults but at state discretion 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.¹⁰ The EITC provides a refundable tax credit to workers, but only annually, and hence it will provide support to those affected by the pandemic recession only in Spring 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

⁷Again, see Table 22.1 of Ben-Shalom et al. (2012) for a listing of eligible groups for each major programme.

⁸See Table 1 of Kosar and Moffitt (2017).

⁹While there is some evidence of a cyclical component to Disability Insurance (Maestas, 2019), that programme is designed to replace the 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.

¹⁰In fact, because the US 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, Garrett and Gangopadhyaya (2020) have estimated that if the unemployment rate reaches 15 per cent, over 17 million workers will lose employer health insurance coverage.

earnings reduced to low earnings levels will, to the contrary, receive reduced tax credits.¹¹ Some evidence suggests that the programme 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 per cent of EITC recipients.¹²

There are only two major US safety net programmes that provide substantial and meaningful support during downturns, and these are the UI and SNAP programmes. We devote a short discussion to each.

Among social insurance programmes, only UI is specifically targeted to assist workers from economic recessions. Like most UI programmes in industrialised countries,¹³ the US UI programme provides benefits to the involuntarily unemployed who meet requirements related to past earnings in an UI-eligible job, who are paid a benefit that is a fraction of past wages for a certain maximum duration, and who must meet certain job search requirements. As in all 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 per cent.¹⁴ The US 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 US programme and that in other countries is the state-based organisation of the system and its method of financing, as contrasted with the national organisation and financing in most other countries.¹⁵ The ability of states to set the parameters of the programme means that many of those parameters often vary widely (e.g., replacement rates range from 30 to 55 per cent¹⁶). However, more important, states have to raise their own revenues to support the programme 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 by restricting eligibility, and many did the latter.¹⁷ Some states lowered the maximum duration down to a very low 13 weeks, only half of the normal 26. Many states also tightened

¹¹Larrimore, Mortenson and Splinter, 2016.

¹²Jones, 2017; Bitler, Hoynes and Kuka, 2017.

¹³Moffitt, 2014.

¹⁴von Wachter, 2019.

¹⁵See Vroman and Woodbury (2014) for details on the US system.

¹⁶Stone and Chen, 2014.

¹⁷Vroman and Woodbury, 2014; von Wachter, 2019.

up their eligibility restrictions, which led to a decline of the fraction of the unemployed receiving UI benefits to an average of 28 per cent shortly before the pandemic, the lowest level in 45 years.¹⁸ Thus, the UI system was trending in an unfavourable direction even prior to 2020.

This peculiar method of financing UI leads to the other important feature of the programme relevant to recession relief. While there is a special programme that triggers modest extra federal benefits for states if their unemployment rate rises above certain levels,¹⁹ 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.²⁰ 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. Economists have long criticised the lack of an automatic system instead, and we do so as well in Section VII.

The means-tested transfer programme that most closely resembles an automatic stabiliser is SNAP.²¹ The programme 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 programme because benefits must be spent on food purchased from qualified vendors for preparation and consumption in the home. However, the distinctiveness of the programme compared with the others in the United States is that eligibility is near-universal, with eligibility extended to families and individuals regardless of marital status, the presence of children, or other demographic characteristics, as long as income and asset conditions are met. Unlike a number of other programmes, it is federally financed and is an entitlement, with all those eligible legally entitled to benefits.

There are a few restrictions in the programme relevant to recession relief. One is that the programme does have asset tests and the asset limit at the federal level is only \$2,250, which would make almost all working families except for the poorest of the poor ineligible for the programme 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.²² A second restriction is that childless adults who do not have a disability must meet work requirements in the programme. These can be relaxed if the unemployment rate rises above certain levels and

¹⁸See Figure 2 of von Wachter (2019).

¹⁹This is the so-called Extended Benefits programme. States typically pay half of the cost but Congress has, in the past, temporarily paid all of it.

²⁰See Whittaker and Isaacs (2013) for the history.

²¹Ziliak, 2015; Ganong and Liebman, 2018.

²²US Congressional Research Service, 2019.

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 US safety net compares with most other OECD countries, including the United Kingdom. First, the United States offers no universal health insurance, which is standard in the OECD. Persons aged 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 per cent in 1998 to 58 per cent in 2018.^{23,24} Thus, as of 2018, over 10 per cent of the non-elderly US population remain without health coverage.²⁵ Second, the US does not provide general income support to the low-income non-disabled, non-elderly population. The former programme, Aid to Families with Dependent Children, did offer general assistance to low-income families with children under age 18. 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 programme mainly served lone-mother families.²⁶ The programme was replaced by TANF as part of the 1996 welfare reform, whereby the programme was stripped of its entitlement status and eligibility was severely curtailed such that participation among families with children in poverty fell from 7 in 10 to 2.5 in 10.²⁷ Income support for non-disabled non-elderly adults without dependent children has never been provided at any meaningful 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 US offers little in the way of childcare assistance compared with other OECD countries. Childcare is not an entitlement for low-income families, and thus the vast majority receive no assistance, even though centre-based care can eat up one-fifth of earnings of the typical single-mother family.²⁸ 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 per cent of the population compared with, for example, 16 per cent of the population in England.²⁹ Fifth, as noted previously, the US UI system is disadvantaged by its state-level financing structure, which makes it less responsive to recessions than in most OECD countries.

²³Rae et al., 2020.

²⁴Under the ACA, firms with 50 or more employees are required to offer insurance to at least 95 per cent of their full-time workforce or are subject to penalties from the Internal Revenue Service.

²⁵Tolbert, Orgera and Singer, 2019.

²⁶Moffitt, 1992.

²⁷Bitler and Hoynes, 2016b.

²⁸Ziliak, 2014; Hotz and Wiswall, 2019.

²⁹Adam et al., 2015; Collinson, Ellen and Ludwig, 2019.

In summary, while the safety net in the United States 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 programmes is generally not designed to respond as well to changes in the macro economy as would be desired.

III. The Great Recession and COVID-19 policy responses

The most recent major recession in the United States prior to the current one was the Great Recession, which took place approximately in the 2007–2011 period, with unemployment peaking at approximately 10 per cent and coming down very slowly, reaching pre-recession levels only in 2017. Through a series of pieces of legislation, the US Congress enacted a number of major forms of temporary safety net relief.³⁰ UI was greatly extended, reaching a maximum of 99 weeks of benefit eligibility at the peak. Maximum benefits in the SNAP programme were increased by 13 per cent, 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 programme 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 childcare 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.³¹

The US policy response to the pandemic recession has been much narrower than in the Great Recession, although more generous in the programmes 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 programmes. SNAP benefits were increased temporarily but only for those whose benefit amounts were below the maximum (40 per cent 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 per cent. 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 programmes and state childcare funds. But funding and eligibility rules for the other means-tested programmes in the safety net, including the EITC, TANF, SSI, and subsidised housing programmes, have largely remained at their pre-pandemic levels.

³⁰Burtless and Gordon, 2011.

³¹See Sherman (2011) and Moffitt (2013); see also Bitler and Hoynes (2016a).

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 \$1,200 per adult, \$2,400 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 programme raised incomes over pre-pandemic earnings for two-thirds of UI recipients. But this programme expired on 31 July 2020, and at this writing has not been renewed despite continued record high numbers of unemployed.³² 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 programme 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 programme provides a minimum weekly benefit based on the state's programme and can be received for up to 39 weeks through to the end of 2020.³³

In the following sections, we chart trends in employment, earnings, income and – most important for the topic of this paper – safety net programme participation, both before and during the initial months of the COVID-19 pandemic. We then follow this up with descriptive regressions showing the relationship between state business cycles and programme participation, conditional on a host of socio-economic characteristics, and whether the link between the economy and programme participation changed after the COVID period.

