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Income and Poverty in the COVID-19 Pandemic

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Abstract

This paper addresses the economic impact of the COVID-19 pandemic by providing timely and accurate information on the impact of the current pandemic on income and poverty to inform the targeting of resources to those most affected and assess the success of current efforts. We construct new measures of the income distribution and poverty with a lag of only a few weeks using high frequency data from the Basic Monthly Current Population Survey (CPS), which collects income information for a large, representative sample of U.S. families. Because the family income data for this project are rarely used, we validate this timely measure of income by comparing historical estimates that rely on these data to estimates from data on income and consumption that have been used much more broadly. Our results indicate that at the start of the pandemic government policy effectively countered its effects on incomes, leading poverty to fall and low percentiles of income to rise across a range of demographic groups and geographies. Simulations that rely on the detailed CPS data and in aggregate closely match total payments made show that the entire decline in poverty that we find can be accounted for by the rise in government assistance including unemployment insurance benefits and the Economic Impact Payments.

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I. Introduction

The start of the COVID-19 pandemic in the United States quickly resulted in an unprecedented decline in economic activity. In the 13 weeks starting in mid-March 2020, more than 49 million people filed for unemployment insurance.[1] GDP in the first quarter of 2020 fell 1.2%, the largest quarterly decline since the Great Recession, even though state stay-at-home orders were uncommon until the latter part of that quarter. The sharp decline in employment meant that earnings fell, and the significant decline, at least temporarily, in the value of the stock market reduced asset and retirement income. At the same time, the federal government responded with tax rebates in the form of Economic Impact Payments, small business loans, and an unprecedented expansion of unemployment insurance as part of the CARES Act and related stimulus legislation that all told committed more than three trillion dollars to countering the effects of the COVID-19 pandemic. However, whether this response has been adequate to offset the losses and what net effect it may have on income and poverty remains unclear. To ensure that the government can target and calibrate its fiscal response most effectively requires timely information on income and poverty by demographic group and geography, but currently we have extremely limited ability to track the income changes of the American population overall or to understand who is affected the most by the pandemic on a timely basis.

Official estimates of income and poverty for 2020 will not be available until September of 2021. These official statistics will be of little use to federal, state, and local policymakers who need to decide quickly how to allocate scarce resources to minimize COVID-19's impact on vulnerable populations. Thus, this crisis calls for timely and accurate information on the impact of the current pandemic (as well as future shocks) on the economic well-being of individuals and families in order to inform the design of policies that adequately respond to sudden losses and target resources towards those who are most affected by the pandemic.

To address the gap in critical, real-time information we construct new measures of the income distribution and income-based poverty with a lag of only a few weeks using high frequency data for a large, representative sample of U.S. families and individuals. We rely upon the Basic Monthly Current Population Survey (Monthly CPS), which includes a greatly

[1] This is based on the non-seasonally adjusted numbers and includes regular state programs, the federal Pandemic Unemployment Assistance (PUA) program, and the programs for federal employees (UCFE) and newly discharged veterans (UCX). UCFE and UCX are excluded from the initial claim number for June 13. See https://www.dol.gov/ui/data.pdf.

underused global question about annual family income. A clear advantage of using the Monthly CPS to estimate changes in income and poverty is that the quick release of these data allows us to understand the immediate impact of macroeconomic conditions and government policies. For example, given data release dates, analyses of income from the Monthly CPS would have revealed the negative impact of the Great Recession a full 14 months before official estimates indicated an increase in poverty. Our approach generates immediately useful income and poverty estimates for the overall population as well as how these rates vary by demographic groups and geography. We also validate this new, timely, measure of family income by comparing estimates that rely on these data to estimates from data on income that have been used much more broadly and that have a long historical track record. Our validations will help other researchers understand the advantages and limitations of using more timely income data to understand changes in economic well-being.

Our initial evidence indicates that at the start of the pandemic government policy effectively countered its effects on incomes, leading poverty to fall and low percentiles of income to rise across a range of demographic groups and geographies. Our evidence suggests that income poverty fell shortly after the start of the COVID-19 pandemic in the U.S. In particular, the poverty rate, calculated each month by comparing family incomes for the past twelve months to the official poverty thresholds, fell by 2.3 percentage points from 10.9 percent in the months leading up to the pandemic (January and February) to 8.6 percent in the two most recent months (April and May). This decline in poverty occurred despite that fact that employment rates fell by 14 percent in April—the largest one month decline on record. The declines in poverty are evident for most demographic groups, although we find some evidence that poverty declines most noticeably for those who report their race as neither white nor black.

Our simulations using the detailed and nationally representative CPS data indicate that government programs, including the regular unemployment insurance program, the expanded UI programs, and the Economic Impact Payments (EIPs), can account for more than the entire decline in poverty that we find, and more than half of the decline can be explained by the EIPs alone. These programs also helped boost incomes for those further up the income distribution, but to a lesser extent.

This study generates some of the first evidence on how the COVID-19 pandemic is affecting the economic well-being of individuals and families in the U.S., and which groups are

affected most. Economists have long examined the impact of large macroeconomic shocks, such as recessions (i.e. Grusky et al. 2011) or pandemics (i.e. Almond 2006; Almond and Mazumder 2005). However, due to the limited availability of data making it difficult to study major shocks as they evolve, past research has necessarily mostly happened long after the events occurred. Our study provides a template for the future understanding of large economic shocks as they happen. This paper also addresses important survey methodology questions such as whether the patterns of annual income from a monthly survey align with the patterns for income from annual surveys that are the source for official statistics, and how responses to a single, global question about income compare to estimates of total income from questions about many income sources. Understanding the validity of survey-measured income is critically important given the prominent role it plays in economic research.

II. Discerning the Impact of COVID-19

The impact of the pandemic on the labor market was swift and severe. The sharp decline in employment is shown in Figure 1, which reports employment rate estimates from the Monthly CPS for all individuals 16 and older for the period from January 2019 through May of 2020. The employment rate held steady at about 60 percent through March of 2020, and then dropped sharply, by more than 8 percentage points (14 percent), in April, the largest one-month decline on record. Employment bounced back somewhat in May, with the rate rising by 2 percentage points (4 percent). The employment pattern for the sample we use for our main results, which is restricted to individuals in the Monthly CPS with reported family income, is very similar to that for the full sample. Not surprisingly, family earnings fall suddenly after the start of the pandemic (Figure 2). Between January of 2019 and March of 2020, real monthly family earnings grew by 3 percent, but then fell by more than 10 percent in April and bounced back slightly in May.

The two most direct ways that federal policies worked to offset this sudden decline in earnings was through Economic Impact Payments and the expansion of unemployment insurance benefits. The Economic Impact Payments provided $1,200 to individuals with income less than $75,000 and to single parents (heads of household) with income below $112,500, and they provided $2,400 to married couples with income less than $150,000. Recipients were also eligible to receive an additional $500 for each qualifying child. For those with income above

these thresholds, the payments were reduced by 5 percent of the income that exceeded the threshold.

Economic Impact Payments started the second week of April, with the early checks going to those with the lowest adjusted gross income. As shown in Figure 3, the Internal Revenue Service had sent Economic Impact Payments to nearly 90 million individuals by April 17, and to an additional 63 million individuals over the next 5 weeks. As of June 3rd, 159 million payments had been processed.[2]

Additional relief was made available to those who lost their job through expanded unemployment insurance benefits. The CARES Act, which was passed in late March, created the Pandemic Unemployment Compensation (PUC) program, which provided an additional $600 per week to claimants on top of the usual benefit. These PUC payments are scheduled to expire at the end of July 2020. The CARES Act also extended eligibility for benefits to groups not covered by the traditional UI program, such as the self-employed, part-time workers, and those who did not have a long enough work history to qualify for the traditional program (Pandemic Unemployment Assistance, PUA), and it extended by 13 weeks the duration of UI benefits for a regular claim (Pandemic Emergency Unemployment Compensation, PEUC).

An unprecedented number of individuals have filed for these benefits during the pandemic. As shown in Figure 4, initial claims shot up, starting in mid-March. For the week ending April 4th, 6.2 million initial claims were filed. Between the weeks ending March 21 and June 12, more than 49 million initial claims were filed. According to the Bureau of the Fiscal Service of the U.S. Treasury, UI payments never exceeded $3 billion in a single month from February 2019 through February 2020. In March 2020, these payments shot up to $4.2 billion, and then to $48.4 billion in April and $93.7 billion in May.[3]

Together these policies have the potential to significantly boost family incomes and lift many families, at least temporarily, out of poverty. Consider a family of four with two adults and two children whose family income comes entirely from the earnings of the head. If the head's earnings do not change after the start of the pandemic and the family receives the maximum

[2] www.irs.gov/newsroom/159-million-economic-impact-payments-processed-low-income-people-and-others-who-arent-required-to-file-tax-returns-can-quickly-register-for-payment-with-irs-non-filers-tool

[3] UI payment data are available here: https://datalab.usaspending.gov/dts/?start=20050609&end=20200617&frequency=mtd&category=Unemployment%20Insurance%20Benefits.

Economic Impact Payments in April, then this family would be lifted out of poverty (i.e. their income for the past 12 months would exceed the poverty threshold for a family of this size and composition) in April as long as their income exclusive of EIP was within 90 percent of the poverty line. Moreover, the one-time EIPs would be sufficient to keep such a family's income over the past 12 months above the poverty line for an entire year, through March 2021. Alternatively, if, in addition to the EIP payments, the head of such a family lost his or her job in April 2020 and collected UI benefits as well as the additional $600 per week through July 2020, then such a family would have income above the poverty line in April and for the following nine months as long as their pre-COVID earnings (and therefore income) were within 80 percent of the poverty line.[4]

III. Earlier work on Timely Income and Poverty

While there is an extensive literature that examines income and poverty measurement and trends (summarized in Ruggles 1990; National Academy of Sciences 1995, Meyer and Sullivan, 2012 and Burkhauser et al., 2019), none of these studies have addressed the long delay in the availability of nationally representative income data, and very few have used the data from the Monthly Current Population Survey (Monthly CPS). Bergmann and Coder (2010) use the Monthly CPS to construct a poverty measure based on earnings and imputed UI benefits for the period from 2005 to 2009. A few researchers have used the Monthly CPS to generate timely estimates of income and compare these estimates to the CPS Annual Social and Economic Supplement (ASEC). However, this work has focused on median income (Green and Coder, 2020) and provided only very limited validation of its measures. Thus, there is surprisingly little precedent for our timely, validated measure of income and poverty.

IV. Data and Methods

We rely on income to measure poverty in this situation, despite two of us having argued for more than fifteen years that for historical (as opposed to timely) research consumption should be preferred. However, we have never argued that consumption should be exclusively used. Income and consumption data are complements and there are situations where each is likely to be more informative than the other. Given that detailed, comprehensive and representative

[4] This calculation assumes that the head collects UI benefits equal to half of pre-separation earnings.

consumption data are not available in a timely fashion, the income data are an important source.[5] Furthermore, the short run aspects of this pandemic, in which consumption is likely to move independently of short run changes in income, makes income of interest in its own right. Examining short term changes in income during the pandemic allows us to examine whether the concomitant decline in consumption is due to a shortfall in current income or another explanation such as a limited opportunity to consume or uncertainty over future income streams.

Our new measures of the income distribution and income-based poverty rely on data from the Monthly CPS, which collects information on labor market outcomes and demographic characteristics from a representative sample of about 40,000 to 50,000 households. Interviews are conducted during the calendar week containing the 19th of the month. The survey provides the timeliest nationally representative data available for family income. The Monthly CPS has been collecting information about income for nearly 40 years. Thus, we can observe the cyclical patterns of income and its association with other variables long before the onset of the COVID-19 pandemic, which is helpful for understanding the validity of the income data, as it allows us to compare income and other observable characteristics from these data to those from many other historical data series. To capture changes in income before and after the start of the pandemic, we will focus on data from the January 2019 survey through the June 2020 survey. Although the June data are not currently available, these data should be released in mid-July, and will be added to the final draft of this paper.

Analysis Sample

Our analyses focus on a subset of individuals from the Monthly CPS because we do not observe family income for all individuals for several reasons. First, the total income question is asked only in reference to the family income of the householder's family, so we do not observe this income information for individuals in the household who are outside the householder's family (i.e. unrelated individuals and unrelated subfamilies), which accounts for about 5 percent of the full sample. Second, housing units selected to be in the CPS are typically only asked this question in the first and fifth interview months that they are in the survey (housing units are in the CPS sample for eight months over a 16-month period—four months on, eight months off,

[5] Nationally representative data on consumption for 2020 from the Consumer Expenditure Survey is not currently scheduled to be released until September 2021.

and four months on).[6] About 25% of the CPS sample each month is in either their first or fifth month. Finally, about 20 percent of those in the first or fifth months of the survey do not respond to the family income question. Although the Census Bureau provides imputed values of income for those who do not respond, we do not include these observations in our analysis. Because of these restrictions, we observe family income from respondents in their first or fifth month in the survey for a monthly sample ranging from 9,217 households and 21,424 individuals in April 2019 to 6,149 households and 14,383 individuals in April 2000.