IV. Data

The data for our analysis span the recession of 2001, the Great Recession of 2007–09, and the early months of the COVID-19 pandemic. Data for the pre-COVID-19 period come from the Current Population Survey (CPS) Annual

³²The US 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.

³³These newly eligible recipients also received the additional \$600 per week given to all UI recipients, which expired on 31 July 2020.

Social and Economic Supplement (ASEC) for the 2001–19 survey years. The ASEC, which is collected by the US Census Bureau as a supplement to the monthly labour force statistics from the CPS, 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 levels.³⁴

Data for the COVID-19 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 aged 18 and older collected by the Census Bureau to provide timely information on how the pandemic initially affected employment, food security, health, housing and education (but not programme 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 aged 18 and older, also started in response to the COVID-19 health pandemic.³⁵ It is collected by the NORC at the University of Chicago and contains information on civic engagement, current employment and health status, transfer programme 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 programme participation – and separate weights are provided to make each weekly sample nationally representative; alternatively, 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.³⁶

Focal outcomes and their reference periods

Our focal outcomes are employment per population, earnings, household income before and after taxes, and transfer programme 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 programme 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,

³⁴The Census Bureau defines a family as two or more persons related by birth, marriage or adoption, and it does not include cohabiting partners. The household includes all persons residing in the household, regardless of relationship.

³⁵Wozniak et al., 2020.

³⁶The CIS only covers ten large states and eight metropolitan statistical areas. We recomputed all CPS statistics for that subset of states and found no differences in trends.

race/ethnicity and poverty status within each gender.³⁷ 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 capture the monthly dynamics over the spring season. The reference period for employment in the Pulse is the prior seven days, and thus to better align the series we use the corresponding survey-week employment measure in the ASEC. Earnings are only available in the ASEC, and refer 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 labour and non-labour 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.³⁸

We focus on the two programmes in the safety net most likely to be 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 programme participation questions).³⁹ But we are not able to match the reference periods for participation in these programmes 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 non-comparability has on our results, but because 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.

Measurement challenges

Beyond the discrepancy in the reference period, 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 under-reporting of programme participation, mostly from respondents reporting

³⁷SNAP 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.

³⁸Tax 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.

³⁹None of the surveys asks questions about receipt of the EITC or CTC, and participation among those estimated to be eligible is assumed to be 100 per cent 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.

non-participation when in fact they did participate.⁴⁰ To address under-reporting, we use a model-based approach to predict programme participation as a rich function of household demographics.⁴¹ We then randomly assign participation to those non-participants with a high *ex ante* predicted probability of participation, until the population-weighted participation counts align with administrative totals.⁴² We then assign the average state-by-year benefit amount among recipients to those individuals, and re-compute household income. Because administrative totals are available with a lag, we only make this under-reporting adjustment to the ASEC data covering calendar years 2000–18.

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 under-report 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 programme participation from the CIS are likely understated compared with what we might expect in the ASEC when those data become available in 2021.⁴³

All three surveys conduct some data imputation prior to public release. The Census Bureau imputes missing data on individual questions on the ASEC using what is known as the ‘hot-deck’ procedure, whereby observations with missing information are 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 useable so 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 non-response have been on the rise in recent years, with nearly 25 per cent of all households receiving a completely imputed ASEC record by 2018. The Census Bureau 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

⁴⁰Meyer, Mok and Sullivan, 2015.

⁴¹Moffitt and Pauley, 2018.

⁴²The administrative totals we match are adult participants in each programme aged 18 and older, and thus we use an expanded ASEC sample of persons aged 18 and older in order to match administrative counts.

⁴³The CIS question asks about safety net programmes in a single question, with possibly confusing programme names, and is likely to have random reporting error, as we discuss in the text. As noted previously, however, we adjust for systematic under-reporting by adjusting to control totals, but only in the ASEC.

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.⁴⁴

In order to abstract from most post-secondary education and retirement decisions, we select a sample of prime age adults aged 25–54 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 minimise sampling variation. This means we provide three separate snapshots of weekly employment in 2020 from the Pulse, but only a single snapshot of transfer programme participation in 2020 from the CIS.

V. Labour market impact of COVID-19

We begin by documenting trends in labour 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 to July 2020.⁴⁵ The unemployment rate series shows two US recessions prior to 2020, one modest recession in the early 2000s and the major recession in the 2007–09 period (the Great Recession). The pandemic downturn shows up as a jump in the second-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 that of the Great Recession. Also, as noted elsewhere,⁴⁶ 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. (2020) attribute this to the particular sectors affected by the pandemic (e.g. restaurants and childcare) and to school closures.

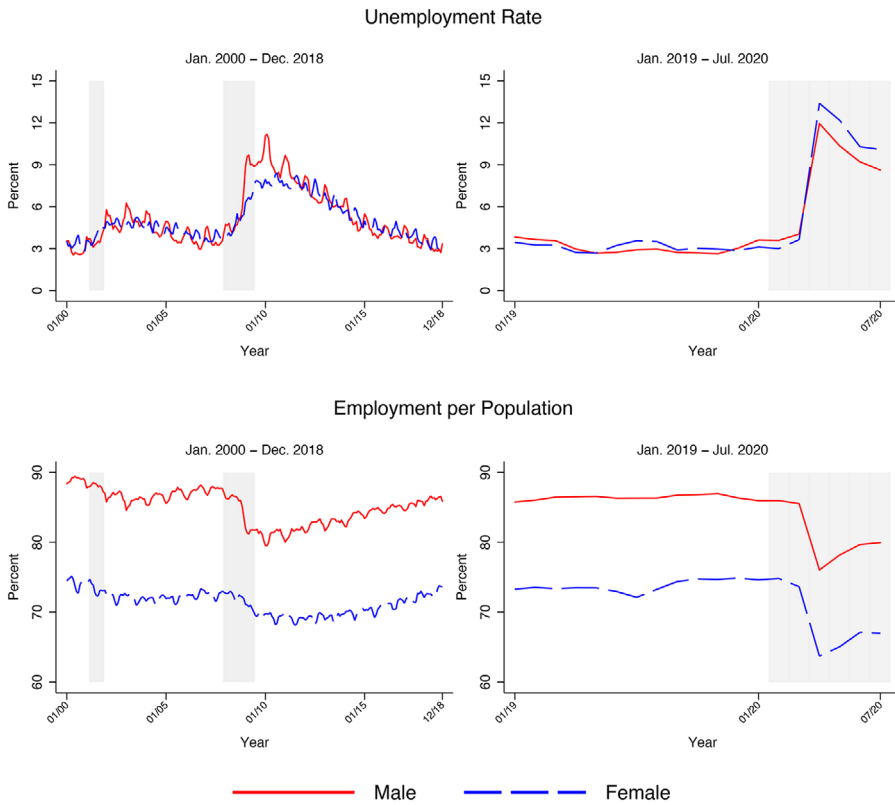
The employment–population ratio shows a smaller cyclical response than the unemployment rate because the downturns mostly reflect a decrease in employment, not labour force participation. Whereas we again see that, in past recessions, male employment has declined more than that of women, they

⁴⁴The whole supplement imputes are retained for the adjustment for under-reporting of transfer programmes in order to match population weighted totals to administrative counts.

⁴⁵The data in Figure 1 represent non-seasonally adjusted monthly employment and unemployment data on persons aged 25–54 from the Bureau of Labor Statistics, <https://data.bls.gov/PDQWeb/In>.

⁴⁶Alon et al., 2020.

FIGURE 1
Trends in unemployment rates and employment per population



Source: Authors' calculations of non-seasonally adjusted monthly employment and unemployment data on persons aged 25–54 from the Bureau of Labor Statistics (<https://data.bls.gov/PDQWeb/In>). 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>).

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 labour force participation for both men and women.

We use the 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 programme receipt, our main interest is in the labour market experiences of more disadvantaged groups. 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.⁴⁷

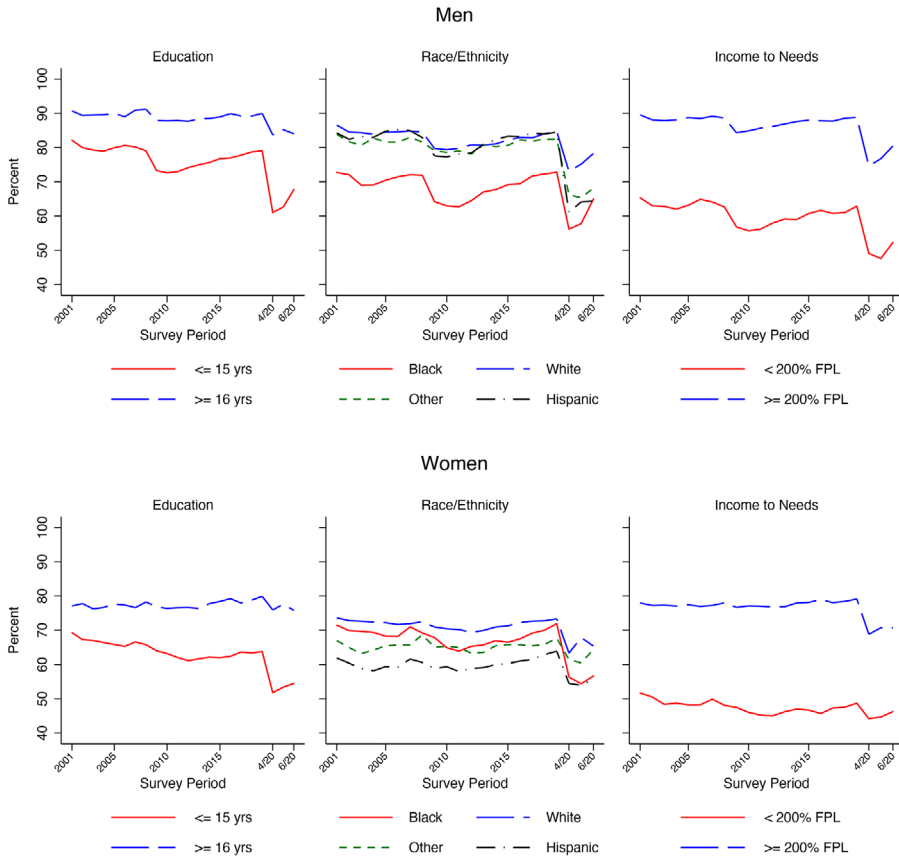
Figure 2 presents trends in employment of men and women aged 25–54 as a share of their respective populations. The figure shows that the effects of both the Great Recession, and especially COVID-19, were not neutral with respect to education, race and poverty status. For education, both men and women with lower levels of education had much more sizeable reductions in employment in the Great Recession and the COVID-19 pandemic than those with more education. Interestingly, compared with 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 between high-skilled and low-skilled men doubled between the 2001 recession and the COVID-19 pandemic.

As for race and 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 the COVID-19 pandemic, falling 23 percentage points compared with 16 points for black men. For women, the decline in employment for black women was much larger than for other groups.⁴⁸ 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 a slight trend of 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 pandemic. The other important 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.

⁴⁷Income to needs is found by dividing household income by the household-size specific poverty threshold. In the ASEC, income is continuously measured, but the Pulse and CIS only release income in bins. We thus assign the mid-point of the bin to the household before dividing by the poverty threshold. The poverty thresholds are fixed over time except for an inflation adjustment.

⁴⁸The graphs also show much smaller differences in women's employment by race and ethnicity than in men's. It has previously been found that racial differences for women are smaller than those for men.

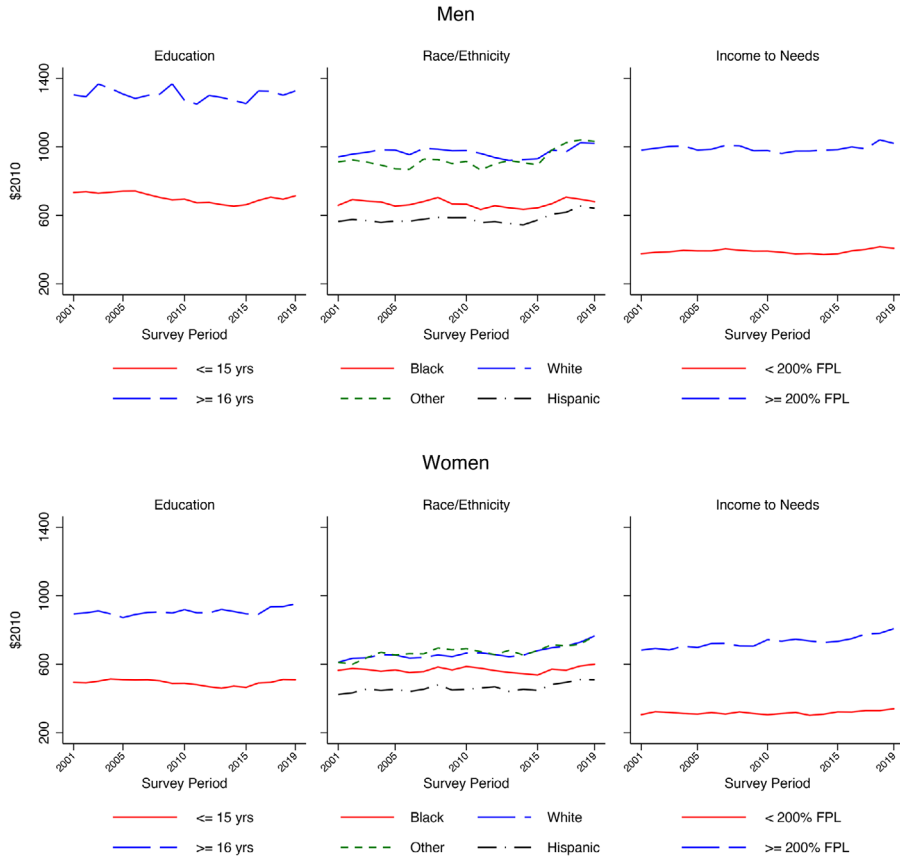
FIGURE 2
Employment per population by education, race, and poverty status



Source: Authors' calculations of 2001–19 ACES and Weeks 1, 4 and 7 of the Pulse. Results weighted using person weights.