An important issue to consider for analyses of income before and after the start of the pandemic is that concerns about COVID-19 may have affected survey responses. Due to health concerns, the Census Bureau shifted the survey collection method for the Monthly CPS from in-person to phone interview for some households in March 2020 and for all households in April 2020. Households in their first and fifth interview month are most affected by this change because interviews in these two months are usually conducted in-person, whereas interviews in other months are normally conducted via phone. For example, in January 2020 66 percent of the households in their first or fifth month were interviewed in person.

In Appendix Table 1, we examine how the change in the survey method affects the survey nonresponse rate as well as the composition of the sample across interview months between February and May 2020. The first row shows that the nonresponse rates in the April and May 2020 surveys were substantially higher than that in February 2020 for all interview months. However, this rise was most noticeable for households in their first month, whose survey nonresponse rates rose from 19.5% in February to 53.3% in April and 52.3% in May. Survey nonresponse for those in their fifth month also rose, but to a much less extent. For this group, 20% did not respond to the survey in February, and this rate rose to 31% in March and then held steady for the next two months. That the rise in survey nonresponse rates is more noticeable for those in their first or fifth month than for those in other months, suggests that the shift from in-person to telephone did have an impact on response rates. We also see a rise in item nonresponse for the family income question, although this rise is much less pronounced than the rise in survey nonresponse. The item nonresponse rate increased by about 35% (from 20 percent to 27 percent)

[6] CPS households that do not provide an answer to this income question in their first or fifth month are asked this question in subsequent months. Thus, about 3 percent of households in these other months are asked and respond to the family income question. Otherwise, in the public use files, the value of family income in these other months is just carried over from the response in either the first or fifth month.

between February and May of 2020 for individuals in their first month interview, while the rate for individuals in their fifth month interview changed little during the same period.

These patterns might be problematic if survey or item non-response is not random. It should be emphasized that across surveys and questions survey nonresponse rates are only loosely related to bias (Groves and Peytcheva, 2008), so each situation needs to be investigated. To consider whether there might be selection into non-response, we examine the observable characteristics of the sample across interview months before and after the onset of the pandemic, restricting the sample to individuals who are included in the householders' families with non-imputed family income. Most of the characteristics that we report in Appendix Table 1 are similar pre- and post-COVID regardless of interview month. There is some evidence that the first month responders in April 2020 are slightly more educated and older than the first month responders pre-COVID. These differences, although small, suggest that changes in survey response rates may have resulted in a slightly more advantaged sample of first month responders in the most recent survey month. Thus, to reduce potential bias (but increase variance) we also examine income trends for a sample of respondents in their fifth month interview, which includes about 8,000 to 11,000 individuals each month.

Family Income in the Monthly CPS

Our primary analyses rely on a global question in the Monthly CPS about total cash income for the householder's family for the previous 12 months. Specifically, the question asks the respondent to report:

> "total combined income during the past 12 months…of all members [of the family]. This includes money from jobs, net income from business, farm or rent, pensions, dividends, interest, social security payments and any other money income received…by members of [the family] who are 15 years of age or older."[7]

This global family income measure from the Monthly CPS aligns closely with the measure of total cash income from the CPS ASEC, which is used for official poverty and income statistics, although family income from the CPS ASEC is calculated as the sum of responses to questions about many different components of income. Because interviews take place in the third week of the month, we assume that the respondent includes income from the interview month in their

[7] https://www2.census.gov/programs-surveys/cps/techdocs/questionnaires/Labor%20Force.pdf

response to the question. Making this distinction is important for determining when we should expect to see this measure of family income reflect the effects of the pandemic. For example, we assume that the April respondents include negative income shocks that occurred or government payments that were received during the first two weeks of April. During these first two weeks, unemployment insurance claims grew sharply and the first wave of Economic Impact Payments were distributed.[8]

It is also unclear whether the responses to this question give equal weight to each of the previous 12 months, or whether greater weight is given to income in more recent months. If there is telescoping, i.e. more accurate recall of more recent income, then the most recent responses to the income question in the Monthly CPS are more likely to capture the effects of the pandemic. Investigating whether there is evidence of telescoping in the Monthly CPS family income data is an important area for future research.

Rather than reporting a specific amount for total income, respondents in the Monthly CPS choose among 16 categorical income ranges. For the bottom part of the income distribution, the income ranges are fairly small. Below $15,000 there are five categories, and from $15,000 to $40,000 the intervals are $5,000 wide. Nevertheless, to calculate our estimates of poverty and various percentiles of the income distribution, we need to convert this categorical response into a continuous measure. To do this, we randomly select values of family income from families in the CPS ASEC from the same survey year[9] who have incomes that fall in that same income range and who have some similar demographic characteristics. Specifically, we define the cells from which we draw income values based on the 16 income categories and 15 demographic categories defined by family size, number of children, and whether the age of the household head is 65 or older. For example, we would assign an income value for a 65-year-old single individual in the Monthly CPS who reports having income between $20,000 and $24,999 by randomly selecting income values from the CPS ASEC sample of single individuals aged 65 and over who report a total income value that is between $20,000 and $24,999. The key assumption for this imputation approach is that the distribution within a given category is the same in the Monthly CPS as in the

[8] While the interviewer instructions in some Census Bureau surveys such as the American Community Survey specify that the reference period is the 12 months before the interview date, the CPS instructions are not specific.
[9] In 2020 we use 2019 CPS ASEC as the 2020 data will not become available until September.

CPS ASEC, which is reasonable given that both questions refer to a twelve-month period and rely on the same definition of income.

As a preliminary assessment of the validity of the family income measure in the Monthly CPS, we compare income reports in the Monthly CPS to those in the CPS ASEC (see Section VI for additional analyses of the validity of this income measure). Because a majority of CPS ASEC survey participants also participated in the Monthly CPS, we can compare responses to the income questions in the CPS ASEC to those from the Monthly CPS holding constant either the interview date (i.e. looking at respondents who complete both the Monthly CPS and the ASEC during the same interview) or the reference period, but not both.[10] For these comparisons, we exclude individuals who have imputed income in the Monthly CPS or imputed earnings in the CPS ASEC.

In Appendix Table 2, we report the distribution of the CPS ASEC family income for each Monthly CPS family income bracket holding the reference period constant—i.e for a sample of December or January Monthly CPS respondents who also responded to the CPS ASEC. While there is considerable dispersion in the distribution of CPS ASEC income for a given Monthly CPS income bracket, a substantial share of individuals in a given Monthly CPS income bracket report that their CPS ASEC income falls into that exact same bracket. For example, 34% of individuals who report a family income below $5,000 in the December or January CPS also report a few months later in the CPS ASEC that their income is below $5,000. Estimates of the Pearson and Spearman correlations between CPS ASEC income and Monthly CPS income suggest a strong association between the two income measures (Appendix Table 3). In results not reported, we find similar alignment of responses across surveys when looking at respondents who complete both the Monthly CPS and the ASEC during the same interview.

Measures of Income Poverty and the Income Distribution

The primary goal of this study is to describe how income has changed during the COVID-19 pandemic for vulnerable families. To that end, we use data from the Monthly CPS to

[10] CPS ASEC respondents are interviewed in February, March, and April and are asked about income for the previous calendar year. The Monthly CPS interviews individuals and families throughout the year and ask about family income for the previous 12 months. Thus, to compare responses across surveys holding the reference period constant, we focus on the CPS ASEC respondents who participated in the December or January Monthly CPS surveys, because the reference period for the family income question for these Monthly CPS respondents aligns closely with the reference period for their responses to the ASEC (the previous calendar year).

estimate annual poverty rates and income percentiles on a monthly basis for the period from January 2019 through April 2020. Our estimates of poverty compare our measure of family income for the 12 months immediately preceding the interview from the Monthly CPS to the official poverty threshold for each family, which varies by family size and composition. For our monthly poverty estimates, we apply the official poverty thresholds for the year that aligns with the most recent month of the reference period in the Monthly CPS.

There are many limitations of the official measure that numerous studies have noted, such as the use of a price index to adjust thresholds over time that overstates inflation, its omission of taxes, tax credits, and in-kind benefits such as food stamps and housing subsides, and its peculiar equivalence scale (National Academy of Sciences 1995, Meyer and Sullivan 2012; Burkhauser et al. 2019). These limitations are less relevant for the short-term changes in poverty that are the focus of this study. For example, although price index bias significantly affects estimates of changes in poverty over several decades (Meyer and Sullivan, 2012), such bias is negligible for changes in poverty within a year. While we do not incorporate noncash programs into our analyses because the Monthly CPS does not include data on receipt of such benefits, these programs may play an important role in replacing lost earnings during the pandemic. See Bitler, Hoynes, and Schanzenbach (this issue) for more discussion of the importance of these programs.

While low-income families are arguably the most vulnerable to the sharp downturn in the economy that resulted from the pandemic, recent events are likely to affect other parts of the income distribution as well. The sudden disruption in economic activity affected families at all income levels. And although the government response was somewhat targeted, EIPs and expanded UI benefits were by no means restricted to those near the poverty line. A married couple with two children, for example, would be eligible for the full EIP benefit ($3,400) even if their income was 5.75 times the federal poverty line. To investigate how other points in the distribution of income, beyond just around the poverty line, change during the pandemic, we also examine changes in percentiles of income. In particular, we look at changes in family income for the 10^{th}, 25^{th}, 50^{th}, and 75^{th} percentiles. For these analyses, we adjust the income measures for family size and composition using the National Academy of Sciences (1995) recommended equivalence scale and account for inflation using the Personal Consumption Expenditures Chain-type Price Index. Although there is some debate about how best to adjust for family size and

inflation, these issues are much less consequential for analyses of monthly changes in income over less than two years.

V. Changes in Poverty and the Income Distribution During the COVID-19 Pandemic

As discussed above, the onset of the COVID-19 pandemic was marked by a sharp decline in employment and earnings. At the same time, there was a sizable response from the federal government that transferred trillions of dollars to low and middle income individuals and families. A key question, then, is whether this government response was large enough to offset lost earnings. To address this question, we examine changes in poverty and percentiles of the income distribution for the period just prior to and after the start of the pandemic.

In Figure 6 we report the poverty rate as well as a 3-month moving average of this rate, for the period from January 2019 to May 2020. Then, in Table 1, we focus in on the estimates for each month between January and May of 2020, as well as change in poverty between the pre-and post-COVID-19 period defined as January-February 2020 and April-May 2020, respectively.[11] For both the table and the figure, the sample includes Monthly CPS respondents in either their first or fifth interview month, as those are the months when respondents are asked about income. Because of concerns about nonresponse bias, we also present a version of Table 1 for a sample that is restricted to respondents in their fifth month only, because the nonresponse rates for this group is considerably lower. These results are reported in Appendix Table 4.

The results in Figure 6 indicate that poverty was falling fairly steadily in the period leading up to the pandemic. Between November 2019 and February 2020, poverty fell by 0.7 percentage points. This decline then accelerates once the pandemic hits. As shown in Table 1, the annual poverty rate fell by another 0.7 percentage points in March and then by 1.6 percentage points in April. By May, the rate had fallen to 8.5 percent. The poverty rate declined from the pre-COVID-19 period (January and February) to the post-COVID-19 period (April and May) by 2.3 percentage points (or about 21%), and this difference is statistically significant. For the sample that includes only responders in their fifth month (Appendix Table 4), the decline is somewhat smaller (1.3 percentage points) and is marginally significant. These results suggest that for low-income individuals and families the government response to the pandemic more than offset the sharp decline in earnings.

[11] We plan to add June 2020 to the post-COVID-19 period once the June CPS data are available in mid-July.

To determine whether the labor market shock and the government response affected certain demographic groups differently, we explore the heterogeneity of poverty rates across groups defined by age (0-17, 18-64, and 65+), race (White, Black, and Other), and the educational attainment of the head of the household (H.S. degree or below and some college or above). We also examine differences in poverty rates between states with high and low COVID-19 death rates, states that implemented stay-at-home orders early versus late, and states that announced a state of emergency early versus late. Specifically, we divide states into two groups based on each state's COVID-19 death rate as of May 18: "high COVID-19 death rate" states have 10 COVID-19 deaths per 100,000 or more, while "low COVID-19 death rate" states have less than 10 COVID-19 deaths per 100,000. Similarly, we divide states into early and late stay-at-home states based on whether a majority of population in a state lives in a county that had the stay-at-home order before March 24. Finally, we divide states into early and late state of emergency states based on whether a state declared state of emergency before March 10th. Each of these cutoffs is chosen to roughly evenly split the sample based on population in order to maximize sub-sample size and the likelihood that we can discern a difference between the groups.

Our estimates of poverty by age group indicate that poverty declined for all three groups. Poverty declined by 2.8 percentage points (18.6 percent) for individuals aged 0-17, by 2.4 percentage points (24.2 percent) for individuals aged 18-64, and by 1.4 percentage points (17.2 percent) for individuals aged 0-17. All of these declines in poverty are statistically significant, but they are not significantly different from each other. We also see declines in poverty across racial groups and across groups defined by the educational attainment of the head. Those in the Other race group (neither white nor black) experienced the largest drop in poverty—a decline of 4 percentage points or 31.8 percent—and this change is statistically significant.[12] However, we cannot reject the hypothesis that the decline in poverty are the same across racial groups. We also find that poverty declined broadly across demographic groups when looking at the sample of responders in their fifth month only (Appendix Table 4), although the declines are somewhat more muted. For this smaller sample, the decline in poverty for the Other race group relative to the other race groups is even larger, but the differences across groups is still not statistically

[12] The Other race group includes American Indian, Alaska Native, Native Hawaiian or Other Pacific Islander (16 percent based on the May 2020 survey), Asian (58 percent), and two or more races reported (26 percent).

significant. We also considered whether the short-run patterns for income poverty differed across states depending on state-level COVID-19 related deaths or on how states responded to the pandemic. In each of these cases we find that poverty rates declined similarly across these groups.