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 were real gains in earnings among less-skilled men and women, men of white and other races 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-pandemic earnings

FIGURE 3
Median real weekly earnings



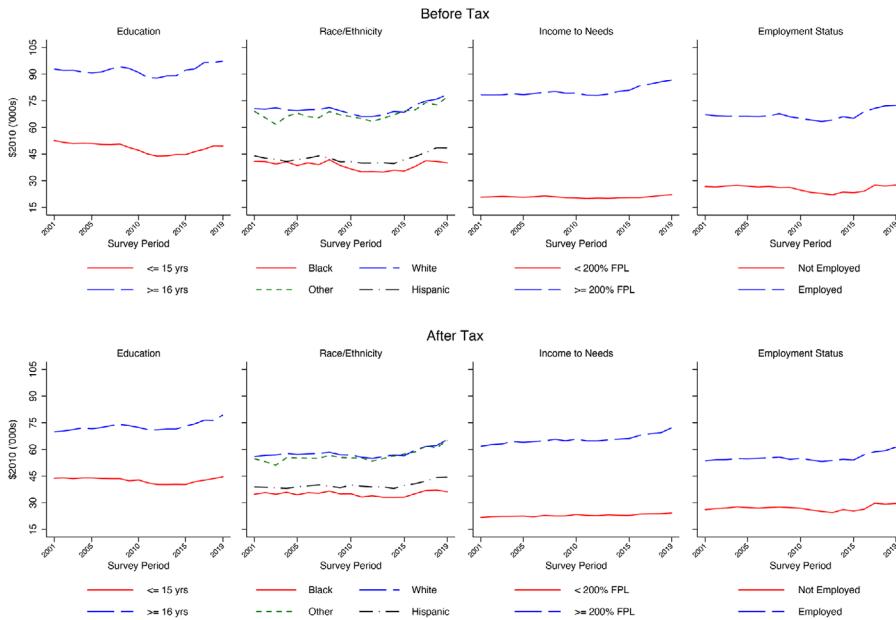
Source: Authors' calculations of 2001–19 ASEC. Results weighted using person weights.

gainers denoted in Figure 1, the expectation is that unconditional earnings losses for these groups (i.e. earnings inclusive of job losers) will also be sharp.⁴⁹

We move beyond individual employment and earnings in Figure 4 where we present median real household income both before and after taxes and inclusion of near-cash benefits from SNAP, but only up to 2019 as 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

⁴⁹Earnings conditional on those retaining work may not fall in response to COVID-19. This information for calendar year 2020 from the ASEC will not be available until autumn 2021.

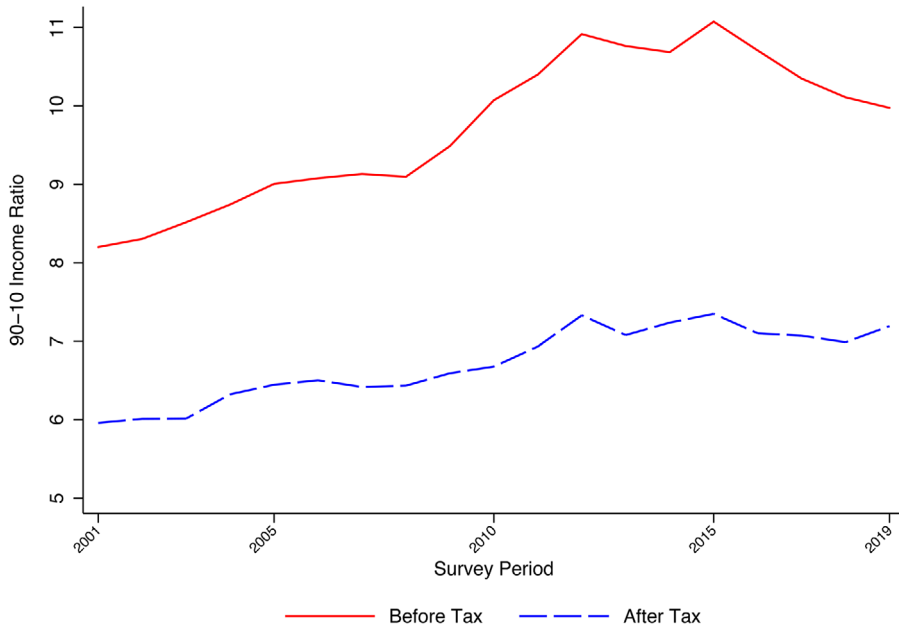
FIGURE 4
Median real household income



Source: Authors' calculations of 2001–19 ASEC. Results weighted using household weights.

household head, but we 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 education or less fell over the sample period, especially after the Great Recession. These households 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 person of other races, 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 sizeable 45 per cent. However, from the Great Recession to 2015, before-tax inequality increased 22 per cent, and while the tax system slowed that rate down, post-tax inequality increased 14 per cent. After 2015, before-tax inequality fell 10 per cent, but after-tax inequality was little changed, pulling back only 2 per cent.

FIGURE 5
Household income inequality



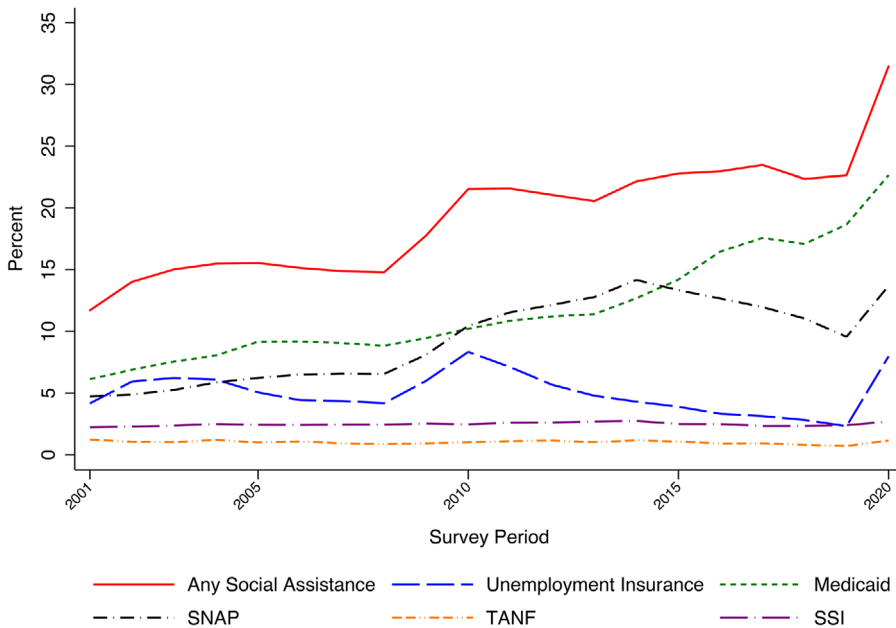
Source: Authors' calculations of 2001–19 ASEC. Results weighted using household weights.

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. However, as we discuss below, the inclusion of social assistance from unemployment compensation is likely to stabilise before-tax income inequality. Because the Trump administration's tax cuts of 2017 were heavily skewed toward high-income taxpayers, however, after-tax inequality may actually worsen, as hinted by the increase in 2018 shown in Figure 5.

VI. Transfer programme participation over time and the cycle

In this section, we document how the US 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

FIGURE 6
Participation rates in social assistance programmes



Source: Authors' calculations of 2001–19 ASEC and Weeks 1–3 of the CIS. Social assistance programmes include UI, Medicaid, SNAP, TANF and SSI. Results weighted using person weights.

different per unit of past experience.⁵⁰ We compare historical participation rates with those in the pandemic.

We first present overall participation rates in the aggregate (i.e. over all five programmes that we examine) and then by education attainment. This is then followed up with descriptive regressions of programme participation as a function of demographic characteristics and the state labour market.

Figure 6 shows the fraction of men and women aged 25–54 receiving any assistance from UI, Medicaid, SNAP, TANF or SSI over the last 20 years, including the first few months of the COVID-19 crisis in 2020, along with trends in each of the individual programmes. The figure shows that the participation rate in any assistance programme resembles a step function, with steps up at the onset of the Great Recession and the COVID-19 pandemic. Participation held steady at around 15 per cent 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

⁵⁰See also Ziliak (2015) and Ganong and Liebman (2018).

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 programmes then jumped another 10 percentage points, to just under 35 per cent with the onset of the pandemic. Given the change in definition of programme 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.⁵¹ Thus, we find that the increase in safety net participation in these first few months of the pandemic exceeded that in the Great Recession.⁵²

The increase during the pandemic 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.⁵³ However, there also 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.⁵⁴ The fact that there might be a business cycle jump in Medicaid in the COVID-19 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.⁵⁵

In Figure 7, we present trends in participation rates overall and for individual programmes by educational attainment. The figure makes clear the relationship of programme participation to the overall state of the macro economy, 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 recession resulting from COVID-19.⁵⁶ However, UI receipt rates for the

⁵¹ As we noted earlier, we expect the 2020 participation estimates to be on the conservative side because they reflect participation in the prior seven days at different weeks between April and June 2020, whereas the 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.

⁵² 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 in the text. We should also note that there were many more increases in other safety net programmes in the Great Recession than there have been in the pandemic, however; see the discussion in the text.

⁵³ 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 von Wachter (2020), another paper in this issue. The CIS 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.

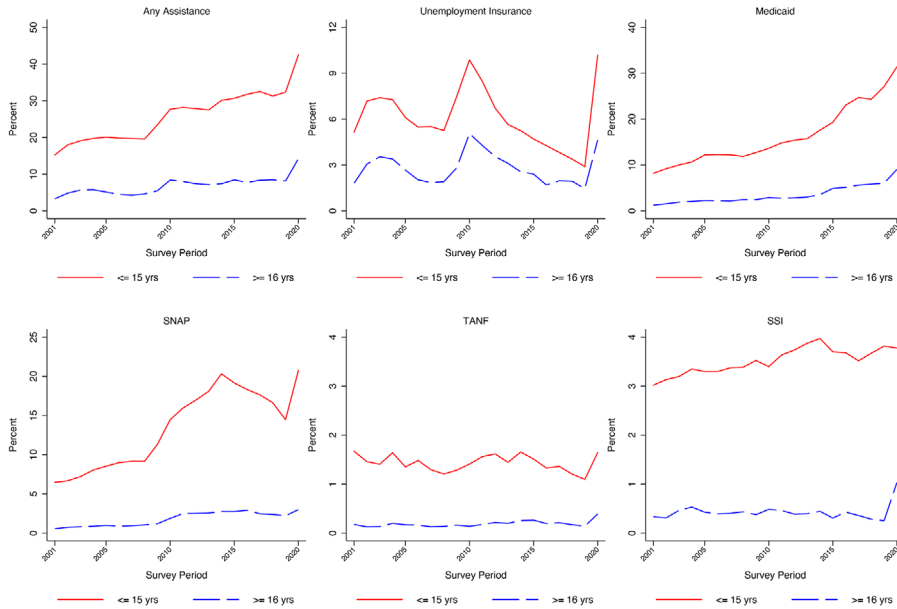
⁵⁴ Currie and Duque, 2019.

⁵⁵ We produced a complete set of figures using data as reported in the ASEC without the adjustment for under-reporting. 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.

⁵⁶ 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 in the 2001 and 2007–09 recessions,

FIGURE 7

Participation rates in social assistance programmes by education attainment



Source: Authors' calculations of 2001–19 ASEC and Weeks 1–3 of the CIS. Results weighted using person weights.

unemployed are far below 1, even during the pandemic. This reflects the continued incomplete coverage of the programme discussed above, even after the expansions of UI eligibility provided for in the pandemic legislation.⁵⁷ The figure also shows a huge response of SNAP to the Great Recession among men and women with some college education 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 programme growth during that decade, though there were also a number of policies adopted at the state level that eased access and recertification of programme benefits.⁵⁸ 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

but UI participation among less-skilled women in the COVID-19 period has been even stronger than among less-skilled men, consistent with the shutdown of work in the hospitality and entertainment sectors where these women are more concentrated.

⁵⁷See Bitler et al. (2020) for a more detailed discussion of incomplete UI coverage in the pandemic.

⁵⁸Ziliak, 2015; Ganong and Liebman, 2018.

participation among the semi- and less-skilled during the pandemic, to rates that slightly exceed the record highs of the Great Recession.⁵⁹

Figure 7 also shows the huge secular growth in the Medicaid programme that affected both the skilled and less skilled. Participation rates among those with some college education or less tripled to over 30 per cent in the last two decades, but this rate of growth was even higher among the college educated, albeit from a much smaller base participation rate in 2000. The latter speaks to the weakness in the labour 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. In the pandemic, however, 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 programme heretofore not affected as much by the humps and bumps of the business cycle. The fact that TANF also increased in the pandemic among those with some college education or less could reflect just how deeply the crisis has 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 with the other programmes in the figure and, in comparison, is visually barely detectable (see Figure 6). Finally, SSI experienced trend growth among the semi- and less-skilled from 2000 to 2014, but then stabilised 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 programme response.⁶⁰

We summarise these business-cycle responses with a series of descriptive weighted probit regressions, using the person weights provided in each survey. For all programmes combined, and each one individually, we regress programme participation on indicators for age (ages 45–54 omitted), gender, race (white omitted), education (college omitted), household size, number of children aged under 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,

⁵⁹Bitler et al. (2020, 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 programme.

⁶⁰The 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.

while the year dummies are necessary to control for common aggregate factors affecting programme 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 programme 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 Tables A1 and A2 in the online Appendix, and summary statistics of regression variables in Table A3. Because the state unemployment rate is the focal regressor of interest, we cluster the standard errors at the state level.⁶¹

Table 1 presents the marginal effects from the probit models for the combined 2001–20 survey years. We see that overall programme participation is U-shaped with respect to age, with younger adults more likely to participate than those aged 45–54, but those aged 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 programme, and this higher participation among women holds across all programmes except for UI. Black people are 14 percentage points more likely to be on social assistance than white people, and Hispanic people are 4 percentage points more likely to be on assistance than non-Hispanic people. Participation by black people is higher across all programmes, and the same is true of Hispanic people except for UI and SSI. Programme participation is strongly decreasing in education attainment. Those with high school or less are 26 percentage points more likely to be on assistance than those who are college educated, compared with 17 percentage points for those who have some college education versus college educated. The programme for which the marginal effects of high school or less and some college are comparable in magnitude is UI, underscoring the fact that unlike means-tested transfers,

⁶¹To 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 response of UI and Medicaid during the pandemic is little changed, we do observe a larger SNAP, TANF and SSI response for those with less than college education in the regional sample. We believe this is explained in part by the fact that the extra eight states in the regional CIS are drawn from large metropolitan areas, where SNAP, TANF and SSI participation rates tend to be higher than average.