Looking beyond poverty estimates, we also consider how the COVID-19 pandemic affected different points in the distribution of income. In Figure 7 we report estimates of the 10th, 25th, 50th, and 75th percentiles for the period from January 2019 to May 2020. Then, in Table 2, we report estimates of the 25th percentile for each month between January and May of 2020, as well as changes in the 25th percentile between the pre-and post-COVID-19 period defined as January-February 2020 and April-May 2020, respectively. For both the figure and the table, the results are for the sample of responders in the first and fifth months of the survey. Results for the subsample that includes only responders in their fifth month are reported in Appendix Table 5.

The results in Figure 7 show that income for each of the percentiles we report remains flat for the period from January 2019 through February 2020. Then, incomes start to rise somewhat in March, except at the 75th percentile. Then income rises more noticeably at all percentiles in April and continues to rise at the 10th percentile in May. Focusing in on the 25th percentile of family income for the five most recent months (Table 2), we see annual family income increased from about $46,000 in January to about $51,000 in May, an increase of more than $5,000, or 11 percent.[13] This rise is statistically significant. As with our results for poverty, we find consistent evidence that income rose between the pre- and post-COVID period for all of the subgroups that we consider, and in nearly all cases the rise is statistically significant.

The Effect of Government Policy on Changes in Income

That we find poverty declined and income rose in the first few months after the start of the pandemic, despite the fact that earnings fell sharply, suggests that the government policy response to the pandemic had a substantial effect on income. We can estimate the direct impact of payments to individuals by calculating the differences in poverty and other income statistics relying of measures of family income that alternatively include and exclude the government benefits. Since we directly observed income including the benefits, we only need to calculate a second income measure that subtracts those benefits. Although we do not directly observe

[13] The January number is about 1.75 times the federal poverty line for a family of four.

receipt of the EIPs and the expanded UI benefits, we have sufficient information in the Monthly CPS to calculate the potential benefits that each family could receive—annual income, family size and structure, unemployment status and duration.

In particular, for our sample from the May CPS we impute benefits for the three main government programs that directly transferred cash income to individuals and families—the Economic Impact Payments (EIPs), the Pandemic Unemployment Compensation (PUC) program and the Pandemic Unemployment Assistance (PUA) program—as well as for regular UI, as these payments also expanded significantly after the start of the pandemic..[14] Imputing EIPs is straightforward as nearly all income eligible individuals and families received such payments. So, we calculate the appropriate benefit amount based on family income, size and composition. See the Appendix for a detailed description of this procedure. On aggregate it appears that our imputation method accurately captures total EIPs paid out. The weighted sum of our total EIPs for the May CPS totaled $277 billion, which is only about 8 percent more than the actual amount of payments through May 22, 2020 ($257 billion) as reported by the IRS.

To impute benefits from the PUC program, which provides an additional $600 per week in UI benefits, we assume that all those who report being unemployed in the May CPS receive PUC. We calculate the total benefit amount for each of these recipients as $600 times the number of weeks continuously unemployed, and set the maximum amount of PUC at $4,800 ($600*8 weeks), because the first payable week for PUC was the week beginning March 29, 2020, which is eight weeks before the end of the target interview week for the May CPS. Finally, we calculate the family-level PUC by summing all PUC payments in the family. The weighted sum of our PUC payments ($75.4 billion) compares favorably to the estimated amount of PUC benefits paid out ($74.4 billion). See the Appendix for more details.

We also impute PUA and regular UI benefits for those who report being unemployed. We want to calculate the benefits from these programs separately because PUA is part of the government's response to COVID, while regular UI payments reflect government policy that was already in place prior to the pandemic. To calculate the benefits from each of these programs separately, we rely on the fact that, for recent months, about a third of total UI claimants are

[14] We do not impute benefits for another program that expanded UI benefits, the Pandemic Emergency Unemployment Compensation (PEUC) program, because this program extended by 13 weeks the duration of UI benefits, which has affected very few claims up to this point.

PUA claimants.[15] So, we randomly select a third of the individuals who report being unemployed in the May CPS and impute a PUA benefit for them that is equal to the number of continuous weeks of unemployment multiplied by the average weekly UI benefit for the first quarter of 2020, $383. We set the maximum amount of PUA for an individual at $6,511 ($383*17 weeks), because PUA claimants were eligible to receive retrospective benefits back to the last week of January 2020, which is 17 weeks before the end of the target interview week for the May CPS. We then sum these PUA benefits across individuals in the family to get the family level PUA benefit. We impute regular UI benefits for the unemployed individuals that are not randomly selected to receive PUA. Their total regular UI benefit for the COVID period is calculated as the average weekly benefit times the number of continuous weeks of unemployment, capping the number of weeks at 8. Again, for these UI benefits the weighted totals that we impute are fairly comparable to administrative totals. We impute benefits totaling $51.2 billion ($18.2 billion for PUA and $33.0 billion for regular UI), while our estimate of the total benefits paid based on administrative data is $47.5 billion ($15.7 billion for PUA and $31.8 for regular UI).

That we are imputing PUC and PUA benefits only to those who report being unemployed in the May CPS will lead us to understate true UI benefits because, under the expanded rules, some individuals who were not looking for work could still receive benefits and others may have received PUC and/or PUA benefits but had already become re-employed by the time of the May CPS survey. On the other hand, our approach might lead us to overstate benefits because we are assuming that all the unemployed receive UI benefits, while some unemployed are ineligible and some eligible individuals do not actually file a claim. That our imputed dollars match fairly well with administrative aggregates suggests that these biases roughly offset each other.

Using these imputed benefits, we calculate changes in the share of individuals with family incomes below the poverty line and multiples of the poverty line using income with and without these benefits. In the first row of Table 3 we report our main poverty estimates from Table 1. These estimates are based on reported total annual family income, and therefore, in theory, include EIPs and both the expanded and regular UI benefits. We then calculate poverty, subtracting from income these government benefits for our May CPS sample. In the last column we report the change in poverty between January 2020 and May 2020 for each measure of

[15] See Department of Labor's Weekly UI Claims report released June 18,2020: https://oui.doleta.gov/unemploy/claims_arch.asp

poverty. When all of these government policies are excluded we find that poverty rises by 0.4 percentage points between January and May, although this rise is not statistically significant. In other words, more than the entire decline in poverty that we reported earlier can be accounted for by the EIPs and UI benefits. Thus, we estimate that poverty would have risen in the absence of these programs. To determine the relative contribution of these programs in reducing poverty we exclude each of them separately. When we exclude the EIPs, the poverty rate for May is 9.8 percent, as compared to an 8.5 percent poverty rate when these payments are not excluded, a difference of 1.3 percentage points. If, instead, we exclude only the expanded UI benefits (PUC and PUA), then the poverty rate in May is 9.2 percentage points, which is 0.7 percentage points higher than the actual estimate for May. Taken together these results indicate that both the EIPs and the expansion of UI benefits played an important role in the decline in poverty, but the impact was somewhat larger for the EIPs.

In the remaining panels of Table 3 we consider the effects of these policies on higher points in the income distribution: 200 percent, 300 percent, and 500 percent of the poverty line. As we move up the income distribution the effect of the policies decreases in percentage terms, which is expected given the targeted nature of these programs. The estimates in the top panel suggests that the effect of all programs was to reduce poverty by 23 percent (from 11 percent to 8.5 percent). These combined programs reduced the fraction of families with income below 200 percent of the poverty line by 10 percent, the fraction below 300 percent of the poverty line by 7.5 percent, and the fraction below 500 percent of the poverty line by 3.1 percent. The EIPs have a noticeable impact on higher points in the distribution, even at 500 percent of the poverty line, but the effect of the UI programs falls at higher points in the distribution. For example, removing UI benefits from income has little effect on the fraction of individuals with income below 500 percent of the poverty line.

VI. Comparisons of Family Income Data from the Monthly CPS to Other Sources

Because the Monthly CPS family income data have been rarely used to measure income or poverty, we benchmark them and examine their accuracy by comparing them to alternative sources of data on income. We consider how these different sources of income align both in levels and in trends. We are also interested in assessing whether monthly updates to an annual measure of income or poverty, which we can do with the Monthly CPS data, anticipate changes

that are later revealed by survey data that are only available annually, such as the CPS ASEC. We are also interested in whether within-year variation in family income from the Monthly CPS aligns with data from other sources. These comparisons will provide information that will allow researchers to identify the strengths and weaknesses of these vital, but rarely used, public-use data and aid their use and interpretation.

The most direct comparison for the Monthly CPS is the Annual Social and Economic Supplement (ASEC) to the CPS as this survey is administered as a supplement to a subset of the Monthly CPS sample each February, March, and April. The CPS ASEC is the source of official income statistics in the U.S. The income questions in both surveys are designed to capture a similar concept of income: pre-tax money income. One important distinction between these measures is that the Monthly CPS measure relies on a single, global question about income over the past 12 months from all sources and all individuals in the householder's family, while CPS ASEC income is derived from information on more than 25 different income sources in the household for the previous calendar year for all individuals ages 15 and above. Thus, comparisons of income in the Monthly CPS to income in the CPS ASEC can shed light on the extent to which global questions about income can capture income from many different sources.

To assess the comparability of patterns across these different sources, in Figure 8 we report income poverty using both the Monthly CPS and the CPS ASEC for the period from 2005 through 2020. For the CPS ASEC estimates, we restrict the sample to individuals in householder families only, because this is the sample for which we observe income in the Monthly CPS. For comparison, we also report the official U.S. poverty rate, which is derived from the CPS ASEC data. The only difference between these two measures from the CPS ASEC is that the official measure also includes individuals who are outside the householder's family. Because our sample from the Monthly CPS is much smaller than that from the CPS ASEC, and is therefore noisier, we also report a 3-month moving average of the Monthly CPS poverty rate. For all measures, the x-axis indicates the most recent month of the income reference period. Thus, we plot the estimates from the CPS ASEC in December of each year because the reference period is the calendar year, but for the Monthly CPS we plot the estimates in the interview month.

The results in Figure 8 indicate that individuals in householder families have lower poverty than other individuals—the official poverty rate is about 1 percentage point higher than the measure from the CPS ASEC that excludes individuals outside the householder's family. The

poverty estimates from the Monthly CPS are higher than the comparable measures from the CPS ASEC, typically by 1 to 2 percentage points. This difference in levels suggests that the more detailed income questions that are asked in the CPS ASEC capture more income than the single, global questions about family income. For changes over time, however, the patterns are quite similar across these two series. For example, between December 2007 and December 2010, annual CPS ASEC poverty rose by 20 percent, while annual Monthly CPS poverty (3-month moving average) rose by 27 percent. Between December 2014 and December 2018, CPS ASEC poverty fell by 21 percent while CPS Monthly poverty fell by 23 percent.

Figure 8 also shows the advantage of using the Monthly CPS to provide timely estimates. The first evidence of the negative impact of the Great Recession on official poverty did not come until September of 2009, when official poverty estimates (and the CPS ASEC data) were released for calendar year 2008. With the Monthly CPS, however, we see annual poverty rising as soon as June of 2008—an estimate that could have been calculated in July of 2008, a full 14 months before the official estimates became available. The timely Monthly CPS data means that we can already see how poverty was changing in the months leading up to and shortly after the start of the COVID-19 pandemic, and we will continue to get an early look at how economic well-being changes as macroeconomic circumstances evolve over the coming months.

In Figure 9, we report the trends for various percentiles of real family income for both the Monthly CPS and the CPS ASEC for the period from 2005 through 2020. Again, we see that CPS ASEC income exceeds Monthly CPS income, but for each of the percentiles we report, the changes over time are quite similar for the two data sources.

We also compare income in the Monthly CPS to income in the Consumer Expenditure Survey (CE). The CE is a nationally representative survey that is the most comprehensive survey of consumption data in the United States. It is a rotating panel survey that interviews about 7,500 families each quarter. While the focus of the survey is spending data, it also collects information on family income. The nice feature of this comparison is that the CE interviews families throughout the year with the reference period for the income questions the previous 12 months, which aligns with the reference period for the Monthly CPS income question. For the period from the first quarter of 2014 through the end of 2018, we report in Figure 10 estimates of income poverty on a quarterly basis using the CE data alongside the estimates from the Monthly CPS, aggregated up to the quarter. As is shown in Figure 10, the long-term trends in poverty

from the Monthly CPS line up very closely with those from the CE. Between the first quarter of 2014 and the last quarter of 2018, poverty fell by 22 percent using data from the Monthly CPS and by 16 percent using data from the CE. Within-year variation in poverty is also comparable across these sources. These patterns suggest that changes in family income that are captured in the Monthly CPS are consistent with other, commonly used, nationally representative data sources.