TABLE 1
Marginal effects from probit regression of social assistance programme participation

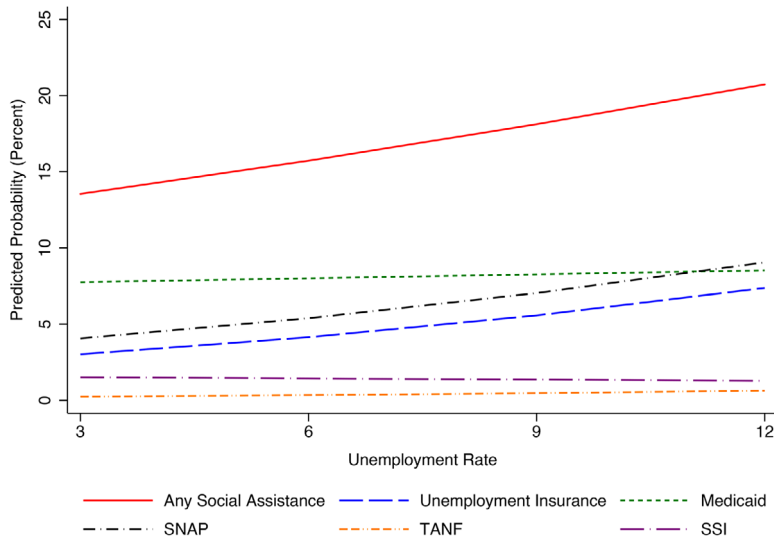
<i>Variables</i>	<i>Any programme</i> (1)	<i>UI</i> (2)	<i>Medicaid</i> (3)	<i>SNAP</i> (4)	<i>TANF</i> (5)	<i>SSI</i> (6)
Ages 25–34	0.0223 (0.0026)	0.0001 (0.0007)	0.0144 (0.0021)	0.0123 (0.0015)	0.0017 (0.0002)	–0.0054 (0.0006)
Ages 35–44	–0.0026 (0.0020)	0.0022 (0.0008)	–0.0019 (0.0012)	–0.0003 (0.0012)	0.0009 (0.0003)	–0.0028 (0.0004)
Female	0.0246 (0.0023)	–0.0195 (0.0015)	0.0401 (0.0009)	0.0256 (0.0008)	0.0063 (0.0003)	0.0058 (0.0004)
Black	0.1430 (0.0047)	0.0117 (0.0020)	0.0949 (0.0035)	0.0968 (0.0035)	0.0094 (0.0006)	0.0209 (0.0012)
Other	0.0341 (0.0081)	–0.0077 (0.0012)	0.0360 (0.0076)	0.0202 (0.0044)	0.0019 (0.0007)	0.0031 (0.0010)
Hispanic	0.0438 (0.0099)	–0.0080 (0.0019)	0.0309 (0.0083)	0.0314 (0.0074)	0.0015 (0.0012)	–0.0022 (0.0025)
High school or less	0.2619 (0.0057)	0.0400 (0.0025)	0.1843 (0.0027)	0.1619 (0.0038)	0.0135 (0.0005)	0.0538 (0.0013)
Some college	0.1677 (0.0045)	0.0361 (0.0018)	0.1143 (0.0019)	0.1077 (0.0030)	0.0095 (0.0004)	0.0284 (0.0013)
Household size	–0.0108 (0.0014)	–0.0057 (0.0003)	–0.0073 (0.0012)	–0.0044 (0.0014)	–0.0015 (0.0003)	–0.0046 (0.0003)
Number of children aged < 14	0.0404 (0.0017)	0.0035 (0.0004)	0.0256 (0.0008)	0.0269 (0.0009)	0.0029 (0.0002)	0.0008 (0.0005)
State unemployment rate	0.0077 (0.0032)	0.0043 (0.0006)	0.0009 (0.0019)	0.0050 (0.0008)	0.0004 (0.0001)	–0.0003 (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

Note: The sample consists of adults aged 25–54 from the 2001–19 ASEC and Weeks 1–3 of the CIS. The CIS sample is the regional sample. Results are weighted using person weights. Standard errors are clustered at the state level.

the reach of UI is higher up the skill and income distribution. Participation on social assistance programmes is decreasing in household size, but increasing in the number of children aged under 14, reflecting the need and subsequent targeting of assistance to young families.

Finally, Table 1 shows that consistent with the aggregate trends depicted in Figures 6 and 7, programme 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 programme participation changes as the unemployment rate increases from 3 to 12 per cent, which captures the range of values in our sample period (the sample average at 6 per cent). Going from an

FIGURE 8
Effect of the unemployment rate on programme participation



Source: Authors’ calculations of 2001–19 ASEC and Weeks 1–3 of the CIS. Any social assistance includes UI, Medicaid, SNAP, TANF and SSI. Results show the effect of changing the unemployment rate on the predicted probability of participation, holding other variables at their mean values.

unemployment rate of 6 to 9 per cent increases the probability of any programme participation from 15.7 to 18.1 per cent, increases UI participation from 4.1 to 5.6 per cent, and increases SNAP from 5.4 to 7.0 per cent. In the COVID-19 period, however, the United States went from an unemployment rate of just over 3 per cent to over 14 per cent. Figure 8, which is based on the subset of those aged 25–54, shows that going from 3 to 12 per cent unemployment increases programme participation by 7 percentage points overall, 4 points on UI and 5 points on SNAP. The other programmes in Figure 8 show no responsiveness to the business cycle.

To see whether the relationship between the macro economy and programme participation changed in the COVID-19 period, in Table 2 we redo the analysis but now permit the effect of the state unemployment rate to differ in the pre-pandemic period and the COVID-19 period.⁶² Not

⁶²In earlier analyses, we explored heterogeneity in programme participation by selected demographics such as race, detailed education, and poverty status. However, sample sizes in the CIS are limited compared with the ASEC, and thus lack power to robustly identify whether the relationship between socio-economic characteristics and programme participation changed in the COVID-19 period. We should also note that these regressions use the regional sample of the CIS whereas Figures 6 and 7 used the national sample. SNAP, TANF and Medicaid show slightly greater increases in 2020 for the regional sample.

TABLE 2

Marginal effects from probit regression of social assistance programme participation with nonlinear 2020 unemployment rate

<i>Variables</i>	<i>Any programme</i> (1)	<i>UI</i> (2)	<i>Medicaid</i> (3)	<i>SNAP</i> (4)	<i>TANF</i> (5)	<i>SSI</i> (6)
Ages 25–34	0.0223 (0.0026)	0.0001 (0.0007)	0.0144 (0.0021)	0.0123 (0.0015)	0.0017 (0.0002)	–0.0054 (0.0006)
Ages 35–44	–0.0026 (0.0020)	0.0022 (0.0008)	–0.0019 (0.0012)	–0.0003 (0.0012)	0.0009 (0.0003)	–0.0028 (0.0004)
Female	0.0247 (0.0023)	–0.0195 (0.0015)	0.0401 (0.0009)	0.0256 (0.0008)	0.0063 (0.0003)	0.0058 (0.0004)
Black	0.1430 (0.0047)	0.0117 (0.0020)	0.0948 (0.0035)	0.0968 (0.0035)	0.0093 (0.0006)	0.0209 (0.0012)
Other	0.0340 (0.0081)	–0.0077 (0.0012)	0.0359 (0.0076)	0.0202 (0.0044)	0.0019 (0.0007)	0.0031 (0.0010)
Hispanic	0.0438 (0.0099)	–0.0080 (0.0019)	0.0309 (0.0083)	0.0314 (0.0075)	0.0015 (0.0012)	–0.0022 (0.0025)
High school or less	0.2619 (0.0057)	0.0400 (0.0025)	0.1844 (0.0027)	0.1619 (0.0038)	0.0135 (0.0005)	0.0538 (0.0013)
Some college	0.1677 (0.0045)	0.0361 (0.0018)	0.1144 (0.0019)	0.1077 (0.0030)	0.0095 (0.0004)	0.0284 (0.0013)
Household size	–0.0107 (0.0015)	–0.0057 (0.0003)	–0.0072 (0.0012)	–0.0044 (0.0014)	–0.0015 (0.0003)	–0.0046 (0.0003)
Number of children aged < 14	0.0404 (0.0017)	0.0035 (0.0004)	0.0256 (0.0008)	0.0269 (0.0009)	0.0029 (0.0002)	0.0008 (0.0005)
State unemployment rate	0.0073 (0.0034)	0.0043 (0.0006)	0.0005 (0.0020)	0.0049 (0.0010)	0.0003 (0.0001)	–0.0003 (0.0003)
State unemployment rate*year = 2020	0.0051 (0.0043)	0.0001 (0.0023)	0.0046 (0.0032)	0.0018 (0.0023)	0.0004 (0.0006)	0.0002 (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