VII. Relation to Other Information on Income and Well-Being during the Pandemic

In recent months, a flood of near real-time data has shed light on aspects of the changes in economic well-being of the population during the very early stages of the pandemic. At least two patterns are notable about this research. First, the other sources of evidence, from surveys as well as administrative sources, are largely consistent with, or can be reconciled with, the evidence in this paper. Second, while these other sources provide important information about how the economic circumstances of individuals and families have changed during the pandemic, the evidence we present from the Monthly CPS has important advantages.

The results from many sources are consistent or can be reconciled with our results. The Bureau of Economic Analysis (BEA) Personal Income and Outlays data (currently available through April 2020 and shown in Figure 5) indicate that real disposable personal income fell by 1.8 percent in March but rebounded to rise by 13.4 percent in April calculated as the change from the previous month in both cases. Cox et al. (2020) finds that income flows into household bank accounts and saving increased early in the pandemic. Thus, the income rise that we find is consistent with the other evidence

The BEA also reported that real personal consumption expenditures fell by 6.7 percent in April followed by an additional fall of 13.2 percent in May. Cox et al. (2020) and Chetty et al. (2020) also find a decline in April in spending as recorded in bank accounts or aggregated credit records, respectively, though they both find an uptick in May. The rise in income and savings can be reconciled with the decline in consumption because the opportunities for spending were limited by stay at home orders and travel bans as well as personal choices to avoid contracting or spreading the virus, and uncertainty about future income streams and other factors.

While aggregated national accounts or financial records yield useful information on aggregate changes in consumption, they do not provide disaggregated estimates of economic

well-being by demographic group, which is important for understanding which groups are hurt the most by the pandemic. Distributional statistics such as income percentiles or poverty rates that are needed to assess who is affected by the pandemic also cannot be obtained from these data. Household financial records have the potential to provide disaggregated and distributional detail, but are not representative of the entire population, importantly missing a substantial segment of the population without bank accounts.

There are important and timely new survey sources that provide invaluable information on other domains, but they have little or no information on income. These surveys include the Federal Reserve Board Survey of Household Economics and Decisionmaking (SHED) (Federal Reseerve Board 2020), the Census Bureau's Household Pulse survey (U.S. Census Bureau 2020), and the Data Foundation's COVID Impact survey (Data Foundation 2020; Hamilton Project 2020a,b). A description of these surveys can be found in Appendix Table 6. In short, all of these have nonresponse rates of at least 97 percent (while the Monthly CPS has a comparatively low nonresponse rate of 50 percent), and none of the surveys ask about the level of post-pandemic income. The SHED survey asks a qualitative question about income in March relative to income in February. The Census Pulse survey asks a yes/no question about whether anyone in the household has experienced a loss of employment income. Since the answers are only categorical in both cases, the questions are not useful for calculating magnitudes.

These surveys provide important information on well-being beyond income from questions on food insecurity (COVID Impact), or ability to pay rent (Census Pulse), for example. These sources as well as evidence on food bank usage indicate increased hardship after the pandemic. We should emphasize that the profound disruptions from the pandemic such as the closures of schools, store, churches and other facilities, the uncertainty about future income streams, concerns about the health of family and friends, and other disruption could lead to these increases in hardship. The uptick in deprivation could be real, though there are reasons to be less certain of the magnitude of any change over time given the different source of the pre and post-pandemic information. In terms of policy, the important fact gained from this paper is that the increase in deprivation is not due to the overall income loss, but rather due to other disruptions of the pandemic including possibly the unevenness of the income flows. Furthermore, given the evidence that small changes in wording or question order can have large impacts on survey results, having data from a survey that has been fielded in the same form for decades allows us to

be more certain about any implications from our evidence than we could when using a new survey without historical benchmarks.

VIII. Discussion and Conclusions

We find that percentiles of income did not fall and the poverty rate did not rise in the early months of the pandemic, using the only available source of representative and timely income data for the U.S. population. We further show that the stimulus payments and expanded unemployment insurance changed what would have been an increase in poverty into a reduction. While we follow the official definition of poverty in using a full year reference period and official poverty thresholds, the results are informative regarding changes in income in the last few months during the pandemic. By focusing on change in income between February and May, we are examining the effects on income during the pandemic. Ideally we would examine high quality nationally representative income data for shorter time periods as well, but these data do not exist. Short run decreases in income for those without savings or another buffer can lead to substantial increases in hardship. While we show that annual income increased at all percentiles, this improvement in the overall distribution of income is still consistent with a share of families experiencing substantial income drops. Given the observed data, a substantial short run fall for a small number of families would have to be combined with small increases for a much larger number.

A number of potential biases in our results are worth noting. We suspect there is some tendency, it is unclear how strong, to emphasize recent income patterns in reporting on the past year. Such a bias would mean that our estimates more closely approximate changes in income over a shorter horizon than the nominal one year reference period. We also suspect that the shift in income from earnings, a well-reported source of income, to unemployment insurance, a poorly reported source, means that we may have understated any improvements or overstated any declines in income. In recent years about ninety percent of earnings has been reported in the CPS, while only about sixty percent of unemployment insurance (Meyer, Mok and Sullivan 2015; Rothbaum 2015).

This study has important implications for both policy and future research. A better, more timely understanding of income and poverty will help federal, state, and local policymakers

allocate scarce resources to minimize the impact of COVID-19 (and future pandemics or other economic shocks) on vulnerable populations. In addition, by assessing the validity of these new measures using several sources of income, this study lays the foundation for future work on timely poverty measurement and allows others to understand the strengths and weaknesses of these vital, but rarely used, public-use data.

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Appendix

Imputing Government Benefits

To determine the role of government programs we impute the value of program benefits for the three main new government programs that directly transferred cash income to individuals and families—the Economic Impact Payments (EIPs), the Pandemic Unemployment Compensation (PUC) program, and the Pandemic Unemployment Assistance (PUA) program—as well as for regular UI, as these payments also expanded significantly after the start of the pandemic.

1. Economic Impact Payment (EIP)

Imputing the EIP is straightforward as nearly all income eligible individuals and families received such payments, and eligibility was primarily determined by family income, size and composition, all of which we observe in the Monthly CPS. However, to calculate the EIP, in some cases we have to make assumptions about 1) who is in the tax filing unit and 2) how total family income is divided across families with multiple tax filing units.

1.1 Specifying the tax filing unit
To assign individuals in the Monthly CPS to tax filing units we make four assumptions. First, each family unit within a household is a separate tax unit. In particular, a primary family and a subfamily file tax returns separately. For a household with multiple subfamilies, each subfamily is a separate tax unit. Second, a married couple in each family files tax jointly. Third, a person age 23 or below who is not the head of family or the spouse of family head (i.e. child or other relative of family head) belongs to the family head's tax unit as a dependent. Fourth, a person age 24 or above who is not the head of the family or the spouse of the family head is a separate tax unit.

1.2. Specifying the income of tax filing units
We first allocate family income in a household assuming that each family's contribution to household income is proportional to the number of adults in the family. For example, suppose that a household consists of two families where the first family has two adults and the second family has three adults. We assign family income of 2*(total household income/5) to the first family and family income of 3*(total household income/5) to the second family. Similarly, we calculate tax filing unit income as family income multiplied by the percent of adults in a family who belongs to the tax filing unit.

1.3 Household level EIP
Having the imputed tax filing units and their income, we calculate the amount of EIP for each tax filing unit by applying the EIP eligibility/benefit rules. Specifically, we assign $1,200 to a single tax unit who has income less than $75,000. We apply the benefit reduction rate of 5 percent for each dollar in excess of $75,000. We assign $2,400 to a married couple tax unit with income less than $150,000 and apply the benefit reduction of 5 percent for each dollar in excess of $150,000. For each dependent, we assign an additional $500 to a tax unit. Finally, we calculate the household-level EIP as the sum of EIPs in all tax filing units of a household. These imputed

EIPs, when weighted using survey weights adjusted for our subsample restrictions,[16] total $277 billion, which is about 8 percent greater than the actual total payments of $257 billion through May 22th (as reported by the IRS).

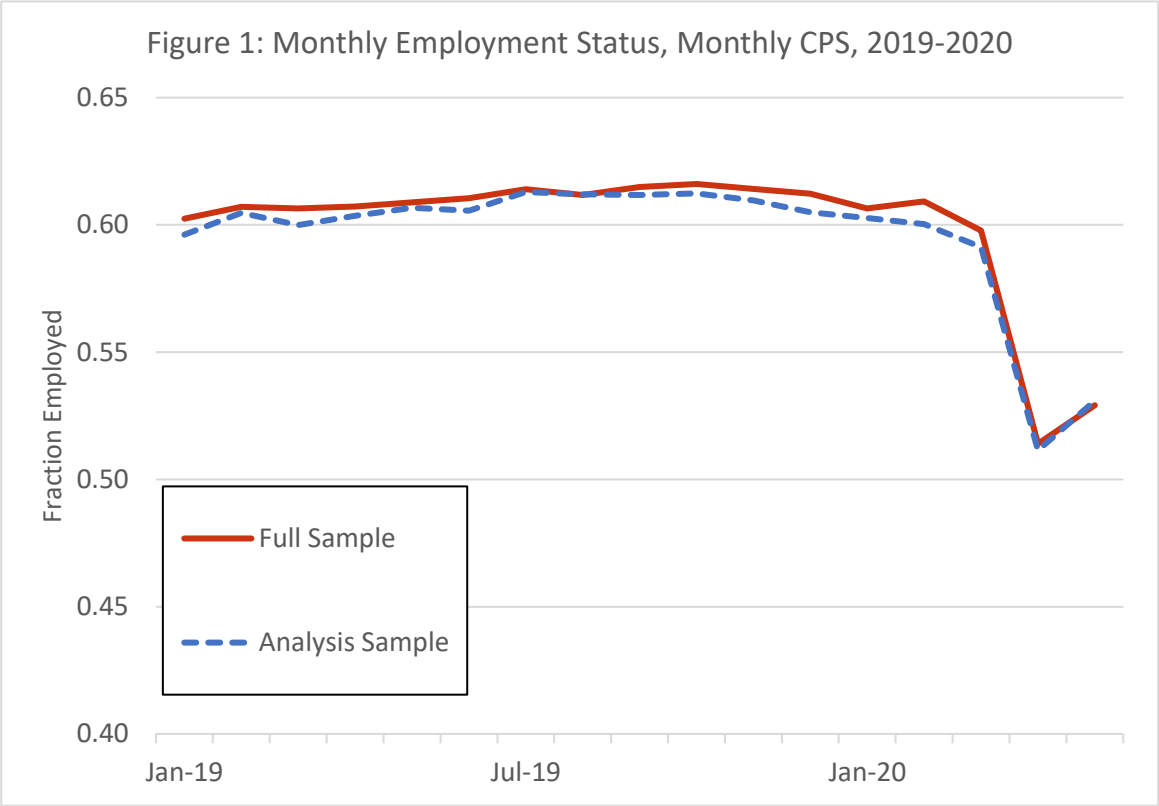
2. The Pandemic Unemployment Compensation (PUC) Program

To impute PUC benefits, which provides an additional $600 per week in UI benefits, we assume that all those who report being unemployed in the May CPS receive PUC. We calculate the total benefit amount for each of these recipients as $600 times the number of weeks continuously unemployed, and set the maximum amount of PUC at $4,800 ($600*8 weeks) because the first payable week for PUC was the week beginning March 29, 2020, which is eight weeks before the end of the target interview week for the May CPS. Finally, we calculate the family-level PUC by summing all PUC payments in the family. The weighted sum of our PUC payments ($75.4 billion) compares favorably to the estimated amount of PUC benefits paid out ($74.4 billion).

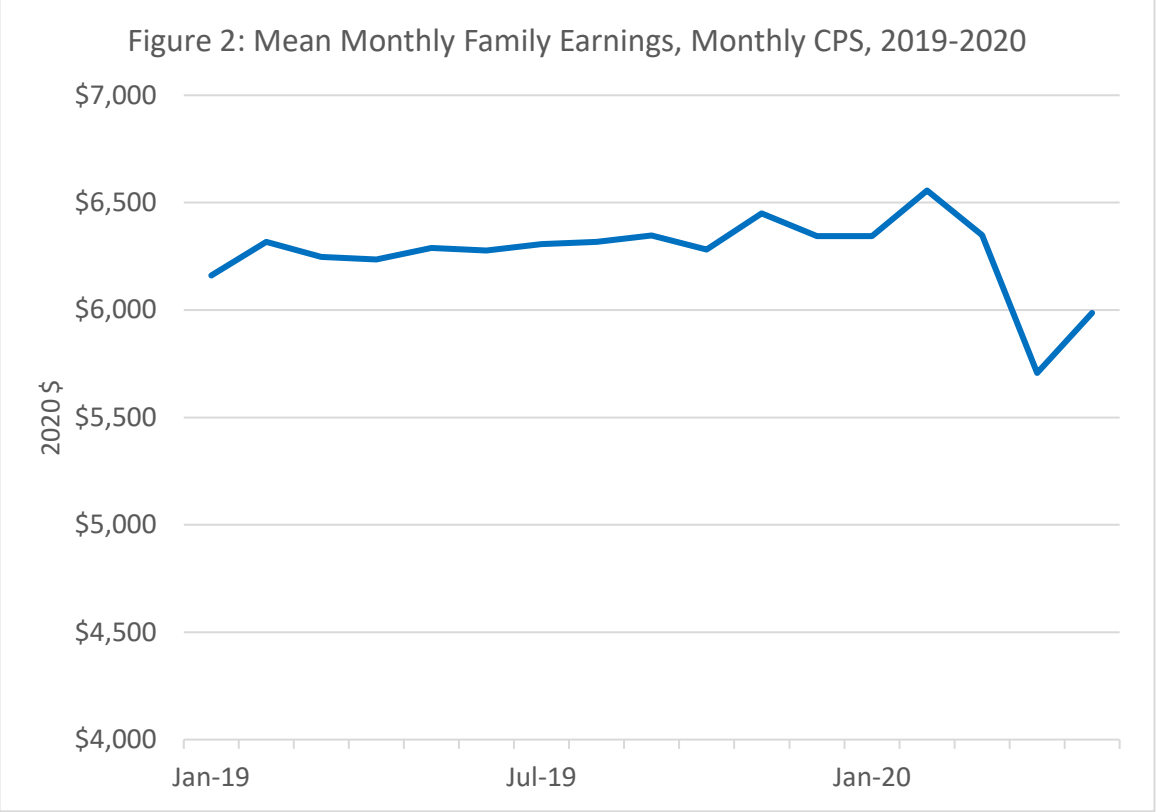
3. The Pandemic Unemployment Assistance (PUA) Program and Regular UI

We also impute PUA and regular UI benefits for those who report being unemployed. We want to calculate the benefits from these programs separately because PUA is part of the government's response to COVID, while regular UI payments reflect government policy that was already in place prior to the pandemic. To calculate the benefits from each of these programs separately, we rely on the fact that, for recent months, about a third of total UI claimants are PUA claimants. So, we randomly select a third of the individuals who report being unemployed in the May CPS and impute a PUA benefit for them that is equal to the number of continuous weeks of unemployment multiplied by the average weekly UI benefit for the first quarter of 2020, $383. We set the maximum amount of PUA for an individual at $6,511 ($383*17 weeks), because PUA claimants were eligible to receive retrospective benefits back to the last week of January 2020, which is 17 weeks before the end of the target interview week for the May CPS. We then sum these PUA benefits across individuals in the family to get the family level PUA benefit. We impute regular UI benefits for the unemployed individuals that are not randomly selected to receive PUA. Their total regular UI benefit for the COVID period is calculated as the average weekly benefit times the number of continuous weeks of unemployment, capping the number of weeks at 8. For these UI benefits the weighted total we impute exceeds the administrative totals modestly. We impute benefits totaling $51.2 billion ($18.2 billion for PUA and $33.0 billion for regular UI), while our estimate of the total benefits paid based on administrative data is $47.5 billion ($15.7 billion for PUA and $31.8 for regular UI).

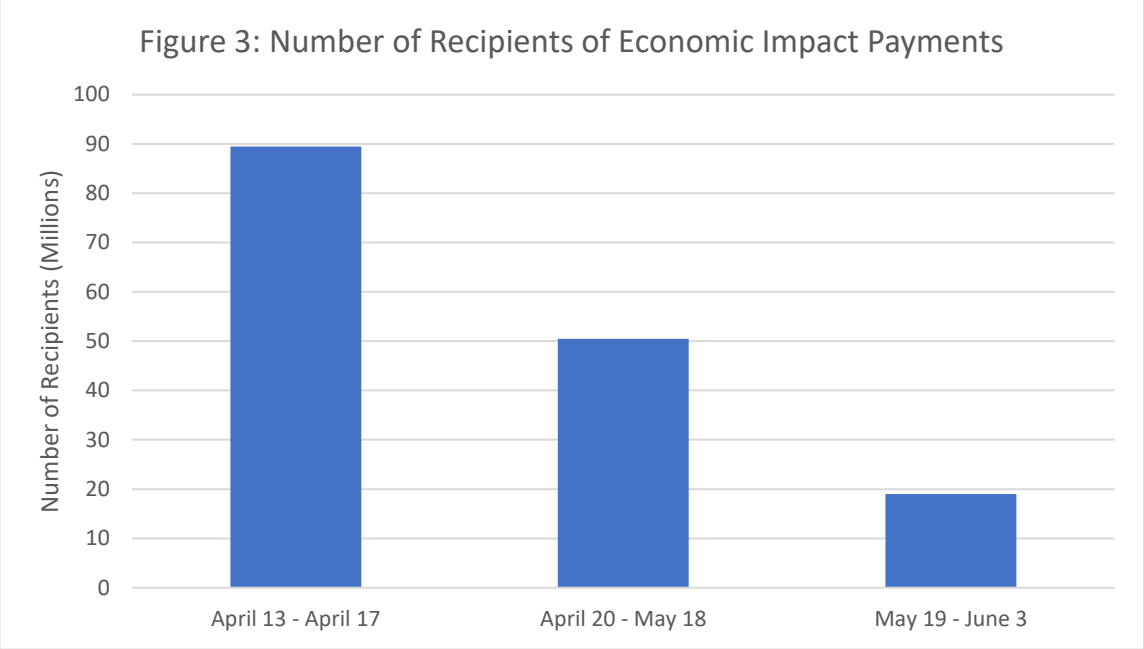
[16] Because our analysis sample is a subsample of the entire CPS sample, we made adjustment to the survey weights so that the sum of the weights in our sample represents the total U.S. population. In particular, we apply an adjustment factor of 5.66 to the survey weight where the adjustment factor is calculated as the sum of the weights in the entire CPS sample divided by the sum of the weights in our analysis sample.



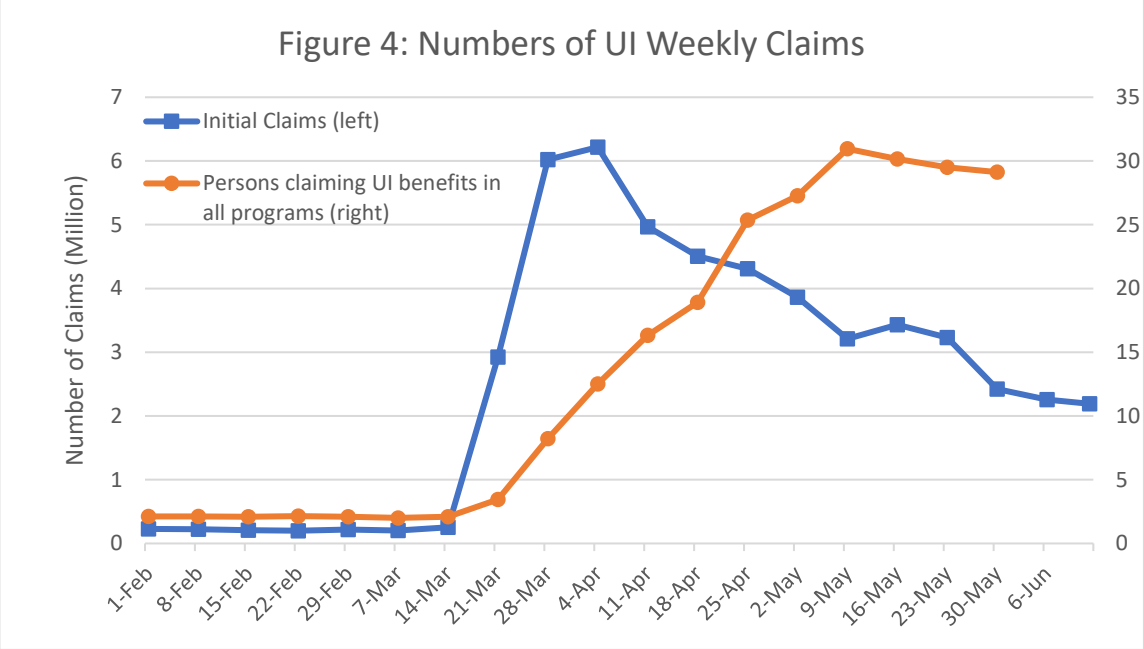
Note: The full sample includes individuals 16 and older in any months in the survey, while the analysis sample includes individuals 16 and older in their 1st or 5th month in the survey.



Note: The sample includes individuals in their 4th or 8th month in the survey who are included in the householders' families. The monthly family earnings is calculated as the total weekly earnings for the respondent's family multiplied by 4.3. The family earnings is equivalence-scale adjusted and equivalized to a family with 2 adults and 2 children. The earnings is adjusted over time using the PCE Chain-type price index and is expressed in April 2020 dollars.

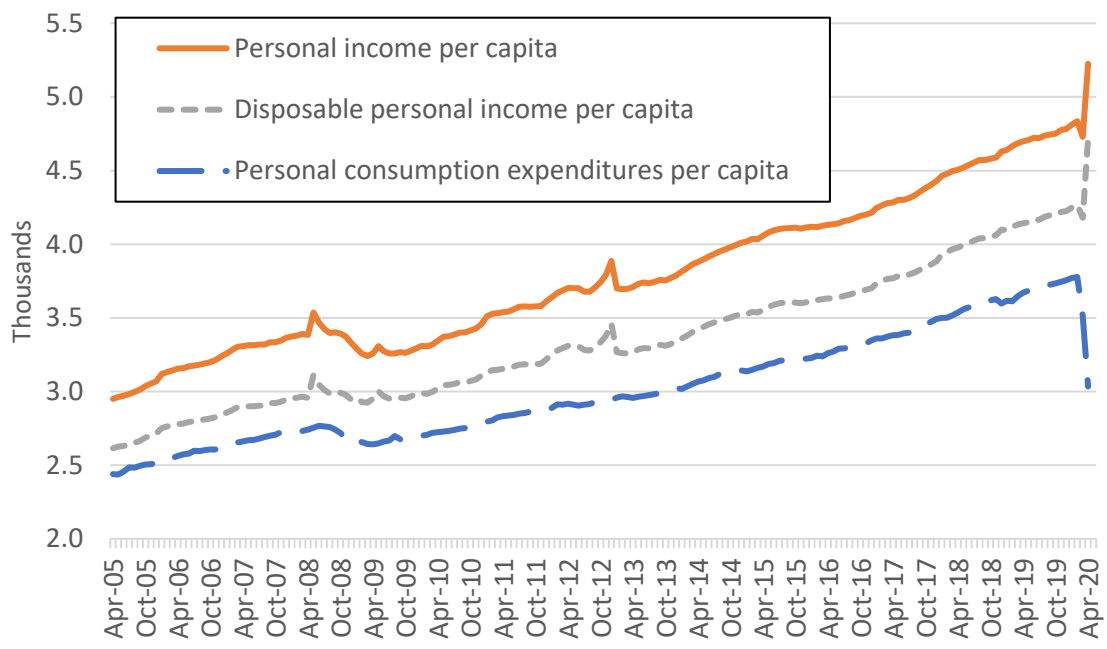


Note: Recipients are measured at the individual level rather than family level. Data are from the IRS website (https://www.irs.gov/newsroom/news-releases-for-current-month).

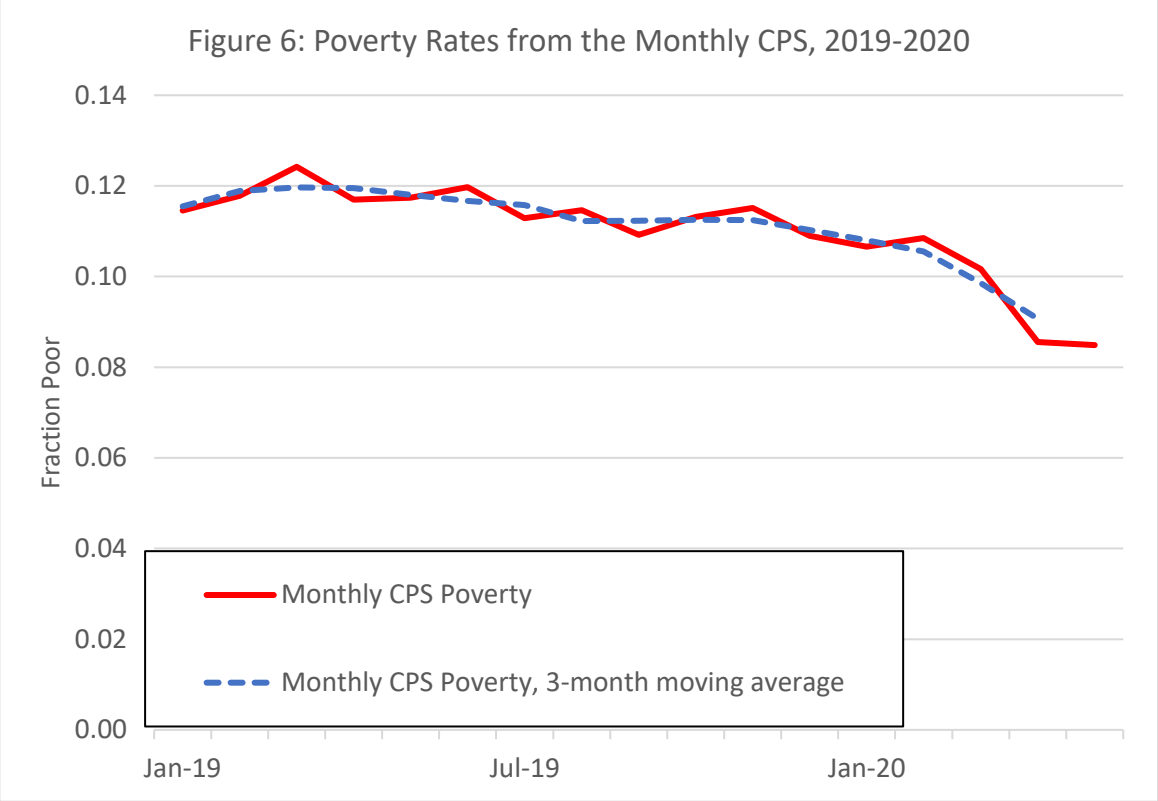


Note: We report the non-seasonally adjusted numbers and include regular state programs, the federal Pandemic Unemployment Assistance (PUA) program, and the programs for federal employees (UCFE), and newly discharged veterans (UCX). UCFE and UCX are excluded from the initial claim number for June 13. See https://www.dol.gov/ui/data.pdf. UCFE and UCX are excluded from the initial claim number for June 13. All programs include the regular state program, PUA, UCFE, UCX, Pandemic Emergency UC, Extended Benefits, State Additional Benefits, STC/Workshare. Data are from the USDOL ETA website.