Note: The sample consists of adults aged 25–54 from the 2001–19 ASEC and Weeks 1–3 of the CIS. The CIS sample is the regional sample. Results are weighted using person weights. Standard errors are clustered at the state level.

surprisingly, the partial effects of the socio-economic 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-19 period shows a stronger business-cycle effect in overall safety net participation, and the interaction coefficients for individual programmes are positive and often sizeable in magnitude relative to the pre-pandemic coefficients (especially for Medicaid and TANF), the effects are not statistically significant at usual levels. This implies that the increases in programme 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 programme participation in the pre-2020 and 2020 periods which, as we have already noted, could bias the interaction coefficient downward.⁶³ In sum, with the exceptions of UI and SNAP, the safety net programmes considered here demonstrate little buoyancy with respect to state business cycles. In the next section, we consider possible reform to strengthen UI and SNAP, as well as to introduce changes to some other programmes on order to offer greater access and coverage to the safety net during economic downturns.

VII. Reform options for the US safety net

The descriptive evidence presented here highlights the shortcomings of the US social safety net to respond to economic and health crises, and points to several areas for reform. In this section, we emphasise two areas, one a system of automatic triggers targeted to negative business-cycle shocks, and the other to an expansion of programme access and generosity to non-covered and under-covered populations during both good and bad economic times.

Under current practice, during economic downturns, the expansion of programme access and benefit generosity and duration requires an explicit act of Congress. An exemplar of this flawed process is the UI programme. Under normal conditions, a qualifying individual is eligible for UI benefits for up to 26 weeks, though there are some states that cap that at a lower level. Since 1970, there has been the Extended Benefits programme 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.⁶⁴ The problem with this programme is that half the benefits must be paid by the states but states are typically financially strapped during recessions.⁶⁵ In the Great Recession, Congress authorised the federal government to pay 100 per cent; implementing such a rule in this recession would appear to be a meritorious reform.

During the Great Recession, Congress passed the Emergency Unemployment Compensation Programme whereby all additional benefits

⁶³A 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.

⁶⁴There has been much discussion in the United States about whether the triggers are too stringent; see, for example, Bauer, Edelberg and Parsons (2020).

⁶⁵US 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.

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 as the drama unfolding as of this writing demonstrates, 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 programme, and if so by how much, despite the fact that unemployment rates remain in excess of 10 per cent. Not only does the legislative process result in gaps in coverage, it creates uncertainty for 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.

A clear workaround is to reform the Extended Benefits programme by fully federally funding the additional weeks of eligibility with a revamped series of automatic triggers that turn on and off when established thresholds are crossed. The extended UI programme should not only federally fund additional weeks of benefits, but also the dollar amounts owing to the low wage replacement rates in state UI programmes. But there are more fundamental reforms in UI that should 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 programmes of minimally acceptable generosity. All the reforms we suggest require heavier federal involvement and regulation of the programme, which seems to be the only way to address the evident problems with the programme revealed by the pandemic.

SNAP has functioned well overall as an automatic stabiliser, but there are several incremental changes that could improve programme coverage and generosity. As part of the 1996 welfare reform, the programme 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 programme would 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 would improve programme 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 by \$250 since the early 1980s, and precludes many low- and moderate-income families from participating. The limits should be raised, and suspended automatically during economic downturns. Programme participants without earnings generally must recertify every six months, but those with earnings often recertify every three months. This should be extended to at least six 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 per cent, and this resulted in reduced food insecurity.⁶⁶ There should be an automatic trigger that temporarily raises benefit levels during downturns.

Unlike SNAP, the TANF programme requires more fundamental reform to make it more responsive to economic crises. As shown in Figure 8, the programme 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 into 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.⁶⁷ However, Congress did at least provide some emergency funding to the programme in the Great Recession, but did not do so in prior recessions and has not done so during the pandemic. Thus, similar to the UI Extended Benefits programme, Congress could establish a TANF Extended Benefits programme that is fully federally funded and automatically accessible once certain labour market thresholds are crossed. These automatic triggers could also initiate a series of changes to programme 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 non-existent in the United States, and thus additional federally provided cash support for low-income families with young children via the TANF programme could go a long way to reduce income volatility during downturns.

In addition to reforms that improve programme effectiveness over the business cycle, there are a number of incremental reforms to improve general programme coverage. Historically, the UI programme 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. Thus, the programme should be reformed to permanently cover this growing share of the labour force, or at least to offer coverage to those groups at a price. Another problem widely noted in the US 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.

⁶⁶Nord and Prell, 2011.

⁶⁷Falk, 2016.

This is not surprising as states do not have the incentive to make capital investments when they are barely able to raise enough revenues to pay benefits. Federal subsidies to states to invest in upgrades should be on the table.

COVID-19 also exposed a major tear in the US safety net, with health insurance for many tied to their employer. The expansion of Medicaid in the ACA substantially reduced rates of non-insured, but 10 per cent 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, in order 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.

These reforms, both those directly aimed at cyclical responsiveness as well as those indirectly aimed through general increases in coverage, do not constitute a trivial commitment of resources. But failure to enact some or all of these and similar changes will leave the US safety net still with gaping holes that leave many families insufficiently assisted during downturns and even during normal economic times. This will lead to the same problems occurring again in the next recession.

Supporting information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Online Appendix

References

- Adam, S., Chandler, D., Hood, A. and Joyce, R. (2015), 'Social housing in England: a survey', Institute for Fiscal Studies (IFS) Briefing Note BN178.
- Alon, T., Doepke, M., Olmstead-Rumsey, J. and Tertilt, M. (2020), 'This time it's different: the role of women's employment in a pandemic recession', *National Bureau of Economic Research (NBER) Working Paper* no. 27660.
- Bauer, L., Edelberg, W. and Parsons, J. (2020), 'Unemployment Insurance Extended Benefits will lapse too soon without policy changes', Up Front, Brookings Institution, <https://www.brookings.edu/blog/up-front/2020/08/06/unemployment-insurance-extended-benefits-will-lapse-too-soon-without-policy-changes/>.
- Ben-Shalom, Y., Moffitt, R. and Scholz, K. (2012), 'An assessment of the effectiveness of anti-poverty programs in the United States', in P. Jefferson (ed.), *The Oxford Handbook of the Economics of Poverty*, Oxford: Oxford University Press.
- Bitler, M. and Hoynes, H. (2016a), 'The more things change, the more they stay the same: the safety net and poverty in the Great Recession', *Journal of Labor Economics*, vol. 34, pp. S403–44.