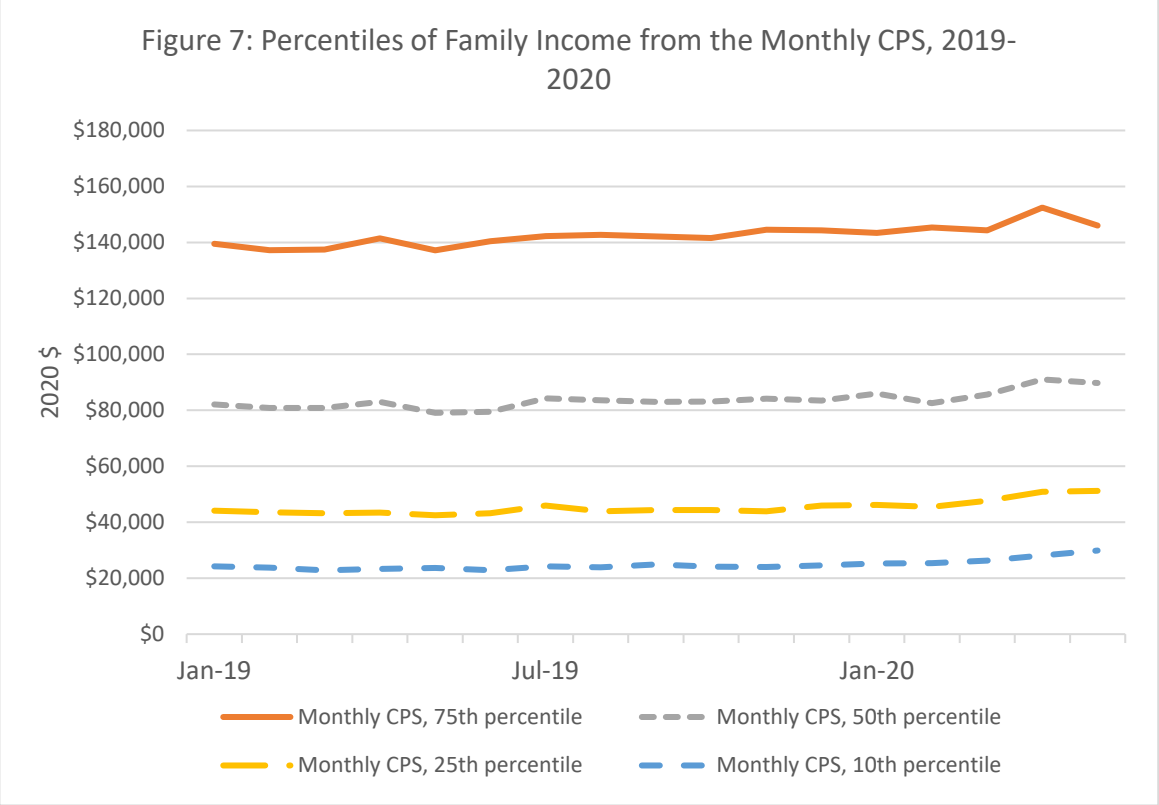
Figure 5: Monthly NIPA Personal Income and Consumption, 2005-2020



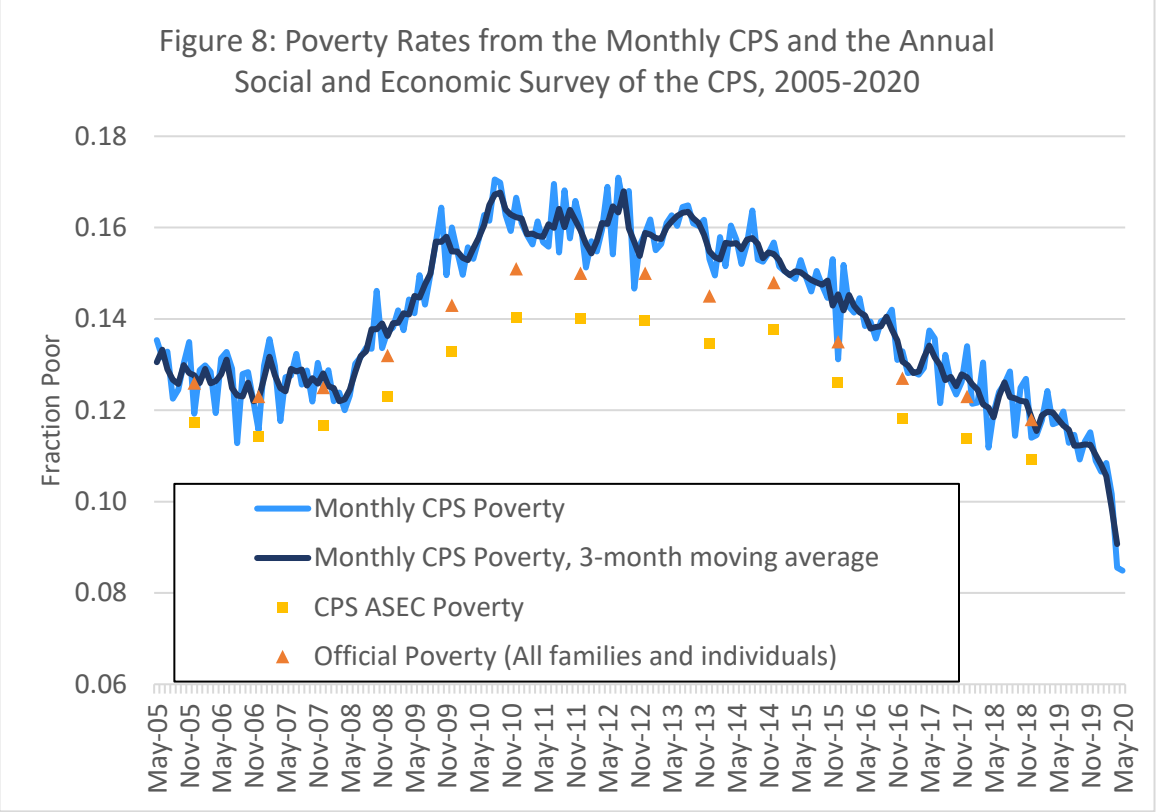
Note: Data are taken from the Bureau of Economic Analysis' National Income and Product Accounts (NIPA) Data Archives, Section 2- Personal Income and Outlays. Original data is annualized, therefore each data point is divided by 12 to obtain a monthly estimate.



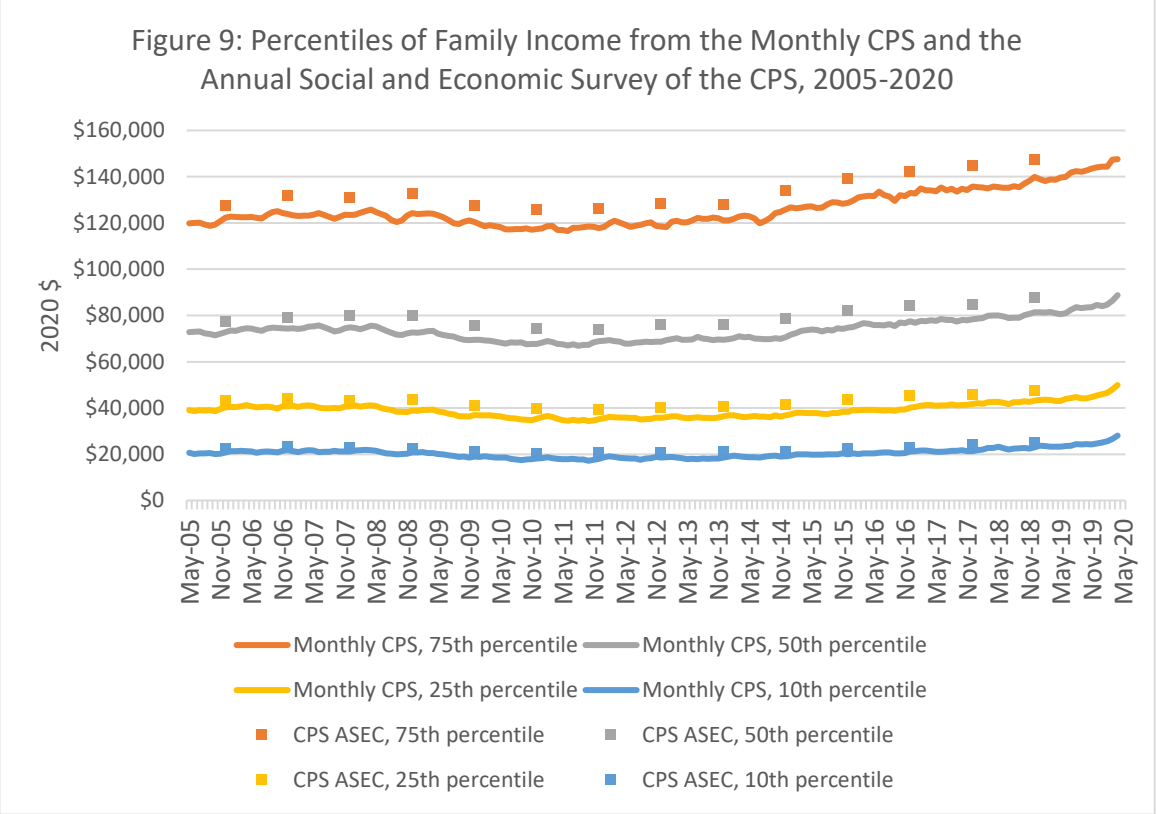
Note: The sample includes individuals who are included in the householders' families and those in their 1st or 5th month in the survey. Individuals who have imputed income in the Monthly CPS are excluded.



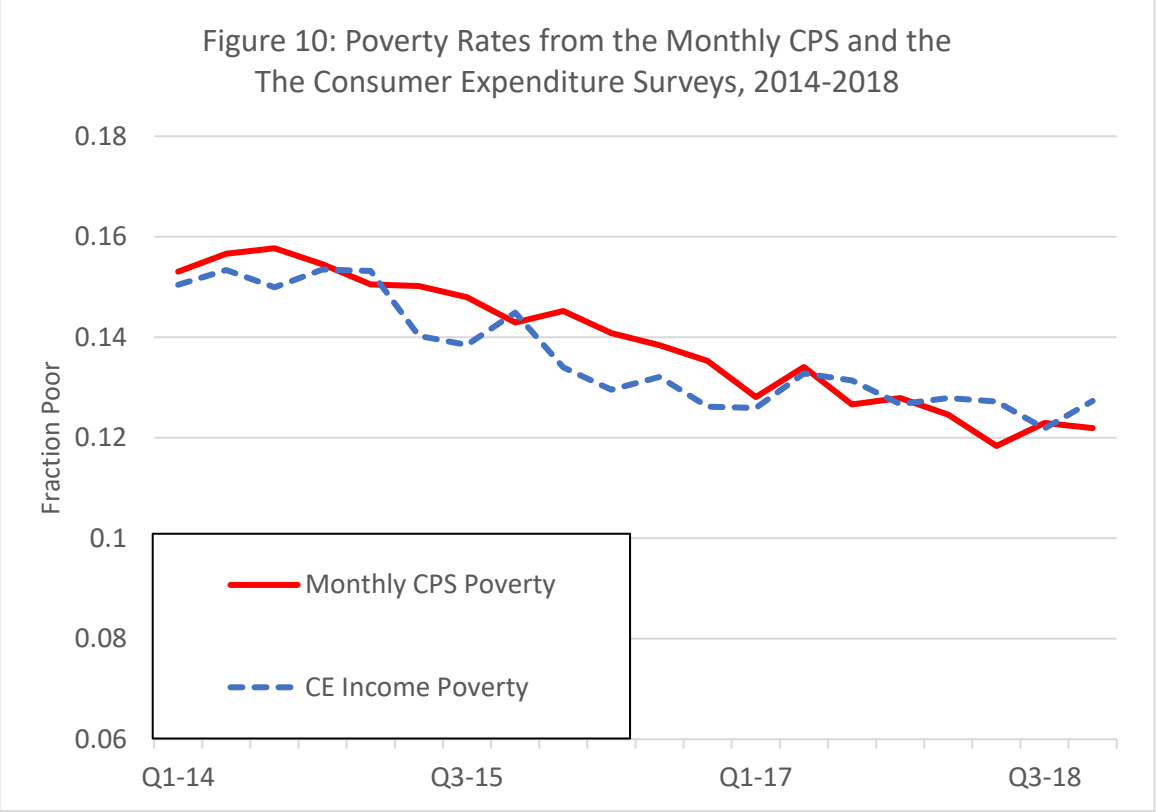
Note: The sample includes individuals who are included in the householders' families and those in their 1st or 5th month in the survey. Individuals who have imputed income in the Monthly CPS are excluded. The family income is equivalence-scale adjusted and equivalized to a family with 2 adults and 2 children. The income is adjusted over time using the Personal Consumption Expenditures Chain-type Price Index and is expressed in April 2020 dollars.