- and — (2016b), ‘Strengthening temporary assistance for needy families’, Brookings Institution, The Hamilton Project, Policy Proposal 2016-04.
- , — and Kuka, E. (2017), ‘Do In-Work Tax Credits Serve as a Safety Net?’, *Journal of Human Resources*, vol. 52, pp. 319–350.
- , — and Schanzenbach, D. W. (2020), ‘The social safety net in the wake of COVID-19’, Brookings Papers on Economic Activity Conference Draft, Summer.
- Bollinger, C. R., Hirsch, B., Hokayem, C. and Ziliak, J. P. (2019), ‘Trouble in the tails? What we know about earnings nonresponse thirty years after Lillard, Smith, and Welch’, *Journal of Political Economy*, vol. 127, pp. 2143–85.
- Burtless, G. and Gordon, T. (2011), ‘The federal stimulus programs and their effects’, in D. B. Grusky, B. Western and C. Wimer (eds), *The Great Recession*, New York: Russell Sage Foundation.
- Collinson, R., Ellen, I. G. and Ludwig, J. (2019), ‘Reforming housing assistance’, *ANNALS of the American Academy of Political and Social Science*, vol. 686, pp. 250–85.
- Currie, J. and Duque, V. (2019), ‘Medicaid: what does it do and can we do it better?’, *ANNALS of the American Academy of Political and Social Science*, vol. 686, pp. 148–79.
- Desmond, M. (2016), *Evicted: Poverty and Profit in the American City*, New York: Crown Publishers.
- Falk, G. (2016), ‘The Temporary Assistance for Needy Families (TANF) Block Grant: responses to frequently asked questions’, Congressional Research Service Report RL32760, Washington, DC.
- Ganong, P. and Liebman, J. (2018), ‘The decline, rebound, and further rise in SNAP enrollment: disentangling business cycle fluctuations and policy changes’, *American Economic Journal: Economic Policy*, vol. 10, no. 4, pp. 153–76.
- , Noel, P. and Vavra, J. (2020), ‘US unemployment replacement rates during the pandemic’, University of Chicago, Becker–Friedman Institute Working Paper no. 2020-62.
- Garrett, B. and Gangopadhyaya, A. (2020), ‘How the COVID-19 recession could affect health insurance coverage’, Urban Institute Research Report, Washington, DC.
- Hembre, E. (2020), ‘Examining the social safety net response to the Covid-19 pandemic’, Mimeo, Department of Economics, University of Illinois-Chicago.
- Hotz, V. J. and Wiswall, M. (2019), ‘Child care and child care policy: existing policies, their effects, and reforms’, *ANNALS of the American Academy of Political and Social Science*, vol. 686, pp. 310–38.
- Jones, M. R. (2017), ‘The EITC over the Great Recession: who benefitted?’, *National Tax Journal*, vol. 70, pp. 709–36.
- Kosar, G. and Moffitt, R. (2017), ‘Trends in cumulative marginal tax rates facing low-income families, 1997–2007’, *Tax Policy and the Economy*, vol. 31, pp. 43–70.
- Larrimore, J., Mortenson, J. and Splinter, D. (2016) ‘Income and earnings mobility in U.S. tax data’, in *Economic Mobility: Research & Ideas on Strengthening Families, Communities & the Economy*, Federal Reserve Bank of St Louis and the Board of Governors of the Federal Reserve System, 481–516.
- Maestas, N. (2019), ‘Identifying Work Capacity and Promoting Work: A Strategy for Modernizing the SSDI Program’, *ANNALS of the American Academy of Political and Social Science*, vol. 686, pp. 93–120.
- Meyer, B., Mok, W. and Sullivan, J. (2015), ‘Household surveys in crisis’, *Journal of Economic Perspectives*, vol. 29, no. 4, pp. 199–226.
- Moffitt, R. A. (1992), ‘Incentive effects of the U.S. welfare system: a review’, *Journal of Economic Literature*, vol. 30, pp. 1–61.
- (2013), ‘The Great Recession and the social safety net’, *ANNALS of the American Academy of Political and Social Science*, vol. 650, pp. 143–66.
- (2014), ‘Unemployment benefits and unemployment’, *IZA World of Labor*, 2014: 13.

- (ed.) (2016), *Economics of Means-Tested Transfer Programmes in the United States*, Volumes I and II, Chicago: University of Chicago Press.
- and Pauley, G. (2018), 'Trends in the distribution of social safety net support after the Great Recession', Stanford Center on Poverty and Inequality, Issue Brief.
- and Ziliak, J. P. (2019), 'Entitlements: Options for Reforming the Social Safety Net in the United States', *ANNALS of the American Academy of Political and Social Science*, vol. 686, pp. 8–35.
- Nord, M. and Prell, M. (2011), 'Food security improved following the 2009 ARRA increase in SNAP benefits', Economic Research Report No. 116, US Department of Agriculture, <https://www.ers.usda.gov/publications/pub-details/?pubid=44839>.
- Rae, M., McDermott, D., Levitt, L. and Claxton, G. (2020), 'Long-term trends in employer-based coverage', Peterson-KFF Health System Tracker Issue Brief, <https://www.healthsystemtracker.org/brief/long-term-trends-in-employer-based-coverage/>.
- Sherman, A. (2011), '*Despite deep recession and high unemployment, government efforts – including the recovery act – prevented poverty from rising in 2009*', Washington, DC: Center for Budget and Policy Priorities, <https://www.cbpp.org/research/despite-deep-recession-and-high-unemployment-government-efforts-including-the-recovery-act>.
- Stone, C. and Chen, W. (2014), 'Introduction to Unemployment Insurance', Center on Budget and Policy Priorities, <https://www.cbpp.org/research/introduction-to-unemployment-insurance>.
- Tolbert, J., Orgera, K. and Singer, N. (2019), 'Key facts about the uninsured population', Kaiser Family Foundation Issue Brief, <https://www.kff.org/uninsured/issue-brief/key-facts-about-the-uninsured-population/>.
- US Census Bureau (2020), Household Pulse Survey: Measuring Social and Economic Impacts during the COVID-19 Pandemic, <https://www.census.gov/programmes-surveys/household-pulse-survey.html>.
- US Congressional Research Service (2019), '*The Supplemental Nutrition Assistance Program (SNAP): Categorical Eligibility*', Washington, DC: US Congressional Research Service.
- von Wachter, T. (2019), 'Unemployment Insurance reform', *ANNALS of the American Academy of Political and Social Science*, vol. 686, pp. 121–46.
- (2020), 'Lost generations: long-term effects of the COVID-19 crisis on job losers and labour market entrant and policy options', *Fiscal Studies*, vol. 41, pp. 549–90.
- Vroman, W. and Woodbury, S. A. (2014), 'Unemployment Insurance', *National Tax Journal*, vol. 67, pp. 253–68.
- Whittaker, J. M. and Issacs, K. P. (2013), '*Extending unemployment compensation benefits during recessions*', Washington, DC: US Congressional Research Service.
- Wozniak, A., Willey, J., Benz, J. and Hart, N. (2020), *COVID Impact Survey: Version 1.3 [Weeks 1–3]*, Chicago, IL: National Opinion Research Center.
- Ziliak, J. P. (2014), 'Supporting low-income workers through refundable child-care credits', in M. Kearney and B. Harris (eds), *Policies to Address Poverty in America*, The Hamilton Project, Brookings Institution, pp. 109–18.
- (2015), 'Why are so many Americans on food stamps? The role of the economy, policy, and demographics', in J. Bartfeld, C. Gundersen, T. Smeeding and J. Ziliak (eds), *SNAP Matters: How Food Stamps Affect Health and Well Being*, Redwood City, CA: Stanford University Press, pp. 18–48.