Note: The Monthly CPS and CPS ASEC samples include individuals who are included in the householders' families. The Monthly CPS sample is restricted to individuals with non-imputed income who are in their 1st or 5th month in the survey. The three-month moving average is calculated as the unweighted average of poverty rates in month t-1, t, and t+1.



Note: The Monthly CPS and CPS ASEC samples include individuals who are included in the householders' families. The Monthly CPS sample is restricted to individuals with non-imputed income who are in their 1st or 5th month in the survey. The family income is equivalence-scale adjusted and equivalized to a family with 2 adults and 2 children. The income is adjusted over time using the PCE Chain-type Price Index and is expressed in April 2020 dollars.



Note: Poverty rates are calculated for each survey quarter. The Monthly CPS sample includes individuals who are included in the householders' families and those in their 1st or 5th month in the survey. Individuals who have imputed income in the Monthly CPS are excluded. The CE income is calculated as the before-tax income less food stamps.

Table 1. Poverty Rates, Monthly CPS, 2020

Month	January	February	March	April	May	(April+May)-(Jan+Feb)
Full Sample	0.109	0.108	0.101	0.086	0.085	-0.023
	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.005)
Number of individuals	20,020	20,822	16,733	14,383	14,236	
Age						
Age 0-17	0.155	0.149	0.162	0.129	0.119	-0.028
	(0.010)	(0.010)	(0.012)	(0.013)	(0.012)	(0.011)
Age 18-64	0.098	0.097	0.084	0.072	0.076	-0.024
	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
Age 65+	0.076	0.086	0.074	0.070	0.064	-0.014
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Race						
White	0.095	0.090	0.086	0.073	0.075	-0.019
	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.005)
Black	0.178	0.208	0.211	0.167	0.152	-0.034
	(0.016)	(0.017)	(0.021)	(0.024)	(0.021)	(0.020)
Other	0.125	0.117	0.087	0.082	0.081	-0.040
	(0.015)	(0.015)	(0.013)	(0.017)	(0.019)	(0.017)
Head Education						
H.S. Degree or below	0.205	0.201	0.198	0.191	0.171	-0.022
	(0.011)	(0.010)	(0.013)	(0.015)	(0.014)	(0.013)
Some College or above	0.060	0.058	0.052	0.038	0.047	-0.016
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)
COVID19 Death Rate						
High Death Rate (>=10 per 100k)	0.096	0.108	0.101	0.083	0.078	-0.022
	(0.006)	(0.007)	(0.007)	(0.008)	(0.007)	(0.007)
Low Death Rate (<10 per 100k)	0.120	0.107	0.102	0.089	0.092	-0.023
	(0.007)	(0.007)	(0.008)	(0.008)	(0.009)	(0.008)
Date of Stay at Home Order						
Early Stay at Home (3/23 or before)	0.105	0.106	0.102	0.088	0.085	-0.019
	(0.007)	(0.007)	(0.008)	(0.009)	(0.008)	(0.008)
Late Stay at Home (after 3/23)	0.112	0.109	0.101	0.084	0.085	-0.027
	(0.006)	(0.006)	(0.007)	(0.008)	(0.008)	(0.007)
Date of State of Emergency Order						
Early State of Emergency (3/9 or before)	0.106	0.105	0.098	0.087	0.082	-0.021
	(0.007)	(0.007)	(0.008)	(0.009)	(0.008)	(0.008)
Late State of Emergency (after 3/9)	0.111	0.111	0.106	0.084	0.088	-0.025
	(0.006)	(0.006)	(0.007)	(0.008)	(0.008)	(0.007)

Note: The sample includes individuals who are included in the householders' families and who are in their 1st or 5th month in the survey. Individuals with imputed income are excluded from the sample. Standard errors are clustered at the household level.

Table 2. 25th Percentile, Monthly CPS, 2020

Month	January	February	March	April	May	(April+May)-(Jan+Feb)
Full Sample	$46,139	$45,822	$47,452	$51,111	$51,340	$5,244
	(822)	(865)	(1,033)	(1,296)	(1,246)	(1,042)
Number of individuals	20,029	20,825	16,739	14,387	14,243	
Age						
Age 0-17	$38,365	$37,399	$34,859	$41,996	$42,891	$4,561
	(1,379)	(1,114)	(1,693)	(2,108)	(1,574)	(1,459)
Age 18-64	$49,994	$50,090	$54,199	$56,572	$56,221	$6,355
	(1,308)	(934)	(1,361)	(1,267)	(1,261)	(1,213)
Age 65+	$47,154	$46,610	$49,020	$48,564	$50,623	$2,712
	(1,086)	(977)	(1,063)	(1,333)	(1,387)	(1,257)
Race						
White	$50,089	$49,751	$51,757	$54,678	$54,731	$4,785
	(1,176)	(917)	(1,354)	(1,111)	(1,457)	(1,120)
Black	$30,482	$30,231	$29,237	$37,805	$35,762	$6,427
	(1,601)	(1,331)	(1,823)	(3,087)	(2,312)	(1,993)
Other	$44,862	$43,930	$49,020	$56,852	$49,384	$8,722
	(3,165)	(2,433)	(2,123)	(4,097)	(5,014)	(4,031)
Head Education						
H.S. Degree or below	$29,684	$30,055	$29,728	$30,533	$33,429	$2,112
	(828)	(977)	(909)	(1,454)	(1,036)	(1,109)
Some College or above	$63,388	$62,904	$65,657	$70,001	$66,694	$5,201
	(1,103)	(1,366)	(1,743)	(1,852)	(1,665)	(1,377)
COVID19 Death Rate						
High Death Rate (>=10 per 100k)	$50,689	$47,649	$52,429	$55,090	$54,282	$5,517
	(1,458)	(1,032)	(1,848)	(1,948)	(1,678)	(1,570)
Low Death Rate (<10 per 100k)	$42,510	$44,348	$44,696	$47,470	$47,212	$3,913
	(1,207)	(951)	(1,311)	(1,206)	(1,539)	(1,052)
Date of Stay at Home Order						
Early Stay at Home (3/23 or before)	$50,089	$47,217	$52,257	$53,418	$50,997	$3,554
	(1,592)	(1,168)	(1,676)	(2,508)	(1,735)	(1,713)
Late Stay at Home (after 3/23)	$43,997	$44,635	$44,710	$49,851	$51,510	$6,364
	(1,184)	(1,109)	(1,225)	(1,322)	(1,933)	(1,353)
Date of State of Emergency Order						
Early State of Emergency (3/9 or before)	$47,889	$45,766	$49,760	$51,306	$51,740	$4,696
	(1,241)	(1,134)	(1,711)	(2,351)	(1,592)	(1,650)
Late State of Emergency (after 3/9)	$44,716	$46,067	$45,738	$50,871	$50,997	$5,542
	(1,227)	(1,121)	(1,349)	(1,426)	(2,147)	(1,474)

Note: The sample includes individuals who are included in the householders' families and who are in their 1st or 5th month in the survey. Individuals with imputed income are excluded from the sample. The family income is equivalence-scale adjusted and equivalized to a family with 2 adults and 2 children. The income is adjusted over time using the PCE Chain-type Price Index and is expressed in April 2020 dollars. Standard errors are clustered at the household level and are estimated using the bootstrap.

Table 3. Poverty Rates with and without COVID19 related Government Payments, Monthly CPS, 2020

Month	January	February	March	April	May	May-January
Panel A. Income<100% Poverty						
Actual Poverty	0.107	0.108	0.102	0.086	0.085	-0.022
	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.007)
w/o EIP and All UI Programs					0.108	0.002
					(0.006)	(0.008)
w/o EIP and PUC/PUA					0.106	0.000
					(0.006)	(0.008)
w/o EIP					0.098	-0.009
					(0.006)	(0.008)
w/o All UI Programs					0.096	-0.011
					(0.006)	(0.008)
w/o PUC/PUA					0.092	-0.015
					(0.006)	(0.007)
Panel B. Income<200% Poverty						
Actual Poverty	0.289	0.291	0.274	0.258	0.256	-0.033
	(0.007)	(0.007)	(0.008)	(0.009)	(0.008)	(0.011)
w/o EIP and All UI Programs					0.287	-0.002
					(0.009)	(0.011)
w/o EIP and PUC/PUA					0.283	-0.006
					(0.009)	(0.011)
w/o EIP					0.274	-0.015
					(0.009)	(0.011)
w/o All UI Programs					0.269	-0.020
					(0.009)	(0.011)
w/o PUC/PUA					0.266	-0.023
					(0.008)	(0.011)
Panel C. Income<300% Poverty						
Actual Poverty	0.445	0.462	0.442	0.417	0.422	-0.024
	(0.007)	(0.007)	(0.008)	(0.009)	(0.009)	(0.012)
w/o EIP and All UI Programs					0.456	0.011
					(0.009)	(0.012)
w/o EIP and PUC/PUA					0.453	0.008
					(0.009)	(0.012)
w/o EIP					0.446	0.001
					(0.009)	(0.012)
w/o All UI Programs					0.432	-0.013
					(0.009)	(0.012)
w/o PUC/PUA					0.429	-0.016
					(0.009)	(0.012)
Panel D. Income<500% Poverty						
Actual Poverty	0.695	0.693	0.684	0.664	0.676	-0.019
	(0.006)	(0.006)	(0.007)	(0.008)	(0.008)	(0.010)
w/o EIP and All UI Programs					0.698	0.003
					(0.008)	(0.010)
w/o EIP and PUC/PUA					0.696	0.002
					(0.008)	(0.010)
w/o EIP					0.693	-0.002
					(0.008)	(0.010)
w/o All UI Programs					0.680	-0.015
					(0.008)	(0.010)
w/o PUC/PUA					0.678	-0.016
					(0.008)	(0.010)

Note: EIP is imputed based on the family composition, and PUC/PUA are imputed based on the duration of unemployment. See Method Appendix for the details on the imputation procedure.

Appendix Table 1. Characteristics of the Monthly CPS samples by Interview Month, 2020

Survey month	Feb-20			Mar-20			Apr-20			May-20		
Interview month	1	5	2-4,6-8	1	5	2-4,6-8	1	5	2-4,6-8	1	5	2-4,6-8
Survey Nonresponse Rate	19.5	19.9	17.0	43.2	31.4	23.5	53.3	31.4	25.9	52.3	31.7	29.5
Missing Income Rate	0.20	0.27		0.19	0.26		0.26	0.28		0.27	0.29	
Male	0.48	0.49	0.49	0.48	0.49	0.49	0.48	0.50	0.49	0.49	0.49	0.49
White	0.77	0.77	0.77	0.79	0.77	0.77	0.77	0.76	0.77	0.76	0.77	0.77
Black	0.13	0.12	0.13	0.11	0.13	0.13	0.12	0.13	0.13	0.12	0.12	0.13
Age	38.3	38.6	38.3	38.5	37.9	38.3	38.9	36.9	38.3	38.1	37.5	38.2
Family Size	3.27	3.22	3.23	3.23	3.31	3.25	3.25	3.38	3.26	3.27	3.28	3.29
Number of Children	1.07	1.07	1.06	1.06	1.08	1.07	1.07	1.13	1.07	1.08	1.06	1.07
Single Parent	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.11	0.11	0.10	0.10	0.11
Married Parent	0.37	0.38	0.37	0.37	0.38	0.37	0.38	0.41	0.38	0.38	0.38	0.38
Single Individuals	0.14	0.14	0.14	0.13	0.13	0.14	0.12	0.12	0.14	0.13	0.13	0.13
Married w/o Children	0.18	0.18	0.19	0.19	0.20	0.18	0.20	0.18	0.19	0.20	0.20	0.19
Head 65 and Over	0.20	0.19	0.19	0.21	0.18	0.19	0.21	0.18	0.19	0.19	0.18	0.19
H.S. Dropout	0.32	0.31	0.31	0.32	0.32	0.32	0.30	0.33	0.32	0.30	0.31	0.32
H.S. Degree	0.21	0.21	0.20	0.20	0.20	0.20	0.20	0.19	0.20	0.19	0.20	0.20
Some College	0.21	0.21	0.21	0.21	0.22	0.21	0.21	0.21	0.21	0.21	0.21	0.21
College Degree or Above	0.26	0.27	0.27	0.27	0.27	0.27	0.29	0.27	0.27	0.30	0.27	0.27
Employed	0.49	0.49	0.49	0.48	0.48	0.48	0.42	0.42	0.41	0.44	0.44	0.43
Income Under $10,000	0.04	0.04		0.04	0.03		0.02	0.03		0.01	0.03	
Income $10,000 - 19,999	0.06	0.06		0.06	0.06		0.04	0.05		0.05	0.05	
Income $20,000 - 29,999	0.08	0.07		0.06	0.08		0.07	0.07		0.06	0.07	
Income $30,000 - 39,999	0.09	0.10		0.09	0.09		0.08	0.09		0.08	0.09	
Income $40,000 - 49,999	0.07	0.07		0.07	0.07		0.07	0.07		0.06	0.07	
Income $50,000 - 59,999	0.08	0.08		0.07	0.07		0.06	0.08		0.09	0.08	
Income $60,000 - 74,999	0.10	0.12		0.11	0.10		0.12	0.10		0.11	0.11	
Income $75,000 - 99,999	0.13	0.13		0.15	0.14		0.15	0.13		0.15	0.15	
Income $100,000 - 149,999	0.15	0.15		0.16	0.18		0.18	0.17		0.18	0.17	
Income $150,000 and Over	0.19	0.17		0.19	0.17		0.22	0.20		0.20	0.17	
Number of observations	10,861	10,051	65,265	7,742	9,056	61,510	6,051	8,388	60,870	6,122	8,183	57,338

Note: The sample includes individuals who are included in the householders' families. Individuals with imputed income are excluded in estimating statistics in rows 3-27. The survey response rate data come from https://cps.ipums.org/cps/covid19.shtml.

Appendix Table 2. CPS ASEC income by Monthly CPS income bracket, CPS ASEC 2005-2019

	CPS ASEC Income																Share Pop. Monthly CPS income bracket
	Under $5,000	$5,000 - 7,499	$7,500 - 9,999	$10,000 - 12,499	$12,500 - 14,999	$15,000 - 19,999	$20,000 - 24,999	$25,000 - 29,999	$30,000 - 34,999	$35,000 - 39,999	$40,000 - 49,999	$50,000 - 59,999	$60,000 - 74,999	$75,000 - 99,999	$100,000 - 149,999	$150,000 and over	
Monthly CPS income bracket																	
Under $5,000	0.34	0.10	0.09	0.08	0.05	0.08	0.06	0.04	0.03	0.02	0.03	0.02	0.02	0.02	0.01	0.01	0.03
$5,000 - 7,499	0.17	0.13	0.16	0.10	0.06	0.11	0.07	0.04	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.02
$7,500 - 9,999	0.12	0.06	0.22	0.15	0.08	0.11	0.07	0.04	0.03	0.02	0.03	0.02	0.02	0.02	0.02	0.01	0.03
$10,000 - 12,499	0.09	0.04	0.08	0.18	0.13	0.15	0.10	0.06	0.04	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.04
$12,500 - 14,999	0.08	0.03	0.05	0.08	0.14	0.21	0.11	0.07	0.05	0.04	0.04	0.03	0.02	0.02	0.02	0.01	0.03
$15,000 - 19,999	0.06	0.02	0.04	0.05	0.06	0.25	0.17	0.09	0.06	0.04	0.05	0.03	0.03	0.02	0.02	0.01	0.05
$20,000 - 24,999	0.05	0.02	0.02	0.03	0.03	0.10	0.22	0.16	0.10	0.06	0.08	0.04	0.04	0.03	0.02	0.01	0.06
$25,000 - 29,999	0.04	0.01	0.02	0.02	0.02	0.07	0.11	0.19	0.14	0.09	0.11	0.06	0.05	0.03	0.02	0.01	0.06
$30,000 - 34,999	0.03	0.01	0.01	0.02	0.02	0.05	0.06	0.09	0.18	0.14	0.16	0.09	0.07	0.04	0.03	0.01	0.06
$35,000 - 39,999	0.03	0.01	0.01	0.01	0.01	0.04	0.05	0.06	0.09	0.16	0.21	0.12	0.09	0.06	0.04	0.02	0.06
$40,000 - 49,999	0.02	0.01	0.01	0.01	0.01	0.03	0.04	0.04	0.05	0.07	0.27	0.17	0.13	0.09	0.05	0.02	0.09
$50,000 - 59,999	0.02	0.00	0.01	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.11	0.24	0.23	0.15	0.07	0.03	0.08
$60,000 - 74,999	0.01	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.02	0.02	0.06	0.09	0.29	0.27	0.12	0.04	0.10
$75,000 - 99,999	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.04	0.04	0.10	0.38	0.29	0.08	0.11
$100,000 - 149,999	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.04	0.11	0.51	0.25	0.10
$150,000 and over	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.03	0.05	0.15	0.70	0.08
Share Pop. CPS ASEC Income	0.04	0.01	0.02	0.02	0.02	0.05	0.05	0.05	0.05	0.05	0.08	0.07	0.10	0.12	0.14	0.11	

Note: Each cell reports the percent of individuals who report that their CPS ASEC income falls into a given CPS ASEC income category (column) for a given Monthly CPS income bracket (row). The CPS ASEC mod for a given Monthly CPS income bracket is highlighted in green. The sample includes individuals who report their family income in the December or January CPS and also responded to the CPS ASEC. Individuals with imputed income in the Monthly CPS or those with imputed earnings in the CPS ASEC are excluded from the sample.

Appendix Table 3. Correlation between the CPS ASEC and Monthly CPS income, CPS ASEC 2019

	Coefficient	p-value
Correlation type		
Pearson	0.481	<0.001
Spearman (Rank)	0.801	<0.001

Note: The correlations are between the natural logarithms of the income measures. An income value of one is assigned to individuals who report zero or negative family income. The sample includes individuals who report their family income in the December or January CPS and also responded to the CPS ASEC. Individuals with imputed income in the Monthly CPS or those with imputed earnings in the CPS ASEC are excluded.

Appendix Table 4. Poverty Rates, 5th month in sample, Monthly CPS, 2020

Month	January	February	March	April	May	(April+May)-(Jan+Feb)
Full Sample	0.109	0.108	0.104	0.097	0.094	-0.013
	(0.007)	(0.007)	(0.007)	(0.008)	(0.008)	(0.007)
Number of individuals	9,495	10,011	9,030	8,355	8,150	
Age						
Age 0-17	0.159	0.140	0.165	0.143	0.131	-0.013
	(0.015)	(0.013)	(0.016)	(0.017)	(0.016)	(0.015)
Age 18-64	0.096	0.098	0.086	0.083	0.086	-0.013
	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)	(0.007)
Age 65+	0.082	0.093	0.078	0.074	0.066	-0.018
	(0.008)	(0.009)	(0.009)	(0.009)	(0.008)	(0.009)
Race						
White	0.097	0.087	0.088	0.082	0.084	-0.009
	(0.007)	(0.007)	(0.008)	(0.008)	(0.008)	(0.008)
Black	0.164	0.227	0.215	0.190	0.171	-0.015
	(0.022)	(0.026)	(0.028)	(0.033)	(0.028)	(0.028)
Other	0.138	0.114	0.088	0.092	0.076	-0.042
	(0.025)	(0.021)	(0.019)	(0.025)	(0.021)	(0.023)
Head Education						
H.S. Degree or below	0.216	0.203	0.199	0.216	0.176	-0.014
	(0.017)	(0.015)	(0.017)	(0.021)	(0.017)	(0.018)
Some College or above	0.057	0.056	0.058	0.040	0.056	-0.008
	(0.006)	(0.006)	(0.006)	(0.005)	(0.007)	(0.006)
COVID19 Death Rate						
High Death Rate (>=10 per 100k)	0.086	0.110	0.097	0.090	0.095	-0.005
	(0.008)	(0.009)	(0.010)	(0.011)	(0.010)	(0.010)
Low Death Rate (<10 per 100k)	0.132	0.105	0.112	0.104	0.093	-0.020
	(0.011)	(0.009)	(0.011)	(0.012)	(0.011)	(0.011)
Date of Stay at Home Order						
Early Stay at Home (3/23 or before)	0.107	0.115	0.097	0.104	0.094	-0.012
	(0.010)	(0.010)	(0.010)	(0.013)	(0.010)	(0.011)
Late Stay at Home (after 3/23)	0.111	0.100	0.112	0.091	0.094	-0.014
	(0.009)	(0.009)	(0.011)	(0.010)	(0.011)	(0.010)
Date of State of Emergency Order						
Early State of Emergency (3/9 or before)	0.115	0.110	0.094	0.099	0.089	-0.018
	(0.011)	(0.010)	(0.010)	(0.012)	(0.010)	(0.011)
Late State of Emergency (after 3/9)	0.103	0.105	0.116	0.095	0.099	-0.007
	(0.009)	(0.009)	(0.011)	(0.011)	(0.011)	(0.010)

Note: The sample includes individuals who are included in the householders' families and who are in their 5th month in the survey. Individuals with imputed income are excluded from the sample. Standard errors are clustered at the household level.

Appendix Table 5. 25th Percentile, 5th month in sample, Monthly CPS, 2020

Month	January	February	March	April	May	(April+May)-(Jan+Feb)
Full Sample	$46,197	$45,997	$46,874	$48,138	$48,160	$2,052
	(1,239)	(1,081)	(1,333)	(1,369)	(1,689)	(1,269)
Number of individuals	9,495	10,011	9,030	8,355	8,355	
Age						
Age 0-17	$38,356	$38,960	$36,449	$37,908	$41,071	$831
	(1,767)	(1,770)	(2,521)	(2,732)	(2,148)	(1,896)
Age 18-64	$51,984	$49,647	$52,675	$53,787	$52,274	$2,215
	(1,929)	(1,222)	(1,827)	(1,927)	(2,005)	(1,886)
Age 65+	$45,897	$46,771	$47,778	$47,839	$48,944	$2,058
	(1,346)	(1,716)	(1,720)	(1,990)	(1,815)	(1,684)
Race						
White	$51,488	$50,312	$50,612	$51,355	$50,739	$146
	(1,639)	(1,249)	(1,776)	(1,689)	(1,734)	(1,562)
Black	$31,033	$29,788	$29,277	$32,975	$34,646	$3,400
	(2,334)	(2,430)	(3,165)	(4,685)	(2,761)	(2,886)
Other	$38,673	$43,930	$45,841	$57,797	$48,548	$11,871
	(4,564)	(3,188)	(3,836)	(4,869)	(5,725)	(4,833)
Head Education						
H.S. Degree or below	$28,201	$30,252	$29,277	$27,477	$33,112	$1,067
	(1,164)	(1,236)	(1,651)	(1,388)	(1,051)	(1,575)
Some College or above	$64,771	$61,901	$63,885	$67,804	$64,187	$2,659
	(1,547)	(2,163)	(2,706)	(2,639)	(2,455)	(2,065)
COVID19 Death Rate						
High Death Rate (>=10 per 100k)	$51,984	$46,172	$50,815	$52,326	$49,095	$1,633
	(2,143)	(1,478)	(2,639)	(2,912)	(2,583)	(2,168)
Low Death Rate (<10 per 100k)	$41,761	$45,505	$43,466	$45,331	$46,900	$2,482
	(1,896)	(1,467)	(1,787)	(1,453)	(1,943)	(1,435)
Date of Stay at Home Order						
Early Stay at Home (3/23 or before)	$50,689	$45,766	$50,268	$49,995	$46,595	$68
	(2,481)	(1,549)	(2,606)	(3,180)	(2,657)	(2,255)
Late Stay at Home (after 3/23)	$44,387	$46,023	$43,458	$47,470	$49,954	$3,507
	(1,424)	(1,452)	(1,413)	(1,460)	(2,101)	(1,504)
Date of State of Emergency Order						
Early State of Emergency (3/9 or before)	$47,110	$44,711	$49,611	$49,220	$48,821	$3,110
	(2,089)	(1,368)	(2,257)	(2,928)	(2,123)	(2,150)
Late State of Emergency (after 3/9)	$45,465	$47,070	$43,735	$47,478	$46,761	$852
	(1,678)	(1,402)	(1,527)	(1,493)	(2,442)	(1,665)

Note: The sample includes individuals who are included in the householders' families and who are in their 5th month in the survey. Individuals with imputed income are excluded from the sample. The family income is equivalence-scale adjusted and equivalized to a family with 2 adults and 2 children. The income is adjusted over time using the PCE Chain-type Price Index and is expressed in April 2020 dollars. Standard errors are clustered at the household level and are estimated using the bootstrap.

Appendix Table 6. Features of Household Surveys that Collect Income Data During the COVID-19 Pandemic

Survey Name	Monthly CPS	FRB SHED[a]	Household Pulse	COVID Impact
First year of survey	1982[b]	2013	2020	2020
Number of surveys	462	8	4	3
Survey months in 2020	Jan-June	April	April-June	April-June
Reference period of income question	Last 12 months	Last 12 months	Last calendar year	Last calendar year
Survey mode[c]	In-person (3%), phone (97%)	online	online	online (94%), phone (6%)
Number of income brackets below 25K[c]	7	7	1	2 (under 20k)
Number of income brackets below 50K[c]	11	11	3	5
Survey nonresponse rate[c]	0.42	0.98	0.97	0.97
Missing income rate[c]	0.28	N/A	0.15	0.02
Number of households[c]	8,779	1,030	101,215	7,505

Note: [a]Income data in the FRB SHED survey is carried over from an initial demographic profile survey. Information about the month of the initial survey is not available. [b]First year of survey with income question. [c]Data from the most recent survey data available. Respondents of Household Pulse survey are contacted by email or text. The number of households includes those with missing income.